

ANIMALS IN
SAXON & SCANDINAVIAN
ENGLAND

BACKBONES OF
ECONOMY AND
SOCIETY

MATILDA HOLMES



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Introduction, Research Questions and Context

1.1 Introduction

Animal bone data recovered from archaeological sites are crucial for the interpretation of relationships between past populations and the animals they used: the interactions between people and animals would have been integral to the daily life of the majority of the population who worked the land. Animal products would also have been central to those who worked with raw materials such as bone, antler and horn, and in the expression of status through the consumption, ownership, or procurement of particular taxa.

Early archaeozoological investigations were largely descriptive and centred upon functional, site-specific questions (e.g. quantifications of taxa present and population structures of the main species). However, animal bones can be used to greater effect exploring facets of past life such as environment, diet and subsistence, social status, ethnicity, religion and rituals (MacDonald 1991, 66). The practicality of synthesising early work was limited, particularly given the meagre gazetteer of excavated Saxon sites. However, the proliferation of excavations within England during the last forty years has led to the growth of an extensive data set of faunal assemblages from Saxon sites, making it timely for a review of the archaeozoology of Saxon England to take place.

1.2 Research Themes in Context: Background and Rationale

It is essential to frame the archaeozoological analyses and data in a coherent context by outlining current perceptions of early, middle and late Saxon England in terms of settlement and economic trajectories. Therefore, current theories regarding motivating economic, political and social forces at play throughout the period (c.A.D. 410-1066) will be identified to provide secure foundations for evaluating major themes pertinent to the research aims. It also allows for the identification of key issues and assumptions, problem areas and specific gaps in knowledge that presently exist.

Initially, some consideration of the likely factors affecting the nature of land exploitation by the population of Saxon England is essential. Of primary importance is the size of the population: the greater the population, the greater the competition for resources and the will be. Although the estimation of population

in pre-census England is based purely on conjecture, there is general agreement that the population of Roman Britain was approximately 4 million - a figure which dropped substantially in the century following the Roman withdrawal and the fragmentation of the province (Dyer 2003, 26). Few data on the Saxon population are available, but demographic estimations based on documentary sources, settlement patterns and geography suggest a considerable reduction in population density that only recovered to 2 million by Domesday (Esmonde Cleary 1995, 13; Russell 1976). The Saxon population was therefore well below the agricultural carrying capacity of England, suggested at 5 million by Stanton (2003, 41), and land would not have been in short supply.

Other potential impacts on the population came from famine – such as those of A.D. 890 (Hinton 1990, 68), 1005 (Keynes 2007, 155) and 1042 resulting in loss of livestock (Trow-Smith 1957, 50) – as well as war, notably between early Saxon Kingdoms and later against the Viking threat. Indeed, the effect of the Danish army is detailed in the *Historia Regum* of 896, recording the slaughter of people, beasts of burden, sheep and oxen (Trow-Smith 1957, 49). It is not within the scope of this book to assess such famines and conflicts, but these should be considered factors affecting the population, and people's ability to farm effectively.

The Early Saxon Phase (A.D. 450-650)

Society

The end of the Roman period would have had a significant impact upon the agricultural economy. The importance of surplus production to supply urban populations and armies through markets, tax and rent was removed, leading to a change in emphasis towards a more localised society, although with some trade networks dealing in ceramics and metal work (Esmonde Cleary 1995, 22; Moreland 2011, 181). In such a society family and kinship determined status, links and allegiances between groups and access to good farmland would have been of prime importance (Härke 1997, 141; Wickham 2006, 695).

By the later 6th century England was divided into numerous kingdoms and the general populace would have been obliged to supply the King with food in the form of tax, as well as service in times of war, in return for protection. The display of status between King, kinship groups and the household (i.e. both the family unit and their servants), resulted in a three-tier society of nobility, freemen and slaves, but with a greater distinction between the nobility and lower classes, inferred from the construction of larger halls, greater quality and quantity of grave goods in high-status burials and a reduction in the relative numbers of grave goods representative of free men (Härke 1997, 146). Allegiance and place in the hierarchy was reinforced through gift giving, display of wealth and reward for service (Brookes 2007, 26-28). The sense of community was of utmost importance, and the place of those within it was secured and reinforced by the use of feasting and food redistribution (Sykes 2010, 183). This emphasis on feasting as a method of social separation is reflected in the likely importance of pastoral farming, particularly the status and

wealth imbued upon cattle at this time, duly reflected in the fines imposed by legal documents (Oosthuizen 2005, 188).

One other group – the ecclesiastical – emerges from the late early Saxon phase. Missionaries from St Augustine successfully re-introduced Christianity to eastern England in the early 7th century, and ultimately brought about the conversion of the English (Chadwick Hawkes 1982, 64). The significance of the development of the ecclesiastical system lies in the need of the clergy for surplus production, to support their work in a non-agrarian calling. Coupled to this was the relationship between the Church and aristocracy. It is suggested that this came about through a mutual need for Kings to show close ties to the Church in Rome, perceived intellectual wisdom, and access to writing skills for the perpetuity of laws. In return, the Church (both clergy and monks) received lands and security (Hinton 1990, 36). Because of the rapid increase in church wealth, the religious orders were able to live as ‘multi-functional’ communities, evolving in economic and organisational complexity to a greater extent than the rest of society (Blair 2005, 77-78).

Settlement

It has widely been asserted that the post-Roman to early-Saxon phase was marked by rural settlements of family groups, analogous both economically and socially (Beckinsale 1968; Dyer 2003; Fowler 2002; Hodges 1988; Hooke 1998; Murphy 1994, 24; Vince 1994). The majority of settlements were farmsteads inhabited by one household, or kin-based group, made up of between approximately 12 and 50 people, including a nuclear family and their servants, all of whom lived under one roof (Härke 1997, 157). Farmsteads were sometimes grouped together as hamlets (Cowie and Blackmore 2008, 136). Fowler (2002:96) suggests that by the end of the phase (c. A.D. 650), each ruling class probably also had large permanent residences (e.g. Yeavinger and Cheddar) that they visited sporadically.

Urbanism as a social and economic phenomenon disappeared in the post-Roman period (Moreland 2011, 181; Powlesland 1997, 104; Vince 1994, 109). The physical remains of Roman towns remained and, although the extent of the ‘evacuation’ is not known, theories, summarised by Beckinsale (1968), Faulkner (2000), Haslam (1985, 7-12) and Henig (2011), range from complete abandonment by 550, to the inclusion of a fragmentary ‘slum’ population, to some scale of continuing domestic and administrative occupation. Although some Roman towns, such as Wroxeter, continued to be inhabited in the form of timber buildings amidst the ruins (Fowler 2002, 91), the nature of this settlement type is generally viewed in terms solely of an administrative and ecclesiastical capacity (e.g. Lincoln), with the elite laying claim to ruinous but dominant areas of the townscape (Clarke and Ambrosiani 1995, 8; Henig 2011, 530; Hodges 1988, 3; Vince 1994, 108). If so, then the question of how such inhabitants were supplied must be raised. Were they administrators supplied by farms in the hinterland, or was it a population of farmers who worked the land surrounding the town, while making the most of the protection afforded by the Roman defences?

Economy, Agriculture and Husbandry regimes

The early Saxon period was based almost wholly on a rural society producing on a domestic level, synonymous with family-based subsistence settlements (Hodges 1988, 4). There would be little inter-site movement, although some re-distribution between local groups may be expected (e.g. for the exchange of breeding stock). Wild animals may be present that were indigenous to the immediate area of the site (O'Connor 1989b, 19), so faunal assemblages may be expected to reflect the wider animal population, allowing for taphonomic differences (Meadow 1980; Rackham 1983).

The use of intensive cultivation and herding strategies may have been most suited to populations based on nuclear households, where tasks such as childcare were incompatible with the tending of far-off fields or herds. Rather, it may be expected that small plots of land close to the settlement were cultivated, and the small-scale herding of animals nearby would have been conducive to limited labour and resources, while at the same time allowing the production of a small surplus to provide for times of shortage (Bogaard 2005, 179-80). This would have been compatible with a pre-existing infield/ outfield regime of the Iron Age and Romano-British periods, involving the intensive cultivation of small fields near to the settlement (infields), and extensive use of land further away (outfields), for grazing or non-intensive crop production (Oosthuizen 2005, 166; Oosthuizen 2011; van der Veen 2005, 159).

Typically associated with this type of economy is the use of animals primarily for meat, rather than secondary products (Bogaard 2005, 187), although it should be emphasised that three year old sheep, for example, could produce two seasons worth of fleece, before being culled for meat (O'Connor 2010, 12). This has been observed at many early Saxon sites, where sheep and cattle came from herd structures of animals of all ages, indicative of a self-sufficient regime (Crabtree 2010, 126; Sykes 2006, 61) – animals kept for both meat and small scale secondary product production.

Potential for Further Analysis

Although much is known of the lives of the early Saxons, large gaps remain. It may be possible to illuminate further some of these areas of supposition through a systematic analysis of human-animal interactions, notably:

- The extent to which social hierarchy is manifested through food consumption and procurement. With the exception of recent work into the redistribution of deer remains by Sykes (2010) there is currently little archaeozoological evidence for feasting or food redistribution, which is at the heart of many of the major themes surrounding the economy of the early Saxon period.
- The limited variability of settlement types means that there may be little variation in the nature of animal husbandry; however, as noted above, the question of provisioning inhabitants of the former Roman towns is poorly understood, yet essential to understanding the nature of such settlements.

The Middle Saxon Phase (A.D. 650-850)

Society and Politics

The increase in social hierarchies noted at the end of the last phase led to the varied kingdoms of early Saxon England being condensed into fewer, larger territories, facilitating consolidated control through military organisation (Bassett 2007, 53-57). These kingdoms (Mercia, Wessex, Northumbria, East Anglia, Sussex and Kent) were relatively politically stable (Hinton 1990, 60). This stability acted as a platform from which a tributary society was facilitated, taking over from the kinship-based reciprocal redistribution of the previous phase (Hodges, 1988:4), reflecting the move to class-defined social and political hierarchies. The functions of these larger territories were two-fold: it meant that farmers within them could have a greater degree of security to farm; and the King or Queen had a population they could draw on when needed for military service.

Through tribute payments from their subjects, the ruling elite could take control of the redistribution of an agricultural surplus through the collection of food renders at estate centres. Furthermore, documentary evidence suggests that Kings collected tolls on traded goods and gave out tax exemptions. A number of bishops were made exempt, highlighting the role of the Church in middle Saxon trade (Middleton 2005, 352; Moreland 2011, 188). It is also likely that regional markets outside the control of the elite took place on certain days throughout the year (Brookes 2007, 34).

From this phase on, those who worked the land were made to exist within a framework of organisation (Fowler 2002, 84). Settlement hierarchies developed rapidly during the late early- to middle Saxon phase and formed the basis for a network of producer and consumer sites, crucial for the provisioning of sites in the later Saxon phase (Brookes 2003, 180). The farmers who worked the land provided food rents to the thegn in charge of the estate centre, who would then provide for the royal household as they toured their kingdom (Richards 2007, 22).

The mid-7th century was the time of a 'monastic boom' (Blair 2005, 79), whereby monasteries were established by the English, providing a focus for local communities for learning and guidance that was accessible by the aristocratic and peasant classes alike (Blair 2005, 80-83; Leyser 1997, 180). The establishment of minsters was still closely linked to the aristocracy, both physically and socially – they were formed on land granted by estate owners, and the monks and nuns within would have prayed for the benefactor in return (Holdsworth 1995, 41). By the mid-9th century the Church was established fully in England, and bishoprics lay within each diocese (Holdsworth 1995, 31). The stability and organisation of minster settlements would have set them apart from the aristocracy and general population, as a distinct part of the increasingly conspicuous hierarchy (Blair 2005, 204).

Settlement

Some authors propose that the relative economic importance of a settlement is largely dependent on its place in the distribution network (e.g. Brookes 2003, 100). For example, in a study of their hinterlands, Palmer (2003, 51) notes that sites receiving traded goods were situated on trade routes (coasts, roads or rivers). Settlements in the surrounding area would therefore have had opportunities to supply goods to be traded, and therefore may also have held an economic advantage purely by association with these early consumer sites.

At the lower end of any proposed settlement hierarchy remained the isolated farmsteads and hamlets. Hodges (1989, 130) and Fowler (2002, 109-121) note that these dispersed settlements formed the backbone of the large estates, and several would have provided render to one estate centre (Jones and Page 2006, 81). Hamlets consisted of two to four farmsteads – each of which was an enclosed unit with a hall, sunken-feature buildings, possibly a granary and a well. These sites were vital for the collection of food taxes by the ruling class (Fowler 2002, 71), which would be supplied to middlemen at the local estate centre (Aston 1985, 35-36).

Estates incorporated marginal areas valuable for wood, grazing, pannage, wild fowling, fishing, hunting and transhumance (Dyer 2003, 15-17; Hooke 1998, 171; Miller and Hatcher 1978, 3; Naylor 2004, 10), as well as arable land. They had significant storage facilities which received food from the surrounding countryside, as well as supporting industry and craft production (Hodges 1988, 4). By the 8th century, documentary sources hint that the large estates began to be divided up into smaller royal or ecclesiastical estates (Hooke 1998:54). Of the latter, the largest such as Wearmouth and Jarrow would have been quasi-urban in nature, housing a significant population of non-agrarian clerics and students (Holdsworth 1995, 43). They were, however, probably of a nature comparable to the secular estates, and the land granted to the ecclesiastical institution by the local elite may have been worked in a similar way.

The distinction between secular and ecclesiastical estate centres in this phase is blurred, as churches were often built within royal estates, and the status and function of sites were subject to change (Fowler 2002, 81; Loveluck 2001; Richards 2007, 181; Ulmschneider 2011, 165). Nonetheless, monastic sites were often more richly provisioned with stone churches than purely secular ones, although the general layout of the site would have been similar to that of the royal estate (Blair 2005, 204), such as Hartlepool Monastery. Recent work has had some success comparing the likely evidence for cockfighting with settlement type, to help elucidate secular from religious settlements, based on the social role of cockfighting as associated with masculinity and sexuality (Hodkinson 2013).

Between the 7th and 9th centuries there arose specialist trading settlements, or *wics*, indicated by coastal, riverside and industrial trading sites, on green-field or even extra mural areas of old Roman towns. These *wics* developed by royal patronage, and were used to restrict international trade to specific ports, thereby allowing taxes to be collected (Middleton 2005, 354). Astill (1991, 101) emphasises their dependence, not only on international trade with northern Europe

and the manufacture of goods, but also on trade within their immediate regions. There is a suggestion that some *wics* developed from small, seasonal trading sites, or regional coastal markets of the early 7th century, becoming busy commercial centres of international trade by the later 7th century where traders could stay, with a permanent native community to provide for them, as well as native artisans manufacturing goods on site (Blackmore 2002, 283; Hodges 1989, 56). Clarke and Ambrosiani (1995, 15-16) describe them as complementing local administrative centres and bishoprics, as some may have developed as central administrative places for the region (e.g. London and York), whereas others remained as commercial centres (e.g. Hamwic and Ipswich).

The extent to which the royal court inhabited *wics* is largely unknown, and although it is possible that high-status residences were present, evidence is scarce. Remains of royal residences have been postulated at Lundenwic and in or near Ipswich (Hodges, 1988:55), but none securely identified, indeed, their presence was later disputed by Hodges himself (2000, 122).

A second tier of trading sites has also been hypothesized, in the form of inland markets, or 'productive sites' (Hamerow 2007, 228; Middleton 2005, 314), areas where relatively large numbers of coins have been found. These have been linked to trade away from *wics*, possibly associated with the Church (Pestell 2011, 565).

Economy, Agriculture and Husbandry

The need for the rural population to produce a surplus to supply estate centres with food rents in return for the lease of land itself marked the need for a widespread distribution network (O'Connor 2001a, 60). The presence of a growing non-agrarian population within *wics* and minsters, as well as the royal court, required the estate centre to act as a redistribution centre. This mechanism involved the provision of food tax or render from outlying farms to the estate centre, where it was then redistributed to the aristocracy. The provisioning of ecclesiastical settlements with food renders presented to the itinerant Kings from their estates has been proposed, using the redistribution of various parts of deer carcasses (Sykes 2010, 182).

There are some differences of opinion concerning the provisioning of *wics*: data from York, Hamwic and Ipswich have been used to suggest that animals were the product of food renders from estates tied to the *wic* (Bourdillon 1994; Crabtree 1994; O'Connor 1994); whereas the evidence from London is suggestive of a market economy (Vince 1994); by contrast, Scull (1997, 282) tentatively describes the inhabitants of London and Ipswich as producing much of the food required in the surrounding fields themselves.

Hodges (1989:142) indicates that the realisation that profits could be made by supplying a market and provisioning non-agricultural workers within towns, led to a fundamental change in the economy towards urbanisation and state formation, as those in power began to manage their agricultural surplus through intra-regional exchange. This change may have coincided with *wics*, yet Hodges himself notes that evidence for this change is scarce. Rather, he suggests that craft specialisation in *wics* was the beginning of a competitive market economy, the presence of a

central power for the organisation, expansion and adaptation of this economy was necessary before state formation and urbanisation could occur (Hodges 1989).

Changes to the economic and political structure of middle Saxon society would have required an increased scale of agricultural production: redistributive systems and urbanisation was predicated upon the ability of rural producers to produce an agricultural surplus. This contributed to the emergence of trade centres (i.e. *wics*), and rural production centres based at high-status and ecclesiastical rural sites, where metal, glass and pottery were made (Astill 2006, 236). Trade routes were established at this point on a significant regional scale, between village, estate and trading centre (Pestell 2011, 573). Rural fairs and markets were important links in the trade networks of both ecclesiastical and royal estates, most likely supplying utilitarian items, food and raw materials (including food, leather, horn, bone and antler), despite the emphasis given to prestige goods in the archaeological record. Wickham (1994:153) suggests that, after renders had been paid to a lord, farmers could then exchange any excess produce with neighbouring areas, through a local market system within a social network, running alongside the larger scale distribution networks between estate and *wic*. It is also suggested that monastic settlements, particularly those of the east and south east, were consumer-led, eager for the goods supplied through international trade (Blair 2005, 204), and at such sites the range of imported items was only comparable to the *wics* themselves.

Agriculturally, the use of the infield/ outfield system continued in the middle Saxon phase, although there is some evidence for an evolution of this to a 'proto-open field system' at some sites within a 'central province' (Oosthuizen 2005, 185). Here, increasing demands placed upon farmers by the king for food renders led to increased grain surplus production. This in turn may have led to the innovation of new agricultural systems, which could have been accommodated by extending existing infields, while retaining the use of associated land for pastoral grazing (Oosthuizen 2005, 188).

Previous studies of the animal bone evidence argued that *wics* were provisioned through the redistribution of food received as render or tax from rural settlements through estate centres (Bourdillon 1994, 124; Middleton 2005, 313; O'Connor 2010, 14). Supply of *wics* at this time was by driving animals to the site where they were killed and butchered (Bourdillon 1994, 123). For the *wics* themselves, there is debate about the extent of the decline of international trade during the 9th century, resulting from Viking attacks which ultimately led to the abandonment, shrinkage or re-location of *wics*. Traditionally it was argued that *wics* monopolised the trade networks in the 8th and 9th centuries (Hodges 1989, 42). However, Brookes (2003, 26) and Naylor (2004, 13), argue that too much emphasis had been placed on the role of *wics* and *emporia* at this time, and that trade simply turned inwards, focusing instead on rural trading centres.

Potential for Further Analysis

Certain areas of current theory regarding the middle Saxon population remain in need of clarification which can be supplied by archaeozoological analysis :

- Although widely acknowledged that an increasingly complex social hierarchy was emerging, the nature of provisioning within and between the populations of various settlement types is poorly understood. Of particular interest is the role of ecclesiastical settlements as producers or consumers, and the nature of *wics* as markets versus trading centres supplied by an external authority;
- Can the increased surplus production on rural sites necessary to satisfy a redistributive system be identified?
- Determining supply networks and differences in social status between sites: techniques can be employed to investigate the redistribution of animal carcasses, product specialisation, and the demand for particular taxa from the inhabitants of various site types;
- The intensification of craft production can also be tested archaeozoologically, through the supply and use of raw materials such as horn, antler and bone.

The Late Saxon Phase (A.D. 850-1066)

Society and Politics

Although the threat from the Vikings first originated at the end of the 8th century, there is little archaeological evidence for any major colonisation until the mid-9th century, at the beginning of the late Saxon phase. The Viking threat increased significantly in the middle of the 9th century, eventually leading to the division of England into three main areas: Mercia, Wessex and the Danelaw by the late 9th century. However, evidence from a number of sources indicate that some areas of the Danelaw were more ‘Danish’ than others, particularly the northern area, with East Anglia showing no perceptible Scandinavian influence (Hinton 1990, 71; Kershaw 2010). It has been suggested that there was no common ‘Viking’ identity; rather they came from Scandinavia, continental Europe and the area around the Irish Sea, with “alliances which cross-cut ethnic divides and did not promote any sense of Scandinavian unity” (Richards 2011, 48). A review of evidence for the ethnicity of Viking settlers suggested that, while those of the 9th, 10th and 11th centuries had a significant impact on the society and culture of the indigenous inhabitants of the North and East, the effect was not homogeneous. Rather, the ‘Viking’ display was manipulated by the elites of the Danelaw for particular political and cultural benefits, and generally there was widespread assimilation of the first wave of settlers into English culture by A.D. 1000 (Hadley 2002).

By the mid-10th century Saxon kings had reclaimed the Danelaw, although many Scandinavian settlers remained. However, during the early 11th century renewed attacks from the Viking army stopped only after the payment of tribute by the English. This came to an end by 1016 when the Danish King Knut was made King of England, and the succession of Danish kings continued until the Norman Conquest in 1066 (Richards 2007, 26-48).

During the 10th century the large estates that existed in the middle Saxon phase were re-parcelled by the King's administration and distributed to the Church and to aristocrats (Reynolds 1999, 83). This became necessary with the development of a significant 'middle class' – the thegns – resulting from widening social hierarchies (Hooke 1995, 99). Estate fragmentation continued, and the common pattern of rural settlement by the time of the Conquest was one of a thegn running an estate consisting of his manor, a village and land farmed by the peasant class. It has been suggested that the re-shaping of increasingly smaller estates presents a metaphor for the emergence of an elite class, more removed from the lower classes than previously (Sykes 2010, 183).

Minster churches and monasteries were, by now, widespread. These had provided easy targets for plundering during early Viking attacks, and in the years after this they saw decline in wealth and size (Blair 2005, 292, 320; Leyser 1997, 177). Following the Viking settlement in the 10th century there was a rapid increase in the creation of local churches (at the expense of the minsters) by both Saxon and Viking benefactors, based on the Gregorian Rule (Blair 2005, 506-507; Richards 2007, 180). This provides a good illustration of the willingness for the new Viking population to embrace the status symbols of the Saxon elite, in this case as patrons to churches, requiring their conversion to Christianity (Blair 2005, 293). The Church still held vast amounts of land and resources, but was also subject to the contraction of land holdings taking place on secular estates caused by the fragmentation of estates (Blair 2005, 157), and by the Norman Conquest many were taken over by the new elite.

Settlement

Many of the smaller estates that now existed depended on a supply of surplus from farmsteads that had been increasingly nucleated until they were large enough to be characterised as villages, under the control of a central manor (Hooke 1998, 117; Jones and Page 2006, 82). The nucleation of settlements occurred in a 'Central province' (Roberts and Wrathmell 2000, 4) synonymous with the open field system (see below), whereby large fields surrounded the settlement at their centre (Jones and Page 2006, 4). Despite the move towards a more communal society, isolated farmsteads persisted in some regions where dispersed settlement continued into the second half of the 11th century at least, for example in eastern and south-western England (Hooke 1995, 103-104).

Estate centres were still trading during the 9th and 10th centuries, being involved in manufacture and ecclesiastical functions as well as agricultural production and tax collection (Astill 1991, 103). However, from the 10th century, estate centres with a secular base started to decline, as the collection of food renders was made redundant when coinage became increasingly widespread and urban markets grew. Ecclesiastical estate centres, however, continued to thrive.

During the 9th century, continuing attacks from the Danish army led Alfred to establish new defended settlements, or burhs, defined in the Burghal Hidage – documents listing 33 burhs and their sizes. Nearly all were within Wessex, although three were included from Mercia (Hill 1969, 84). Their character varied: from the

purely military such as Portchester; to sites protecting existing estate centres (e.g. Oxford and Northampton); some lay within re-defended former Roman towns (e.g. Winchester and Chester); but others were situated close to former *wics* (e.g. London and Southampton); and some were newly built (e.g. Wallingford and Bedford). The non-military and larger burhs are generally perceived as ‘urban’ foundations. While the definition of what constitutes an ‘urban’ site varies in much of the literature, for this research it is their function supporting non-agricultural production and a population of non-farmers making them dependant on others for food that is key (Clarke and Ambrosiani 1995, 3; Fowler 2002, 91; Hodges 1989, 142).

The Viking population of the Danelaw occupied former East Anglian burhs (e.g. Norwich and Thetford) as well as forming new trading settlements such as York and Lincoln, often extending their defences. Of particular note are the five Viking towns – Leicester, Derby, Lincoln, Nottingham and Stamford – which were built as defended settlements on (presumed) existing estate centres and, in the case of Leicester, a former Roman town (Richards 2007, 101-102). Many burhs and Danish towns grew quickly from the late 9th century, and contain evidence for wider trade connections (e.g. York, Lincoln and Chester) and internal industry (e.g. Northampton, Thetford and Norwich) - the latter relying on materials from their hinterlands. Northern and eastern urban sites grew more rapidly than those in the south and midlands, but by the 11th century southern towns also became intensely occupied throughout the country as trade again picked up (Astill 1991, 112; Vince 1994, 117-118).

Economy, Agriculture and Husbandry

In the late Saxon phase the economies of town and country developed a closer, direct interaction made possible by the re-introduction of a market-based economy, and the royal drive to urbanisation (Hutcheson 2006, 73). However, the documentary evidence indicates that in rural areas land leases continued to exert a demand for food rents from farmers, and examples are given by Trow-Smith (1957, 57, 63).

Hodges (1988; 1989) proposes that the small-scale, local, rural markets held by royal and ecclesiastical estates evolved into competitive markets with regional distribution from the late 9th century (Astill 1991; Astill 2006; Pestell and Ulmschneider 2003; Vince 1994). Within burhs, the requirement of the population for food and raw materials and the subsequent exchange of manufactured items, has been described by Hodges (1989, 49) as operating within an interlocking central-place system, which was fully commercialised, unlike the smaller rural markets. As a result, by the later 10th century, royal control revived coinage as the major mode of exchange and tax collection, either through the acquisition of goods later sold for money, or to collect tax as coinage itself (Astill 1991, 99; Haslam 1985, 49).

Even though many of those living in burhs were employed in non-agrarian trades, a number of inhabitants were recorded in contemporary documents as being employed on the land. Most burhs had lands attached that were in the hands of a few burgesses – “there was no sharp break between town and country” (Miller and Hatcher, 1978:9) – and from the 10th century many burghal plots were

attached to rural manors (Beckinsale, 1968:13). Dyer (2003:67) also suggests that land close to the burh was used for gardens and limited agricultural production - some animals may have been kept in orchards, smallholdings and backyards such as dairy cows, sheep, goats, pigs and fowl (O'Connor 1989b, 17; Wilson 1994, 113). Nonetheless, as market economies evolved, the needs of craft workers and administrators necessitated a change in the agricultural regime, with an increased requirement for production and trade in food to supply the new population no longer devoted to working the land (Clarke and Ambrosiani 1995, 167; Hodges 1989, 130).

By the 10th century rising taxation through coinage led to greater control of the elite over the farming classes, implemented through village formation (Hodges 1989, 164). This allowed an increasing area of land to be used for arable production, as the focus moved to profitable rather than sustainable farming. Pasture land potentially became marginalised and, in order to allow enough stock to be kept to manure the land, fallow field systems were introduced (Astill, 1991:113; Fowler, 2002:192). This marked the advent of open field systems in arable regions of the midlands (Hooke 1998, 121), which developed in a belt from Northumberland and Durham, through the midlands and central southern England, finishing in Dorset and Hampshire (Dyer 2003:19). The open field system enabled an increase in productivity and the creation of a greater surplus to be marketed. It required the intensive cultivation of large fields close to the centre of a settlement, with one third of the land set aside each year for common grazing (Oosthuizen 2005, 165-166). Outside this region people continued to live in hamlets or isolated farms, with a greater emphasis on pastoral farming and the continuing use of an infield/outfield model (Oosthuizen 2005, 185).

One of the earliest documented livestock inventories of an ecclesiastical farm at Beddington, Surrey re-stocked at the turn of the 10th century, following Viking raids, listed the animals present as: “9 full-grown oxen and 114 full-grown pigs and 50 wethers, besides the sheep and pigs the herdsmen have a right to have 20 of which are full-grown; and there are 110 full-grown sheep” (quoted in Trow-Smith 1957, 50). Of particular interest in this passage is the small number of cattle recorded – enough for one plough team if pulling a heavy plough. This is common in inventories of this period along with the presence of only a few cows for breeding (Trow-Smith 1957, 57). Also of note are the large quantity of pigs recorded. Further reference is made to the vast herds of pigs kept within woodland in the late 9th century, for example a bequest made of 2400 head from one ealdorman (Clutton-Brock 1976, 378).

The introduction of seasonal transhumance in the middle Saxon phase has been postulated (Hooke 1981, 321; Hooke 1998, 186; Hutcheson 2006, 75), particularly in the northern areas under the Danelaw (Wickham 1994, 152), reflecting practice in the Scandinavian home countries (Adalsteinsson 1991, 285).

Potential for Further Analysis

The faunal record may allow the elucidation of particular aspects of late Saxon life, such as:

- The extent to which the Viking population of the Danelaw remained distinct from the native Anglo-Saxons through differences in diet and products;
- The increasing intensification of agriculture at this time, and the move to open field systems, as well as a better understanding of the extent to which social divisions were recognisable;
- Little work has been carried out into the provisioning of ecclesiastical sites, particularly given the move to more standardised minsters united under Gregorian rule;
- Was there a conflict of interest for the farmer, between producing for food rents and for a market? Analysis of animal bones may also help clarify the function of early burhs as markets, or simply defensive outposts, if not directly the degree to which they were inhabited;
- The move towards the late Saxon market economy from one based on redistribution in the middle Saxon phase, would involve a significant shift in production and distribution networks, which could explain the recent observation that, during their early manifestation, burhs were only sparsely populated.

1.3 Research Questions

This study presents the first systematic and critical review of an extensive corpus of animal bone data from sites throughout Saxon England, fitting within the research framework already established for the middle Bronze Age to late Iron Age (Hambleton 1999), Roman (King 1978; King 1999a; King 1999b) and Norman (Sykes 2007b) periods. Although other syntheses have been carried out on Saxon assemblages, these have predominantly been on a local or regional scale. This examination of currently available data therefore aims to shed new light on the Saxon economy throughout England, and provide a benchmark for more detailed analyses to take place. From the areas of potential for further investigation presented above, the following revised research questions were identified:

1. Can the role of consumption of animals at particular site types, and thus the place of that settlement within a social, political and economic hierarchy be inferred?
2. What was the nature of the agricultural economy (i.e. what were animals used for) in Saxon England?
3. Can the two periods of cultural migration (Saxon and ‘Viking’) be observed in the faunal record?
4. How were sites provisioned? Is there evidence for production, consumption and redistribution of animals and their products?

5. How do archaeozoological analyses feed into debates on the nature of the urban context through spatial organisation of status, craft production and trade?

The key strength of this research lies in the integration of animal bone assemblages from published and grey literature to produce analysis of an abundant archaeological resource. It is a resource that is significant in its availability and potential to illuminate many aspects of a past society that reflect on the day-to-day choices of the population: decisions such as what to produce; what to kill; what to sell; what to keep back; and what to eat. Interpretations of the data can then be contextualised using documentary and archaeological sources, to define further our understanding of the agricultural, social and political economies across the whole Saxon period, and interactions between settlements.

Methodology and Introduction to the Data Set

2.1 Introduction

Techniques used to acquire and understand the data underpinning the study will be defined in this chapter, as well as an introduction to the data set itself. Methods used when analysing animal bone assemblages vary between specialists. They are dependent on numerous factors such as taphonomy, size of the assemblage, excavation conditions, time constraints, cost, theoretical approach, experience and methodological background of the archaeozoologist, as well as research questions specific to each project. To be able to conduct an inter-site analysis with any confidence, it is important to make the data comparable, and to that end, a number of criteria were set for the inclusion of a site and its assemblage in this study:

Geological Area

Sites were included from anywhere within England.

Sample Size

For practical reasons, a lower limit had to be set on the size of assemblages to be included. In Hambleton's investigation into the British Iron Age economy, she suggests that a minimum sample size of 300 identified fragments (100 per taxa investigated) is the most reliable, and the one least likely to produce outliers that are the result of small biased samples (Hambleton, 1999: 39). However, due to the paucity of excavated Saxon sites, and even fewer recorded faunal assemblages, a lower threshold was considered necessary for this study; namely a minimum of 100 identified fragments from the main domesticates (sheep, cattle, pig), suggested by Davis (1995, 46) as a minimal figure. In reality, some exceptional sites contained fewer than 100 identified specimens (NISP). This permitted the inclusion of site reports specifically dealing with fish or birds, or those which may have used a minimum number of individuals (MNI) for the taxa count (therefore being incomparable with other sites), but containing useful secondary information, such as ageing, body part, metrical or butchery data.

Phasing

Although it is preferable to treat the period from the decline of Roman influence to the period after the Norman conquest as a continuum, analysis is simplified if broader period groups are assigned. Four main phases were investigated, each broadly recognised by archaeologists and historians for the period in question (e.g. Fowler 2002; Perring 2002; Reynolds 1999; Sykes 2007b):

- Early Saxon (mid-5th to mid-7th centuries);
- Middle Saxon (mid-7th to mid-9th centuries);
- Late Saxon (mid-9th to early-11th centuries);
- Saxo-Norman (11th to 12th centuries).

2.2 The Data Set

Raw data came from both published site reports and grey literature where possible. A total of 315 records from 241 sites - multiple records being made for some sites if they spanned more than one phase (Table 2.1). The locations of sites are shown in Figure 2.1, where it can be observed that the majority are located in the southern and eastern counties which will provide a bias when investigating regional trends.



Figure 2.1: Location of sites in the data set

| Site Name | Reference | Phase | Site Type |
|---|---------------------|--------------|--------------|
| Bedfordshire | | | |
| 23-27 High St, Bedford a | Maltby, n.d. | Middle Saxon | Burh |
| 23-27 High St, Bedford b | Maltby, n.d. | Saxo-Norman | Burh |
| Bennett's Works, Bedford a | Grant, 1986 | Middle-Late | Burh |
| Castle Lane, Bedford a | Maltby, n.d. | Saxo-Norman | Burh |
| Castle Lane, Bedford b | Maltby, n.d. | Saxo-Norman | Burh |
| Castle Lane, Bedford c | Maltby, n.d. | Saxo-Norman | High Status |
| Castle Lane, Bedford d | Maltby, n.d. | Saxo-Norman | High Status |
| Harrold, Bedfordshire | Maltby, n.d. | Early-Middle | Rural |
| Lower School, Elstow | Holmes, 2005 | Saxo-Norman | Rural |
| Tempsford Park a | Hutchins, 2005 | Middle Saxon | High Status |
| Tempsford Park b | Hutchins, 2005 | Saxo-Norman | High Status |
| Berkshire | | | |
| Abbey Wharf, Reading | Coy, 1997 | Early-Late | Rural |
| Bartholemew St, Newbury | Coy, 1997 | Saxo-Norman | Urban |
| Kintbury Square, Kintbury | Hamilton Dyer, 1997 | Late Saxon | High Status |
| Lake End Rd | Powell, 2002 | Middle Saxon | Trading Site |
| Lot's Hole | Powell, 2002 | Middle Saxon | Urban |
| Ufton Nervet | Westley, 1974 | Late Saxon | Rural |
| Wraysbury | Coy, 1989 | Saxo-Norman | Rural |
| Buckinghamshire | | | |
| Chicheley, Bucks | Jones, 1980 | Middle Saxon | Rural |
| Hartigans, Milton Keynes | Burnett, 1993 | Early Saxon | Rural |
| Pennyland, Milton Keynes | Holmes, 1993 | Early Saxon | Rural |
| Pitstone, Bucks | Hambleton, 2005 | Early-Middle | Rural |
| Walton Lodge, Aylesbury | Sadler, 1989 | Middle Saxon | Rural |
| Walton Vicarage, Aylesbury a | Noddle, 1976 | Early Saxon | Rural |
| Walton Vicarage, Aylesbury b | Noddle, 1976 | Late Saxon | Rural |
| Wolverton Turn enclosure, Stony Stratford | Sykes, 2007 | Early-Middle | Rural |
| Cambridgeshire | | | |
| Church End, Cherry Hinton | Baxter, 2001 | Saxo-Norman | Rural |
| Harston Mill, Cambridgeshire a | Jones et al, n.d. | Early-Middle | Rural |
| Harston Mill, Cambridgeshire b | Jones et al, n.d. | Saxo-Norman | Rural |
| Longstanton | Holmes, in prep | Late Saxon | Rural |
| Lordship Lane, Cottenham a | Higbee, 1998 | Middle Saxon | Rural |
| Lordship Lane, Cottenham b | Higbee, 1998 | Saxo-Norman | Rural |
| Maxey, Northants | Seddon et al, 1964 | Early-Late | Rural |
| Orchard Lane, Huntingdon | Albarella, 1996 | Saxo-Norman | Urban |
| Orton Hall Farm | King, 1996 | Early Saxon | Rural |
| School Lane, Fulbourn | Holmes, 2008 | Saxo-Norman | Rural |
| Spicer's Warehouse, Sawston | Holmes, 2009 | Early Saxon | Rural |
| Stonea Grange, Cambridgeshire | Stallibrass, 1996 | Early Saxon | Rural |

| Site Name | Reference | Phase | Site Type |
|--------------------------------|---------------------------|--------------|----------------|
| Cheshire | | | |
| 26-42 Lower Bridge St, Chester | Morris, MG, 1985 | Saxo-Norman | Industrial |
| Abbey Green, Chester | Cartledge, 1994 | Late Saxon | Burh |
| Crook St, Chester | Cartledge, 1994 | Late Saxon | Burh |
| Crown Car Park, Nantwich | Fisher, 1986 | Saxo-Norman | High Status |
| Goss St, Chester | Cartledge, 1994 | Late Saxon | Burh |
| Hunter St School, Chester | Cartledge, 1994 | Middle Saxon | Burh |
| Hunter's Walk, Chester | Cartledge, 1994 | Late Saxon | Burh |
| Cornwall | | | |
| Mawgan Porth, Cornwall | Clutton-Brock, 1976 | Late Saxon | Rural |
| Derbyshire | | | |
| Little Chester, Derby | Harman, 2002 | Saxo-Norman | Military |
| Devon | | | |
| Bantham | Coy, 1981 | Early-Middle | Trading Site |
| Benham's Garage, Taunton | Levitan, 1979 | Late Saxon | Burh |
| Goldsmith St III, Exeter | Maltby, 1979 | Saxo-Norman | Burh |
| Goldsmith St I-II, Exeter | Maltby, 1979 | Saxo-Norman | Burh |
| Trickay St, Exeter a | Maltby, 1979 | Saxo-Norman | Burh |
| Dorset | | | |
| Poundbury, Dorchester | Buckland-Wright, 1987 | Early Saxon | Rural |
| Durham | | | |
| Church Close, Hartlepool | Huntley and Rackham, 2007 | Middle Saxon | Ecclesiastical |
| Church Walk (76), Hartlepool | Huntley and Rackham, 2007 | Middle Saxon | Ecclesiastical |
| Hartlepool Monastery | Rackham et al, 1988 | Middle Saxon | Ecclesiastical |
| Sadler Street, Durham City a | Rackham, 1979 | Late Saxon | Danish Town |
| Wearmouth and Jarrow a | Noddle et al, 2006 | Middle Saxon | Ecclesiastical |
| Wearmouth and Jarrow b | Noddle et al, 2006 | Late Saxon | Rural |
| Wearmouth and Jarrow c | Noddle et al, 2006 | Saxo-Norman | Rural |
| Essex | | | |
| Barking Abbey | Hamilton-Dyer, 2002 | Saxo-Norman | Ecclesiastical |
| Fossets Farm, Southend | Grimm, 2007 | Early Saxon | Rural |
| Mucking | Done, 1993 | Early-Middle | Rural |
| Wicken Bonhunt, Essex | Crabtree, 1996 | Middle Saxon | Rural |
| Gloucestershire | | | |
| Barnsley Park | Noddle, 1985 | Early Saxon | Rural |
| Church Rd, Bishop's Cleeve | Lovell et al, 2007 | Late Saxon | Rural |
| Copeshill Rd, Lower Slaughter | Hambleton, 2006 | Middle Saxon | High Status |
| Sherborne House, Lechlade | Maltby, 2003 | Early Saxon | Rural |
| Winchcombe | Levitan, 1985 | Late Saxon | Burh |
| Hampshire | | | |
| Riverdene, Basingstoke | Hamilton-Dyer, 2003 | Middle Saxon | Rural |
| Staple Gardens, Winchester a | Holmes, 2009 | Late Saxon | Burh |

| Site Name | Reference | Phase | Site Type |
|---------------------------------|------------------------------|--------------|--------------------|
| Staple Gardens, Winchester b | Holmes, 2009 | Saxo-Norman | Burh |
| 27, Jewry St, Winchester | Bourdillon, 2009 | Late Saxon | Burh |
| Abbots Worthy | Coy, 1991 | Early-Middle | Rural |
| Anderson's Rd, Southampton | Knight, 2006 | Middle Saxon | Wic |
| Chester Rd, Winchester | Bourdillon, 2009 | Late Saxon | Burh |
| Cook St, Southampton | Bourdillon, 1993 | Middle Saxon | Wic |
| Cowdery's Down | Maltby, 1983 | Early Saxon | Rural |
| Easton Lane, Winchester | Maltby, 1989 | Late Saxon | Rural |
| Facombe Netherton a | Sadler, 1990 | Late Saxon | High Status |
| Facombe Netherton b | Sadler, 1990 | Saxo-Norman | High Status |
| Friend's Provident, Southampton | Hamilton-Dyer, 2005 | Middle Saxon | Wic |
| Henley's Garage, Winchester | Serjeantson and Smith, 2009 | Saxo-Norman | Burh |
| Melbourne St, Southampton | Bourdillon and Coy, 1980 | Middle Saxon | Wic |
| Old Down Farm, Andover | Bourdillon, 1980 | Early Saxon | Rural |
| Portchester Castle a | Grant, 1976 | Early-Middle | Re-used Roman Town |
| Portchester Castle b | Grant, 1976 | Middle-Late | Burh |
| Portchester Castle c | Grant, 1976 | Late Saxon | Burh |
| SARC XIV, Southampton | Driver, 1984 | Middle Saxon | Industrial |
| Six Dials, Hamwic | Bourdillon and Andrews, 1997 | Middle Saxon | Wic |
| SOU25, Southampton | Driver, 1987 | Saxo-Norman | Burh |
| Victoria Rd, Winchester a | Bourdillon, 2009 | Late Saxon | Burh |
| Victoria Rd, Winchester b | Serjeantson and Smith, 2009 | Saxo-Norman | Burh |
| Western Suburb, Winchester a | Coy, 2009 | Late Saxon | Burh |
| Western Suburb, Winchester b | Coy, 2009 | Saxo-Norman | Burh |
| Western Suburb, Winchester all | Coy, 2009 | Saxo-Norman | Burh |
| Herefordshire | | | |
| Hereford City | Noddle, 1985 | Middle-Late | Burh |
| Chapter House, St Albans Abbey | Crabtree, 1983 | Early-Middle | Ecclesiastical |
| Kent | | | |
| Canterbury Castle, Canterbury | King, 1982 | Saxo-Norman | Urban |
| Canterbury Lane, Canterbury | Marples, 1983 | Late Saxon | Urban |
| Church Lane, Canterbury | King, 1982 | Middle Saxon | Urban |
| Manston Rd, Ramsgate | Hamilton-Dyer, 1997 | Early Saxon | Rural |
| Sandtun, Kent | Clutton-Brock, 1976 | Early-Late | Rural |
| Sandtun, West Hythe | Murray, 2001 | Middle Saxon | Trading Site |
| Leicestershire | | | |
| Bonnars Lane, Leicester | Levitan, 2004 | Early Saxon | Re-used Roman Town |
| Empingham West, Rutland Water | Morrison, 2000 | Early Saxon | Rural |
| Eye Kettleby | Knight, forthcoming | Early Saxon | Rural |

| Site Name | Reference | Phase | Site Type |
|--|----------------------------|--------------|----------------|
| Lincolnshire | | | |
| Danesgate, Lincoln a | Holmes, nd | Late Saxon | Burh |
| Danesgate, Lincoln b | Holmes, nd | Saxo-Norman | Danish Town |
| Flaxengate, Lincoln a | O'connor, 1982 | Late Saxon | Burh |
| Flaxengate, Lincoln b | O'connor, 1982 | Late Saxon | Industrial |
| Flaxengate, Lincoln c | O'connor, 1982 | Saxo-Norman | Danish Town |
| Flixborough a | Dobney et al, 2007 | Middle Saxon | High Status |
| Flixborough b | Dobney et al, 2007 | Late Saxon | High Status |
| Goltho a | Jones and Ruben, 1987 | Late Saxon | High Status |
| Goltho b | Jones and Ruben, 1987 | Late Saxon | High Status |
| Gosberton | Baker, 2002 | Middle Saxon | Rural |
| Lincoln a | Dobney et al, 1997 | Late Saxon | Burh |
| Lincoln b | Dobney et al, 1997 | Saxo-Norman | Danish Town |
| Nettleton Top | Berg, 1993 | Early Saxon | Rural |
| Quarrington, Lincs a | Rackham, 2003 | Early Saxon | Rural |
| Quarrington, Lincs b | Rackham, 2003 | Middle Saxon | Rural |
| School Lane, Old Leake | Holmes, 2004 | Saxo-Norman | Rural |
| St Nicholas School, Boston | Giorgi and Rackham, 1996 | Middle Saxon | Rural |
| London | | | |
| 21-24 Maiden La and 6-7 Exchange Court a | Hamilton-Dyer, 2004 | Middle Saxon | Wic |
| 21-24 Maiden La and 6-7 Exchange Court b | Hamilton-Dyer, 2004 | Middle Saxon | Wic |
| 21-24 Maiden La and 6-7 Exchange Court c | Hamilton-Dyer, 2004 | Late Saxon | Urban |
| Althorpe Grove, Battersea | Locker, 1983 | Early-Late | Rural |
| Baynard's Castle | King, 1980 | Early Saxon | Rural |
| Billingsgate Triangle | Levitan, 1980 | Saxo-Norman | Burh |
| Distillery site, Hammersmith | Ainsley, 2008 | Early Saxon | Rural |
| Dorter Undercroft, Westminster Abbey a | Pipe, 1995 | Late Saxon | Ecclesiastical |
| Dorter Undercroft, Westminster Abbey b | Pipe, 1995 | Saxo-Norman | Ecclesiastical |
| Harlington, London a | Grimm, 2009 | Early Saxon | Rural |
| Harlington, London b | Grimm, 2009 | Saxo-Norman | Rural |
| James St, London | Armitage, 2004 | Middle Saxon | Wic |
| Jubilee Hall, Covent Garden | West, 1988 | Middle Saxon | Wic |
| Lyceum Theatre, Exeter St | Rackham and Snelling, 2004 | Middle Saxon | Wic |
| Maiden Lane | West, 1988 | Middle Saxon | Wic |
| National Gallery Basement | West, 1989 | Middle Saxon | Rural |
| National Gallery Extension | Rackham, 1989 | Middle Saxon | Wic |
| National Portrait Gallery | Armitage, 2004 | Middle Saxon | Rural |
| Peabody Site | West, 1989 | Middle Saxon | Wic |
| Prospect Park, Harmondsworth | Ainsley et al, 2008 | Early Saxon | Rural |
| St Magnus | Armitage, 1979 | Saxo-Norman | Burh |
| St Mary Cray, Kent Rd | Ainsley et al, 2008 | Early Saxon | Rural |
| The Treasury, Whitehall | Ainsley et al, 2008 | Middle Saxon | Rural |
| Tower of London | Nicolaysen, 1985 | Saxo-Norman | Military |

| Site Name | Reference | Phase | Site Type |
|---|---|--------------|--------------|
| Norfolk | | | |
| Brandon Rd, Thetford a | Jones, 1993 | Late Saxon | Danish Town |
| Bury Rd, Thetford | Grimm, 2006 | Late Saxon | Danish Town |
| Caister-on-Sea, Great Yarmouth | Harman, 1993 | Middle Saxon | High Status |
| Castle Mall, Norwich a | Albarella et al, 1997 | Late Saxon | High Status |
| Castle Rising Castle | Jones et al, 1997 | Saxo-Norman | High Status |
| Chalkpit Field North, Sedgeford a | Poole, nd | Middle Saxon | Rural |
| Chalkpit Field North, Sedgeford b | Poole, 2007 | Late Saxon | Rural |
| Church Close, Whissonsett | Holmes, nd | Middle-Late | Rural |
| Creake Rd Allotment, Burnham Market | Baker, 2000 | Middle-Late | Trading Site |
| Crow Hall Park, Downham Market | Curl, 2008 | Middle Saxon | Rural |
| Dragon Hall, Norwich a | Murray and Albarella, 2000 | Saxo-Norman | Danish Town |
| Fishergate, Norwich | Jones, 1994 | Late Saxon | Industrial |
| Greyfriars, Norwich | Moreno-Garcia, 2007 and Nicholson, 2007 | Saxo-Norman | Industrial |
| Guildhall St, Thetford | Hutton MacDonald, 1999 | Late Saxon | Danish Town |
| Hay Green, Terrington St. Clement | Baker, 2002 | Middle Saxon | Rural |
| Kilverstone, Norfolk | Higbee, 2006 | Early Saxon | Rural |
| Knocker's site, Thetford | Jones, 1984 | Late Saxon | Danish Town |
| Melford Meadows, Brettenham | Powell and Clark, 2002 | Early Saxon | Rural |
| Mundham, Norfolk | Leach and Morris, 2008 | Early Saxon | Rural |
| North Elmham Park a | Noddle, 1980 | Middle Saxon | High Status |
| North Elmham Park b | Noddle, 1980 | Late Saxon | High Status |
| North Elmham Park c | Noddle, 1980 | Late Saxon | High Status |
| Redcastle Furze, Thetford a | Wilson, 1995 | Early Saxon | Rural |
| Redcastle Furze, Thetford b | Wilson, 1995 | Saxo-Norman | Danish Town |
| Rose Hall Farm, Walpole St. Andrew | Baker, 2002 | Middle Saxon | Rural |
| Sedgeford, Norfolk | Clutton-Brock, 1976 | Middle Saxon | Rural |
| Site 1092, Thetford | Jones, 1984 | Late Saxon | Industrial |
| Spong Hill, Norfolk | Bond, 1995 | Early Saxon | Rural |
| St Barnabas Hospital, Thetford | Jones, 1984 | Late Saxon | Danish Town |
| St Martin-at-Palace Plain, Norwich | Cartledge, 1988 | Saxo-Norman | Trading Site |
| St Nicholas St, Thetford | Hutton MacDonald, 1999 | Late Saxon | Danish Town |
| Whitefriars Car Park, Norwich | Cartledge, 1983 | Late Saxon | Danish Town |
| Northamptonshire | | | |
| Black Lion Hill, Northampton | Harman, 1985 | Late Saxon | Burh |
| Chalk Lane, Northampton | Harman, 1981 | Late Saxon | Burh |
| Kings Meadow Lane, Higham Ferrers a | Albarella and Johnstone, 2000 | Early Saxon | Rural |
| Kings Meadow Lane, Higham Ferrers b | Albarella and Johnstone, 2000 | Early-Middle | Rural |
| Kingswell St & Woolmonger St, Northampton | Armitage, 2008 | Saxo-Norman | Burh |
| Langham Rd and Burystead, Raunds a | Davis, 2009 | Early-Middle | Rural |
| Langham Rd and Burystead, Raunds b | Davis, 2009 | Late Saxon | Rural |

| Site Name | Reference | Phase | Site Type |
|---|---------------------------|--------------|----------------|
| Marefair, Northampton a | Harman, 1979 | Middle Saxon | Urban |
| Marefair, Northampton b | Harman, 1979 | Late Saxon | Burh |
| Middleton Stoney a | Evans, 2007 | Early Saxon | Rural |
| Middleton Stoney b | Evans, 2007 | Middle Saxon | High Status |
| Middleton Stoney c | Evans, 2007 | Late Saxon | Rural |
| Northampton | Locker, 1985 | Early Saxon | Rural |
| Northampton Rd, Brixworth | Reilly, 1995 | Early-Middle | Rural |
| Saxon Palaces, Northampton a | Harman, 1985 | Early-Middle | Rural |
| Saxon Palaces, Northampton b | Harman, 1985 | Middle Saxon | Rural |
| Saxon Palaces, Northampton c | Harman, 1985 | Saxo-Norman | Burh |
| St James' Square, Northampton | Harman, 1983 | Late Saxon | Industrial |
| St Peters Rd, Northampton a | Harman, 1979 | Middle Saxon | Rural |
| St Peters Rd, Northampton b | Harman, 1979 | Saxo-Norman | Burh |
| St Peter's Walk, Northampton a | Armitage, 1999 | Late Saxon | Burh |
| St Peter's Walk, Northampton b | Armitage, 1999 | Saxo-Norman | Burh |
| The Green, Northampton | Harman, 1996 | Late Saxon | Industrial |
| Vicarage Garden, Brixworth | Coy et al, 1977 | Late Saxon | Ecclesiastical |
| West Cotton, Raunds | Albarella and Davis, 1994 | Late Saxon | Rural |
| Northumberland | | | |
| Holy Island Village, Lindisfarne | Allison et al, 1985 | Saxo-Norman | Rural |
| Yeavinger | Higgs and Jarman, 1977 | Early Saxon | High Status |
| Oxfordshire | | | |
| 113-119 High St, Oxford | Maltby, 2000 | Late Saxon | Burh |
| Aelfric's Abbey, Eynsham a | Ayres et al, 2003 | Early Saxon | Rural |
| Aelfric's Abbey, Eynsham b | Ayres et al, 2003 | Middle Saxon | Ecclesiastical |
| Aelfric's Abbey, Eynsham c | Ayres et al, 2003 | Late Saxon | Ecclesiastical |
| Aelfric's Abbey, Eynsham d | Ayres et al, 2003 | Late Saxon | Ecclesiastical |
| All Saints Church, Oxford a | Wilson, 2003 | Late Saxon | Burh |
| Audlett Drive, Abingdon | Levitan, 1992 | Early Saxon | Rural |
| Barton Court Farm, Abingdon | Wilson et al, 1986 | Early Saxon | Rural |
| Beech House hotel, Dorchester on Thames | Grant, 1981 | Early-Late | Urban |
| Codrington Library, Oxford | Sykes, 2007 | Late Saxon | Burh |
| Cresswell Field, Yarnton | Mulville, 2004 | Middle Saxon | Rural |
| Hinxey Hall, Queen St, Oxford | Wilson et al, 1983 | Late Saxon | Burh |
| Mill St, Wantage | Maltby, 1996 | Early Saxon | Rural |
| New Wintles | Noddle, 1975 | Early Saxon | Rural |
| Oxford Science Park, Littlemore | Ingrem, 2001 | Early Saxon | Rural |
| St Aldates, Oxford | Armour-Chelu, 2003 | Late Saxon | Burh |
| St Ebbes, Oxford | Wilson et al, 1989 | Late Saxon | Burh |
| St Helen's Avenue, Benson | Hamilton-Dyer, 2004 | Early Saxon | Rural |
| The Orchard, Walton Rd, Aylesbury | Hamilton-Dyer, 2004 | Middle Saxon | Rural |
| Trill Mill Stream, Oxford a | Wilson, 2003 | Late Saxon | Burh |
| Trill Mill Stream, Oxford b | Wilson, 2003 | Late Saxon | Burh |
| Worton, Yarnton | Mulville, 2004 | Middle Saxon | Rural |

| Site Name | Reference | Phase | Site Type |
|-----------------------------------|-----------------------------|--------------|--------------------|
| Yarnton a | Mulville, 2004 | Middle Saxon | Rural |
| Yarnton b | Mulville, 2004 | Saxo-Norman | Rural |
| Shropshire | | | |
| Viroconium, Wroxeter a | Hammon, 2005 | Early Saxon | Re-used Roman Town |
| Viroconium, Wroxeter b | Hammon, 2005 | Early Saxon | Re-used Roman Town |
| Viroconium, Wroxeter c | Hammon, 2005 | Middle Saxon | Re-used Roman Town |
| Viroconium, Wroxeter d | Hammon, 2005 | Middle Saxon | Re-used Roman Town |
| Somerset | | | |
| Bristol Castle | Levitan, 1987 | Late Saxon | Burh |
| Cadbury Congresbury | Noddle, 1970 | Early Saxon | Rural |
| Cadbury Congresbury, Somerset | Noddle, 1992 | Early Saxon | High Status |
| Cheddar Palaces a | Higgs et al, 1979 | Late Saxon | High Status |
| Cheddar Palaces b | Higgs et al, 1979 | Late Saxon | High Status |
| Citizen house, Bath a | Grant, 1979 | Late Saxon | Burh |
| Mary-Le-Port, Bristol | Noddle, 1985 | Late Saxon | Burh |
| Silver St, Glastonbury | Levitan, 1982 | Saxo-Norman | |
| The Mound, Glastonbury | Darvill and Coy, 1985 | Saxo-Norman | Industrial |
| Staffordshire | | | |
| Stafford Castle a | Sadler and Jones, 2007 | Late Saxon | High Status |
| Suffolk | | | |
| Brandon | Crabtree, forthcoming | Middle Saxon | High Status |
| Bury St Edmunds AML 3270 | Locker, 1981 | Early-Late | Rural |
| Ipswich 1974-88 a | Crabtree, 1994 | Middle Saxon | Wic |
| Ipswich 1974-88 b | Crabtree, 1994 | Late Saxon | Burh |
| Ipswich 1974-88 c | Crabtree, 1994 | Saxo-Norman | Burh |
| Ipswich 1974-88 d | Crabtree, 1994 | Late Saxon | Burh |
| Ipswich a | Jones and Serjeantson, 1983 | Middle Saxon | Wic |
| Ipswich b | Jones and Serjeantson, 1983 | Late Saxon | Burh |
| Ipswich c | Locker and Jones, 1983 | Middle Saxon | Wic |
| Ipswich d | Locker and Jones, 1983 | Late Saxon | Burh |
| Mill Lane, Thetford a | Albarella et al, 1995 | Late Saxon | Danish Town |
| Mill Lane, Thetford b | Albarella et al, 1995 | Saxo-Norman | Industrial |
| Site 127 Bury St Edmunds | Murphy, 1996 | Middle Saxon | Urban |
| West Stow a | Crabtree, 1989 | Early Saxon | Rural |
| West Stow b | Crabtree, 1989 | Early Saxon | Rural |
| West Stow c | Crabtree, 1989 | Early Saxon | Rural |
| Surrey | | | |
| Guildford Castle | Sykes, 2005 | Saxo-Norman | High Status |
| Saxon County School, Shepperton a | Ayres, 2005 | Early Saxon | Rural |
| Saxon County School, Shepperton b | Ayres, 2005 | Late Saxon | Rural |

| Site Name | Reference | Phase | Site Type |
|--------------------------------------|---------------------------|--------------|----------------|
| Sussex | | | |
| Bishopstone, Seaford | Poole, nd | Late Saxon | Ecclesiastical |
| Bishopstone, Sussex | Gebbels, 1977 | Early Saxon | Ecclesiastical |
| Botolphs, Bramber a | Stevens, 1990 | Early Saxon | Rural |
| Botolphs, Bramber b | Stevens, 1990 | Saxo-Norman | Rural |
| Friars Oak, Hassocks | Stevens, 2000 | Middle Saxon | Rural |
| Lewes Priory | Stevens, 1997 | Late Saxon | Ecclesiastical |
| Market field, Steyning | O'Shea, 1993 | Late Saxon | Rural |
| Steyning | Sykes, 2007 | Late Saxon | Rural |
| Warwickshire | | | |
| Hatton Rock, Warwickshire | Noddle, 1973 | Late Saxon | High Status |
| Stretton-on-Fosse | Lambden and Rackham, 2002 | Early Saxon | Rural |
| Wiltshire | | | |
| Cadley Rd, Collingbourne Ducis | Hamilton-Dyer, 2001 | Middle Saxon | Rural |
| Emwell St, Warminster | Freke and Smith, 1997 | Saxo-Norman | High Status |
| High St, Ramsbury a | Coy, 1980 | Middle Saxon | High Status |
| High St, Ramsbury b | Coy, 1980 | Middle Saxon | High Status |
| Market Lavington, Wiltshire a | Bourdillon, 2006 | Early Saxon | Rural |
| Market Lavington, Wiltshire b | Bourdillon, 2006 | Late Saxon | Rural |
| Tidworth | Hamilton-Dyer, 2002 | Early-Middle | Rural |
| Trowbridge a | Bourdillon, 1993 | Middle-Late | Rural |
| Trowbridge b | Bourdillon, 1993 | Saxo-Norman | High Status |
| Wilton, Salisbury a | Grimm, 2008 | Early-Middle | Rural |
| Wilton, Salisbury b | Grimm, 2008 | Saxo-Norman | Rural |
| Worcestershire | | | |
| Deansway, Worcester a | Nicholson and Scott, 2004 | Early Saxon | Rural |
| Deansway, Worcester b | Nicholson and Scott, 2004 | Saxo-Norman | Burh |
| Friar St, Droitwich | Locker, 1995 | Saxo-Norman | Industrial |
| Upwich, Droitwich a | Meddens, 1997 | Early Saxon | Industrial |
| Upwich, Droitwich b | Meddens, 1997 | Middle-Late | Industrial |
| Worcester Cathedral | Thomas and Holmes, 2010 | Early-Late | Ecclesiastical |
| Yorkshire | | | |
| Blue Bridge Lane, York a | Rowland, 2004 | Middle Saxon | Industrial |
| Blue Bridge Lane, York b | Rowland, 2004 | Late Saxon | Danish Town |
| Caythorpe Pipeline, North Humberside | Stallibrass, 1996 | Early Saxon | Rural |
| Coppergate, York a | O'Connor, 1989 | Late Saxon | Danish Town |
| Coppergate, York b | O'Connor, 1989 | Late Saxon | Danish Town |
| Coppergate, York c | O'Connor, 1989 | Late Saxon | Industrial |
| Coppergate, York d | O'Connor, 1989 | Late Saxon | Danish Town |
| Cottam, Yorkshire | Dobney et al, 1999 | Middle Saxon | Rural |
| Eastgate, Beverley b | Scott, 1992 | Middle-Late | Rural |
| Fishergate, York a | O'Connor, 1991 | Middle Saxon | Trading Site |

| Site Name | Reference | Phase | Site Type |
|---------------------------------|----------------------|--------------|----------------|
| Fishergate, York b | O'Connor, 1991 | Saxo-Norman | Ecclesiastical |
| Lurk Lane, Beverley a | Scott, 1991 | Late Saxon | Ecclesiastical |
| Lurk Lane, Beverley b | Scott, 1991 | Late Saxon | Ecclesiastical |
| Micklegate, York | O'Connor, 2004 | Late Saxon | Danish Town |
| North Manor, Wharram | Richardson, 2004 | Early-Middle | Rural |
| Pontefract Castle | Richardson, 2002 | Saxo-Norman | High Status |
| Ribblehead | Rackham, 1977 | Late Saxon | Rural |
| Site 39, Wharram | Stevens, 1992 | Middle Saxon | Rural |
| Sites 94 and 95, Wharram | Pinter-Bellows, 1992 | Middle Saxon | Rural |
| Skeldergate, York | O'Connor, 1984 | Late Saxon | Danish Town |
| St Saviourgate, York | O'Connor, 2004 | Late Saxon | Danish Town |
| The South Manor Area, Wharram a | Pinter-Bellows, 2000 | Middle Saxon | Rural |
| The South Manor Area, Wharram b | Pinter-Bellows, 2000 | Late Saxon | Rural |
| Walmgate, York | O'Connor, 2004 | Late Saxon | Danish Town |

Table 2. 1: List of sites included in the data set

2.3 Site Classification

The classifications used describe broad categories of site (Table 2.1); Sites labelled as urban are, for the most part, not fully functioning urban centres with all the social, legal, administrative, ritual, symbolic, military, distributive, economic and industrial aspects associated with Roman or medieval towns (as defined by Dyer 2003, 58; Perring 2002, 10). It is, however, a convenient label for sites such as *wics*, burhs and Danish towns that house a population not employed full time in the agrarian economy. The proportion of urban to rural sites (Figure 2.2) clearly increases between the early, middle and late phases. This reflects mounting social complexity, progressing from an almost exclusive rural settlement pattern in the early Saxon phase, to a greater concentration in populations, where over 60% of sites were recorded as urban from the late Saxon phase.

The early Saxon phase is characterised by very few high-status, religious and industrial sites. Settlements within former Roman towns were included as a distinct site type as their exact nature has not yet been established. The middle Saxon phase is represented by the greatest variation in diversity and nature of recorded settlement types: *wics* and other trading sites appear, and religious, high-status and industrial sites occur in greater proportions. From the late Saxon phase burhs and Danish towns are founded, but trading, high-status, religious, and industrial sites also persist.

It is probable that many of the functions recorded as individual sites actually existed together on a single site, particularly in the middle and late Saxon phases. This was recently noted at Flixborough (Dobney *et al.* 2007; Loveluck 2001) where large scale excavations revealed evidence for high-status secular and ecclesiastical inhabitants as well as craft activities. Furthermore, the site of Ramsbury, Wiltshire was long regarded as an iron working site, yet associations of metal working

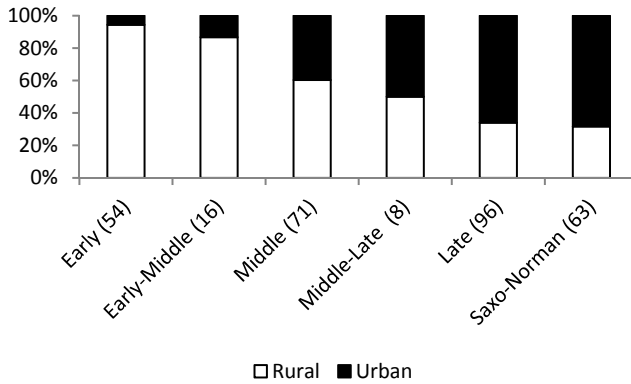


Figure 2.2: Proportion of urban and rural sites in the data set by phase

with elite settlements mean it is now connected with a high-status complex (Blinkhorn 1999, 14; Sykes 2011, 333). Accordingly, some of the sites labelled here as industrial, high-status, trading or ecclesiastical may in fact have been part of the same site type, which included aspects of all these functions within spatially distinct areas of one settlement.

2.4 Limiting factors

The data will provide information that must be recognised for its limitations. Because of the large number of sites investigated, there was insufficient scope to look at differences in taphonomy or preservation by site. It is accepted that differences will exist that may bias some aspects of the faunal assemblage. For example, the survival or recovery of small bones from larger mammals as well as all bones from small mammals, fish, birds and very young animals may vary between sites due to taphonomic history and recovery methods (Albarella and Thomas 2002; Driver 2004; Eryvynck 2004; Groenman-van Waateringe 1994; Payne 1972; Sykes 2004a). There is no easy way to compensate for these differences, so, where possible, only hand-collected data were recorded; although this may result in the loss of some evidence as detailed above, it will produce a more comparable data set. A further bias relating to the preservation of material culture must be considered during interpretation. Bones from urban sites are likely to be better preserved due to higher concentrations of organic waste from craft production creating a higher pH level compared to rural areas of less intensive occupation (Clarke and Ambrosiani 1995, 167). Additionally, the very nature of early- and middle-Saxon dispersed settlements means that much of the archaeology is often poorly preserved, as buildings were frequently in use for short periods of time and were made of turf and wood which rarely survives well. It is also more likely that the inhabitants of rural sites collected refuse in a midden and spread it as manure on the fields, leading to a dearth of bones surviving in situ (Jones 2005, 62). Dating earlier Saxon sites is also made harder as everyday Saxon pottery was often of poor quality and friable (Hooke 1998, 106; McCarthy and Brooks 1988, 61-62). This may lead to an under-representation of such sites within the data set.

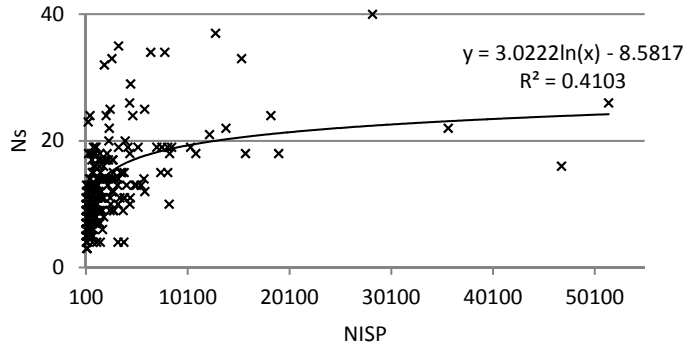


Figure 2.3: Number of taxa (N_s) recorded against assemblage size, $NISP$ = number of identified fragments

A key limitation in the use of data from secondary reports lies in the methodological differences between specialists. This is a familiar problem within archaeozoology, and has been considered in detail by many authors (e.g. Grant 2002b; Maltby 1985; Rackham 1983; Wilson 1996). Although, in theory, the post-PPG16 (Department of the Environment 1990), MAPII (English Heritage 1991) and MoRPHE (English Heritage 2006) era has provided a framework within which methods could be standardised, this has not happened, and a number of methods are used, particularly regarding recording, quantification and ageing. This problem is more obvious when older site reports are included (Dobney and Jaques 2002, 8; Groenman-van Waateringe 1994, 147; Wilson 1996, 8), many of which are inclined only to record minimum numbers of individual taxa. The problem is less significant concerning quantification in recent reports, as nearly all record fragment numbers (which in itself will vary between the nature of the fragments recorded in the identification methodology). Some attempt has been made to standardise the recording of ageing data to reduce differences by using Hambleton's (1999) conversion of tooth wear methods. Even so, it is sometimes unfortunate that data are lost when recorded in an incomparable form. Despite these limitations, their effect on the interpretation of data is likely to be minimal when considering large-scale inter-site trends.

2.5 Species Diversity and Sample Size Problems

One recognised problem with exploring patterns in species representation is that the number of taxa identified is correlated with sample size (Casteel 1979; Grayson 1984; Lyman 2008, 192-194). Grayson (1984) and Byrd (1997, 55) employed regression analysis of a range of samples to investigate the effect of sample size on diversity. When carried out on the Saxon data set these methods show a correlation between assemblage size and number of identified taxa for assemblages over 100 $NISP$, the threshold applied to this data set, (Figure 2.3). Spearman's r_s confirms this correlation ($r_s(297) = 0.63254$, $P < 0.001$ for samples > 100 $NISP$;

$r_s(225) = 0.58389$, $P < 0.001$ for Samples > 300 NISP). However, this effect is more pronounced for smaller assemblages, evident from the steeper curve, and fewer taxa observed in samples between 100 and 300 NISP.

When statistical analysis was carried out on diversity in assemblages between 100 and 300 NISP the number of taxa recorded was not influenced by sample size (where $r_s(71) = 0.14298$, $P =$ not significant), because there were so few taxa present – in the majority of cases, it was limited to cattle, sheep and pig. This effect has ramifications for the analysis of taxa diversity (i.e. comparing trends in the proportions different taxa). It is therefore suggested that comparisons into the frequency of taxa recorded, or investigations into minor taxa (i.e. wild mammals and birds) should not be carried out on assemblages under 300 NISP. As cattle, sheep and pigs were recovered on all sites, and therefore do not have an association with sample size in the same way, it is likely that comparing a more restricted suite of domestic taxa should be possible between assemblages with a NISP as low as 100.

2.6 Quantification

Quantification of animal bone assemblages varies within archaeozoology. There are two principal methods by which taxa are quantified: NISP, the “number of skeletal elements and fragments thereof – all specimens – identified as to the taxon they represent”; and MNI “the minimum number of individual animals necessary to account all the kinds of skeletal elements found in the skeleton of a taxon” (Lyman 2008, 27, 39). Both methods have numerous advantages and disadvantages that have been discussed at length elsewhere (e.g. Binford 1977; Chaplin 1971; Driver 1992; Gilbert and Singer 1982; Grayson 1979; Klein and Cruz-Urbe 1984; Lyman 2008; Maltby 1985; O’Connor 2000; Payne 1972; Reitz and Wing 1999). As MNI and NISP data are not directly comparable, it was decided to only include the latter, as it is more often included in site reports, and is the method subject to less inter-specialist variation. A basic list of species quantification at all sites is given in Appendix A.

2.7 Ageing

Two major methods are available for the ageing of mammal skeletons: fusion of the epiphyses (ends) of bones and the rate of tooth wear and eruption. Fusion data may cause under-representation of very young animals, whose bones do not survive as well as those from mature individuals. Additionally, this method is only useful until an animal reaches skeletal maturity (approximately 48 months in cattle and 42 months in sheep and pigs), which restricts the age at death information available in economies utilising animals for their secondary products, where they are likely to be alive significantly longer than $3\frac{1}{2}$ - 4 years (cattle can live 15-20 years). Teeth are more likely to survive archaeologically than bones, and there is less bias towards older animals, although there may be some loss of deciduous teeth from young animals through poor retrieval methods. Most importantly, teeth continue to exhibit wear patterns throughout the animal’s life, which makes them

valuable for assessing the age of skeletally mature animals. For this reason, the use of fusion data has been omitted from this study; instead, tooth wear data will be used to compare mortality profiles between sites.

There are many methods used to record tooth wear (e.g. Coy *et al.* 1982; Grant 1982; Habermehl 1975; Halstead 1985; Jones and Sadler 2012; O'Connor 2003a; Payne 1973), however, the most commonly used are those of Halstead, Grant and Payne. A method has been developed to combine these methods, permitting a comparison of mortality profiles without assigning an absolute age to individual animals (Hambleton 1999, 64). This is preferable, as modern age data regarding tooth eruption and wear cannot reliably be applied to past populations, due to differences in maturation, environment and nutrition. Cumulative mortality profiles for the main domestic species can be found in Appendix B. Assemblages with 10 wear stages were included in analysis.

2.8 Sexual Dimorphism

Metrical data can be used to distinguish between males, females and/ or castrates in sexually dimorphic animals. The most promising of these, based on the availability of data are the metapodia. Of the bones that are frequently well preserved in sheep and cattle that present good biometric data, metacarpals are the most sexually dimorphic (Bartosiewicz 1987, 49; Higham 1969, 66; Thomas 1986, 83). A slenderness index was utilised: for cattle this was (shaft diameter/ greatest length)*100 plotted against (distal breadth/ greatest length)*100 (Albarella 1997); and for sheep (shaft diameter/ greatest length)*100 plotted against greatest length (Davis 2000). The metapodia of females tend to be short and slender; those of entire males short and robust; and castrates long and slender (Davis 2000, 373; Higham 1969, Table II), these distinctions are represented in Figure 2.4. For cattle, cows tend to occupy the smallest cluster, at around the 28-32 index on the horizontal axis is another distinct group more likely to be castrated males; and a few larger animals which are bulls, with an index of around 35. These patterns fit with the large summary datasets from Flixborough (Dobney *et al.* 2007, Figure 7.45), Ipswich and Brandon (Crabtree 2012).

Problems are inherent, particularly relating to the splaying of distal metapodia noted in animals used for traction (Bartosiewicz *et al.* 1997); however, the plough work done by Saxon cattle, particularly in the early and middle epochs, was probably often done with a light ard (Fowler 2002, 183-4). This was less likely to cause such pathologies as the later, widespread 'heavy plough' (Holmes in prep-b).

One further complication when interpreting data relating to sexual dimorphism occurs in the potential mixing of animals from different landraces – those brought together from different stock from different locations (Bartosiewicz 1987, 48), although the likelihood of this in the Saxon period is minimal (Holmes 2014). Furthermore, sheep data may be compromised by the presence of goats, which have much shorter metapodials than sheep – even though the measurements of goat bones were excluded from analysis. However, goats are relatively rare compared to sheep and their metapodials are one of the easiest elements to distinguish between the two species (Boessneck, 1969).

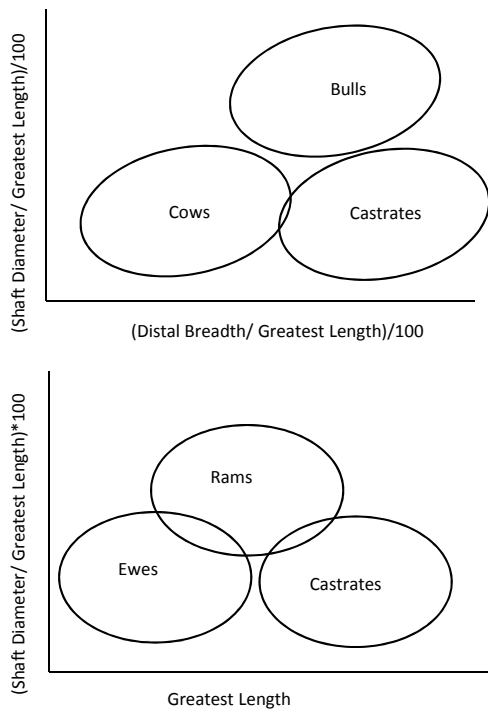


Figure 2.4: Groupings that may be expected to illustrate the presence of sexual dimorphism amongst cattle and sheep metapodials (After Albarella 1997 and Davis 2000: Figure 8)

2.9 Carcass Parts

The way that anatomical elements are recorded is subject to great variation. The most consistently recovered elements are those from the appendicular skeleton (i.e. limb bones), which are generally recorded as a minimum number or number of all fragments. Given the disparity between methods of inclusion and recording of the axial skeleton (i.e. skull and vertebrae), these elements were discounted in analysis, with the exception of mandibles and horn core fragments. The quantification of body parts from each Saxon site is given in Appendix C. Only assemblages with 50 elements or more were included in analysis.

The relative proportion of anatomical elements present is affected by taphonomic processes such as butchery, gnawing, redistribution, burial, preservation and recovery (see Binford 1981; Brain 1981; Lyman 1994; Lyman 2008). As a result, some bones may be expected to survive better than others, smaller phalanges are often subject to poor recovery and may not be recorded as often as larger, more dense mandibles that will survive better and be recognised more readily during excavation. The relative frequency of bones that may be expected to survive if a whole carcass is present is suggested, in order of best preservation as: mandibles, lower limbs (metapodials), upper limbs (other long bones) and feet (phalanges). This basic classification can be used as a standard, against which differences between samples may be observed.

2.10 Software

Statistical analysis was carried out using PAST (Hammer *et al.* 2001), and maps were produced using QGIS 2.0 (Quantum GIS Development Team 2014).

Food, Diet and Status

3.1 Introduction

This chapter is primarily concerned with the availability of all commonly eaten domestic and wild species. Their potential contribution to the diet of populations at sites of differing social and economic status in Saxon England will then be evaluated. Analysis of the data set will consider relationships between taxa quantities using Principal Component Analysis (PCA).

Differences in the way status is displayed through food is dependent on the social complexity of the population. Van der Veen (2003, 415) suggests that in simple, egalitarian societies, there will be little variation in the staples of everyday food although the head of such a society may receive the first choice of meat. Luxury consumption is rarely seen, except during feasts, where large quantities of food are eaten by a large number of people. Feasting is a symbolic event, focusing on a significant quantity of food, and may be recognised by assemblages of large numbers of bones deposited as a single episode.

In the case of hierarchical societies, differentiation is increasingly seen in the consumption of 'luxury' foods, and may be expected in the increasingly complex middle and late Saxon phases. In the late Saxon phase, three broad classes of society are documented – warriors (elite), ecclesiastical (monks) and workers (peasants) (Ervynck 2004, 215). Much effort has been expended to recognise the differences between them in the faunal record. These methods rely largely on the identification of 'luxury' foods, that are more commonly associated with the upper echelons of secular and religious society. The social significance of luxury goods has been summarised by a number of authors (e.g. Curet and Pestle 2010; Driver 2004; Ervynck 2004; Grant 1988; Grant 2002a; O'Connor 2003a; Pigiere *et al.* 2004; van der Veen 2003) and the salient points, with particular reference to archaeozoological material, are summarised below:

- Difficulty in procurement, either in the ways by which food can be obtained or the scarcity of the animal itself – during the Saxon period this was true of hunting and hawking. Although in earlier phases it was the landholder's right to hunt on their own land, this was a prohibitively expensive and time-consuming activity (Almond 2003, 40; Dyer 2003, 18; Hooke 1998, 157).

- Capacity to signal complex social messages, setting the consumer apart from those of lower rank – again best seen in the use of hunting by the elite. The presence of very large cattle in some areas is suggested by Dobney *et al.* (2007, 164) to display status, as the larger the animal the more effort would have been required to feed it.
- Abundance of either quantity or quality of food, particularly from protein sources which are more time-consuming and expensive to cultivate compared to vegetables, for example wild birds would have provided little nourishment for the energy expended in their capture (Albarella and Thomas 2002, 26-27). Although pigs are the least cost-efficient meat source in an agrarian economy as they have little value for secondary products (Ervynck 2004, 218-219), it has also been suggested that they provide an assured meat source for a consumer population (O'Connor 2010, 10). In some societies the consumption of young animals culled before they could contribute to the production of milk or wool would also be a luxury.
- Diversity of diet through the consumption of greater numbers of wild taxa and fish, at a time when much of the general population could rarely expect to eat meat from domestic animals (Banham 2004, 53).

3.2 Livestock, Birds and Game

Cattle, Sheep and Pigs

When the presence of the main domesticates at various site types is considered (Figure 3.1), there was a predominance of sheep on the majority of rural and ecclesiastical sites in early-late phases. At sites of an urban nature, such as *wics* of the middle Saxon phase and late Saxon burhs and Danish towns there were correspondingly high numbers of cattle. In functional terms, this is not surprising as a concentrated population would require larger animals as the most effective way of supplying food: cattle would have provided far greater quantities of meat per individual than pigs or sheep. It does imply that there was deliberate supply of urban areas with cattle – either through redistribution or market forces

That there was less distinction in the Saxo-Norman phase, with a more homogenous distribution of the main domesticates between urban and rural sites could symbolise a change in production on rural sites, where the demand from the market went beyond meat, with a greater emphasis on other animal products such as wool and milk, or grain production, requiring greater numbers of cattle in the countryside. The nuances of this argument will be further considered in Chapter 5.

The other noteworthy distinction is the presence of pigs in greatest proportions on early to late high-status sites. They are also prominent on *wics* and trading sites in the middle Saxon phase, urban sites in the late Saxon phase, industrial sites in the Saxo-Norman phase and ecclesiastical sites in the late and Saxo-Norman phases. Pigs are easy to keep, feeding on scraps and agricultural waste, and the

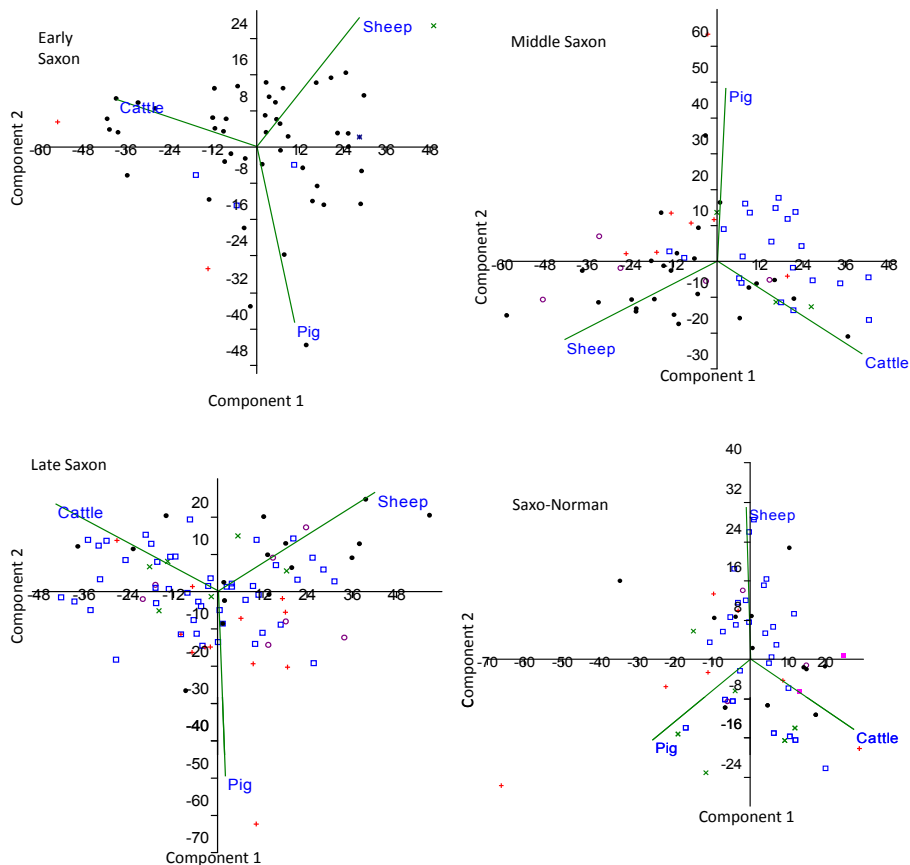


Figure 3.1: Principal component analysis of numbers (NISP) of cattle, sheep and pigs recorded from various site types, by phase. Open square= former Roman town/ burh/ wic/ Danish town; dot= rural; upright cross= high status; open circle= ecclesiastical; angled cross= industrial; filled square= military

speed with which they reach maturity makes them useful animals for subsidising the meat diet. However, they don't contribute anything other than manure to the economy of a settlement, and for this reason, they are widely under-represented in comparison to cattle and sheep on many sites. The consumption of pigs on high-status sites symbolises a combination of the ability to provide food, shelter and care to an animal that provides little in the way of secondary products, yet is an efficient producer of meat, as well as their contribution to the elite by way of tax (Sykes 2007b, 29). If the relative meat values of the various domestic species are taken into account (Vigne 1992), beef would have contributed most to the diet. Even at sites where sheep bones were recovered in over 75% of the assemblage mutton would likely have been consumed less often than beef. However, at the few settlements where pigs were present in over 70% of the assemblage (St Albans, Pontefract Castle, Stafford Castle and Wicken Bonhunt) the populations within would have been provided with a comparable quantity of pork and beef.

Fowl, Geese and Ducks

Domestic birds are most commonly regarded as chicken, geese and ducks. It can be difficult to positively identify chicken from similar species (i.e. pheasant and guinea fowl), which are all included under the umbrella term 'domestic fowl'. However, it is likely that chickens were the most common of these species, as pheasant remains are rarely recorded prior to the medieval period (Yalden and Albarella 2009, 101), and guinea fowl were not introduced until the 13th century, although there are, as yet, no positive identifications archaeologically (Yalden and Albarella 2009, 208). It is also hard to distinguish wild from domestic geese and ducks, although they are often separated in site reports on the basis of size (e.g. Coy 1989b, 31,35).

Domestic birds were relatively uncommon finds on the majority of Saxon sites, on average being recorded as less than 10% of the cattle, sheep and pig assemblage. The number of domestic birds from Saxon sites increased with time, from c.2% in the early Saxon phase to almost five times that number in the Saxo-Norman phase. The number of domestic fowl recovered from sites in the late Saxon phase increases considerably, largely at the expense of geese (Figure 3.2). Geese were more common of the two minor domestic species recorded, which has been suggested as an indicator that they were domesticated by the early Saxon period, with ducks most likely wild (Albarella 2005, 256)

When the relative proportions of domestic bird bones recorded from various site types is considered (Figure 3.3), the scarcity of bird bones on early Saxon sites can be observed, recorded on both rural settlements and re-occupied Roman towns in similar proportions. The greatest distinction between sites can be observed in the middle Saxon phase, where domestic birds were most common on ecclesiastical and high-status sites. Differences were less obvious in the late Saxon phase, though domestic birds remain prevalent on high-status sites, they also become more common at burhs. By the Saxo-Norman phase, however, fowl, ducks and geese were again recorded in greatest proportions at high-status sites, with an increase also observed on rural sites, while numbers of domestic birds at urban sites, reduces again.

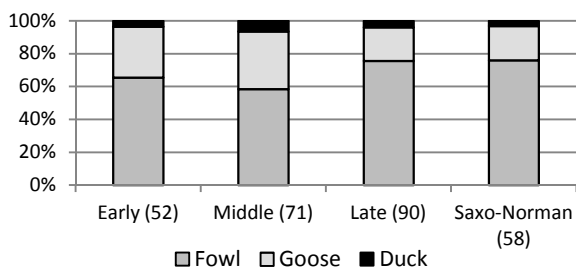


Figure 3.2: Relative proportions of domestic birds recovered from sites in Saxon England. (n)= number of sites where birds were recorded

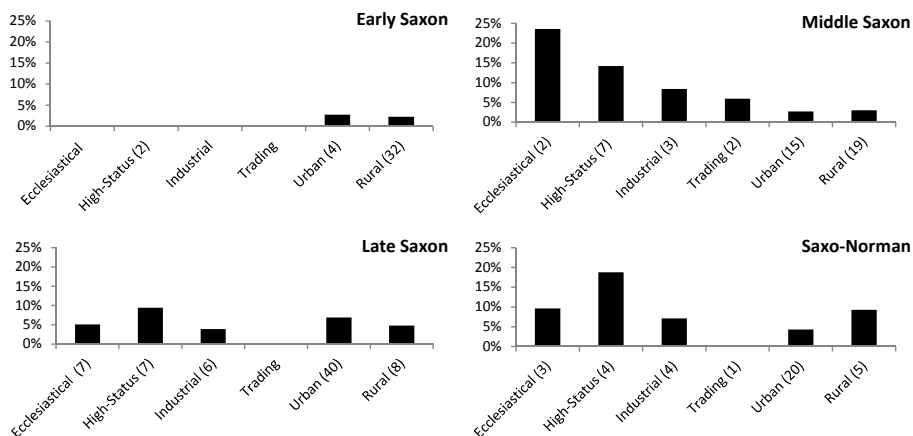


Figure 3.3: Mean proportion of domestic birds (chicken, goose and duck), as a % of cattle, sheep and pigs, recovered from various site types. (n)=number of sites where birds were recorded with a NISP cattle, sheep and pig >300

Deer, Hare and Wild Pigs

The wild mammals most likely to have formed part of the Saxon-period diet are the indigenous red and roe deer, hare and wild pig. The likely introduction of fallow deer by the Normans, and rabbits in the late 12th century (Sykes 2004b; Sykes and Curl 2010) means that these species were not included in analysis.

Distinction between the bones of wild and domestic pigs was rarely reported, although metrical analysis indicated their presence at a few additional sites (Table 3.1). Their incidence provides too small a sample to be used for further analysis, yet there was a change in their distribution; in the early Saxon phase they are recorded at both former Roman towns and rural sites, yet by the middle Saxon phase wild pigs were observed only on *wics*, trading and high-status sites, a trend that continued into later phases, whereby wild pigs were recorded exclusively on urban (burhs and Danish towns), high-status and ecclesiastical sites.

Despite the documented availability of game to the free population in the early and middle Saxon phases (Hooke 1998, 157), venison and hare seem to have made little contribution to the menu in the early Saxon phase. Throughout the Saxon period red deer were most commonly recorded of the wild species, followed by roe deer and hare. Average proportions rise slightly in the late Saxon phase (Figure 3.4), and there is a considerable increase in all three species in the Saxo-Norman phase.

When the numbers of wild mammals are considered by site type (Figure 3.5) it is apparent that in all phases unusually high numbers of deer and occasionally hare are recorded at very few sites. At the majority of settlements they are found in very low numbers and are often absent. For this reason, two plots of the data were made, the first of all sites and the second with outlying sites where wild mammals were particularly abundant removed, to better understand nuances in the data.

| Phase | Site Name |
|--|---|
| Wild pigs identified in the site report | |
| Early Saxon | Viroconium, Wroxeter |
| Early-middle Saxon | Wolverton Turn enclosure, stony Stratford |
| Middle Saxon | Fishergate, York |
| Middle Saxon | Lake End Road |
| Middle Saxon | Flixborough |
| Middle Saxon | Lot's Hole |
| Late Saxon | Lurk Lane, Beverley |
| Late Saxon | Stafford Castle |
| Late Saxon | Flixborough |
| Late Saxon | Bury Road, Thetford |
| Late Saxon | Coppergate, York |
| Saxo-Norman | Fishergate, York |
| Wild pigs identified from measurements | |
| Early Saxon | Fossets Farm, Southend |
| Late Saxon | Staple Gardens, Winchester |
| Late Saxon | Site 1092, Thetford |
| Saxo-Norman | Staple Gardens, Winchester |

Table 3.1: Recorded and inferred incidences of wild pigs

Individual quantifications by site type are given in Appendix A. Where possible antler fragments have not been included.

In the early Saxon phase wild mammals were recorded on very few sites, most of which were rural, but with greater than normal proportions of red deer observed from the former roman towns (Figure 3.5). Exceptionally high numbers of hare were recorded at Oxford Science Park (5.83%) and rural phase of Aelfric's Abbey and roe deer at Poundbury, Dorchester (5.19%) and are not shown in the PCA. In the middle Saxon phase high numbers of roe deer were recorded from both phases of the high-status site at Ramsbury (5.03% and 2.8%) and rural site at Cadley Road, Collingbourne Ducis (2.85%), and red deer from the high-status site at Caister-on-Sea, Great Yarmouth (2.65%). Once these outliers were removed (Figure 3.5), it becomes apparent that some of the highest numbers of red deer were recorded at *wics*, whereas roe deer were more commonly found on high-status and ecclesiastical sites, although all species were occasionally found at isolated rural sites.

By the late Saxon phase, roe deer were recorded in exceptionally high numbers on high-status sites such as Facombe Netherton (4.92%), Goltho, Lincolnshire (7.82%) and the ecclesiastical Aelfric's Abbey, Eynsham (5.58%). When these outlying sites were removed, the next level (Figure 3.5) shows that other high-status and ecclesiastical sites were commonly those with high numbers of deer remains, along with many burhs and Danish towns. This trend continues into the Saxo-Norman phase, with aristocratic sites represented by greatest numbers of wild mammals, particularly Facombe Netherton (51.96% red deer and 20.92%

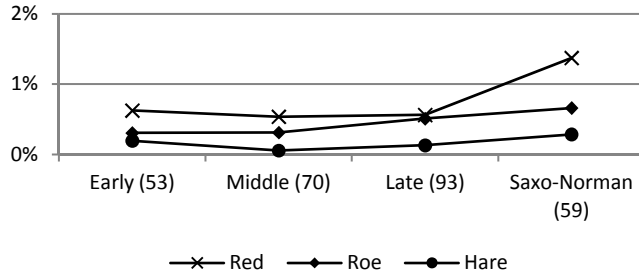


Figure 3.4: Variation in the mean numbers of red and roe deer and hare recovered from all sites. Given as a % of cattle, sheep and pig. (n)= number of sites. Only sites with a NISP > 300 cattle, sheep and pig were included. Where possible antler has been excluded

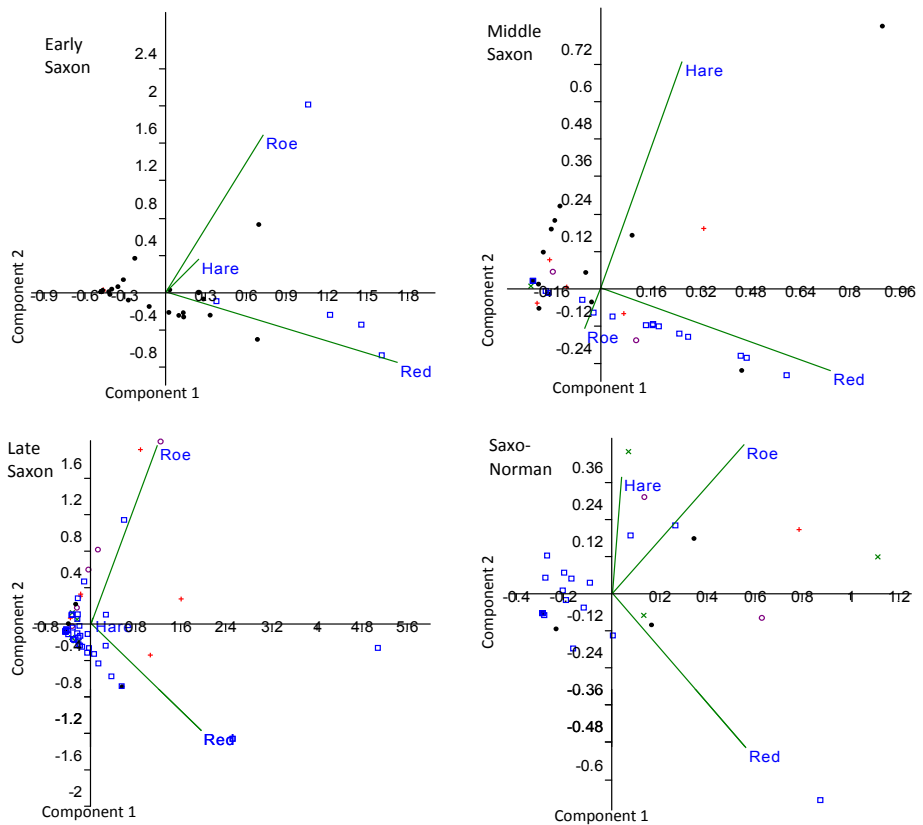


Figure 3.5: Principal component analysis of wild mammals, as a proportion of the cattle, sheep and pig assemblage. Dot= rural site; open square= former Roman town, wic, burh or Danish town; open circle= ecclesiastical; upright cross= high-status; angled cross= industrial site. Sites with NISP cattle sheep and pig >300 included

roe) and Pontefract Castle (3.30% roe deer). When the remaining sites were plotted (figure 3.5) it is clear that other elite Saxo-Norman sites have the greatest proportion of wild species, along with a few urban and rural settlements.

Wild Birds

The number of wild birds from each site was recorded where such data were available, but individual taxa were not quantified. Instead the presence of each taxa was noted and categorised according to their habitat or nature as defined in Table 3.2. It must be borne in mind that many of these are also background species, occupying the same environmental niche as human settlements. Consequently, they may have been incorporated into the archaeological record as natural mortalities or the incidental disposal of birds killed by cats or humans and disposed of with domestic waste.

Wild birds occur on fewer sites than domestic birds and wild mammals but follow a similar trend through time, increasing in quantity from the late Saxon phase, which reflects the increase in hunting observed in the procurement of deer and hare. When the presence of edible wild birds on various site types is examined (Figure 3.6), all groups except sea birds were best represented at early Saxon former Roman towns. In the middle Saxon phase water and game birds were most common on ecclesiastical, high-status and, to a lesser extent, *wic* and trading sites, with very few recorded at rural settlements.

From the late Saxon phase there was less variation though water birds were most often recorded at ecclesiastical sites. A substantial proportion of wild birds were reported from urban sites – burhs and Danish towns – again with few on rural sites. There was a greater shift in proportions of water birds recorded in the Saxo-Norman phase, with far more recorded on ecclesiastical and high-status sites than other settlements, although game and sea birds were apparently restricted to lower status sites.

Water birds were ubiquitous throughout the period on all site types (Table 3.2), and this may largely be due to the wide range of taxa within the group – encompassing as it does all taxa of ducks and waders, amongst others. Sea birds and game birds were less commonly recovered. The majority of sea birds came from coastal, or near- coastal, settlements, with the exceptions of a gull and guillemot recovered from York in the middle and late Saxon phases, respectively; a gull from Oxford in the middle Saxon phase and another from a late Saxon Cambridgeshire site. Gulls often fly inland, but their scarcity on settlements suggests that they were not particularly sought-after during this period, although some taxa became a delicacy in medieval England (Fisher 1997). The same was true of the game birds. Despite being rare (Yalden and Albarella 2009, 134), pheasant and partridge were recorded in all phases, and grouse in all but the Saxo-Norman phase. Other game birds (capercaillie, corncrake and quail) were only rarely noted.

A group of exotic taxa were also recorded, consisting largely of peafowl, but includes the exceptional find of a pelican from the industrial site at The Mound, Glastonbury in the Saxo-Norman phase. Peafowl were recorded at isolated sites (middle Saxon Wicken Bonhunt, Essex, late Saxon Thetford (Knocker's site) and

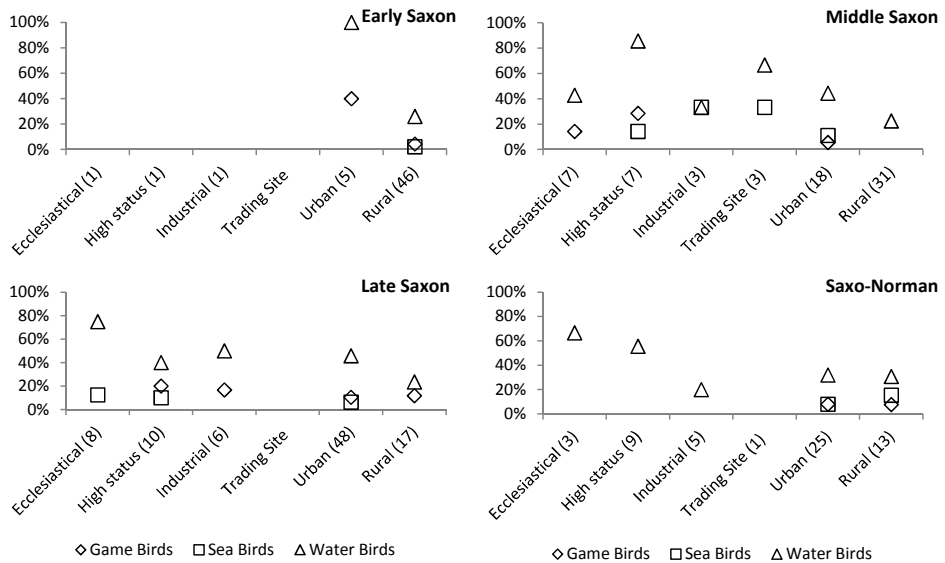


Figure 3.6: Proportion of wild birds by site type. All sites >300 NISP cattle, sheep and pig where birds were recorded are included

Saxo-Norman sites of Facombe Netherton, Norfolk, Crown Car Park, Nantwich and The Mound, Glastonbury).

Birds of prey were also rarely recovered, and those most commonly found include those traditionally used for falconry (Yalden and Albarella 2009, 137) i.e. goshawk, peregrine falcon and sparrowhawk, as well as scavenger taxa such as buzzard and red kite. Various species of owls and harriers were also recorded from middle Saxon sites and later, along with a number of finds of white tailed eagle in the early and middle Saxon phases.

Fish

Fish were only recorded using presence/ absence measures. Consequently the data for fish is incomparable with that for mammals and birds and necessitates separate analysis. A list of taxa recorded, split into three categories – marine, freshwater and migratory – is given in Table 3.3.

Very few fish were recovered from early Saxon sites, all of which could be caught from freshwater and coastal waters. This is consistent with findings that, although marine and freshwater fish were consumed in greatest proportions by those living in coastal and riverine areas, isotope studies have shown that they still made a very small contribution to the diet (Mays and Beavan 2012; Müldner and Richards 2007, 690; Privat *et al.* 2002, 785). The greatest number of taxa came from middle and late Saxon phases, from freshwater, migratory and marine sources. In the Saxo-Norman phase fewer freshwater taxa were represented; while in preceding phases pike and roach were recorded most frequently, they were less prolific in the Saxo-Norman phase. Eel, salmon, cod, flatfish and herring were most common from the middle Saxon phase onwards.

| Category | Taxa | Early Saxon | Middle Saxon | Late Saxon | Saxo-Norman |
|--------------------|--------------------|----------------|--------------|------------|-------------|
| Game Birds | Pheasant | 2 | 2 | 2 | 1 |
| | Grouse | 2 | 1 | 5 | |
| | Capercaillie | | | 1 | |
| | Quail | 2 | | | |
| | Partridge | 2 | 2 | 2 | 4 |
| | Corncrake | 1 | | | 1 |
| | Small Birds | Perching birds | 12 | 17 | 5 |
| Turdus spp. | | 6 | 7 | 4 | 1 |
| Columba spp. | | 9 | 19 | 23 | 17 |
| Water Birds | Ducks (all) | 15 | 11 | 19 | 6 |
| | Mallard | 8 | 5 | 5 | 3 |
| | Pochard | 1 | | | |
| | Widgeon | 2 | 1 | 7 | |
| | Water Rail | 1 | 1 | 1 | |
| | Teal | 3 | 4 | 1 | 3 |
| | Smew | | | 1 | |
| | Goosander | | | 1 | |
| | Tufted Duck | | | 1 | |
| | Shelduck | | | 1 | |
| | Pintail | | | 1 | |
| | Geese | 3 | 6 | 1 | 3 |
| | Swan | 3 | 7 | 5 | 1 |
| | Diver | | 2 | 1 | |
| | Moorhen/ Coot | 1 | 1 | | |
| | Crane | 3 | 8 | 13 | 4 |
| | Heron | 3 | 1 | 1 | 2 |
| | Stork | 1 | | 1 | 1 |
| | Waders (all) | 15 | 20 | 46 | 17 |
| | Bittern | | 1 | 1 | |
| | Curlew | | 2 | 4 | 1 |
| | Dunlin | | | 2 | |
| | Godwit | | | 1 | |
| | Golden Plover | 1 | 2 | 4 | 1 |
| | Lapwing | 1 | 1 | 3 | 1 |
| | Oystercatcher | | 1 | 2 | |
| | Plover | 4 | 2 | 7 | 1 |
| | Redshank | 1 | | 2 | 1 |
| | Snipe | 2 | 1 | 3 | 2 |
| | Wader spp. | 2 | 3 | 2 | 2 |
| | Whimbrel | | | 1 | |
| | Woodcock | 4 | 7 | 14 | 8 |

| Category | Taxa | Early Saxon | Middle Saxon | Late Saxon | Saxo-Norman |
|-----------|-----------|-------------|--------------|------------|-------------|
| Sea Birds | Gull spp. | 1 | 4 | 6 | 3 |
| | Guillemot | | 1 | 1 | |
| | Tern | | 1 | 1 | |
| | Cormorant | | | 1 | |
| | Osprey | | | | 1 |
| | Gannet | | 1 | | |

Table 3.2: Number of sites from which each wild bird taxa was recorded

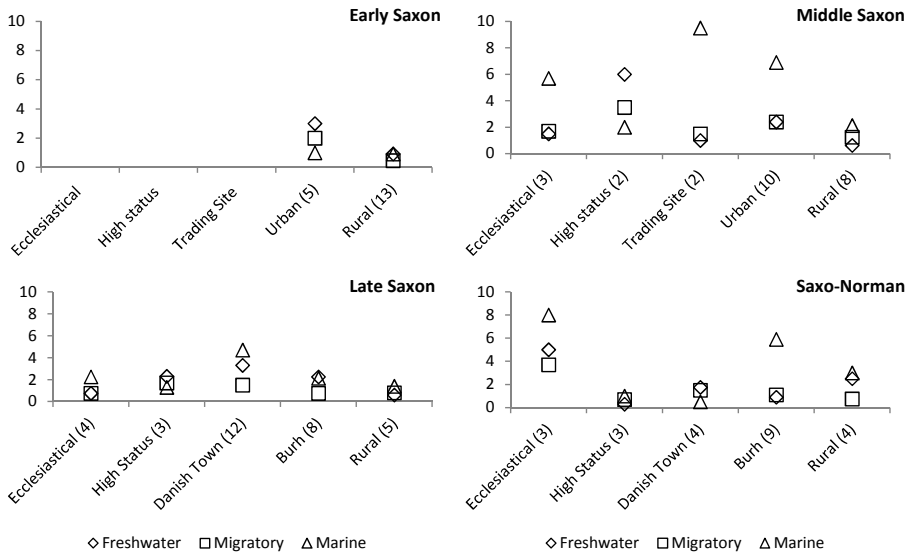


Figure 3.7: Mean number of fish taxa recorded from broad site types. (n)= number of sites where fish were recorded

When the diversity of fish taxa recorded on various site types was examined (Figure 3.7), the greatest numbers of fish in the early Saxon phase come from former Roman towns. In the middle Saxon phase, there was an interesting dichotomy between the high number of freshwater and migratory fish species recorded on high-status sites, and a greater number of marine fish at coastal *wic* and trading sites, as well as ecclesiastical sites, although numbers on the latter site-type were bolstered by the assemblage from Hartlepool monastery, situated on the coast. From the late Saxon phase the greatest number of fish taxa were recorded on urban sites (burhs and Danish towns), presumably in their capacity as market places for the distribution of a catch. This was reflected in evidence for a thriving trade network such as that described in Aelfric’s Colloquy, where the fisherman says he “sells his fish in the town, and sells all he can catch” (Swanton 1993, 110). Furthermore, results of a large-scale project investigating the increase in fishing in the Saxon and medieval periods (Barrett 2008; Barrett *et al.* 2004b) and isotope analysis of diet (Müldner and Richards 2007) reveal that marine fish were far less common on sites preceding the emerging fishing industry of the late

10th century. Prior to this, in the middle Saxon phase, the majority of fish taxa came from coastal or near-coastal sites, which implies that fishermen supplied a relatively local market with a consistency that extends into later phases. Most probably many fish were preserved, either by salting, drying or smoking (Banham 2004, 68; Barrett *et al.* 2004a, 630). This would have enabled greater opportunity for the trade of fish inland.

Although fish were common on ecclesiastical sites in all phases, in the Saxo-Norman phase there was a large increase (Figure 3.7). Such a phenomenon was observed by Eryvynck (2004) who suggested that this was a method used by the religious orders to distinguish their diet from the aristocracy; this may well be the case, given the apparent paucity of fish species recovered from high-status sites in the same period. An additional explanation results from the Benedictine doctrine requiring increased fasting and a prohibition of meat in the diet of the monastic population from the 10th century (Brown 2003, 38), whereby fish became a legitimate substitute (Banham 2004, 64).

Despite the proximity of rivers, and therefore availability of freshwater fish taxa to much of the rural population, very few fish remains from earlier phases come from such sites, indicating little time or inclination to consume fish. Freshwater fish become most common on rural and ecclesiastical sites from the Saxo-Norman period, which coincides with attempts to increase the availability and regulation of such species through the use of fishponds from the 11th century (Barrett *et al.* 2004a, 628).

3.3 Status and the Role of Signature Species: A case study

Considerable work has been carried out into the use of birds as signature species. Sykes has defined six such species (swan, bittern, grey heron, crane, grey partridge and woodcock) as specific to elite residences, based on their status in later medieval England (Sykes 2004a, 89). A similar method was used by Albarella and Thomas (2002) to investigate medieval wildfowling and status, indicated by the presence of gannet, stork, heron, sparrowhawk, grey partridge, pheasant, capercaillie and crane. A restricted range of wild bird species was also used in a study by Dobney and Jacques using diversity of species, the prevalence of hawking and falconry birds, and potential avian prey species (Dobney and Jaques 2002, 18). All of these studies accept the premise that wild birds were a luxury food in a farming-based society, where their procurement was unnecessary for survival. Consequently, the consumption of wild birds is taken to indicate the presence of an elite who could afford, both in time and resources, to catch birds either directly through hunting, or indirectly through the employment of others (Ashby 2002, 40; Serjeantson 2009a, 316; van der Veen 2003, 407). The validity of this assumption is reflected in the quantification of wild bird species from various site types (Figure 3.6), where the greatest numbers of wild birds were recorded at former Roman towns in the early Saxon phase and high-status sites in the middle and late Saxon phases, corresponding with their lowest numbers at rural sites. However, as noted previously, the use of wild birds to signal status apparently declined in the late

| | Species | Early | Middle | Late | Saxo-Norman | L | O | F |
|-------------------|---------------|----------|-----------|-----------|-------------|----------|---|----------|
| Freshwater | Barbel | | 3 | 1 | 3 | | | |
| | Bream | | 6 | 3 | 5 | | | |
| | Burbot | | 2 | 5 | 1 | | | |
| | Carp | 1 | 3 | 6 | 3 | | | |
| | Chub | | 2 | 5 | 5 | | | |
| | Cyprinid | 1 | 5 | 3 | 6 | | | |
| | Dace | | 2 | 5 | 5 | | | |
| | Grayling | | 1 | 3 | | | | |
| | Gudgeon | | 2 | 1 | 1 | | | |
| | Perch | 3 | 3 | 3 | 2 | | | |
| | Percidae | | 1 | | | | | |
| | Pike | 7 | 8 | 15 | 6 | | | |
| | Roach | | 9 | 8 | 1 | | | |
| | Rudd | 1 | 4 | 2 | 2 | | | |
| | Ruffe | | | 1 | | | | |
| | Stickleback | | 2 | 5 | 2 | | | |
| | Tench | 1 | 2 | 6 | 1 | | | |
| | Trout | | 3 | 6 | 4 | | | |
| Migratory | Eel | 8 | 18 | 19 | 20 | | | |
| | Clupeidae | | 2 | | 2 | | | |
| | Flounder | 1 | 9 | 5 | 4 | | | |
| | Mullet | | 5 | 1 | 1 | | | |
| | Pleuronectid | | 1 | 1 | | | | |
| | Salmon | 1 | 15 | 9 | 8 | | | |
| | Shad | | 3 | 4 | 1 | | | |
| | Smelt | 1 | 3 | 6 | 4 | | | |
| | Sturgeon | | 3 | 2 | 1 | | | |
| Marine | Bass | | 6 | 2 | 3 | Y | | Y |
| | Brill | | 3 | | 1 | Y | | Y |
| | Bullrout | | 1 | | | Y | | Y |
| | Cod | 1 | 14 | 20 | 13 | Y | | |
| | Conger | | 2 | 1 | 2 | Y | Y | |
| | Dab | | | 1 | 1 | Y | | Y |
| | Dogfish | 1 | | 1 | 1 | Y | | Y |
| | Elasmobranch | | 1 | 2 | 1 | | Y | |
| | Flatfish | 3 | 13 | 9 | 10 | Y | | Y |
| | Gadid | | 4 | 4 | 5 | Y | Y | |
| | Garfish | | 2 | 1 | 1 | Y | | |
| | Gilthead | | | | | Y | | Y |
| | Gurnard | | 4 | | 3 | Y | | Y |
| | Haddock | | 9 | 8 | 6 | Y | | Y |
| | Hake | | 6 | 2 | 1 | Y | | Y |

| Species | Early | Middle | Late | Saxo-Norman | L | O | F |
|----------------------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|
| Halibut | | 1 | 1 | 1 | Y | Y | Y |
| Herring/ Sprat | 4 | 11 | 21 | 17 | Y | Y | |
| John dory | | 1 | | | Y | | |
| Ling | | 4 | 3 | 3 | Y | Y | Y |
| Mackerel | | 5 | 9 | 8 | Y | | |
| Pandora | | | | 1 | Y | | |
| Piper | | | | 1 | Y | | |
| Plaice | 1 | 8 | 6 | 7 | Y | | Y |
| Pollack | | 1 | | 1 | Y | | |
| Ray | 2 | 8 | 10 | 5 | Y | | Y |
| Roker/ Thornback ray | | 2 | 4 | 1 | Y | Y | Y |
| Saithe | | | 1 | 2 | Y | Y | Y |
| Scad/ Horse mackerel | | 4 | 2 | 4 | Y | | |
| Seabream | | 3 | 1 | 2 | Y | | Y |
| Serranid | | | | 1 | | | |
| Shark | | | | 2 | | Y | |
| Sole | | 2 | | | Y | | Y |
| Triglidae | | | | | Y | | Y |
| Tunny | | | 1 | 1 | | Y | |
| Turbot | | 1 | 4 | 4 | Y | | Y |
| Whiting | 1 | 8 | 4 | 4 | Y | | |
| Wrasse | | 4 | 1 | 1 | Y | | |
| N sites | 15 | 27 | 38 | 28 | 33 | 10 | 20 |

Table 3.3: Number of sites from which each fish taxa was recorded. L= littoral zone, O= oceanic zone, F= floor-dwelling (data from Froese and Pauly, 2000)

Saxon and Saxo-Norman phases with the increased exploitation of wild mammals. This change in emphasis provides an ideal backdrop for an investigation into the use of signature species to investigate nuances in the data regarding the perceived social context of wild bird species.

Three main methods of investigating signature species can be undertaken with this dataset. The first is the use of a basic measure of diversity (number of taxa recorded) and abundance (presence of that taxa) for the major site types (Figure 3.8). In the early Saxon phase, as already noted, both a greater number of taxa and occurrences were recorded at re-used Roman towns (Virconium and Bonners Lane, Leicester) than rural sites. Middle Saxon rural sites were also the most poorly provisioned with wild birds, the greatest abundance and diversity coming from high-status sites, then ecclesiastical settlements, then *wics* and trading sites. By the late Saxon phase, two groupings can be observed, the elite sites (secular and ecclesiastical) having greater numbers of bird species per site than urban and rural sites, although the abundance of taxa was not much different between urban and elite – i.e. although a more restricted number of taxa were available at the former

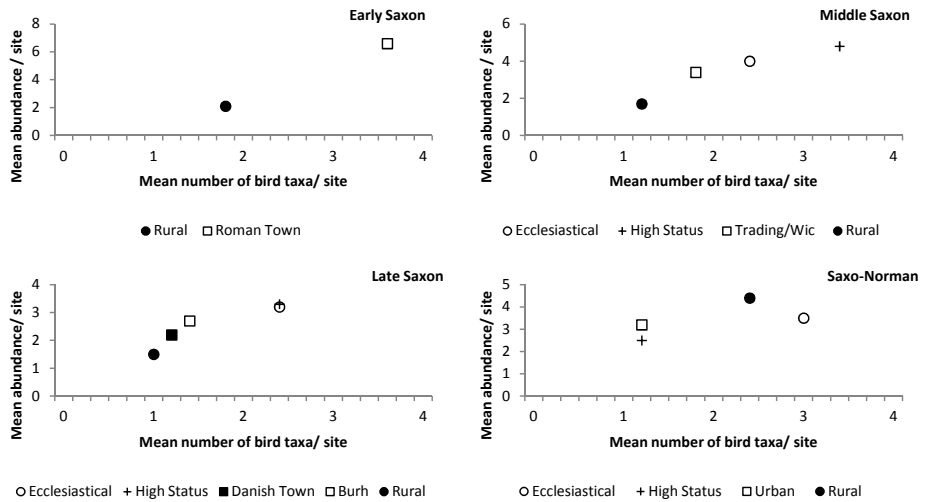


Figure 3.8: A basic diversity chart for sites where edible wild bird species were recorded

sites, they were present in only slightly lower numbers. The Saxo-Norman phase presents a change, whereby the greatest diversity of taxa were recorded at both rural and ecclesiastical sites, with rural sites also providing the most abundance. Urban and high-status sites produced fewest numbers and abundance of taxa.

As the diversity analysis does not take into account the specific taxa present, the second method employed to explore signature species is the analysis of particular taxa of wild bird against site type. Because of their ubiquity, ducks were not included as possible signature species, neither were sea birds, as the distribution of these is most obviously affected by environmental factors. The frequency of 16 of the most commonly occurring taxa of wader (bittern, curlew, plover, lapwing, oystercatcher, snipe, woodcock), water birds (swan, diver, crane, heron and stork), columbiformes (pigeon/ dove) and game birds (partridge, pheasant and grouse) was calculated for each site type. Many of these taxa were recorded at numerous site types, and therefore of little value as signature species; although some were more common at specific settlements. For example, grouse and partridge were exclusive to early Saxon re-used Roman towns, while woodcock and pigeon/ dove were far more common at these sites than rural settlements (Figure 3.9). In the middle Saxon phase heron, diver, bittern, snipe, lapwing, partridge and grouse were only recorded on elite sites, with swan, woodcock and columbiformes also more often recovered at high-status and ecclesiastical sites. As implied by the abundance and diversity data, only very few wild species, from few rural sites were observed, however, columbiformes were also recorded at a proportion of *wic* and trading sites consistent with those of high-status.

In the late Saxon phase heron and stork were only recovered from ecclesiastical sites, which also had the greatest prevalence of crane and curlew (Figure 3.9). Crane and plover were also found on a number of high-status sites, however, from this phase partridge were only observed on rural and burh sites, which suggests they had lost the status apparent from middle Saxon assemblages. Also of note was

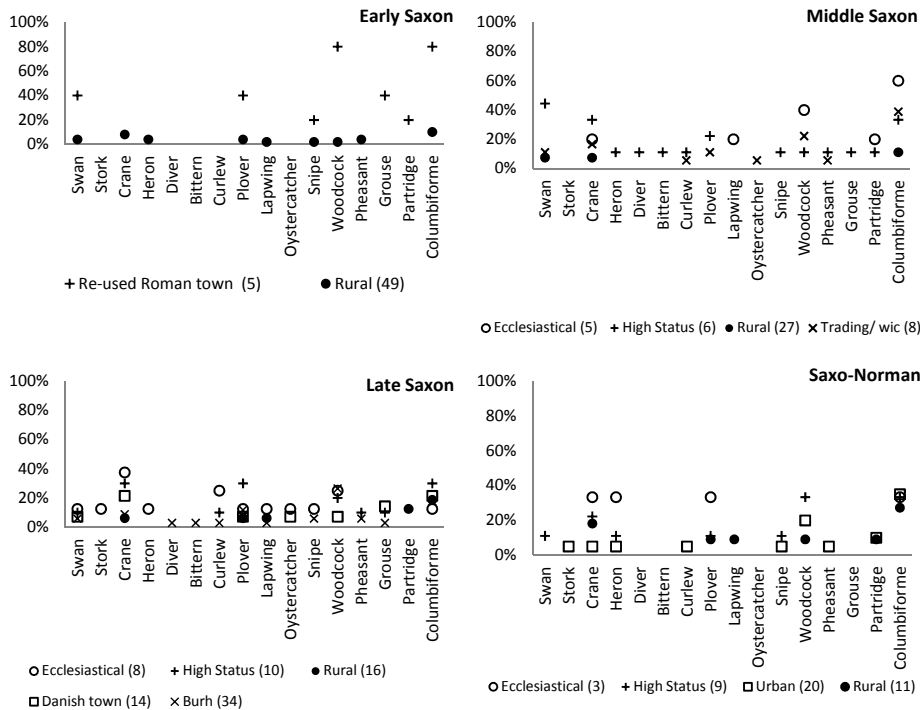


Figure 3.9: Percentage of sites from which selected wild bird taxa have been recorded. (n)= total number of sites for which data were available

the relatively high frequency of woodcock at burhs in the late Saxon and Saxo-Norman phases as well as elite sites, implying a consumer demand as well as a reduction of implied status. The prevalence of pigeon/ dove on all site types from the late Saxon phase indicates that this was a resource available to, and utilised by, much of the population. By the Saxo-Norman phase swan was the only taxa unique to high-status sites, although crane, heron and plover remain more frequently recovered from ecclesiastical sites. What is obvious from this case study, is that the consideration of signature species alone is too ambiguous to provide informative data on the social status of the Saxon population, particularly from the late Saxon phase, where the many taxa were recorded at all site types.

The third and final method used to argue for the presence of signature taxa utilises the evidence for hawking and falconry. There is little evidence for falconry in England prior to the middle Saxon phase, although there was some suggestion for this sport at the late Roman site of Great Holts Farm, Essex (Serjeantson 2009a, 321). The first documentary evidence for hunting with birds in England came from a letter from St Boniface to King Ethelbald of Mercia dated to A.D. 745-746 which recorded the gift of a hawk and two falcons to the King; shortly after this, another letter was sent from King Ethelbert of Kent to St Boniface, asking him to supply two falcons to hunt crane with (Oggins 1981, 175-177; Oggins 2004, 38). The delivery of these birds may have occurred through one of the established coastal trading centres or *wics*. If so, the presence of a goshawk

at Ipswich and a sparrowhawk at Lundenwic and later, at the urban centres of Exeter (sparrowhawk), Ipswich (peregrine), Thetford (kestrel), Winchcombe and York (goshawks), probably reflected the nature of goods they were trading, rather than the status of the inhabitants (Dobney and Jaques 2002, 16-17). In his highly informative work on the nature of Anglo-Saxon falconry, Oggins notes that the majority of literary and pictorial sources for falconry relate to the ruling classes, and members of the aristocracy (Oggins 1981, 193-194; Oggins 2004, 49). Other documentary sources include a grant of land AD 803 by Cenwulf, king of Mercia, and Cuthred, king of Kent to the abbess of Lyminge, referring to “keepers of dogs, or horses, or hawks”; in AD 843 or 844 a grant by Ceolred, bishop of Leicester, of land at Pangbourne, Berkshire also describes men who bear hawks or falcons; and Asser in the *Life of King Alfred* written in AD 893, refers to the king partaking in falconry and hawking (Whitelock 1996). This reflects a bias in the nature of the sources themselves, as the Saxon elite would have been responsible for commissioning, writing and using such material. This imbalance is addressed marginally by evidence for the presence of fowlers within the peasant population, described in Aelfric’s *Colloquy*, who hunted with hawks that they took from the indigenous population and trained seasonally (Swanton 1993, 111).

The documentary evidence is reflected in the site types from which falconry birds were recovered (Figure 3.10). Numbers of falconry birds (goshawk, peregrine falcon and sparrowhawk) recorded from Saxon sites were incredibly small, although this is not surprising given the possibility that they were buried or cremated with their owners as recorded on contemporary European sites (Dobney and Jaques 2002, 15; Serjeantson 2009a, 323). Nonetheless, there was evidence for falconry from the middle Saxon phase, since not only was there an increase in the number of falconry birds, but they were recorded in greatest numbers on specific site types – ecclesiastical and high-status – into the Saxo-Norman phase. Of particular note were a peregrine falcon recorded at Brandon, which was unusual as its presence as a complete skeleton, and the earliest peregrine recorded so far in Britain (Crabtree 2007, 164), and a goshawk skeleton from a Saxo-Norman latrine at the manor of Facombe Netherton (Sadler 1990, 505). There was a decline over time in the proportion of ecclesiastical sites from which the main falconry species were recovered, and they were absent from this site type in the Saxo-Norman phase. This is consistent with a number of contemporary documents admonishing members of the clergy that they “be not too fond of sport, nor care too much for dogs or hawks”, and that “a priest be not a hunter, or a hawker” (cited in Oggins 2004, 43), although at the same time recognising that members of the religious orders did pursue such pastimes. There was a notable narrowing of the bird of prey species recorded from Saxon sites through time, whereas in the middle and late Saxon phases there were a number of buzzard, red kite and other species recorded on a variety of site types, by the Saxo-Norman phase there were very few of these species in the archaeological record. A restriction of social boundaries is implied, where only the aristocracy undertook these pursuits, compared with apparently greater accessibility in previous phases (Oggins 1981, 194).

This brings the argument around to the ambiguity in the evidence for actual falconry and hawking taxa. Birds traditionally used for falconry – the goshawk, sparrowhawk, peregrine and kestrel – were present from the middle Saxon phase. However, other large native species (i.e. buzzard and red kite) were conspicuous by their occurrence on similar site types to the typical falconry birds (trading sites, ecclesiastical and high-status sites). Although these birds are often considered to be scavengers, associated with urban sites (Mulkeen and O'Connor 1997, 441), it is suggested elsewhere that both these species were used for hawking, either directly as in the case of a buzzard, or as prey or decoy as red kites were used for in the medieval period (Dobney and Jaques 2002, 17-18). While there is no direct historical reference for the use of these species for hunting, it is entirely likely that they were tamed and trained for just such purposes. Furthermore, there was a similar correlation between other birds of prey and these sites, and harriers and white tailed eagles may also have been used for sport because they too were found on trading, ecclesiastical and high status sites throughout the Saxon period in proportions not dissimilar to other falconry species.

A number of criteria for distinguishing hawking and falconry archaeozoologically have been described (Prummel 1997), one of which is the presence of game which may have been caught by the birds of prey. Major prey species have been defined (Prummel 1997, 336; Serjeantson 2009a, Table 13.1), and are given in Table 3.4. Prey and raptor species recorded from Saxon sites where birds of prey were recorded are summarised in Table 3.5. Generally speaking, prey species were associated with the majority of sites from which birds of prey were present, including those not widely considered suitable for hunting with (i.e. buzzard and red kites). Fewest prey species were recorded at many of the *wics*, burhs and Danish towns, which emphasizes the suggestion that the birds of prey were present at these sites for a different reason, namely trade, rather than hunting. Although it may seem that the evidence presented by signature bird taxa show a contrasting picture, depending on the method involved, certain trends emerge. The distinction of the population of former Roman towns from those of rural sites was portrayed by the abundance and number of wild bird taxa and the presence specifically of grouse and partridge and, to a lesser extent, woodcock and columbiformes. The possibility that the latter were kept as a food source is likely, given the evidence for domestic dove to have been introduced to England in the Roman period (Yalden and Albarella 2009, 106). Increasing social distinction in the middle Saxon phase was reflected in diversity of wild bird species at high-status and ecclesiastical sites, specific taxa prevalent at these sites linked also to their role as prey species, as falconry as a sport was taken up by the elite. While the abundance of wild bird taxa continued on late Saxon high-status and ecclesiastical sites, the presence of particular signature species became less obvious, although certain taxa are more common at elite sites, again linked to the use of birds of prey for hunting. A change occurred in the Saxo-Norman phase, whereby fewer taxa were recorded at high-status sites, with only swan found exclusively at these settlements, a bird previously common on a number of site types. This narrowing of the wild bird food base is consistent with the restriction in types of birds of prey recorded, and reflects the social change

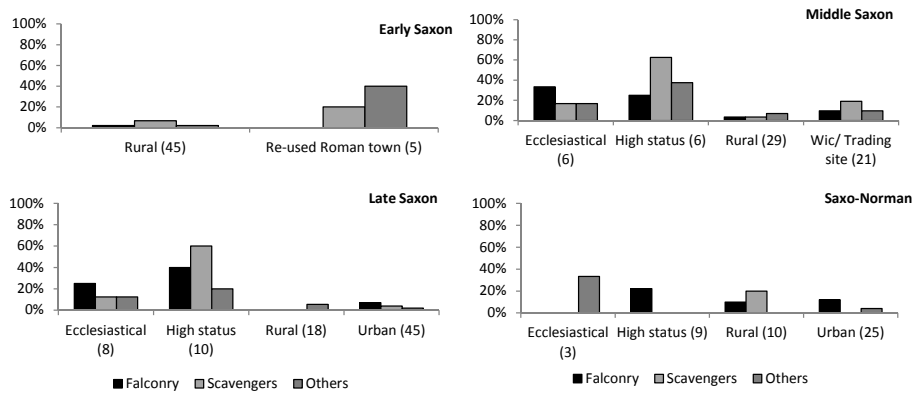


Figure 3.10: Percentage of sites from which falconry birds (goshawk, sparrowhawk, peregrine falcon, kestrel and falconidae), scavengers (buzzards and kites) and other bird of prey species (owl, harriers, white tailed eagle, raptor) have been recorded. (n)= total number of sites where bird species were recorded

| Species | Natural prey | Main prey when trained |
|------------------|---|--|
| Eagle | Mammals to 4kg (fox, hare, rabbit); birds to 1.2kg (grouse), carrion | Fox, small deer |
| Goshawk | Birds to 1.2kg (pigeon, thrush, pheasant, grouse, partridge); mammals to 1.5kg (rabbit) | Heron, grouse, bustard, crane, hare, rabbit, pheasant, partridge, pigeon |
| Sparrow hawk | Birds to 500g (woodpigeon, thrush, grouse) | Moorhen, partridge |
| Peregrine Falcon | Birds to 600g (pigeon, grouse, thrush) | Pheasant, partridge |
| Kestrel | Mammals to 100g (voles); small birds; insects | Small birds |
| Buzzard | Mammals to 500g (rabbit); birds to 600g; carrion | Rabbit, moorhen, squirrel |

Table 3.4: Prey species of the major birds of prey recovered from Saxon sites (after Serjeantson 2009a)

| Early Saxon | Site Type | Falconry Birds | | | | Scavengers | | | Prey | | | |
|-----------------------------|------------|----------------|-----------|-------------|---------|------------|---------|----------|------|-------------|------------------------------|------------|
| | | Goshawk | Peregrine | Sparrowhawk | Kestrel | Falconidae | Buzzard | Red Kite | Kite | Small Birds | Heron/ Stork/ Crane/ Bittern | Game Birds |
| Viroconium, Wroxeter c | Roman Town | | | | | | | | * | * | * | * |
| Viroconium, Wroxeter d | Roman Town | | | | | * | | | * | | * | * |
| Barton Court Farm, Abingdon | Rural | | | * | | | | | * | | | * |
| Cadbury Congresbury | Rural | | | | | * | | | | | | * |
| Pennyland, Milton Keynes | Rural | | | | | | * | | * | | | * |
| West Stow | Rural | | | | | * | | | * | | | * |

| | Site Type | Falconry Birds | | | | Scavengers | | | Prey | | | |
|--------------------------|----------------|----------------|-----------|-------------|---------|------------|---------|----------|------|-------------|---------------------------------|------------|
| | | Goshawk | Peregrine | Sparrowhawk | Kestrel | Falconidae | Buzzard | Red Kite | Kite | Small Birds | Heron/ Stork/ Crane/ Bittern | Game Birds |
| Middle Saxon | | | | | | | | | | | | |
| Aelfric's Abbey, Eynsham | Ecclesiastical | | | | | * | | | * | * | * | * |
| Church Close, Hartlepool | Ecclesiastical | | | * | | | | | * | | | * |
| Hartlepool Monastery | Ecclesiastical | | | * | | | | | * | | | |
| Wearmouth and Jarrow | Ecclesiastical | | | | | | | | * | | | |
| Flixborough | High status | | | | | * | * | | * | * | * | * |
| North Elmham Park | High status | | | * | | * | * | | * | * | | * |
| High Street, Ramsbury | High status | | | | | | | * | | | | |
| Lake End Road | High status | | | | | | | | * | | | * |
| Brandon | High status | | * | | | * | | | * | * | | * |
| Crow hall park | Rural | | | | | | | | | | | |
| Gosberton | Rural | | | | | | | | | | | |
| Lot's Hole | Rural | | | | | | | * | | | | |
| Fishergate, York | Trading site | | | | | * | * | | * | | * | * |
| Sandtun, West Hythe | Trading site | | | | | | | * | * | * | | |
| Ipswich | Wic | * | | | | | | | * | * | | |
| Maiden Lane | Wic | | | * | | | | | | | | |
| Peabody site | Wic | | | | | | | * | | | | |

| | Site Type | Falconry Birds | | | | Scavengers | | | Prey | | | |
|----------------------------|----------------|----------------|-----------|-------------|---------|------------|---------|----------|------|-------------|---------------------------------|------------|
| | | Goshawk | Peregrine | Sparrowhawk | Kestrel | Falconidae | Buzzard | Red Kite | Kite | Small Birds | Heron/ Stork/ Crane/ Bittern | Game Birds |
| Late Saxon | | | | | | | | | | | | |
| Ipswich 1974-88 b | Burh | | | | | * | | | * | | | |
| Ipswich 1974-88 d | Burh | | * | | | | | | | * | | * |
| Portchester Castle | Burh | | | | | | | * | * | | | * |
| Winchcombe | Burh | * | | | | | | | | | | |
| Exeter as whole | Burh | | | * | | | | | * | | | |
| Ipswich 1974-88 c | Burh | | | * | | | | | * | * | | * |
| Victoria Rd, Winchester | Burh | | | | | * | | | | | | * |
| Bury Road, Thetford | Danish town | | | | | | | * | | | | |
| Aelfric's Abbey, Eynsham | Ecclesiastical | | | | | | | * | | * | | |
| Bishopstone, Seaford | Ecclesiastical | | | * | | | | | * | * | | * |
| Vicarage Garden, Brixworth | Ecclesiastical | | | | * | | | | | | | * |
| Flixborough | High status | | | | | * | * | | * | * | * | * |
| Goltho | High status | | | | | * | | | | | | * |

| | | | | | | | | | | |
|----------------------|-------------|---|---|--|---|---|---|---|---|---|
| North Elmham Park b | High status | | * | | * | | * | * | | |
| North Elmham Park c | High status | | * | | | * | | * | | * |
| Stafford Castle | High status | * | | | | | | * | * | * |
| Castle Mall, Norwich | High status | * | | | | * | | * | | * |
| Coppergate, York | Industrial | * | | | | | | * | * | * |
| Site 1072, Thetford | Industrial | | | | | * | | | * | |
| Chalkpit Field North | Rural | * | | | | * | | | | |
| Longstanton | Rural | | | | | | | | | * |

| Saxo-Norman | Site Type | Falconry Birds | | | | Scavengers | | | Prey | | | |
|--------------------------|----------------|----------------|-----------|-------------|---------|------------|---------|----------|------|-------------|-------------------------------|------------|
| | | Goshawk | Peregrine | Sparrowhawk | Kestrel | Falconidae | Buzzard | Red Kite | Kite | Small Birds | Heron/Stork/ Crane/Bittern | Game Birds |
| Barking Abbey | Ecclesiastical | | | | | | | | | * | | |
| Facombe Netherton | High status | * | | | | | | | * | | | * |
| Castle Lane, Bedford | High status | | * | | | | | | | | * | * |
| Mill Lane, Thetford | Industrial | | | * | | | | | * | | | * |
| Little Chester, Derby | Military | | | * | | | | | | | | * |
| Lordship Lane, Cottenham | Rural | | | | | | * | | | * | | |
| Wraysbury | Rural | * | | | | | * | | * | | * | |

Table 3.5: Presence of birds of prey and prey species from sites where birds of prey were recorded

occurring at the end of the Saxon period where the elite set themselves apart from lower classes through the use of food procurement, distribution and consumption (Sykes 2010, 185).

3.4 Food and Diet

According to work done by Anthony King on the animal economy of Roman Britain, those living on native, unromanised settlements consumed more sheep (generally over 30% of the total cattle, sheep and pig assemblage) than the populations of villas, roadside settlements, towns and forts, who would have been influenced by Roman culture and consume more beef as a consequence (King 1978, 211; King 1984, 190). This pattern is consistent with data from the English pre-Roman Iron Age, where the majority of sites exhibit proportions of sheep around the 30-60% mark (Hambleton 1999, 59). In combination, this implies an underlying husbandry regime continuing from the Iron Age through unromanised rural settlements, via a culture that ‘had little or nothing to do with Roman, or Greco-Roman, values or identities’ (James 2001, 206). The diet of much of the population in the 5th to 7th centuries remained similar to that of their Iron Age predecessors, with 57% of sites containing over 30% sheep. This has been noted

by King (2001, 219), who describes those living on native Roman rural sites and many early Saxon settlements as sustaining a diet similar to that of the pre-Roman Iron Age.

Although it is hard to gauge the role of meat in the diet, recent isotope studies have indicated that it was commonly consumed in the diet, with much of the population of a cemetery in Berinsfield, Oxfordshire consuming “a significant amount of animal protein on a regular basis” (Privat *et al.* 2002, 785). In all phases, the three main domesticates provided the majority of meat to the Saxon population. Beef was most commonly available, with the exception of a handful of high-status sites where pork was obtained in similar quantities. Despite the abundance of sheep on some sites, corresponding meat weights suggest that mutton and lamb did not feature largely in the diet. This is reflected in a source from the reign of Aethelstan, where a “destitute Englishman on each of the royal estates was to receive one amber of meal and a shank of bacon or a wether worth fourpence every month” (cited by Hagen 1992, 67) – thus equating a whole sheep to just one joint of bacon, highlighting the relative value of pork. Wild mammals, domestic and wild birds only provided meagre rations, particularly in the early Saxon phase. The consumption of domestic birds increased considerably between the early and middle Saxon phases, as did the number of sites recording wild birds, though to a lesser extent. Wild mammals did not increase in number until the Saxo-Norman phase (Figure 3.11), despite being widely available as a resource. It has been suggested that the early Saxon population regarded wild resources as part of the wilderness, highly symbolic and not viable as part of the diet (Sykes and Carden 2011, 153). Indeed, in Bede’s Ecclesiastical History of England of AD 732 he mentions that hunting was only undertaken when “the whole country was left destitute of food” (Whitelock 1996, 644). Seasonal animal-based additions to the diet would have included eggs, milk and cheese, the former readily available from any of the domestic bird species, or collected from wild ducks (Banham 2004, 57).

3.5 The Social Divide

One of the biggest problems when assessing the status of inhabitants at a particular site is the mingling of food debris from the table of the most affluent, with that of their servants. Nonetheless, this research has highlighted the presence of particular patterns in the type of food consumed that are likely indicative of social status.

Following the decline of Roman influence in England in the early 5th century, many towns were abandoned and allowed to fall into ruin, as evidenced by black earth layers that built up over former occupation surfaces. However, evidence for sporadic settlement within towns such as London, Canterbury, Wroxeter, Silchester, Gloucester and St. Albans has been identified (Snyder 1998, 142-146), and their use has been proposed variously as foci for an elite, administrative or ecclesiastical population (e.g. Clarke and Ambrosiani 1995, 12-15; Fowler 2002, 91; Haslam 1985, 10; Vince 1994, 108). Archaeozoological evidence from Wroxeter was most abundant, and indicated a signature similar to that of both contemporary

high-status and ecclesiastical sites (i.e. Yeavinger, Northumberland; Cadbury Congresbury, Somerset; and Bishopstone, Sussex). Smaller assemblages from the former Roman towns of Baynard's Castle, London, Bonners Lane, Leicester and Freeschool Lane, Leicester (Browning 2011, not included in the dataset) and the Roman fort of Portchester were also similar in the relatively high proportions of pig and wild species. Collectively this implies that some of the inhabitants of former Roman towns were eating a high-status diet. It is likely that the remains of these ruinous towns attracted the elite of the Saxon population as a residence and focus for the surrounding community, whose inhabitants consumed most beef and least lamb. This may be a reflection of the high regard in which cattle were kept, as it has been suggested elsewhere that the wealth of the ruling classes was tied up in the size of their cattle herds (Brunner 1995, 28-29). In addition, it has been proposed that early Saxon rulers displayed wealth through feasting, at the same time confirming the allegiance of their followers (Dobney *et al.* 2007, 236; Hagen 1992, 76; Sykes 2010, 185), and the consumption of cattle would have provided a significant amount of meat. Although the refuse from feasting is hard to distinguish from accumulations of more general meal waste (Twiss 2008, 419), evidence from York suggests that a number of feasts took place in the mid 5th century, centred on the consumption of young pigs by a high-status population emulating their Roman predecessors (Gerrard 2007).

By the middle Saxon phase, social distinction between populations became more complex, and differences between middle Saxon site types were generally well defined. A move towards the exhibition of social identity through hunting (Sykes and Carden 2011, 153) meant that the feasts of the previous phase were less important, and the middle Saxon elite began to show their status through the display of hunting and the cutting up and sharing of the deer carcass (Sykes 2010, 182). Wealth was also apparently displayed by the diversity of species consumed: wild birds were more commonly recorded on ecclesiastical and high-status sites in this phase, and the latter also contained the greatest range of freshwater fish. There was also some indication for the emergence of falconry as a sport given the prevalence of birds of prey on middle Saxon high-status and ecclesiastical sites. The relative proportions of domestic birds were greatest on ecclesiastical and, to a lesser extent, high-status sites in this phase, which may represent a move towards a new trend in the display of wealth, manifested through the consumption of distinct species. Domestic birds were recorded in comparatively small quantities at early Saxon sites, and so the addition of relatively exotic species would have been a visible method of distinguishing the ecclesiastical and secular elite. The consumption of greater proportions of sheep at rural settlements from the middle Saxon phase, when combined with the relative paucity of minor species, indicates that these animals may have been considered low-status animals, particularly if they commanded low market value, not being in demand from *wic* or elite populations.

From the late Saxon phase, the prevalence of domestic and many wild birds on high-status and ecclesiastical sites diminishes, which represents the changing perception of a luxury commodity (van der Veen 2003, 403). Indeed, domestic

birds became commonplace on all site types, and partridge particularly common on rural and urban sites. The late Saxon elite therefore created a new, socially conspicuous way of signalling their status, seemingly achieved through the consumption of a wider range of wild species: deer, particularly roe deer, water birds (such as crane, swan and waders) and pig on high-status sites; and water birds (particularly heron and stork) on ecclesiastical sites. By the late Saxon phase social status became concomitant with land ownership (Fleming 2000), exhibited in the ability of the elite to hunt deer with horses and dogs and to catch birds with hawks. The sudden increase in the abundance of wild mammals on high-status sites from the Saxo-Norman phase indicates that this change may have occurred just prior to the Conquest. This may be explained by a law documented in the *Charta de Foresta*, of 1016 laid down by King Canute prohibiting hunting by the peasant classes (Almond 2003, 137), although the reliability of this document is in question.

A number of authors (Bourdillon 1994, 122; Ervynck 2004, 218; Fowler 2002, 240; O'Connor 1994, 139) suggested that peasant diets may have included beef and mutton, but few game species, and this was borne out in the archaeozoological data, where wild species were consistently recorded in lowest numbers on rural sites. A similar phenomenon has been described in modern-day self-sufficient societies, where food is locally produced, and consists largely of plants, with some meat supplementing the diet (van der Veen 2003, 415). By way of contrast, social status was reflected in diets with the inclusion of more diverse species such as deer, pig and wild birds (Dobney *et al.* 2007, 240; Ervynck *et al.* 2003, 432; Grant 2002a, 21). Similarly, dietary differences may be observed for those living on ecclesiastical establishments, whose diet likely became more structured from the 10th century, as rules concerning restrictions on eating meat were widely introduced with the Benedictine rule (Leyser 1997, 179). This was also reflected in the data, where inhabitants of ecclesiastical sites enjoyed a far greater range of fish, in keeping with the rule of St Benedict.

The exclusivity of high-status sites became most notable in the Saxo-Norman phase, where the greatest proportion of wild species, domestic birds and pigs came from high-status and ecclesiastical sites. The separation of the secular and religious elite from the populations of urban centres and rural settlements continued to

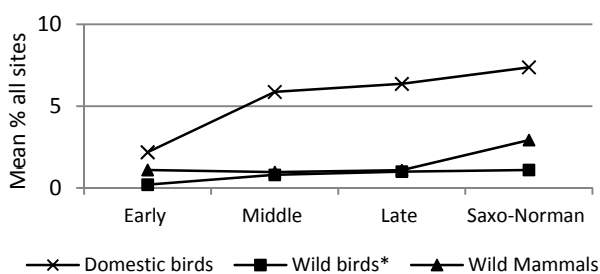


Figure 3.11: Average proportions of the minor species for each phase as a proportion of the total cattle, sheep and pig. * numbers for wild birds have been multiplied by 100 to make trends visible

be magnified, where a considerable narrowing of signature species was observed. Wild species were restricted to high-status and, to a lesser extent, ecclesiastical sites, from which fish were also most abundant. After the Norman Conquest, the aristocracy employed additional means of distinguishing themselves from the majority through hunting and consumption rituals and the restriction of land and access to wild animals (Sykes 2007b, 96-97). This is unsurprising, as the onus was on the invading force to display their superiority and power in order to exert authority over their new subjects, exemplified in part by their castle building schemes (Haslam 1985, 53). The distinction between sites of differing social status in all phases falls largely on the quantities of minor species – wild animals and domestic birds, rather than the proportions of the major domesticates, with the exception of pigs. The emphasis on these species is therefore likely to be the most appropriate indicator of status for the inhabitants of a site in the faunal record.

Animal Husbandry and Economy

4.1 Introduction

The term 'animal husbandry' here encompasses the various methods by which people breed and raise animals for their primary products (e.g. meat, skin, marrow, horn), and/ or secondary products (e.g. milk, wool, manure, traction). The husbandry regime will differ depending on the products realised, and typical trends that may be observed in animal bone assemblages will be summarised below. For this study the discussion will centre on the main domesticates (cattle, sheep and pig). First is a brief review of the main archaeozoological indicators for the use of animals for secondary products and meat production. The profiles given are specific to that product, whereas in reality it is probable that mixed regimes were practiced, for example, one and two year old sheep still produce wool despite being immature, and therefore not at optimum meat yield.

Meat

Meat would have been provided by all animals at the end of their life, but the most cost-effective production of animals purely for meat is to cull those nearing maturation (between 2 ½ and 3 ½ years of age) - when they produce most meat in relation to the cost of feed and shelter (Noddle 1990, 35; Ryder 1983, 186; Trow-Smith 1957, 54, 61). On sites producing animals for meat a breeding population of older animals would be required, as well as an excess of young stock as insurance in case of disease or accident.

Milk

In a dairy-based economy, a large number of very young animals (lambs or calves) may be expected together with a substantial base of older females calving and being milked and a few older males as breeding stock (Crabtree 1990a; Legge 1981, 42). However, others (McCormick 1991, 57; McCormick 1992, 201; Noddle 1990, 37) maintain that the culling of lambs or calves is not always necessary for milk production, as humans can compete with the young animal, or wean them early, after allowing a week of suckling to establish lactation.

Power

Power was required to plough and pull carts. The ard required only two animals, and it has been suggested by some that the heavy plough would have utilised between 4-12 in a team (Bökönyi 1995, 59; Fowler 2002, 222; Noddle 1990, 38; Trow-Smith 1951, 68). In either case, more cattle would be necessary to allow for animals in training, 'spares' and breeding stock. Cattle used for ploughing would have been skeletally mature, as oxen were not trained at the plough until they were four years of age, and then they would have the potential to work for an average of four further years (Salisbury 1994, 20). A good indicator of the use of cattle for traction comes from pathologies to the lower limbs that occur as a result of excess loading of the joints (Bartosiewicz *et al.* 1997; Noddle 1990, 38).

Wool

Sheep can produce a clip of wool suitable for cloth production from their second year (Ryder, 1981: 187), and go on providing fleece until old age, although O'Connor suggests that the production of best quality fleeces will occur before animals reach 5-7 years (2010, 12). The non-intensive exploitation of sheep for wool may not be noticed as a particular phenomenon in the archaeological record, as wool could be collected from any sheep used for milk or meat production. Once wool became an important resource, however, it may be recognised in a flock profile of largely mature male castrates, with a few breeding ewes and rams (Davis 2002, 23).

Breeding

The presence of neonatal fatalities is often recognised as direct evidence for the breeding of animals within or close to the site in question (O'Connor 1989b, 17; Vince 1994, 116). In early pastoral communities the rate of loss in the first year of life has been estimated to be between 13% and 60% of lambs, and around 25% of piglets, due to disease and natural mortality of the weak (Noddle, 1990: 35).

To recognise the emphasis of production three questions will be asked on a species-by-species basis: What were animals used for? how did this change throughout the Saxon period? And what does this imply regarding the underlying economy?

Determination of these questions will be answered using two main methods of analysis: mortality data to identify at what ages major culls took place; and sexing data to determine the prevailing herd structures. Mortality data for each site are presented graphically to give an idea of the homogeneity of results, with detailed breakdowns by site given in Appendix B. Three major mortality profiles were commonly observed:

- A steep curve where the majority of animals were culled before reaching tooth wear stage F (cattle and sheep) or E (pigs) – indicative of animals of prime importance for meat production;

- Delayed mortality, where the majority of animals were alive until wear stage G or older – implying their use for secondary products, breeding and/ or the removal of younger animals of prime meat age;
- A stepped curve, where a number of animals were killed before tooth wear stage F, and again at around stage G or later – suggesting an economy where animals were utilised for both meat and secondary production.

4.2 Cattle

During the early Saxon phase the majority of cattle were culled between stages C and F (Figure 4.1), although two sites (Fossets Farm, Southend; and Oxford Science Park, Oxford) produced a mortality curve indicative of animals culled at both prime meat age and older, reflecting the use of some for secondary products. The sexing data (Figure 4.2) suggests that cows and castrates were recorded at most sites, with a predominance of females, and three very large individuals that could be bulls from West Stow, Suffolk.

A mix of husbandry strategies were apparent from the middle Saxon tooth wear data. The majority of animals were culled at ages consistent with meat production (Figure 4.3), largely coming from *wics* (Fishergate, York, James St, London, Melbourne Rd and Anderson's Road, Southampton) and the trading settlement at Lake End Rd, Windsor. At other sites (Ipswich and The South Manor area, Wharram), mortality profiles were consistent with their use for both meat and secondary products, yet the high-status site at Brandon, Suffolk and rural settlement of Wicken Bonhunt, Essex, both from East Anglia, were typical of animals used for more intensive secondary production, such as milk or traction, where nearly all animals were alive until tooth wear stage I. Unfortunately there were too few raw data available to investigate sexual dimorphism, although it has been observed that cattle at Brandon, Suffolk and Ipswich were largely cows, with few castrates, and those from Wicken Bonhunt, Essex were predominantly castrates (Crabtree 2012).

A more widespread change in cattle husbandry occurred in the late Saxon phase (Figure 4.4). The majority of sites recorded animals culled at prime meat age as well as older individuals used for secondary products. Two curves, both from Flaxengate, Lincoln, have an apparent emphasis on secondary production. Plots of sexing data (Figure 4.5) indicate a smaller group of females than observed in the early Saxon phase, with a similar number of castrates, and a few bulls.

The same trends can be recognised for the Saxo-Norman phase (Figure 4.6), where cattle at all but two sites were kept for mixed purposes – those from Harlington, London and Flaxengate, Lincoln, however, were used predominantly for secondary products. Herd structures again imply an increase in castrates, with fewer cows apparent at the left of the chart (Figure 4.7).

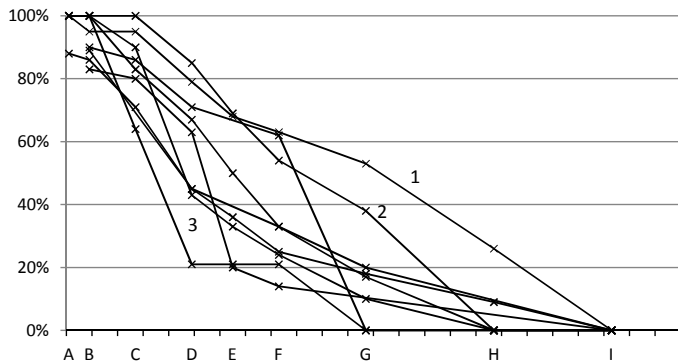


Figure 4.1: Early Saxon cattle mortality profiles showing tooth wear data (after Hambleton 1999). 1= Fossets Farm; 2= Oxford Science Park

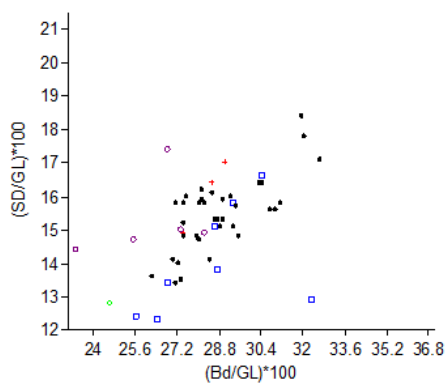


Figure 4.2: Early Saxon plots of cattle metacarpal measurements from all sites. SD= shaft diameter; GL= greatest length; Bd= distal breadth. Mucking= circle; Barnsley Park= diamond; Fossets Farm= cross; Orton Hall Farm= square; West Stow= filled circle

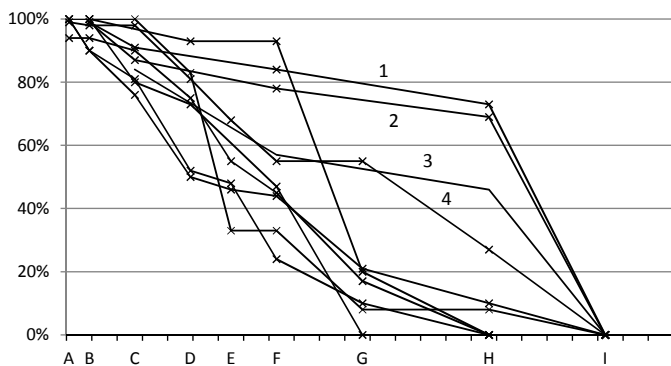


Figure 4.3: Middle Saxon cattle mortality profiles showing tooth wear data (after Hambleton 1999). 1= Wicken Bonhunt; 2= Brandon; 3= Ipswich; 4= The South Manor Area

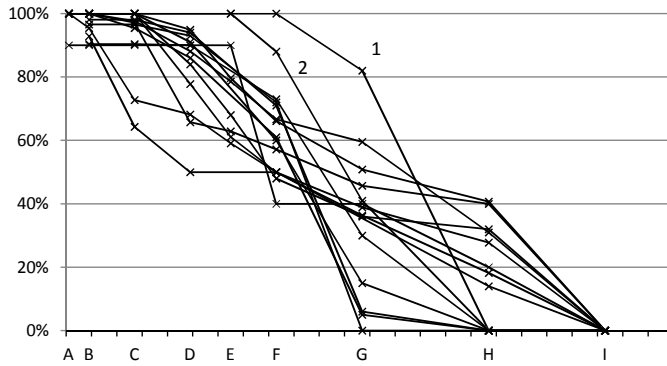


Figure 4.4: Late Saxon cattle mortality profiles showing tooth wear data (after Hambleton 1999). 1 and 2= Flaxengate, Lincoln

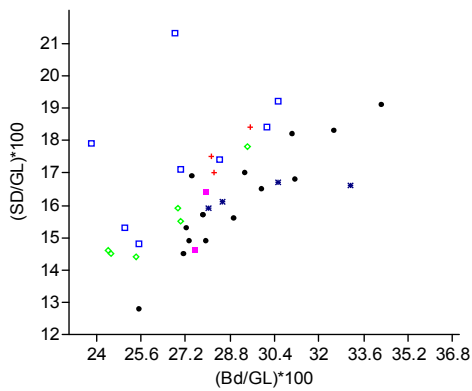


Figure 4.5: Late Saxon plots of cattle metacarpal measurements from all sites. SD= shaft diameter; GL= greatest length; Bd= distal breadth. Abbey Green= filled square; Burystead= cross; Castle Mall= filled circle; North Elmham= square; Northern Suburbs= star; Staple Gardens= diamond

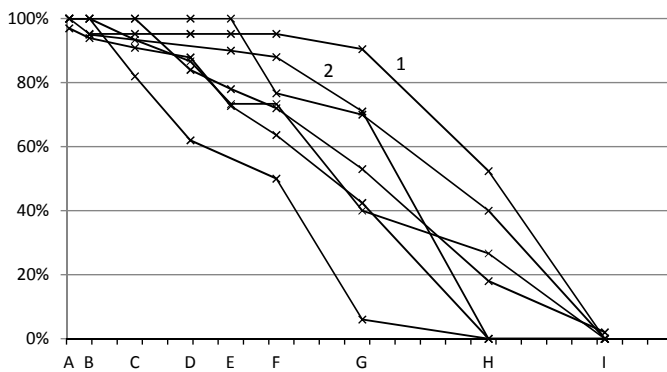


Figure 4.6: Saxo-Norman cattle mortality profiles showing tooth wear data (after Hambleton 1999). 1= Harlington, London; 2= Flaxengate, Lincoln

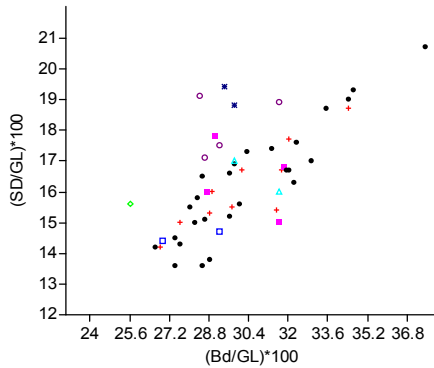


Figure 4.7: Saxo-Norman plots of cattle metacarpal measurements from all sites. SD= shaft diameter; GL= greatest length; Bd= distal breadth. Castle Lane= cross; Dragon Hall= open square; Harlington= filled square; Mill Lane= filled circle; North Elmham= star; Staple Gardens= diamond; Wearmouth= open circle; Wilton= triangle

4.3 Sheep

During the early Saxon phase (Figure 4.8), over 60% of sheep from the majority of sites were culled before reaching prime meat age – between stages D (1-2 years) and E (2 years), with a large number not surviving past their first year, or wear stage C. In general, the remaining flock were culled before reaching tooth wear stage G, although at Pennyland, Buckinghamshire, Eye Kettleby, Leicestershire and West Stow, Suffolk there was evidence for 9%, 6% and 7% of animals killed at tooth wear stage H (6-8 years) respectively, and at the latter site 3% were still alive until stage I (8-10 years). This implies that sheep were of greatest value for their meat, with a small proportion of the flock kept back as adults for breeding and probably wool or milk production. The fairly high number of first year mortalities is consistent with breeding casualties, suggesting that these animals were bred at many settlements (Noddle 1990, 29). Sexing data were scarce, with the exception of West Stow (Figure 4.9), although the sites included imply that the majority of animals alive old enough for fusion of the metapodials were ewes, with a smaller, but still significant number of castrates present.

At 12 of the 17 middle Saxon sites (Figure 4.10) there was a cull of animals at ages consistent with optimum meat production, between stages E and F. Exceptions to this include the rural site of Aelfric's Abbey, Eynsham, where over 65% of sheep were culled in the first year, before they reached the end of tooth wear stage C. At a number of sites (Brandon, Friend's Provident, Hampshire, Wicken Bonhunt and St Peter's Road, Northampton) older sheep become more common, with culls of both younger animals at prime meat age, and those at stage G or older. This implies either that there was an emphasis on secondary products, or that animals of prime meat age were not culled on site, but were consumed elsewhere. The former explanation has been put forward for the Brandon animals, the majority of which were male and therefore likely to have been kept as wool producers (Crabtree 2007, 167). However, given the predominance of younger animals at *wic* sites, the

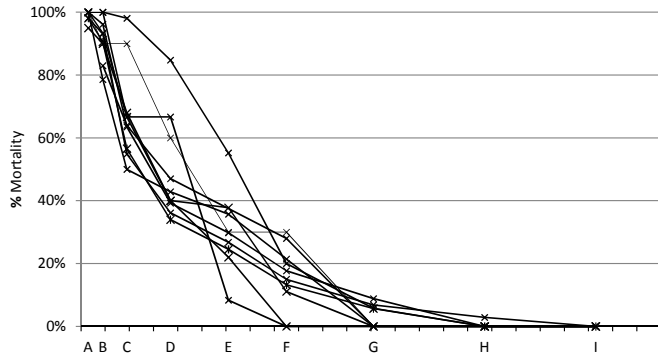


Figure 4.8: Early Saxon sheep mortality profiles showing tooth wear data

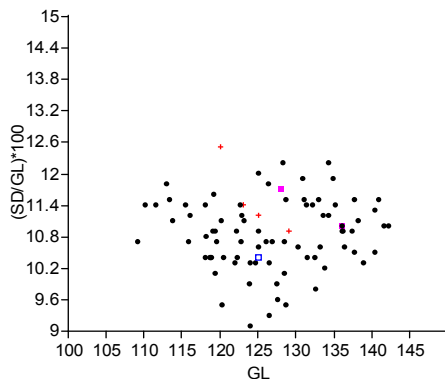


Figure 4.9: Early Saxon plots of sheep metacarpal measurements from all sites. SD= shaft diameter; GL= greatest length. Barnsley Park= cross; Orton Hall Farm= filled square; West Stow= filled circle; Mucking= square

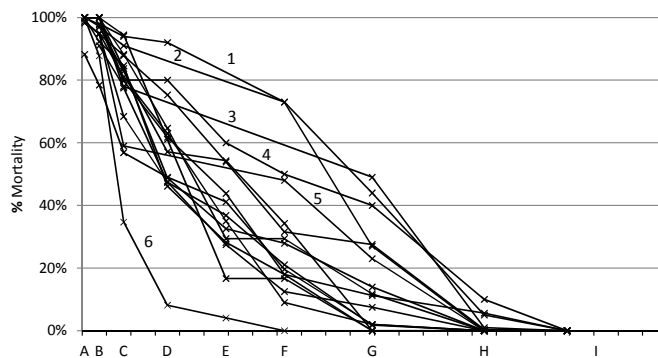


Figure 4.10: Middle Saxon sheep mortality profiles showing tooth wear data. 1= Friend's Provident; 2= Brandon; 3= Wicken Bonhunt; 4= St Peter's Rd; 5= Ipswich; 6= Eynsham Abbey

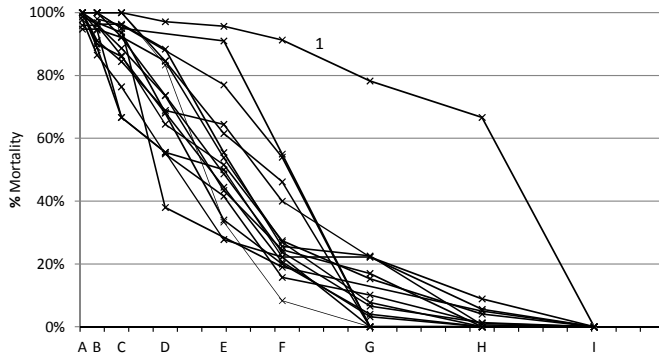


Figure 4.11: Late Saxon sheep mortality profiles showing tooth wear data. 1= Bury Rd, Thetford

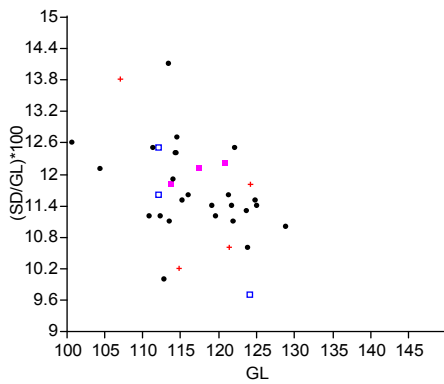


Figure 4.12: Late Saxon plots of sheep metacarpal measurements from all sites. SD= shaft diameter; GL= greatest length. Castle Mall= cross; North Elmham= square; Northern Suburb= filled square; Staple Gardens= filled circle

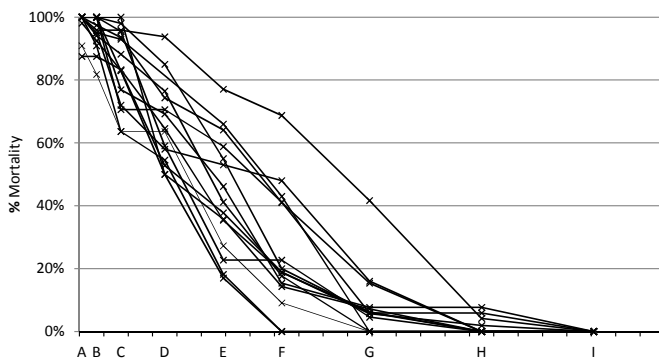


Figure 4.13: Saxo Norman sheep mortality profiles showing tooth wear data

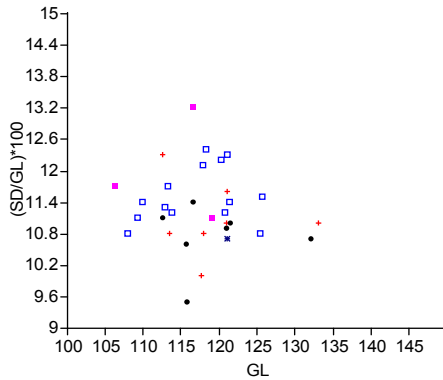


Figure 4.14: Saxo-Norman plots of sheep metacarpal measurements from all sites. SD= shaft diameter; GL= greatest length. Mill Lane= cross; Staple Gardens = open square; Wilton = closed square; Dragon Hall = dot; Wearmouth = star

production of sheep for supply to consumer sites cannot be discounted. As with the cattle data set, it was not possible to investigate sexual dimorphism for this phase.

In the late Saxon phase, as previously, the majority of sites showed a primary cull of animals between stages E and F, implying meat production (Figure 4.11). Slightly later culls, with very few young animals were recorded at burhs (Portchester Castle, Hampshire and St James's Square, Northampton) and Danish towns (Flaxengate, Lincoln). At Bury Road, Thetford a very high number of old animals were recorded, more consistent with intensive secondary product production, as nearly 70% were older than 8 years of age. The sexing data implies more of an emphasis on females from nearly all sites (Figure 4.12).

The trend for sheep to be of prime importance for their meat was again apparent in the Saxo-Norman phase, whereby animals were more likely to be culled for between stages E and F (Figure 4.13). At many urban sites (St Peter's Road, Northampton; Western Suburbs, Winchester; Redcastle Furze, Norfolk; and Flaxengate, Lincoln), there was little evidence for early deaths – culls of sheep in their first year being more commonly recorded on rural sites. Plots of metapodials were rather homogenous and skewed towards the female ratios apparent for the early Saxon phase, which may suggest a greater proportion of ewes in Saxo-Norman flocks (Figure 4.14).

4.4 Pigs

As pigs are of most value for their meat, it may be expected that the majority will be culled before reaching maturity. This is true of most sites throughout the Saxon period (Figures 4.15-4.18), where nearly all animals were culled between stages C (7-14 months) and F (27-36 months), after which they were skeletally mature. A few older animals were occasionally recorded, which were probably breeding stock, although they may also have been wild pigs. The only exception to this was the middle Saxon site of Fishergate, York (Figure 4.16) at which 50% of the

pig remains were still alive at wear stage F and this, combined with the highest proportion of first year mortalities, indicates that animals were kept for breeding. The absence of culls of animals at prime meat age at the same site implying that they were sold or traded away from the site.

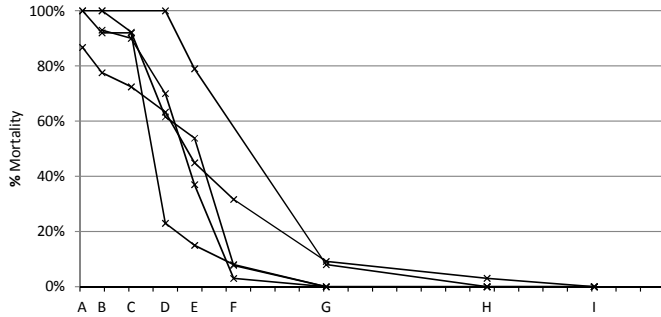


Figure 4.15: Early Saxon pig mortality profiles showing tooth wear data

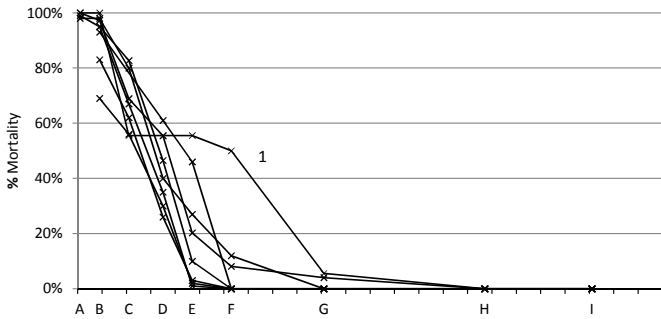


Figure 4.16: Middle Saxon pig mortality profiles showing tooth wear data. 1= Fishergate, York

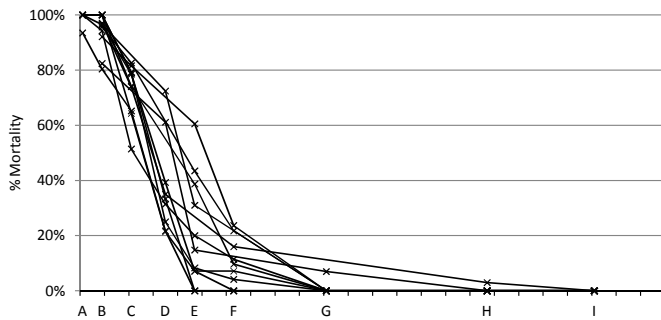


Figure 4.17: Late Saxon pig mortality profiles showing tooth wear data

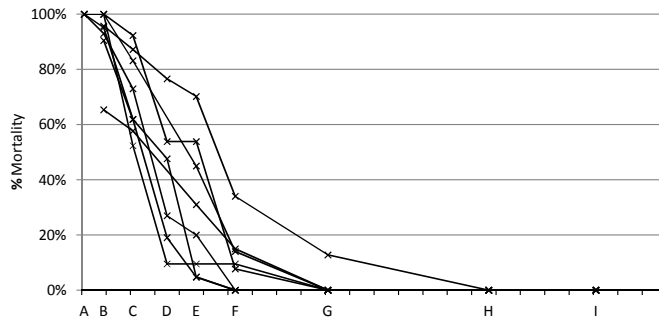


Figure 4.18: Saxo-Norman pig mortality profiles showing tooth wear data

4.5 Animal Husbandry

Meat

In all phases, sheep and pigs were predominantly kept for their meat, although there was some suggestion of a change at specific sites from the middle Saxon phase towards the keeping of sheep for more than meat alone. Cattle too, during the early Saxon phase, were bred purely for meat. Though the keeping of cattle for meat persists on many sites, animals at prime meat age were more common within *wics*, with a mixed economy apparent at many other sites.

Milk

Documentary evidence indicates that sheep and cattle both contributed to the provisioning of dairy products in the Saxon period (Banham 2004, 54; Hagen 1992, 16), and it has traditionally been suggested that milk was predominantly recovered from sheep: the move to large herds of dairy cows not occurring until the 13th century (Campbell 1992, 107; Noddle 1990, 35-37; O'Connor 1989b, 14). An increase in the proportion of ewes through time could reflect their preferential use for dairy production. Some evidence, albeit based on a small data set has since been used to imply an increase in cows for dairy production in the late Saxon phase (Sykes 2007b, 52). Grigg (1989, 213) also suggests that perhaps just two to three head of cattle were kept for summer milk production on a small-scale. In the limited data analysed here, however, there was an apparent decrease in the number of cows kept with time. Dairy farms are mentioned in Saxon documentary evidence, such as the exchange of land between Ethelbert, king of Kent, and his thegn Wulflaf of AD 858, who refers to “one dairyfarm of the people of Wye” (Whitelock 1996).

Traction

Although horses were used for transport and hauling in the 8th and 9th centuries (Langdon, 1986:24), they were not widely introduced as draught animals until the medieval period (Clutton-Brock 1976, 383; Smil 2000, 125). Instead, cattle have

been described as “the equivalent of a modern farmer investing in a multi-purpose tractor and fittings” (Fowler, 2002: 222). The earliest British plough was an ard, which consisted of a plough share that would, “pulverise and stir the soil” (Payne 1957, 77). In the Roman period a few farmers made use of a plough with a coulter (to cut the soil) and mould board (to turn the soil), which could be used more effectively to turn heavy clay soils (Fowler 2002, 185; Payne 1957, 77). In post-Roman contexts there is little artefactual evidence for the use of heavy plough until the 10th or 11th centuries (though see Pitts 2011). Further work on the frequency of pathologies to the feet and legs of cattle, which may be expected to increase with the use of the heavy plough has likewise found no evidence that injuries increased throughout the Saxon period (Holmes in prep-b). This suggests that ards were prevalent; and even after the introduction of the heavy plough, the ard remained in use in northern and western Britain until modern times (Fowler, 2002: 203; Noddle, 1990:38). Although the link between cattle and arable production is close, it is also possible for land to be broken up without animal power, and given the added requirements of cattle for grain and fodder when overwintering, for poorer households the luxury of using cattle for traction may not have been an option (Noddle 1990, 37). However, on the heaviest clay soils of the north west and midlands, cattle would be more necessary for arable production. The increasing number of older cattle from the middle Saxon phase, combined with the rise in the proportion of castrates suggests an increasing emphasis on arable production, combined with the use of cattle for traction.

Wool

On most sites in the Saxon period there was little variation in the husbandry of sheep, which were either kept primarily for their meat, or for a mixture of meat and secondary products. A few sites prove the exception to this, such as Brandon, Wicken Bonhunt, St Peters Road and Friend’s Provident in the middle Saxon phase, late Saxon Bury Road and Portchester Castle and St Peters Road in the Saxo-Norman phase. This implies a greater emphasis on wool exploitation that reflect structural and artefactual evidence for wool processing and cloth production that exists at many rural sites, such as sunken feature buildings and spindle whorls (Härke 1997, 136-137). Moreover, a letter from Charlemagne to the king of Mercia in 796 specifically requested English-made cloaks (Ryder 1983, 188). This, combined with the presence of both male and female sheep at many available sites suggests that wool was produced, possibly collected on a small scale from young sheep in their second and third summers.

4.6 Modes of Production and the Role of Animals in the Economy

Early Saxon Self-Sufficiency

Evidence presented in this study strongly supports the view that the early Saxon economy was self-sufficient, producing enough for the household as well as a surplus for over-wintering. This is typically characterised by intensive mixed farming, where small scale production of crops and animals were undertaken close to the settlement (Bogaard 2005, 179). Milk and wool could have been supplied by small numbers of breeding ewes and younger sheep, and likewise, one or two oxen or cows could have been used to pull an ard to assist in arable cultivation. The character of the majority of sites in this phase as rural settlements (Figure 2.2) also makes it likely that the population was largely one of farmers subsisting on a self-sufficient basis, providing for their family and household. Animals within such a regime will be utilised mainly for meat, and will be bred, culled, butchered and consumed on site. Certainly this was reflected in the animals of early Saxon sites, the majority of which record breeding casualties, with a main cull at prime meat ages. There was also some suggestion that cattle were utilised for small-scale milk production, given the predominance of females in the assemblages.

Wics as Instigators of Production

A change in the nature of production is apparent from the middle Saxon phase. The majority of sites continued to exhibit a reliance on animals for their meat, combined with a high number of first year mortalities, indicative of self-sufficiency. Yet a few began to exhibit signs of specialisation in both the cattle and sheep economy. This took the form of a greater proportion of animals culled later, reflecting a larger population of older animals, either resulting from increased use of secondary products or the production of younger animals for market. Either of these hypotheses are possible, and it is likely that, given the proximity of these sites to *wics* along the eastern and southern coasts, increased production occurred in response to demands placed on the surrounding rural population for food and raw materials to support those living and working within *wics* (Holmes 2013). A similar explanation has been postulated by Crabtree (2010), who suggests that the specialisation of farms came in response to trade instigated by secular and monastic estate centres at the end of the early Saxon phase. Yet there is no evidence for specialisation from more inland sites, and links between estate centres and *wics*, with the former acting as redistributors of renders between producer and consumer (see Chapter 5) makes the underlying causal factor hard to recognise.

Late Saxon Intensification

From the late Saxon phase there was a decline in the number of sites exhibiting specialised husbandry trends in both the cattle and sheep populations, although there was an increased number of older cattle as well as those at prime meat age, largely

on rural sites. When combined with the increasing numbers of castrates through time this suggests that, as well as a continuing emphasis on meat production, the use of cattle for traction and therefore an increase in arable production occurred as urbanisation increased, coinciding with the need for greater production of grain. There is some evidence to suggest that this increased production took an early form of open field agriculture that emerged in the midlands, based in a 'central province' (Roberts and Wrathmell 2000, 27). Settlements outside this area continued the traditional form of agriculture based on intensively cultivated 'infields' near to the settlement, and less intensively cultivated 'outfields' further away. The expansion of arable farming heightened demand for manure, and most probably sheep were grazed on fields away from the settlement in the day, before being housed in temporary pens on arable land at night (Oosthuizen 2005, 184; Ryder 1983, 672). It has been suggested that, as a result, sheep were kept in greater numbers in midland areas associated with the beginning of open field agriculture from the late Saxon phase (Holmes forthcoming-b; Sykes 2007b, 29).

In summary, then, the animal husbandry of the main domesticates throughout the Saxon phase reflects a move from self-sufficient production catering for individual households to an emphasis on specialisation peaking at sites in the vicinity of *wics* in the middle Saxon phase, and settlements of a more urban nature in the late Saxon and Saxo-Norman phases. However, the overlying trend throughout the period was one where animals were of prime importance for their meat, with few incidences of intensive secondary production.

Provisioning and Foodways

5.1 Introduction

General trends in animal husbandry and food availability discussed previously will be considered in terms of the provisioning of various site types with animals and animal products. Provisioning is a term that describes the ways and means that a population procures its food and raw materials. The mechanisms by which this occurs can be viewed as a spectrum: at one end are sites which are entirely self-sufficient, and at the other are those wholly dependent on external sites for the production of animal-based food and goods, either through trade or taxation. In between are a variety of ways in which the population may interact with each other for the procurement of animals and their products, which encompass many social, political and economic mechanisms as the basis of trade and exchange (Costin 1991, 2). Archaeozoological techniques are invaluable when debating the strategies by which food and raw materials were procured. Producer sites are those on which animals are bred and raised, either for their primary or secondary products (Davis 1995, 155-162). Consumer sites are those where primary or secondary products are utilised, either through the consumption of meat or milk, or use of raw materials in manufacture. A site can be both consumer and producer, as in self-sufficient economies, whereby animals are bred, raised, slaughtered and eaten on site, being used for secondary products as required (Maltby 1994, 85).

One of the most important distinctions to make when considering the Saxon economy is between net producer and net consumer sites. Wilson (1994: 105) has considered the marketing of animals within and around medieval Oxford, and suggests using a subsistence economy as a base-line for judgements regarding mortality patterns of animals from producer sites that were supplied through a market (or redistributive system) to a consumer settlement. Wapnish and Hesse (1988), in their study into the urbanisation of the Bronze Age Levant confront a problem similar to the one associated with the provisioning of Saxon 'urban' sites. Using mortality profiles to investigate the specialisation of animal husbandry and the evidence for exchange networks they suggest the following signatures: in a self-sufficient economy animals will be present at all ages from the herd or flock; producer sites will typically have birthing casualties as well as older animals culled from breeding stock; and consumer sites will contain a large proportion of market age animals, and very few of breeding age (Wapnish and Hesse 1988, 84).

The provision of goods to a net consumer or redistribution site is dependent on surplus production, which can be interpreted in one of two ways: a supply of excess animals and products by net producer sites; or a specific demand for particular goods from the net consumer site that is catered for by producers. The latter is a possibility when considering the presence of particular animals in the food rent “*may reflect aristocratic taste rather than the balance of the peasant economy: pastoral goods here would appear, not as the principal economic resource of the peasantry, but only their principal surplus product*” (Wickham, 1994: 139). This may be exemplified by the high incidences of pig remains on high-status sites, as animals particularly suited to production for food rent, being fast-growing and of little use for secondary products. The production of food rents by the rural population to high-status estate centres is recorded in the documentary evidence, such as details in a bequest of Heregyth (833x 839) to Christ Church, Canterbury, who specifies, amongst other goods, ‘a wey of lard and cheese, a fullgrown bullock, 4 sheep, a pig, 6 geese, 10 hens’, mentioning that ‘her successors are to pay this annually when the community are bled’ (Nelson *et al.* 2014) – giving some insight to the impact of such food rents on the rural population. A standard food rent from ten hides is described in the *Laws of Ine* (688-694) as ‘10 vats of honey, 300 loaves, 12 “ambers” of Welsh ale, 30 of clear ale, 2 full-grown cows, or 10 wethers, 10 geese, 20 hens, 10 cheeses, an “amber” full of butter, 5 salmon, 20 pounds of fodder and 100 eels’ (Whitelock 1996, 406).

Food rents continue into the late Saxon phase, evident from the *Anglo-Saxon Chronicle*, which states ‘Then the king had gone across the Thames, into Shropshire, and received there his food-rents in the Christmas season’. A lease of land at Tidenham, Gloucester to Archbishop Stigand (1061x1065) specifies the requirement of an ‘annual render of one mark of gold, 6 porpoises and thirty thousand herring’ (Nelson *et al.* 2014). However, the increasing reliance on the elite for the display of status through money and land led to an increase in taxation through coinage (Fleming 2000), and the emergence of a market economy through the supply of late Saxon ‘urban’ settlements. O’Connor (1989b, 15) suggests that the meat provided had little to do with demands for food from inhabitants, but more to do with rural economy and what excess stock there was to get the best return as wool and corn prices fluctuated. Some attempt to ascertain whether rural producers were free to produce the most profitable stock was made by O’Connor (1992b, 102-105). He suggests that this is discernible through the mortality profiles of animals, comparing the proportion of old animals used for secondary production, which had paid for their living costs, against younger animals which were too young to have been significantly productive, instead being slaughtered during the ‘investment’ phase of life. Another element of the animal economy which should be borne in mind is the keeping of part of the flock for insurance purposes on net producer sites, in case of hard winters, disease or food shortages (O’Connor 1992b, 104), which may be reflected in the culling of excess animals after winter, seen archaeozoologically in a number of animals culled before reaching their 1st year.

Other interpretations of site types based on patterns in the faunal remains are given by Clark (1987), involving the connections between exchange mechanisms, the necessary stock-raising strategies and their recognition in the faunal record. The most pertinent of these are the interpretations of self-sufficient family groups, through various stages of inter-regional exchange, culminating in a full market exchange shown in Table 5.1), which may be directly comparable to the animal bones from Saxon sites. The presence of an economy based on the redistribution of food has also been included, where a ‘filter’ placed on the available goods by the distribution centre may be recognised through restrictions in supply to the end consumer site (Crabtree 1996, 64; O’Connor 2001a, 55; Zeder 1991). The recognition of such a distribution network may include the following aspects of the animal economy: a restriction in the species available for consumption; a focus on a specific age group; the provisioning of specific carcass parts; and a predominance of those that give the greatest quantity of meat (i.e. pigs and cattle). Further work into the provisioning of an early urban site of Tiritis Hoyuk, Turkey (Allentuck and Greenfield 2010), found evidence for the indirect distribution of animal products at sites other than the distribution site. There was capacity for animals to be supplied from various age groups and in the form of a wide range of anatomical elements (Allentuck and Greenfield 2010, 23).

| Criteria | Mode of Production | Settlement Type | Archaeozoological Data | Methods of Analysis |
|----------------------|---------------------------|---|--|--|
| Self-Sufficient Site | Domestic | Isolated kin-based farmstead | Animals bred, raised, worked, culled on site/ range of ages or may be peaks in mortality depending on focus of agriculture | Anatomical Representation/ Mortality Data |
| Producer Site | Tributary/ Tax/ Market | Dispersed farms/ Hamlet/ Nucleated settlement/ Village | Surplus production of meat, milk, wool, intensification of arable production requires more draught animals/ animals bred, raised, worked on site/ some or all culled on site/ some possibly provided on the hoof/ Specialist provision - removal of certain age groups, use for secondary production | Anatomical representation/ Mortality data/ Butchery data/ |
| Consumer Site | Tributary/ Tax/ Market | Ecclesiastical or Royal estate centre/ Wic/ Burh | Animals and raw material received from elsewhere/ may be a predominance of young males if the site can demand best otherwise, may be old animals past best working age/ if received as dressed carcasses or joints of meat may be anomalies in skeletal elements recovered/ where specialised activities taking place may see concentration of raw material refuse/ no breeding fatalities/ different deposition of butchery and domestic refuse | Anatomical representation/ Mortality data/ Butchery data/ Spatial representation |
| Distribution Site | Tributary/ Tax | Ecclesiastical or Royal estate centre/ Rural trading site | Acting as middleman between producer and consumer sites/ may be consuming food as it arrives or may produce own/ any mix of producer or consumer assemblages | Anatomical representation/ Mortality data/ Butchery data/ |

Table 5.1: Data that may be indicative of various site types and modes of production (after Clark 1987)

The greatest problem to acknowledge throughout the analysis, is that with more complex distributions of animals, the true animal husbandry regime of a producer site is likely to be distorted by the animal bones of urban sites, as the presence of animals in towns is *“the end point of a very long and complex series of processes beginning with the birth and rearing of the original livestock at a farm or farms possibly far removed”* (O’Connor, 1988: 75). Other limiting factors include the likelihood that different producers will meet different needs of different consumers within the same settlement; and the increased depositional complexity of urban sites. Therefore, caution should be taken when making statements regarding rural animal husbandry based on assemblages from consumer sites (e.g. Locock 1999, 10), if a study can facilitate a comparison of assemblages from both consumer, producer and distribution sites within a region, it may be more feasible to make such an assessment (Maltby, 1994: 85).

This chapter will explore how the Saxon population acquired their food and raw materials by considering differences and similarities between animal economies within specific regions, and any notable interactions between them. Three categories of economy are identified, although it must be emphasised that these are ideologically based, and will vary depending on environmental, social, economic and behavioural variables: net producer – a site where animals are bred and raised, either for primary or secondary products; distributor – a site where animals or animal products are taken to be redistributed; net consumer – a site where animals and their products are brought to be eaten, and raw materials used for craft or industrial production.

It is the production of surplus for the provision of rent or saleable products that may be observed archaeozoologically as an indicator of economic complexity (Crabtree 1990b, 158) using a combination of methods:

- Investigating where animals were bred and what they were used for, using mortality profiles;
- contrasting the relative availability of wild and domestic species and the diversity of diet;
- observing the distribution of particular cuts of meat or raw materials through the use of body part representation.

Relative frequencies of cattle, sheep, pig, domestic birds, wild birds and wild mammals are given in Appendix A and patterning within the data are investigated using Principal Component Analysis (PCA). In some cases, where trends in wild species distributions are not clear, PCA has been re-run removing outliers to investigate patterns in the majority of sites, without the influence of atypical assemblages. Ageing data are presented in Appendix B and summarised graphically, while body parts are illustrated as a proportion of the most common elements (see Chapter 2.9).

It is likely that regional differences exist in the data, particularly in the middle and late Saxon phases (Holmes 2013; O’Connor 2010; Sykes 2007b). Sites will therefore be analysed according to the broad territorial regions summarised in

| Phase | Region | Counties |
|--------------|-------------|---|
| Middle Saxon | Northumbria | Durham, Yorkshire |
| | East Anglia | Norfolk, Suffolk, Essex* |
| | Mercia | Bedfordshire, Buckinghamshire, Cambridgeshire, Cheshire, Gloucestershire, Northamptonshire, Oxfordshire, Lincolnshire |
| | Wessex | Kent*, Berkshire, Hampshire, London, Sussex, Wiltshire, Worcestershire, Somerset, Cornwall, Devon |
| Late Saxon | Danelaw | Durham, Yorkshire, Buckinghamshire, Cambridgeshire, Northamptonshire, Lincolnshire, Norfolk, Suffolk |
| | Mercia | Cheshire, Gloucestershire, Oxfordshire, Staffordshire, Warwickshire |
| | Wessex | As middle Saxon |

Table 5.2: List of counties within distinct regions for which animal bone reports are included. *Although Kent and Essex were kingdoms in their own right, only isolated sites are available, so they are included in neighbouring regions.

Table 5.2. Included within each region are a variety of site types – enough, it is hoped, to help understand the interactions of urban and rural sites – and sites of differing status and function within their respective hinterlands. The lack of regional variation in the early Saxon phase means that these sites will be considered for England as a whole.

It is unlikely that the arbitrary regional boundaries defined here were observed in the marketing and trade of animals in the past and sites either side of these boundaries can reasonably be expected to have interacted with each other. The key points to be considered are: whether the inhabitants of settlements were self-sufficient, or if there is evidence for surplus production to supply consumer or distribution sites; the relationships that existed between site types; what was being procured, and produced; and was this due to demand or availability?

5.2 Early Saxon Phase

The animals kept on various site types in the early Saxon phase show some distinction (Figure 5.1). Cattle and sheep were most common on the majority of rural sites, although there was wide variation. Greater proportions of pig and cattle were recorded from sites where there was likely to be a high-status presence i.e. re-used Roman towns (Wroxeter and Leicester) and both high-status sites (Yeavinger and Cadbury Congressbury). The early ecclesiastical site of Bishopstone sits within the group of rural sites, with greatest numbers of sheep and pigs.

There was also wide variation in the proportions of minor species (Figure 5.2) recorded at rural sites. They were scarce on the majority of sites, with the exceptions of Baynard's Castle, London, Oxford Science Park, Oxfordshire and Poundbury, Dorchester where high numbers of wild mammals were recorded; and Barton Court Farm and Aelfric's Abbey, Oxfordshire, Lechlade, Gloucestershire and Ramsgate, Kent which had the greatest numbers of domestic birds. The former Roman town of Wroxeter had high proportions of all three of the minor species

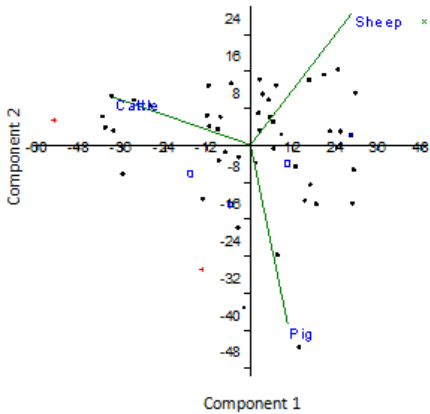


Figure 5.1: Principal Component analysis of the relative proportions of cattle, sheep and pig for all sites in the early Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; former Roman town= open square; ecclesiastical= open circle

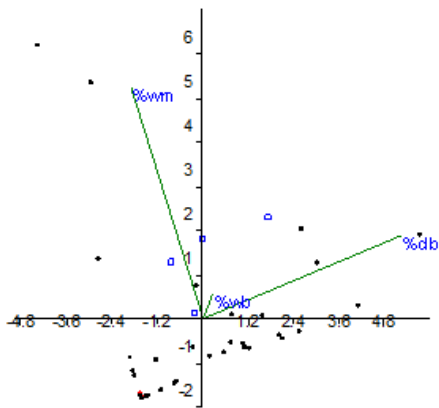


Figure 5.2: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) from all early Saxon sites where all three groups were recorded. Rural= filled circles; high-status= cross; industrial= tilted cross; former Roman town = open square; ecclesiastical= open circle

groups – and was the only site to have more than 1% wild birds in its assemblage. At both high-status sites low numbers of wild mammals were recorded.

As noted in Chapter 4, there was little variation in the mortality profiles of cattle, sheep and pigs on early Saxon sites, with the majority of animals culled at prime meat age. Evidence for cattle body parts was abundant, and to present a clear picture of unusual sites, these have been separated from other sites where there was no evidence for the redistribution of carcass parts (Figure 5.3). At the majority of sites there was no evidence for redistribution, but at Baynard's Castle and Orton Hall Farm there was an abundance of cattle lower limbs and feet, while at Eye Kettleby more upper cattle limb bones were recorded than may be expected if whole carcasses were present, and there was an over-abundance of mandibles at Pennyland and Oxford Science Park (cattle); Redcastle Furze (sheep and cattle); Poundbury (cattle, sheep and pig); and Orton Hall Farm and Eye Kettleby (pig). Although raw data were not available, animals at the former Roman towns of Wroxeter and Leicester were generally butchered on site, with no obvious over- or under-representation in carcass parts (Browning 2011; Hammon 2005).

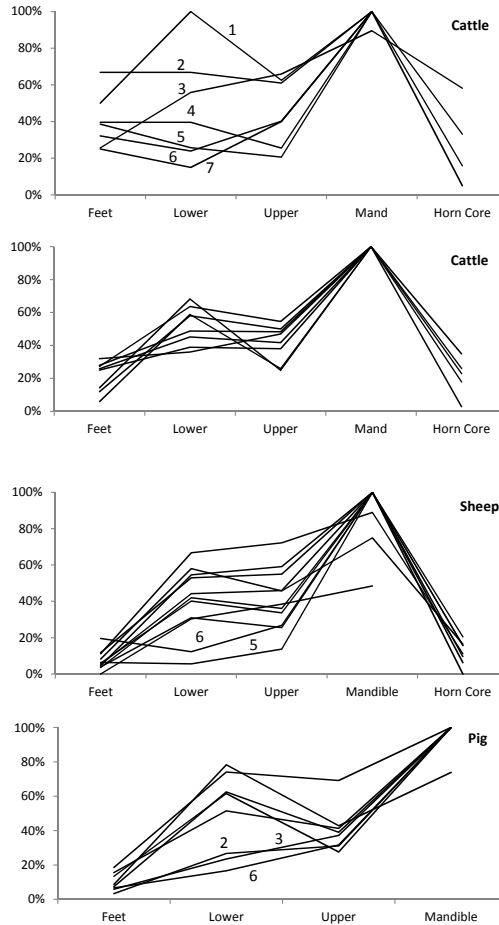


Figure 5.3: Early Saxon body part representation. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Baynard's Castle; 2= Orton Hall Farm; 3= Eye Kettleby; 4= Pennyland; 5= Redcastle Furze; 6= Poundbury; 7= Oxford Science Park

5.3 Middle Saxon Phase

In all regions there were groupings in the proportions of major domesticates between rural settlements and all other site types (Figures 5.4-5.7). Within East Anglia and Mercia sheep and cattle were predominant on rural sites (c.35-49%), but on the hills of Northumbria these site types were typified by greater numbers of sheep (c. 34% cattle and 58% sheep). While in Wessex greater numbers of sheep and pigs (c.40% and 20% respectively) were observed on rural sites, contrasting strongly with the predominance of cattle on *wics* and other trading sites (c.60% *wics*; c.40% rural). Other regions where *wics* were present (Northumbria, and East Anglia), as well as the early burh at Chester in Mercia also record greater numbers of cattle and pigs compared to rural settlements.

High-status sites were rare, and in the East Anglian region had high numbers of pig and cattle. The same was true of one of the Mercian high-status sites, Middleton Stoney, Oxfordshire, although at the second, Copeshill Rd, Lower Slaughter on the chalk of Gloucestershire, sheep predominate which may have more to do with an environment best suited to sheep husbandry. In Wessex, the high-status site at Ramsbury, Wiltshire pigs were also recorded in high numbers. Ecclesiastical settlements were also scarce, Aelfric's Abbey in the Mercian region had high numbers of sheep and pigs, and sites related to Hartlepool Monastery and Wearmouth and Jarrow in Northumbria recorded greater numbers of pigs than other site types in the region, but similar proportions of sheep to contemporary rural sites.

While wild species were less likely to be recorded at rural sites (Figures 5.8-5.11), domestic birds were generally present in low numbers at most rural settlements. Exceptions to this apply, as noted at the rural sites of The Orchard, Walton Rd in Mercia where several fragments of hare and red deer bones were found, and Cadley Rd and Collingbourne, Wessex, where a high proportion of red and roe deer were recorded. Greater numbers of minor species were observed on high-status settlements and some *wic* and trading sites in East Anglia, Mercia and Wessex. Of note are the *wic* sites of Fishergate and Blue Bridge Lane in York, Northumbria; high-status sites of Ramsbury in Wessex, Wicken Bonhunt and Caister-on-Sea in East Anglia and Flixborough in Mercia and the ecclesiastical sites Church Close, Hartlepool in Northumbria and Aelfric's Abbey in Mercia.

Examination of mortality profiles by region does little to elucidate trends, due to the poor number of high-status and rural sites in the data set. However, the evidence for younger cattle at *wics*, and older animals from rural and high-status sites observed in Chapter 4.2 was consistent in all areas where data exist, and indicates the provision of younger animals to *wics*, while older animals were kept back for breeding, traction or milking on producer sites. The extent to which cattle were 'produced' by those living within *wics*, or were brought in from surrounding areas is extremely difficult to define, and the best method of realising sites where animals were bred available for this study, is through the presence of neonatal fatalities (Table 5.3). It is likely that such evidence is under-represented in the faunal record, as the porosity, lower density and small size of such young bones make them prone to poor recovery and preservation (Lyman 1994, 239; Maltby 1985, 36). Nonetheless, at many sites the presence of calves at tooth wear stage A (i.e. newborn) was not recorded at all, only observed at the rural domestic site of The South Manor Area, Wharram. Young animals at wear stages A and B were recorded on most site types.

A more varied picture exists for the sheep mortality data, where older animals were recorded on rural sites, and younger animals at *wics* and ecclesiastical sites in Northumbria and Mercia (Figure 5.12). There was no apparent difference observed between sites in Wessex, while in East Anglia sheep were younger at the rural site of Hay Green and High-Status site of Brandon, but older at Ipswich and Wicken Bonhunt. Two of the three sites with evidence for neonatal animals were rural in nature, as well as a relatively high proportion of birthing casualties from

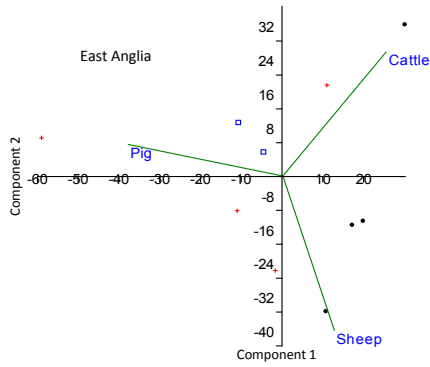


Figure 5.4: Principal component analysis of the relative proportions of cattle, sheep and pig for East Anglia in the middle Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; wicl trading site = open square; ecclesiastical= open circle

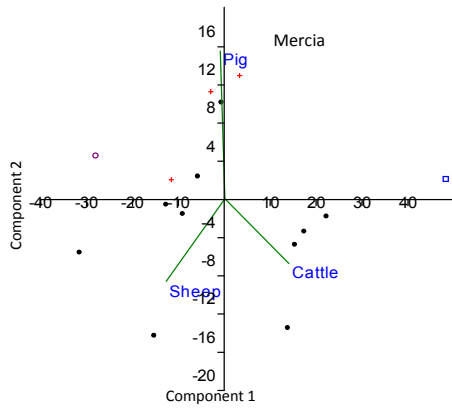


Figure 5.5: Principal component analysis of the relative proportions of cattle, sheep and pig for Mercia in the middle Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; wicl trading site = open square; ecclesiastical= open circle

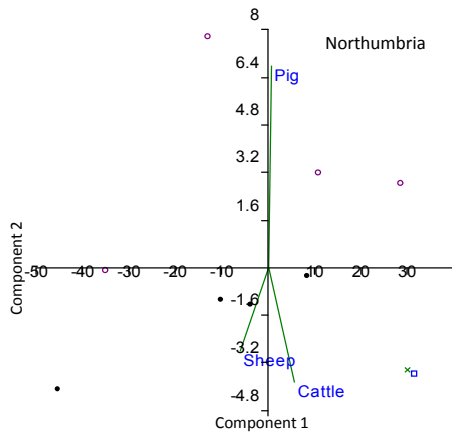


Figure 5.6: Principal component analysis of the relative proportions of cattle, sheep and pig for Northumbria in the middle Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; wicl trading site = open square; ecclesiastical= open circle

the ecclesiastical site of Hartlepool monastery (Table 5.3). Sheep that died prior to reaching 6 months were recorded at a greater range of sites, however, and it may be that these animals were bred within various environments. It is notable that the greatest number of deaths likely to be lambing-related were again at ecclesiastical (Aelfric's Abbey and Hartlepool Monastery) and rural (South Manor Area) sites.

As already noted, pigs were generally culled before reaching maturity, and sample sizes were not big enough when broken down into region and site type for any differences in mortality to be observed. The only sites where neonatal

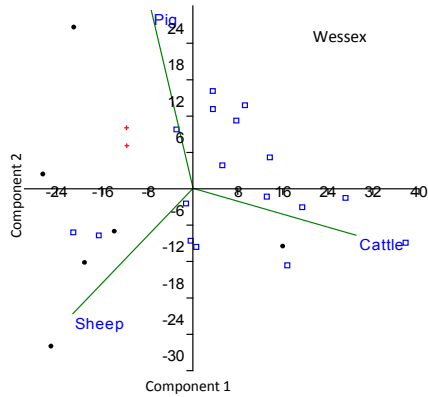


Figure 5.7: Principal component analysis of the relative proportions of cattle, sheep and pig for Wessex in the middle Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; wic/ trading site = open square; ecclesiastical= open circle

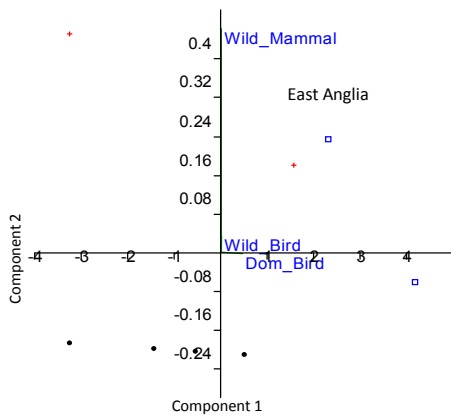


Figure 5.8: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for East Anglia in the middle Saxon phase where all three groups were recorded. Outliers not shown are: Caister on Sea (db 13.88; wm 3.06); and Wicken Bonhunt (db 17.1). Rural= filled circles; high-status= cross; industrial= tilted cross; wic/ trading site = open square; ecclesiastical= open circle

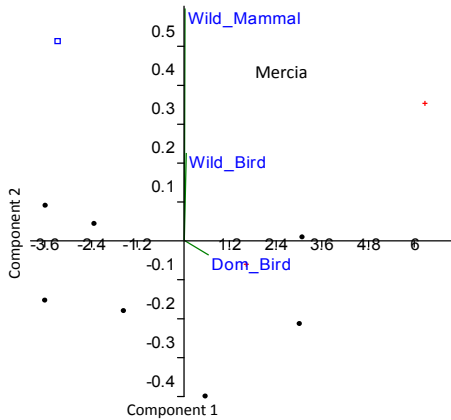


Figure 5.9: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for Mercia in the middle Saxon phase where all three groups were recorded. Outliers not shown are: Flixborough (db 39.4; wb 8.16); Aelfric's Abbey (db 21.6); The Orchard, Walton Rd (wm 1.95). Rural= filled circles; high-status= cross; industrial= tilted cross; wic/ trading site = open square; ecclesiastical= open circle

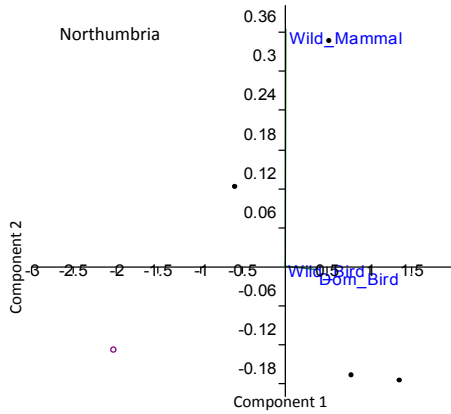


Figure 5.10: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for Northumbria in the middle Saxon phase where all three groups were recorded. Outliers not shown are: Fishergate (wm 10.8); Blue Bridge Lane (db 23.7); and Church Close, Hartlepool (db 23.5). Rural= filled circles; high-status= cross; industrial= tilted cross; wic/ trading site = open square; ecclesiastical= open circle

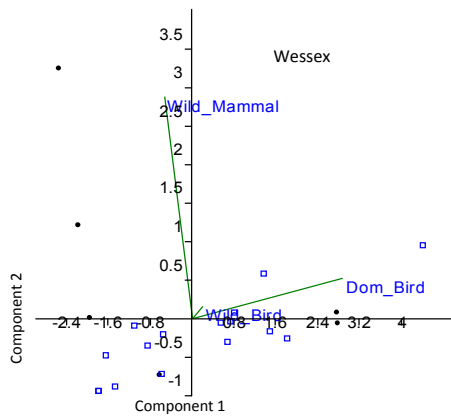


Figure 5.11: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for Wessex in the middle Saxon phase where all three groups were recorded. Outliers not shown are: Collingbourne (wm 4.6), Ramsbury (WM 7.4%) and Church Lane, Canterbury (wm 4.4). Rural= filled circles; high-status= cross; industrial= tilted cross; wic/ trading site = open square; ecclesiastical= open circle

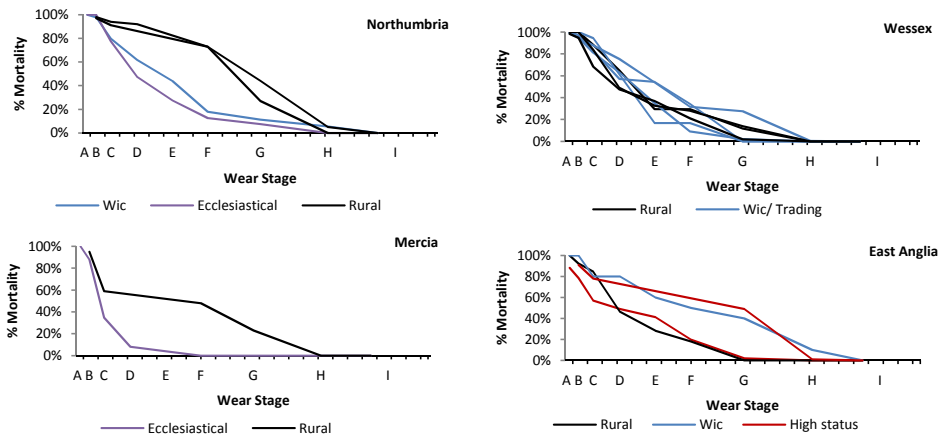
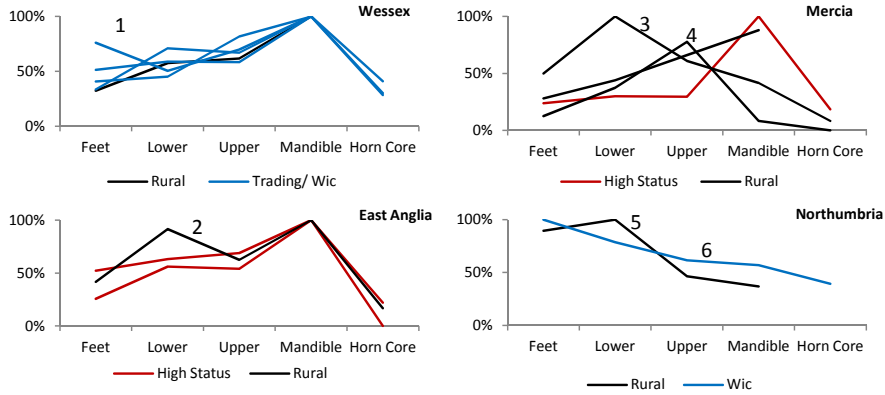


Figure 5.12: Sheep mortality profiles from middle Saxon sites by region. Wear stages after Hambleton (1999)



5.13: Middle Saxon cattle body part representation by site type and region. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Friend's Provident; 2= Rose Hall Farm; 3= Walton Lodge; 4= St Peter's Rd; 5= Sites 94 and 95; 6= Fishergate

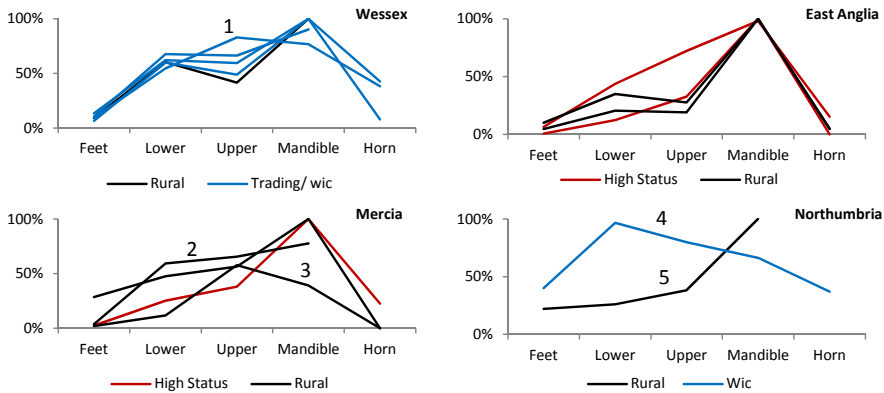


Figure 5.14: Middle Saxon sheep body part representation by site type and region. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Melbourne St; 2= Marefair; 3= St Peter's Rd; 4= Fishergate; 5= Sites 94 and 95

deaths were observed were at the temporary site of Lake End Rd and Melbourne St, Hamwic. Although the mortality profile for Fishergate, York is typical of a site where pigs were bred for sale for meat (Chapter 4.4). When the early mortalities are taken into consideration, the greatest number of deaths in the first six months come from rural sites (Brandon and St Peters Rd, Northampton) as well as Ipswich (Table 5.3).

Slightly more complex evidence for the movement of animals between sites comes from the body part distributions. Both cattle and sheep horn cores were recorded in greatest proportions from wics (Figures 5.13 and 5.14) suggesting some form of deliberate supply. The majority of sites, however, indicated the presence of complete carcasses, although there were a few sites with higher than normal numbers of cattle phalanges and metapodials and sheep and pig metapodials

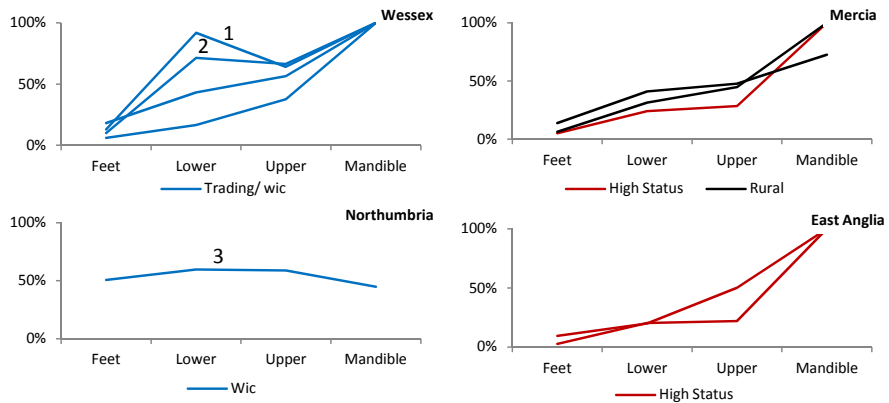


Figure 5.15: Middle Saxon pig body part representation by site type and region. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Peabody Site; 2= Melbourne St; 3= Fishergate

(Peabody Site, London; Friend's Provident, Southampton; Fishergate, York and Rose Hall Farm, Norfolk) (Figures 5.13-5.15). These elements may indicate the presence of skin-processing, bone working or the redistribution of joints of meat. This latter phenomenon is particularly likely when combined with a relative absence of cattle heads at rural sites (as at Walton Lodge, Aylesbury; and Sites 94 and 95, Wharram), which were generally recorded in greater numbers at urban and high-status sites. Conversely, an abundance of limb bones combined with a dearth of heads may be indicative of the redistribution of joints of meat and was observed within *wics* at Melbourne St, Southampton (sheep); Fishergate, York (sheep and pigs); and the Northampton sites of Marefair (sheep) and St Peter's Rd (cattle and sheep).

5.4 Late Saxon Phase

There was more diversity in the proportion of main domestic species recorded from Danish towns (Figure 5.16) than observed at Mercian and Wessex sites (Figures 5.17 and 5.18). Pigs were recorded in high numbers at the majority of high-status sites from all regions, while sheep were recorded in the highest proportions at many rural sites in the Danelaw and Wessex, unfortunately only one rural site exists for Mercia, at which there was an unusually high proportion of cattle (67%), which makes the discernment of trends for this region impossible. Wild mammals and birds were uncommon on rural sites from all regions (Figures 5.19 to 5.21), and while these animals, particularly wild and domestic birds, were more common at urban sites, it was at the high-status and ecclesiastical settlements that they were recorded in greatest numbers.

When broken down by region and site type sample sizes for cattle mortality profiles are poor. Data from sites in the Danelaw are shown in Figure 5.22, where it can be seen that results were varied for urban sites, although most animals were culled at prime meat age, with older animals present at Flaxengate and Coppergate, York, and younger animals at the industrial Site 1092, Thetford. Only four sites

| Species | Site | Type | Sample | % Stage A | % Stage A+B |
|---------------|-----------------------------|-----------------------|------------|-----------|-------------|
| Cattle | Brandon | High Status | 102 | | 1% |
| | The South Manor Area | Rural | 85 | 1% | 2% |
| | Wicken Bonhunt | Rural | 104 | | 1% |
| | Lake End Road | Temporary settlement | 117 | 0% | 10% |
| | Fishergate | Trading site | 21 | 0% | 10% |
| | Melbourne St | Wic | 392 | | 6% |
| Sheep | Chalkpit Field North | | 8 | 0% | 3% |
| | Aelfric's Abbey | Ecclesiastical | 98 | 0% | 12% |
| | Hartlepool Monastery | Ecclesiastical | 51 | 6% | 11% |
| | Brandon | High Status | 100 | | 3% |
| | National Portrait Gallery | Rural | 57 | 1% | 3% |
| | Sites 94 and 95 | Rural | 39 | 0% | 3% |
| | The South Manor Area | Rural | 247 | 3% | 13% |
| | Wicken Bonhunt | Rural | 100 | | 9% |
| | Lake End Road | Temporary settlement | 89 | 0% | 2% |
| | Fishergate | Wic | 35 | 0% | 1% |
| | Ipswich | Wic | 97 | | 5% |
| | Melbourne St | Wic | 378 | | 5% |
| | Friend's Provident | Wic | 63 | | 1% |
| Pig | Aelfric's Abbey | Ecclesiastical | 121 | | 7% |
| | Brandon | High Status | 90 | | 31% |
| | St Peters Rd | Rural | 9 | | 22% |
| | The South Manor Area | Rural | 74 | 0% | 3% |
| | Wicken Bonhunt | Rural | 301 | | 5% |
| | Lake End Road | Temporary settlement | 136 | 1% | 5% |
| | Ipswich | Wic | 69 | | 17% |
| | Melbourne St | Wic | 355 | 2% | 2% |

Table 5.3: Middle Saxon sites with evidence for perinatal or neonatal animals (those at mandible wear stage A), and those that died before reaching Stage B (c.6-8 months). After Hambleton, 1999. Where no % is given at wear stage A, this was not recorded in the original report

were available for Wessex and Mercia, three of which were ecclesiastical and one urban, and at all of which cattle were culled at prime meat age. Sheep were slightly better represented in the ageing data (Figure 5.23), although there was again a notable absence of rural sites that is unfortunate, as it represents a crucial piece of the jigsaw that is missing. However, sheep at high-status and ecclesiastical sites were often culled at relatively young ages, while those from burhs and Danish Towns were more likely to be older, although the majority still died at prime meat age. Exceptions to this came from the Mercian site at Hinxey Hall where a number of very young sheep were present, and Bury Rd, Thetford in the Danelaw at which the majority were elderly, indicative of animals important for secondary products rather than meat.

Direct evidence for neonatal calves, lambs and piglets came largely from ecclesiastical sites (Table 5.4), the industrial site of Flaxengate, Lincoln and the rural South Manor Area, Wharram. Mortality data likely to be from birthing casualties in the first 8 months were observed at a greater range of sites, although proportions of cattle casualties remained greatest at ecclesiastical sites with others recorded at industrial sites of Coppergate and Site 1092, Thetford. Young lambs and piglets were also notable at industrial sites, and their presence may be closely linked to the production of vellum, and, if animals were not bred at these sites, suggests the deliberate provisioning of breeding casualties or excess stock from producer sites, that may explain the dearth of such bones from rural settlements compared to those in the middle Saxon phase. Alternatively, the scarcity of neonatal remains on rural sites may reflect disposal practices affecting the survival of rural assemblages such as the deposition of waste on middens, and subsequent scattering of smaller bones as manure.

Evidence for the redistribution of body parts was abundant at urban sites, leading to a confused graphical representation. Site types have therefore been separated to make analysis easier. Few Mercian sites were available for comparison and are not illustrated. In general, both cattle and sheep horn cores were best represented at industrial and high-status sites in the Danelaw (Figures 5.24 and 5.26), and urban sites in Wessex (Figures 5.25 and 5.27), particularly Portchester Castle and a number of Winchester sites. Cattle horn cores were also recorded in high numbers at high-status sites in Wessex. This may be coupled with an over-representation of cattle metapodials at high-status (North Elmham Park, Goltho and Castle Mall) and industrial (St James's Square and Site 1092) sites in both the Danelaw and Wessex, and pig metapodials at the high-status site of Castle Mall in the Danelaw and feet and metapodials at the ecclesiastical site of Bishopstone in Wessex (Figure 5.28). A number of urban sites also recorded a high number of sheep metapodials, particularly Flaxengate, Lincoln and Lincoln in the Danelaw, and the Winchester sites of Staple Gardens and Western Suburbs in Wessex. The over-representation of lower limb bones may imply skin-processing or bone working, or the redistribution of joints of meat elsewhere, as was likely the case at the only rural site, Langham Rd, Northamptonshire. Correspondingly, a number of urban sites such as Marefair, Northampton; Lincoln; and Danesgate, Lincoln in the Danelaw and Chester Rd, Staple Gardens and 27, Jewry St, Winchester in Wessex, recorded an over-representation of cattle upper limb bones, which also implies movement of meat between sites, either producer to consumer, or from butcher to household within the urban context. With noted exceptions, sheep and pig bones from most urban sites followed patterns that may be expected if complete carcasses were processed on site, which may have been more practicable with smaller carcasses. Meat-bearing cattle, sheep and pig bones from high-status (Cheddar Palaces and Faccombe Netherton) and ecclesiastical (Bishopstone) sites in Wessex were also over-represented, and may indicate the provisioning of such sites with joints of meat, or the butchery of animals away from the site, a practice not apparent in data from the Danelaw.

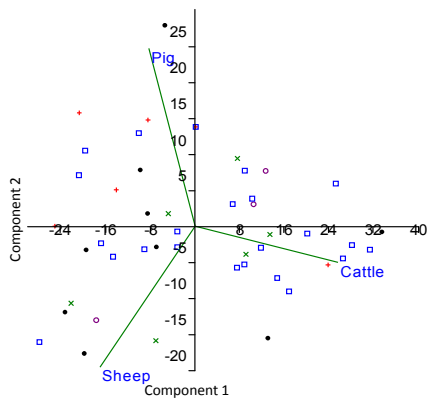


Figure 5.16: Principal Component Analysis of the relative proportions of cattle, sheep and pig for the Danelaw in the late Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; burh/ Danish town = open square; ecclesiastical= open circle

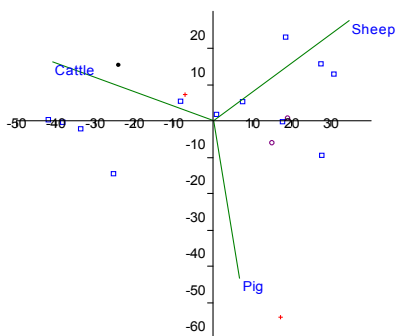


Figure 5.17: Principal Component Analysis of the relative proportions of cattle, sheep and pig for Mercia in the late Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; burh/ Danish town = open square; ecclesiastical= open circle

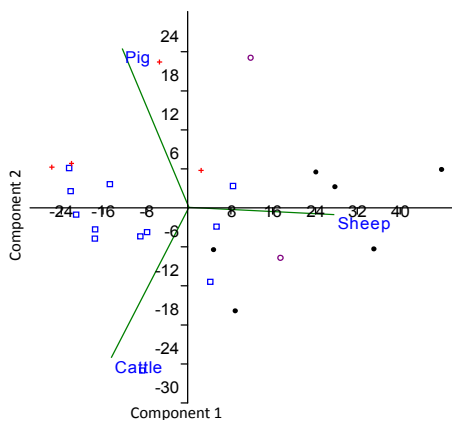


Figure 5.18: Principal Component Analysis of the relative proportions of cattle, sheep and pig for Wessex in the late Saxon phase. Rural= filled circles; high-status= cross; industrial= tilted cross; burh/ Danish town = open square; ecclesiastical= open circle

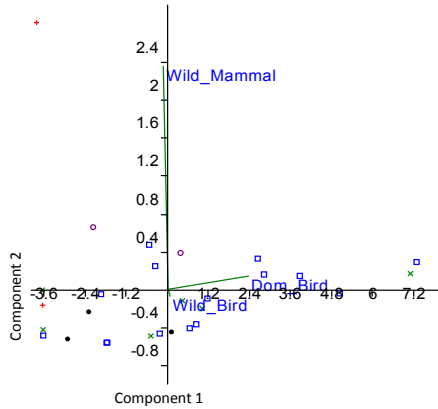


Figure 5.19: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for the Danelaw in the late Saxon phase where all three groups were recorded. Outliers not shown are: Goltho (wm14.4); Wearmouth (db 22.4); Knockers Site (db 17.6); Castle Mall (db22.8); and Flixborough (db24.5). Rural= filled circles; high-status= cross; industrial= tilted cross; burh/ Danish town = open square; ecclesiastical= open circle

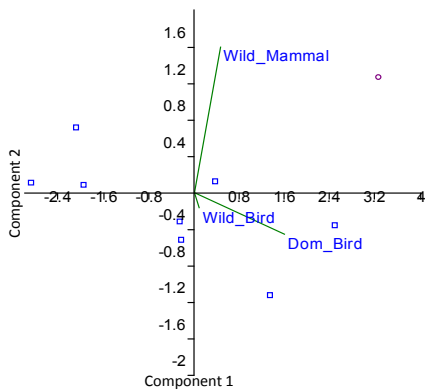


Figure 5.20: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for Mercia in the late Saxon phase where all three groups were recorded. Outliers not shown are: St Ebbes (db 19.3), Hinxe Hall (db 19.2, wb 6.9), and All Saints (db 9.7), all in oxford; and Eynsham Abbey (wm 7.0). Rural= filled circles; high-status= cross; industrial= tilted cross; burh/ Danish town = open square; ecclesiastical= open circle

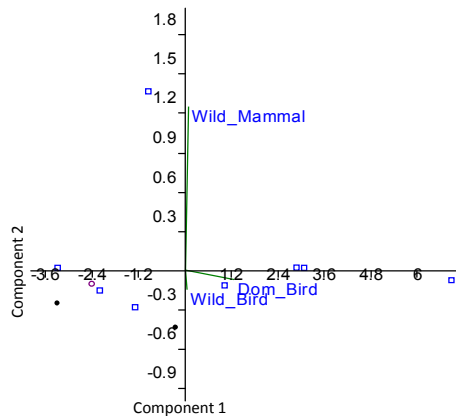


Figure 5.21: Relative proportions of the minor species (as a % of the total number of cattle, sheep and pig bones) for Wessex in the late Saxon phase where all three groups were recorded. Outliers not shown are: Portchester Castle (wm 7.9; db 73.9; wb 20.1); Bishopstone (db 16.3); Faccombe Netherton (wm 9.0). Rural= filled circles; high-status= cross; industrial= tilted cross; burh/ Danish town = open square; ecclesiastical= open circle

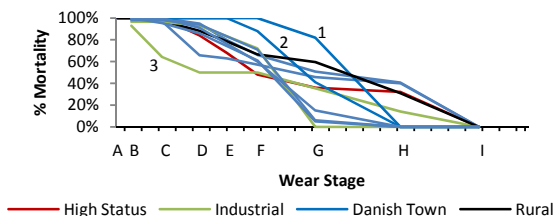


Figure 5.22: Cattle mortality profiles from late Saxon sites in the Danelaw. Wear stages after Hambleton (1999). 1= Flaxengate, Lincoln; 2= Coppergate, York; 3= Site 1092, Thetford

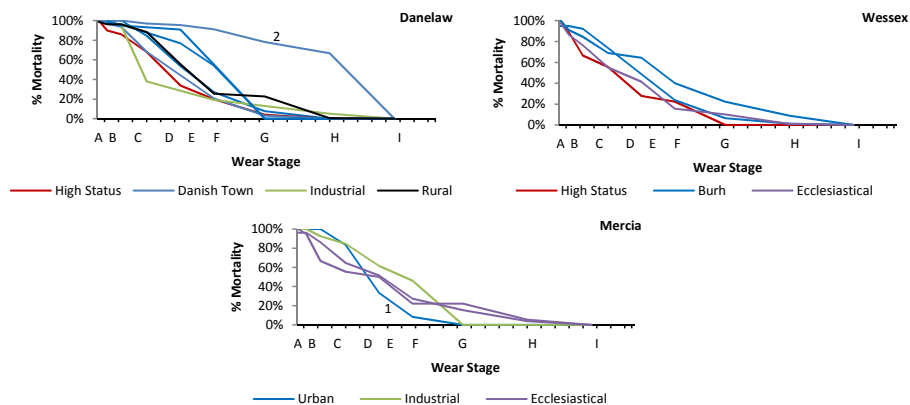


Figure 5.23: Sheep mortality profiles from late Saxon sites by region. Wear stages after Hambleton (1999). 1= Hinxey Hall, Oxford; 2= Bury Rd, Thetford

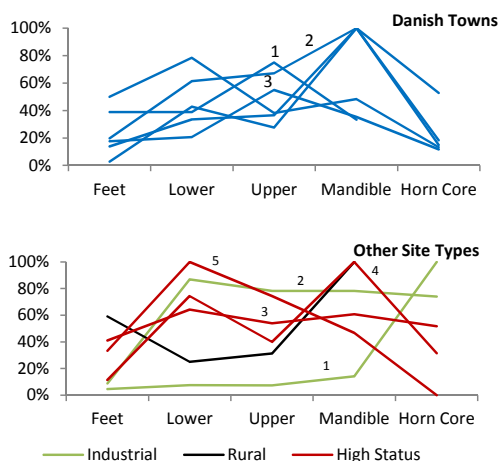


Figure 5.24: Late Saxon cattle body part representation by site type from the Danelaw. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Marefair, Northampton; 2= Lincoln; 3= Danesgate, Lincoln; 4= Site 1092, Thetford; 5= St James Square, Northampton; 6= Castle Mall, Norwich; 7= Goltho, Lincolnshire; 8= North Elmham Park, Norfolk

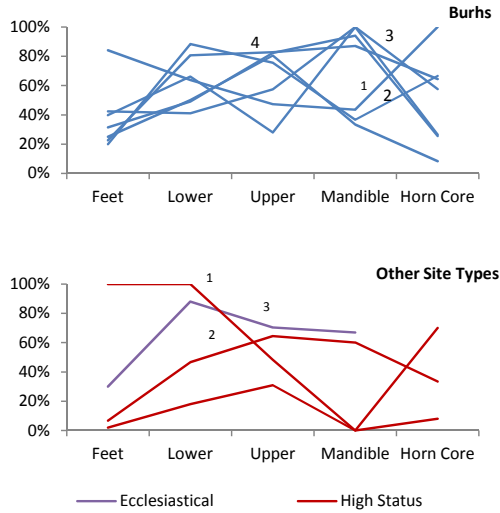


Figure 5.25: Late Saxon cattle body part representation by site type from Wessex. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Portchester Castle; 2= Staple Gardens, 3= Western Suburbs, Winchester and 4= Chester Rd, all in Winchester; 5= Cheddar Palaces, Somerset; 6= Facombe Netherton, Hampshire; 7= Bishopstone, Sussex

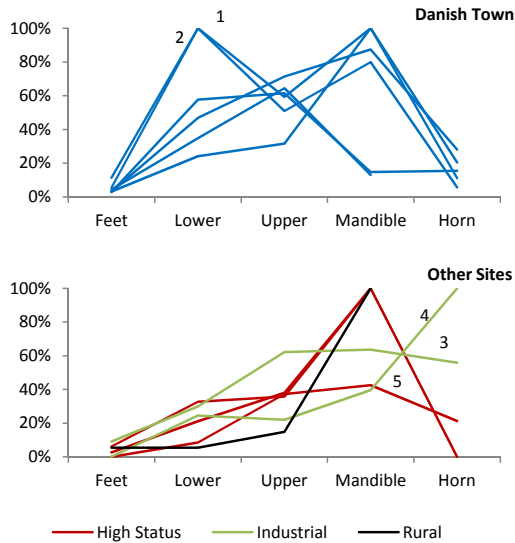


Figure 5.26: Late Saxon sheep body part representation by site type from the Danelaw. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Flaxengate, Lincoln; 2= Lincoln; 3= Site 1092, Thetford; 4= St James Square, Northampton; 5= Goltho, Lincolnshire

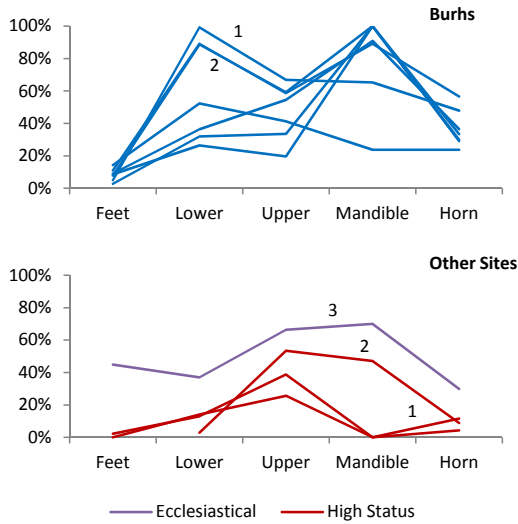


Figure 5.27: Late Saxon sheep body part representation by site type from Wessex. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Staple Gardens and 2= Western Suburbs, Winchester; 3= Bishopstone, Sussex; 4= Faccombe Netherton; 5= Cheddar Palaces (two phases)

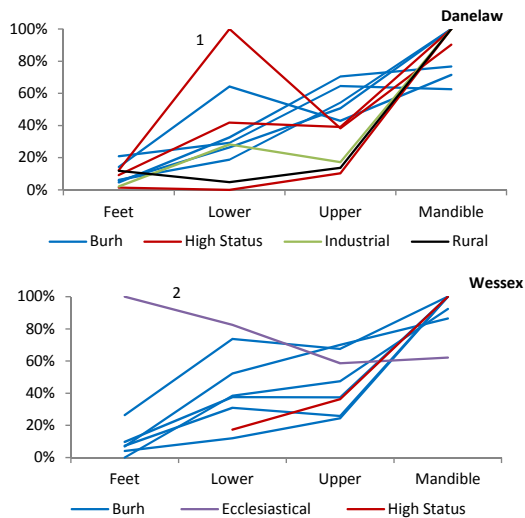


Figure 5.28: Late Saxon pig body part representation by site type and region. Feet= phalanges; lower legs= metapodials; upper legs= scapula, humerus, radius, pelvis, femur, tibia. Sites included with sample size >50 NISP. 1= Castle Mall, Norwich; 2= Bishopstone, Sussex

| Species | Site | Type | Sample | % Stage A | % Stage A+B |
|---------------|----------------------|----------------|--------|-----------|-------------|
| Cattle | Aelfric's Abbey d | Ecclesiastical | 10 | 10% | 10% |
| | Bishopstone | Ecclesiastical | 22 | 0% | 5% |
| | Aelfric's Abbey c | Ecclesiastical | 104 | | 10% |
| | Coppergate d | Industrial | 52 | | 2% |
| | Site 1092 | Industrial | 14 | | 7% |
| | Coppergate c | Industrial | 29 | | 3% |
| Sheep | Chalkpit Field North | | 53 | 0% | 4% |
| | The South Manor Area | Rural | 164 | 1% | 3% |
| | Aelfric's Abbey c | Ecclesiastical | 124 | 4% | 4% |
| | Aelfric's Abbey d | Ecclesiastical | 18 | 0% | 6% |
| | Bishopstone | Ecclesiastical | 89 | 2% | 13% |
| | Castle Mall | High Status | 50 | 0% | 10% |
| | Facombe Netherton | High Status | 18 | 0% | 11% |
| | Portchester Castle | Burh | 45 | 0% | 9% |
| | Brandon Rd | Danish Town | 63 | 0% | 3% |
| | Danesgate | Danish Town | 7 | 0% | 14% |
| | Flaxengate | Industrial | 57 | 2% | 2% |
| Pig | Chalkpit Field North | | 28 | 0% | 4% |
| | Facombe Netherton | High Status | 23 | | 4% |
| | Flaxengate | Industrial | 38 | 8% | 8% |
| | Site 1092 | Industrial | 31 | | 3% |
| | Bishopstone | Ecclesiastical | 46 | 7% | 20% |
| | The South Manor Area | Rural | 35 | 0% | 6% |

Table 5.4: Late Saxon sites with evidence for perinatal or neonatal animals (those at mandible wear stage A), and those that died before reaching Stage B (c.6-8 months). After Hambleton, 1999. Where no % is given at wear stage A, this was not recorded in the original report

5.5 Producers and Consumers?

Although there were clear preferences for the consumption of particular species between site types in the early Saxon phase, there was no evidence for provisioning strategies, given the limited range of sites. Although the majority of sites indicated a self-sufficient economy, where inhabitants produced and consumed animals on site, there were a number of notable exceptions. One of the major indicators of status in this phase would have been through the sharing of food (Sykes 2010, 188). The absence of different site types makes clarification of this difficult, but high numbers of cattle lower limb bones at Baynard's Castle and Orton Hall Farm may imply the deposition of lower-status food refuse, or those from a butchery deposit. The predominance of heads at Oxford Science Park, Poundbury, Redcastle Furze and Pennyland may also be significant. It is probable that animal skulls were symbolic in the early Saxon phase, given the deposit of skulls at high-status

Yeavinger, Northumbria (Higgs and Jarman 1977), and their presence in a number of special deposits of the period (Hamerow 2006), which suggests that their purpose at these sites was more than just functional.

There were a number of indicators for the presence of both consumer and producer sites in the Middle Saxon phase. Greater numbers of cattle on *wics* compared to those from rural settlements are typical of a demand for meat from a concentrated population, and was noted in all regions where comparable urban and rural sites were recorded: i.e. York, Ipswich, London, Canterbury, and Hamwic. This implies either a widespread demand for the provision of cattle to *wics*, or a deliberate supply from rural sites. The provisioning of specific animals to *wics* may be further clarified using mortality data: at nearly all *wic* sites cattle and sheep were at optimal ages for meat production, yet data from rural areas were more indicative of a mixed regime, with both younger and older animals present. When taken together, this phenomenon has been described by Maltby (1994, 90), Wapnish and Hesse (1988, 84) and Crabtree (1990b, 162) as the selection of particular animals for provision to towns.

In both sheep and cattle assemblages, most direct evidence for neonatal animals came from rural and ecclesiastical sites, indicative of their role as producers of animals. This implies either the breeding of such animals at both site types, or their supply for use in the production of vellum and parchment by the ecclesiastical community. Young animals were also recorded at a number of *wics*, and may point to the presence of farms or smallholdings on the edges of these proto-urban settlements. 'Urban' farms have been hypothesised on the outskirts of Lundenwic (Blackmore 2002, 3290-291) in the earlier part of the middle Saxon phase, although no such settlements have been described at Hamwic. It is also likely that pigs and chickens were kept within *wics*. The absence of breeding mortalities from all but one high-status site (Brandon) is notable, and indicates the acquisition of animals at such settlements by other means, such as tax or render, implying their role as net consumers.

Another criteria for the classification of *wics* as consumers comes from the distribution of body parts, particularly the prevalence of horn cores recovered at urban sites. This suggests that there was a trade in horn and/ or skins as a raw material from rural areas – something which has implications for the presence of an artisan population. Evidence for the movement of joints of meat away from rural and high-status sites also implies a demand to supply *wics* with additional joints of meat. These trends will be investigated further in Chapter 6.

In the late Saxon phase there was evidence for the deliberate provisioning of burhs and Danish towns in their role as consumers of beef and pork, while the inhabitants of most rural sites ate more mutton. It is likely that sheep and cattle were raised on rural sites, then cattle marketed to towns as animals that would give best returns per head. While sheep and pigs in the urban context were more likely to be culled on a household level, the larger carcasses of cattle and more mixed distribution of their body parts between urban sites suggests that specialist butchers in these early towns were required for the redistribution of larger animals.

Greater social differentiation was also observed in this phase. The presence of minor species in greatest numbers on elite sites in all regions reflects the use of hunting to exhibit status. There was also a considerable change in the provisioning of elite sites in this phase. The far lower proportions of heads at these sites contrasts with evidence from preceding phases, implying joints of meat were bought in – further setting the elite apart from lower-status sites in both rural and urban contexts. Within burhs, a greater variety of species and body parts on certain sites implies greater social standing than other households (e.g. Hinxey Hall, Oxford where considerable numbers of wild and domestic birds were found; Marefair, Northampton and 27 Jewry St, Winchester where a predominance of meat-bearing bones were recorded). The provisioning of ecclesiastical, industrial and burh sites with raw materials for craft and industrial processing was also abundant, from horn and bone working to vellum production.

The recovery of pigs in greater proportions on particular sites (urban, ecclesiastical and high-status settlements), and their relative paucity on rural settlements has also been described in Roman contexts (Maltby 1994, 97). Possible reasons for this were described as: specialist breeders on more ‘romanised’ rural sites, such as villas; the importation of cuts of meat such as hams; or the rearing of pigs in towns, particularly to satisfy the Roman urban demand for pork. The large scale trade in particular cuts of meat at late Saxon sites can be ruled out, since the presence of complete pig carcasses at most sites in all phases indicates that animals were slaughtered on site, or bought in as complete carcasses. However, the other two suggestions are equally reasonable – pigs could have been supplied to order, specifically from rural sites, or they could have been reared within towns themselves, illustrated by evidence for very young piglets from such sites.

5.6 Distribution Networks

As Costin (1991, 1) notes, “all economic systems have three components: production, distribution, and consumption”, and the provisioning of a site with meat, meat products or raw materials is no exception. The existence of likely producer and consumer sites has been identified above. This section aims to discern how such components of the supply chain worked economically. Net producer or net consumer sites may be the most straightforward to distinguish, but distributive sites are harder to recognise, yet it is these that will aid in the understanding of how animals, meat and raw materials moved from origin to end user. As summarised in Table 5.2, distributive sites may incorporate any aspect of production or consumer site. It may be that clues to their presence will only become clear when comparing likely foodways of consumer and producer sites between phases.

The economics of Saxon England have been described in detail in Chapter 1.2, but to reiterate for the benefit of the following discussion: redistribution networks are widely described during the middle Saxon period, whether through royal villas, or estate centres (Brookes 2007, 27; Dobney *et al.* 2007, 237; Haslam 1985, 13). Others suggest that food rents were taken from the producer sites directly to *wics* (consumer sites), to be redistributed at the point of use (Hodges 1989,

136; Rackham 1994, 127). In the late Saxon phase, redistribution is seen as taking place at urban and rural markets associated with burhs and later towns (Haslam 1985, 22, 48; Hodges 1989, 189; Hooke 1998, 203), but also within their rural hinterland (Vince 1994, 117). It is possible that estate centres continued this role into the late Saxon phase (e.g. Astill 1991, 109; Perring 2002, 27). So, how well do the archaeozoological data translate into evidence for redistribution sites? It seems likely from the analysis so far, that there was no formal distribution network in the early Saxon phase, with most sites being largely self-sufficient. Therefore, the following discussion will be concerned with strategies apparent in the middle and late Saxon phases.

Wics, Estate Centres and Payments in Kind

It has been established that *wics* exhibit properties consistent with net consumer sites, while rural sites are more typical of net producers. The next stage of analysis is therefore to refine this, to help understand the nature of distribution from producer to consumer at a time when documentary evidence points to the payment of tax from rural sites to the local King as food renders through estate centres.

Studies of the animal bones from Hamwic (Bourdillon 1980b) and York (O'Connor 1991a) and secondary overviews (Hamerow 2007; O'Connor 2001b) have specifically considered the provisioning of *wics*. Their findings are similar and indicate that *wics* were supplied with complete animals from a narrow food base, provided by a "maintaining institution from resources that that institution generated or procured" (O'Connor 2001b, 60). This implies that links will exist between both the *wic* and the 'maintaining institution', or high-status sites, as estate centres are described here.

The wider parameters of this study have enabled a comparison of bones from a broad range of sites, to allow relationships between them to be observed, and the extent to which they reflect the criteria for redistributive networks. The results of this analysis indicate that some similarities do exist between elite and urban sites. Higher numbers of cattle, pigs and minor species may indicate a relationship between the two site types – and given the historical background to the provisioning of *wics*, it is tempting to suggest that elite sites were receiving cattle and pigs as tribute from farms within their region, and then redistributing them to the inhabitants of trading centres as a controlled resource. Consistent with this is a discrepancy between the documented records of large herds of pigs kept in rural areas in the middle Saxon phase (Albarella 2006, 77) and the relatively small proportions of pigs recovered from related sites (Clutton-Brock 1976, 374). It is possible that pigs were bred on rural sites specifically to supply high-status estate centres, and thus not consumed locally.

Low species diversity on *wics* is generally regarded as being indicative of a redistribution network, where the occupants did not have the resources or opportunity to demand specific food types or to procure it for themselves, instead being dependant on the narrow range of species provided by estate centres (Hamerow 2007, 221; O'Connor 1992a, 105; O'Connor 2001b, 57). This is reflected to some extent in the proportions of domestic and wild birds and wild

mammals, which are consistently recovered in lower numbers from urban sites, and greater quantities from high-status and ecclesiastical sites. Comparably lower numbers of pigs and domestic birds on rural sites also signifies a genuinely sparse diet. Even the diets of those on high-status sites only included low numbers of wild species compared with medieval assemblages (Thomas 2007), and the consumption of game may have been only an occasional addition to the diet.

Ageing data were less distinct, and direct comparisons between high-status and urban sites could not be made because of the absence of data. However, cattle were generally oldest on rural and high-status sites and youngest at *wics*. This indicates a redistribution of specific stock, and retention of older animals by the rural population, implying that the demand for beef was sufficient for the best meat-producing animals to be redistributed. With the exception of the provisioning of urban sites with horn cores, there is little suggestion for the supply of particular carcass parts, indicating that animals were most often provided as complete carcasses, or (more likely) on the hoof. However, the more varied body part evidence from a few rural and high-status sites indicates that some redistribution of body parts did take place. Movement of joints of meat from the upper limbs may have taken place away from such sites, possibly to *wics*, where upper limb bones were sometimes recorded in slightly greater proportions than at other site types.

Drawing on the criteria for the presence of animal products through indirect distribution, there was evidence for a restriction in species diversity and the focus on particular age groups within consumer sites (Zeder 1991, 84). Links between *wics* and high-status settlements exist, that may illustrate the function of the latter as redistributive centres, taking food received as tax from the rural population to supply the newly formed *wics*, established and patronised by the elite as another origin of taxable income. However, there are significant gaps in the data that must be acknowledged. There is nothing in the data to suggest that animals were not marketed from rural sites directly to *wics* and other sites of an urban nature. The basis of previous arguments for the supply of food taxes to *wics* from estate centres came from the perceived lack of wild species and domestic birds on the former, compared to a relative abundance on the latter. This is not a particularly convincing argument as numbers of wild species are low even on the majority of high-status sites, and could simply reflect a genuinely restricted diet for the whole population, prior to the use of food for display of social status that was exemplified by the Normans (Sykes 2007b, 89). One final piece of data supporting the provisioning of *wics* directly from estate centres comes from the proportion of domestic birds recovered. Considerably more come from high-status and ecclesiastical sites compared to rural and urban settlements. Does this show that the elite were restricting access to chicken, goose and duck? If rural sites were free to supply urban sites, it would not be difficult for them to breed domestic birds to sell or for them to be reared in *wics*, as seems to be the case in the late Saxon phase.

It is most likely, given the documentary evidence and the results presented above, that estate centres would have collected food rents from rural sites, to be used by the elite both as food and as resources for the provisioning of *wics*.

Burhs, Danish Towns, Markets and Churches

Evidence for the late Saxon phase saw a change in the underlying economies of high-status and ecclesiastical sites which contained similar proportions of cattle and sheep to rural domestic sites, although with greater numbers of pigs; while urban sites continued to demand greater quantities of beef. It is this divergence in proportions of the major species from high-status and urban sites that implies a change in the provisioning of the latter – no longer dependant on the redistribution of goods from a controlling elite. The market economy of the time, based on coinage, allowed the inhabitants of burhs and Danish towns to dictate their own demands. This was further illustrated by the increase in domestic birds recovered in urban assemblages.

Also recorded was the movement of animal bones to, and within, the urban context, reflecting industrial processing such as butchery and skin processing, and craft working (bone, horn and antler-object manufacture). This important indicator of a market economy was exemplified by considerable evidence for redistribution of cattle carcass parts within towns, particularly when compared to those of sheep and pigs, which were less affected. It implies the presence of specialist butchers, responding to a demand for raw materials from one part of the population, and meat provided in a more easily handled portion from individual households.

The presence of ‘town fields’ (Haslam 1985, 20) surrounding burhs, must have been farmed, and it is likely that the resulting produce was used to supply the inhabitants – some of whom no doubt owned and farmed these lands themselves. Direct evidence for these sites was lacking, although there was some evidence for sheep (more common on producer sites) to be bred at the urban sites of Brandon Rd, Thetford and Danesgate, Lincoln.

Comparative Overview

By comparing trends in various aspects of archaeozoological data between differing site types, very different forces of distribution for the middle and late Saxon phases can be postulated. The inhabitants of *wics* were subject to restrictions in the food they had access to, particularly domestic birds and wild species, which is fully consistent with the redistribution of lands, goods and food that was at the heart of middle Saxon society (Scull 2011, 860; Sykes 2010, 189). With the move to an emphasis on money and land from the mid 9th century, differences in provisioning late Saxon sites reflect the change in socio-political economy, which led to certain parts of the population of burhs gaining greater autonomy and choice in the goods they procured.

Although Crabtree (in press) notes that there is little change in the provisioning of Ipswich from the middle Saxon to the 12th century, differences in the nature of other *wics*, and the burhs and towns of the late Saxon phase were visible in the faunal record. Both were dominated by cattle bones – a sensible provisioning strategy, allowing the delivery of a maximum amount of meat from the smallest number of animals, yet a change in other aspects of provisioning was also apparent.

The procurement of more varied species by the inhabitants of burhs and Danish towns, as well as the presence of animals from wider age ranges is consistent with a market economy, where those within urban sites were freely trading with those from the hinterland. As a result, rural producer sites began to provide meat from animals that were past their prime – they were more at liberty to dispose of their excess stock on the open market, rather than be restricted to a supply of animals at prime meat age. This coincided with increasing arable production, implying less land was available to produce large herds of young cattle, instead they were culled only after their use for milk and/ or traction.

Referring back to the questions posed at the outset, the above evidence for provisioning sites in Saxon England illustrates well the complexity of interactions existing between consumer and producer sites. Although there were exceptions to all patterns, and large variations in numbers, there was strong evidence for net producer (rural domestic and ecclesiastical sites, and probably high-status sites in the later phase) and net consumer (urban and middle Saxon high-status) sites. Although recent work has argued for more emphasis to be placed on the existence of a monetary-based economy in the middle Saxon phase (e.g. Naylor 2004, 15), the data regarding foodways during this phase indicate some control of animals and animal products sent to *wics*, most likely by redistribution from rural high-status sites in the hinterland. The data were more indicative of a market economy from the late Saxon phase, however, where producer sites in rural areas appear to be provisioning urban sites directly, the population of the latter showing preference for, and access to, a greater range of foods.

5.7 Ecclesiastical sites

One of the most poorly understood areas of Saxon archaeology is the role of ecclesiastical sites in the provisioning network. Trends have been elusive, as the number of ecclesiastical settlements represented archaeozoologically is small. Although the earliest churches were probably entirely under royal patronage (Blair 2005, 75), by the middle Saxon phase they have been described as occupying a similar role to high-status estate centres (Astill 1991, 103; Hodges 1988, 4), being instrumental in the move to surplus production (Naylor 2004, 133). However, there was a clear distinction in the species proportions recorded on early and middle Saxon ecclesiastical and high-status sites. In the early Saxon phase high-status sites were represented by high numbers of cattle, and the monasteries by sheep and pig. A distinction was also noted in the middle Saxon phase, where cattle and pigs predominate on high-status sites, and sheep on ecclesiastical settlements, although the exceedingly high number of pigs at St Albans Abbey and Wicken Bonhunt are anomalous, but indicative of a combination of environment; probable feasting at St Albans Abbey; and the trade of pork joints in the case of Wicken Bonhunt (Crabtree 2010, 130). Therefore, the provisioning of both ecclesiastical and high-status secular sites did differ and, although they were distinct from rural sites, there was evidence that ecclesiastical sites occupied a different role to secular

estate centres. The presence of fairly high numbers of neonatal animals at many ecclesiastical sites in both the middle and late Saxon phases (Tables 5.3 and 5.4) is ambiguous. While it suggests that they were sites where animals were bred and raised, it is also highly possible that there was an organised supply of animals that died young or were excess to requirements at other producer sites for use as parchment, and it has been suggested that, although calf-skin to produce vellum would have been used for the most high-status books, the availability of sheep would have made parchment the more common material, used on more 'ordinary' books (Gameson 2011, 798).

Larger monastic estates were established in the 10th century (Fowler 2002, 291) and grew in landed power, providing a specific spiritual function, rather than being estate centres (Astill 1991, 113; Blair 2005, 341). Archaeozoologically, the major differences in species recorded were in the lower relative abundance of domestic and wild birds; at Flixborough this coincides with the site's late Saxon monastic focus (Dobney *et al.* 2007, 228). Ecclesiastical settlements continued to have more sheep than both high-status and rural domestic sites, more pigs and wild mammals than the latter, yet fewer than the former. Little evidence was available for redistributed carcass parts from ecclesiastical sites, and this, coupled with the evidence for breeding also suggests that the occupants of ecclesiastical sites were responsible for farming and consuming much of their own food.

The quantity of sheep bones recorded on ecclesiastical sites were amongst the highest proportions of all site types, in all phases, and were often significantly greater than those recorded on high-status sites. The reason for this seems to have been fundamental to religious identity, and may be related to wool production; the parallels drawn with the later medieval wool boom cannot be avoided. Although the intensive wool flocks were developed by the Cistercians in the early 12th century (Ryder 1983, 449), it is likely that the roots of the wool trade originated in the Saxon period, wool and cloth being two of the most important bulk commodities exported from England (Sawyer 2013, 60). The church was one of the greatest merchants in Saxon England, having close ties to religious houses all over Europe, able to command exemptions from tax, and so the opportunity for trade in wool would have been palpable (Blair 2005, 99).

The Link between the church and sheep is not surprising, as many Anglo-Saxon texts talk of the congregation as the flock. In a Letter from Bede to Egbert, archbishop of York in AD 734 he writes "I earnestly beg and implore you by the Lord to protect assiduously the flock committed to you from the audacity of the attacking wolves, and to remember that you have been appointed, not a hireling, but a shepherd, to show love of the chief Shepherd by the careful feeding of his sheep"; and when Fulk, the archbishop of Reims writes to King Alfred (AD 883–886) he exhibits a good understanding of real shepherding principles, "Then, as a very prudent shepherd, he first fortified firmly the fences of the precincts on every side with monastic buildings and other defences... There he enclosed the Lord's sheep, gathered in flocks from far and wide, that they might not be torn to pieces by the invisible wolf" (Whitelock 1996). Pictorial illustrations from the

period also depict the Lamb of God in religious manuscripts (Heitz 1986, 97), the lamb, fish and dove being the three animals representing aspects of Christ (Hicks 1993, 8). If sheep were animals at the heart of Christian metaphor it is perhaps not surprising that they were farmed preferentially by the ecclesiastical community, the production and trade in wool resulting from that regime.

Specialists and Spatial Organisation in Early Urban Contexts

6.1 Introduction

Although not ticking all the ‘urban’ boxes used to define medieval towns (Biddle 1976, 20), *wics* and burhs presented a concentrated population, the majority of whom were not engaged in full-time agricultural activities and would require food and raw materials to be bought in (Perring 2002, 10). This is exemplified by the redistribution of animals, raw materials and joints of meat between middle and late Saxon producer and consumer sites shown in the previous chapter. Although there is little evidence for redistribution of carcass parts on a scale similar to specialist waste associated with Roman urban butchers (Maltby 1989b) or medieval skin processing (Harman 1996), there are some signs for the movement of animal carcasses within the urban context. This chapter will consider evidence for the redistribution of animal products, and the extent to which this shows deliberate spatial organisation, urbanisation and complexity of populations living within middle Saxon *wics* and late Saxon burhs and Danish towns.

Investigation will be carried out into two major areas: specialisation of the workforce, and spatial organisation of refuse disposal. Organised trades such as butchery and skin-processing may be evident from deposits containing specific bones as waste products, alongside craft workers using bone, antler and horn as raw materials (Table 6.1). Analysis will primarily use raw data (Appendix C) regarding anatomical elements to investigate the presence of higher concentrations of carcass parts specific to particular processes as well as other literary references to particular sites where craft or industrial waste was recorded. The presence of specialists within the urban environment would indicate a complexity requiring the procurement of food and materials from elsewhere.

Deliberate spatial organisation may be observed in the disposal of industrial and craft-working waste as well as the bones of animals traditionally not eaten such as horse and dog away from domestic areas. This will be investigated by plotting the relative quantities of species (horse and dog) and specific waste products (primary butchery, horn, bone and antler working offcuts and skin processing waste) on a map of the relevant settlement.

Although certain distributions of anatomical elements may be indicative of specific trades, often the presence of agglomerations of certain elements could be the result of more than one specialised craft. For example, dumps of cattle horn

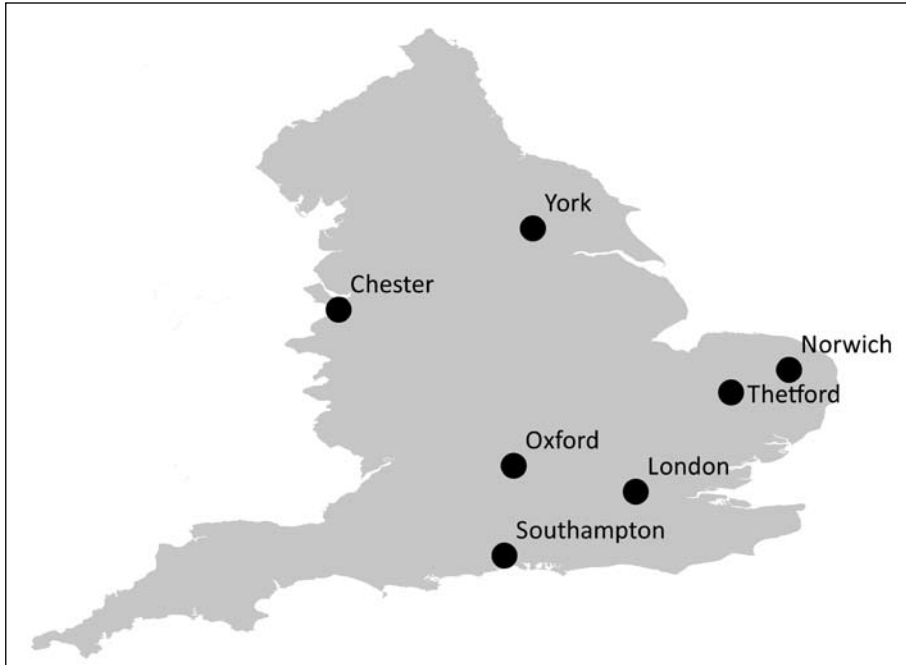


Figure 6.1: Location of wics, burhs and Danish towns included in the analysis

| | Skull | Horn core | Antler | Metapodials | Phalanges | Sawn bone | Sawn antler | Sawn Horn Core |
|-----------------|-------|-----------|--------|-------------|-----------|-----------|-------------|----------------|
| Butchery | Y | Y | | Y | Y | | | |
| Skin-Processing | | Y | | Y | Y | | | |
| Horner | | Y | | | | | | Y |
| Bone worker | | | | | | Y | | |
| Antler worker | | | | | | | Y | |

Table 6.1: Faunal remains likely to represent specific craft and industrial processes likely to be recorded (after Albarella 2003; Serjeantson 1989)

cores could be waste from a horner, yet they may just as likely be from a butcher or hide processor (Prummel 1978, 400), who may or may not remove horn cores or the horn itself to be sold to horn workers. Additionally, it is probable that crafts such as horn and bone working were so closely linked to other trades providing raw materials, that they were carried out in an area near to butchers and hide processors, so that the raw materials were close to hand, as evident in medieval York, Oxford and Northampton (Wilson, 1996: 61-62).

Investigation will focus on Danish towns, burhs and *wics* with data available from a number of excavations in various locations (Figure 6.1). This will not be a detailed analysis of individual sites, but an overview of what the faunal remains from sites within an urban setting can reveal of the organisation of the population and trades within. Obviously there are large gaps in the available data, and it is highly likely that future excavations will add to, alter or refine any conclusions drawn here. Analysis is based on data from middle Saxon *wics* (Hamwic and Lundenwic), late Saxon burhs (Northampton, Oxford, London, Winchester and Chester) and Danish towns (York, Norwich and Thetford) from the late Saxon and Saxo-Norman phases.

6.2 Wics

There were sufficient data for the analysis of two *wics*, Hamwic and Lundenwic.

Specialisation

Only one London site (Peabody Site) contained enough data to be of use for investigating redistribution of carcass parts, whereby all parts of cattle, sheep and pigs were recorded in quantities consistent with the deposition of complete carcasses. However, although the raw data are not available, primary butchery waste has been recorded at The Treasury site, Whitehall (Reilly 2008, 162), and one context at the Lyceum Theatre (Rackham and Snelling 2004, 71). Horn-working refuse was recorded at James Street and small scale antler- and bone-working was observed at other sites (Lyceum Theatre, National Portrait Gallery, James Street). It has been suggested that bone-working within Lundenwic was centred around the eastern part of the settlement (Blackmore 2002, 289), and Riddler (2004) specifies a centre of antler working at the Royal Opera House, where a large assemblage of antler offcuts was recovered, alongside a significant number of horn cores – interpreted as waste from horn-working. Antler working refuse was also recovered from nearby 15-16 Bedford Street (Wylie 2011).

At Hamwic sheep and pigs were generally recorded as whole carcasses from Melbourne Street and Friend's Provident, although at both sites there was an under-representation of cattle lower limb bones (metapodia). The reason for this is evident from the Anderson's Road bone-working assemblage, which consists largely of these elements, indicating the movement of particular elements within the town. This is consistent with findings from nearby SARC XIV where subsequent analysis by Driver (1984) identified horn cores, antler and long bones (predominantly cattle and horse), all of which had been sawn, and provided firm evidence for bone working. Furthermore, the majority of limb bones recorded were metapodia, which not only provide good surfaces for bone working, but also were more commonly discarded complete at the primary butchery stage (Driver 1984, 401). Both sawn horn cores and antlers were present at Melbourne Street, showing ample evidence for their use as raw materials for working. Long bones were also worked, including metapodia, but not as frequently. Other sites where

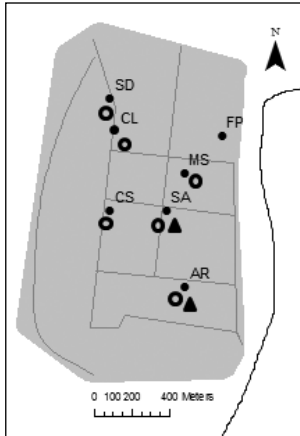


Figure 6.2: Location of non-food waste in Hamwic. Open circle= craft working; triangle= horse remains. For site codes see Table 6.2

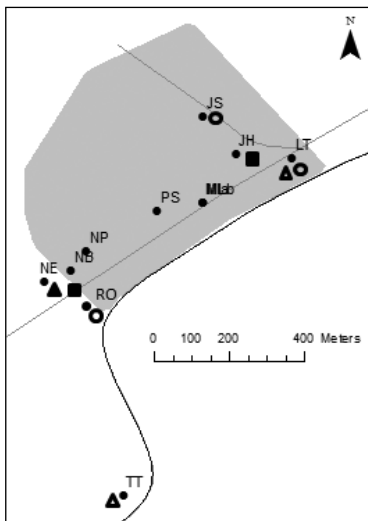


Figure 6.3: Location of non-food waste in Lundenwic. Open circle= craft working; triangle= horse remains; open triangle= butchery; square= dog remains. For site codes see Table 6.2

bone working debris was recovered include Six Dials, Clifford Street and Cook Street (Riddler 2001).

Riddler has suggested that the presence of small quantities of horn, bone or antler-working waste from numerous sites throughout both *wics* were “background noise”, as they in no way reflect the large-scale processing noted at these specialist sites, with the exception of SARC XIV, rather being residual fallout from specific workshops (Riddler 2001, 66; Riddler 2004, 145). However, they could also be considered evidence for craft working on a smaller scale in household workshops.

Spatial Organisation

The deposition of bone, antler and horn working waste in Hamwic is common throughout the *wic*, often in association with larger concentrations of horse bones (Anderson’s Road and SARC XIV), related to the deliberate sourcing of limb bones. (Figure 6.2). At Lundenwic, however, butchery, bone working debris and horse and dog remains were more abundant from sites on the periphery (i.e. Lyceum Theatre,

James St, National Gallery Extension, Royal Opera House and The Treasury), with the exception of the more central Jubilee Hall that also contained high numbers of dog bones (Figure 6.3).

6.3 Burhs

The four burhs examined include the new burhs of Oxford and Northampton and two re-used Roman towns of London and Chester. Both Oxford and Northampton were newly established as part of the defensive network of the 9th century, laid out to a deliberate plan, with large fields surrounding the settlement, possibly part of a royal estate, designated as 'town fields' (Haslam 1985, 19-22). Chester and London are situated within former Roman towns. Evidence for their military beginnings can be seen in the circuit road situated inside the defensive walls, and it has been suggested that the interior layouts were originally large plots of land, property of either the secular or religious elite and tied to a rural estate (Haslam 1985, 31-36). At London there was continuing habitation at the settlement of Lundenwic, as well as within the new burh.

Specialisation

Body part representation comparisons from the raw data within Northampton suggest that some sort of primary butchery of cattle took place, as mandibles, horn cores and foot bones (phalanges) were under-represented at many sites. If complete carcasses were disposed of mandibles would likely be the most common element. Instead the majority of sites were dominated by the bones of upper limbs and, to a lesser extent, those from the lower legs. At Kingswell Street, only sheep were recorded in proportions that indicate the disposal of complete carcasses. The pig assemblage was more varied: bones from St Peter's Road indicate an under-representation of feet and mandibles, whereas at Marefair the deposition of complete animals was recorded. The predominance of horn cores at St James' Square, and their near absence from all other sites in Northampton signifies the processing of skins or horns, which continued in the area into the medieval period (Shaw 1996, 114). Very little evidence for industrial antler, horn or bone working was recorded. The largest group of antler offcuts came from Saxon Palaces, indicating the presence of a craft worker in the vicinity, although a few antler offcuts came from other sites in the area (Marefair, Black Lion Hill and Chalk Lane), which may imply the presence of an industrial workshop in that part of the town, or that very small-scale, household-level working was being undertaken at more than one site. There was no indication of bone- or antler-working waste from any of the sites in Oxford. This is consistent with other observations; where primary evidence for trades or craft working within late Saxon Oxford is limited to four sawn horn cores, indicative of horn-working waste at Cornmarket (Dodd 2003, 42).

Body part data from London sites indicated that at Billingsgate Triangle, proportions of cattle were consistent with the processing of complete carcasses, although at Harlington they reflect animals that had undergone primary butchery, with very few feet and mandibles recorded. This latter pattern was also observed at

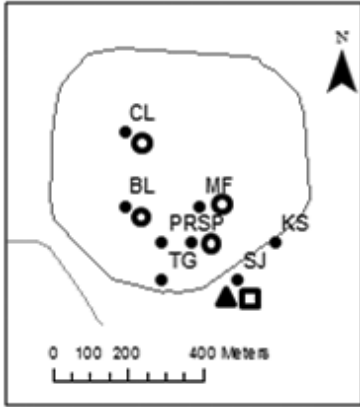


Figure 6.4: Location of non-food waste in late Saxon Northampton. Open circle= craft working; triangle= horse remains; open square= skin-processing. For site codes see Table 6.3

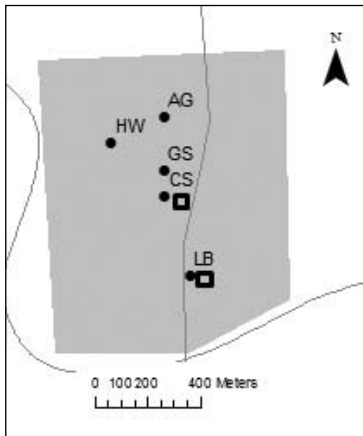


Figure 6.5: Location of non-food waste in late Saxon Chester. Open square= skin-processing. For site codes see Table 6.3

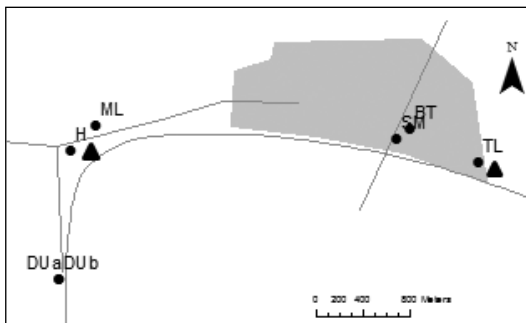


Figure 6.6: Location of non-food waste in late Saxon London. Triangle= horse remains. For site codes see Table 6.3

Billingsgate Triangle for the sheep assemblage. Indirect evidence therefore exists for the provision of dressed carcasses to domestic sites in London, implying evidence of butchers, either within the burhs, or externally, who provided joints of meat or prepared carcasses within these early towns.

Within Chester, horn cores and metapodia from cattle were recovered from Crook Street, indicative of skin-processing waste, in the same area as archaeological evidence for contemporary tanneries at Lower Bridge Street (Shaw 1996, 112).

Spatial Organisation

Sparse data makes understanding deliberate spatial organisation hard to assess for all burhs, although areas associated with craft working in Northampton was central to the settlement (Figure 6.4). The deposit of horn cores indicative of skin-processing waste was on the outskirts, and associated with the presence of the greatest proportion of horse bones. This contrasts with Chester, where the best evidence for skin-processing came from sites within the burh (Figure 6.5). At London horses and dogs were found in greatest proportions at sites on the outskirts of the settlement (Figure 6.6), while they were recorded in similar, small quantities throughout Chester.

6.4 Danish Towns/ Burhs

All three Danish towns analysed here (York, Thetford and Norwich) grew from earlier trading sites. They were later developed by the Vikings in a linear pattern, distinct from the Saxon burhs even though Thetford and Norwich had their beginnings as Mercian burhs (Haslam 1985, 25-30).

Specialisation

Carcass parts were recorded from sites in Thetford and Norwich. At all sites for which data were recorded horn cores were present, although usually in small quantities. There was variation between sites: at Brandon Road, Thetford cattle and pigs were present in proportions consistent with the deposition of complete animals, although there was an under-representation of sheep mandibles; at Site 1092 sheep were represented by upper limbs and heads, and pigs predominantly by mandibles; Redcastle Furze, however, was characterised by sheep lower legs and mandibles. At Norwich there was slightly less variation: sheep were present at both Dragon Hall and Castle Mall as complete carcasses; and cattle and pigs at both sites had fewer upper limb bones than may be expected, and high proportions of lower legs and heads.

The body part data summarised above indicate deposits of primary butchery waste (lower legs and heads) at Dragon Hall and Castle Mall as well as Whitefriars Car Park in Norwich; Redcastle Furze possibly Site 1092 and Brandon Road, Thetford. Small primary butchery dumps were also observed in York – at Blake Street (O'Connor 2004b, 435) a group of cattle skulls, metapodia and phalanges; and at Coppergate a deposit of pig lower limbs.

Some evidence for craft workshops also exists. At Site 1092 in Thetford a few sawn antler fragments and a large number of split, polished and pierced cattle ribs and goat, sheep and cattle horn cores were recovered, indicating the presence of craft-workers in all three media. At Norwich a number of cattle and sheep metapodials were interpreted as bone-working waste. Within York, small quantities of craft-working waste came from many sites (Mainman and Rogers 2004, 471), but large numbers of antler fragments were recovered from Coppergate and Hungate

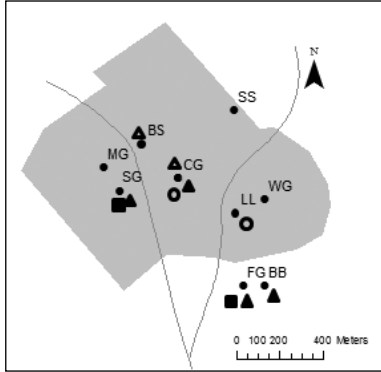


Figure 6.7: Location of non-food waste in late Saxon York. Open triangle= butchery; open circle= craft working; triangle= horse remains; square= dog remains. For site codes see Table 6.4

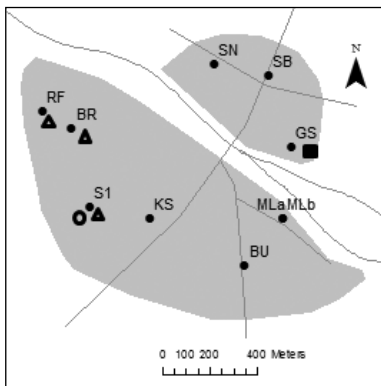


Figure 6.8: Location of non-food waste in late Saxon Thetford. Open triangle= butchery; open circle= craft working; square= dog remains. For site codes see Table 6.4

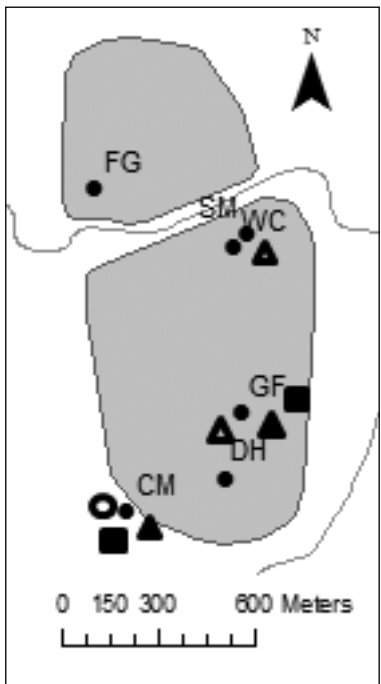


Figure 6.9: Location of non-food waste in late Saxon Norwich. Open triangle= butchery; triangle= horse remains; square= dog remains. For site codes see Table 6.4

(O'Connor *pers. com.*), as well as bone-working waste, which was also recorded at Leadmill Lane (MacGregor 1982, 150), indicative of specialist workshops.

Spatial Organisation

Horses and dogs were more abundant at the central sites of Coppergate (earliest phase) and Skeldergate in York (Figure 6.7). There was little difference in the proportion of horses recovered from Thetford sites, although dogs were most common in the northern half of the town (Figure 6.8). Trends were hard to see at Norwich (Figure 6.9), as the greatest proportions of both dogs and horses were recorded at the Saxo-Norman sites, and it may be a phase-related pattern, rather than one of a spatial nature. At York the sites from which antler- and bone-working waste was recovered were central, yet at Norwich and Thetford such sites were peripheral.

6.5 Discussion

Zoning and Waste Disposal

It has been widely reported that the bone assemblages of middle Saxon *wics* were homogenous, and reflect no spatial differences (Bourdillon and Coy 1980, 114; Clarke and Ambrosiani 1995, 201; Riddler 2001, 62). However, the evidence presented here goes some way to dispute this assumption. At Lundenwic non-food refuse such as dogs, horses, antler-, bone- and horn-working waste were deposited at the outskirts, suggesting some attempt at segregation of domestic and craft working areas, or at least the disposal of such refuse. This points to deliberate organisation, with more central areas of the *wic* used for other purposes. At Hamwic the scale of bone working was on a level unsurpassed at any other Saxon site, with this trade an obvious focus of many living within the town. As such, the waste from craft activities was ubiquitous throughout the settlement, with some suggestion for three main zones of bone working activity, in northern, central and southern areas (Riddler 2001).

Although in burhs there were very few deposits of craft-working debris, at all the places it was recorded (Northampton and all three Danish towns) there was evidence to suggest that small-scale antler- and bone-working took place within these urban centres. However, the nature of butchery or skin-processing waste and complete carcasses of non food animals (in the quantity of waste and undesirable smell resulting from it) is likely to mean that this refuse was not disposed of in the immediate vicinity of domestic areas, and it may be expected that dumps of such deposits would occur well away from the general area in which it was created, probably outside the boundary of the settlement (Rixson 1989, 58). Indeed, such waste was generally disposed of on the outskirts of burhs and Danish towns (Northampton, London, York, Thetford and Norwich), indicating that some attempt was made in these early towns to dispose of large-scale waste away from the main domestic areas. In contrast to this were Chester, where both

skin-processing refuse and the tannery itself were more central; and York, where small-scale butchery apparently took place within the town.

The organisation of refuse disposal of unpleasant waste to areas away from the settlement may be obvious to modern-day thinking, but in these newly emerging urban centres it suggests some form of enforcement or collaboration between butchers, craft workers and skin processors and the rest of the population.

An Artisan Population?

The accepted consensus regarding manufacture within *wics* is that, “the engine of activity was craft production on a significant scale”, (Hodges 1996, 297) and that at Hamwic “manufacturing of a wide range of materials... was taking place throughout the settlement” (Ottaway 1992, 125). The faunal evidence from Hamwic does reflect this, with a few offcuts of antler and bone observed on the majority of excavated sites as well as significant concentrations of antler-, bone- and horn-working waste at Six Dials, SARC XIV and Anderson’s Road. Riddler (2001; 2004) has suggested that these sites represent spatially distinct areas of craft working, rather than a piecemeal industry carried out all over the *wic* – the smaller assemblages at most other sites being residual material carried throughout the site by the movement of humans and animals. However, the presence of a separate class of small-scale craft working on a household level cannot be discounted. There is certainly no evidence to date for a major craft-working industry in middle Saxon Lundenwic, with smaller-scale activities more likely.

There was far less evidence for craft working refuse recorded within burhs, indicative of small-scale processes taking place, probably on a household level. At Chester and London there was no recorded evidence for craft working, and very little from Oxford, which may imply the production of objects outside burhs and Danish towns. The presence of itinerant craft-workers that made their wares away from the urban environment before trading within the urban market, is a likely explanation for this apparent under-representation of manufacture evidence archaeologically (MacGregor 1989, 110). Significant accumulations of bone working offcuts at the Danish towns of York and Thetford contrast with the burhs investigated, where evidence exists for larger-scale working. The Viking work ethic may therefore have produced a different mode of production, with bone objects manufactured within the urban environment.

The presence of carcass parts from complete animals at much of Anglo-Scandinavian (late Saxon) York prompted O’Connor (1989a, 159) to suggest that, “*beasts were bought in and slaughtered as required and shared amongst several households, the role of butcher being taken by whomsoever in that particular neighbourhood had a sharp knife and a rough idea of how to use it*”. This model can be attributed to the processing of cattle, sheep and pig carcasses from earlier *wics*, too. However, there were isolated features at Lundenwic (The Treasury and Lyceum Theatre) and Hamwic (Melbourne Street), where discreet dumps typical of a single butchering episode exist, perhaps indicating the presence of a part-time butcher, or evidence of preparations for feasting.

Although at many sites animals were slaughtered, consumed and the waste disposed of together, a number within burhs and towns in the Danelaw reflect the distribution of cattle and sheep that had undergone primary butchery. This provides indirect evidence for the existence of specialised butchers, or the organised disposal of primary butchery waste the late Saxon phase. Despite such inferences from the carcass parts represented in domestic assemblages, there were very few distinct deposits of primary butchery waste recorded within burhs. This is in keeping with the likelihood that joints of meat were redistributed to and within urban sites (Chapter 5.4). At all Danish Towns small dumps of specific butchery waste were recorded – at Thetford (Site 1092, Redcastle Furze and Bury Road), Norwich (Whitefriars Car Park and Greyfriars) and York (Blake St and Coppergate). As with the evidence for craft working, this suggests that specialist butchers were more likely to be found in Viking centres than Saxon burhs, or at least that there was an organised method of disposal of household animal slaughter waste.

Likely deposits of skin-processing waste were uncommon, but were recognised at the burhs of Northampton and Chester, being conspicuously absent from the Danish towns, even when evidence for leather working was abundant (Mould *et al.* 2003, 3234), perhaps indicating that leather was bought in already tanned. The distasteful nature of skin-processing may make this a more attractive proposition, and it may be that skin-processing sites are to be found away from Danish settlements.

Urban Complexity: Supply and Demand

From the middle Saxon phase the abundance of antler, bone and horn working at urban sites corresponds to the theory that growing urbanisation from the 9th century enabled a section of the population to specialise in product manufacture. With the exception of Hamwic, however, the presence of waste from such activities in mixed deposits with domestic refuse suggests that such trades remained a small-scale, household industry. It was therefore most likely that production of antler, bone and horn objects was carried out as and when required, rather than as a market-led industrial process. In later Saxon England it appears that itinerant tradesmen would have supplied the demand for goods from the population within burhs. In stark comparison was the evidence for larger scale craft production from Danish towns, indicating increased opportunities for supply using the Viking trade networks.

Perhaps one of the most illuminating results of this research was evidence for the controlled redistribution of raw materials from both rural and urban domestic sites to specialist craft workers. This was best illustrated in the movement of horn cores to *wics*, burhs and Danish towns, possibly with skins attached, to provide materials for tanning and horn working. There was also evidence from Hamwic for the deliberate provisioning of workshops with fresh limb bones, rather than those scavenged from general refuse (Driver 1984, 403). The association between horse remains and sites related to skin processing and bone-working should also be noted, as this reflects the differential treatment of food and non-food animals. Tanners or tawyers would be provided with skins from cattle and sheep direct

| London | Code | Total | % horse | % dog | Butchery | Skin-Processing | Antler | Bone | Horn |
|--|------|-------|---------|-------|----------|-----------------|--------|------|------|
| 21-24 Maiden Lane and 6-7 Exchange Court a | MLa | 228 | 0.4 | 0.0 | | | | | |
| 21-24 Maiden Lane and 6-7 Exchange Court b | MLb | 1412 | 0.0 | 0.2 | | | | | |
| Maiden Lane | ML | 5321 | 0.2 | 0.1 | | | | | |
| James Street | JS | 1684 | 0.0 | 0.0 | | | | | Y |
| Jubilee Hall, Covent Garden | JH | 1580 | 0.2 | 2.1 | | | | | |
| Lyceum Theatre, Exeter Street | LT | 3683 | 0.0 | 0.0 | Y | | Y | Y | |
| National Gallery Basement | NB | 1606 | 0.0 | 0.0 | | | | | |
| National Gallery Extension | NE | 469 | 0.6 | 0.9 | | | | | |
| National Portrait Gallery | NP | 4194 | 0.0 | 0.1 | | | Y | Y | |
| Peabody Site | PS | 4892 | 0.2 | 0.1 | | | | | |
| The Treasury, Whitehall | TT | 141 | 1.4 | 1.4 | Y | | | | |
| Royal Opera House | RO | | | | | | Y | | |
| 15-16 Bedford Street | BS | | | | | | Y | | Y |
| Hamwic | | | | | | | | | |
| Anderson's Road | AR | 727 | 15.0 | 0.0 | | | | Y | |
| Cook St | CS | 4719 | 0.3 | 0.1 | | | | Y | |
| Friend's Provident, St Mary's Stadium | FP | 3907 | 0.3 | 0.1 | | | | | |
| Melbourne St | MS | 45527 | 0.1 | 0.1 | | | Y | | Y |
| SARC XIV | SA | 9243 | 3.6 | 0.0 | | | | Y | Y |
| Six Dials | SD | 100 | 0.0 | 0.0 | | | | Y | |
| Clifford Street | CL | | | | | | | | |

Table 6.2: Abundance of horse and dog bones and presence of industrial and craft working waste from wics. % given as a proportion of the total cattle, sheep, pig, horse and dog fragments

from the butcher, the rest of the carcass being used for food, although direct evidence for this is lacking, and at York there is some suggestion that skins from younger animals were selected over those from older cattle (O'Connor 2003b, 3233). Horses, though, were not eaten as commonly as the major domesticates, and it is possible that old animals were sent to tanners who removed the skins directly. When combined, the evidence suggests that organised suppliers acquired and redistributed raw materials to the artisan population. This phenomenon was most clear-cut in the middle Saxon phase, indicating again the presence of a controlled collection and redistribution system, most likely based at estate centres. Redistribution appears less strict in the late Saxon phase, and horn cores are also recorded at high-status and ecclesiastical sites, indicating the widening sphere of output and a move to craft and industrial production to provide for emerging markets has been demonstrated at Flixborough, Lincolnshire (Loveluck 2001, 96). This may be translated as a loosening of the control of the elite on production,

| Northampton | Code | Total | % horse | % dog | Butchery | Skin-Processing | Antler | Bone | Horn |
|--------------------------------|-------------|--------------|----------------|--------------|-----------------|------------------------|---------------|-------------|-------------|
| Black Lion Hill | BL | 281 | 1.1 | 0.7 | | | Y | | |
| Chalk Lane, Northampton | CL | 5309 | 0.8 | 0.3 | | | Y | | |
| Marefair | MF | 324 | 1.2 | 0.9 | | | Y | | |
| St James' Square | SJ | 481 | 12.3 | 1.5 | | Y | | | |
| The Green | TG | 927 | 1.5 | 0.3 | | | | | |
| Kingswell St and Woolmonger St | KS | 427 | 0.2 | 0.0 | | | | | |
| Saxon palaces | SP | 1893 | 0.8 | 0.6 | | | Y | | |
| St Peters Rd | PR | 2478 | 1.0 | 0.4 | | | | | |
| Oxford | | | | | | | | | |
| 113-119 High St | HS | 562 | 1.2 | 0.5 | | | | | |
| All Saints Church | AS | 937 | 1.1 | 0.1 | | | | | |
| Codrington Library, Oxford | CL | 85 | 0.0 | 0.0 | | | | | |
| Hinxe Hall | HH | 769 | 0.0 | 0.4 | | | | | |
| St Aldates | SA | 478 | 5.0 | 0.0 | | | | | |
| St Ebbes | SE | 2202 | 1.4 | 0.2 | | | | | |
| Trill Mill Stream a | TMa | 404 | 3.7 | 1.7 | | | | | |
| Trill Mill Stream b | TMb | 257 | 1.6 | 0.4 | | | | | |
| Cornmarket | CM | | | | | | Y | | |
| Chester | | | | | | | | | |
| Abbey Green | AG | 893 | 1.8 | 1.3 | | | | | |
| Crook Street | CS | 568 | 0.2 | 0.2 | | Y | | | |
| Goss Street | GS | 530 | 1.1 | 1.5 | | | | | |
| Hunter's Walk | HW | 450 | 0.2 | 1.6 | | | | | |
| 26-42 Lower Bridge St | LB | 121 | 1.7 | 0.0 | | Y | | | |

Table 6.3: Abundance of horse and dog bones and presence of industrial and craft working waste from burhs. % given as a proportion of the total cattle, sheep, pig, horse and dog fragments

providing opportunity for manufacture away from the urban environment in the late Saxon phase, to be sold by itinerant traders through urban markets.

Little evidence for primary butchery deposits was found in middle Saxon England, and certainly none on the scale of the Roman deposits recorded at Winchester (Maltby 1994; Maltby 2010) and Lincoln (O'Connor 1982). The presence of butchery waste amongst domestic, household rubbish at many sites in *wics* and burhs was indicative of small-scale butchery occurring on a household level for the smaller animals (sheep and pigs), and the presence of cuts of meat from larger animals (cattle), possibly from a communally-owned animal. The occasional find of a deposit of primary butchery waste does suggest that this activity was sometimes carried out on several animals at once, as with the deposit of young

pig remains and primary waste from other animals from middle Saxon Aldwych, London (Blackmore 2002, 291), perhaps the result of feasting, or a seasonal cull of pigs prior to winter. It is therefore probable that horn cores, skins and sometimes lower legs were sent to a central redistributor, or individual tradesmen following the slaughter of animals, either as a trade or through obligation. In the late Saxon burhs there was some indirect evidence for specialist butchers given that fewer head and foot bones were recorded from domestic sites.

| York | Code | Total | % horse | % dog | Butchery | Skin-Processing | Antler | Bone | Horn |
|---------------------------|------|-------|---------|-------|----------|-----------------|--------|------|------|
| Blue bridge lane | BB | 173 | 1.2 | 0.0 | | | | | |
| Coppergate a | CGa | 3173 | 1.7 | 0.6 | Y | | Y | Y | |
| Coppergate b | CGb | 2786 | 0.1 | 0.1 | Y | | Y | Y | |
| Coppergate c | CGc | 11655 | 0.7 | 0.3 | Y | | Y | Y | |
| Coppergate d | CGd | 12753 | 0.2 | 0.6 | Y | | Y | Y | |
| Micklelegate | MG | 1035 | 0.0 | 0.0 | | | | | |
| Skeldergate | SG | 1123 | 1.6 | 0.4 | | | | | |
| St Saviourgate | SS | 463 | 0.0 | 0.0 | | | | | |
| Walmgate | WG | 248 | 0.0 | 0.0 | | | | | |
| Fishergate | FG | 1951 | 0.3 | 1.2 | | | | | |
| Blake Street | BS | | | | Y | | | | |
| Leadmill Lane | LL | | | | | | | Y | |
| Norwich | | | | | | | | | |
| Whitefriars car park | WC | 277 | 0.4 | 0.4 | Y | | | | |
| Castle Mall, Norwich | CM | 1282 | 3.4 | 4.4 | | | | | |
| Fishergate | FG | 1586 | 0.9 | 0.0 | | | | | |
| Dragon Hall | DH | 109 | 0.0 | 0.9 | | | | | |
| Greyfriars | GF | 692 | 4.6 | 3.2 | Y | | | | |
| St Martin-at-palace plain | SM | 3798 | 0.4 | 0.4 | | | | | |
| Thetford | | | | | | | | | |
| Brandon Rd | BR | 3091 | 1.6 | 0.7 | Y | | | | |
| Bury Road | BU | 7099 | 0.3 | 0.3 | | | | | |
| Guildhall St | GS | 106 | 1.9 | 9.4 | | | | | |
| Knocker's site | KS | 619 | 4.2 | 3.2 | | | | | |
| Mill Lane a | MLa | 1166 | 2.1 | 1.4 | | | | | |
| St Nicholas St | SN | 209 | 4.8 | 3.8 | | | | | |
| Site 1092 | S1 | 2085 | 3.7 | 2.1 | Y | | Y | | |
| Redcastle Furze | RF | 848 | 0.0 | 0.0 | Y | | | | |
| Mill Lane b | MLb | 438 | 2.3 | 1.6 | | | | | |

Table 6.4: Abundance of horse and dog bones and presence of industrial and craft working waste from Danish towns. % given as a proportion of the total cattle, sheep, pig, horse and dog fragments

Food, Status and Economy in England A.D. 450-1066

Preceding chapters have set out and critically appraised the archaeozoological evidence for key aspects of Saxon and Scandinavian social, political and economic hierarchies, diet, husbandry, specialisation and urbanisation. In this concluding chapter the major findings will be assessed to help understand the role of human-animal relationships within Saxon England.

So far, the use of archaeozoological data has been invaluable in the investigation of the provisioning of food to the population of Saxon England, in defining the status of that population, and in observing the complexity of relationships between various site types. Changes in the economic and political structure of the Saxon way of life are reflected in the ways that sites were provisioned; from the self-sufficient early Saxon farmers, to the redistribution of food received as tax, both to the secular elite, ecclesiastical and *wic* populations, and to the emergence of a commoditised market place at the close of the study period. It is suggested here that the economy of Saxon England provided a significant driving force for many of the trends apparent in the archaeozoological record.

Early Saxon Hiatus

The nature of animal husbandry in the early Saxon phase was similar to the Iron Age economy, where there was little need to produce a surplus over that required for a safety margin in poor years, and to provide render for the king. The Romano-British period was less straightforward, as even native, unromanised settlements would have been required to pay tax, either in coinage or in kind (Faith 1997, 1; King 1978, 216; Maltby 1984, 126-7). Despite this, both diet and economy apparently reverted back to one similar to that of the Iron Age by the early Saxon period. Early Saxon crop-based agriculture also became less intensive, returning to a pre-Roman pattern of land use (Hamerow 2002, 152). Isotope studies also show that late Roman populations had a different diet to that of the early Saxon population, although at rural settlements the difference was less notable (Hull and O'connell 2011, 682). It is possible that the animal economy typified at the majority of Iron Age, unromanised and early Saxon settlements was not one related to a deep-rooted cultural identity, but was simply that best-suited to a self-sufficient economy. However, connections by the native population to a more distant past, providing authority through a link to the ancestors, is also evident through burials at prehistoric monuments such as Bronze Age barrows (Moreland 2011, 184). A

small proportion of the population existed as an elite based around small territories, some of which took advantage of the ruinous, yet still no doubt impressive former Roman towns, and pre-Roman foci (Faith 1997, 9). The presence of higher-status occupation was evident at sites within Wroxeter, York, Leicester and London, as well as the former Iron Age hill fort at Cadbury Congresbury and royal centre at Yeavinger.

International Traders

The emergence of Anglo-Saxon influence in the international arena in the mid seventh century had significant consequences for the economy of England, and has been observed in all aspects of the animal record. The social hierarchy increased between the powerful elite who controlled trade within their respective kingdoms and those of more humble employment who worked the land. Also emerging were ecclesiastical estates, linked closely to the secular elite (Coatsworth 2011, 780), and a new craft-based sector to produce goods to supply the international market. The role of faunal remains in aiding understanding of the display of status through diet and foodways has been enlightening, showing clear distinctions between major site types. The full economic impact, too, is only just becoming clear. The engine of innovation on the role of the elite as patrons of craft production is evident from numerous aspects of the animal economy. These include the provision of specialists with raw materials; a new advancement in the way food was redistributed from farmer to estate to *wic*; increasing pressure on farmers in the hinterland of *wics* to specialise (Holmes 2013); and opportunities for those in the vicinity of trade centres to improve livestock (Holmes 2014). This was an economy based largely on redistribution, but by the second half of the 9th century the increase in trade led to a focus on money, goods and land to display, which further changed the animal economy of England.

Market Forces

Increasing Viking threats and changes in trade with Europe brought a more inward-looking economy, where international trade routes were superseded by manufacture and trade within England (Richards 2007, 162; Vince 1994, 114). This is reflected archaeozoologically, through subtle changes in previous trends. Increasing free trade through markets, with less pressure on the rural economy to provide tax as render, but coinage, is seen in a blurring of social boundaries between the diet of those living at rural and urban settlements, and the beginnings of a structured, conspicuous consumption of particular species to indicate status, dependant on exclusive land ownership rights. Some diversification in the animal economy points to an increase in consumer demand for food and textiles that rural producers supplied according to their own surplus rather than a controlled demand. The beginnings of the open field system (Holmes forthcoming-b) allowed for increasing production under the control of the elite. The increasing

administrative role of burhs and Danish towns is also evident through the presence of specialist butchers and industrial workers as well as spatial organisation, bringing new opportunities for craft workers outside the urban environment.

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Appendix A1

Quantification of Major Taxa (NISP)

ST= site type; R= rural; RT= former Roman town; I= industrial; M= military; T= trading site; U= urban

| Early Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|---------------------------------------|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Bishopstone, Sussex | E | 35 | 55 | 24 | 3 | 0 | 1 | 1 | 0 | 6 | 3 | 0 |
| Baynard's Castle | RT | 171 | 58 | 98 | 2 | 0 | 2 | 8 | 1 | 0 | 0 | 0 |
| Bonnors Lane, Leicester | RT | 77 | 60 | 38 | 3 | 1 | 1 | 0 | 0 | 1 | 2 | 0 |
| Viroonium, Wroxeter | RT | 1508 | 400 | 411 | 1 | 22 | 19 | 5 | 4 | 42 | 1 | 1 |
| Viroonium, Wroxeter | RT | 1678 | 545 | 648 | 7 | 42 | 47 | 10 | 15 | 124 | 1 | 4 |
| Viroonium, Wroxeter | RT | 2220 | 802 | 1035 | 1 | 89 | 77 | 15 | 17 | 104 | 2 | 8 |
| Viroonium, Wroxeter | RT | 4274 | 1288 | 1699 | 1 | 107 | 158 | 13 | 13 | 121 | 2 | 10 |
| Cadbury Congresbury, Somerset | HS | 4788 | 578 | 2889 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Yeavinger | HS | 912 | 14 | 7 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Upwich, Droitwich | I | 56 | 212 | 18 | 5 | 5 | 13 | 0 | 0 | 0 | 0 | 0 |
| Barnsley Park | R | 1281 | 1889 | 460 | 215 | 36 | 7 | 9 | 5 | 14 | 4 | 3 |
| Aelfric's Abbey, Eynsham | R | 230 | 291 | 121 | 20 | 5 | 5 | 7 | 2 | 16 | 18 | 0 |
| Audlett drive, Abingdon | R | 91 | 67 | 15 | 4 | 1 | 0 | 0 | 0 | 2 | 1 | 1 |
| Barton Court Farm, Abingdon | R | 377 | 573 | 354 | 17 | 7 | 11 | 1 | 1 | 60 | 47 | 5 |
| Botolphs, Bramber | R | 113 | 55 | 98 | 0 | 0 | 10 | 0 | 0 | 2 | 1 | 0 |
| Cadbury Congresbury | R | 490 | 95 | 465 | 4 | 0 | 7 | 3 | 0 | 0 | 0 | 0 |
| Caythorpe pipeline, North Humberstone | R | 164 | 244 | 40 | 20 | 10 | 3 | 0 | 0 | 0 | 0 | 0 |
| Cowdery's Down | R | 65 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Deansway, Worcester | R | 219 | 156 | 86 | 7 | 7 | 1 | 0 | 0 | 11 | 0 | 0 |
| Distillery site, Hammersmith | R | 94 | 41 | 19 | 4 | 0 | 2 | 0 | 0 | 2 | 0 | 0 |
| Empingham west, Rutland water | R | 128 | 96 | 25 | 2 | 0 | 0 | 0 | 0 | 3 | 1 | 0 |
| Eye Kettleby | R | 1482 | 633 | 206 | 97 | 26 | 15 | 1 | 0 | 12 | 3 | 0 |
| Fossets Farm, Southend | R | 1082 | 84 | 185 | 61 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Harlington, London | R | 149 | 65 | 41 | 6 | 10 | | | | 8 | 1 | |
| Hartigans, Milton Keynes | R | 167 | 28 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Early Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|-----------------------------------|----|--------|------------|-----|-------|-----|----------|----------|------|---------|-------|------|
| Kilverstone, Norfolk | R | 36 | 34 | 26 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Kings Meadow lane, Higham Ferrers | R | 80 | 45 | 32 | 3 | 0 | 0 | 1 | 0 | 3 | 2 | 0 |
| Manston rd, Ramsgate | R | 100 | 172 | 44 | 13 | 0 | 4 | 0 | 0 | 12 | 5 | 0 |
| Market Lavington, Wiltshire | R | 572 | 277 | 191 | 15 | 23 | 1 | 2 | 0 | 10 | 11 | 1 |
| Melford Meadows, Brettenham | R | 291 | 140 | 48 | 102 | 6 | 3 | 0 | 0 | 2 | 6 | 0 |
| Middleton Stony | R | 158 | 134 | 121 | 5 | 3 | 3 | 1 | 0 | 10 | 2 | 0 |
| Mill st, Wantage | R | 94 | 70 | 10 | 16 | 6 | 1 | 0 | 0 | 2 | 1 | 0 |
| Mundham, Norfolk | R | 320 | 86 | 122 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Nettleton Top | R | 461 | 52 | 33 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New Wintles | R | 435 | 296 | 96 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 |
| Northampton | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Old Down Farm, Andover | R | 125 | 140 | 25 | 8 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| Orton Hall Farm | R | 3582 | 1712 | 235 | 247 | 47 | 0 | 0 | 0 | 25 | 5 | 4 |
| Oxford Science park, Littlemore | R | 305 | 121 | 89 | 11 | 0 | 3 | 4 | 30 | 3 | 3 | 0 |
| Pennyland, Milton Keynes | R | 1170 | 894 | 330 | 82 | 5 | 0 | 0 | 2 | 68 | 25 | 0 |
| Poundbury, Dorchester | R | 1716 | 1446 | 270 | 49 | 58 | 80 | 178 | 32 | 5 | 0 | 0 |
| Prospect Park, Harmondsworth | R | 52 | 11 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 |
| Quarrington, Lincs | R | 640 | 268 | 111 | 41 | 8 | 4 | 0 | 0 | 19 | 8 | 0 |
| Redcastle Furze, Theford | R | 407 | 301 | 105 | 0 | 0 | 0 | 0 | 0 | 27 | 5 | 0 |
| Saxon County School, Shepperton | R | 111 | 105 | 96 | 4 | 1 | 0 | 0 | 6 | 7 | 0 | 0 |
| Sherborne House, Lechlade | R | 256 | 151 | 20 | 14 | 0 | 0 | 0 | 0 | 16 | 10 | 1 |

| Early Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|-------------------------------|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Spicer's Warehouse, Sawston | R | 203 | 159 | 72 | 5 | 2 | 0 | 0 | 0 | 3 | 1 | 0 |
| Spong Hill, Norfolk | R | 634 | 75 | 22 | 30 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| St Helen's Avenue, Benson | R | 227 | 147 | 64 | 14 | 1 | 2 | 1 | 0 | 13 | 3 | 5 |
| St Mary Cray, Kent road | R | 31 | 12 | 51 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 |
| Stonea grange, Cambridgeshire | R | 325 | 410 | 72 | 14 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Stretton-on-Fosse | R | 72 | 18 | 4 | 6 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Walton vicarage, Aylesbury | R | 603 | 511 | 331 | 46 | 5 | | | | 20 | 44 | 0 |
| West Stow | R | 523 | 727 | 308 | 42 | 1 | 1 | 1 | 0 | 17 | 29 | 14 |
| West Stow | R | 2539 | 3479 | 1683 | 90 | 40 | 7 | 7 | 4 | 115 | 110 | 2 |
| West Stow | R | 4811 | 6944 | 5675 | 149 | 50 | 9 | 4 | 3 | 389 | 146 | 11 |

| Early-Middle Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|-----------------------------------|----|--------|------------|-----|-------|-----|----------|----------|------|---------|-------|------|
| Chapter House, St Albans Abbey | E | 136 | 84 | 510 | | | 2 | 41 | 0 | 23 | 11 | 3 |
| Portchester Castle | RT | 287 | 74 | 64 | 9 | 0 | 9 | 5 | 0 | 31 | 32 | 2 |
| Harston Mill, Cambridgeshire | R | 1791 | 1794 | 529 | 165 | 69 | 5 | 5 | 1 | 0 | 0 | 4 |
| Abbots Worthy, Hampshire | R | 502 | 443 | 108 | 19 | 2 | 19 | 0 | 0 | 70 | 17 | 0 |
| Harrold, Bedfordshire | R | 483 | 254 | 169 | 17 | 0 | 14 | 2 | 0 | 13 | 8 | 0 |
| Kings Meadow lane, Higham Ferrers | R | 95 | 47 | 52 | 31 | 21 | 0 | 0 | 1 | 8 | 1 | 0 |
| Langham Rd and Burystead, Raunds | R | 72 | 54 | 23 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mucking | R | 1520 | 333 | 311 | 254 | 20 | 79 | 0 | 0 | 0 | 0 | 0 |
| North Manor, Wharham | R | 82 | 148 | 18 | 13 | 2 | 0 | 0 | 0 | 7 | 5 | 0 |
| Northampton rd, Brixworth | R | 129 | 50 | 16 | 22 | 0 | 1 | 0 | 0 | 2 | 0 | 0 |
| Pitstone | R | 105 | 103 | 39 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Saxon palaces, Northampton | R | 91 | 186 | 81 | 4 | 0 | 0 | 0 | 2 | 11 | 15 | 1 |
| Tidworth | R | 64 | 11 | 1 | 46 | 0 | 0 | 33 | 0 | 8 | 2 | 0 |
| Wilton, Salisbury | R | 442 | 233 | 63 | 3 | 1 | 3 | 0 | 1 | 2 | 3 | 0 |
| Wolverton Turn Enclosure | R | 211 | 335 | 117 | 83 | 20 | 1 | 0 | 0 | 33 | 6 | 0 |
| Bantham | T | 400 | 337 | 184 | 5 | 14 | 5 | 1 | 1 | 34 | 0 | 1 |

| Middle Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|---------------------------------|----|--------|------------|-------|-------|-----|----------|----------|------|---------|-------|------|
| Aelfric's Abbey, Eynsham | E | 385 | 1039 | 434 | 16 | 3 | 7 | 12 | 1 | 280 | 122 | 38 |
| Church Close, Hartlepool | E | 613 | 1175 | 350 | 21 | 0 | 1 | 0 | 1 | 242 | 260 | 0 |
| Church walk (76), Hartlepool | E | 54 | 44 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hartlepool Monastery | E | 36 | 146 | 16 | 0 | 0 | 0 | 0 | 0 | 9 | 15 | 1 |
| Wearmouth and Jarrow | E | 170 | 75 | 43 | 15 | 5 | 0 | 0 | 0 | 32 | 18 | 0 |
| Brandon | HS | 13441 | 24652 | 9121 | 702 | 151 | 50 | 108 | 28 | 1306 | 964 | 832 |
| Caister-on-Sea, Great Yarmouth | HS | 305 | 108 | 77 | 8 | 7 | 13 | 1 | 1 | 52 | 16 | 18 |
| Copeshill Rd, Lower Slaughter | HS | 111 | 149 | 65 | 14 | 3 | 1 | 0 | 0 | 12 | 5 | 5 |
| Flixborough | HS | 6652 | 6628 | 4893 | 830 | 3 | 5 | 77 | 29 | 4308 | 2854 | 227 |
| High Street, Ramsbury | HS | 339 | 247 | 249 | 64 | 2 | 20 | 42 | 0 | 0 | 0 | 0 |
| High Street, Ramsbury | HS | 447 | 307 | 353 | 204 | 24 | 16 | 31 | 0 | 0 | 0 | 0 |
| Middleton Stoney | HS | 357 | 265 | 243 | 73 | 41 | 4 | 0 | 3 | 80 | 5 | 3 |
| North Elmham Park | HS | 2424 | 2993 | 2182 | 368 | 245 | 3 | 43 | 3 | 0 | 0 | 0 |
| Wicken Bonhunt, Essex | HS | 5138 | 3858 | 20954 | 163 | 26 | 16 | 143 | 4 | 3082 | 2038 | 166 |
| Blue bridge lane, York | I | 637 | 277 | 97 | 57 | 6 | 0 | 1 | 0 | 177 | 63 | 2 |
| SARC XIV, Southampton | I | 6262 | 1805 | 843 | 329 | 4 | 0 | 0 | 0 | 81 | 29 | 0 |
| Chalkpit Field North, Sedgeford | R | 25 | 140 | 20 | 1 | 0 | 0 | 0 | 0 | 51 | 13 | 1 |
| Police Station, Canterbury | R | 10 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cadley rd, Collingbourne Dudis | R | 377 | 573 | 66 | 19 | 4 | 18 | 29 | 0 | 74 | 21 | 0 |
| Chicheley, Bucks | R | 70 | 106 | 13 | 1 | 8 | 0 | 0 | 0 | 1 | 1 | 0 |
| Cottam, Yorkshire | R | 52 | 328 | 14 | 7 | 10 | 1 | 0 | 1 | 7 | 3 | 0 |
| Cresswell Field, Yarnton | R | 200 | 110 | 48 | 31 | 2 | 0 | 0 | 0 | 4 | 11 | 0 |
| Crow hall park, Downham Market | R | 224 | 44 | 9 | 45 | 8 | 7 | 0 | 0 | 2 | 3 | 0 |
| Friars Oak, Hassocks | R | 271 | 95 | 45 | 18 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| Gosberton | R | 40 | 34 | 5 | 7 | 0 | 0 | 0 | 0 | 4 | 3 | 0 |

| Middle Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|--|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Hay Green, Terrington St. Clement | R | 104 | 109 | 9 | 2 | 0 | 0 | 0 | 0 | 1 | 5 | 0 |
| Lordship Lane, Cottenham | R | 60 | 23 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marefair, Northampton | R | 193 | 176 | 130 | 22 | 0 | 1 | 0 | 0 | 12 | 21 | 5 |
| National Gallery Basement | R | 475 | 661 | 470 | 0 | 0 | 1 | 2 | 0 | 45 | 30 | 2 |
| National Portrait Gallery | R | 1623 | 1882 | 684 | 1 | 4 | 1 | 1 | 0 | 87 | 108 | 0 |
| Quarrington, Lincs | R | 591 | 368 | 63 | 76 | 25 | 0 | 0 | 1 | 15 | 6 | 0 |
| Riverdene, Basingstoke | R | 49 | 41 | 79 | 4 | 1 | 4 | 1 | 0 | 1 | 1 | 0 |
| Rose Hall Farm, Waiipole St. Andrew | R | 144 | 156 | 20 | 9 | 0 | 0 | 0 | 0 | 6 | 6 | 1 |
| Saxon palaces, Northampton | R | 103 | 292 | 70 | 4 | 0 | 0 | 1 | 1 | 18 | 13 | 11 |
| Sedgeford, Norfolk | R | 199 | 430 | 55 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site 39, Wharram | R | 182 | 161 | 42 | 5 | 0 | 0 | 0 | 0 | 8 | 5 | 0 |
| Sites 94 and 95, Wharram | R | 280 | 365 | 66 | 14 | 4 | 0 | 0 | 0 | 12 | 8 | 0 |
| St Nicholas school, Boston | R | 51 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| St Peters Rd., Northampton | R | 162 | 228 | 88 | 16 | 1 | 0 | 0 | 1 | 2 | 4 | 0 |
| The Orchard, Walton Rd, Aylesbury | R | 195 | 214 | 105 | 5 | 5 | 4 | 0 | 6 | 0 | 0 | 0 |
| The south manor area, Wharram | R | 1170 | 1889 | 295 | 58 | 17 | 5 | 1 | 3 | 38 | 10 | 0 |
| The Treasury, Whitehall | R | 57 | 54 | 26 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |
| Walton Lodge, Aylesbury | R | 142 | 175 | 65 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Worton, Yarnton | R | 101 | 41 | 25 | 0 | 2 | 0 | 0 | 0 | 4 | 1 | 0 |
| Yarnton | R | 308 | 156 | 78 | 36 | 24 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake End Road | T | 2108 | 704 | 1288 | 162 | 28 | 9 | 18 | 2 | 198 | 64 | 67 |
| Lot's Hole | T | 196 | 111 | 78 | 24 | 6 | 0 | 0 | 0 | 10 | 4 | 1 |
| Sandturn, West Hythe | T | 91 | 109 | 51 | 0 | 7 | 0 | 0 | 0 | 31 | 13 | 0 |
| Site 127 Bury St Edmunds | U | 38 | 70 | 36 | 1 | 1 | 0 | 0 | 0 | 7 | 2 | 0 |
| 21-24 Maiden Lane and 6-7 Exchange Court | U | 165 | 27 | 35 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| Middle Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|--|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Hunter Street School, Chester | U | 743 | 55 | 159 | 35 | 5 | 7 | 0 | 0 | 3 | 0 | 0 |
| 23-27 High Street, Bedford | U | 39 | 25 | 18 | 5 | 0 | 0 | 0 | 0 | 9 | 6 | 0 |
| 21-24 Maiden Lane and 6-7 Exchange Court | U | 714 | 221 | 474 | 0 | 3 | 7 | 0 | 0 | 19 | 0 | 0 |
| Anderson's road, Southampton | U | 513 | 64 | 41 | 109 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Church Lane, Canterbury | U | 64 | 66 | 30 | 2 | 5 | 0 | 7 | 0 | 0 | 0 | 0 |
| Cook St, Southampton | U | 2869 | 775 | 1058 | 13 | 4 | 3 | 5 | 0 | 99 | 59 | 0 |
| Fishergate, York | U | 8296 | 3421 | 1295 | 49 | 18 | 1406 | 5 | 0 | 603 | 224 | 0 |
| Friend's Provident, Southampton | U | 2427 | 772 | 692 | 13 | 3 | 34 | 2 | 0 | 83 | 49 | 0 |
| Ipswich | U | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ipswich | U | 3408 | 2353 | 1973 | 27 | 125 | 4 | 7 | | 397 | 176 | 14 |
| Ipswich 1974-88 | U | 4585 | 2342 | 3237 | 68 | 18 | 28 | 17 | 1 | 438 | 126 | 9 |
| James Street, London | U | 935 | 232 | 517 | 0 | 0 | 12 | 0 | 0 | 10 | 4 | 0 |
| Jubilee Hall, Covent Garden | U | 843 | 336 | 365 | 3 | 33 | 6 | 1 | 0 | 24 | 14 | 0 |
| Lyceum Theatre, Exeter Street | U | 2479 | 636 | 566 | 1 | 1 | 15 | 0 | 0 | 20 | 18 | 0 |
| Maiden Lane | U | 2898 | 861 | 1547 | 11 | 4 | 28 | 0 | 0 | 80 | 65 | 4 |
| Melbourne St, Southampton | U | 23896 | 14606 | 6953 | 49 | 23 | 76 | 8 | | 800 | 353 | 19 |
| National Gallery Extension | U | 310 | 113 | 39 | 3 | 4 | 2 | 0 | 0 | 0 | 1 | 0 |
| Peabody site | U | 2292 | 1120 | 1466 | 10 | 4 | 20 | 1 | 0 | 58 | 71 | 1 |
| Six Dials, Hamwic | U | 54 | 32 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Middle-Late Saxon | ST | Cattle | Sheep/ goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|-------------------------------------|----|--------|-------------|-----|-------|-----|----------|----------|------|---------|-------|------|
| Upwich, Droitwich | I | 63 | 207 | 37 | 3 | 0 | 0 | 0 | 1 | 1 | 3 | 0 |
| *Yarnton all phases | R | 369 | 200 | 91 | 46 | 26 | 0 | 0 | 0 | 8 | 14 | 0 |
| Church Close, Whissonsett | R | 75 | 116 | 21 | 3 | 0 | 0 | 0 | 0 | 39 | 27 | 1 |
| Eastgate, Beverley | R | 234 | 104 | 47 | 8 | 3 | 0 | 2 | 0 | 7 | 4 | 1 |
| Trowbridge | R | 718 | 415 | 342 | 33 | 1 | 10 | 19 | 0 | 20 | 7 | 0 |
| Creake rd allotment, Burnham market | T | 40 | 34 | 8 | 6 | 4 | 0 | 0 | 0 | 7 | 4 | 0 |
| Hereford City | U | 1648 | 496 | 492 | 76 | 25 | 84 | 9 | 0 | 0 | 0 | 0 |
| Portchester Castle | U | 1935 | 1303 | 817 | 50 | 19 | 151 | 127 | 26 | 0 | 0 | 0 |
| Bennett's Works, Bedford | U | 63 | 39 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Late Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|--------------------------------------|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Aelfric's Abbey, Eynsham | E | 260 | 322 | 261 | 6 | 0 | 4 | 47 | 8 | 29 | 11 | 9 |
| Aelfric's Abbey, Eynsham | E | 403 | 600 | 356 | 21 | 3 | 5 | 36 | 0 | 54 | 22 | 10 |
| Bishopstone, Seaford | E | 897 | 2854 | 1620 | 29 | 43 | 2 | 17 | 14 | 810 | 66 | 38 |
| Lurk Lane, Beverley | E | 1921 | 652 | 649 | 38 | 16 | 1 | 34 | 5 | 33 | 16 | 1 |
| Lurk Lane, Beverley | E | 2162 | 882 | 614 | 31 | 0 | 0 | 29 | 1 | 55 | 93 | 2 |
| Vicarage Garden, Brixworth | E | 177 | 224 | 56 | 7 | 2 | 0 | 0 | 1 | 0 | 0 | 0 |
| Dorter Undercroft, Westminster Abbey | E | 974 | 1593 | 152 | 21 | 0 | 2 | 3 | 1 | 21 | 3 | 3 |
| Lewes Priory | E | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| Cheddar Palaces | HS | 416 | 212 | 291 | 13 | 4 | 1 | 22 | 0 | 0 | 0 | 0 |
| Cheddar Palaces | HS | 1390 | 852 | 997 | 56 | 41 | 51 | 44 | 0 | 0 | 0 | 0 |
| Faccombe netherton | HS | 284 | 449 | 405 | 26 | 36 | 28 | 56 | 18 | 61 | 15 | 2 |
| Flixborough | HS | 3609 | 3266 | 2276 | 671 | 6 | 2 | 45 | 5 | 1396 | 845 | 85 |
| Goltho | HS | 103 | 32 | 10 | 14 | 1 | 1 | 2 | 0 | 1 | 1 | 1 |
| Goltho | HS | 234 | 152 | 177 | 19 | 10 | 5 | 44 | 1 | 36 | 15 | 5 |
| Hatton Rock, Warwickshire | HS | 129 | 77 | 44 | 46 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| North Elmham Park | HS | 1046 | 1542 | 827 | 122 | 49 | 1 | 16 | 0 | 0 | 0 | 0 |
| Stafford Castle | HS | 45 | 43 | 204 | 0 | 4 | 44 | 6 | 7 | 21 | 2 | 25 |
| Castle Mall, Norwich | HS | 583 | 272 | 327 | 44 | 56 | 0 | 2 | 1 | 245 | 25 | 10 |
| Kintbury Square, Kintbury | HS | 75 | 105 | 49 | 5 | 0 | 1 | 3 | 0 | 2 | 1 | 0 |
| Coppergate, York | I | 7148 | 2886 | 1506 | 76 | 39 | 30 | 3 | 4 | 380 | 90 | 4 |
| Fishergate, Norwich | I | 876 | 341 | 354 | 15 | 0 | 2 | 0 | 1 | 58 | 15 | 2 |
| Flaxengate, Lincoln | I | 5834 | 2902 | 1147 | 0 | 498 | 0 | 0 | 0 | 200 | 109 | 16 |
| Site 1092, Thetford | I | 919 | 650 | 394 | 78 | 44 | 4 | 0 | 0 | 169 | 42 | 11 |
| St James' Square, Northampton | I | 199 | 185 | 31 | 59 | 7 | 0 | 1 | 0 | 0 | 0 | 0 |
| The Green, Northampton | I | 321 | 452 | 137 | 14 | 3 | 1 | 2 | 0 | 0 | 0 | 0 |

| Late Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|--|----|--------|------------|-----|-------|-----|----------|----------|------|---------|-------|------|
| Chalkpit Field North, Sedgford | R | 581 | 975 | 413 | 20 | 15 | 2 | 18 | 0 | 83 | 28 | 5 |
| Church Rd, Bishop's Cleeve | R | 169 | 59 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Easton Lane, Winchester | R | 25 | 163 | 8 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 0 |
| Langham Rd and Burystead, Raunds | R | 454 | 365 | 171 | 97 | 45 | 0 | 1 | 0 | 7 | 0 | 1 |
| Longstanton | R | 98 | 147 | 41 | 11 | 8 | 0 | 0 | 1 | 10 | 5 | 0 |
| Market field, Steyning | R | 806 | 2159 | 429 | 33 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Market Lavington, Wiltshire | R | 53 | 63 | 15 | 4 | 0 | 0 | 0 | 0 | 6 | 2 | 0 |
| Mawgan Porth, Cornwall | R | 506 | 577 | 37 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Middleton Stoney | R | 125 | 101 | 59 | 13 | 4 | 0 | 0 | 0 | 6 | 0 | 3 |
| Ribblehead | R | 83 | 44 | 3 | 13 | 0 | 2 | 0 | 0 | 2 | 0 | 0 |
| Saxon County School, Shepperton | R | 21 | 21 | 25 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Steyning | R | 624 | 1768 | 260 | 0 | 0 | 0 | 0 | 1 | 62 | 19 | 23 |
| The south manor area, Wharram | R | 646 | 917 | 158 | 57 | 26 | 0 | 6 | 0 | 16 | 7 | 0 |
| Ufton Nervet | R | 38 | 104 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walton vicarage, Aylesbury | R | 726 | 883 | 396 | 89 | 36 | | | | 56 | 19 | 2 |
| Wearmouth and Jarrow | R | 469 | 82 | 47 | 16 | 49 | 7 | 0 | 0 | 87 | 47 | 2 |
| West Cotton, Raunds | R | 46 | 35 | 28 | 12 | 3 | 0 | 0 | 0 | 5 | 4 | 1 |
| 21-24 Maiden Lane and 6-7 Exchange Court | U | 174 | 102 | 122 | 0 | 26 | 7 | 0 | 0 | 9 | 0 | 0 |
| 113-119 High st, Oxford | U | 288 | 158 | 106 | 7 | 3 | 1 | 1 | 0 | 11 | 4 | 1 |
| 27, Jewry Street, Winchester | U | 141 | 115 | 58 | 5 | 4 | 0 | 2 | 0 | 20 | 0 | 1 |
| Abbey Green, Chester | U | 629 | 63 | 173 | 16 | 12 | 6 | 2 | 1 | 4 | 1 | 2 |
| All Saints Church, Oxford | U | 283 | 397 | 246 | 10 | 1 | 1 | 2 | 2 | 83 | 7 | 0 |
| Benham's Garage, Taunton | U | 374 | 242 | 20 | 3 | 2 | 1 | 0 | 0 | 6 | 1 | 1 |
| Black Lion Hill, Northampton | U | 110 | 117 | 49 | 3 | 2 | 0 | 0 | 0 | 26 | 2 | 1 |
| Bristol Castle | U | 150 | 86 | 92 | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |

| Late Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|-------------------------------|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Chalk Lane, Northampton | U | 1636 | 2963 | 653 | 42 | 15 | 3 | 0 | 3 | 395 | 61 | 5 |
| Chester Rd, Winchester | U | 469 | 359 | 290 | 30 | 27 | 1 | 1 | 5 | 67 | 2 | 12 |
| Citizen house, Bath | U | 143 | 183 | 51 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Codrington Library, Oxford | U | 27 | 33 | 25 | 0 | 0 | 0 | 0 | 0 | 11 | 3 | 0 |
| Crook Street, Chester | U | 391 | 52 | 123 | 1 | 1 | 2 | 1 | 0 | 14 | 1 | 0 |
| Danesgate, Lincoln | U | 347 | 385 | 180 | 2 | 7 | 0 | 0 | 0 | 9 | 8 | 2 |
| Flaxengate, Lincoln | U | 791 | 425 | 145 | 0 | 104 | 0 | 0 | 0 | 19 | 6 | 2 |
| Goss Street, Chester | U | 303 | 41 | 172 | 6 | 8 | 6 | 0 | 0 | 14 | 2 | 2 |
| Hinxey Hall, Queen st, Oxford | U | 157 | 340 | 269 | 0 | 3 | 2 | 12 | 3 | 142 | 5 | 3 |
| Hunter's Walk, Chester | U | 334 | 22 | 86 | 1 | 7 | 2 | 0 | 0 | 4 | 0 | 0 |
| Ipswich | U | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ipswich | U | 398 | 159 | 119 | 23 | 25 | 0 | 0 | 0 | 21 | 2 | 2 |
| Ipswich 1974-88 | U | 2739 | 1932 | 2020 | 30 | 51 | 13 | 6 | 2 | 681 | 51 | 7 |
| Ipswich 1974-88 | U | 4918 | 5177 | 4457 | 69 | 92 | 82 | 7 | 0 | 698 | 219 | 15 |
| Lincoln | U | 1037 | 449 | 203 | 12 | 6 | 5 | 0 | 0 | 63 | 18 | 4 |
| Marefair, Northampton | U | 140 | 122 | 55 | 4 | 3 | 3 | 0 | 0 | 9 | 1 | 0 |
| Mary-Le-Port, Bristol | U | 660 | 715 | 113 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Portchester Castle | U | 439 | 267 | 185 | 22 | 15 | 43 | 24 | 2 | 511 | 147 | 62 |
| St Aldates, Oxford | U | 198 | 152 | 104 | 24 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| St Ebbes, Oxford | U | 536 | 1251 | 380 | 31 | 4 | 0 | 9 | 4 | 380 | 38 | 25 |
| St Peter's walk, Northampton | U | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Staple Gardens, Winchester | U | 773 | 1234 | 414 | 22 | 11 | 6 | 2 | 12 | 226 | 20 | 12 |
| Trill Mill Stream, Oxford | U | 70 | 143 | 39 | 4 | 1 | 0 | 1 | 0 | 19 | 1 | 0 |
| Trill Mill Stream, Oxford | U | 152 | 150 | 80 | 15 | 7 | 2 | 2 | 1 | 12 | 8 | 2 |
| Victoria Rd, Winchester | U | 765 | 657 | 314 | 53 | 26 | 4 | 1 | 2 | 71 | 4 | 1 |

| Late Saxon | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|-------------------------------|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Western Suburb, Winchester | U | 8813 | 5054 | 4532 | 50 | 169 | 5 | 6 | 5 | 354 | 18 | 11 |
| Winchcombe | U | 343 | 512 | 76 | 3 | 4 | 0 | 2 | 0 | 36 | 5 | 0 |
| Tenements, Durham City | U | 78 | 32 | 74 | 4 | 44 | 2 | 4 | 1 | 55 | 17 | 0 |
| Blue bridge lane, York | U | 83 | 58 | 30 | 2 | 0 | 1 | 0 | 0 | 7 | 0 | 0 |
| Brandon Rd, Thetford | U | 1487 | 1050 | 483 | 49 | 22 | 0 | 1 | 0 | 100 | 35 | 15 |
| Bury Road, Thetford | U | 4763 | 1507 | 787 | 21 | 21 | 0 | 1 | 0 | 266 | 35 | 12 |
| Canterbury Lane, Canterbury | U | 99 | 63 | 46 | 0 | 0 | 9 | 1 | 0 | 10 | 1 | 0 |
| Coppergate, York | U | 1771 | 778 | 230 | 3 | 4 | 19 | 0 | 1 | 67 | 25 | 0 |
| Coppergate, York | U | 2256 | 616 | 229 | 53 | 19 | 14 | 2 | 0 | 40 | 13 | 1 |
| Coppergate, York | U | 7257 | 2766 | 2623 | 31 | 76 | 43 | 1 | 4 | 730 | 220 | 8 |
| Guildhall St, Thetford | U | 40 | 40 | 14 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Knocker's site, Thetford | U | 323 | 149 | 101 | 26 | 20 | 18 | 3 | 0 | 86 | 15 | 3 |
| Micklegate, York | U | 727 | 149 | 159 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mill Lane, Thetford | U | 548 | 260 | 318 | 24 | 16 | 1 | 3 | 1 | 62 | 11 | 4 |
| Skeldergate, York | U | 814 | 201 | 86 | 18 | 4 | 2 | 0 | 0 | 0 | 0 | 0 |
| St Nicholas St, Thetford | U | 112 | 58 | 21 | 10 | 8 | 0 | 0 | 1 | 0 | 1 | 0 |
| St Saviourgate, York | U | 306 | 129 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walmgate, York | U | 190 | 41 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Whitefriars car park, Norwich | U | 92 | 105 | 78 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 |

| Saxo-Norman | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|--------------------------------------|----|--------|------------|-----|-------|-----|----------|----------|------|---------|-------|------|
| Barking Abbey | E | 255 | 178 | 184 | 9 | 4 | 4 | 4 | 0 | 35 | 22 | 5 |
| Dorter Undercroft, Westminster Abbey | E | 901 | 1206 | 435 | 5 | 0 | 2 | 13 | 6 | 173 | 7 | 35 |
| Fishergate, York | E | 1025 | 660 | 237 | 6 | 23 | 150 | 3 | 1 | 159 | 40 | 1 |
| Castle Rising Castle | HS | 68 | 66 | 59 | 5 | 23 | 0 | 3 | 1 | 41 | 7 | 1 |
| Emwell Street, Warminster | HS | 165 | 48 | 23 | 5 | 27 | 1 | 1 | 0 | 6 | 0 | 0 |
| Faccombe netherton | HS | 333 | 372 | 471 | 69 | 53 | 611 | 246 | 29 | 629 | 164 | 2 |
| Guildford Castle | HS | 79 | 126 | 62 | 2 | 6 | 1 | 1 | 0 | 11 | 0 | 0 |
| North Elmham Park | HS | 290 | 306 | 321 | 42 | 14 | 13 | 5 | 1 | 0 | 0 | 0 |
| Pontefract Castle | HS | 16 | 67 | 311 | 0 | 0 | 5 | 13 | 5 | 0 | 0 | 0 |
| Tempsford Park | HS | | | | | | | | | | | |
| Trowbridge | HS | 619 | 771 | 350 | 16 | 6 | 12 | 14 | 8 | 96 | 33 | 3 |
| Castle Lane, Bedford | HS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Castle Lane, Bedford | HS | 124 | 80 | 44 | 5 | 5 | 1 | 0 | 1 | 5 | 3 | 0 |
| Crown Car Park, Nantwich | HS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| The Mound, Glastonbury | I | 175 | 251 | 180 | 158 | 0 | 5 | 7 | 0 | 17 | 12 | 1 |
| 26-42 Lower Bridge St, Chester | I | 66 | 26 | 27 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Friar Street, Droitwich | I | 140 | 103 | 93 | 5 | 9 | 1 | 1 | 0 | 28 | 4 | 0 |
| Greyfriars, Norwich | I | 220 | 153 | 265 | 32 | 22 | 0 | 0 | 0 | 14 | 9 | 0 |
| Mill Lane, Thetford | I | 235 | 101 | 85 | 10 | 7 | 0 | 2 | 2 | 20 | 10 | 14 |
| Little Chester, Derby | M | 68 | 38 | 20 | 3 | 4 | 2 | 0 | 3 | 0 | 0 | 2 |
| Tower of London | M | 143 | 85 | 11 | 32 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Church End, Cherry Hinton | R | 102 | 124 | 60 | 16 | 2 | 1 | 1 | 0 | 10 | 1 | 0 |
| Harston Mill, Cambridgeshire | R | 143 | 131 | 63 | 26 | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| Silver st, Glastonbury | R | 482 | 806 | 195 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Holy Island Village, Lindisfarne | R | 36 | 23 | 9 | 12 | 0 | 0 | 0 | 0 | 6 | 1 | 2 |

| Saxo-Norman | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|---|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| Botolphs, Bramber | R | 8 | 35 | 27 | 2 | 0 | 6 | 1 | 0 | 7 | 0 | 0 |
| Harlington, London | R | 401 | 174 | 100 | 53 | 13 | 2 | 4 | 1 | 1 | 0 | 0 |
| Lordslip Lane, Cottenham | R | 42 | 25 | 7 | 27 | 0 | 0 | 0 | 0 | 62 | 25 | 13 |
| Lower School, Elstow | R | 103 | 94 | 51 | 8 | 2 | 1 | 0 | 0 | 2 | 1 | 0 |
| School lane, Fulbourn | R | 44 | 49 | 20 | 12 | 1 | 0 | 0 | 1 | 2 | 2 | 0 |
| School lane, Old Leake | R | 26 | 35 | 20 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 0 |
| Wearmouth and Jarrow | R | 230 | 134 | 108 | 13 | 4 | 2 | 1 | 1 | 122 | 48 | 0 |
| Wilton, Salisbury | R | 481 | 640 | 62 | 6 | 1 | 1 | 0 | 0 | 27 | 3 | 2 |
| Wraysbury | R | 1937 | 1330 | 1453 | 0 | 0 | 0 | 0 | 0 | 296 | 66 | 0 |
| Yarnton | R | 43 | 27 | 10 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| St Martin-at-palace plain, Norwich | T | 1524 | 1102 | 1140 | 15 | 17 | 3 | 2 | 5 | 0 | 0 | 0 |
| 23-27 High Street, Bedford | U | 371 | 98 | 100 | 14 | 2 | 1 | 0 | 0 | 8 | 1 | 0 |
| Billingsgate triangle | U | 84 | 102 | 28 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Castle Lane, Bedford | U | 65 | 29 | 30 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Castle Lane, Bedford | U | 429 | 253 | 147 | 26 | 4 | 0 | 1 | 0 | 6 | 3 | 3 |
| Deansway, Worcester | U | 175 | 217 | 108 | 7 | 11 | 0 | 0 | 0 | 12 | 7 | 0 |
| Exeter as whole | U | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 204 | 42 | 1 |
| Goldsmith st III, Exeter | U | 415 | 326 | 161 | 8 | 2 | 2 | 0 | 3 | 0 | 0 | 0 |
| Goldsmith st III, Exeter | U | 320 | 265 | 113 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Henley's Garage, Winchester | U | 232 | 218 | 80 | 3 | 4 | 0 | 0 | 0 | 20 | 0 | 1 |
| Ipswich 1974-88 | U | 3942 | 2752 | 2677 | 52 | 132 | 15 | 9 | 27 | 647 | 88 | 8 |
| Kingswell St and Woolmonger St, Northampton | U | 137 | 243 | 46 | 1 | 0 | 0 | 0 | 0 | 56 | 1 | 0 |
| Saxon palaces, Northampton | U | 733 | 785 | 349 | 15 | 11 | 1 | 2 | 3 | 98 | 42 | 9 |
| SOU25, Southampton | U | 1128 | 456 | 434 | 17 | 5 | 26 | 7 | 0 | 193 | 18 | 0 |

| Saxo-Norman | ST | Cattle | Sheep/goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|--------------------------------|----|--------|------------|------|-------|-----|----------|----------|------|---------|-------|------|
| St Magnus | U | 363 | 139 | 132 | 3 | 1 | 1 | 4 | 0 | 0 | 0 | 0 |
| St Peters Rd, Northampton | U | 1060 | 965 | 417 | 26 | 10 | 7 | 3 | 2 | 109 | 46 | 4 |
| St Peter's walk, Northampton | U | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Staple Gardens, Winchester | U | 641 | 819 | 351 | 33 | 9 | 3 | 6 | 6 | 188 | 32 | 7 |
| Trickay st, Exeter | U | 379 | 289 | 153 | 2 | 10 | 0 | 0 | 2 | 0 | 0 | 0 |
| Victoria Rd, Winchester | U | 409 | 748 | 121 | 11 | 2 | 0 | 0 | 5 | 11 | 13 | 12 |
| Western Suburb, Winchester | U | 2852 | 3237 | 1696 | 30 | 50 | 1 | 0 | 0 | 229 | 14 | 4 |
| Western Suburb, Winchester all | U | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bartholemew Street, Newbury | U | 59 | 69 | 42 | 3 | 0 | 0 | 0 | 1 | 24 | 11 | 0 |
| Canterbury Castle, Canterbury | U | 78 | 91 | 65 | 22 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| Danesgate, Lincoln | U | 376 | 605 | 200 | 36 | 0 | 0 | 0 | 0 | 31 | 16 | 4 |
| Dragon Hall, Norwich | U | 38 | 27 | 43 | 0 | 1 | 0 | 0 | 0 | 8 | 1 | 0 |
| Flaxengate, Lincoln | U | 8602 | 7860 | 1883 | 0 | 220 | 0 | 0 | 0 | 303 | 269 | 23 |
| Lincoln | U | 88 | 110 | 26 | 2 | 2 | 1 | 0 | 0 | 8 | 13 | 3 |
| Orchard Lane, Huntingdon | U | 24 | 20 | 15 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Redcastle Furze, Thetford | U | 313 | 386 | 149 | 0 | 0 | 0 | 1 | 1 | 21 | 6 | 0 |

| Saxon | ST | Cattle | Sheep/ goat | Pig | Horse | Dog | Red Deer | Roe Deer | Hare | Chicken | Goose | Duck |
|---|----|--------|-------------|-----|-------|-----|----------|----------|------|---------|-------|------|
| Worcester Cathedral | E | 488 | 314 | 259 | 20 | 6 | 4 | 8 | 1 | 22 | 3 | 1 |
| Beech House hotel, Dorchester on Thames | R | 2631 | 514 | 300 | 60 | 12 | 15 | 2 | 0 | 0 | 0 | 0 |
| Abbey Wharf, Reading | R | 60 | 8 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Althorpe Grove, Battersea | R | 63 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| Bury St Edmunds | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Maxey, Cambs | R | 194 | 191 | 59 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sandtun, Kent | R | 71 | 96 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix A2

Presence of the Most Common Wild Birds

See following pages

| Early Saxon | Passerine | Turdus spp. | Columba spp. | Pheasant | Grouse | Capercaille | Quail | Partridge | Cornrake | Mallard | Other Duck spp. | Goose | Wader spp. | Woodcock | Redshank | Plover | Golden Plover | Snipe | Oystercatcher | Dunlin | Curlew | Godwit | Whimbrel | Crane | Heron | Moorhen/Coot | Diver spp. | Stork | Lapwing | Swan | Bittern | Gull spp. | Guillemot | Tern | Cormorant | Osprey | Gannet | Kittiwake | | | | | | | | | | | | | |
|---------------------------------|-----------|-------------|--------------|----------|--------|-------------|-------|-----------|----------|---------|-----------------|-------|------------|----------|----------|--------|---------------|-------|---------------|--------|--------|--------|----------|-------|-------|--------------|------------|-------|---------|------|---------|-----------|-----------|------|-----------|--------|--------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Barnsley Park | * | | | * | | | * | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Barton Court Farm, Abingdon | * | | * | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cadbury Congressbury | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deansway, Worcester | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye Kettleby | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mansston rd, Ramsgate | * | | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mill st, Wantage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Orton Hall Farm | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oxford Science park, Littlemore | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pennyland, Milton Keynes | * | | * | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poundbury, Dorchester | * | | * | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sherborne House, Lechlade | | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spicer's Warehouse, Sawston | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Walton vicarage, Aylesbury | | | | | | | | | | * | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| West Stow a | * | | | | | | | | | * | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| West Stow b | * | | | | | | | | | * | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| West Stow c | * | | | | | | | | | * | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Viroconium, Wroxeter c | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | | |
| Viroconium, Wroxeter d | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | |
| Viroconium, Wroxeter a | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | |
| Viroconium, Wroxeter b | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Bonnars Lane, Leicester | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Middle Saxon | Passerine | Turdus spp. | Columba spp. | Pheasant | Grouse | Capercaille | Quail | Partridge | Corncrake | Mallard | Other Duck spp. | Goose | Wader spp. | Woodcock | Redshank | Plover | Golden Plover | Snipe | Oystercatcher | Dunlin | Curllew | Godwit | Whimbrel | Crane | Heron | Moorhen/Coot | Diver spp. | Stork | Lapwing | Swan | Bittern | Gull spp. | Gulliemot | Tern | Cormorant | Osprey | Gannet | Kittiwake | | | | | | |
|--------------------------------|-----------|-------------|--------------|----------|--------|-------------|-------|-----------|-----------|---------|-----------------|-------|------------|----------|----------|--------|---------------|-------|---------------|--------|---------|--------|----------|-------|-------|--------------|------------|-------|---------|------|---------|-----------|-----------|------|-----------|--------|--------|-----------|---|---|---|---|---|---|
| Aelfric's Abbey, Eynsham | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | | | |
| Blue bridge lane, York | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | | |
| Brandon | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | |
| Caister-on-Sea, Great Yarmouth | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Church Close, Hartlepool | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Cook St, Southampton | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

| | Passerine | Turdus spp. | Colomba spp. | Pheasant | Grouse | Capercaille | Quail | Partridge | Cornrake | Mallard | Other Duck spp. | Goose | Wader spp. | Woodcock | Redshank | Plover | Golden Plover | Snipe | Oystercatcher | Dunlin | Curllew | Godwit | Whimbrel | Crane | Heron | Moorhen/Coot | Diver spp. | Stork | Lapwing | Swan | Bittern | Gull spp. | Gulliemot | Tern | Cormorant | Osprey | Gannet | Kitwake | | | | | | | | | |
|-------------------------------|-----------|-------------|--------------|----------|--------|-------------|-------|-----------|----------|---------|-----------------|-------|------------|----------|----------|--------|---------------|-------|---------------|--------|---------|--------|----------|-------|-------|--------------|------------|-------|---------|------|---------|-----------|-----------|------|-----------|--------|--------|---------|--|--|--|--|--|--|--|--|--|
| Late Saxon | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Abbey Green, Chester | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| All Saints Church, Oxford | | | | | | | | | | | * | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chalk Lane, Northampton | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Danesgate, Lincoln a | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Goss Street, Chester | | * | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hinxey Hall, Queen st, Oxford | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ipswich 1974-88b | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ipswich 1974-88 d | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ipswich | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lincoln | | | | * | | | | | | | | * | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mary-Le-Port, Bristol | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Late Saxon Continued | Passerine | Turdus spp. | Columba spp. | Pheasant | Grouse | Capercaille | Quail | Partridge | Corncrake | Mallard | Other Duck spp. | Goose | Wader spp. | Woodcock | Redshank | Plover | Golden Plover | Snipe | Oystercatcher | Dunlin | Curlew | Godwit | Whimbrel | Crane | Heron | Moorhen/Coot | Diver spp. | Stork | Lapwing | Swan | Bittern | Gull spp. | Guillemot | Tern | Cormorant | Osprey | Gannet | Kittiwake | | | | | | | | |
|--------------------------|-----------|-------------|--------------|----------|--------|-------------|-------|-----------|-----------|---------|-----------------|-------|------------|----------|----------|--------|---------------|-------|---------------|--------|--------|--------|----------|-------|-------|--------------|------------|-------|---------|------|---------|-----------|-----------|------|-----------|--------|--------|-----------|--|--|--|--|--|--|--|--|
| Flixborough | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| North Elmham Park b | * | | | | | | | | | | | | | * | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| North Elmham Park c | | * | | | | | | | | | * | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stafford Castle | * | | | | | | | | | | | | | * | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Castle Mall, Norwich | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coppergate, York | | * | | | | | | | | | | * | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fishergate, Norwich | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Site 1092, Thetford | | | * | | | | | | | | * | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| Blue bridge lane, York | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bury Road, Thetford | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coppergate, York a | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coppergate, York b | | * | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coppergate, York d | | * | | | | | | | | | * | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Knocker's site, Thetford | | | * | | | | | | | | * | | | | | | * | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| Micklegate, York | | * | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | |
| Mill Lane, Thetford | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | |
|----------------------------|---|---|---|--|
| Saxo-Norman | | | | |
| SOU25, Southampton | | | | |
| Staple Gardens, Winchester | * | | | |
| The Mound, Glastonbury | | * | | |
| Trowbridge | | | | |
| Wearmouth and Jarrow | * | | | |
| Western Suburb, Winchester | * | | | |
| Waysbury | * | | | |
| Passerine | * | | | |
| Turdus spp. | * | | | |
| Columba spp. | * | | | |
| Pheasant | * | | | |
| Grouse | | | | |
| Capercaille | | | | |
| Quail | * | | | |
| Partridge | * | | | |
| Corncrake | * | | | |
| Mallard | * | | | |
| Other Duck spp. | * | | | |
| Goose | | * | | |
| Wader spp. | * | * | | |
| Woodcock | * | * | | |
| Redshank | | * | | |
| Plover | | | * | |
| Golden Plover | | | * | |
| Snipe | | * | * | |
| Oystercatcher | | | | |
| Dunlin | | | | |
| Curlew | | | | |
| Godwit | | | | |
| Whimbrel | * | | | |
| Crane | * | | | |
| Heron | | | * | |
| Moorhen/Coot | | | * | |
| Diver spp. | | | * | |
| Stork | | | * | |
| Lapwing | | | * | |
| Swan | | * | | |
| Bittern | | | * | |
| Gull spp. | | | * | |
| Guillemot | | | | |
| Tern | | | | |
| Cormorant | | | | |
| Osprey | | | | |
| Gannet | | | | |
| Kittiwake | | | | |

Appendix A3

Presence of Freshwater and Migratory Fish Taxa

| | Migratory | | | | | | | | | | | | | Freshwater | | | | | | | | | | | | | | |
|------------------------------|-----------|-------|------|--------|--------------|--------|----------|-----------|-----|-------|-------|-------------|-------|------------|-------|------|-----------|-------|---------|----------|------|----------|------|------|--------|-------|--------|--|
| | Sturgeon | Smelt | Shad | Salmon | Pleuronectid | Mullet | Flounder | Clupeidae | Eel | Trout | Tench | Stickleback | Ruffe | Rudd | Roach | Pike | Percaidae | Perch | Gudgeon | Grayling | Dace | Cyprinid | Chub | Carp | Burbot | Bream | Barbel | |
| Early Saxon | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Barton Court Farm, Abingdon | | | | | | | | | * | | | | | | | | | * | | | | | | | | | | |
| Bishopstone, Sussex | | | | | | | | | * | | | | | | | | | | | | | | | | | | | |
| Bonnors Lane, Leicester | | | | * | | | | | * | | | | | | | | * | * | * | | | | * | | | | | |
| Deansway, Worcester | | | | | | | | | | | * | | | | | | | | | | | | | | | | | |
| Distillery site, Hammersmith | | | | | | | | | * | | | | | | | | | | | | | | | | | | | |
| Market Lavington, Wiltshire | | | | | | | | | * | | | | | | | | | | | | | | | * | | | | |
| Middleton Stoney | | | | | | | | | * | | | | | | | | * | | | | | | | | | | | |
| Northampton | | | | | | | | | * | | | | | | | | | | | | | | | | | | | |
| Redcastle Furze, Thetford | | | | | | | | | * | | | | | | | | * | | | | | | | | | | | |
| West Stow a | | | | | | | | | * | | | | | | | * | * | | | | | | | | | | | |
| West Stow b | | | | | | | | | | | | | | | | | * | * | | | | | | | | | | |
| West Stow c | | | | | | | | | | | | | | | | | * | * | | | | | | | | | | |

| | Freshwater | | | | | | | | | | | | | Migratory | | | | | | | | | | | | | | |
|----------------------------------|------------|-------|--------|------|------|----------|------|----------|---------|-------|----------|------|-------|-----------|-------|-------------|-------|-------|-----|-----------|----------|--------|--------------|--------|------|-------|----------|---|
| | Barbel | Bream | Burbot | Carp | Chub | Cyprinid | Dace | Grayling | Gudgeon | Perch | Percidae | Pike | Roach | Rudd | Ruffe | Stickleback | Tench | Trout | Eel | Clupeidae | Flounder | Mullet | Pleuronectid | Salmon | Shad | Smelt | Sturgeon | |
| Middle Saxon | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aelfric's Abbey, Eynsham | * | * | | * | | | * | | * | | * | * | * | * | | | | * | * | * | * | | * | * | * | * | * | * |
| Blue bridge lane, York | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cook St, Southampton | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cottam, Yorkshire | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fisher Gate, York | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Flixborough | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Friend's Provident, Southampton | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gosberton | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hartlepool Monastery | | | | | | | | | | | | | * | | | | | | | | | * | | * | | | | |
| Hay Green, Terrington St Clement | | | | | | | | | | | | | | | | | | | | | | * | | * | | | | |
| Ipswich c | | | | | * | | | | | | * | | | | | | | | | | * | * | * | * | * | * | * | |
| James Street, London | | | | | | | | | | | | * | | | | | | | | | | | | | | | * | |
| Jubilee Hall, Covent Garden | | | | * | | * | | | | | * | * | * | * | | | | | | | * | * | * | * | * | * | * | |
| Lake End Road | | | | | | | | | | * | | * | | | | | | | | | * | * | * | * | * | * | * | |
| Maiden Lane | | | | * | | * | | | | * | * | * | * | * | | | | | | * | * | * | * | * | * | * | * | |
| Melbourne St, Southampton | | * | | | | | | | | | | * | * | * | | | | | | * | * | * | * | * | * | * | * | |
| Middleton Stoney | | | | | * | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | |
| National Gallery Basement | | | | | | | | | | | * | | * | | | | | | | | | | | | | | * | |
| National Portrait Gallery | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Peabody site | * | * | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |

| | Freshwater | | | | | | | | | | | | | Migratory | | | | | | | | | | | | | | |
|------------------------------------|------------|-------|--------|------|------|----------|------|----------|---------|-------|----------|------|-------|-----------|-------|-------------|-------|-------|-----|-----------|----------|--------|--------------|--------|------|-------|----------|--|
| | Barbel | Bream | Burbot | Carp | Chub | Cyprinid | Dace | Grayling | Gudgeon | Perch | Percidae | Pike | Roach | Rudd | Ruffe | Stickleback | Tench | Trout | Eel | Clupeidae | Flounder | Mullet | Pleuronectid | Salmon | Shad | Smelt | Sturgeon | |
| Middle Saxon | | | | | | * | | | | | * | | | | | * | | | | * | * | | | * | | | | |
| Rose Hall Farm, Walpole St. Andrew | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sandtun, West Hythe | | | | | | | | | | | | | | | | | | | | * | * | | * | * | | | | |
| Saxon palaces, Northampton | | | | | | | | | | | | | | | | | | | | * | * | | * | * | | | | |
| Six Dials, Hamwic | | | | | | | | | | | | | | | | | | | * | * | * | | * | * | | | | |
| St Nicholas school, Boston | | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | | | |
| Wearmouth and Jarrow | | | | | | | | | | | | | | | | | | | | | | | | * | * | | | |

| | Freshwater | | | | | | | | | | | | | Migratory | | | | | | | | | | | | | | |
|----------------------------|------------|-------|--------|------|------|----------|------|----------|---------|-------|----------|------|-------|-----------|-------|-------------|-------|-------|-----|-----------|----------|--------|--------------|--------|------|-------|----------|---|
| | Barbel | Bream | Burbot | Carp | Chub | Cyprinid | Dace | Grayling | Gudgeon | Perch | Percidae | Pike | Roach | Rudd | Ruffe | Stickleback | Tench | Trout | Eel | Clupeidae | Flounder | Mullet | Pleuronectid | Salmon | Shad | Smelt | Sturgeon | |
| Late Saxon | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * |
| 113-119 High st, Oxford | | | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * |
| Aelfric's Abbey, Eynsham c | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Aelfric's Abbey, Eynsham d | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Benham's Garage, Taunton | | | | | * | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Bury Road, Thetford | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Coppergate, York a | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Coppergate, York b | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

| | Freshwater | | | | | | | | | | | | | Migratory | | | | | | | | | | | | | | |
|-------------------------------|------------|-------|--------|------|------|----------|------|----------|---------|-------|----------|------|-------|-----------|-------|-------------|-------|-------|-----|-----------|----------|--------|--------------|--------|------|-------|----------|---|
| | Barbel | Bream | Burbot | Carp | Chub | Cyprinid | Dace | Grayling | Gudgeon | Perch | Percidae | Pike | Roach | Rudd | Ruffe | Stickleback | Tench | Trout | Eel | Clupeidae | Flounder | Mullet | Pleuronectid | Salmon | Shad | Smelt | Sturgeon | |
| Late Saxon | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coppergate, York c | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Coppergate, York d | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Easton Lane, Winchester | | | * | | | | | | * | | | | | | | | | | * | | | | | | | | | |
| Facombe Netherton | | | | | | | | | | | | | | | | | * | | | | | | | | | | | |
| Fishergate, Norwich | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |
| Flixborough | | * | | | | * | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Hinxey Hall, Queen st, Oxford | | | | * | | | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Ipswich | | | | | | | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Knocker's site, Thetford | | | | | | | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Lewes Priory | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Lincoln | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Longstanton | | | | | | | | | | | | | | | | | | | * | | | | | | | | | |
| Market Lavington, Wiltshire b | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |
| Micklegate, York | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Mill Lane, Thetford | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Site 1092, Thetford | | | | | | | | * | | | | | | | | * | | | | | | | | | | | | |
| St Peter's walk, Northampton | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Trill Mill Stream, Oxford | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Wearmouth and Jarrow | | | | | | | | | | | | | | | | | * | | | | | | | | | | | |
| West Cotton, Raunds | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |
| Whitefriars car park, Norwich | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |

| | Freshwater | | | | | | | | | | | | | Migratory | | | | | | | | | | | | | | | |
|---|------------|-------|--------|------|------|----------|------|----------|---------|-------|----------|------|-------|-----------|-------|-------------|-------|-------|-----|-----------|----------|--------|------------|--------|------|-------|----------|---|---|
| | Barbel | Bream | Burbot | Carp | Chub | Cyprinid | Dace | Grayling | Gudgeon | Perch | Percidae | Pike | Roach | Rudd | Ruffe | Stickleback | Tench | Trout | Eel | Clupeidae | Flounder | Mullet | Pleuroctid | Salmon | Shad | Smelt | Sturgeon | | |
| Saxon-Norman | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bartholemew Street, Newbury | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | |
| Billingsgate triangle | | * | | | | | | | | | | * | | | | | | | | | | | | | | | | | |
| Church End, Cherry Hinton | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | |
| Deansway, Worcester | | * | | | | | | | | | | | | | | | | * | | | | | | * | | | | | |
| Dorter Undercroft, Westminster Abbey | * | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Exeter as whole | | | | | | | | | | | | | | | | | | | * | | | | * | * | * | * | * | * | |
| Facombe Netherton | | | | | | | | | | | | | | | | | | | * | | | | * | * | * | * | * | * | |
| Fishergate, York | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Greyfriars, Norwich | | | | | | * | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Kingswell St and Woolmonger St, Northampton | | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Lincoln | | | | | | | * | | | | | * | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Mill Lane, Thetford | | | | | | | | | | | * | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Orchard Lane, Huntingdon | | * | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Redcastle Furze, Thetford b | | | | | | | | | | | | | | | | * | | | * | * | * | * | * | * | * | * | * | * | |
| Saxon palaces, Northampton | | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| St Martin-at-palace plain, Norwich | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| St Peters Rd, Northampton | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| St Peter's walk, Northampton | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Trowbridge | | | | | | * | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Victoria Rd, Winchester | | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Wilton, Salisbury | | | | | | | | | | | | | | | | | | | * | * | * | * | * | * | * | * | * | * | |
| Wraysbury | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

Appendix A4

Presence of Marine Fish Taxa

| Early Saxon | Baynard's Castle | Bishopstone, Sussex | Bonnors Lane, Leicester | Deansway, Worcester | Distillery site, Hammersmith | Harlington, London | Manston rd, Ramsgate | Market Lavington, Wiltshire | Northampton | Redcastle Furze, Thetford | West Stow |
|---------------------|------------------|---------------------|-------------------------|---------------------|------------------------------|--------------------|----------------------|-----------------------------|-------------|---------------------------|-----------|
| Wrasse | | | | | | | | | | | |
| Whiting | | * | | | | | | | | | |
| Turbot | | | | | | | | | | | |
| Tunny | | | | | | | | | | | |
| Triglidae | | | | | | | | | | | |
| Sole | | | | | | | | | | | |
| Shark | | | | | | | | | | | |
| Serranid | | | | | | | | | | | |
| Seabream | | | | | | | | | | | |
| Scad/Horse mackerel | | | | | | | | | | | |
| Saithe | | | | | | | | | | | |
| Roker/Thornback ray | | | | | | | | | | | |
| Ray | | | | * | | | * | | | | |
| Pollack | | | | | | | | | | | |
| Plaice | | | | | * | | | | | | * |
| Piper | | | | | | | | | | | |
| Pandora | | | | | | | | | | | |
| Mackerel | | | | | | | | | | | |
| Ling | | | | | | | | | | | |
| John dory | | | | | | | | | | | |
| Herring/Sprat | | | * | | * | | * | | | * | |
| Halibut | | | | | | | | | | | |
| Hake | | | | | | | | | | | |
| Haddock | | | | | | | | | | | |
| Gurnard | | | | | | | | | | | |
| Gilthead | | | | | | | | | | | |
| Garfish | | | | | | | | | | | |
| Gadid | | | | | | | | | | | |
| Flatfish | | * | | | | * | * | | | | |
| Elasobranch | | | | | | * | | | | | |
| Dogfish | | | | | | | | * | | | |
| Dab | | | | | | | | | | | |
| Conger | | | | | | | | | | | |
| Cod | | | | | | | | | * | | |
| Bullrout | | | | | | | | | | | |
| Brill | | | | | | | | | | | |
| Bass | | | | | | | | | | | |

| Middle Saxon | Bass | Brill | Bullrout | Cod | Conger | Dab | Dogfish | Elasmobranch | Flatfish | Gadid | Garfish | Gillthead | Gurnard | Haddock | Hake | Halibut | Herring/Sprat | John dory | Ling | Mackerel | Pandora | Piper | Plaice | Pollack | Ray | Roker/ Thornback ray | Saithe | Scad/ Horse mackerel | Seabream | Serranid | Shark | Sole | Triglidae | Tunny | Turbot | Whiting | Wrasse | | | | |
|-----------------------------------|------|-------|----------|-----|--------|-----|---------|--------------|----------|-------|---------|-----------|---------|---------|------|---------|---------------|-----------|------|----------|---------|-------|--------|---------|-----|----------------------|--------|----------------------|----------|----------|-------|------|-----------|-------|--------|---------|--------|--|--|--|--|
| Aelfric's Abbey, Eynsham | * | * | * | * | | | | | | | | | | | | | * | | | | | | | * | | | | | | | | | | | | | | | | | |
| Blue bridge lane, York | | | | | | | | * | * | | | | * | | | | * | | | | | | | * | | | | | | | | | | | | | * | | | | |
| Cook St, Southampton | | | | | | | | * | * | | | | | | | | * | | | | | | | * | | | | | | | | | | | | | * | | | | |
| Fishergate, York | | | | * | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | | * | | | | | |
| Flixborough | | | | * | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | | * | | | | | |
| Friend's Provident, Southampton | | | | | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | | * | | | | | |
| Gosberton | | | | * | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | * | | | | | | |
| Hartlepool Monastery | | | | * | * | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | * | | | | | | |
| Hay Green, Terrington St. Clement | | | | | | | | * | * | | | | | | | * | * | | | * | | | | | | | | | | | | | | * | | | | | | | |
| Ipswich c | | | | * | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | * | | | | | | | |
| Jubilee Hall, Covent Garden | | | | | | | | | | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | | | | | | | |
| Lake End Road | | | | | | | | | | | | | | | | * | * | | | * | | | | | | | | | | | | | | | | | | | | | |
| Maiden Lane | * | | | * | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | | * | | | | | |
| Melbourne St, Southampton | | | * | * | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | * | | | | | | |
| National Gallery Basement | * | | | | | | | * | * | | | | * | | | * | * | | | * | | | | | | | | | | | | | | | * | | | | | | |

| | Bass | Brill | Bullrout | Cod | Conger | Dab | Dogfish | Eel | Flatfish | Gadid | Garfish | Gillthead | Gurnard | Haddock | Hake | Hallbut | Herring/Sprat | John dory | Ling | Mackerel | Pandora | Piper | Plaice | Pollack | Ray | Roker/ Thornback ray | Saithe | Scad/ Horse mackerel | Seabream | Serranid | Shark | Sole | Triglidae | Tunny | Turbot | Whiting | Wrasse | | | | | | | | | | |
|---------------------------------------|------|-------|----------|-----|--------|-----|---------|-----|----------|-------|---------|-----------|---------|---------|------|---------|---------------|-----------|------|----------|---------|-------|--------|---------|-----|----------------------|--------|----------------------|----------|----------|-------|------|-----------|-------|--------|---------|--------|---|---|---|---|---|---|---|---|--|--|
| Middle Saxon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| National Portrait Gallery | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peabody site | | * | | * | | | | * | * | | | * | * | * | * | | | | | | | | * | | | | | | | | | | | | | | * | | | | | | | | | | |
| Rose Hall Farm, Walpole St. Andrew | | | | | | | | | | * | | | | * | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sandtun, West Hythe | | | | * | * | | | * | * | | * | * | * | * | * | | * | * | | | * | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | | | |
| Saxon palaces, Northampton | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Six Dials, Hamwic | | | | | | | | * | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | | |
| St Nicholas school, Boston | | | | * | | | | | * | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | |
| Wearmouth and Jarrow | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Late Saxon | Brill | Bullrout | Cod | Conger | Dab | Dogfish | Elasmobranch | Flatfish | Gadid | Garfish | Gilthead | Gurnard | Haddock | Hake | Halibut | Herring/Sprat | John dory | Ling | Mackerel | Pandora | Piper | Plaice | Pollack | Ray | Roker/Thornback ray | Saithe | Scad/Horse mackerel | Seabream | Serranid | Shark | Sole | Triglidae | Tunny | Turbot | Whiting | Wrasse | | | | | | |
|-------------------------------|-------|----------|-----|--------|-----|---------|--------------|----------|-------|---------|----------|---------|---------|------|---------|---------------|-----------|------|----------|---------|-------|--------|---------|-----|---------------------|--------|---------------------|----------|----------|-------|------|-----------|-------|--------|---------|--------|--|--|--|--|--|--|
| Lewes Priory | * | | | | | | | | | | | | | | | * | | | | | | * | | | | | | | | | | | | | | | | | | | | |
| Lincoln | | | | | | | | | | | | * | | * | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |
| Longstanton | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Market Lavington, Wiltshire | | | | | | * | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Micklegate, York | * | | | | | | | * | | | | | | | | * | | | | | | | | | * | | | | | | | | | | | | | | | | | |
| Mill Lane, Thetford | * | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sire 1092, Thetford | * | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St Peter's walk, Northampton | * | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tenements, Durham City | * | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Victoria Rd, Winchester | | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wearmouth and Jarrow | * | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| West Cotton, Raunds | | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Whitefriars car park, Norwich | * | | | | | | | * | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Saxon-Norman | Brill | Bullrout | Cod | Conger | Dab | Dogfish | Elsambranch | Flatfish | Gadid | Garfish | Gillhead | Gurnard | Haddock | Hake | Halibut | Herring/ Sprat | John dory | Ling | Mackerel | Pandora | Piper | Plaice | Pollack | Ray | Roker/Thornback ray | Saithe | Scad/ Horse mackerel | Seabream | Serranid | Shark | Sole | Triglidae | Tunny | Turbot | Whiting | Wrasse | | | |
|---|-------|----------|-----|--------|-----|---------|-------------|----------|-------|---------|----------|---------|---------|------|---------|----------------|-----------|------|----------|---------|-------|--------|---------|-----|---------------------|--------|----------------------|----------|----------|-------|------|-----------|-------|--------|---------|--------|---|--|--|
| Barking Abbey | * | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | |
| Bartholemew Street, Newbury | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Billingsgate triangle | | * | * | | | | | | | | | | * | | | | | | | | | * | | | | | | | | | | | | | | * | | | |
| Botolphs, Bramber | | * | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | |
| Deansway, Worcester | | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | |
| Dorter Undercroft, Westminster Abbey | | * | * | | | | | * | * | | | * | * | | | | | | | | | | * | * | * | * | * | | | | | | | | * | * | * | | |
| Exeter as whole | | | * | | | | | * | * | | | * | * | | | | | | | | | | * | * | * | * | * | | | | | | | | * | * | * | | |
| Fishergate, York | | * | * | | | * | | * | * | | | | * | | | | | | | | | | | * | * | * | * | | | | | | | | | | | | |
| Greyfriars, Norwich | | * | * | | * | | | * | * | | | | * | | | | | | | | | | | * | * | * | * | | | | | | | | | | | | |
| Guildford Castle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Henley's Garage, Winchester | | * | * | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holy Island Village, Lindisfarne | | * | * | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kingswell St and Woolmonger St, Northampton | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mill Lane, Thetford | | * | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| Redcastle Furze, Thetford | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |

| Saxon-Norman | Brill | Bullrout | Cod | Conger | Dab | Dogfish | Elasmobranch | Flatfish | Gadid | Garfish | Gilthead | Gurnard | Haddock | Hake | Halibut | Herring/Sprat | John dory | Ling | Mackerel | Pandora | Piper | Plaice | Pollack | Ray | Roker/Thornback ray | Saithe | Scad/Horse mackerel | Seabream | Serranid | Shark | Sole | Triglidae | Tunny | Turbot | Whiting | Wrasse | | | | |
|------------------------------|--------------|-----------------|------------|---------------|------------|----------------|---------------------|-----------------|--------------|----------------|-----------------|----------------|----------------|-------------|----------------|----------------------|------------------|-------------|-----------------|----------------|--------------|---------------|----------------|------------|----------------------------|---------------|----------------------------|-----------------|-----------------|--------------|-------------|------------------|--------------|---------------|----------------|---------------|---|---|---|---|
| Saxon palaces, Northampton | | | | | | | * | | | | | | | | * | * | | | | | | | | | | | | | | | | | | | | | | | | |
| St Martin-at-palace plain | | | * | | | | * | * | * | | | * | * | | | * | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | |
| St Peters Rd, Northampton | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | |
| St Peter's walk, Northampton | | | * | | | | * | * | | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | |
| Trowbridge | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | * | | | | | | | | | | | |
| Victoria Rd, Winchester | * | | * | * | | | * | * | * | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Wilton, Salisbury | | | | | | | | * | * | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Wwaysbury | | | | | | | | * | * | | | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

Appendix B

Mortality Profiles

Mortality stages are as defined by Hambleton (1999). All values are number of mandibles except sites marked* % values; ** MNI; *** % values cattle and sheep/goat, NISP pig. Where no value is given, this stage was not recorded in the original site report.

| | Cattle | | | | | | | | | | | | Sheep/ Goat | | | | | | | | | | | | Pig | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--------|----|----|----|----|----|----|----|----|----|----|-----|-------------|-----|-----|-----|----|----|----|----|----|----|----|----|-----|---|---|---|---|---|---|---|---|---|---|---|----|----|---|---|--|--|---|--|--|---|--|--|---|--|--|---|--|--|
| | A | | | B | | | C | | | D | | | E | | | F | | | G | | | H | | | I | | | A | | | B | | | C | | | D | | | E | | | F | | | G | | | H | | | I | | |
| | 11 | 43 | 13 | 13 | 20 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 22 | 28 | 18 | 22 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 73 | 7 | | | | | | | | | | | | | | | |
| Early Saxon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Eynsham Abbey* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Bonnors Lane, Leicester | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Deansway, Worcester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Eye Kettleby | 0 | 0 | 2 | 10 | 2 | 2 | 3 | 2 | 0 | 1 | 4 | 18 | 12 | 5 | 6 | 4 | 3 | 0 | 0 | 1 | 0 | 9 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | |
| Fossets Farm, Southend | 0 | 1 | 0 | 3 | 2 | 1 | 2 | 5 | 5 | 0 | 0 | 1 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Harlington, London | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Hartigans, Milton Keynes | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Market Lavington, Wiltshire | 2 | 1 | 3 | 2 | 13 | 0 | 0 | 0 | 0 | 6 | 7 | 6 | 7 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Melford Meadows, Brettenham | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 1 | 0 | 3 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Mill st, Wantage | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Nettleton Top | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Old Down Farm, Andover | 0 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Oxford Science park, Littlemore | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 5 | 0 | 0 | 0 | 4 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | |
| Pennyland, Milton Keynes | 6 | 1 | 6 | 15 | 2 | 5 | 0 | 7 | 59 | 44 | 17 | 22 | 16 | 16 | 0 | 2 | 1 | 6 | 10 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | |
| Redcastle Furze, Thetford | 1 | 0 | 2 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 12 | 12 | 1 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | |
| Sherborne House, Lechlade | 0 | 0 | 5 | 6 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 1 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |
| Stonea grange, Cambridgeshire | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | |
| West Stow | 35 | 5 | 44 | 78 | 26 | 32 | 20 | 27 | 26 | 24 | 62 | 480 | 235 | 117 | 148 | 102 | 50 | 36 | 13 | 9 | 5 | 9 | 18 | 13 | 22 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |

| | Cattle | | | | | | | | | | Sheep/Goat | | | | | | | | | | Pig | | | | | | | | | |
|----------------------------------|--------|---|---|---|---|---|---|---|---|---|------------|----|----|----|----|---|---|----|---|---|-----|---|----|----|----|---|---|---|---|--|
| | A | B | C | D | E | F | G | H | I | | A | B | C | D | E | F | G | H | I | | A | B | C | D | E | F | G | H | I | |
| Early-Middle Saxon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 11 | 21 | 10 | | | | | |
| Chapter House, St Albans Abbey | 0 | 4 | 1 | 7 | 4 | 1 | 2 | 3 | 5 | 0 | 6 | 23 | 21 | 9 | 7 | 4 | 3 | 27 | 0 | 8 | 9 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Harston Mill, Cambridgeshire | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Langham Rd and Burystead, Raunds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 1 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| North Manor, Wharram | 0 | 1 | 2 | 2 | 7 | | | | | | 0 | 0 | 1 | 4 | 10 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Northampton rd, Brixworth | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | |
| Wilton, Salisbury | 0 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 3 | 4 | 15 | 10 | 5 | 7 | 0 | 1 | 0 | 4 | 3 | 5 | 1 | 3 | 0 | 0 | 0 | 0 | |
| Wolverton Turn enclosure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

| | Cattle | | | | | | | | | | Sheep/Goat | | | | | | | | | | Pig | | | | | | | | | |
|-----------------------------------|--------|----|---|---|---|---|---|---|---|----|------------|----|----|----|---|----|----|---|---|----|-----|----|----|----|----|----|---|---|---|--|
| | A | B | C | D | E | F | G | H | I | | A | B | C | D | E | F | G | H | I | | A | B | C | D | E | F | G | H | I | |
| Middle Saxon | 0 | 7 | | | | | | | | | 0 | 12 | 53 | 26 | 4 | 4 | 0 | 0 | 0 | 7 | 32 | 14 | 47 | | | | | | | |
| Eynsham Abbey * | 0 | 0 | 0 | 2 | 6 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Anderson's road, Southampton | 1 | 12 | 9 | | | | | | | 10 | 70 | 3 | 6 | 18 | | | | | | 29 | 39 | 5 | 28 | 12 | 23 | 25 | 2 | | | |
| Brandon*** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 15 | 7 | 2 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Cadley rd, Collingbourne Ducis | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| Chalkpit Field North, Sedgford | 0 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Copeshill rd, Lower Slaughtcr | 0 | 2 | 2 | 6 | 1 | 5 | 3 | 2 | | | 0 | 1 | 5 | 9 | 1 | 7 | 12 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 8 | 1 | 0 | | | |
| Fishergate, York | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Flixborough | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 12 | | | | | | 29 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Friend's Provident, Southampton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 4 | 4 | 11 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hartlepool Monastery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hay Green, Terrington St. Clement | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

| | Cattle | | | | | | | | | | | Sheep/Goat | | | | | | | | | | | Pig | | | | | | | | | | |
|------------------------------------|--------|----|----|----|----|----|----|----|----|----|----|------------|----|----|----|----|----|----|----|----|----|----|-----|-----|----|---|---|--|--|--|--|--|--|
| | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | | | | | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Middle Saxon | 16 | 27 | | | | | | | | 12 | 45 | | | | | | | | | | | | | | | | | | | | | | |
| Hunter Street School, Chester | 0 | 3 | 1 | 4 | | | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | |
| Ipswich 1974-88*** | 0 | 12 | 16 | 30 | 5 | 2 | 28 | 12 | 12 | 0 | 2 | 16 | 16 | 16 | 23 | 6 | 5 | 5 | 1 | 6 | 38 | 44 | 45 | 2 | | | | | | | | | |
| James Street, London | 0 | 0 | 0 | 1 | 0 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lake End Road and Lots Hole** | 94 | 94 | 82 | 60 | 45 | 17 | 0 | 0 | 0 | 95 | 95 | 81 | 63 | 35 | 9 | 0 | 0 | 0 | 98 | 98 | 80 | 40 | 27 | 12 | 0 | 0 | | | | | | | |
| Lordship Lane, Cottenham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 15 | 12 | 6 | 9 | 11 | 1 | | | | | | | | | | | | | | | | |
| Melbourne St, Southampton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 12 | 8 | 6 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | |
| National Portrait Gallery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 15 | 7 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | |
| Rose Hall Farm, Walpole St. Andrew | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 1 | 3 | 1 | 2 | 1 | 0 | 0 | 2 | 3 | 1 | | | | | | | | |
| Sites 94 and 95, Wharram | 1 | 1 | 0 | 14 | 11 | 11 | 0 | 24 | 23 | 3 | 10 | 17 | 31 | 53 | 55 | 10 | 67 | 1 | 0 | 2 | 21 | 10 | 26 | 9 | 3 | 3 | | | | | | | |
| St Peters Rd, Northampton | 1 | 8 | 8 | | | | | | | 11 | 72 | 9 | 8 | 5 | | | | 29 | 48 | 1 | 15 | 37 | 109 | 110 | 30 | | | | | | | | |
| The south manor area, Wharram | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wicken Bonhunt, Essex*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Cattle | | | | | | | | | | | Sheep/Goat | | | | | | | | | | | Pig | | | | | | | | | | |
|--------------------|--------|---|---|----|---|---|----|---|----|---|----|------------|----|----|----|----|----|---|---|---|---|----|-----|---|---|---|---|--|--|--|--|--|--|
| | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | | | | | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Middle-Late Saxon | 1 | 0 | 1 | 20 | 8 | 8 | 13 | 8 | 23 | 0 | 10 | 26 | 42 | 49 | 50 | 34 | 31 | 2 | 0 | 5 | 9 | 65 | 36 | 3 | 5 | 0 | | | | | | | |
| Eastgate, Beverley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | | | | | | | |
| Portchester Castle | 0 | 0 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trowbridge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Cattle | | | | | | | | | | | | Sheep/Goat | | | | | | | | | | | | Pig | | | | | | | | | | | |
|--------------------------------|------------|---|---|----|----|----|----|---|----|---|----|----|------------|----|----|----|----|----|----|----|----|----|----|---|-----|---|---|---|--|--|--|--|--|--|--|--|
| | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | | | | | | | | | |
| | Late Saxon | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | |
| Abbey Green, Chester | 9 | 0 | | | 17 | 44 | 30 | | | 4 | 0 | 10 | 22 | 14 | 26 | 11 | 10 | 4 | 18 | 21 | 46 | 8 | | | | | 8 | | | | | | | | | |
| Eynsham Abbey* | 1 | 0 | 0 | 0 | 5 | 0 | 2 | 2 | 0 | 1 | 5 | 2 | 1 | 5 | 0 | 3 | 1 | | 1 | 7 | 12 | 9 | 0 | | | | 0 | | | | | | | | | |
| Bishopstone, Seaford | 0 | 1 | 5 | 1 | 2 | 2 | 3 | 4 | 4 | 2 | 10 | 9 | 19 | 12 | 23 | 5 | 8 | 1 | 3 | 6 | 7 | 20 | 10 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Brandon Rd, Thetford | 0 | 0 | 1 | 11 | 1 | 2 | 4 | 2 | 14 | 0 | 2 | 2 | 16 | 15 | 15 | 11 | 2 | 0 | 0 | 8 | 11 | 9 | 3 | | | | | | | | | | | | | |
| Bury Road, Thetford | 0 | 0 | 0 | 3 | 9 | 8 | 9 | 6 | 24 | 0 | 0 | 0 | 2 | 1 | 3 | 9 | 8 | 46 | 0 | 0 | 5 | 13 | 4 | 1 | 1 | 0 | 0 | | | | | | | | | |
| Castle Mall, Norwich | 0 | 0 | 0 | 4 | 4 | 5 | 3 | 1 | 8 | 0 | 5 | 2 | 9 | 17 | 7 | 8 | 2 | 0 | 0 | 0 | 5 | 6 | 2 | 0 | 1 | 0 | 0 | | | | | | | | | |
| Chalkpit Field North, Sedgford | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 2 | 4 | 8 | 16 | 10 | 4 | 9 | 0 | 0 | 1 | 5 | 11 | 9 | 2 | 0 | 0 | 0 | | | | | | | | | |
| Codrington Library, Oxford | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Coppergate, York a | 0 | 2 | 4 | 11 | | 25 | 2 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Coppergate, York b | 0 | 0 | 4 | 15 | | 21 | 7 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Coppergate, York c | 1 | 0 | 1 | 6 | | 21 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Coppergate, York d | 1 | 0 | 2 | 12 | | 34 | 3 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Crook Street, Chester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Danesgate, Lincoln | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Faccombe Netherton | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 4 | 2 | 5 | 1 | 4 | 0 | 0 | 1 | 3 | 9 | 5 | 5 | | | | | | | | | | | | | |
| Flaxengate, Lincoln a | 0 | 0 | 0 | | 0 | 2 | 9 | | | 0 | 1 | 1 | 8 | 12 | | | | 0 | 2 | 0 | 3 | 2 | | | | | | | | | | | | | | |
| Flaxengate, Lincoln b | 0 | 0 | 0 | | 2 | 8 | 7 | | | 1 | 1 | 11 | 13 | 31 | | | | 3 | 4 | 8 | 14 | 9 | | | | | | | | | | | | | | |
| Flixborough b | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Goss Street, Chester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |
| Hinxey Hall, Queen st, Oxford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | |

| | Cattle | | | | | | | | | | | Sheep/Goat | | | | | | | | | | | Pig | | | | | | | | | | |
|--------------------------------|-------------|---|---|---|---|---|----|----|---|---|---|------------|----|----|----|----|----|---|---|----|----|---|-----|----|---|---|---|--|--|--|--|--|--|
| | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | A | B | C | D | E | F | G | H | I | | | | | | |
| | Saxo-Norman | 0 | 0 | 1 | 1 | 2 | 0 | 5 | 2 | 4 | 1 | 1 | 2 | 0 | 4 | 2 | 1 | 0 | 0 | 0 | 9 | 2 | 7 | 4 | 4 | | | | | | | | |
| Faccombe Netherpton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Fishergate, York | 2 | 2 | | | 1 | 7 | 29 | | | 8 | 2 | 41 | | | 34 | 65 | | | 0 | 16 | 36 | | 30 | 13 | | | | | | | | | |
| Flaxengate, Lincoln | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 1 | 0 | 0 | 0 | | | | | | |
| Friar Street, Droitwich | 0 | 1 | 0 | 0 | 0 | 1 | 8 | 11 | | 0 | 0 | 5 | 0 | 2 | 3 | 6 | 0 | 1 | 0 | 0 | 1 | 5 | 0 | 6 | 1 | 0 | 0 | | | | | | |
| Harlington, London | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 3 | 4 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | | | | | | |
| Kingswell St and Woolmonger St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | | | | |
| Lincoln | 0 | 0 | 0 | 2 | 1 | 4 | | | | 0 | 0 | 0 | 1 | 2 | | 1 | 1 | | 0 | 0 | 1 | 1 | | | | | | | | | | | |
| Lordship Lane, Cottenham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 1 | 3 | | | | | | | | | |
| Pontefract Castle | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 3 | 15 | 8 | 18 | 20 | 12 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Redcastle Furze, Thetford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| St Magnus | 1 | 1 | 1 | 1 | 5 | 3 | 7 | 14 | 0 | 0 | 2 | 0 | 1 | 8 | 4 | 13 | 18 | 2 | 2 | 4 | 5 | 3 | 17 | 10 | 6 | | | | | | | | |
| St Peters Rd, Northampton | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 3 | 6 | 0 | 2 | 9 | 14 | 8 | 6 | 3 | 0 | 0 | 1 | 7 | 3 | 9 | 1 | 0 | 0 | 0 | | | | | | |
| Staple Gardens, Winchester* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 3 | 1 | 1 | 7 | 4 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Tempsford Park | 1 | 1 | 1 | 2 | 2 | | | | | 0 | 2 | 4 | 4 | 2 | | | | | 2 | 6 | 9 | 3 | 1 | | | | | | | | | | |
| Trowbridge | 0 | 0 | 0 | 5 | 2 | 2 | 6 | 11 | 5 | 0 | 0 | 2 | 14 | 31 | 37 | 15 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Western Suburb, Winchester | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 1 | 2 | 6 | 4 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | | | | | | |
| Wilton, Salisbury | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Worcester Cathedral | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | | | | | | |

Appendix C1

Cattle Carcass Part Representation

All values are number of fragments except sites marked* = minimum number elements or ** = minimum number individuals. Where no value is given, this element was not recorded in the original site report. Unless otherwise stated skull and vertebrae counts are assumed to be counts of all fragments.

| Early Saxon | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|---------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|---------------------------------|
| Eynsham Abbey | | | | 5 | 7 | 7 | | | 6 | 5 | 2 | | |
| Bishopstone, Sussex | | 3 | 0 | 2 | 1 | 3 | 0 | 4 | 1 | 1 | 3 | 3 | |
| Eye Kettleby | 50 | 77 | 314 | 12 | 63 | 86 | 32 | 50 | 42 | 67 | 48 | 22 | vert= cervical1&2 |
| Harlington, London | 1 | 6 | 2 | 4 | 7 | 4 | 4 | 3 | 4 | 3 | 4 | 1 | |
| Hartigans, Milton Keynes | 0 | 11 | 9 | 1 | 5 | 2 | 3 | 5 | 7 | 3 | 7 | 2 | vert= cervical1&2 |
| Kilverstone, Norfolk* | 1 | 6 | 0 | | 1 | 4 | 0 | 3 | 0 | 4 | 1 | 1 | |
| Melford Meadows, Brettenham | 1 | 34 | 10 | 3 | 4 | 8 | 14 | 6 | 8 | 13 | 20 | 2 | skull=maxilla; vert=cervical1&2 |
| Mill st, Wantage | | 11 | 5 | 5 | 11 | 4 | 2 | 9 | 5 | 5 | 7 | 3 | |
| Nettleton Top | | 50 | 33 | | 23 | 24 | 28 | 22 | 28 | 25 | 29 | 6 | |
| Orton Hall Farm | 71 | 214 | 392 | 357 | 107 | 142 | 107 | 107 | 142 | 178 | 143 | 143 | |
| Oxford Science park, Littlemore | 2 | 40 | 5 | 0 | 28 | 13 | 10 | 15 | 14 | 16 | 6 | 10 | vert= cervical1&2 |
| Pennyland, Milton Keynes | | 182 | 114 | 158 | 33 | 54 | 62 | 57 | 37 | 35 | 72 | 72 | |
| Poundbury, Dorchester | | 134 | 222 | 165 | 63 | 61 | 57 | 38 | 45 | 59 | 32 | 43 | |
| Redcastle Furze, Thetford | 16 | 101 | 117 | 8 | 27 | 10 | 21 | 28 | 16 | 23 | 26 | 39 | |
| Spong Hill, Norfolk | 22 | 63 | 28 | 23 | 29 | 10 | 14 | 21 | 5 | 15 | 43 | 9 | |
| St Helen's Avenue, Benson | | 36 | 34 | 3 | 21 | 12 | 11 | 9 | 17 | 12 | 14 | 9 | vert= cervical1&2 |
| Stonea grange, Cambridgeshire* | | 4 | | | 4 | 3 | 3 | 2 | 2 | 3 | 5 | | |
| West Stow a | 55 | 240 | | | 147 | 99 | 100 | 149 | 94 | 106 | 117 | 67 | |
| West Stow b | 84 | 469 | | | 278 | 142 | 190 | 216 | 156 | 191 | 212 | 121 | |
| West Stow c | 13 | 50 | | | 41 | 19 | 12 | 38 | 13 | 18 | 18 | 16 | |
| Baynard's Castle* | | 8 | 8 | 13 | 5 | 4 | 4 | 4 | 4 | 5 | 8 | 4 | |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|-------------------------------------|
| Abbots Worthy | 2 | 17 | 60 | 47 | 14 | 7 | 10 | 9 | 17 | 14 | 2 | | |
| Harold, Bedfordshire | 8 | 84 | 12 | 2 | 40 | 27 | 23 | 27 | 20 | 21 | 20 | 13 | skull = maxilla; vert = cervical1&2 |
| Harston Mill, Cambridgeshire | 45 | 152 | 16 | 18 | 105 | 66 | 62 | 98 | 69 | 51 | 67 | 41 | vert= cervical1&2 |
| Langham Rd and Burystead, Raunds* | | 9 | | 6 | 5 | 3 | | | 2 | 4 | 4 | | |
| Mucking | 14 | 72 | 51 | 21 | 22 | 46 | 41 | 33 | 14 | 48 | 69 | 26 | |
| North Manor, Wharham | | 0 | 0 | 22 | 3 | 3 | 2 | 6 | 4 | 4 | 0 | 2 | |
| Portchester Castle* | 18 | 13 | 11 | 3 | 17 | 20 | 29 | 14 | 18 | 18 | 37 | 33 | vert= cervical1&2 |
| Wilton, Salisbury* | 0 | 4 | 2 | 1 | 9 | 5 | 12 | 8 | 5 | 7 | 10 | 4 | |
| Wolverton Turn enclosure, stony stratford* | 1 | 6 | 2 | 5 | 6 | 6 | 2 | 7 | 7 | 8 | 3 | | vert= cervical1&2 |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| 23-27 High Street, Bedford | 0 | 1 | 0 | 0 | 2 | 2 | 6 | 2 | 1 | 3 | 4 | 1 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Eynsham Abbey | | | | 10 | 18 | 20 | | 5 | 17 | 4 | | | |
| Anderson's road, Southampton* | 0 | 1 | 1 | 0 | 4 | 2 | 9 | 1 | 3 | 8 | 11 | 1 | vert only recorded if >50% present |
| Brandon | 176 | 796 | 578 | 241 | 366 | 521 | 528 | 737 | 561 | 581 | 504 | 416 | vert= cervical1,&2+ sacrum |
| Cadley rd, Collingbourne Ducis | 40 | 39 | 8 | 29 | 20 | 22 | 22 | 26 | 29 | 23 | 13 | | atlas and axis. Skull not inc maxilla / pmaxilla |
| Cresswell Field, Yarnton* | 4 | 1 | 2 | 1 | 0 | 1 | 2 | 1 | 1 | 3 | 1 | 1 | skull=zygomatic; vert=cervical1&2 |
| Fishergate, York* | 83 | 120 | 24 | 79 | 52 | 165 | 131 | 126 | 173 | 132 | 166 | 211 | skull=maxilla; vert=cervical1&2 |
| Flixborough** | 53 | 286 | | 98 | 83 | 75 | 131 | 30 | 92 | 86 | 68 | | |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|------------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Middle Saxon | | | | | | | | | | | | | |
| Friend's Provident, Southampton | | 247 | 226 | 66 | 192 | 183 | 128 | 187 | 195 | 150 | 125 | 188 | vert= cervical1&2 |
| Gosberton | 1 | 11 | 2 | 3 | 6 | 4 | 3 | 4 | 4 | 2 | 7 | 4 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Hay Green, Terrington St. Clement | 0 | 5 | 10 | 2 | 3 | 1 | 9 | 3 | 7 | 1 | 5 | 6 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Lake End Road* | 44 | 107 | 17 | 33 | 68 | 94 | 78 | 62 | 55 | 73 | 76 | 36 | vert= cervical1&2+ sacrum |
| Lot's Hole | 1 | 2 | 4 | 11 | 1 | 0 | 3 | 1 | 1 | 1 | 1 | 2 | |
| Marefair, Northampton | | 22 | 13 | | 25 | 14 | 12 | 14 | 20 | 14 | 11 | 7 | |
| Melbourne St, Southampton | 301 | 1055 | | 967 | 790 | 710 | 1056 | 767 | 894 | 477 | 431 | | |
| North Elmham Park | 105 | | | 66 | 57 | 44 | 48 | 79 | 47 | 59 | 27 | | |
| Peabody site | 53 | 175 | 27 | 83 | 66 | 107 | 108 | 113 | 117 | 103 | 103 | 90 | vert= cervical1&2+ sacrum |
| Rose Hall Farm, Walpole St. Andrew | 2 | 13 | 9 | 3 | 4 | 9 | 6 | 7 | 12 | 7 | 11 | 5 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Site 127 Bury St Edmunds | 1 | 1 | | 3 | 1 | 1 | 1 | 0 | 2 | 2 | 4 | 2 | |
| Sites 94 and 95, Wharram* | 7 | | | 11 | 7 | 5 | 18 | 7 | 5 | 19 | 17 | | |
| St Peters Rd, Northampton | 0 | 2 | 6 | | 22 | 17 | 15 | 20 | 14 | 24 | 9 | 3 | |
| Walton Lodge, Aylesbury | 1 | 5 | 6 | 1 | 5 | 7 | 9 | 6 | 9 | 8 | 12 | 6 | vert=cervical2 |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|-------------------|
| Middle-Late Saxon | | | | | | | | | | | | | |
| Hereford City | 3 | 6 | | 13 | 5 | 8 | 5 | 6 | 7 | 13 | 9 | | |
| Portchester Castle* | 152 | 234 | 477 | 52 | 98 | 141 | 146 | 140 | 144 | 189 | 208 | 178 | vert= cervical1&2 |

| Late Saxon | Horn Core | | | Mandible | | | Skull | | | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|-----------------------------------|-----------|-----|----|----------|-----|----|-------|----|----|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| | 1 | 4 | 3 | 10 | 10 | 7 | 7 | 10 | 12 | 12 | 6 | 3 | | | | | | | |
| 27, Jewry Street, Winchester | 1 | 4 | 3 | 10 | 10 | 7 | 7 | 10 | 12 | 12 | 6 | 3 | | | | | | | |
| Eynsham Abbey | 3 | 34 | 6 | 2 | 36 | 15 | 9 | 16 | 20 | 20 | 13 | 10 | | | | | | | skull=zygomatic+occipital; vert=sacrum+cervical; 2 ph=ph1 |
| Eynsham Abbey | | | | | 8 | 10 | 16 | | 11 | 6 | 3 | | | | | | | | |
| Bishopstone, Seaford* | 22 | 35 | | | 20 | 33 | 30 | 6 | 25 | 25 | 29 | 38 | | | | | | | |
| Brandon Rd, Theford | 19 | 127 | 75 | 139 | 117 | 69 | 66 | 80 | 73 | 106 | 78 | 25 | | | | | | | |
| Canterbury Lane, Canterbury | 10 | 12 | 13 | 13 | 2 | 2 | 2 | 2 | 3 | 1 | 5 | 4 | | | | | | | |
| Castle Mall, Norwich | 29 | 34 | | | 28 | 37 | 23 | 27 | 10 | 56 | 36 | 23 | | | | | | | |
| Cheddar Palaces a | 7 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 10 | 8 | 10 | 10 | | | | | | | |
| Cheddar Palaces b | 4 | 0 | 0 | 0 | 0 | 15 | 50 | 0 | 18 | 10 | 9 | 1 | | | | | | | |
| Chester Rd, Winchester | 20 | 27 | 55 | 19 | 30 | 31 | 20 | 22 | 24 | 27 | 25 | 7 | | | | | | | |
| Citizen house, Bath* | 0 | 1 | 7 | 16 | 3 | 3 | 7 | 4 | 4 | 3 | 11 | 6 | | | | | | | |
| Danesgate, Lincoln | 4 | 12 | 13 | 49 | 12 | 17 | 20 | 14 | 15 | 34 | 7 | 6 | | | | | | | |
| Faccombe Netherton | 5 | 9 | | | 7 | 15 | 6 | 5 | 12 | 13 | 7 | 1 | | | | | | | |
| Flaxengate, Lincoln* | 8 | 29 | | | 22 | 36 | 60 | 0 | 6 | 13 | 47 | 30 | | | | | | | |
| Flixborough** | 25 | 137 | | | 63 | 49 | 53 | 47 | 20 | 68 | 46 | 19 | | | | | | | |
| Goltho a | 7 | 9 | 1 | 0 | 2 | 1 | 8 | 1 | 3 | 2 | 11 | 0 | | | | | | | |
| Goltho b | 11 | 35 | 9 | 1 | 11 | 20 | 13 | 18 | 7 | 15 | 26 | 4 | | | | | | | |
| Langham Rd and Burystead, Raunds* | 44 | | | | 18 | 9 | 8 | | | 20 | 11 | 26 | | | | | | | |
| Lincoln** | 37 | 70 | | | 12 | 17 | 29 | 30 | 11 | 17 | 30 | 2 | | | | | | | |
| Marefair, Northampton | 6 | 8 | | | 16 | 11 | 18 | 12 | 9 | 15 | 7 | 7 | | | | | | | |
| Mary-Le-Port, Bristol | 18 | 68 | 48 | 68 | 15 | 16 | 19 | 20 | 20 | 24 | 45 | 27 | | | | | | | |

| Late Saxon | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|-------------------------------|------------------|-----------------|--------------|-----------------|----------------|----------------|---------------|---------------|--------------|--------------|------------------|------------------|--|
| North Elmham Park b | 14 | | 17 | 27 | 20 | 20 | 24 | 26 | 30 | 10 | | | |
| North Elmham Park c | 6 | | 6 | 13 | 7 | 8 | 8 | 8 | 18 | 8 | | | |
| Portchester Castle* | 69 | 30 | 47 | 13 | 15 | 30 | 50 | 38 | 28 | 35 | 44 | 58 | vert= cervical1&2 |
| Site 1092, Thetford | 375 | 53 | 59 | 59 | 35 | 27 | 38 | 24 | 17 | 25 | 28 | 17 | |
| St Aldates, Oxford | 3 | 15 | 10 | 4 | 5 | 6 | 9 | 8 | 2 | 4 | 4 | 1 | |
| St James' Square, Northampton | 17 | 18 | 6 | 16 | 14 | 23 | 20 | 14 | 15 | 22 | 20 | 2 | |
| Staple Gardens, Winchester* | 40 | 22 | 37 | 67 | 40 | 52 | 60 | 41 | 34 | 45 | 53 | 12 | skull= zygomatic + occipital; vert= cervical1,&2+ sacrum |
| Victoria Rd, Winchester | 13 | 48 | 55 | 17 | 45 | 46 | 51 | 41 | 35 | 34 | 25 | 16 | vert= cervical1&2+ sacrum |
| Western Suburb, Winchester | 91 | 158 | 196 | 321 | 128 | 78 | 77 | 124 | 61 | 77 | 65 | 67 | |

| Saxo-Norman | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|---|
| 23-27 High Street, Bedford | 9 | 64 | 25 | 2 | 26 | 9 | 10 | 13 | 20 | 13 | 11 | 11 | vert= cervical 1,&2+ sacrum; skull= maxilla |
| Billingsgate Triangle | 0 | 0 | 0 | 4 | 1 | 5 | 5 | 8 | 3 | 4 | 2 | | |
| Canterbury Castle, Canterbury* | 3 | 3 | 1 | 3 | 3 | 8 | 11 | 4 | 4 | 3 | 9 | 1 | |
| Castle Lane, Bedford a | 0 | 8 | 4 | 0 | 7 | 5 | 3 | 2 | 4 | 1 | 2 | | vert= cervical 1,&2+ sacrum; skull= maxilla |
| Castle Lane, Bedford b | 3 | 26 | 8 | 9 | 19 | 20 | 28 | 22 | 20 | 32 | 13 | | vert= cervical 1,&2+ sacrum; skull= maxilla |
| Castle Lane, Bedford c | 0 | 7 | 1 | 0 | 4 | 14 | 12 | 4 | 7 | 9 | 8 | 2 | vert= cervical 1,&2+ sacrum; skull= maxilla |
| Danesgate, Lincoln | 8 | 20 | 18 | 24 | 17 | 27 | 18 | 11 | 18 | 37 | 16 | 7 | |
| Dragon Hall, Norwich | 34 | 41 | | 50 | 28 | 19 | 35 | 7 | 32 | 49 | 36 | | |
| Faccombe Netherton | 2 | 21 | | 13 | 9 | 10 | 7 | 15 | 8 | 11 | 7 | | |
| Flaxengate, Lincoln* | 19 | 48 | | 89 | 61 | 192 | 0 | 59 | 50 | 69 | 61 | | |
| Friar Street, Droitwich | 27 | 10 | 15 | | | | | | | 9 | | | |
| Guildford Castle** | 1 | 2 | 2 | 1 | 1 | 3 | 3 | 2 | 3 | 4 | 5 | 1 | skull=maxilla; vert=cervical1&2 |
| Harlington, London | 2 | 20 | 3 | 46 | 11 | 16 | 17 | 7 | 8 | 12 | 7 | | |
| Harston Mill, Cambridgeshire | 3 | 10 | 12 | 4 | 8 | 8 | 7 | 8 | 6 | 7 | 8 | 4 | vert= cervical 1&2 |
| Kingswell St and Woolmonger St, Northampton* | 0 | 2 | 1 | 4 | 2 | 2 | 2 | 5 | 1 | 2 | 2 | 0 | |
| Redcastle Furze, Thetford | 2 | 40 | 10 | 3 | 10 | 6 | 11 | 10 | 3 | 8 | 12 | 18 | |
| School lane, Fulbourn* | 4 | 1 | 2 | 2 | 0 | 1 | 2 | 1 | 1 | 3 | 2 | 2 | |
| St Peters Rd, Northampton | 0 | 33 | 228 | | 98 | 74 | 72 | 95 | 112 | 117 | 57 | 30 | |
| Staple Gardens, Winchester* | 35 | 11 | 31 | 57 | 33 | 45 | 58 | 34 | 29 | 44 | 36 | 10 | skull= zygomatic + occipital; vert= cervical 1,&2+ sacrum |
| Western Suburb, Winchester | 28 | 152 | 111 | 163 | 62 | 20 | 24 | 38 | 27 | 11 | 33 | 35 | |
| Wilton, Salisbury* | 7 | 7 | 2 | 1 | 5 | 7 | 8 | 5 | 5 | 8 | 10 | | |
| Wrayisbury | 3 | 5 | 23 | 12 | 8 | 1 | 3 | 5 | 2 | 3 | 4 | 2 | |

Appendix C2

Sheep/ Goat Carcass Part Representation

All values are number of fragments except sites marked**= minimum number elements or **= minimum number individuals. Where no value is given, this element was not recorded in the original site report. Unless otherwise stated skull and vertebrae counts are assumed to be counts of all fragments.

| Early Saxon | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|---------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|---------------------------------|-------------------|
| Eynsham Abbey | | | 13 | 10 | 22 | 7 | 20 | 2 | | | | | |
| Bishopstone, Sussex | 2 | 0 | 0 | 2 | 0 | 4 | 1 | 1 | 1 | 3 | 5 | | |
| Eye Kettleby | 9 | 44 | 41 | 17 | 22 | 26 | 27 | 21 | 43 | 24 | 2 | vert= cervical1&2 | |
| Harlington, London | 0 | 2 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 3 | 2 | 0 | |
| Hartigans, Milton Keynes | 0 | 8 | 1 | 1 | 0 | 1 | 3 | 1 | 0 | 2 | 0 | 0 | vert= cervical1&2 |
| Kilverstone, Norfolk* | 1 | 13 | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 |
| Melford Meadows, Brettenham | 1 | 8 | 0 | 0 | 9 | 6 | 3 | 3 | 9 | 6 | 1 | skull=maxilla; vert=cervical1&2 | |
| Mill st, Wantage | 11 | 1 | 0 | 2 | 1 | 1 | 5 | 2 | 13 | 9 | 2 | | |
| Nettleton Top | 4 | 2 | 1 | 2 | 5 | 2 | 4 | 9 | 3 | 1 | | | |
| Orton Hall Farm | 34 | 155 | 52 | 69 | 34 | 69 | 120 | 52 | 86 | 207 | 120 | 17 | |
| Oxford Science park, Littlemore | 0 | 17 | 2 | 2 | 10 | 10 | 12 | 5 | 9 | 10 | 9 | 2 | vert= cervical1&2 |
| Pennyland, Milton Keynes | 181 | 81 | 40 | 47 | 48 | 65 | 44 | 14 | 59 | 56 | 7 | | |
| Poundbury, Dorchester | 179 | 150 | 44 | 59 | 57 | 62 | 33 | 23 | 53 | 22 | 35 | | |
| Redcastle Furze, Thetford | 12 | 125 | 29 | 3 | 15 | 12 | 19 | 17 | 15 | 25 | 7 | 8 | |
| Spong Hill, Norfolk | 2 | 5 | 0 | 5 | 3 | 1 | 4 | 1 | 0 | 4 | 0 | 0 | |
| St Helen's Avenue, Benson | 16 | 12 | 1 | 8 | 5 | 17 | 6 | 7 | 33 | 10 | 0 | vert= cervical1&2 | |
| Stonea grange, Cambridgeshire* | 11 | | 4 | 8 | 4 | 5 | 2 | 5 | | | | | |
| West Stow a | 85 | 536 | 162 | 168 | 280 | 137 | 90 | 325 | 225 | 19 | | | |
| West Stow b | 160 | 1024 | 339 | 267 | 514 | 249 | 164 | 533 | 411 | 61 | | | |
| West Stow c | 6 | 95 | 26 | 41 | 73 | 22 | 21 | 79 | 42 | 5 | | | |
| Baynard's Castle* | 0 | 3 | 0 | 6 | 4 | 5 | 2 | 4 | 5 | 4 | 1 | | |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|-------------------------------------|
| Early-Middle Saxon | | | | | | | | | | | | | |
| Abbots Worthy | 3 | 34 | 34 | 19 | 3 | 14 | 13 | 5 | 7 | 29 | 16 | 2 | |
| Harold, Bedfordshire | 6 | 27 | 2 | 3 | 19 | 9 | 25 | 9 | 7 | 40 | 26 | 2 | skull = maxilla; vert = cervical1&2 |
| Harston Mill, Cambridgeshire | 18 | 273 | 30 | 14 | 66 | 77 | 137 | 51 | 44 | 206 | 82 | 12 | vert= cervical1&2 |
| Langham Rd and Burystead, Raunds* | 11 | | | 4 | 1 | 1 | | | | 3 | 0 | 1 | |
| Mucking | 0 | 22 | 4 | 0 | 1 | 3 | 6 | 1 | 5 | 11 | 10 | 1 | |
| North Manor, Wharham | 8 | 18 | 19 | 25 | 14 | 27 | 14 | 14 | 1 | 26 | 2 | 2 | |
| Portchester Castle* | 5 | 19 | 1 | 1 | 5 | 10 | 5 | 3 | 7 | 11 | 4 | 1 | vert= cervical1&2 |
| Wilton, Salisbury* | 5 | 17 | 2 | 1 | 8 | 8 | 18 | 5 | 5 | 6 | 9 | 5 | |
| Wolverton Turn enclosure, stony stratford* | 2 | 32 | 1 | 4 | 7 | 13 | 4 | 3 | 23 | 9 | 10 | 10 | vert= cervical1&2 |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Middle Saxon | | | | | | | | | | | | | |
| 23-27 High Street, Bedford | 0 | 2 | 1 | 0 | 0 | 0 | 5 | 1 | 0 | 5 | 1 | 0 | vert= cervical1 ,&2+ sacrum; skull= maxilla |
| Eynsham Abbey | | | | | 35 | 31 | 48 | | 25 | 44 | 4 | | |
| Anderson's road, Southampton* | 1 | 0 | 0 | 2 | 5 | 3 | 1 | 1 | 1 | 4 | 2 | 0 | vert only recorded if >50% present |
| Brandon | 321 | 2064 | 973 | 622 | 925 | 1756 | 1642 | 1852 | 828 | 2104 | 921 | 134 | vert= cervical1 ,&2+ sacrum |
| Cadley rd, Collingbourne Ducis | 96 | 29 | 5 | 23 | 41 | 52 | 20 | 27 | 77 | 58 | 9 | 9 | atlas and axis. Skull not inc maxilla / pmaxilla |
| Cresswell Field, Yarnton* | 1 | 0 | 2 | 0 | 1 | 4 | 0 | 2 | 2 | 0 | 1 | 1 | skull=zygomatic; vert=cervical1&2 |
| Fishergate, York* | 34 | 61 | 21 | 32 | 33 | 83 | 92 | 69 | 88 | 76 | 89 | 37 | skull=maxilla; vert=cervical1&2 |
| Flixborough** | 95 | 420 | | 194 | 145 | 159 | 178 | 31 | 254 | 106 | 10 | | |

| Middle Saxon | | | | | | | | | | | | | |
|-------------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
| Friend's Provident, Southampton | | 84 | 95 | 18 | 57 | 40 | 79 | 57 | 45 | 93 | 63 | 10 | vert= cervical1&2 |
| Gosberton | 1 | 4 | 2 | 0 | 2 | 2 | 3 | 0 | 3 | 3 | 1 | 0 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Hay Green, Terrington St. Clement | 1 | 20 | 9 | 2 | 7 | 5 | 8 | 4 | 3 | 6 | 7 | 2 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Lake End Road* | 6 | 75 | 9 | 3 | 22 | 26 | 50 | 28 | 25 | 69 | 45 | 5 | vert= cervical1&2+ sacrum |
| Lot's Hole | 0 | 2 | 0 | 2 | 3 | 1 | 3 | 1 | 1 | 1 | 2 | 1 | |
| Marefair, Northampton | | 21 | 8 | | 18 | 12 | 21 | 14 | 14 | 27 | 16 | 1 | |
| Melbourne St, Southampton | 282 | 565 | | | 584 | 524 | 648 | 667 | 509 | 736 | 402 | 71 | |
| North Elmham Park | | 156 | | | 46 | 33 | 73 | 39 | 35 | 80 | 19 | 1 | |
| Peabody site | 51 | 119 | 22 | 36 | 52 | 75 | 83 | 73 | 52 | 90 | 74 | 16 | vert= cervical1&2+ sacrum |
| Rose Hall Farm, Waiipole St. Andrew | 2 | 44 | 7 | 2 | 6 | 13 | 11 | 3 | 5 | 12 | 9 | 2 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Site 127 Bury St Edmunds | 2 | 4 | | | 4 | 4 | 6 | 3 | 4 | 8 | 2 | 1 | |
| Sites 94 and 95, Wharram* | | 50 | | | 15 | 26 | 8 | 18 | 13 | 35 | 13 | 11 | |
| St Peters Rd, Northampton | 0 | 20 | 9 | 26 | 22 | 27 | 24 | 27 | 51 | 6 | 1 | | |
| Walton Lodge, Aylesbury | 0 | 21 | 4 | 1 | 9 | 13 | 16 | 8 | 6 | 19 | 10 | 6 | vert=cervical2 |

| Middle-Late Saxon | | | | | | | | | | | | | |
|--------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|---------------------------------|
| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
| Hereford City | 6 | 11 | 8 | 7 | 6 | 9 | | 4 | 12 | 13 | 2 | | |
| Portchester Castle* | 77 | 445 | 45 | 30 | 63 | 114 | 109 | 67 | 65 | 136 | 113 | 17 | vert= cervical1&2 |
| Throwbridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | skull=maxilla; vert=cervical1&2 |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|-----------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Late Saxon | | | | | | | | | | | | | |
| 27, Jewry Street, Winchester | 2 | 8 | 6 | 4 | 5 | 5 | 7 | 7 | 1 | 6 | 5 | 2 | |
| Eynsham Abbey | 1 | 33 | 7 | 6 | 24 | 24 | 51 | 7 | 18 | 64 | 16 | 1 | skull=zygomatic+occipital; vert=sacrum+cervical; 2 ph=ph1 |
| Eynsham Abbey | | | | | 20 | 32 | 22 | | 15 | 31 | 1 | | |
| Bishopstone, Seaford* | 38 | 89 | | | 52 | 127 | 100 | 52 | 76 | 99 | 47 | 57 | |
| Brandon Rd, Thetford | 21 | 20 | 60 | 79 | 79 | 57 | 97 | 71 | 59 | 135 | 78 | 4 | |
| Canterbury Lane, Canterbury | 12 | 8 | 9 | 7 | 0 | 4 | 2 | 1 | 0 | 1 | 4 | 1 | |
| Castle Mall, Norwich | 0 | 49 | | | 14 | 18 | 16 | 18 | 6 | 33 | 16 | 3 | |
| Cheddar Palaces a | 9 | 0 | 0 | 0 | 0 | 8 | 27 | 0 | 7 | 78 | 11 | 0 | |
| Cheddar Palaces b | 2 | 0 | 0 | 0 | 0 | 25 | 30 | 0 | 6 | 46 | 6 | 1 | |
| Chester Rd, Winchester | 12 | 30 | 46 | 7 | 18 | 15 | 21 | 13 | 8 | 33 | 12 | 3 | |
| Citizen house, Bath* | 5 | 5 | 3 | 21 | 6 | 10 | 8 | 21 | 3 | 4 | 11 | 3 | |
| Danesgate, Lincoln | 9 | 28 | 38 | 47 | 15 | 26 | 11 | 29 | 24 | 32 | 15 | 1 | |
| Faccombe Netherton | 3 | 16 | | | 8 | 12 | 34 | 9 | 34 | 12 | 1 | | |
| Flaxengate, Lincoln* | 2 | 28 | | | 27 | 27 | 26 | 0 | 3 | 24 | 35 | 4 | |
| Flixborough** | 39 | 191 | | | 68 | 66 | 63 | 55 | 17 | 93 | 46 | 6 | |
| Goltho a | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | |
| Goltho b | 10 | 20 | 3 | 0 | 9 | 20 | 20 | 7 | 2 | 47 | 4 | 0 | |
| Langham Rd and Burystead, Raunds* | | 74 | | | 9 | 9 | 6 | | | 20 | 4 | 4 | |
| Lincoln** | 2 | 18 | | | 10 | 8 | 15 | 9 | 6 | 16 | 18 | 1 | |
| Marefair, Northampton | | 3 | 3 | | 14 | 13 | 15 | 9 | 15 | 23 | 8 | 1 | |
| Mary-Le-Port, Bristol | 35 | 117 | 29 | 56 | 24 | 29 | 22 | 29 | 14 | 20 | 31 | 10 | |

| Late Saxon | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|-------------------------------|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| North Elmham Park b | 76 | | | | 24 | 19 | 35 | 17 | 11 | 67 | 16 | 2 | |
| North Elmham Park c | 18 | | | | 4 | 10 | 11 | 5 | 7 | 23 | 14 | 1 | |
| Portchester Castle* | 21 | 72 | 0 | 5 | 15 | 23 | 31 | 18 | 14 | 44 | 23 | 2 | vert= cervical1&2 |
| Site 1092, Thetford | 43 | 49 | 61 | 72 | 77 | 39 | 55 | 42 | 24 | 50 | 23 | 7 | |
| St Aldates, Oxford | 3 | 13 | 5 | 5 | 6 | 4 | 6 | 2 | | 11 | 11 | 0 | |
| St James' Square, Northampton | 53 | 21 | 4 | 10 | 9 | 11 | 16 | 3 | 9 | 22 | 13 | 0 | |
| Staple Gardens, Winchester* | 69 | 94 | 69 | 133 | 66 | 104 | 123 | 90 | 51 | 144 | 143 | 7 | skull= zygomatic + occipital; vert= cervical1,&2+ sacrum |
| Victoria Rd, Winchester | 26 | 41 | 89 | 16 | 29 | 20 | 34 | 23 | 10 | 46 | 41 | 5 | vert= cervical1&2+ sacrum |
| Western Suburb, Winchester | 47 | 141 | 115 | 252 | 106 | 60 | 94 | 79 | 38 | 124 | 125 | 11 | |

| | Horn Core | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | Notes |
|--|-----------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Saxo-Norman | | | | | | | | | | | | | |
| 23-27 High Street, Bedford | 3 | 8 | 0 | 4 | 5 | 10 | 7 | 6 | 3 | 17 | 11 | 0 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Billingsgate Triangle | 0 | 2 | 3 | 10 | 12 | 6 | 3 | 7 | 9 | 5 | 0 | | |
| Canterbury Castle, Canterbury* | 2 | 6 | 1 | 1 | 5 | 4 | 11 | 4 | 2 | 13 | 9 | 0 | |
| Castle Lane, Bedford a | 0 | 5 | 1 | 0 | 1 | 1 | 2 | 4 | 1 | 2 | 0 | 0 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Castle Lane, Bedford b | 4 | 20 | 1 | 5 | 17 | 18 | 20 | 11 | 17 | 33 | 17 | 2 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Castle Lane, Bedford c | 1 | 2 | 1 | 0 | 3 | 7 | 8 | 4 | 4 | 10 | 7 | 4 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Danegate, Lincoln | 13 | 45 | 24 | 71 | 25 | 43 | 33 | 35 | 22 | 48 | 29 | 3 | |
| Dragon Hall, Norwich | 24 | 48 | | 14 | 29 | 16 | 35 | 8 | 42 | 20 | 4 | | |
| Facombe Netherton | 1 | 11 | | 17 | 16 | 35 | 6 | 32 | 6 | 1 | | | |
| Flaxengate, Lincoln* | 44 | 159 | | 124 | 149 | 123 | 0 | 55 | 210 | 129 | 21 | | |
| Friar Street, Droitwich | 50 | 23 | 6 | | | | | | | 4 | | | |
| Guildford Castle** | 1 | 3 | 0 | 1 | 1 | 4 | 12 | 2 | 4 | 15 | 10 | 1 | skull=maxilla; vert=cervical 1&2 |
| Harston Mill, Cambridgeshire | 2 | 10 | 0 | 1 | 3 | 11 | 3 | 6 | 5 | 16 | 8 | 3 | vert= cervical1&2 |
| Kingswell St and Woolmonger St, Northampton* | 2 | 13 | 7 | 12 | 5 | 3 | 8 | 6 | 4 | 7 | 5 | 1 | |
| Redcastle Furze, Thetford | 5 | 19 | 8 | 3 | 6 | 10 | 7 | 8 | 2 | 14 | 14 | 3 | |
| School lane, Fulbourn* | 1 | 0 | 2 | 0 | 1 | 4 | 0 | 2 | 2 | 0 | 2 | 1 | |
| St Peters Rd, Northampton | 0 | 60 | 146 | 80 | 90 | 96 | 83 | 102 | 168 | 87 | 4 | | |
| Staple Gardens, Winchester* | 53 | 51 | 31 | 86 | 47 | 69 | 132 | 60 | 45 | 88 | 77 | 4 | skull= zygomatic + occipital; vert= cervical1,&2+ sacrum |
| Western Suburb, Winchester | 69 | 101 | 84 | 125 | 45 | 57 | 87 | 55 | 50 | 126 | 95 | 13 | |
| Wilton, Salisbury* | 7 | 25 | 8 | 1 | 9 | 10 | 13 | 5 | 7 | 19 | 15 | 6 | |
| Wraysbury | 4 | 37 | 30 | 39 | 17 | 0 | 10 | 9 | 5 | 8 | 15 | 4 | |

Appendix C3

Pig Carcass Part Representation

All values are number of fragments except sites marked**= minimum number elements or **= minimum number individuals. Where no value is given, this element was not recorded in the original site report. Unless otherwise stated skull and vertebrae counts are assumed to be counts of all fragments.

| Early Saxon | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|---------------------------------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|---------------------------------|
| Eynsham Abbey | | | 5 | 3 | 8 | 1 | 4 | 3 | | | | |
| Bishopstone, Sussex | 1 | 2 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 5 | 5 | |
| Eye Kettleby | 17 | 18 | 0 | 8 | 8 | 5 | 6 | 2 | 9 | 4 | 1 | vert= cervical1&2 |
| Harlington, London | 3 | 4 | 2 | 1 | 0 | 2 | 0 | 0 | 1 | 2 | 0 | |
| Kilverstone, Norfolk* | 4 | 1 | | 3 | 1 | 0 | 1 | 0 | 1 | 4 | 2 | |
| Melford Meadows, Brettenham | 10 | 7 | 0 | 1 | 3 | 1 | 0 | 3 | 2 | 1 | 1 | skull=maxilla; vert=cervical1&2 |
| Mill st, Wantage | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | |
| Nettleton Top | 3 | 0 | | 2 | 4 | 0 | 0 | 4 | 2 | 0 | 0 | |
| Orton Hall Farm | 30 | 42 | 2 | 14 | 8 | 12 | 8 | 2 | 12 | 8 | 1 | |
| Oxford Science park, Littlemore | 5 | 3 | 0 | 3 | 6 | 3 | 3 | 8 | 8 | 1 | 1 | vert= cervical1&2 |
| Pennyland, Milton Keynes | 52 | 51 | 23 | 17 | 9 | 15 | 17 | 5 | 23 | 32 | 7 | |
| Poundbury, Dorchester | 30 | 45 | 16 | 29 | 7 | 4 | 5 | 8 | 4 | 5 | 2 | |
| Redcastle Furze, Thetford | 17 | 32 | 0 | 23 | 7 | 9 | 3 | 4 | 13 | 18 | 2 | |
| Spong Hill, Norfolk | 8 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| St Helen's Avenue, Benson | 12 | 4 | 1 | 6 | 3 | 6 | 1 | 2 | 5 | 2 | 1 | vert= cervical1&2 |
| Stones grange, Cambridgeshire* | 5 | | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 0 | | |
| West Stow a | 176 | | 90 | 63 | 41 | 96 | 56 | 66 | 110 | 13 | | |
| West Stow b | 206 | | 118 | 102 | 51 | 95 | 70 | 74 | 106 | 32 | | |
| West Stow c | 27 | | 27 | 17 | 10 | 31 | 18 | 9 | 20 | 5 | | |
| Baynard's Castle* | 11 | 1 | 1 | 7 | 2 | 2 | 1 | 4 | 1 | 3 | 0 | |

| Early-Middle Saxon | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|--|-----------------|--------------|-----------------|----------------|----------------|---------------|---------------|--------------|--------------|------------------|------------------|-------------------------------------|
| Abbots Worthy | 3 | 12 | 5 | 5 | 5 | 2 | 1 | 1 | 3 | 1 | 1 | |
| Harold, Bedfordshire | 26 | 8 | 2 | 15 | 11 | 4 | 9 | 6 | 8 | 9 | 0 | skull = maxilla; vert = cervical1&2 |
| Hairston Mill, Cambridgeshire | 74 | 22 | 7 | 42 | 36 | 24 | 7 | 14 | 18 | 0 | 6 | vert= cervical1&2 |
| Langham Rd and Burystead, Raunds* | 6 | | 1 | 0 | 1 | | | | 3 | 0 | 1 | |
| Mucking | 36 | 3 | 0 | 8 | 30 | 12 | 5 | 2 | 7 | 5 | 4 | |
| Portchester Castle* | 10 | 3 | 0 | 8 | 4 | 5 | 3 | 7 | 6 | 5 | 3 | vert= cervical1&2 |
| Wilton, Salisbury* | 4 | 3 | 0 | 3 | 3 | 4 | 3 | 4 | 4 | 2 | 2 | |
| Wolverton Turn enclosure, stony stratford* | 15 | 0 | 14 | 13 | 2 | 6 | 2 | 5 | 4 | 0 | 0 | vert= cervical1&2 |

| Middle Saxon | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|---------------------------------|-----------------|--------------|-----------------|----------------|----------------|---------------|---------------|--------------|--------------|------------------|------------------|--|
| 23-27 High Street, Bedford | 1 | 0 | 0 | 6 | 2 | 0 | 2 | 1 | 1 | 1 | 1 | vert= cervical1,&2+ sacrum;skull= maxilla |
| Eynsham Abbey | | | 20 | 18 | 6 | | | 11 | 14 | 14 | | |
| Anderson's road, Southampton* | 0 | 0 | 1 | 4 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | vert only recorded if >50% present |
| Brandon | 859 | 1141 | 168 | 459 | 561 | 324 | 459 | 294 | 486 | 172 | 81 | vert= cervical1,&2+ sacrum |
| Cadley rd, Collingbourne Ducis | 11 | 3 | 1 | 4 | 4 | 1 | 5 | 0 | 1 | 5 | 4 | atlas and axis. Skull not inc maxilla / pmaxilla |
| Cresswell Field, Yarnton* | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | skull=zygomatic; vert=cervical1&2 |
| Fishergate, York* | 30 | 18 | 15 | 17 | 35 | 67 | 34 | 28 | 56 | 40 | 34 | skull=maxilla; vert=cervical1&2 |
| Flixborough** | 283 | | 108 | 91 | 79 | 82 | 36 | 88 | 68 | 15 | | |
| Friend's Provident, Southampton | 88 | 54 | 11 | 49 | 57 | 40 | 52 | 48 | 52 | 38 | 16 | vert= cervical1&2 |

| Middle Saxon | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|------------------------------------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Gosberton | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Hay Green, Terrington St. Clement | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Lake End Road* | 133 | 34 | 9 | 98 | 65 | 15 | 36 | 45 | 41 | 22 | 8 | vert= cervical1&2+ sacrum |
| Marefair, Northampton | 16 | 10 | 22 | 11 | 3 | 8 | 12 | 7 | 9 | 3 | | |
| Melbourne St, Southampton | 506 | | 359 | 354 | 251 | 407 | 330 | 318 | 361 | 50 | | |
| North Elmham Park | 152 | | 55 | 38 | 21 | 37 | 21 | 28 | 31 | 4 | | |
| Peabody site | 124 | 91 | 40 | 76 | 90 | 42 | 90 | 97 | 81 | 114 | 16 | vert= cervical1&2+ sacrum |
| Rose Hall Farm, Walpole St. Andrew | 3 | 2 | 0 | 1 | 0 | 1 | 3 | 2 | 1 | 0 | 1 | skull= occipital, zygomatic, maxilla; vert=cervical1&2 |
| Site 127 Bury St Edmunds | 5 | | 5 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 2 | |
| Sites 94 and 95, Wharram* | 6 | | 4 | 3 | 3 | 3 | 0 | 2 | 6 | 2 | | |
| St Peters Rd, Northampton | 16 | 8 | 13 | 9 | 2 | 6 | 5 | 8 | 5 | 1 | | |
| Walton Lodge, Aylesbury | 12 | 10 | 0 | 7 | 1 | 2 | 3 | 5 | 3 | 3 | 1 | vert=cervical2 |

| Middle-Late Saxon | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|---------------------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|---------------------------------|
| Hereford City | 14 | | 10 | 7 | 14 | 7 | | 4 | 9 | 4 | 2 | |
| Portchester Castle* | 430 | 159 | 14 | 60 | 52 | 37 | 52 | 15 | 44 | 62 | 15 | vert= cervical1&2 |
| Trowbridge | 65 | 25 | 3 | 10 | 21 | 5 | 7 | 3 | 17 | 3 | 1 | skull=maxilla; vert=cervical1&2 |

| Late Saxon | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|-----------------------------------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|---|
| 27, Jewry Street, Winchester | 5 | 8 | 1 | 6 | 3 | 4 | 1 | 2 | 9 | 0 | 1 | |
| Eynsham Abbey | 29 | 5 | 0 | 24 | 9 | 12 | 20 | 6 | 15 | 8 | 8 | skull=zygomatic+occipital; vert=sacrum+cervical; 2 ph=ph 1 |
| Eynsham Abbey | | | | 9 | 8 | 20 | | 5 | 16 | 7 | | |
| Bishopstone, Seaford* | 46 | | | 35 | 46 | 61 | 19 | 50 | 49 | 61 | 74 | |
| Brandon Rd, Theiford | 33 | 36 | 41 | 39 | 43 | 21 | 26 | 17 | 36 | 14 | 2 | |
| Canterbury Lane, Canterbury | 9 | 13 | 2 | 0 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | |
| Castle Mall, Norwich | 37 | | | 15 | 18 | 11 | 13 | 6 | 31 | 41 | 5 | |
| Cheddar Palaces a | 0 | 0 | 0 | 0 | 5 | 8 | 0 | 3 | 4 | 12 | 2 | |
| Cheddar Palaces b | 0 | 0 | 0 | 0 | 10 | 9 | 0 | 0 | 9 | 2 | 0 | |
| Chester Rd, Winchester | 50 | 57 | 3 | 22 | 13 | 8 | 6 | 13 | 11 | 6 | 2 | |
| Citizen house, Bath* | 4 | 1 | 3 | 1 | 1 | 0 | 5 | 1 | 2 | 10 | 2 | |
| Danegate, Lincoln | 16 | 34 | 28 | 8 | 9 | 10 | 5 | 10 | 10 | 3 | 1 | |
| Faccombe Netherton | 23 | | | 8 | 13 | 4 | 5 | 10 | 10 | 4 | | |
| Flaxengate, Lincoln* | 10 | | | 8 | 14 | 11 | 0 | 1 | 2 | 9 | 2 | |
| Flixborough** | 106 | | | 67 | 62 | 70 | 44 | 16 | 63 | 28 | 6 | |
| Goltho a | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| Goltho b | 73 | 31 | 2 | 4 | 16 | 8 | 5 | 1 | 11 | 0 | 1 | |
| Langham Rd and Burystead, Raunds* | 42 | | | 5 | 7 | 1 | | | 10 | 2 | 5 | |
| Lincoln** | 15 | | | 12 | 14 | 24 | 16 | 10 | 17 | 7 | 5 | |
| Marefair, Northampton | 5 | 4 | | 6 | 5 | 8 | 2 | 3 | 6 | 5 | 1 | |
| Many-Le-Port, Bristol | 12 | 8 | 23 | 6 | 3 | 1 | 13 | 8 | 6 | 5 | 0 | |

| | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|-------------------------------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Late Saxon | | | | | | | | | | | | |
| North Elmham Park b | 55 | | 27 | 33 | 8 | 27 | 14 | 20 | 23 | 5 | | |
| North Elmham Park c | 16 | | 7 | 14 | 5 | 5 | 4 | 12 | 8 | 2 | | |
| Portchester Castle* | 55 | 14 | 3 | 12 | 12 | 11 | 31 | 5 | 14 | 17 | 4 | vert= cervical1&2 |
| Site 1092, Thetford | 99 | 53 | 9 | 20 | 14 | 18 | 14 | 9 | 27 | 28 | 2 | |
| St Aldates, Oxford | 10 | 7 | 2 | 2 | 3 | 4 | 3 | 1 | 3 | 3 | 0 | |
| St James' Square, Northampton | 7 | 1 | 0 | 3 | 2 | 3 | 5 | 1 | 4 | 4 | 1 | |
| Staple Gardens, Winchester* | 38 | 27 | 23 | 26 | 44 | 33 | 27 | 15 | 40 | 23 | 3 | skull= zygomatic + occipital; vert= cervical1,&2+ sacrum |
| Victoria Rd, Winchester | 19 | 44 | 7 | 14 | 14 | 12 | 17 | 8 | 12 | 14 | 5 | vert= cervical1&2+ sacrum |
| Western Suburb, Winchester | 133 | 231 | 199 | 76 | 61 | 27 | 43 | 42 | 49 | 50 | 13 | |

| | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|--------------------------------|----------|-------|----------|---------|---------|--------|--------|-------|-------|-----------|-----------|--|
| Saxo-Norman | | | | | | | | | | | | |
| 23-27 High Street, Bedford | 10 | 10 | 0 | 11 | 7 | 3 | 5 | 2 | 9 | 8 | 0 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Billingsgate Triangle | 1 | 0 | | 1 | 2 | 2 | 0 | 1 | 1 | 3 | 1 | |
| Canterbury Castle, Canterbury* | 13 | 8 | 1 | 6 | 6 | 10 | 1 | 6 | 18 | 4 | 0 | |
| Castle Lane, Bedford a | 7 | 0 | 0 | 2 | 0 | 0 | 4 | 1 | 2 | 1 | 0 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Castle Lane, Bedford b | 17 | 3 | 2 | 11 | 16 | 7 | 3 | 8 | 17 | 6 | 0 | vert= cervical1,&2+ sacrum; skull= maxilla |
| Castle Lane, Bedford c | 3 | 0 | 1 | 1 | 0 | 5 | 0 | 1 | 6 | 3 | 0 | vert= cervical1,&2+ sacrum; skull= maxilla |

| Saxo-Norman | Mandible | Skull | Vertebra | Scapula | Humerus | Radius | Pelvis | Femur | Tibia | Metapodia | Phalanges | notes |
|----------------------------------|-----------------|--------------|-----------------|----------------|----------------|---------------|---------------|--------------|--------------|------------------|------------------|--|
| Danesgate, Lincoln | 15 | 31 | 15 | 12 | 6 | 7 | 8 | 6 | 12 | 5 | 3 | |
| Dragon Hall, Norwich | 39 | | 14 | 29 | 7 | 14 | 6 | 37 | 22 | 4 | | |
| Faccombe Netherton | 24 | | 13 | 17 | 11 | 14 | 11 | 14 | 7 | | | |
| Flaxengate, Lincoln* | 29 | | 19 | 19 | 52 | 0 | 14 | 12 | 16 | 4 | | |
| Guildford Castle** | 2 | 2 | 1 | 0 | 7 | 4 | 1 | 1 | 6 | 3 | 1 | skull=maxilla; vert=cervical1&2 |
| Harston Mill, Cambridgeshire | 9 | 1 | 0 | 6 | 4 | 2 | 1 | 1 | 2 | 0 | 2 | vert= cervical1&2 |
| Kingswell St and Woodmonger St,* | 8 | 3 | 0 | 2 | 3 | 0 | 1 | 1 | 0 | 2 | 0 | |
| Redcastle Furze, Thetford | 18 | 14 | 7 | 7 | 3 | 4 | 5 | 3 | 6 | 6 | 0 | |
| School lane, Fulbourn* | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | |
| St Peters Rd, Northampton | 54 | 23 | 51 | 54 | 29 | 27 | 32 | 44 | 20 | 3 | | |
| Staple Gardens, Winchester* | 23 | 10 | 8 | 20 | 27 | 34 | 30 | 21 | 35 | 33 | 2 | skull= zygomatic + occipital; vert= cervical1,&2+ sacrum |
| Trowbridge | 42 | 15 | 3 | 12 | 15 | 18 | 5 | 14 | 29 | 8 | 3 | skull=maxilla; vert=cervical1&2 |
| Western Suburb, Winchester | 55 | 59 | 88 | 36 | 35 | 25 | 34 | 36 | 41 | 19 | 8 | |
| Wilton, Salisbury* | 3 | 0 | 1 | 2 | 2 | 2 | 1 | 0 | 1 | 1 | 2 | |
| Wraysbury | 35 | 73 | 26 | 14 | 10 | 4 | 9 | 5 | 8 | 11 | 8 | |

