UNIVERSITY OF SOUTHAMPTON

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School of Archaeology

The Human-Dog Relationship in Early Medieval England and Ireland (*c.* AD 400-1250)

by

Amanda Louise Grieve

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ABSTRACT

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This thesis aims to explore the human-dog relationship in early medieval England and Ireland (*c.* AD 400-1250) and so develop an improved understanding of how people perceived and utilised their dogs. In 1974, Ralph Harcourt published a seminal paper reviewing the metrical data for archaeological dog remains excavated from British antiquity. Nearly forty years on, many more dog bones have been excavated and recorded. His results from the Anglo-Saxon period illustrated that the degree of skeletal variability had reduced after the end of the Roman occupation, with an increase in the average size. He also observed two distinct groups in the estimated shoulder height measurements.

The key areas that have been considered include: dog functionality, morphology, and treatment. Influences that may have led to changes in people's perception of dogs during this time period have been examined. Differences between England and Ireland are assessed, but variation in recording methods has meant the data obtained on the Irish dogs were limited. An interdisciplinary approach has been taken, combining archaeological, historical and anthrozoological information. New evidence has shown that humans' relationships with dogs were more complex and varied than previous research would suggest, especially in the treatment of dogs at their death. This was particularly evident in England, where a change in the burial location of dogs was observed from the end of the seventh century, and could be linked to the development of Christianity and its negative teachings towards the dog. More metrical data from English sites have shown that the two distinct groups observed in Harcourt's Anglo-Saxon results were no longer apparent.

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DECLARATION OF AUTHORSHIP

I, Amanda Louise Grieve

declare that the thesis entitled

The Human-Dog Relationship in Early Medieval England and Ireland (*c.* AD 400-1250)

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- none of this work has been published before submission.

Signed: ……..

Date:…….

Preface and Acknowledgements

Like many people, I have always admired the unique relationship humans share with dogs, which has been shown to date back thousands of years. In deciding on my PhD topic, I chose an area and time period for this study that I felt had been neglected by zooarchaeologists. I began my thesis in October 2004 while I was working at English Heritage as a researcher, but unfortunately my contract came to an end and I moved to Ireland, so was unable to visit all the different English site archives as initially planned. There were accessibility issues in examining the archaeological material; this was particularly prominent in Ireland. In Ireland, all the archaeological material should be stored centrally with the National Museum of Ireland, but gaining access to the archives was very difficult and in some cases, the animal bones had never been deposited with the National Museum and their actual location was unknown. To compensate for this, I decided to concentrate on what could be deduced from published and unpublished literature from early medieval English and Irish sites, as well as the examination of the interrelationship of the archaeological, iconographic and documentary evidence. Data collection for the main database ended in June 2012, any sites published after this date have not been included.

It would not have been possible to complete this thesis without the help and support of colleagues, peers and family. First and foremost my gratitude must go to my supervisor, Prof. David Hinton, for all his advice, support and encouragement throughout these years. I am also very grateful to Yannis Hamilakis, Jacobo Weinstock and Naomi Sykes for all their advice.

During my studies, I have approached a number of people for additional information and were very helpful. In no particular order I would like to thank; Kate Clark, Leslie Cram, Kate Smith, James Morris, Mark Maltby, Ingrid Peckham, Helen Rees, Professor Finbar McCormick, Emily Murray, Sean Denham, Duncan Brown, Siân Iles, Jessica Grimm, and Pam Crabtree. Please accept my sincere apologies for any inadvertent omissions.

I was very grateful to have had the opportunity to measure and compare modern dog bones from a number of collections. I would like to acknowledge Polydora Baker and

Fay Worley from the English Heritage Faunal Remains Unit, who provided assistance at the Centre for Archaeology, as well as Dr Robin Sabin at the Natural History Museum and also Shelia Hamilton-Dyer who kindly allowed me access to her own personal collection.

During my studies I visited a number of libraries and archives and I am most appreciative to the staff at the University of Southampton, University of Reading, University College Dublin, Trinity College Dublin, English Heritage, Winchester Museums Service, Southampton Museums and The Kennel Club, for all their assistance.

Close to home, I am indebted to Tom Pound, who has kept me sane and ensured that I completed this thesis before I got any older. Finally and most importantly, I am eternally grateful to my parents for encouraging me and believing in my capabilities throughout these years, as well as taking the time to proof read each individual chapter. This work is dedicated to them.

Chapter 1 – Introduction

1.1 Why Dogs?

From the archaeological record it appears that the dog, *Canis familiaris,* was the first animal to be domesticated by humans; it is now one of the most popular animals kept as a companion animal. There are many reasons for this popularity. It may be the loyalty and devotion a dog demonstrates, as part of its natural instincts as a pack animal, that so closely mimics the human idea of love and friendship, which leads to many dog owners viewing their animal as a family member.

Today there are over 800 breeds of domestic dog recognised by various kennel clubs throughout the world. From the petite Chihuahua to the giant Irish Wolfhound and with immense diversity in canine size and shape, they all belong to one species, named by Carolus Linnaeus in 1758 as *Canis familiaris.* Recent research into canine genomes concludes this wide diversity in morphological shape and size is linked to changes in a small number of gene regions (Ratliff 2012). Dogs mean many things to different people, and have been utilised by humans for various functions in contemporary and historic societies, such as hunting, retrieving, flushing, herding, guarding, companionship, fighting and even as a food source. The relationship humans have with dogs has fascinated generations of writers, poets, painters and philosophers. As Grossman (1993, 7) noted "no animal has ever gripped the human heart and mind so fiercely".

1.2 Origins and Domestication of the Dog – Brief Overview

The origins and domestication theory will not be discussed in detail here as comprehensive reviews have been made by numerous researchers (Galton 1865; Darwin 1868; Zeuner 1963; Clutton-Brock 1981, 1995). It is now generally agreed, based on genetic evidence alone, that dogs derived from the grey wolf, *Canis lupus*, and that this process may have started as far back as 15,000 years ago (Coppinger and Coppinger 2001; Savolainen *et al.* 2002; Verginelli *et al*. 2005; Vilà *et al.* 1997, 1999). New research from remains recovered from Siberia suggests that dog domestication began

earlier, with evidence of 'incipient' dogs dating back to 33,000 years ago (Ovodov *et al.* 2011). These 'incipient' dogs have morphological characteristics of both wild wolves and domesticated dogs, which suggest they could be transitional forms from wolves to dogs. Ovodov *et al.* (2011) concluded that the dog domestication process was disrupted due to ecological changes during this period with progressive cooling, which prohibited the creation of sufficient lineages to enable full domestication of the dog.

The first archaeological evidence of this strong human-dog connection was the discovery of the skeletal remains of a woman with her hand on top of a puppy, in a tomb that has been dated to 9750 BC, from the Natufian site of Ein Mallaha in northern Israel (Davis and Valla 1978). The earliest known dog excavated in Britain was at Star Carr, Yorkshire, which has been dated to 9940 ± 100 BP, OxA-1030 (Degerbøl 1961; Hedges *et al*., 1987).

1.3 Dogs in Archaeology – England

It was not until the late 1960s and early 1970s that there was an upsurge of interest in dogs, and in animal bones in general. Many dog remains previously unearthed on archaeological sites had simply been thrown away, without any record being made of them. Only special finds, such as complete skeletons discovered in unusual contexts, were being included in the final report. Harcourt (1974) cited a Romano-British site at Asthall in Oxfordshire, excavated in 1955, where five complete dog skeletons were found and subsequently thrown onto the spoil heap, without any details of them being given in the final excavation report.

Harcourt (1974) was one of the initial people to review the data available on the development of the domestic dog in Britain and Ireland. He measured dog bones from the whole of Britain, according to the main divisions of the archaeological record, from the Mesolithic to the end of the eleventh century AD. While the long bone measurements were applied to estimate the shoulder height of dogs, the cranial measurements were used to make comparisons between the different skull morphologies. The skeletal information Harcourt gathered from the Anglo-Saxon period suggests that the degree of variability was reduced after the end of the Roman

occupation, although he pointed out that Anglo-Saxon literature indicated the opposite, with references to a wide range of different morphological types of dog.

A summary of Harcourt's findings from the Anglo-Saxon period:

1. Degree of skeletal variability reduced, but average size increased slightly.
2. From the long bone measurements, there is a clear indication from the frequency diagrams that there were two distinct populations of dog groups.
3. There is very little variation in the total length of the skull; statistically all the skulls fall into one group. As mentioned above, the long bones indicate two populations, so Harcourt (1974) surmised that the second group of skulls had not been recovered.

Clutton-Brock's (1976) review article on Anglo-Saxon animal resources observed that dogs were frequently found on sites from this period. She concluded that when dogs died or were killed they were thrown into the general rubbish pits along with the food refuse. Dog carcasses seem not to have been butchered, as whole skulls and occasionally entire skeletons were recovered from these pits.

Through the 1970s and 1980s animal bone studies developed, with the consistency of the bone measurements being recorded greatly assisted by two key texts. Elizabeth Schmid's (1972) book *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists* has acted as a handbook for the identification of animal bones, while Angela von den Driesch's (1976) *A Guide to the Measurement of Animal Bones from Archaeological Sites* manual aimed to standardise the measurements to be taken for specific animals. In 1987, Simon Davis's influential book *The Archaeology of Animals* illustrated the full potential of archaeozoological studies to the archaeological community as a whole (Davis, S 1987a).

In 1992, Prummel published her research on the presence of dog burials in early medieval Germanic graves in Europe. She catalogued 271 dog burials from 108 cemeteries on Continental and Anglo-Saxon Europe from the fifth to the eighth century AD, including six dog burials from five Anglo-Saxon cemeteries in England. Her study showed that Continental dogs were usually larger. She concluded that the dogs generally did not die a natural death, but were killed, most dying fairly young (over

60% died younger than five years old), and believed the dog burials represented grave gifts. The dogs were viewed as symbols of the prestige, importance and wealth, which the deceased had attained in life.

An important cemetery at Spong Hill, Norfolk, was not published until after Prummel's research. McKinley (1994) meticulously analysed the cremation urn contents from this Anglo-Saxon cemetery to obtain information on the human and animal bones; the latter were examined by Bond. It is believed that this detailed investigation, of cremated animal bones from such a large cemetery, was indeed the first to be carried out. Out of the 650 cremations that contained identifiable animal bones, twenty five (3.9%) included dog bones, with two dogs contained in the same cremation urn (Bond 1994). Bond (1994) noted that the dog bones ranged from small terrier-sized to wolf-sized, although heat shrinkage meant metrical comparisons could not be applied. Analysing cremation bones is very time-consuming and skilled work, which has limited the research carried out in this area.

K Clark developed the work begun by Harcourt in 1974. She concentrated on the late Iron Age and Romano-British periods and examined dog bones recovered since 1974, pooling the measurements of 206 specimens from across the whole of Britain (Clark, K 1995). She expressed her results in shoulder heights, comparing these to the humerus lengths obtained in Harcourt's research. Her results confirmed those of Harcourt, but she went further, to show that 'toy' dogs (the term 'toy' meaning a dog that is very small and is kept purely as a companion animal) were more common in the later Roman period. Within her research, Clark remarked on the benefits to be obtained from studying isolated or semi-articulated skeletons and the importance of taking measurements from the more common surviving bones, such as metapodials and fragmentary pieces of skulls. During this research she developed a new method for calculating the estimated shoulder height of the dog by using the greatest length measurement of the second to fourth metapodials. These additional formulas increase the number of specimens that can be included in the stature data.

Research into archaeological dog remains became more popular and by 1998 the first session on the history of the domestic dog was held at the Eighth International Congress of Archaeozoology (ICAZ) symposium in Victoria, British Columbia, Canada. The

session papers were compiled and published as Crockford ed. (2000). A wide spectrum of dog topics was discussed: with papers on dog evolution, their secular and ritual roles, on skeletal variation and ethnozoological studies. One paper of particular relevance to this research was by Clark (K 2000). She examined the apparent skeletal uniformity of dogs prior to the Romano-British period and outlined the problems affecting dog research in Britain with some possible solutions. The main predicament highlighted was the lack of any advance to the work started by Harcourt (1974). British faunal analysts were still using his results as a convenient datum level, but with no attempt to question them. Clark (K 2000) further pointed out the problem with an unsystematic approach to measuring dog elements. This had resulted in a bias to certain time periods, in particular Romano-British. There was a lack of measurements especially where dog bones were being recovered from the medieval period.

Another dog-themed session was organised for the next ICAZ in 2002. Here the emphasis was on examining the multiple and complex roles that dogs may play in human lives, frequently combining the practical, the ideological and the symbolic functions. The papers from this session have been published as *Dogs and People in Social, Working, Economic or Symbolic Interaction* (Snyder and Moore (eds) 2006). An interesting article by Daróczi-Szabó (2006) examined the medieval dogs of Hungary. He used archaeological data, along with the sparse iconographic record available; and concluded that dogs excavated from high-status sites were more morphologically variable than those recovered from lower-status households.

Thomas (R 2005a) examined the perceptions and realities of keeping animals as pets in medieval and post-medieval England using zooarchaeological data, along with contemporary literary and artistic evidence. This paper originated from a session at the 2004 Theoretical Archaeology Group (TAG) conference. He noted, from purely looking at the archaeological record, some key problem areas in determining the function an animal may have held during its life. For example taphonomic activities, such as ploughing, can cause what may have been a discrete burial of a companion animal to become disturbed or redeposited, with the remains consequently ending up with the general household rubbish. The archaeologist would surmise, from the evidence, that in death at least, the animal had been treated no better than the general rubbish.

K Smith's published PhD thesis, *Guides, Guards and Gifts to the Gods: Domesticated Dogs in the Art and Archaeology of Iron Age and Roman Britain* (2006), examined the role and status of the dog in Iron Age and Roman Britain, based on archaeological evidence and contemporary iconography. K Smith's study highlighted the significance of dogs and their interpretation as holding not just functional but also a symbolic role within society, especially during the Romano-British period.

The presence of dogs as 'special deposits' in Anglo-Saxon settlements was highlighted by Hamerow (2006). She observed that little research had been carried out into their interpretation, with researchers mainly concentrating on the Iron Age and Romano-British periods. 'Special deposits' mostly comprised of animal or human bone deposited within settlements where deliberate and careful placement appeared likely. It is very difficult to distinguish 'ritual deposit' from 'rubbish' in archaeological sites, indeed waste could be deposited in ways that were ritualised or symbolically structured. From Hamerow's investigation of sixteen Anglo-Saxon settlements, a total of forty two 'special deposits' was identified with eight (19%) containing dog bones. Hamerow noted that dog and horse bones outnumber sheep and pig in 'special deposits', but in the animal bone assemblages generally, the situation was reversed, the latter outnumbering the former. Unfortunately the common problem of a lack of documentation on the exact stratigraphic positions of the deposits and their contents has meant that only limited conclusions can be drawn. Morris and Jervis (2011) produced a follow-up paper to Hamerow's research, and described the benefits of implementing a biographical life-history approach to interpreting these deposits. They stressed the importance of looking at each deposit as a separate entity rather than grouping deposit types together and interpreting them the same, which had been carried out in the past. Morris (2012) explains this further in his article on determining the meaning of so-called 'ritual' burials recovered from archaeological record. He noted the significance of past authors describing these possible 'ritual' or 'special' deposits as leading to their eventual interpretation, whereas he believed the term 'associated bone group' (ABG) should be applied to these animal deposits to remove any subtext to the audience and provide them with the raw data to aid in their interpretation.

1.4 Dogs in Archaeology – Ireland

The first detailed examination of Irish archaeological faunal remains was in the late 1830s from the Lagore Crannog site, Co. Meath, commissioned by Sir William Wilde. However, it was not until 1974 that the first comprehensive publication of an animal bone report appeared, from the Beaker settlement at Newgrange, Co. Meath, carried out by Wijngaarden-Bakker of The University of Amsterdam (Wijngaarden-Bakker 1974). Only in the last thirty years have faunal remains in Ireland received the attention they deserve. Some major faunal assemblages have been examined that provide vital comparative material for the study of the economy of the time. A number of important assemblages include: Moynagh Crannog, Co. Meath; the Knowth medieval settlement, Co. Meath; Scandinavian Dublin; Waterford; and Clonmacnoise, Co. Offaly (McCormick and Murphy 2007).

In 1997, F Kelly published a valuable volume entitled *Early Irish Farming*, which is a corpus of early medieval documentary evidence of Irish farming relating to agriculture and livestock rearing, as well as specific non-meat animals such as dogs and cats. The information was sourced from mainly seventh and eighth century AD law-texts, along with other written sources including annals, law-texts, sagas and poetry. F Kelly's research included detailed information on the different functions of the Irish dog, dog diseases, the legal situation of dog offences and the use of dogs on specific hunts.

An interesting article by Scharff (1924) in the *Irish Naturalist*, described the breeds of dogs then particular to Ireland. Scharff gave an account of the history of various breeds, referring to a couple of archaeological examples: the dog skeletal remains excavated from Dunshaughlin, Co. Meath, and the Old Irish names for the various breeds obtained from Old Irish literature.

Redlich published a more detailed account of the dog breeds on Ireland in 1981, *The Dogs of Ireland*. This book provided an historic account of dogs from prehistory to modern times. Their strong presence in Irish folklore and mythology is illustrated from the literature, as well as from archaeological examples, superstitions and the presence of dog names in modern Irish place-names.

Since Harcourt's paper (1974), which included nineteen dogs from Lagore Crannog, Co. Meath, only two papers have been published on dogs in the Irish archaeological records both by Prof. F McCormick in 1991. One, *Dogs in Prehistory and Early Christian Ireland* (1991a), was a synopsis of his findings on canines. He had noted the presence of dogs with estimated shoulder heights as small as Pekingese during the prehistoric and early medieval period.

McCormick's broader but more detailed research paper, *The Effect of the Anglo-Norman Settlement on Ireland's Wild and Domesticated Fauna* (1991b), agreed with Harcourt's analysis on early medieval dogs. Two distinct groups were evident from the Irish metrical data, especially the estimated shoulder heights with a small size group ranging from 26-40cm and a larger dog group from 48-72cm. McCormick (1991b) noted that these two groups were not evident in the data from Anglo-Norman and medieval periods, which may have been due to the lack of breeding programmes. He commented on the presence of butchery on some dog bones, indicating that at certain times dogs were eaten due to famine. Anti-mortem damage was also observed on the bones. For example, a number of dog skulls from Wood Quay, Dublin, were recorded with healed injuries to the snout, which McCormick (1991b) surmised could have been due to the animals being struck on the snout intentionally by an object.

Over the last ten years a number of detailed research studies have been carried out on faunal remains from Irish sites. In J Soderberg's PhD thesis "Feeding Community: Urbanisation, Religion and Zooarchaeology at Clonmacnoise, an Early Medieval Irish Monastery" (2003), he found by analysing the faunal remains that he could build a picture of the social complexity and economic relationships that create and maintain communities.

McCormick and Murray published a monograph on the zooarchaeology from the multi-period site at Knowth, Co. Meath (2007), which contained an appendix with a gazetteer of faunal reports from early medieval sites. This was the first comprehensive overview of animal resources from this time period, and has become an invaluable source for archaeologists and specialists.

A more detailed examination was carried out by S Denham, at Queens University Belfast, for his PhD research on the exploitation of medieval animals in Ireland (Denham 2008). His comprehensive research explored how the Anglo-Normans affected the native Irish perception of animals, and how the effectiveness and practicality of the new market economy may have aided in the decline of cattle as the main form of wealth and social status in Gaelic Ireland.

1.5 Human-Dog Studies, Background into Modern Studies and Their Use in Archaeological Work

It was in the 1970s that research into the relationships between humans and companion animals became a recognised field of study. The field has been dominated by research in the zoological and veterinary sciences. But in the last thirty years, it has expanded to involve researchers in a wide range of diverse fields. Much work has been carried out on the role the dog has with its owner and the community as a whole, within Western societies as well as in tribal and native communities. In 1995 the publication of *The Domestic Dog: Its Evolution, Behaviour and Interaction with People* (Serpell (ed.) 1995a), consisted of papers presented at the Companion Animal Research Group at Cambridge in 1991. The goal of this conference was "to offer a thoroughly modern synopsis of the behaviour and natural history of the dog, from the scientific standpoint" (Morey 2010, 4). In 1996, Serpell produced a key text *In the Company of Animals*, which examined the human-animal relationship within the world today, focussing on the current phenomenon of pet-keeping, which historically has been presumed to be for the rich (Serpell 1996).

In Britain today there are numerous charities and organisations created to safeguard the rights of dogs and other animals. Our perception is that we live in a society that treats animals with respect and dignity, but research carried out by the RSPCA indicates something quite different. Their annual report from 2007 noted an increase of cruelty cases of 10.5% from the previous year, with neglect as the most common cause (RSPCA 2007, 59). What is understood as animal cruelty can be different from person to person, country to country. This could have been the same during the early medieval period. Animal cruelty laws were only developed just over 150 years ago to recognise

that animals could feel pain and suffering, and the importance of protecting them from unnecessary infliction (Merz-Perez and Heide 2004).

What makes someone mistreat animals? Conversely, what makes people spend thousands of pounds to own a prized pedigree dog and also hours of their time preparing it for the show ring? Is it love for the animal or a more personal emotion? Is this a purely modern phenomenon? Even in the last few decades, the indulgence and fondness placed on dogs has become acute, from designer outfits to leather sofa dog beds.

More archaeologists are observing the benefits of expanding our perspective relating to the way humans and animals interact and the consequences of those behaviours. Its real importance within archaeological study was marked out as the main theme at the first World Archaeology Congress in 1986 entitled *Cultural Attitudes to Animals, Including Birds, Fish and Invertebrates*. From these sessions, four important publications resulted: *Animals in Art* (Morphy (ed.) 1989), *Signifying Animals* (Willis (ed.) 1989), *The Walking Larder* (Clutton-Brock (ed.) 1989) and *What is an Animal*? (Ingold (ed.) 1988). Academics from a variety of backgrounds, particularly archaeologists and anthropologists, discussed animals across a wide range of cultural contexts and theoretical positions. These ethnographic viewpoints are enlightening and provoking, allowing us to examine the archaeological record with a more open mind. A key example was a paper written by Serpell in *The Walking Larder* (1989). Serpell, who is an animal behaviourist, examined the closest of all conscious human-animal relationships, pet-keeping, and reviewed its role and extent from Palaeolithic hunters to modern societies. The article evaluated whether there was a link between pet-keeping and domestication as put forward by Francis Galton in 1883. Serpell concluded that pet-keeping is a common activity within many different societies, giving examples of pet-keeping activities from so called 'indigenous' societies, where women breast-fed puppies, animals were given names, and it was noted that some grieved for their animal when it died.

Since the start of work for this thesis, interest in ethnoarchaeology and its links with zooarchaeology have developed, which has led to a recent publication by Albarella and Trentcoste (eds) entitled *Ethnozooarchaeology The Present and Past of Human-Animal Relationships* (2011). This collection of papers came from the ethnozooarchaeology

session held at the 10th ICAZ conference in 2006. Lupo's (2011) article provides an example of how ethnozooarchaeology can be applied to question why dogs were domesticated and their uses to humans, especially as a hunting companion.

1.6 Aims and Objectives

In this thesis, I aim to explore the human-dog relationship within early medieval England and Ireland (*c.* AD 400 to 1250), and intend to develop an improved understanding of how people in early medieval society both perceived and utilised their dogs.

These two countries were chosen as it was felt they would offer a useful comparison. The organisation within the two countries during this time period was very different. England was dealing with the end of the Romano-British period, leading to a change in the structure of the country, including a decline in the urban areas initially. Ireland, in comparison, was little affected by the Roman developments and remained effectively rural, with pockets of population beginning to grow around monastic areas. Throughout the early medieval period, Irish society had no central government and was led by small independent kingdoms. During the tenth century AD, Scandinavian settlements were developed around the Irish coastal areas, such as Dublin, Waterford, and Limerick. It was not until the arrival of the Anglo-Normans and the introduction of new feudal social and economic institutions that there was a dramatic effect on people's way of life.

As Ervynck (1992) has pointed out, the study of animal bones in isolation cannot answer all the questions concerning the nature of the human-animal relationship. To ensure that this study is as comprehensive as possible, an integrated approach has been taken. All the available resources, from the documentary, art, historical and archaeological evidence, will be combined.

The three key themes that will be explored through this research are:

i) *Functionality* – consideration of the different roles that the dog performed for the individual and the community as a whole, such as a hunting companion or as a source of food. Dog bones have been discovered with butchery marks from late Roman

sites, such as at Lincoln where cut marks suggested meat joints rather than skinning (Dobney *et al.* 1996, 46-7). Whether this was for human or animal consumption is however uncertain. Dog meat is entirely edible, containing the same amount of protein as pork, and in some countries people farm dogs for food (Simoon 1994, 201). However, there is a taboo about eating dog meat in England and Ireland. Leach (1966) comments on how the English treat dogs with a sacred taboo due to their close relationship with humans. People term them as 'companions', which associates them with a social role above being eaten. Nevertheless, butchered dog bones were recovered from the medieval contexts at Newcastle and Gidney (1996) suggested that dog fat was used for cosmetic and medical purposes during the medieval period.

Dogs were also used as a form of entertainment. Dog fighting involved placing two dogs against one another or other animals, this generally led to the death of at least one of the animals. The dogs were bred for their aggression, powerful build and strongly developed head and this so-called sport can be dated back to the Roman times. There is evidence from a fourteenth-century illustration in The Luttrell Psalter (British Library, Add. 42130 Folio 161r) of a bear baiting scene showing the bear chained to a staff in the ground, with four dogs attacking the animal (Serpell and Paul 1994).

A secondary exploitation of dogs could be the use of their excreta. Goodburn (1978) comments on the use of dog, pigeon and human faeces in the tanning process to soften the leather. The skins were washed in a mix of dog dung and bird droppings, which removed the lime (Semple 2006). The tanner dealt with skins from any cattle and sometimes horse, whereas the skins from goat, sheep, deer, horse and hound went to the tawyer. Semple (2006) discusses the tanning process carried out at Wrotham Manor (dated around AD 1400). Tanners used dogs to do the preliminary cleaning of the cattle skins with their teeth. Jones (M 2002, 128) commented on skins from smaller animals, such as dogs, used to make leather for gloves, pouches, and shoe uppers.

A problem noted in archaeological reports when discussing dog remains has been the assumptions made about a dog's function from its shape and size. Harcourt (1974, 171) noted "size alone however is an unreliable guide to function". For example, Baxter (2006) commented on a small dog excavated from a Romano-British grave being very

similar to the Dachshund in appearance and habit, which would indicate that it had been used to hunt down burrows.

Serpell (1989) has argued that usefulness is in the eye of the beholder, and the therapeutic or symbolic value of an animal companion may be as utilitarian as the economic value of farm livestock.

ii) *Morphology* – examination of whether the size and stature of a dog had any relevance to the human attitude towards it. Animal bone reports refer to small-sized dog bones as those coming from 'toy' breeds, which would indicate they were companion animals. But it should be noted that different types of dog are used for different purposes. Particular types have been bred to be both small and agile, for instance the Jack Russell, which was bred specifically to hunt out small vermin. Sadler (1994) commented on the usefulness of small size dogs suitable for herding and hunting activities, such as the Pembroke Corgi and Lancashire Heeler. Whereas, there is evidence that certain breeds were initially bred purely for a specific look. For example, the Pekingese was bred to be the living form of the 'spirit-lion' of Buddha (Clutton-Brock 1995).

Clark (K 1995) observed on the Iron Age to Roman material, a trend for smaller dogs in the later Roman period. It is essential to establish whether this continued through into the Anglo-Saxon and Norman period. Clark (K 1995) also pointed to the speed in which these smaller dogs appeared, which clearly indicated that there was a move in people's attitudes towards these animals. K Clark defined this as a 'cultural marker'.

Teichert (1987) discussed the development of brachymel (short-legged) dogs, from the early artistic representations in Egypt and Inca to their increasing prevalence from Roman sites. There is evidence of the introduction of a new dog breed during the Romano-British period with bowed fore and hind bones, but is this bowing due to a medical condition? Bingel and Sande (1982) discussed the effects of *chondrodysplasia foetalis* on a dog's skeletal elements. This is a condition, which leads to disproportionate fore and hind limbs. Baker and Brothwell (1980, 47) note that bowing can be caused by a deficiency of Vitamin D in the diet.

Without an element of human selection and intention, indicating planned breeding, the biological mechanisms involved in producing the different shapes and types of dogs observed would not have been so successful. Could the urban environment, with its spatial constraints, have led the Romans to breed smaller dogs and if so, were these breeds continued during the early medieval period, when the towns were diminished and abandoned?

It is important to ensure that any large specimens recorded are not wolf skeletal remains. For a confident identification, the cranium is required to differentiate between dog and wolf. O'Connor (1989, 186-7) commented on very large Canid bones from the tenth- and eleventh- century deposits at York, which cannot be attributed to either domestic dog or to wolf *Canis lupus.* Until British medieval wolf skeletons are identified and published, there will be doubt as to the criteria for their recognition. Pluskowski (2006) observed the lack of references to wolf bones in the archaeological record during the early medieval period from both countries.

iii) *Treatment* - an indication of how people perceived their animals can be judged by how they treat and care for them during their life and how they disposed of them at death. Evidence from the archaeological record could show us how people behaved towards their animals. The dog bones in this study have been examined for any evidence of fractures and diseases that may have been caused by human maltreatment or neglect, although caution must be exercised to ensure that these are not the result of medical conditions, which can lead to greater susceptibility to fracture, such as *osteodystrophia fibrosa*. Living conditions might also be inferred from the presence of such disorders as rickets or *osteomalacia*. This is caused by a lack of sunlight or vitamin D, and results in the bowing of the long bones. On the other hand, the presence of bone pathologies that would have severely limited the functional value of an animal or evidence of healed breaks may provide an indication of animals that have been kept for companionship alone.

Religion and other cultural changes will be explored to see whether they had any effect on the way dogs were being perceived and treated. During the Romano-British period, dogs played a symbolic role in religion, especially in death (Smith, K 2006, 73). Dogs were viewed as a vehicle of death, linked with their use in hunting and represented in

the iconography. Dogs were also uncovered from funerary contexts that contained mutilated human skulls and Smith (K 2006, 73) believed that dogs were killed to act as symbolic guardians over dangerous spirits. Were these beliefs and practices continued on through into the early medieval period?

During the fourth century AD, Christianity became more usual in southern England and reached Ireland in the fifth century, although it was struggling to convert followers from the pagan communities within Ireland. It is generally believed that Bishop Palladius was sent by the Pope to spread Christianity to Ireland in *c.* AD 430 (Edwards 1999, 99). It took Anglo-Saxon England many years to convert to Christianity after AD 597, and it was a fairly diplomatic process (Yorke 2006, 133).

Menache (1997) noted that during the early years of Christianity, there was a disapproving attitude towards companion animals, especially dog keeping. This was primarily due to the teachings of the early Christian theologians; the dog is mentioned thirty-five times in the Bible, mainly negatively. The presence or absence of dogs within graves could indicate human attitudes in pre-Christian time. Are dogs represented differently between inhumation and cremations? Was this specific to the culture or religion? Why were they included as a grave gift as suggested by Prummel's (1992) research?

1.7 Methodology of the Study

To examine these research questions thoroughly, both descriptive and quantitative analysis was applied to the available data on dog remains in England and Ireland from the early medieval period, in conjunction with the literary and artistic evidence.

Archaeological data have been gathered from site reports, published and unpublished animal bone reports and museum archives. Some previously examined English dog collections were re-inspected, if the reports suggested they contained particular information relating to the research questions. This has involved measuring the bones and examining them for any palaeopathology, butchery marks and non-metric traits. This provided a more thorough analysis of all the data available.

All the dog bone data obtained from the different sources were placed into a specifically designed database, which has allowed for a comprehensive analysis of these dog remains to be carried out. The data gathered from the reports included site information, such as site name, county and type of site. A separate entry was made for each individual dog with specific data on its burial location, date/period, completeness, metrical data, estimated age, butchery marks, palaeopathology and other additional information.

This database has provided an opportunity to identify and examine trends in a more quantitative manner, over a much broader period of time and also across a wide stratum of society. It must be remembered that the burial location can only inform us how the dog was treated in death. It may have been a cherished companion animal in life, but upon its death was subsequently exploited for economic gain or sacrificed as a gift. Or as Morey (2006, 164) pointed out, "at one level, burial of an animal below the ground surface constitutes little more than hygienic corpse disposal".

Statistical analysis was applied to the data with univariate statistics used initially to evaluate the variation contained within the dataset. This included the mean, minimum, maximum and standard deviation and the co-efficient of variance which are all measures of the amount of variance found within the data.

Additional archaeological information, other than faunal remains, was gathered to shed more light on the relationship that humans shared with dogs. For example, the presence of deer and wild animal bones could suggest that dogs were kept for hunting. Other dog-related items such as collars, as well as dog coprolites have been recorded.

Artistic and literary sources from the time are directly relevant and can provide the embellishment, as well as cross-cultural comparisons, of people's relationship with dogs. Artistic evidence portraying dogs were located and studied. This material has included items such as jewellery, ceramics, metalwork, embroidery and stonework. There is a range of written literature available from this period, such as the Irish law-texts, annals, poetry and folklore, and the writings of Bede, and Lindisfarne Gospels. However such material reflects a single instance, an opinion or observation of the author

or illustrator at a specific point in time and therefore may not be necessarily representative of general attitudes.

Once all the available archaeological data, literature and artistic material, were collated, a comparative approach covering modern studies of human-dog relations, ethnoarchaeological and ethnographic research, was undertaken.

The time period chosen, from AD 400-1250, was one of continual political and cultural exchange. It covers the end of the Romans in Britain, the Saxon migration, the development of Christianity, the Viking invasions and finally the Norman conquests. This makes it desirable that the English and Irish datasets should not be examined in isolation from Continental Europe. It is important to establish if there were any influences that may have stemmed from other regions within Europe.

1.8 Chapter Outline

From the above sections, it can be seen that this thesis deals with a range of topic areas. To avoid any repetition the chapters have been set out to deal with specific areas. Chapters Two and Three will examine the English and Irish dataset respectively, providing a detailed analysis of the dogs in the archaeological record. Areas of particular interest are their geographical location, the site taxa ratios, burial location, completeness, age profile, sexing, and any evidence for butchery and pathology. Comprehensive analysis was carried out on biometrics data to develop an understanding on the morphology of these dogs.

Chapter Four is concerned with the iconographic, textual and artefact evidence for the domestic dog in early medieval England and Ireland. Examples are given from decorative masonry, cremation urns, metalwork and illuminated manuscripts, as well as their presence in biblical literature, poems, Irish law tracts and folklore.

Chapter Five covers the comparisons between the archaeological datasets gathered from England and Ireland. Chapter Six examines the three key themes, functionality, morphology and treatment of dogs from the information gathered and the cultural changes that may have affected people's attitudes during the early medieval period.

And finally, Chapter Seven concludes with the findings from all of these chapters along with a summary of the studies limitations, as well as suggestions for future research.

Chapter 2 – The English Dataset

2.1 Introduction

All the detailed data gathered on early medieval dogs from excavations was placed in a Microsoft Access database for analysis (see CD-ROM). These data was retrieved from both published and unpublished literature, together with nine assemblages that were examined first-hand by the author. The aim of this chapter is to present and discuss these data, but not to interpret them as this will be carried out in Chapter Five.

2.2 Data Analysis

The data were approached in a descriptive and quantitative analytical way. The variable quality of the archaeological data has meant that few statistical tests could be applied, which could be viewed as simplistic, as they rarely move beyond percentages. But all the data must be examined in a manner that allows for all the biases to be noted and taken into account.

A number of problems were encountered during the research process. The first was locating the relevant data. A large number of publication reports did not contain the raw data required for synthesis and analysis of measurements. In many cases these reports failed to state where the archives were kept, or if any raw data actually existed. For example, Bruce-Mitford's (1997, 21) report on the Mawgan Porth, Cornwall, excavation comments that dog bones were recovered from a room around a courtyard, but no further details were given in the report or of any other bones discovered. Two dog burials were noted from the Anglo-Saxon site at Eye Kettleby, Leicestershire, by Hamerow (2006), but again no report has been written up on this site (information had been obtained from Neil Finn by personal communication).

There were a couple of instances where an animal bone report described the presence of a wolf or dog, but no distinction was made between the two. For example at Uncleby, Yorkshire, where a wolf or dog skeleton was recorded in one of the graves at the Anglo-Saxon cemetery (Smith, R A 1912). Pluskowski (2006) noted the problems with

distinguishing between wolf and dog bones, which is also the case with identifying between dog and fox skeletons. For example at the Anglo-Saxon cemetery at Marina Drive, Dunstable, a grave contained a group of skulls, but it could not be determined whether they were young dogs or fox cubs (Matthews 1962).

It was noted that in some published reports the metrical data were in the form of summary tables containing minimum and maximum values, number of cases, mean and standard deviation. This information was not specific enough to be included within the database.

The majority of the animal bone reports use the von den Driesch (1976) method for taking measurements, but problems arose when non-standard measurements were used. The description of these non-standard measurements was often not provided, such as shaft diameter measurements on tibiae. Von den Driesch indicates this is measured in the medio-lateral plane of the bone, but other workers use the anterior-posterior plane (which is narrower in most mammals). Combining the two datasets with different ways of measuring the shaft diameter produced false results showing very convincing groups of animals of approximately the same height, but one set with gracile limbs and the other with more robust limbs.

Johnstone (1999) noted during his research into the biometric of equids in the Roman world that when a large number of calculations of wither heights was made, the accuracy of the measurements became a crucial issue. The difference of just 2mm in the greatest length of a horse metacarpal could make as much as 25mm difference in the estimated withers height, which could mean the difference between an individual being interpreted as a horse or a pony!

A number of problems arose during the collection of data and the placing of it into certain categories for analysis later. One of the main limitations has been the classification of dating the specific assemblage. Since material culture does not change with the calendar, excavators have often found it difficult to assign assemblages to specific dates. For example, the term ‘Saxo-Norman’ covers a date range of approximately AD 950-1200 due to the similarity of late pre-conquest and early post-

conquest artefacts. Despite these problems, the assemblages were categorised, although there was still some overlap (Table 2.1).

Table 2.1. Date range and sample sizes for each period group.

Period	Date range	Number of assemblages	Number of dogs	Average number of dogs per assemblage
Anglo-Saxon	Fifth to mid-eleventh century	28	83	3.0
Early-middle Anglo-Saxon	Fifth to mid-ninth century	60	245	4.1
Middle-late Anglo-Saxon	Seventh to mid-eleventh century	57	228	4.0
Saxo-Norman	Mid-tenth to late twelfth century	46	152	3.3
Anglo-Norman-medieval	Late eleventh to late thirteenth century	74	166	2.2
Early medieval	Fifth to mid-thirteenth century	15	47	3.1

There were also problems with the amount of detailed information provided in the animal bone reports, many specialists having different agendas, often concentrated on meat-bearing species, with just a small reference to minor mammals and birds. Many sites did not contain information on the completeness of the dogs, their ages or whether there was evidence of butchery or pathology. The study was further limited by the number of sites that actually included an animal bone report, with some major sites, such as West Heslerton, Yorkshire, having no report published. Many other sites may have further details about dog material stored in the site excavation archives, but obtaining access to such unpublished information has proved to be both difficult and time-consuming.

Primary research has therefore been limited to those reports available in published form, from books, journals, excavation report series, as well as unpublished ones, which were easily accessible, for example those held in the Zooarchaeology Library at the University of Southampton. Some unpublished excavation reports have been obtained directly from the animal bone specialists themselves.

In total, data from 212 English sites were utilised. These sites are listed in Table 2.2 and their geographical locations are shown on Figure 2.1.

Table 2.2. List of English sites examined in this study (sites in **bold** where examined first-hand).

Site No.	Site Name	Reference
1	Great Chesterford, Essex	Serjeantson (1994)
2	Sancton I, Yorkshire	Bond (1993)
3	Spong Hill, Norfolk	McKinley (1994)
4	Illington, Norfolk	Davison *et al.* (1993)
5	Loveden Hill, Lincolnshire	Wilkinson (1980)
6	**West Stow, Suffolk**	Crabtree (1990)
7	Lincoln: Flaxengate	O'Connor (1982)
8	Brandon, Suffolk	Crabtree pers. comm.
9	Launceston Castle, Cornwall	Albarella and Davis (1996)
10	Burnham Market, Norfolk	Baker (2000)
11	Stockbridge Down, Hampshire	Hill (1937)
12	Riverdene, Basingtoke, Hampshire	Hall-Torrance and Weaver (2003)
13	Cow Drove Hill, King's Somborne, Hampshire	Pine and Preston (2004)
14	York: Skeldergate	O'Connor (1984)
15	York: General Accident Site	O'Connor (1988)
16	York: 16-22 Coppergate	O'Connor (1989)
17	Chester: 1-11 Crook St 1973/4	Ward (1994)
18	Chester: Goss St 1973	Ward (1994)
19	Chester: Hunter's Walk 1979-80	Ward (1994)
20	Chester: Hunter St School 1979-80	Ward (1994)
21	Chester: 1 Abbey Green 1975-8	Ward (1994)
22	Stafford: Salter St	Clark (1998)
23	Godmanchester, Cambridgeshire	Baxter (2003)
24	Heath Wood, Ingleby, Derbyshire	Richards (2004); Bond and Worley (2004)
25	Tidworth, Wiltshire	Godden *et al.* (2002)
26	North Elmham Park, Norfolk	Noddle (1980)
27	Ramsbury: High St, Wiltshire	Coy (1977; 1980)
28	**Hamwic: Six Dials, Hampshire**	Bourdillon (1984; 1985b; 1986 and 1987)
29	Hamwic: Graveyard Site SOU 13, Hampshire	Colley (1984a)
30	Hamwic: SOU 19, Hampshire	Colley (1984b)
31	**Southampton, New Town: SOU 175, Hampshire**	Bourdillon (1985a)
32	Hamwic: SOU 177, Hampshire	Bourdillon (1985a)
33	Southampton, New Town: SOU 117, Hampshire	Bourdillon (1985a)
34	Winchester: Sussex Street, Hampshire	Coy (1984)
35	Winchester: New Road, Hampshire	Coy (1984)
36	Winchester: Crowder Terrace, Hampshire	Coy (1984)
37	**Wickham Glebe, Hampshire**	Coy (1985)
38	Jarrow, Tyne and Wear	Noddle (1987)
39	Brighton South Hill, Hampshire	Coy (1988)
40	Prudhoe Castle, Northumberland	Davis (1987b)
41	Abbots Worthy (Itchen Abbas Road), Hampshire	Coy (1987)
42	**Hamwic: SOU 15, Hampshire**	Bourdillon (1990)
43	Wraysbury, Berkshire	Coy (1989)
44	Leicester, The Shires: St Peter's Lane	Gidney (1991a)
45	Leicester, The Shires: Little Lane	Gidney (1991b)

46	**Winchester: Northern Suburbs, Victoria Road, Hampshire**	Bourdillon (1992)
47	Winchester: Eastern Suburbs, Chester Road, Hampshire	Bourdillon (1992)
48	Winchester: City Defences, 27 Jewry St, Hampshire	Bourdillon (1992)
49	Newbury: 143-5 Bartholomew St, Berkshire	Coy (1986a)
50	Newbury: Cheap St, Berkshire	Coy (1986b)
51	Carisbrooke Castle, Hampshire and Isle of Wight	Smith (P 1994)
52	West Cotton, Northamptonshire	Albarella and Davis (1994)
53	Thetford: Mill Lane A, Norfolk	Albarella (1999)
54	Norwich: Castle Mall, Norfolk	Albarella *et al.* (1997)
55	Eynsham Abbey, Oxfordshire	Ayres *et al.* (2003)
56	Middle Thames Landscape: Lots Hole, Berkshire	Clark (2002)
57	Middle Thames Landscape: Lake End Road, Berkshire	Clark (2002)
58	Nazeingbury, Essex	Huggins (1978)
59	Barkingwic?, Essex	Hamilton-Dyer (2002)
60	Stebbingford Farm, Essex	Wade (1996)
61	Hereford: Victoria St, Herefordshire	Shoesmith (1985)
62	Hereford: Berrington St, Herefordshire	Shoesmith (1985)
63	Hereford: The Brewery, Herefordshire	Shoesmith (1985)
64	Thetford: St Nicholas St, Norfolk	Hutton MacDonald (1999)
65	Thetford: Guildhall St, Norfolk	Hutton MacDonald (1999)
66	Thetford: Minstergate, Norfolk	Penn (1999)
67	Wharram Percy: South Manor area, Yorkshire	Pinter-Bellows (2000)
68	Leicester: Causeway Lane, Leicestershire	Gidney (1999)
69	Oxford: Trill Mill Stream, Oxfordshire	Wilson (B 2003)
70	Faccombe Netherton, Hampshire	Sadler (1990)
71	Kempton Manor, Bedfordshire	Crick and Dawson (1996)
72	Bedford: St John's St	Grant (1970)
73	Bedford: Salvation Army Site, 1977/2	Grant (1983)
74	Thetford: St Barnabas' Hospital, 1977	Jones (G 1984)
75	Caythorpe, North Humbershire	Stallibrass (1996)
76	Collingbourne Ducis: Cadley Road, Wiltshire	Hamilton-Dyer (2001)
77	Castle Acre Castle, 1972-77, Norfolk	Lawrance (1982)
78	Thetford: Brandon Road, 1964-70, Norfolk	Jones (G 1993)
79	Thetford: Mill Lane B, Norfolk	Albarella (2004)
80	London: Aldergate	Armitage (2001)
81	Newark-on-Trent: Slaughter House Lane, Nottinghamshire	Kinsley (1993)
82	Brettenham: Melford Meadows, Norfolk	Powell and Clark (2002b)
83	Ely,West Fen Road: The Ashwell Site, Cambridgeshire	Higbee (2005)
84	London: 71-77 Leadenhall St, 32-40 Mitre Street	Pipe (2005)
85	London: Baltic House, St House Axe	Rielly (2002)
86	London: Peabody Site	West (B 1989)
87	London: Jubilee Hall	West (B 1988)
88	London: 21-22 Maiden Lane	West (B 1988)
89	London: St Mary Spital	Pipe (1997)
90	Portchester Castle, Hamsphire	Grant (1976; 1977)
91	Guildford Castle, Surrey	Sykes (2005)
92	King's Lynn: All Saints Street, Norfolk	Noddle (1977)

93	Taunton: Priory Barn, Somerset	Levitan (1984a)
94	Taunton: Benham's Garage, Somerset	Levitan (1984a)
95	Goltho, Lincolnshire	Jones and Rubens (1987)
96	Bath: Citizen House, North Somerset	Grant (1979)
97	Witney: Mount House, Oxfordshire	Ayres and Serjeantson (2002)
98	Cheddar Palace, Somerset	Higgs and Greenwood (1979)
99	Aylesbury: George Street, Buckinghamshire	Jones (G G 1983)
100	Aylesbury: Walton Street, Buckinghamshire	Noddle (1975a)
101	Aylesbury: County Museum, Buckinghamshire	Sadler (1998)
102	Loughton, Milton Keynes, Buckinghamshire	Hamilton-Dyer (2003)
103	Castledyke South, Barton-on-Humber, Lincolnshire	Nicholson (1998)
104	Bantham, Devon	Coy (1981)
105	Okehampton Castle: the Bailey, Devon	Maltby (1982)
106	Cambridge: Institute of Criminology	Dodwell *et al.* (2004)
107	Ipswich: Cox Lane and Shire Hall Yard, Suffolk	West (S E 1963)
108	Oxford: Clarendon Hotel, Oxfordshire	Jope (1958)
109	Middleton Stoney, Oxfordshire	Levitan (1984b)
110	Quarrington, Lincolnshire	Rackham (J 2003)
111	York: Baile Hill, Yorkshire	Rackham (D J 1977)
112	Castle rising Castle, Norfolk	Jones *et al.* (1997)
113	Daventry: St John's Square, Northamptonshire	Locker (1996-7)
114	Northampton: St Peter's Walk, Northamptonshire	Armitage (1998-9)
115	Steyning: Steyning New Museum, West Sussex	Irving (1992)
116	Steyning: Fletcher's Croft, West Sussex	Evans (J 1986)
117	Oxford: New Inn Court	Wilson (B 1983)
118	Banbury Castle, Oxfordshire	Gamble (1983)
119	Oxford: St Aldates	Marples (1977)
120	Oxford: Logic Lane	Banks (1961/2)
121	Abingdon: West St Helen Street, Oxfordshire	Wilson (R 1975)
122	Wantage: Mill Street, Oxfordshire	Maltby (1996)
123	Abingdon Abbey Grange, Oxfordshire	Jones (G 1994a)
124	Abingdon: Audlett Drive, Oxfordshire	Levitan (1992)
125	Little Oakley, Essex	Barford (2002)
126	Norwich: Fishergate, Norfolk	Jones (G 1994b)
127	Mitcham, Surrey	Bidder and Morris (1959)
128	Old Erringham, Shoreham: Weaving Hut, West Sussex	Holden (1976)
129	Steyning: Market Field, West Sussex	O'Shea (1993)
130	Dorchester-on-Thames: Beech House Hotel, Oxfordshire	Grant (1981)
131	Lower Farm, Bishop's Cleeve, Gloucestershire	Holbrook (2000)
132	Winchcombe: North St, Gloucestershire	Levitan (1985)
133	Boteler's Castle, Alcester, Warwickshire	Pinter-Bellows (1997)
134	Sandal Castle, Yorkshire	Griffith *et al.* (1983)
135	Caister-on-Sea, Norfolk	Harman (1993)
136	London: Royal Opera House	Rielly (2003)
137	Cogges Priory, Oxfordshire	Wilson (B 1982)
138	Northampton: Marefair, Sol Central, Northamptonshire	Liddle (2005)
139	York: 46-54 Fishergate	O'Connor (1991)
140	Tatberht's Lundenwic: James St, London	Armitage (2004)

141	Tatberht's Lundenwic: Lyceum Theatre, Exeter St, London	Rackham and Snelling (2004)
142	Tatberht's Lundenwic: 21-24 Maiden Lane and 6-7 Exchange Court, London	Hamilton-Dyer (2004a)
143	Tatberht's Lundenwic: National Portrait Gallery, London	Armitage (2004)
144	Canterbury Castle, Kent	King (A 1982)
145	Canterbury: Linacre Garden, Kent	Driver (1990)
146	Canterbury: 16 Watling St, Kent	Clutton-Brock and Burleigh (1995)
147	Trowbridge, Wiltshire	Bourdillon (1993)
148	Riby Cross Road, Lincolnshire	Scott (S 1994)
149	Yarnton, Oxfordshire	Mulville and Ayres (2004)
150	Cresswell Field, Oxfordshire	Mulville and Ayres (2004)
151	Worton, Oxfordshire	Mulville and Ayres (2004)
152	Malmesbury: Postern Mill Site, Wiltshire	Currie (1993)
153	Oxford Castle, Oxfordshire	Marples (1976)
154	Brixworth: Vicarage Gardens, Northamptonshire	Everson (1977)
155	Sutton Courtenay, Berkshire	Leeds (1923; 1927)
156	Car Dyke, Waterbeach, Cambridgeshire	Lethbridge (1927)
157	Beverley: Lurk Lane, Yorkshire	Scott (S 1991)
158	Gamlingay: Station Road, Cambridgeshire	Roberts (2005)
159	Shrewsbury: Area A (East), Shropshire	Noddle (1983)
160	Mucking, Essex	Done (1993)
161	Foulden, Norfolk	Prummel (1992)
162	Minster Lovell, Oxfordshire	Prummel (1992)
163	Cookham, Berkshire	Bond (1996)
164	Leckhampstead: Glebe Field South, Berkshire	Anon. (2006)
165	Bantham Ham, Devon	Higbee (2011)
166	**Sedgeford, Norfolk**	Author
167	**Thetford, Norfolk**	Author
168	Rayleigh Castle, Essex	Hinton (1912)
169	Southampton: Melbourne Street, Hampshire	Bourdillon and Coy (1980)
170	Southampton: High Street B, Hampshire	Noddle (1975b)
171	Southampton: St Mary's Stadium, Hampshire	Hamilton-Dyer (2005)
172	Southampton: Bitterne, Hampshire	Cornwall (1958)
173	**Southampton Castle: Upper Bugle Street (SOU 123), Hampshire**	Devereux (1986); Author
174	Southampton: 66-68 Mary Street (SOU 1333), Hampshire	Morris (2005)
175	Bancroft, Buckinghamshire	Holmes and Rielly (1994)
176	Bradwell Bury (MK623), Buckinghamshire	Burnett and Winder (1994)
177	Great Linford Village, Buckinghamshire	Burnett (1992)
178	Pennyland, Buckinghamshire	Holmes (1993)
179	South Witham: Templar Preceptory, Lincolnshire	Harcourt (2002)
180	Market Lavington, Wiltshire	Bourdillon (2006)
181	Wythemail, Northamptonshire	Harcourt (1969)
182	Wavendon Gate, Buckinghamshire	Dobney and Jaques (1995)
183	Sandtun, West Hythe, Kent	Murray (2001)
184	Upton, Gloucestershire	Noddle (1969)
185	Barentin's Manor, Chalgrove, Oxfordshire	Wilson (B 2005)
186	Droitwich, Worcestershire	Locker (1992)
187	Upwich, Droitwich, Worcestershire	Meddens (1997)

188	Barnsley Park, Gloucestershire	Noddle (1985)
189	Leicester: Bonners Lane	Baxter (2004)
190	Chicheley, Buckinghamshire	Jones (G 1980)
191	Old Erringham, Shoreham: Ringwork, West Sussex	Holden (1980)
192	Seacourt, Berkshire	Jope (1961/2)
193	Thrislington, Co. Durham	Rackham (D J 1989)
194	Little Paxton, Cambridgeshire	Harcourt (1974)
195	Hunsgate, Yorkshire	Harcourt (1974)
196	Puddlehill, nr Dunstable, Bedfordshire	Jones and Horne (1985)
197	Thetford: Land at Bury Road, Norfolk	Grimm (2006)
198	Romsey: Alma Road, Hampshire	Grimm (2007)
199	Oxford: 4a Merton St, Merton College	Worley and Evans (2006)
200	Benson: St Helen's Avenue, Oxfordshire	Hamilton-Dyer (2004b)
201	Canterbury: Adelaide Place, Kent	P. Bennett pers.comm
202	Norwich: Greyfrairs, Norfolk	Moreno-Gracía (2007)
203	Marham: The Old Bell, Norfolk	Pomprey (2008)
204	Norwich: Dragon Hall, King Street, Norfolk	Murray and Albarella (2005)
205	Alwalton, nr Peterborough, Cambridgeshire	Baxter (2007)
206	Ipswich: Buttermarket/ St Stephen's Lane	Scull (2009)
207	Bishopstone, East Sussex	Poole (2010)
208	Stafford Castle, Staffordshire	Sadler and Jones (2007)
209	Thetford: Brandon Road, 2002, Norfolk	Baxter (2010)
210	Norwich: St Faith's Lane, Norfolk	Armitage (2010)
211	Woodhurst: Harradine's Farm	Williams (J 2011)
212	Fordham: Hillside Meadow	Baxter (2011)

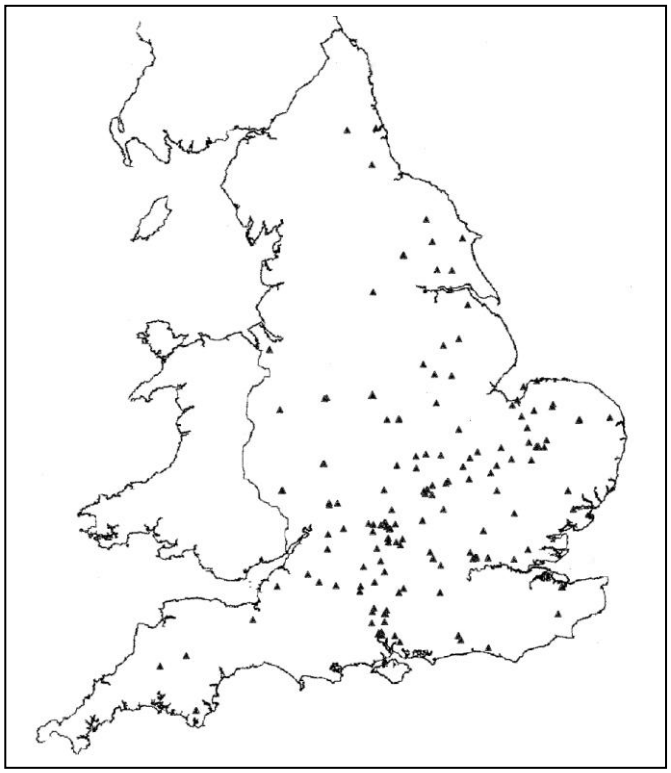

Figure 2.1. The geographical locations of the English sites.

2.3 Site Location

Early medieval dog skeletal remains were recovered from over thirty-five counties in England. The counties were divided into four regions for comparative purposes; North, East, South and West (see Appendix 1). Interestingly, 33.5% of sites were recorded from the southern counties, but the highest percentage of dogs recovered was from the eastern counties at 39.8% (Table 2.3). The southern and western counties had an average of 3.6 and 3.3 dogs per site respectively, whereas the northern and eastern counties had a higher average of 5.6 and 5.2 dogs per site.

Table 2.3. Total number of sites and dogs from the English dataset divided by region.

	Number of sites	**Number of dogs**
North	28	157
East	71	367
South	77	279
West	36	118
Total	**212**	**921**

Cornwall was restricted to two sites, Launceston Castle and Mawgan Porth, because of the acidic soils of this county; this limitation applies to most of south-west England generally and also for places like sand quarries. The ideal pH for the preservation of bone is 7.8 to 7.9 (Reitz and Wing 2000, 117). Only the shadows of human bodies were left in the grave soils from Chamberlains Barn, Leighton Buzzard, Bedfordshire, with very good preservation of metalwork and glass, but only a few skull fragments and shell of teeth were found (Hyslop 1963). At Mucking, Essex, the subsoil was slightly acidic with a mean level of 6.88, which meant the calcium phosphate, the main component of bone, had begun to dissolve (Done 1993). Bone survival was also hampered by emissions being released from an industrial factory situated locally, along with the storage conditions of the bones once excavated. The acidic soil conditions at Sutton Hoo provided a harsh environment for most archaeological materials, leading to human skeletons only recognisable by brown-dark lumps of sand containing flakes of bone (Carver (ed.) 2005, 38).

Only five Anglo-Norman dogs were recorded from the Isle of Wight, with none from the Anglo-Saxon period due to the lack of dated settlement sites on the island. Basford (1980, 35) commented that the only evidence for early settlement on the island is from the placenames and believed that early Anglo-Saxon settlements lie under the present-day villages and are thus inaccessible; it remains the case that no such sites have been found, except Carisbrooke Castle (motte and bailey) where five Anglo-Norman dogs were recovered from ditch and midden contexts (Smith, P 1994).

2.4 Site Type

It can clearly be seen in Figure 2.2 that nearly half of all sites and dogs recovered were from urban site types, with a ratio of 4.7 dogs per site. The rural settlements had a slightly lower ratio of 4.2 dogs per site. The site to dog ratio was highest on manorial site types with 6.3, which was primarily due to the high number of dogs recovered from Faccombe Netherton and South Manor area, Wharram Percy. The 'Other' site types are those which did not fit into the other main categories or no site type of the dogs' location was provided in the excavation report, for example the eleven dogs from Lake End Road, Middle Thames Landscape, and the thirty-four dogs from the disused Roman villa at Barnsley Park, Gloucestershire.

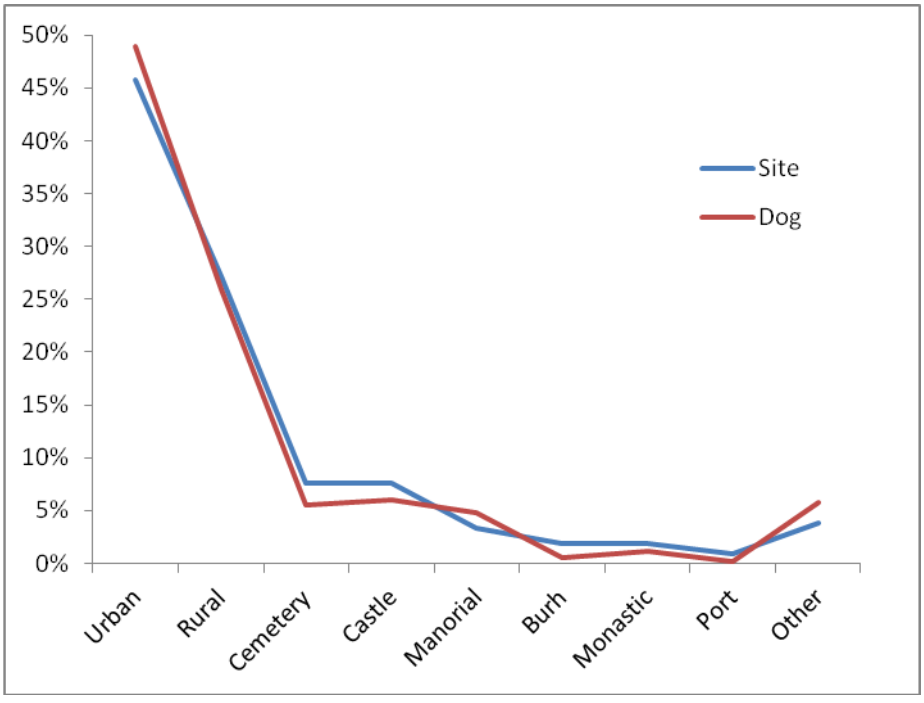

Figure 2.2. Percentage of sites and dogs by site types.

Table 2.4. Top ten sites for dogs from *c.* AD 400 to AD 1250.

	Site name	**Number of dogs**	**Site type**
1	Lincoln, Flaxengate	65	Urban
2	North Elmham Park, Norfolk	47	Rural Settlement
3	Barnsley Park, Gloucestershire	34	Rural Settlement
4	West Stow, Suffolk	32	Rural Settlement
5	York, 16-22 Coppergate	28	Urban
6	Spong Hill, Norfolk	27	Cremation Cemetery
7	Faccombe Netherton, Hampshire	21	Manorial
8	Hereford, Berrington Street	20	Urban
9	Thetford, Norfolk	20	Urban
10	Hamwic, SOU 15, Hampshire	19	Urban

Table 2.4 illustrates the top ten sites by the number of dogs recovered and as expected half were urban. The top site was Flaxengate, Lincoln, with dogs recovered from all chronological periods, including thirty-three from the late Anglo-Saxon period.

Interestingly, the early Anglo-Saxon cremation cemetery of Spong Hill had twenty-seven dogs and ranked number six. This was due to the detailed analysis carried out by Dr Bond on the animal bones from the cremation urns (Bond 1994). This research revealed the presence of many different animals that were cremated along with the human remains. Four dogs were recovered from graves of male, three from females, eleven from (unsexed) adults, two from juveniles and one from a child's grave. Five dogs were described as associated with 'animal accessory vessels'. These were urns that contained primarily animal bones and appear to accompany urns containing almost all human bones (McKinley 1994, 93). Two dogs of differing size were contained in Urn 1725, the only cremation to hold two animals of the same species. Unfortunately due to the soil acidity at Spong Hill, most of the bones from the inhumations had been destroyed (Putnam 1984). Forty-three percent of the cremations at Spong Hill contained animal bone, ranging from a few grams to over a kilogram. Bond (1994) discussed the lack of dogs recorded in published animal bone reports from Anglo-Saxon cremation cemeteries; she was surprised as dogs, like horses, have a long association with votive contexts in north-west Europe (Todd 1975, 182). Unfortunately, no animal

bone report was available from the comparable cremation cemetery at Cleatham, Lincolnshire (Leahy, K 2007).

Barnsley Park, Gloucestershire, provided a minimum number of thirty-four dogs recorded from post-Roman deposits around the villa settlement. These were made up of scattered remains. No further details were provided on the dog bones recovered. Unfortunately Dr Webster, the site director at Barnsley Park, died before the excavations could be properly written up, so the data gathered have been from interim reports published in the *Transactions for the Bristol and Gloucestershire Archaeological Society* (Webster, G *et al.* 1985).

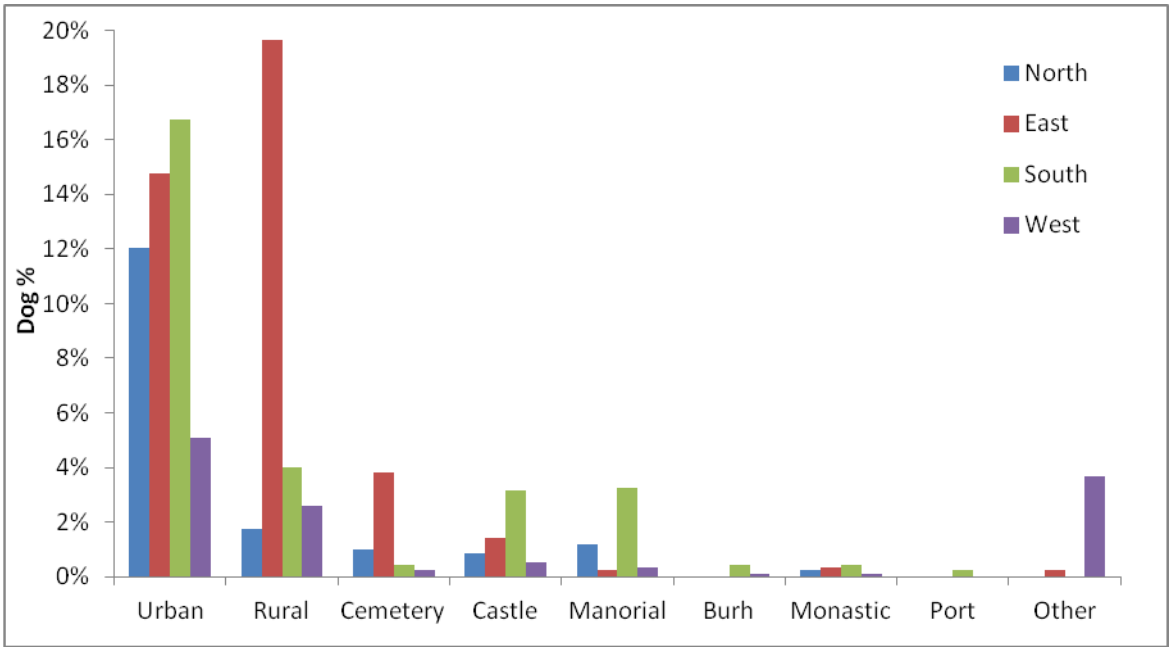

Figure 2.3. Percentage of dogs by site types and regions.

Figure 2.3 compares the percentage of dogs with their site type and region. Urban sites were primary in the North, East and South regions. There was a high peak of dogs recovered from rural sites in the East, the highest for all the regions; this was due to a number of rural settlements with over ten dogs recorded, for example North Elmham Park (forty-seven dogs), West Stow (thirty-two) and Walton Street, Aylesbury (fifteen). The southern region had dogs recovered from the widest range of site types with manorial complexes and ports only found in this region. Dogs were only present in burhs from the South and West region and recorded from the Saxo-Norman period onwards contexts. Burhs were a network of fortified settlements in highly strategic

locations, created from the late ninth century onwards in the southern and midland areas (Astill 1991).

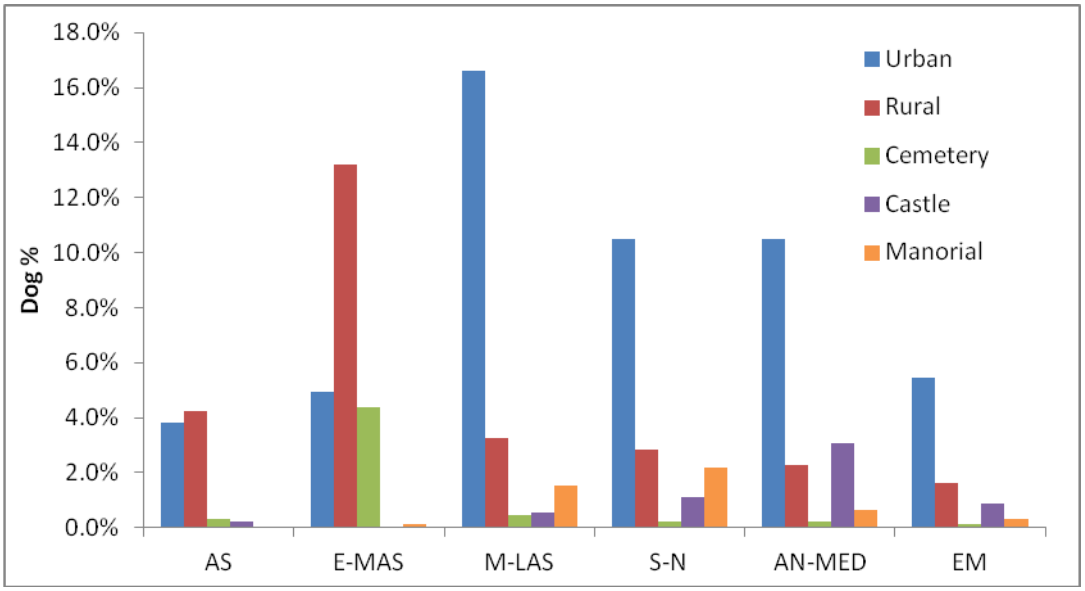

Figure 2.4. Percentage of dogs by the top five site types and chronological periods.

The number of dogs present on the various site types was examined by chronological period and Figure 2.4 illustrates the top five site types by chronological period. Rural settlements were the most common during the early-middle Anglo-Saxon period (13%) and tails off through the time period under analysis. Urban sites were the most frequent for all the other time periods with 16.3% of all dogs recovered from urban sites in the middle-late Anglo-Saxon period. Dogs were recorded from cemetery sites across all the chronological periods with the majority during the early-middle Anglo-Saxon period (4.4%) added to the well recorded cemeteries excavated, for example Spong Hill, Norfolk, and Great Chesterford, Essex. Although Spong Hill was the only cemetery to record more than three dogs, this was probably due to a large number of cremations comprehensively analysed.

Inevitably, the presence of dogs from castles peaks during the Anglo-Norman to medieval period (3.1%) and is the second most popular site type during this period, which indicates that dogs were being kept and disposed of on site. Dogs were first recorded from manorial sites in the middle-late Anglo-Saxon period onwards with the peak in the Saxo-Norman period. Only seven sites form the manorial assemblages and none from the East region. The main manorial site was Faccombe Netherton,

Hampshire, where twenty-one dogs were recovered from the middle to late Anglo-Saxon and Saxo-Norman periods. Sadler (1990) pointed out that manorial animal bone reports differ from urban settlements as most of the remains would have been from animals bred in or around the vicinity of the Manor itself.

2.5 Taxa Ratios

The taxa ratios were taken from all the available animal bone reports, as well as the different periods. This was to build up a picture of the proportion of dogs compared with other species recovered. The two main methods for recording taxa ratios are: the number of identified specimens (NISP) and minimum number of individuals (MNI). The NISP is the total number of identified bones of a taxon species. But as Klein and Cruz-Uribe (1984) have discussed, the number may appear exaggerated because some animal skeletons contain more parts than others, or preservation is good, but there is high fragmentation. When compared to the NISP, the MNI takes into account the 'sides' of the animals, for example two right femora equal two individuals. In the event of complete skeletons being recovered the MNI can put the fragment count into perspective. The MNI will never therefore outnumber the total of the NISP count. It is always useful to record both numbers, as they can give a more realistic view of the animal numbers on a site. Albarella (2004) points out that MNI becomes unreliable when applied to very small assemblages. MNI is only an estimated value for the number of individuals, with minor taxa being over-estimated compared to the NISP counts (O'Connor 2000, 60).

There were 156 sites with NISP animal bone reports, thirty-six sites with MNI reports and only thirty of these sites provided both NISP and MNI information. In the NISP count, dogs made up only 0.2% of the animal bones recovered from all site types through the chronological periods, whereas in the MNI data dogs were 0.7%. This was expected as many of the dogs recorded were from scattered remains consisting of single or small groups of bones. Figure 2.5 illustrates the dog NISP and MNI values for the four regions and as expected the MNI percentages were higher than the NISP.

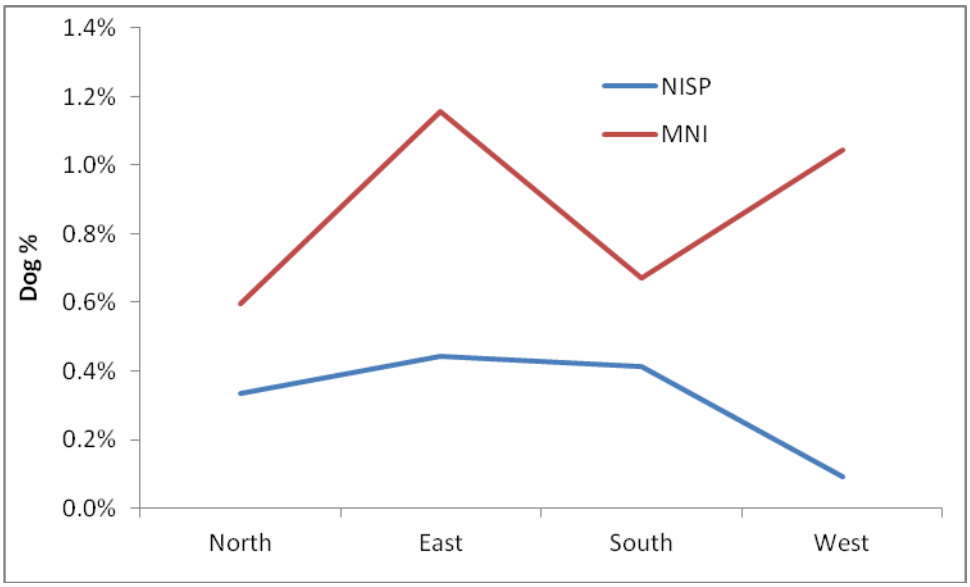

Figure 2.5. Percentage of dog NISP and MNI counts by regions.

When the taxa were divided up into date ranges there were a number of interesting observations. An overall observation was that NISP and MNI values were different between the meat-bearing animals. The NISP counts produced more cattle, followed by sheep/goat and then pig throughout the early medieval period, whereas the MNI data had sheep/goat as the most common animal, then cattle, followed by pig. The term 'sheep/goat' is used within archaeological reports due to the extreme difficulty in distinguishing between the two species by their bones alone (Payne, S 1969 and 1985; Prummel and Frisch 1986; Buitenhuis 1995). This disparity between NISP and MNI of cattle and sheep/goat was also noted by Sykes (2007, 28), who suggested this could have been due to the better preservation and recovery of the larger cattle bones. Sykes (2007, 29) also observed a regional divide during the mid-ninth to mid-eleventh centuries. In the North and East regions, cattle remains were more prominent, whilst in the central and southern regions, sheep/goat and pig bones were dominating the assemblages. These regional variations could have been due to a number of environmental and political factors, such as farming preferences to specific land type, for example, cattle on fenland and pigs in woodlands.

A closer look at the relationship between dog, horse, deer, wild mammal and wild bird bone frequency indicates a marked difference between the NISP and MNI counts (Figures 2.6 and 2.7). From the NISP diagram it can be seen that the deer numbers

increase along with dog and horse throughout the early medieval period, with horse generally becoming the most prevalent, followed by dog and then deer.

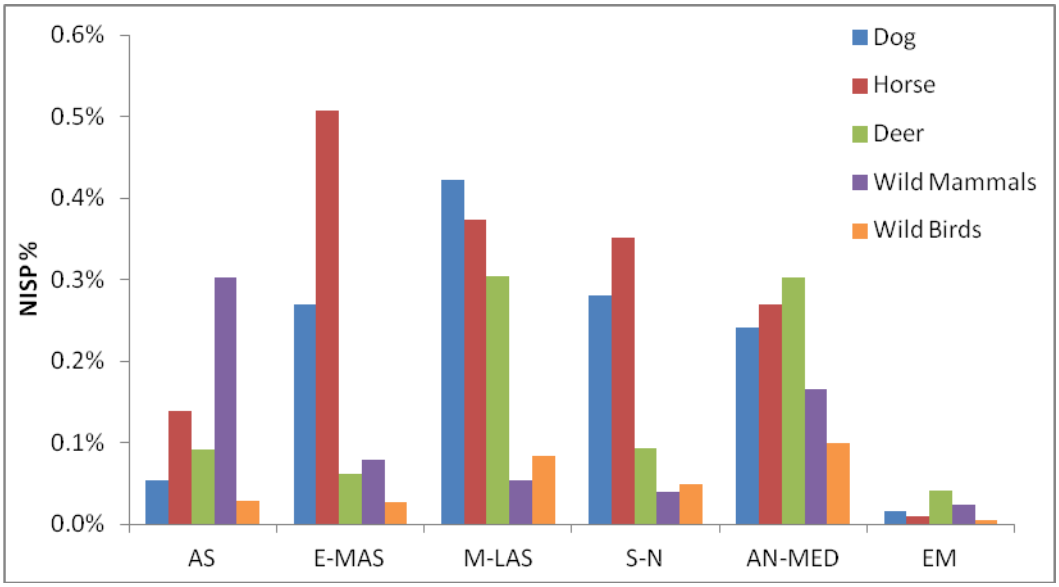

Figure 2.6. NISP percentages for dog, horse, deer, wild mammals and wild birds by chronological periods.

However, the MNI suggests a different picture, with deer more prolific than horse and dog from the middle Anglo-Saxon period onwards, but low numbers of deer during the early Anglo-Saxon period (Figure 2.7). There does not seem to be any particular relationship between the increase in wild mammals and birds compared with the number of dogs being recovered. Higher levels of deer bones would have been expected from Anglo-Norman period sites due to the assumed increase in the popularity of hunting by royalty and noblemen. When the data were examined more closely looking specifically at the high status settlements, such as the castles, from this time period, it showed that there were over twice as many deer bones as dog or horse. The scarcity of deer bones from lower status sites would indicate that the hunting of deer was being restricted to high status people and were disposed of within the settlement. Another indication of hunting being carried out by high status individuals was the presence of birds of prey within the bone assemblage. For example, buzzard and goshawk bones were noted in eleventh-century contexts from Norwich, Castle Mall. Albarella *et al.* (2009) believed that the presence of these goshawk bones suggested falconry was being practised at the Castle Mall as this particular bird of prey was one of the most

commonly used for hunting at this time along with the peregrine falcon, merlin and sparrowhawk.

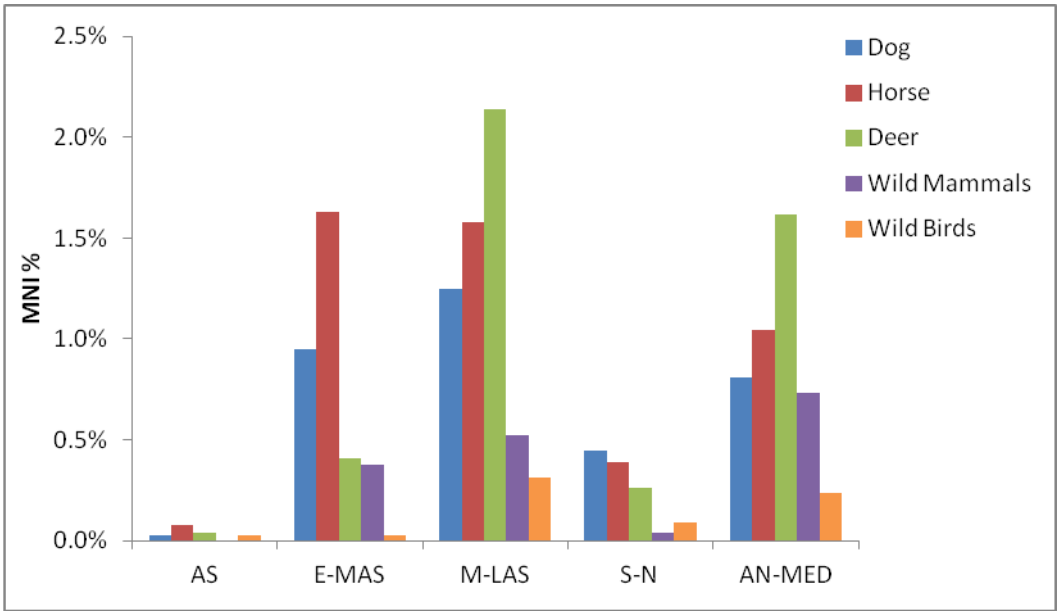

Figure 2.7. MNI percentages for dog, horse, deer, wild mammals and wild birds by chronological periods.

The NISP and MNI data for the dog, horse, deer, wild mammals and wild birds were also compared with the site types (Figure 2.8 and 2.9). Dogs were first in the NISP for urban sites then either second or third on the other settlement types, whereas in the MNI records dogs were second or third for all site types. As expected there was a high peak for deer remains on manorial and castle settlements in both the NISP and MNI data. Sykes's (2007, 66) research observed higher frequency of red deer bones from urban and rural settlements compared with roe deer during the Anglo-Saxon period, whereas roe deer remains were found to be in higher numbers on monastic sites. It has been suggested that these site preferences could be due to antler working being carried out at urban and rural settlements which would lean towards the red deer and their larger antlers. But the reason for the preference for roe deer on monastic sites is not so clear, although clerics were given rights to chase lesser quarry, which could have included roe deer, pheasant and hare.

There was also a peak in the rural NISP data for wild mammals, which was accentuated by data from Wraysbury, Berkshire. This site was excavated with attention to sieving,

which meant a large number of small wild mammals bones, such as voles, moles, and beaver, were recovered, which are not normally retrieved by hand trowelling (Coy 1989).

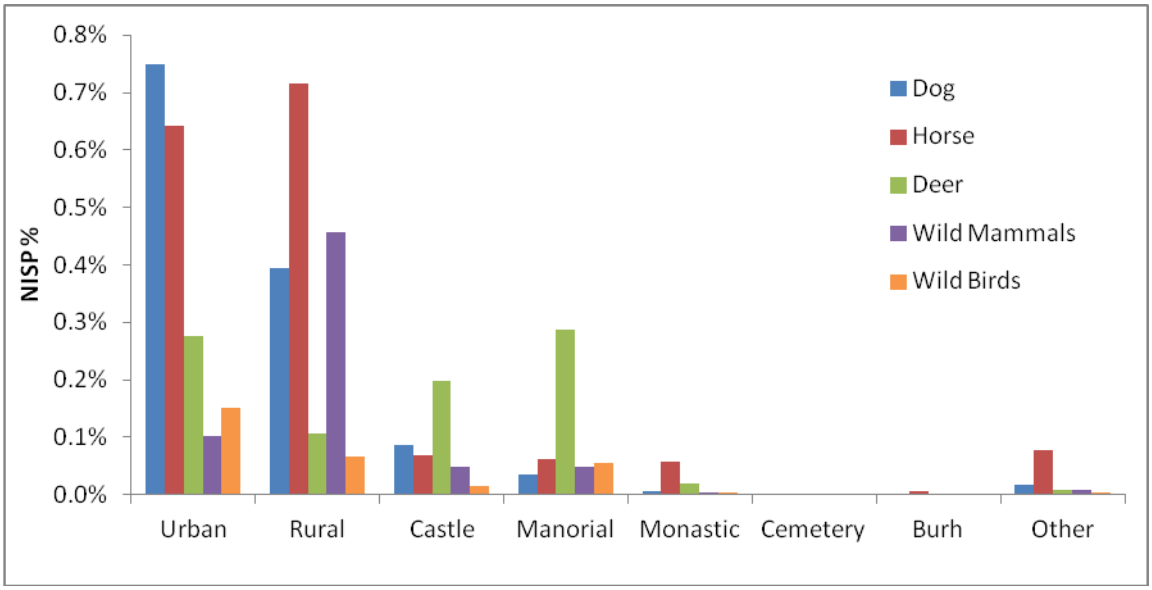

Figure 2.8. NISP percentages for dog, horse, deer, wild mammals and wild birds by site types.

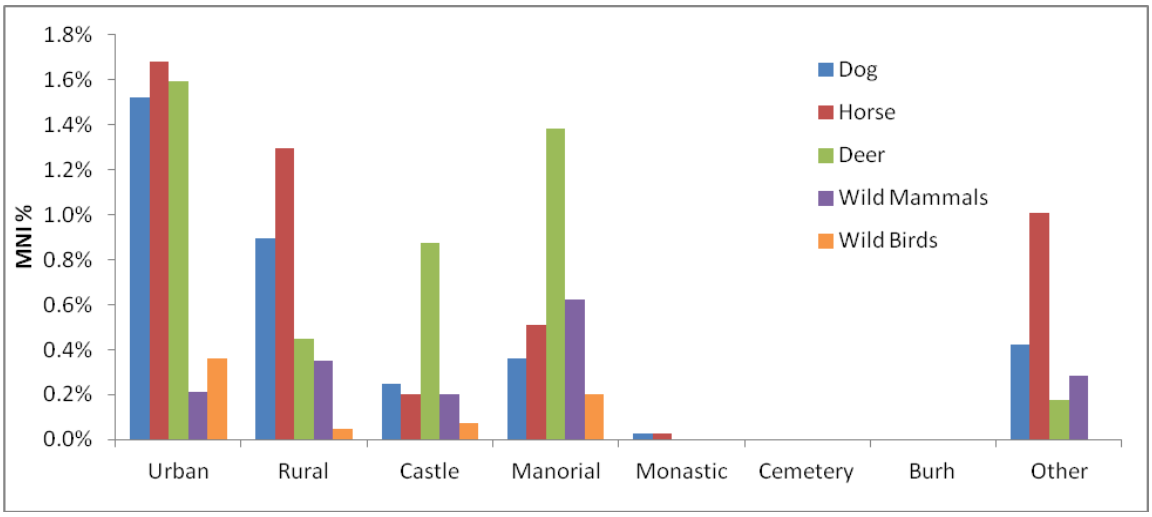

Figure 2.9. MNI percentages for dog, horse, deer, wild mammals and wild birds by site types.

2.6 Burial Location

Burial location is the term used to indicate the context from which the dog bones were excavated and it could also indicate how the dog was disposed of after death. From the archaeological reports, a third of all dogs recorded did not have any information regarding their burial location, for example no context information was provided for the thirty-four dogs excavated at Barnsley Park, Gloucestershire. This site was a Roman villa, which possibly continued to be used into the fifth and sixth century, and any evidence would be classed as 'British' rather than 'Anglo-Saxon'.

From the NISP and MNI counts, it was established that the dog bones were generally recovered as scattered, isolated remains with few articulated bone groups. As Table 2.5 illustrates, dog bones were recovered from a wide range of burial locations. From the 621 dogs with burial location data, just under a quarter were excavated from pits/cess pits, followed by ditch (11%), layer (10%), hut or house (6%), burial or grave (5%) with the other categories all under 5% (Table 2.5).

Table 2.5. Burial location and the number of dogs and percentage.

	Number of dogs	**Percentage of dogs**
Pit/Cess Pit	220	24%
Ditch	104	11%
Layer/Fill/Infill	96	10%
Hut/House	58	6%
Burial/Grave	46	5%
Feature	25	3%
Well	9	1%
Trench/Test Pit	7	1%
Backfill	7	1%
Gully	7	1%
Hollow	5	1%
Road Surface	7	1%
Cellar	5	1%
Posthole	3	0%
Debris	3	0%
Mound/Barrow	3	0%
Kiln	3	0%
Moat	2	0%
Others	11	1%
No information	300	33%

Where the context was described as pit, cess pit or midden, it was decided to group them together. It was felt these terms were used to mean similar, if not the same, functions for depositing of waste products. Some of the burial location descriptions were vague, such as layer, fill or infill but with no further information as to whether they were recovered from a feature or structure. For analysis purposes, these three contexts have also been grouped together. Backfill was another ambiguous term used in the 16-22 Coppergate, York, bone report, to describe the contexts excavated from structures. They were described as rich in organic matter with a large quantity of animal bone recovered (O'Conner 1989, 140).

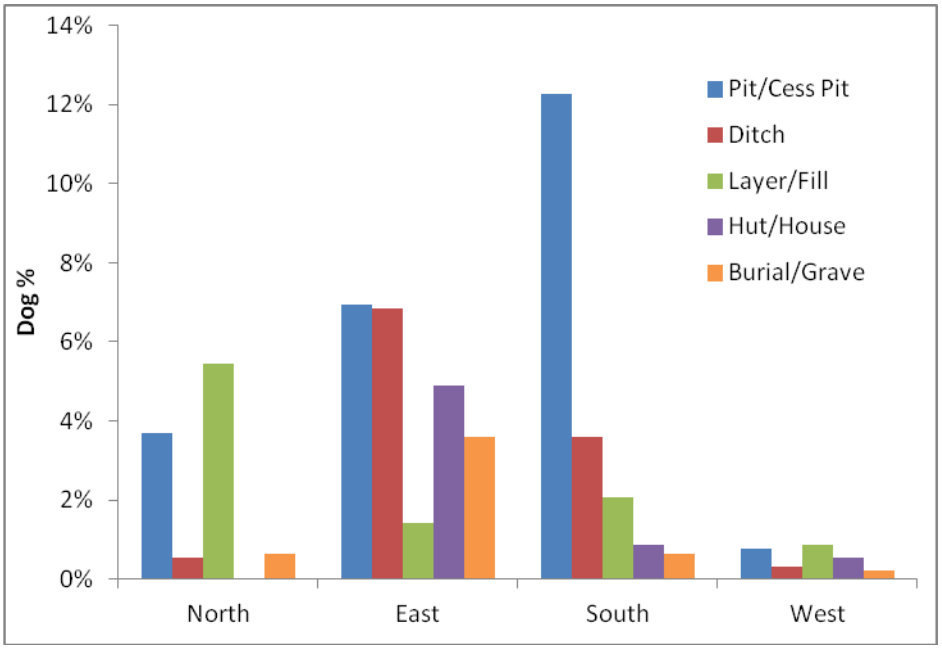

Figure 2.10. The top five burial locations by regions.

Over half of the dogs from the South were recovered from pit/cess pit contexts as illustrated in Figure 2.10. In the East, the top two burial locations were the pit and ditch. The twenty-nine dogs recovered from ditch contexts at North Elmham Park, Norfolk, were primarily made up of scattered remains of no more than five or six bones. There were a high number of dogs recovered from burial/grave contexts from the East, which was due to the well-recorded cemeteries at Spong Hill and Great Chesterford, Essex. In the North, the layer/fill burial location was the most common, followed by pits, and no dogs were recovered from hut/house contexts. The data for the West region were very

minimal, so little interpretation can be made, however dog remains were recovered from all five top burial locations.

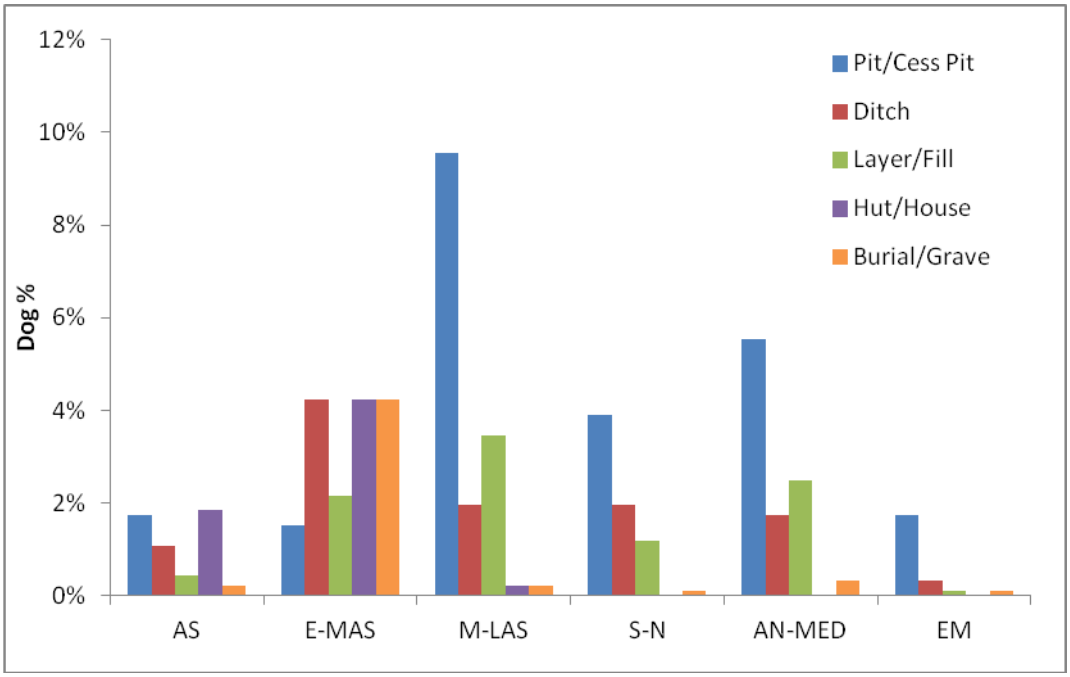

Figure 2.11. The top five burial locations by chronological periods.

When the burial location information was examined by chronological period, the early-middle Anglo-Saxon period showed an even spread between ditch, burial/grave and hut/house contexts with only a small percentage from pits (Figure 2.11). But by the middle-late Anglo-Saxon period there was a dramatic change with a high percentage of dogs recovered from pits, this continued to be the most common burial location into the Saxo-Norman and medieval periods. Dogs were recovered from cellar contexts from the middle-late Anglo-Saxon times onwards. Only three dogs were excavated from mounds and all dated to middle-late Anglo-Saxon period. They were from Heath Wood, Ingleby, Derbyshire, which Richards *et al.* (1995) described as the only Scandinavian cremation cemetery in England. Detailed analysis was carried out on the cremated remains from these mounds and discussed by Richards (2004). Mound 50 contained a whole dog and horse along with part of a pig, a sheep or goat and an ox. All the animals identified in the Heath Wood mounds were domestic, whereas wild animal bone was recorded in some Swedish Viking cremations. The Anglo-Saxon cremations in England such as those from Spong Hill and Sancton included wild animals, for example bear, red deer and fox (Bond 1996). Sixty-eight early Anglo-Saxon burials were excavated from a

Bronze Age barrow at Uncleby, Yorkshire, with a possible dog recovered in grave number 63 (Smith, R A 1912). Due to the uncertainty of whether it was a wolf or dog it has not been included in this database, but has been referenced by a number of authors as a dog.

Nine dogs were recovered from well contexts throughout the chronological periods. The use of disused wells to dispose of animal bodies was familiar practice in the Romano-British period. Smith (K 2006, 16) notes that Romans viewed man-made holes in the ground as channels to the land of the gods where offerings could be made.

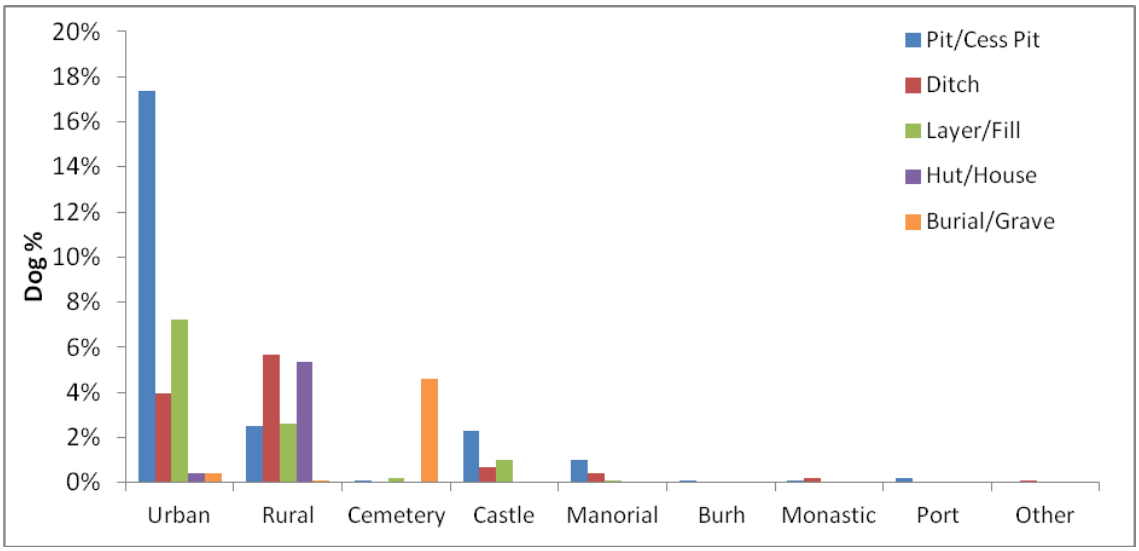

Figure 2.12. The top five burial locations by site types.

Comparing the burial locations with the site type shows up a number of expected and also some unexpected patterns (Figure 2.12). Just over 17% of the dogs were recovered from pit contexts in urban sites. Looking at the urban sites in more detail, the vast majority of the dogs were recovered from pits, layers and ditches, with a low percentage coming from a number of different contexts including huts, graves, postholes and features.

Only three dogs were recovered from burh settlements with burial location data. One dog from Salter Street, Stafford, was located in the base of a kiln dated to the early to mid-eleventh century. It was found in near-complete condition apart from a few missing metapodials and phalanges (Clark, K 1998). The adult dog was excavated from the base of the kiln interior after it had stopped being used and firebars were excavated above the

dogs' body. The dog either died at the location or was placed there soon after its death, which Clark (K 1998) believed could have occurred in a number of ways. One could be that the owners chose to take advantage of the disused kiln and bury their dog inside, or secondly it could have been a votive offering or thirdly the dog could have crawled through the flue (which was 1m wide) into the kiln and then died.

The contextual information for the manorial sites was limited to just two settlements. The first was Barentin's Manor, Chalgrove, Oxfordshire, where two dogs were recovered from the infill of a moat around the manor dating to the mid-thirteenth century AD. The second site was Faccombe Netherton were twenty-one dogs were recovered from pits and ditches dating to the middle Anglo-Saxon to Saxo-Norman periods.

2.6.1 *Pit*

Pits, cess pits or middens were the most common burial location for dogs from the majority of site types. Twenty-eight dogs were recovered from pit contexts at Flaxengate, Lincoln, as whole or partial skeletons. O'Connor (1982) believes that the completeness of the dog skeletons suggests that they were regarded in high esteem and were disposed of in an orderly manner. Analysis was further carried out on the spatial relationship between the location of dog burial and the buildings or structures around them but he did not observe a pattern. The high status site of Portchester Castle had evidence for ten dogs recovered from pit contexts, all represented by just a few bones. Grant (1977) comments that there must have been more dogs living on the site due to the high prevalence of gnawing on the other animal bones analysed. Fifteen dog bones were recovered from a thirteenth-century pit in the floor at Castle Hall, Southampton; along with other animals including fallow deer, rabbit and a couple of fish bones. The dog was fully mature but fairly small with an estimated shoulder height of 32cm. Devereux (1986) believed that this small dog was a companion animal, so a possible sign of wealth and status, although it could have functioned as a hunting dog used to flush out small wild animals, such as hares.

A dog skull was excavated from a middle Anglo-Saxon pit at South Manor site, Wharram Percy. The skull was recovered in an inverted position minus its mandible

above an ox skull (Stamper and Croft 2000, 37). Large chalk and flint blocks were excavated from the northern and eastern sides of the skulls. It is believed that the skulls and blocks were carefully positioned, which has led to the interpretation that it may have some kind 'ritual' meaning. None of the other dog bones recovered from pits on this site were recovered in this way.

2.6.2 *Ditch*

Dog remains were found in boundary ditches, and generally as isolated bones. A number of scattered dog bones were recovered from various layers in the boundary ditch at Barkingwic, which was in the immediate vicinity of Barking Abbey (Hamilton-Dyer 2002). At the Six Dials, Hamwic site, eleven dog bones were found in the primary fill of a boundary ditch dated to the middle Anglo-Saxon period (Bourdillon 1984). The dog bones were described as small and slender, and were in a mix of other domestic animals bones. Baxter (2003) comments that no Anglo-Saxon dog skeletons were recovered from outside the enclosure ditches at the Godmanchester settlement in Cambridgeshire.

2.6.3 *Hut or House*

Fifty-six dogs were recovered from the fills of huts or sunken-featured buildings (hereafter SFB) or the German term, *Grubenhauser.* These remains ranged from just a few bones to partial or complete skeletons such as those from West Stow; The Old Bell site, Marham; Brandon Road, Thetford; and Puddlehill, Dunstable. Lethbridge (1927) noted the recovery of an articulated dog skeleton from the middle of the floor, covered by a midden, of an early Anglo-Saxon hut at Car Dyke, Waterbeach; a piece of Romano-British pottery had been placed on top of the body. Also included were other animal bones and potsherds strewed around the floor level. Hamerow (2006) commented on the other items within this midden, and she describes it as a 'female' assemblage, as it consisted of five glass beads, three needles, three spindlewhorls and a fragment of an ivory bag-ring as well as a silver disc which could have derived from a square-headed brooch.

Whether the dogs excavated from huts or house contexts were actually ritual deposits would be difficult to determine. Hamerow (2006) discusses this further in her article on 'special deposits' in Anglo-Saxon settlements. 'Special deposits' were defined by Grant (1984) in her study on the faunal material from the Iron Age Danebury hillfort, Hampshire, as either articulated animal skeletons of young, juvenile or mature animals, complete/nearly complete animal skulls or articulated limbs. Many authors have discussed the difficulty in determining whether a deposit was 'ritual' or 'rubbish' (Grant 1984; Hill 1995; Hamerow 2006; Cross 2011; Morris 2011; Morris and Jervis 2011; Morris 2012). Morris (2012) believes that describing these deposits as 'special' can lead to misinterpretation by the reader and prefers to classify them as Associated Bone Groups (ABG).

The hut/house burial location had a high proportion in rural settlements along with ditches. Fifteen dogs were recovered from SFBs at West Stow, Suffolk. Two of these West Stow dogs were recovered from a single SFB (Figure 2.13), both in near complete and articulated condition. One was excavated from within the lower fill, just 8cm above the 'floor' of the pit, at the western end. The second was lying on the slope of the lower fill. The main body was near the edge of the pit but looked undisturbed.

Figure 2.13 has been removed due to Copyright reasons.

Figure 2.13. Profile of SFB 16 at West Stow (Source: West, S 1985, Figure 75).

Crabtree (1990) suggested that decomposition must have taken place in a hollow space, protected from the attentions of other dogs, children or village activities by the wooden floor, whereas Tipper (2004, 149) believed that the dead animal was placed in the disused pit of the structure and covered over to prevent scavenging from other animals.

Gibson (2003) discussed how these burials under the flooring of the building would have caused a smell, which would suggest that the buildings had become disused or demolished. The number of dogs excavated from inside the complex at West Stow highlights the disposal of carcasses within the people's living environment. It has been noted that on some sites *Grubenhaus* features have been backfilled with sterile soil or very few artefacts. This was the case at Hillside Meadow, Fordham, where a skull of a large, male dog was recovered from a SFB (Patrick and Rátkai 2011). The SFB contained just the dog skull and loomweights with no other domestic waste, which had led Patrick and Rátkai (2011) to interpret it as a possible 'ritual' or 'totemic' deposit. They suggest the dog had been a watch or guard dog in life and in death was placed in the structure to 'protect' it after its abandonment.

One dog ABG recovered from SFB at Audlett Drive, Abingdon, was of particular interest. The burial consisted of 58 bones from the centre of the SFB floor; it was missing its hindlimbs but the estimated shoulder height was calculated from the forelimbs at 36.6cm. No direct evidence for the significance of the burial was found, but Levitan (1992) believed that it may have been intended to mark the foundation or abandonment of the structure.

Possible depositing of dog remains in building structures was observed at the rural settlement of Sutton Courtenay, Berkshire. Dog bones were recovered from the postholes of an early Anglo-Saxon house. The remains of the front feet were found in the western posthole and the hind feet bones from the eastern posthole of House XVII. Could these have come from the same animal and was it a sacrificial offering in the construction of the building? Also a disarticulated dog was found west of House VII in a pit to the east of the hearth along with horse remains and some bronze artefacts (Leeds 1923; 1927).

2.6.4 *Burial or Grave*

As expected, primarily all the dogs excavated from burial or grave contexts were from cemetery site types with just three inhumation burials recovered from urban sites and one from a rural settlement. Two male dogs were identified from the Great Chesterford, Essex, cemetery with one dog nearly complete. Unfortunately, that burial was of

uncertain date, but Evison (1994, 29) believed it was probably associated with two Anglo-Saxon graves, grave 129, containing a female of 15-25 years old and grave 146, containing a child. This Anglo-Saxon cemetery was one of the few where infants were reasonably well represented, which makes the presence of a dog in one of the graves of particular interest. The grave was richly furnished with a spearhead, shield boss, and knife fragments, which is very unusual for a child burial. The dog was the larger of the two, measuring an estimated shoulder height of 60-62cm, which was near the tall end of those dogs measured by Harcourt (1974) for this time period.

The published report on Illington, Norfolk, cemetery (Davison *et al.* 1993) contained very little information on the animal bones recovered from the graves, with the dog data being obtained from the burial catalogue. Information was also gathered from Wells (1960), who noted that out of the 104 cremations he examined from Illington, twenty-two were found to contain animal along with the human bone. Only one dog was identified and it was discovered in a child's (9-11? year old) cremation burial (urn 226) with no other animals or grave goods. This was the only animal found in any of the child cremation urns (17 to 18%) from this site. Only the distal end of two dog metatarsals was identified from the cremation urn, so limited information could be retrieved.

Unfortunately, no detailed animal bone report was available for Loveden Hill cemetery, with just a short section within a review article by Wilkinson (1980). Out of the 1000 cremation urns excavated from the site, only a tenth of the burials were examined in detail. No dog bones were identified from inside the urns, but two dogs were discovered in the inhumation burials. Both were mature animals with one suffering from an abscess on the front leg, and the other had arthritic lipping on its vertebral bodies. No metrical data were provided for these dogs although one was described as the size of a 'small Alsatian'. The dog with the abscess was excavated from the foot of a grave containing a very old man and a young child, whereas the other dog was found in the grave of a male (about thirty years old). The grave was richly furnished with grave goods, which included a shield boss and a dagger/spear and was described by Wilkinson (1980) as a possible 'warrior' with a well-healed fracture on his left clavicle. Could this 'warrior' have been buried with items to reflect his status in life?

A detailed animal bone report was produced for Sancton I, Yorkshire, by Bond (1993). Nearly 40% of the cremations at Sancton I cemetery contained cremated animal bone. Horse was the most represented species, followed by sheep/goat, pig, cattle and then dog. Bond and McKinley (1993) were both of the view that MS190 and MS191 contained the remains of the same human, a female, and dog but in two urns with a small amount of cattle bone in MS191. Osteological analysis showed that none of the identified bones were duplicated and the state of burning and grave goods corresponded. McKinley (1993) described MS190 as an 'animal accessory vessel' to MS191. She used this term to illustrate the presence of two urns within a grave where one contained largely animal bone while the other holds mainly human bone. Another dog from this cemetery was found with a female burial. It was noted that the grave goods contained beads, a brooch and an antler pin, suggest that this female had a high status in life. Bond (1993) describes both dogs to be 'medium-sized', with MS190 classified as male.

Unfortunately due to the soil acidity at Spong Hill, most of the bones from the inhumations had been destroyed (Putnam 1984). Twenty-seven dogs were identified from the cremation urns that were analysed. Four were recovered from male graves, three with females, eleven with (unsexed) adults, two with juveniles and one with a child. Five dogs were described as associated with animal accessory vessels, with two dogs of differing size contained in urn 1725. This was the only cremation to hold two animals of the same species (McKinley 1994, 94). Urn 2667 contained a young juvenile, a few fragments of sheep and horse/cattle size bone and fragments of all skeletal areas of a dog. The associated vessel (urn 2668) contained skull fragments of the young juvenile and further fragments of the dog. There was no duplication of skeletal elements between the vessels and the dog remains suggesting the same size animal, so it is believed these represent the one animal.

Excavations at Stockbridge Down, Hampshire, uncovered a well preserved dog skeleton in an adult male grave with both their heads missing. Hill (1937) believed these heads had been decapitated, although recently Reynolds (2009, 172) has interpreted this burial as possible evidence for bestiality. Forty-one burials were excavated from this site, all dated to post middle-eleventh century AD and interpreted to have been an execution burial ground.

2.6.5 *Backfill*

A number of dogs were recovered from a context described as backfill, which the animal bone reports describe as the deposits placed in disused features or structures. For example the skeleton of a very large dog was excavated from the backfill of a structure excavated in the rear garden of 16 Watling Street, Canterbury. The skeleton was nearly complete and dated to the seventh century AD. In this case, Clutton-Brock and Burleigh (1995) believe that the dog had crawled into the structure soon after it went out of use and rubbish deposits were placed over the top. Seven dogs were also recovered from backfills to structures from 16-22 Coppergate, York.

2.6.6 *Feature*

There were a number of dogs recovered from burial locations described as 'feature' with no further description of the type of feature. For example in the animal bone report for Yarnton, Oxfordshire, Mulville and Ayres (2004) used 'external feature' to describe a number of the contexts.

2.7 Completeness of Skeletons

A dog skeleton consists of around 320 bones with a slight variation depending on the length of the tail and the presence of dewclaws (an extra digit on the paw) (Evans 1993, 123). The completeness of dogs in the archaeological record was divided into five categories; 10%, 25%, 50%, 75% and 100%. For this study, the author used her own judgement in determining which category each dog fitted. This was due to the exact numbers of bones of the skeleton being rarely available, except for those assemblages personally examined by the author or from detailed reports provided by animal bone experts. Just over 95% of the data had completeness information. From the database it was noted that 88% of all the dogs recorded had 10% or less bones present. Many animal bone reports indicated the presence of only one or two dog bones within a context or feature.

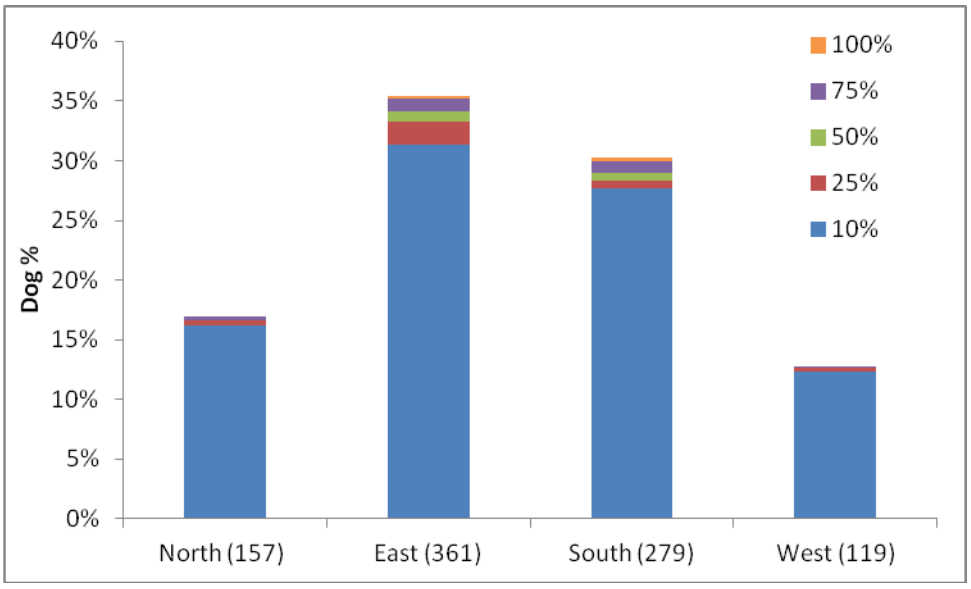

Figure 2.14. Completeness data of dogs by regions (number of dogs).

Figure 2.14 illustrates that the East and South region had dogs in all completeness catergories, whereas the North and West had proportionately less complete dogs with none at 100% complete. There were only five dogs classified as 100% complete: these dogs were from Adelaide Place, Canterbury; Great Chesterford, Essex; SOU15, Hamwic; Glebe Field South, Leckhampstead; and The Old Bell, Marham. All five were recovered from sealed contexts that had not been disturbed since the dogs had been either placed there at death or gone there to die. Also at the Bell Street, Marham, site three disarticulated dogs were recovered at 50% completeness, Morris and Leach (2010) noted some kind of disturbance had caused the mixing up of the bones with certain sections of the dogs' bodies missing.

Twenty-three dogs were 75% complete with ten coming from the East region alone. Five of these came from hut/house contexts from rural settlement sites, such as West Stow where many of the features had remained undisturbed and there was good preservation conditions. The East region also had the best preservation levels with 80% of the dogs at 10% complete, although the East had the largest number of dogs without completeness data for thirty-seven, this was primarily due to the structure of the animal bone reports themselves. The West region had the most fragmented dogs with 96% at just 10% completeness, which is probably due to poor soil conditions for the preservation of animal bone within this area of England.

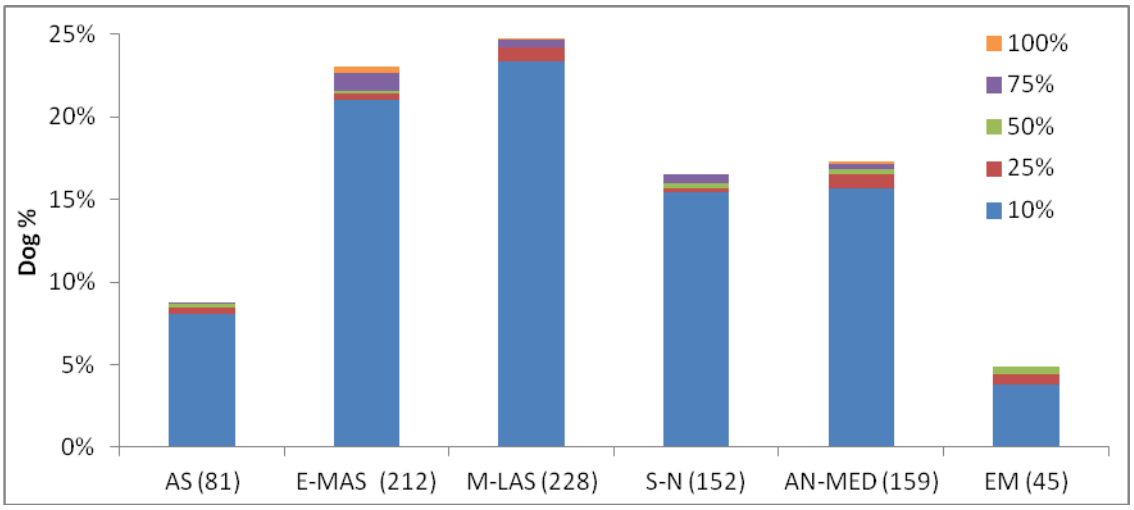

Figure 2.15. Completeness data of dogs by chronological periods (number of dogs).

There appears to be no pattern observed in the completeness data in relation to the chronological period (Figure 2.15). Examples of each of the completeness categories exist over all periods, except for 100% where there were none from the Saxo-Norman period. However, there were five dogs recovered during this period at 75% complete from Faccombe Netherton, which was made up of six neonatal puppies from a pit (Sadler 1990). The dog excavated from Leckhamstead was the only one at 100% complete dated to the Anglo-Norman period; although no further details on its site type or burial location could be determined, due to it being excavated from a test pit measuring just 1m by 1m. A floor layer sealed the body, which was dated to the late thirteenth century. The dog will be discussed further in the butchery section as there was evidence to suggest that the animal had been skinned.

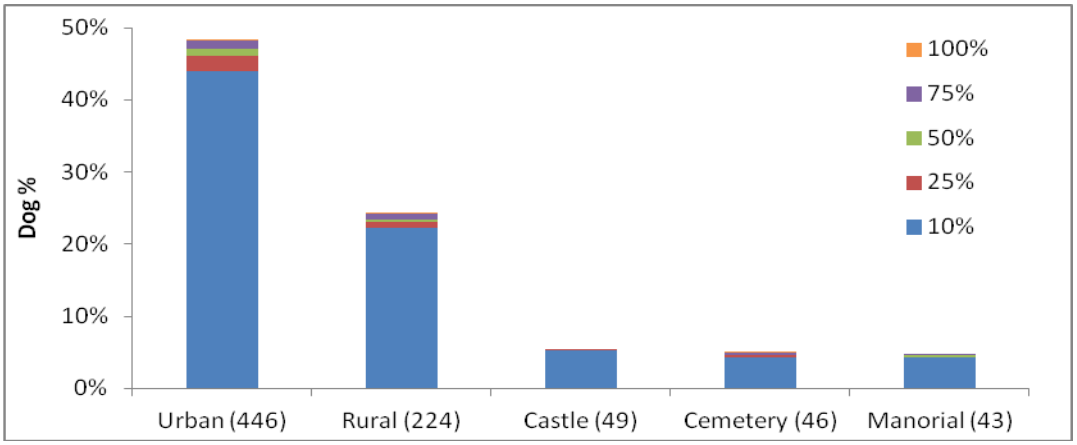

Figure 2.16. Completeness data of dogs for the top five site types (number of dogs).

Urban, rural and cemetery sites had examples of dogs at the different completeness categories (Figure 2.16). Dogs recovered from castle sites were 10% complete, except for one dog at 25% from Oxford Castle, which had been excavated from the pre-bailey bank of the castle dated to *c.* AD 1071. At one urban site, Walton Street, Aylesbury, there were fifteen dogs, which all consisted of only one or two bones from different features on the settlement. All the other sites had incomplete skeletons with only a couple with 50% or 75% from manorial settlements, for example Faccombe Netherton, a partial puppy skeleton (75% complete) along with an adult skeleton (50% complete) from a Norman cess pit (Sadler 1990). In addition there was the near complete dog recovered from a kiln at Salter Street, Stafford, which was discussed previously.

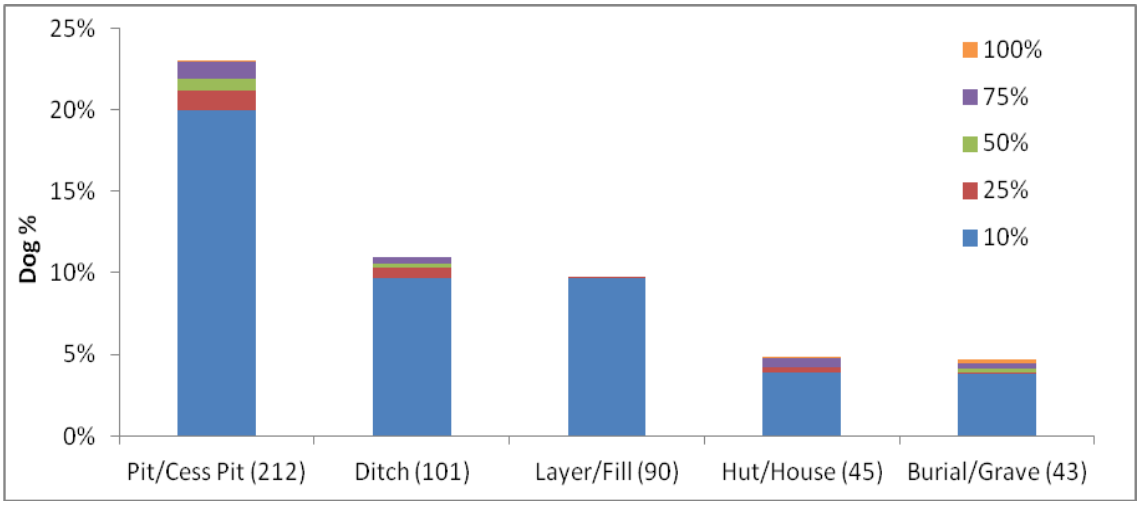

Figure 2.17. Completeness data of dogs in the top five burial locations (number of dogs).

Unsurprisingly, dogs excavated from layers/fills were all recovered at 10% complete, except for one example at 25% complete, which was from Flaxengate, Lincoln, dated to the Saxo-Norman period. The lack of complete or near complete skeletons indicates that dogs were not regularly buried in prepared graves, where the bones would not be disturbed. For example, where dogs were placed in cess pits along with the rest of the domestic rubbish, there would be a far greater chance of disarrangement. O'Connor (1982) comments, however, that the dog skeletons recovered from Flaxengate, Lincoln, were in whole or partial condition, and from pits and dump levels, which could indicate deliberate burials and little interference once the dogs had been deposited. A near-complete dog was recovered from a ditch at St Barnabas' Hospital, Thetford. The dog

had been hit around the muzzle a number of times and in death had been deliberately divided up along the vertebrae into a number of sections to enable the carcass to fit at the base of the ditch (Jones, G 1984). The dog remains recovered from the ditches at Lurk Lane, Beverley, were made up of just isolated bones.

There was no pattern to the location of the 75% and 100% complete skeletons, although as expected, a high proportion were from human graves and sealed features, for example, the dog excavated from under the hut floor layer in West Stow and the one recovered from the inside of the doorway of the SFB. Burial/grave locations had more dogs preserved in partial or near complete condition, which was due to the preservation conditions of burial locations. There were a number at 10% complete, which were primarily from cremated remains from graves. The cremation process caused the bones to become highly fragmented, and not all the bones were included in the cremation vessel from the pyre, which has been discussed by Richards (2004).

An interesting partially complete skeleton from a twelfth-century pit or well context was discovered at 71-77 Leadenhall Street, London. The dog remains were truncated with none of the lower forelimbs and pelvis present (Pipe 2005). No butchery marks were observed on the bones, which would suggest the skeleton had not been broken up for its meat or skin.

2.8 Age Profile

Accessing the age at death of the dogs was important, although their age can only be determined up to two years using epiphyseal fusion of long bone and other bones with epiphyseal plates and eruption of the deciduous and permanent teeth. Silver's (1969) article on ageing in domestic animals gives the following information on the ageing of dogs using the epiphyseal fusion and teeth eruption (Table 2.6 and 2.7). These ageing tables were commonly referenced within animal bone reports used in this research. Generally, epiphyseal fusion is complete by the time the dog reaches eighteen months of age, but ossification depends on breed and sex with nutrition and hereditary factors affecting the process. Hufthammer (1994) suggested that dogs in the early medieval period, with irregular and poor nutritional food, may have taken a longer time to reach adulthood, although the fusion sequence would have been the same.

Table 2.6. Ageing criteria for dog postcranial elements from Silver (1969, 285-6).

Elements	Epiphyseal union in months	
	Ossification centre	Closing
Scapula	Bicipital tuberosity	6-7 months
Humerus	Proximal epiphysis Distal epiphysis	15 months 8-9months
Radius	Proximal epiphysis Distal epiphysis	11-12 months 11-12 months
Ulna	Olecranon Distal epiphysis	9-10 months 11-12 months
Metacarpus	Proximal epiphysis Distal epiphysis	Before birth 8 months
1st Phalanx	Proximal epiphysis Distal epiphysis	7 months Before birth
2nd Phalanx	Proximal epiphysis Distal epiphysis	7 months Before birth
Femur	Proximal epiphysis Distal epiphysis	1 ½ years 1 ½ years
Tibia	Proximal epiphysis Distal epiphysis	1 ½ years 13-16 months
Fibula	Proximal epiphysis Distal epiphysis	15-18 months 15 months
Metatarsus	Proximal epiphysis Distal epiphysis	Before birth 10 months

Table 2.7. Ageing criteria for dog tooth eruption from Silver (1969, 299).

Teeth	Tooth eruption	
	Deciduous	Permanent
Incisor 1-3	4-6 weeks	3-5 months
Canine	3-5 weeks	5-7 months
Premolar 1	Absent	4-5 months
Premolar 2-4	5-8 weeks	5-6 months
Molar 1		4-5 months
Molar 2		5-6 months
Molar 3		6-7 months

The database recorded the ages given in the archaeological reports and placed them into six categories: foetal/neonatal; puppy (newborn to four months); immature (five months to one year); young adult (a year to two years old), adult (two years onwards) and old or mature (only assigned to those described as such in the bone reports).

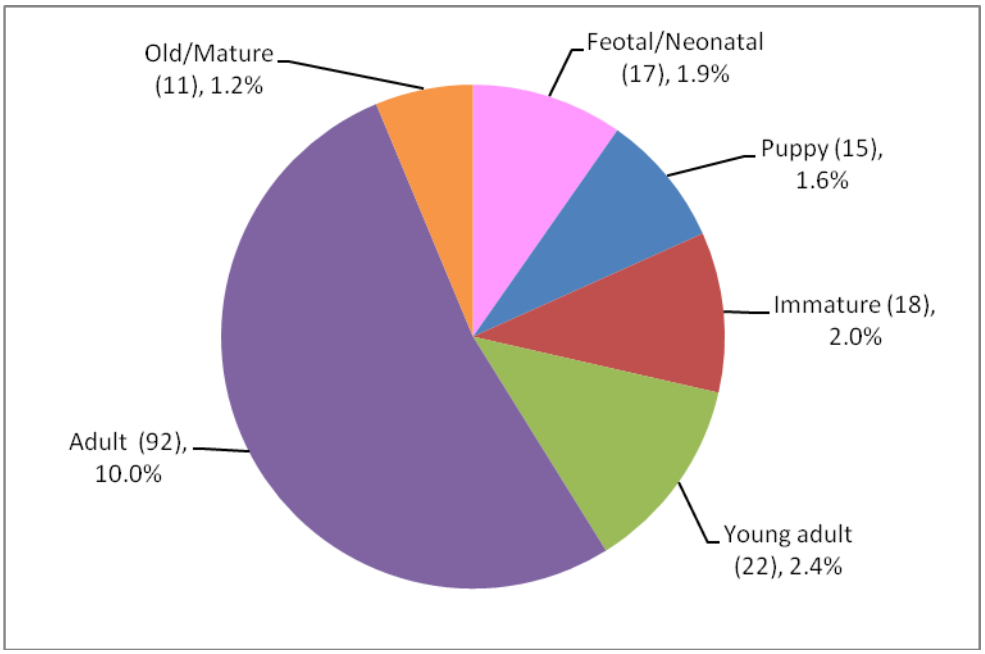

Figure 2.18. Age profile of the dogs (number of dogs in brackets).

Only 19% of the dogs recorded had any age information, details have been illustrated in Figure 2.18, with over half classified as adult. As previously mentioned, many of the dogs recorded in the database consisted of just several bones, which would have meant the Silver (1969) tables could only estimate the minimum age for the dog from those few. Using the chi-square test, statistically it showed that the age profile was not evenly distributed ($\chi^2 = 151.4$; df = 5; p = .05). Many of the reports simply defined the dogs as adult or fully grown, for example at Walton Street, Aylesbury. The other age profile categories were represented by similar percentage, with a few less recorded for the old/mature dogs. The eleven old/mature dogs came from nine sites with the majority coming from grave or pit locations, details of which will be discussed later.

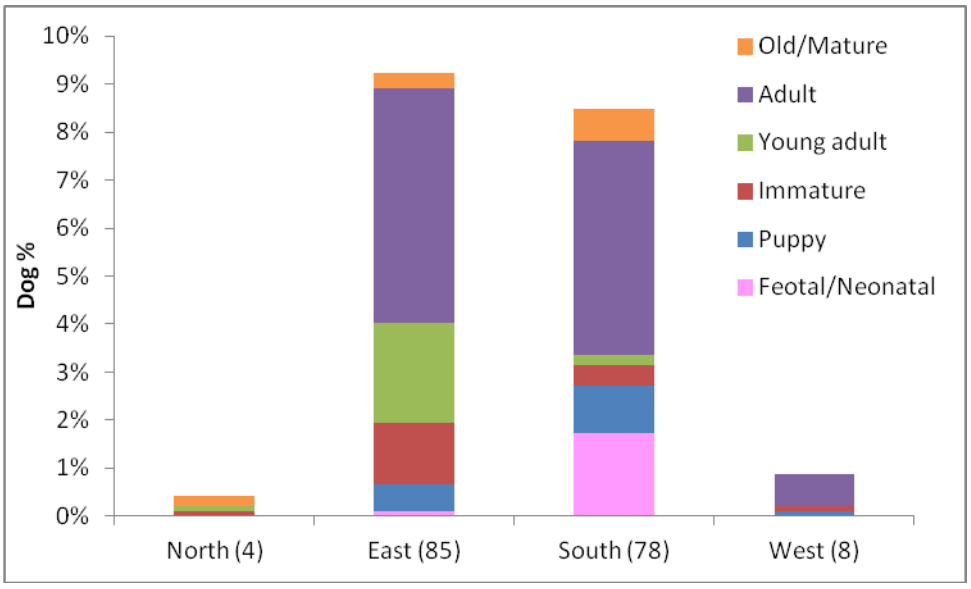

Figure 2.19. Dog age profiles by regions (number of dogs).

Figure 2.19 illustrates the dog age profile information by region and it can be clearly seen there was a lack of data available for the North and West regions. Unfortunately the 16-22 Coppergate, York, dogs could not be included in the database due to the generalised nature of the animal bone report, but O'Connor (1989, 187) commented that the majority of the dogs recovered were fully grown and showed little pathology, indicating that they had been well tended. The South region was the best represented with the full range of age profiles including sixteen neonates, which were principally from SOU15, Hamwic, and Faccombe Netherton. These two sites will be discussed in more detail later.

The East, South and West regions were heavily dominated by the adult category. Immature dogs were the only category to be recovered from all regions, although in small numbers. The exception was the East, where twelve were recovered, with half from Spong Hill, Norfolk. Bond (1994) used Silver's (1969) method to determine the ages of the cremated dog remains, with six identified as being between eight to ten months.

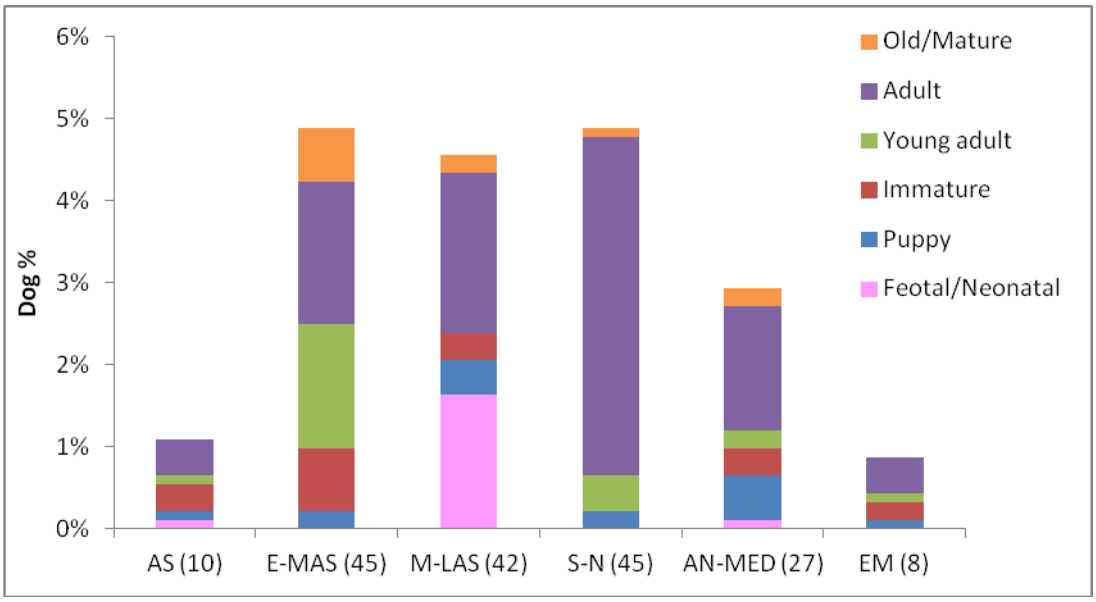

Figure 2.20. Dog age profiles by chronological periods (number of dogs).

All the age profile categories were represented throughout the periods with the Saxo-Norman period providing the most dogs with this data (Figure 2.20). Foetal/neonatal dogs were well represented during the middle-late Anglo-Saxon period, which was due to two mass burials of neonates in pits. Eight neonates were excavated from a middle Anglo-Saxon pit at Hamwic (SOU 15) with an adult female dog which was interpreted as their mother (Bourdillon 1990). Could this have been a female dog that died giving birth or was this a pregnant dog killed as a form of dog control? At Faccombe Netherton, six neonates were excavated from an early to middle Anglo-Saxon pit, but no adult dog was found with them. Sadler (1990) interpreted this as an indication of pest control being used at the manorial settlement. Excavations from Romano-British sites have noted concentrations of young dog burials within pits and wells. For example at Owslebury, Hampshire, the concentrations of neonatal/foetal dog remains were noted in some of the third-and fourth-century pits, which Maltby (1987) felt might indicate some form of population control. This deposition could also possibly indicate that selective breeding was being practiced to improve breed type requirements.

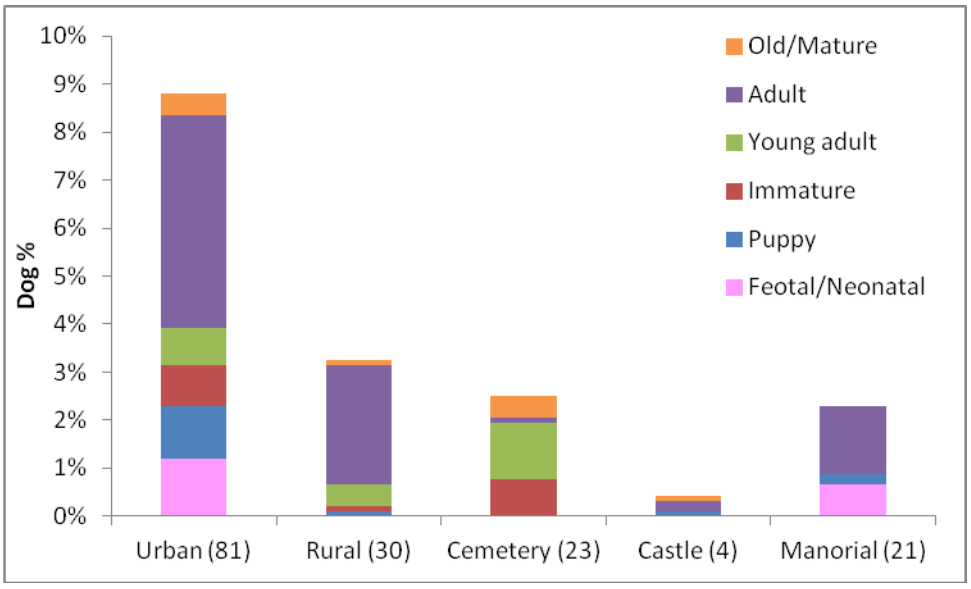

Figure 2.21. Dog age profiles by top five site types (number of dogs).

Figure 2.21 shows the dog age profiles for the top five site types recovered. Cemetery and manorial sites provided the most age profile information, whereas castle sites were very poor, with only four dogs represented. The manorial sites ranged from foetal to adults dogs, whereas the cemetery sites had an older dog age profile, ranging from immature to old/mature dogs. Unfortunately, the manorial data consisted only of the Faccombe Netherton data. The majority of the immature and young adult dogs were recovered from cremation burials, such as at Spong Hill and Sancton I. Bond (1994) found it was hard to determine the age of cremated remains from Sancton I but she observed that all the bones were fully fused, so indicating that none of the dogs were very young. The only immature dog from a cemetery was from a cremation hearth in Mound 1 at Heath Wood, Ingleby (Richards 2004).

Urban sites were the only site type where all age profiles were represented. The dog from 71-77 Leadenham Street, London, was given the age at death of between four to eight months old (Pipe 2005), which was estimated using teeth eruption and limb bone fusion data obtained by Schmid (1972) and Amorosi (1989). There was no age profile information available for the dogs from monastic sites.

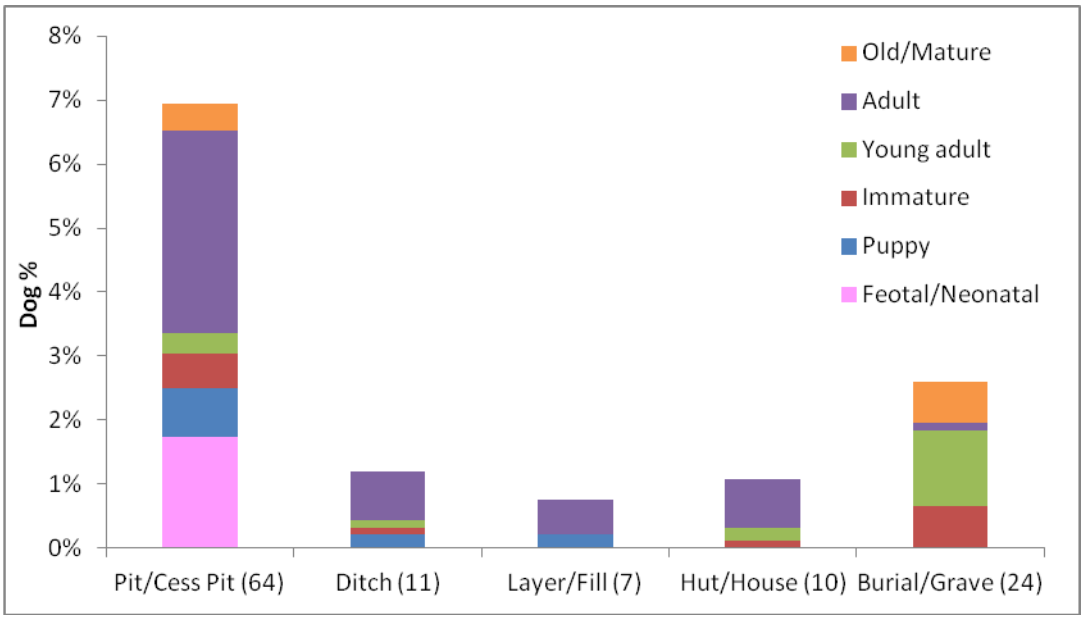

Figure 2.22. Dog age profiles by top five burial locations (number of dogs).

Over 50% of the dogs recovered from burial/grave contexts provided age profile information, naturally a similar pattern to the cemetery site type with all dogs aged five months or older (Figure 2.22). Animal bone reports generally use the term 'Old' or 'Mature' when dogs showed signs of degenerative disease, such as osteoarthritis or tooth decay. Over half the 'Old' dogs were from grave contexts, and all those recovered from cremation burials were aged eighteen months or over. Five old/mature dogs were recovered from burial/grave contexts, with one interesting specimen from Great Chesterford. An old male dog was recovered from an inhumation grave of a young male and the dog was classified as old due to very worn toothwear and some ante mortem tooth loss (Serjeantson 1994). The dog also had evidence of disease at the knee joints, which had led to eburnation of the distal femur and proximal tibiae, along with ossification of the patella tendons. The old/mature dog that was found in the inhumation grave of an old man and child at Loveden Hill was believed to have been lame for some time due to a deformity to one of its legs. Wilkinson (1980) believed that this animal could not have been working long, and so was kept as a companion animal. From these examples, were these old/mature dogs being specially deposited in the graves? Was this the disposal of a dog with limited functionality or a loved companion of the person in the grave? One of the old/mature dogs was found in a pit/ditch context at Aldergate, London. This dog was described as old due to its severely worn teeth, resulting in the exposure of dentine in the upper and lower molars,

plus one canine had been lost ante mortem and the alveolus had completely closed (Armitage 2001).

Dogs recovered from hut/house burial locations were all from the immature to adult age brackets, whereas the pits were the only burial location to be represented in each of the age profiles. Foetal/neonates were only found in pits. Ditches and layers had dogs ranging from puppy to adults but no dogs described as old/mature were recovered.

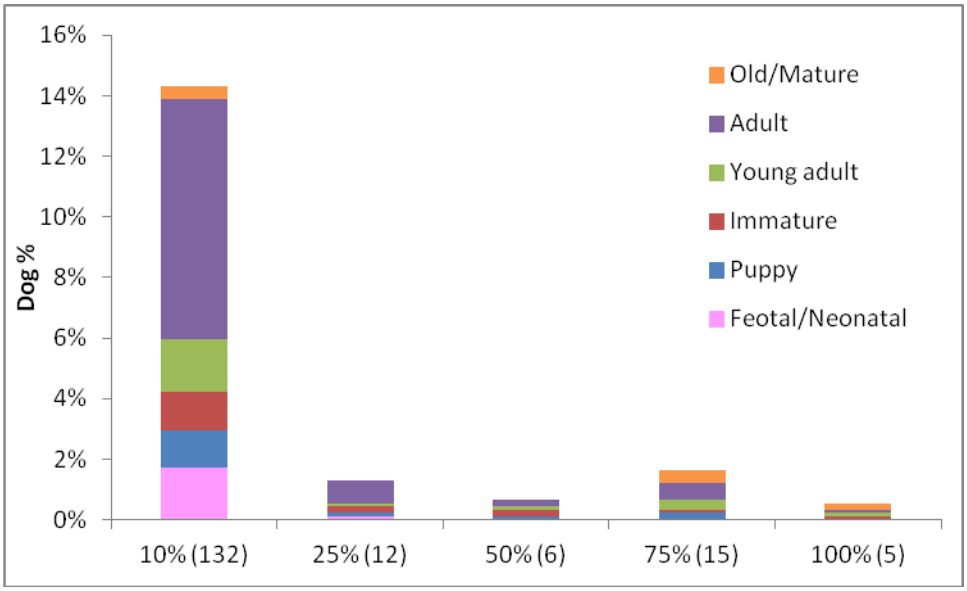

Figure 2.23. Dog age profiles by completeness information (number of dogs).

The majority of all the dogs with age profile information were recovered in 10% completeness, especially in the adult age bracket. Figure 2.23 highlights the fact that the more complete the skeleton, the more probable the age profile would be recorded in the bone report. In addition, the older the dog, the more probable a higher percentage of its skeleton would be recovered. Hufthammer (1994) pointed out that young animals will always be under-represented in the archaeological record. These bones are prone to decay and destruction, as they are more porous and exposed to taphonomic conditions. However, the older animals have a higher probability of suffering from pathological lesions and other diseases that could lead to a lower bone density.

The old/mature age group had a higher level of completeness with those primarily coming from burial/grave contexts and one from a pit. The pit dog was an interesting specimen, excavated from Adelaide Place, Canterbury. It was recovered from an early

fifth-century, isolated, deep pit described as a family grave as it contained an adult female, an adult male, and two young females (eight and eleven years old). The skeleton of an old, arthritic dog was found across the lap area of the adult male (Paul Bennett pers. comm.). A 75% complete old/mature dog was recovered from an Anglo-Saxon quarry pit at Tidworth, Wiltshire. The skeleton was described as belonging to a dog of 'good age'. Evidence of this came from the healing that had taken place after serious injuries that had occurred during its lifetime (Godden *et al.* 2002). Godden *et al.* (2002) believed that this dog had been deliberately buried in the pit, rather than left for the scavengers. There does seem to be some preferential treatment towards the old/mature dogs. Could this indicate that they were not simply thrown away in ditches or in the occupational layers, but that specific burials were made for them? Scott (S 1991, 221) noted that the dog remains recovered from Lurk Lane, Beverley, were primarily adult, which he believed reflected "man's attitude to dogs, the degree of protection which they were afforded and thus the esteem in which they were held."

Ageing data were limited, as this research was reliant on the animal-bone authors to provide the information, which was not regularly carried out on non meat-bearing animals, such as dogs. Generally only if it was something special or unusual, such as young or old, was this information provided.

2.9 Sex Determination

Determining the sex of a dog skeleton is challenging due to the lack of sexual dimorphic characteristics on their bones especially with the degree of variation in their morphology and size. The easiest method of sex determination is the presence or lack of the *os penis* bone. Unfortunately, preservation factors on the skeletal material mean that this bone is rarely present or it can easily be missed by excavators. A number of methods have been developed to determine the sex using the cranium. The cranial shape has sexual dimorphic traits, males having a thicker saggital crest, and their condyloid ridge on the mandible is sharper than on females, whose ridge gently moves downward (Handley 2000). The and Trouth (1976) concluded from their research that the saggital crest was not a reliable indicator to determine sexual characteristic, and they developed a method which utilises the basilar part of the occipital bone in the skull.

The index that was developed from these two research projects was:

$$\text{Index IV} = \frac{\text{Breadth IV} \times 100}{\text{Length II}}$$

The Breadth IV is the distance between the two temporo-occipital fissures at the lateral-most points and length II is the distance between the basion and a line drawn between the two medial-most points of the jugular foramina in the midline. The Index IV values, which are less than 123, are classified as male and those over 136 as female.

Crockford (2000) commented that in general male dogs are 2% to 6% larger and more robust than females. West (B 1990) examined the innominate bone for sexual dimorphism and noted that normally sexual dimorphism is more pronounced in smaller breeds of dog than large ones, but it was determined that this was not a reliable method when used on its own.

Ruscillo (2006) has developed a new technique using the humeri for determining the sex of a canid, called the Table Test. This method requires either the right or left humerus, which must be complete, fully fused and have no pathology. The Table Test consists of holding the humerus at the proximal end and placed on its anteroventral plane on a level surface. If the humerus falls on its medial side, then it is more likely to be a male, but if it remains on the anteroventral plane then it is more like to be female. The test, when carried out on known samples, suggested the likelihood of male sex at 85% probability and female at 70%, where no other sexing information was available.

From the complete database, only ten male and two female dogs were identified. Four males (two from Aldergate, London, one from Godmanchester and one from Hillside Meadow, Fordham) had been sexed using the The and Trouth (1976) and Trouth *et al.* (1977) method. The two females (Aldergate, London and SOU 15, Hamwic) were sexed by the lack of *os penis* bone and two males due to the presence of this bone. Six of the animal bone reports did not mention the methodology used to identify the sex of the dog.

All the dogs sexed were either adults or old/mature, which would indicate better bone preservation in adult dogs. Surprisingly only two of the dogs were 100% complete and a further five at 75% with five at only 10% complete. They were located in a number of burial locations; seven were from pits, three from ditches and two from graves. Interestingly, one of the sexed examples was from the cremated remains at Sancton I, Yorkshire (Bond 1993). The analysis of the cremated remains was very comprehensive, which meant a fragment of an *os penis* was recovered.

Due to the small sample size of the sexed dogs, no further interpretations can be made. Crockford (1997, 25) commented on the research she carried out on Makah and Coast Salish dogs, where she noted a high ratio of males to females. She concluded that this may have been due to a number of reasons, including different burial practices for the sexes or females were being killed in an attempt to the control dog population. Also, the removal of female dogs before they were six months would help minimise fighting amongst the males when a female was in season.

2.10 Butchery

There were fourteen dogs that recorded signs of butchery. It was only possible to examine one specimen first hand; this was a chopped tibia at the proximal end from SOU 15 site in Southampton (Figure 2.24).

Figure 2.24. Chopped tibia from SOU 15 site, Southampton, Hampshire (Source: Author).

There were eight dogs with possible skinning marks on their bones and the other six cases had heavier chop marks with no evidence for their function. A dog recovered from St Barnabas' Hospital, Thetford, had only chop marks on the second and third lumbar vertebrae, which had led to the hypothesis that this was carried out to assist in fitting the carcass into a restricted space at the base of a ditch (Jones, G 1984).

The majority of the butchery marks were recorded on either the limb bones or vertebrae, with only one example on the cranium, from Aldergate, London. Armitage (2001) described chopped marks as coming from either an axe or cleaver with the dog possibly used to feed other dogs, as was the practice on the post-medieval site of Witney Palace, Oxfordshire (Wilson and Edwards 1993). However Dobney *et al.* (1996) had interpreted the chopped dog bones from medieval Lincoln as a meat source for human consumption. Gidney (1996) had an alternative explanation for the butchered dog bones from medieval Newcastle, which she suggested could have been chopped to extracted fat for cosmetic and medical purposes.

If the dogs were being partitioned, that is being chopped up for meat, then certain chopping marks would have been expected. Hufthammer (1994) comments that a broad-bladed chopping tool would have been used and chop marks to the pelvis and/or sacrum would be expected when the animal was divided in two parts. There was no evidence in the database of any chopped pelvic bones. The sample size was small but it supports the belief that dog meat was not consumed to any great extent during the early medieval period.

There were five dogs from Market Lavington with recorded knife or surface marks, which have been attributed to skinning (Bourdillon 2006). One of them also had a chop mark to the back of the scapula and another had been chopped at the distal end of the femur. Evidence of dogs being butchered on the Norwich, Castle Mall site, came from cut marks on an acetabulum dated to the Anglo-Saxon period (Figure 2.25) and a femur (Figure 2.26) dated to *c.* AD 1067-twelfth century and a femur with a chop mark (Albarella *et al.* 2009).

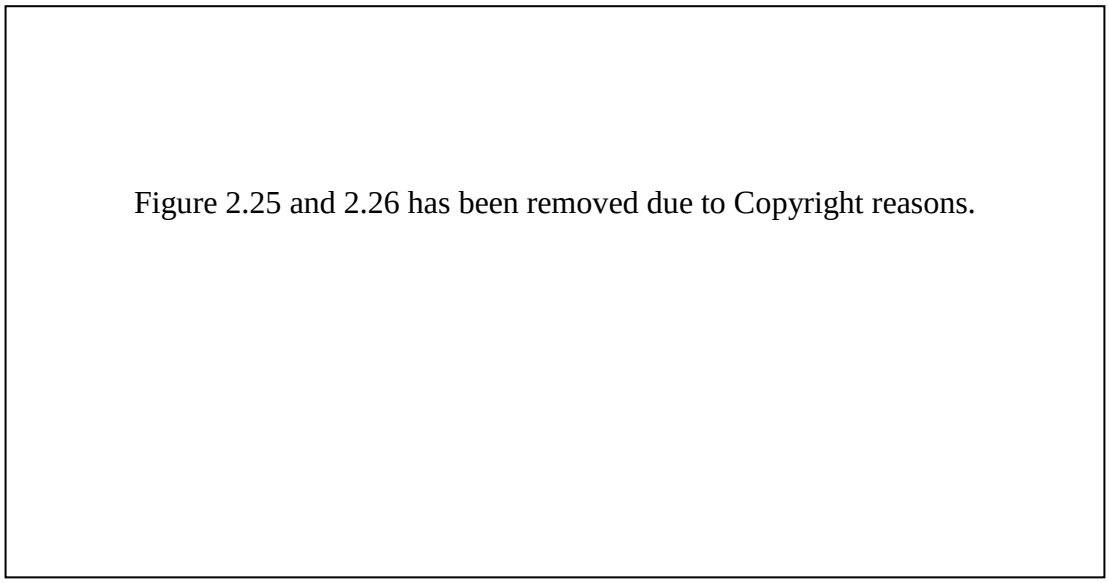

Figure 2.25. Acetabulum with cut marks (Source: Albarella *et al.* 2009, 79).

Figure 2.26. Femur with cut marks (Source: Albarella *et al.* 2009, 79).

The Glebe South Leckhampstead dog, which was excavated from a test pit, had numerous knife marks that suggest it had been skinned. Knife marks were recorded on the metapodials, ribs, left tibia and the skull (see Figures 2.27, 2.28 and 2.29). Interestingly there were also marks on the ventral surface of the third caudal vertebra, but there were no further caudal vertebrae present. It was concluded that these marks suggest that the tail was cut off with the skin (Anon. 2006).

Figure 2.27. Knife marks on metacarpals (Source: Anon. 2006).

Figure 2.28. Knife marks on metatarsals (Source: Anon. 2006).

Figure 2.29. Knife marks on the cranium (Anon. 2006).

Hufthammer (1994) commented that she had skinned both a dog and fox without leaving any clear knife marks on the bones. She noted that it was important that the blade touched the bone as little as possible otherwise it would blunt the knife. Binford (1981, 107) also observed that the lower limbs and head are the most likely areas to show any skinning marks if an animal is being skinned for meat, but if the animal is purely being skinned for its pelt then it would generally be around the phalanges and mandible.

Butchery marks appeared very rarely in the early medieval dog assemblage, with only the occasional evidence of dogs being skinned and used for meat, so it was not common practice.

2.11 Pathology and Abnormalities

The study of animal bones can reveal whether the particular animal had suffered from any pathological conditions or abnormalities during its life. The demands of movement and support can be reflected on the bones themselves such as bone breaks, infection, tooth loss, strain, or genetic condition. The extent of these conditions can be affected by the way the animal had lived its life. For example, if a dog had lived as a companion animal, would it have received better care if it broke its leg, compared to a dog living out on the town streets? Unfortunately, while it is often possible to identify some anomalous formations on a bone, determining the cause of those anomalies is difficult, because the same sort of sign may often result from several different causes.

There were forty-eight dogs that recorded pathological conditions and abnormalities, with a number of dogs exhibiting more than one. A number of examples from West Stow site were examined personally. Specimens from the Winchester excavations unfortunately could not be examined by the author, due to the removal of these specific bones for further analysis some time ago. They were believed to have been returned, but could not be located within the archives by the archivist.

2.11.1 *Degenerative Conditions/Old Age*

Four specimens were recorded from graves that exhibited pathology consistent with old age, such as osteoarthritis and ante mortem tooth loss. For example, the dog excavated from grave 86 at Great Chesterford was in near-complete condition, identified as an old male. In his hind limbs there was evidence of eburnation on the distal femur and proximal tibia joint surfaces on both sides; with the right more affected and ossification of the tendons connected to the patella. This specimen also suffered from poor teeth; his upper molars broken ante mortem with associated neoplastic lesions in the maxilla; and the right second molar had been lost ante mortem in the mandible (Serjeantson 1994, 67). Osteoarthritis is a condition that leads to osteophytes (small bony growths) around

articular surfaces of joints. It can be caused by a variety of reasons, such as trauma, ageing, developmental defects, and nutritional disorders. The affected joint surfaces, such as those from the dog mentioned above, would result in exhibiting pitting, eburnation, marginal lipping, or a combination of these responses (Warren 2000).

One of the dogs recovered from Loveden Hill graves exhibited osteophytes around the body of the vertebrae, which could indicate spondylosis deformans or degenerative disease (Morgan *et al.* 1967). Spondylosis deformans is a disorder that affects the margins of the vertebral bodies at the intervertebral spaces.

2.11.2 *Trauma*

There were fifteen cases of dogs exhibiting fractures of various degrees of severity. An interesting example was excavated from a pit from George Street, Aylesbury, dated to late twelfth to early thirteenth century. The right femur had been broken just below the proximal head, new bone growth had begun but the two bone parts had not reunited. The femoral head had displaced by 20mm and eburnation was noted on the top of the head along with a corresponding area on the pelvis. The distal end of the right femur was more slender than the left one, which would indicate that the left hind leg was taking most of the weight. This was also implied by the growth of a bony extension recorded on the left lateral process on the last lumbar vertebra. Jones (G 1983) observed that the right tibia was 1% shorter than the left one and the fibula had fused to the tibia. From the degree of eburnation and rehealing process it was believed that this dog was about a year old when this break occurred. This dog would not have had full use of its right hind leg, but would still have been able moved around with one of the remaining three limbs taking most of the weight. It has been assumed that the dog died due to a blow to the head at around eighteen months old. A hole about 1cm wide was recorded on the top of the cranium with two pieces of skull pushed in.

Another example of a dog suffering from a number of traumas during its short life was from a mid Anglo-Saxon context at Middle Thames Landscape, Lake End Road excavations. This dog, also recovered from a pit context, was described as fairly robust, bow-legged and medium-sized male (Powell and Clark 2002a). It had three rib fractures that had healed. There were signs of an infection to the right hind leg at the site of the

tendon insertion, due to a proliferation of bone on the distal medial surface of the tibia and on the medial aspect of the calcaneus. The right fibula also exhibited osteomyelitis on the distal end. The neural spines of the sixth, seventh and eighth cervical vertebrae had been displaced to the left hand side and the seventh one had signs of a partially healed fracture. This could have been caused by a blow to the shoulder region. Like the dog from George Street, Aylesbury, the cause of death was probably a blow to the left parietal and temporal bones in the head. Powell and Clark (2002a) believed it was consistent with being hit by a sharp instrument as the bone was cut from just above the temporal zygomatic process, detaching an area of bone (18x28mm). The section of bone was not recovered but there was evidence that some healing had begun, so the animal did not die instantly. This dog could have been hit by a human deliberately or may have been hit by something falling on it.

There were other examples of dogs being struck on the head. At Sussex Street, Winchester, a dog had a healed fracture to the frontal/nasal suture (Coy 1984). At West Stow, a dog recovered from under the floor layer of a SFB had suffered a number of fractures in its brief life. It was believed to be about fifteen months old when it died; it had broken ribs and a leg that had all healed (Crabtree 1990, 62). Its eventual cause of death was a blow to the skull which left a depression fracture on the upper left side of the muzzle and forehead. At St Barnabas' Hospital, Thetford, a dog of around two years old was excavated from a ditch with lesions on both nasal bones and maxillae which again would suggest it had been hit on the muzzle a number of times (Jones, G 1984).

There were a number of dogs that suffered limb bone fractures that healed fully, such as at Sussex Street, Winchester; where the dog had a greenstick fracture (where bending and partially breaking occurs, common in young animals due to their soft bones) to its femur as a juvenile, but did not die until well into adult life (Coy 1984). At Lake End Road, Middle Thames Landscape, a dog had fractured its left tibia; this had resulted in a fusion callus between the tibia and fibula (Powell and Clark 2002a). At Causeway Lane, Leicester, a dog had broken both the radius and ulna, which led to the bone healing out of alignment, causing extra bone growth at the fracture point. The limb was foreshortened and would have been swollen. Gidney (1999) believed that this dog would have required some care and attention when recovering from this injury.

An immature dog recovered from a pit/well at 71-77 Leadenhall Street, London, had pathological changes to a rib fragment and the neural spine of a thoracic vertebra (Pipe 2005). In both cases, the bones had fractured with healing started but not complete, there was no signs of infection. Pipe (2005) believed these fractures had resulted from physical trauma such as a kick or blow (Baker and Brothwell 1980, 85). The pathology recorded on the left fore paw of an early-middle Anglo-Saxon dog from Hillside Meadow, Fordham, could have resulted from getting its foot trapped or someone stepping on the animal (Patrick and Rátkai 2011). The third metacarpal had thickening to the shaft with exostoses between the corresponding metacarpals on either side, which would have caused the dog to walk with a limp.

2.11.3 *Bowed Limbs*

There were twelve cases of bowing recorded on the limb bones, mainly on the lower section of the limbs (radius and tibia). An example that was examined first hand by the author was from West Stow, Suffolk, of a humerus, radius, and ulna all exhibiting bowing (Figure 2.30 to 2.32). The severity of the bowing varies and a number of record twisting along the length of the bone as well.

Figure 2.30. West Stow dog with bowed humeri (Source: Author).

Figure 2.31. West Stow dog with bowed radii (Source: Author).

Figure 2.32. West Stow dog with bowed ulnae (Source: Author).

Generally, the animal bone reports would record the presence of a bowed leg bone, but with no further details and often explain the bowing as a breed condition, for example, the dog from the excavations at Bury Road, Thetford, where the report described the radius as bowed "typical of a dachshund" (Grimm 2006, 25). Bourdillon (2009, 78) described the tibia recovered from a pit at Victoria Road, Winchester, as "strangely curved and the animal could not have carried itself normally".

There are a number of medical conditions that cause the limbs to bow, such as a vitamin D deficiency, known as rickets, or it could be due to a diet lacking in phosphorus. Bowing of the limbs can also result from dogs having been confined inside for a long period of time, which Baker and Brothwell (1980, 48) noted that this has been observed in some modern farm and guard dogs. Another reason could be brachymelia, which is the mutation that results in short-legged animals, probably due to a prenatal evolutionary disturbance, an endochondral ossification disorder (Hilzheimer, cited in

Teichert 1987). Brachymelic dogs are characterised by short, thick and twisted limbs. A condition that is observed in Dachshunds and Basset Hounds is achondroplasia, which is a form of dwarfism, restricting the growth in the limb bones of young dogs, but the animal will have a normal head size (Baxter 2006). Spira (1982, 11) comments that this condition causes the limb bones to be foreshortened, generally bowed, and have earlier fusion of the epiphyses, however they are still strong and robust.

2.11.4 *Dental*

Eleven cases of dental conditions were recorded, from missing teeth to abscesses in the mandible. Some conditions were due to old age such as the dog from Aldergate, London, whose cheekbone teeth were worn down to the dentine as well as the ante mortem loss of the left canine tooth with complete closure of the alveolus. The mandibular carnassial from an early Anglo-Saxon dog excavated from Melford Meadows, Brettenham, was heavily worn on the buccal side, which suggests a malocclusion with the corresponding maxillary tooth. Powell and Clark (2002b) commented that this could either have been be due to a damaged upper tooth or from an abnormality causing the upper dentition to overlap the lower teeth.

Signs of periodontal disease were observed on a dog from Faccombe Netherton in its upper first and second molars (Sadler 1990). Ante mortem tooth-loss was noted on a number of dogs with evidence of the alveolus healed or healing, for example an Anglo-Saxon dog from Godmanchester had lost four teeth in the maxilla and both its canines from the mandible were also broken and heavily worn (Baxter 2003).

A dog from Victoria Road, Winchester, Northern Suburbs excavations, had lost one of its premolars with its alveolus healed. Clark (K 2009) also records that this dog had a congenital anomaly of a supernumerary caudal right molar tooth. Hufthammer (1994) notes that irregularity in the molars of dogs is a result of domestication with the abnormality emphasized by selective breeding. The dog from Glebe Field South, Leckhampstead, also had a congenital abnormality with an asymmetric mandible.

2.12 Biometrical Data

Only a small portion of the dog remains were studied directly by the author with these data provided in the CD-ROM attached. However, the majority of the metrical data obtained from the published and unpublished literature. Measurements were taken following the von den Driesch (1976) methodology and refer to fully fused animals.

To assist in interpreting the archaeological dog material it will be compared with the bones of modern breeds. This is solely to help with visualising the morphology and size variation within the assemblage. It should be pointed out that modern dog breeds are a result of selective breeding aimed to produce inheritable characters, which distinguish one breed from another, and in no way represents their function (Clutton-Brock 1987).

The comparative modern breeds were measured by the author from collections held by English Heritage, The Natural History Museum, London, and from Sheila Hamilton-Dyer's personal collection. K Clark very kindly provided the measurements for the dog skeletons held in the University of Southampton collection. The Natural History Museum dog collection is made up of over 100 different breeds of dogs, many dating back to the beginning of the twentieth century; this was a time when these breeds were just being developed, so they may not be definitive of the breed known today.

Unfortunately some animal bone reports recorded metrical data in tables, but the data could not be allotted to specific dog burials within the database. So that these data could be included in the analysis, they were placed in additional spreadsheets and combined with the dog-specific data to allow for a better understanding of the dogs recovered.

An overall discussion of the English metrical data will be presented in the next section with comparisons with the Irish dataset provided in Chapter Five.

2.13 Skull Measurements

Dog skulls differ in size and shape more than any other mammal (Alpak *et al.* 2004). The shape of the skulls maybe used to determine the type of dog. By applying skull indices to archaeological material, morphological types can be identified and defined.

There are three terms that are often used to describe the dog head shapes, they are:

1. *Dolichocephalic* – have a long, narrow head, with generally almond-shaped eyes (Figure 2.33). The retinal ganglion cell distribution is highly linked with the length of a dog's snout which would be an advantage for hunting by sight (Young and Bannasch 2006). Examples include the Rough Collie and Greyhound.

Figure 2.33 has been removed due to Copyright reasons.

Figure 2.33. Dolichocephalic dog skull (Source: Evans 1993, 167).

2. *Mesaticephalic* – have a medium proportioned head with generally round shaped eyes (Figure 2.34). Examples include the German Shepherd and Border Collie.

Figure 2.34 has been removed due to Copyright reasons.

Figure 2.34. Mesaticephalic dog skull (Source: Evans 1993, 167).

3. *Brachycephalic* – have a short muzzle with a relatively short maxilla and a broad back skull (Figure 2.35). They generally have wide-set, round eyes. The rounder shaped skull with big eyes is similar to that of a human baby, which may explain why humans have selectively bred this shape for the smaller, more companion-type dogs. This skull

shape is also noted in larger bodied dogs with the shorter muzzle and wide-backed skull, which gives the dog a more powerful bite (Young and Bannasch 2006). Breeding for this shape type has led to respiratory problems, due to lack of airflow through the nasal area, which causes particular problems in warmer weather. Examples include the Pekingese and Boxer.

Figure 2.35. Brachycephalic dog skull (Source: Evans 1993, 167).

Evans (1993, 132) produced a table with the average measurements for the three different skull types (Table 2.8).

Table 2.8. Average measurements for the three skull types (Evans 1993, 132).

	Measurement	**Brachycephalic (mm)**	**Mesaticephalic (mm)**	**Dolichocephalic (mm)**
Facial length	Nasion to prosthion	48	89	114
Facial width	Widest interzygomatic distance	103	99	92
Cranial length	Inion to nasion	99	100	124
Cranial width	Widest interparietal distance	56	56	59
Cran ial height	Middle of external acoustic meatus to bregma	54	69	61
Mandibular length	Caudal border of condyle to pogonion	85	134	163
Skull length	Inion to prosthion	127	189	238
Skull width	Widest interzygomatic distance	103	99	92
Skull base length	Basion to prosthion	107	170	216

Hasebe (1952) applied a different approach to classify skull shapes, he created a table with five measurement ranges for small, medium-small, medium, medium-large and large skulls (Table 2.9).

Table 2.9. Dog cranial size classification by Hasebe (1952) as cited in Shigehara (1994) (all measurements are in mm).

	Von den Driesch No.	**Type**				
		Small	**Medium-Small**	**Medium**	**Medium-Large**	**Large**
Max. Cranial Length	C1	≤155	156-170	171-185	186-200	201≥
Brain Case Length	-	≤83	84-93	94-103	104-113	114≥
Max. Cranial Breadth	C29	≤54	55-59	60-64	65-69	70≥
Facial Length	C8	≤76	77-84	85-92	93-100	101≥
Snout Length (Orbital)	C12	≤64	65-72	73-80	81-88	89≥
Palatal Breadth	C34	≤52	53-57	58-62	63-67	68≥
Mandibular Length (Cond.)	M1	≤113	114-124	125-135	136-146	147≥

Only forty-six early medieval dog craniums provided any metrical data, which meant the sample was too small to be subdivided into chronological periods or regions. So the metrical data was grouped together and defined as early medieval dogs. Below is a summary table of the main skull measurements along with the mean, standard deviation (SD) and co-efficient of variance (CV).

Table 2.10. Summary of the skull measurements (all measurements in mm).

	Von den Driesch No.	**N**	**Min.**	**Max.**	**Mean**	**SD**	**CV**
Total Length	C1	24	154.5	217.0	194.8	13.6	7.0%
Cranial Width	C29	24	46.7	72.2	57.6	5.0	8.7%
Cranial Height	C38	22	42.5	68.2	58.7	5.3	9.0%
Facial Length	C8	22	73.8	113.8	97.0	10.0	10.3%
Facial Width	C30	9	93.9	118.8	105.6	7.4	7.0%
Snout Length	C12	19	63.0	96.5	83.1	9.7	11.7%
Snout Width	C36	19	24.5	45.6	36.8	4.8	13.0%
Palatal Length	C13a	16	78.0	107.4	95.2	8.9	9.3%
Palatal Breadth	C34	23	43.6	73.9	62.7	6.2	9.9%
Mandible Length	M1	31	89.4	188.5	136.6	20.6	15.1%
Mandible Height	M8	47	51.9	85.0	72.4	7.4	10.2%

There were twenty-four craniums complete enough to provide the total length (C1) measurement; the smallest specimen was 154.5mm, which would have fallen into Hasebe's small category. This dog was excavated from a late Anglo-Saxon ditch, in New Town (SOU175), Southampton. The smallest skull recorded by Harcourt (1974) in his research measured 173mm, from Hungate, York, dating from the Anglo-Saxon period. Only one dog fitted the small category, as mentioned above, with the rest assigned to medium-size skulls and larger. The largest skull was from Thetford, Norfolk, and measured 217mm; there were seven dogs classified as large. The standard deviations were fairly high for some measurements indicating there was a wide spread in the measurements from the mean, which is also suggested by the co-efficient of variance values. Those CV values greater than 10% indicate that the sample was heterogeneous with a great deal of variability.

Looking at the other measurements, it can be seen that the minimums and maximums fall into the small and large brackets of Hasebe's classifications. The mean measurements for the facial length, snout length and palatal breadth all fitted the medium-large category, whereas the cranial width mean was within the medium-small bracket. This would suggest that although many of the dogs had medium-large length skulls and snouts, their width at the cranium stayed relatively narrow.

2.13.1 *Skull Indices*

Apart from the size, there were three other main features that Harcourt (1974) identified as contributing to the shape of the skull; they were the width of the skull, and the length and width of the snout. Harcourt developed three indexes to assist in interpreting the cranial morphology to enable the comparison of different skull shapes.

1. Cephalic Index – the width of the skull relative to its length.
   Zygomatic breadth (C30) x (100/Total length (C1))

2. Snout Index – the length of the snout relative to that of the whole head.
   Viscerocranium length (C8) x (100/Total length (C1))

3. Snout Width Index – the width of the muzzle relative to the length of the nose. Breadth at the canine alveoli (C36) x (100/ Viscerocranium length (C8))

2.13.2 *Cephalic Index*

The Cephalic Index illustrates the relationship between the width of the skull against its total length. Unfortunately only seven skulls were complete enough to provide both sets of data. The zygomatic breadth was rarely obtainable due to the zygomatic arch bones on the side of the skull being susceptible to damage. The higher the cephalic index the more brachycephalic the skull shape was, for example Pekingese. Of the seven skulls with both measurements, the index ranged from 51.3 to 56.3, which fit into the medium to large dog size. Figure 2.36 illustrates the relationship between the total length and the zygomatic breadth measurements. The smallest early medieval skull lies just between the English Cocker and English Springer Spaniel measurements and was the dog recovered from within a kiln at West Stow. This dog was also recorded as having severe bowing in its lower limbs. It should be noted that the lack of smaller, more complete skulls could be due to taphonomic conditions.

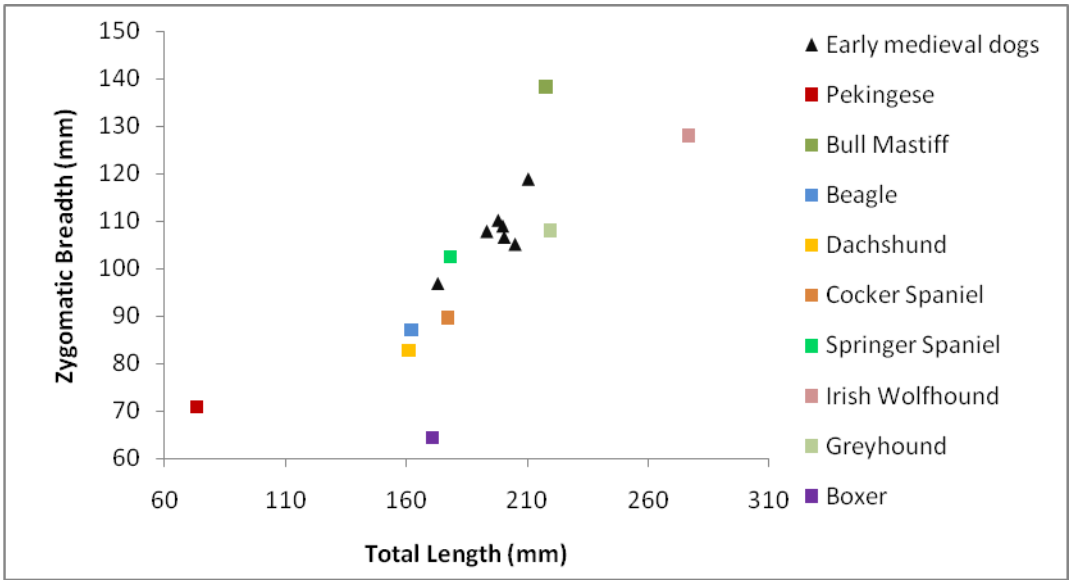

Figure 2.36. The relationship between total length and zygomatic breadth.

2.13.3 *Snout Index*

The Snout Index compares the greatest length of the skull against the snout width, which is a very characteristic and variable feature of a dog's face. There were more skulls with the required measurements (n=19) and a wider range of ratios (46.0 to 62.5). Figure 2.37 illustrates that there were no extremes recorded in snout length, with none as short as a Pekingese. The smallest snout index ratio came from an early Anglo-Saxon West Stow dog, which was situated lower than the other early medieval dogs and had smaller proportions than the modern Beagle. The largest was from a late Anglo-Saxon to medieval context from Alma Road, Romsey. This dog was represented on the scattergram as the outlier (circled in red) above all the other early medieval dogs; although it does not have the longest total length, it had a long snout in comparison to its head length (Grimm 2007). No measurements for the craniums were available for Flaxengate, Lincoln, but O'Connor (1982, 50) did comment on the presence of dogs with distinctly shortened muzzles.

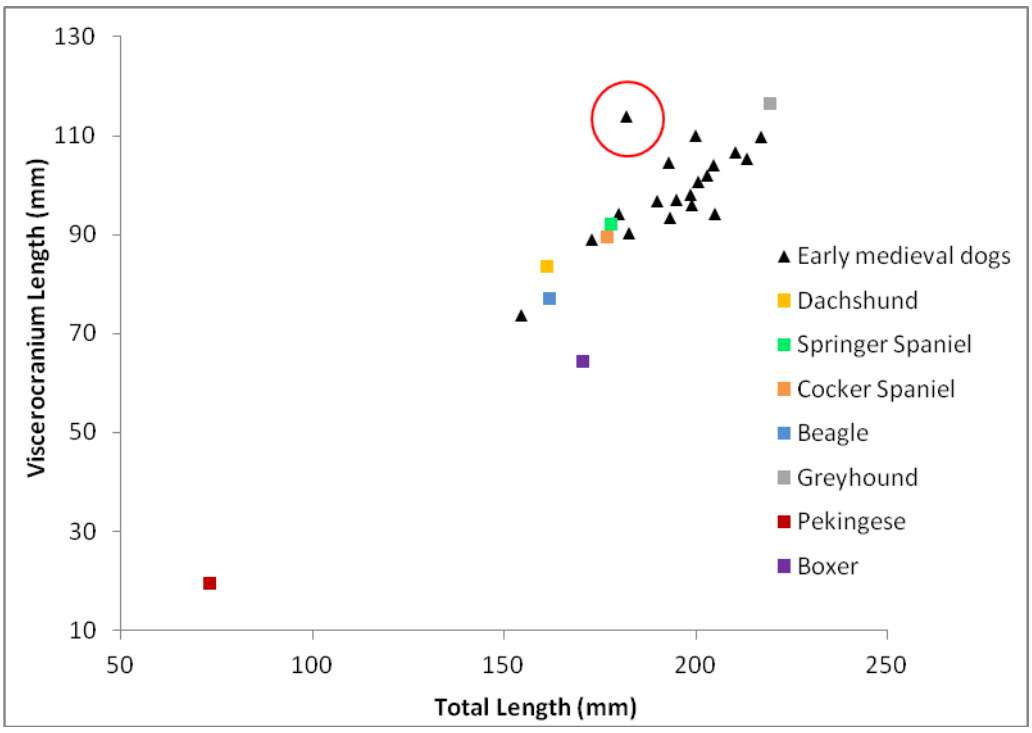

Figure 2.37. The relationship between the total length and viscerocranium length.

2.13.4 *Snout Width Index*

Snout Width Index compares the snout length with the snout width. This index ranged from 32.9 to 41.7 and the early medieval sample was made up of sixteen craniums. The dog with the largest snout index was from Alma Road, Romsey, which also has the smallest snout width index, suggesting that this dog had doliochocephalic skull shape. From Figure 2.38, it can be seen that one dog had snout measurements smaller than the Dachshund. The English Springer Spaniel measurements are in the middle of the correlation with the majority of the early medieval assemblage exhibiting longer and wider snouts. The Boxer is an extreme modern breed and has been included to illustrate its very short snout length in comparison to its width.

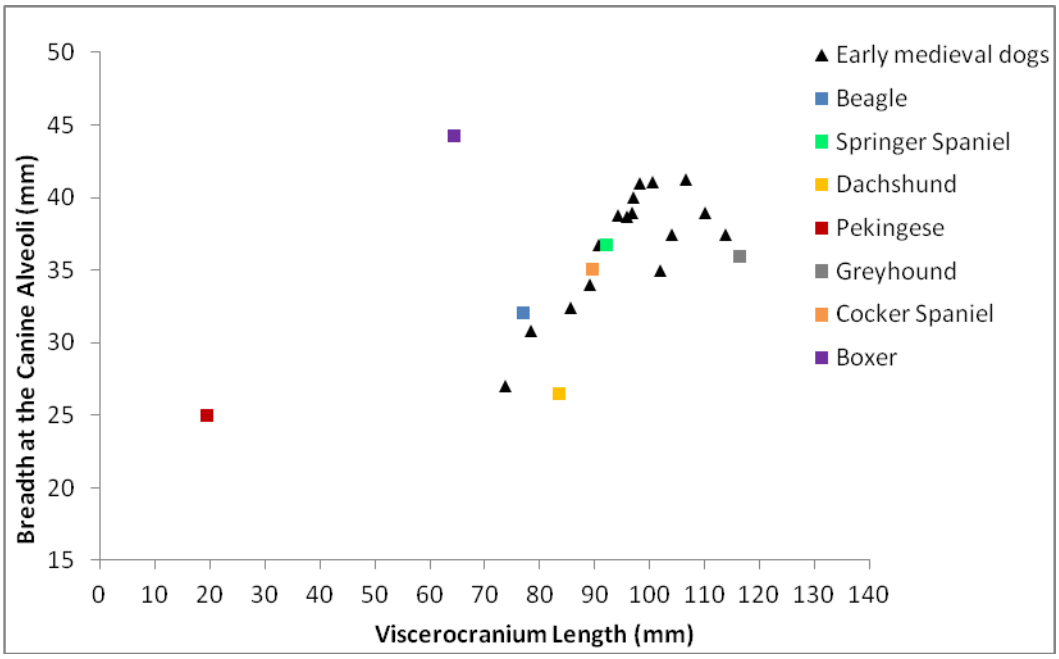

Figure 2.38. The relationship between the viserocranium length and the breadth at the canine alveoli.

2.13.5 *Neoteny Index*

Other sets of skull measurements that have been compared are the total length against the frontal width. This comparison highlights any dogs displaying the 'puppylook' or 'infantile' characteristics, which are often found in brachycephalic breeds, known as neoteny. This is the retention of youthful morphological characteristics in adulthood, leading to a short broad snout, big eyes, high forehead and round head.

From the results (n=16), the main cluster of early medieval dogs lay between the rounded English Springer Spaniel skull and the Greyhound shape with its long, sleek face (Figure 2.39). There was one skull from the New Town, Southampton, that has smaller dimensions than the other archaeological dogs (Bourdillon 1985a). This specimen's measurements were smaller than the Beagle, which has a characteristically fairly short snout with a round head and eyes.

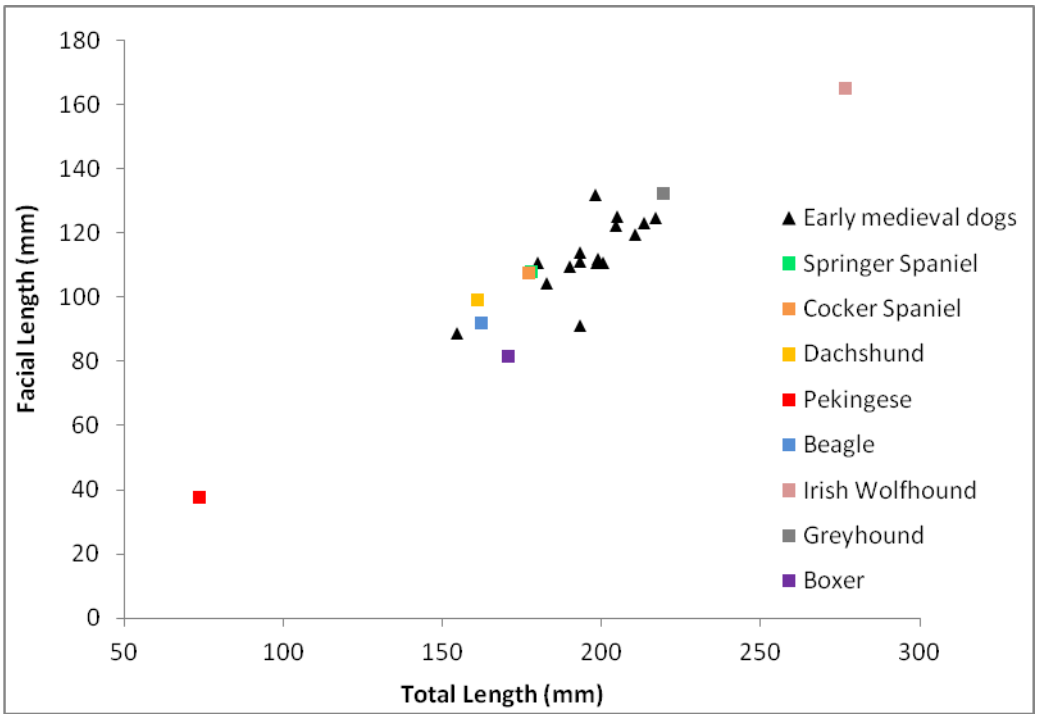

Figure 2.39. The relationship between the total length and facial length.

2.13.6 *Palatal Measurements*

The width to length proportion of the palate is a good indicator of the degree to which the snout elongates with various dog types. It has been noted that the wolf skull is not only larger but more robust than the domestic dog. Daróczi-Szabó (2006) records that only the very large modern dog breeds, such as Great Dane, would have large palatal proportions. Logically, larger dogs will have larger skulls and so larger palatal measurements. However, while palatal length follows the size of the total skull length, relative palatal width may be more variable in brachycephalic breed types.

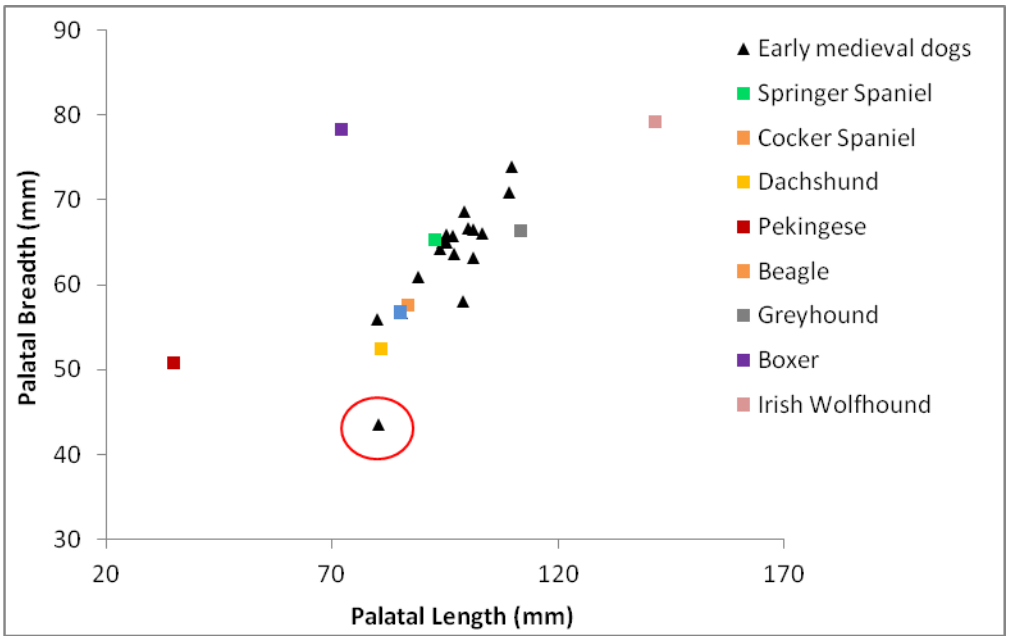

Figure 2.40. The relationship between the palatal length and palatal width.

Nineteen skulls had palatal information and from Figure 2.40, it can be seen that they all fit within the Dachshund to Greyhound shape. The only archaeological outlier (circled in red) was situated below the Dachshund, which dated from a late Anglo-Saxon ditch context, at New Town, Southampton, mentioned earlier as it had the smallest total length. The largest palatal breadth to length dimensions came from Anglo-Saxon Thetford, Norfolk, and this was examined by the author at the Natural History Museum. Unfortunately there was very little information available on this dog regarding its burial context and precise dating.

2.13.7 *Mandible Measurements*

The total mandible sample was comprised of thirty-one essentially complete specimens and forty incomplete ones. Hasebe (1952) also produced a classification table for mandible lengths (Table 2.9) placing them into five categories. Using Hasebe's classifications on the early medieval mandibles, nearly 80% of the dogs could be placed in the medium or larger sized categories. The largest mandible was from a seventh-century dog excavated from 16 Watling Street, Canterbury. This dog received a special section within the excavation report, due to its large size and articulated preservation (Clutton-Brock and Burleigh 1995). The smallest mandible was from a thirteenth-

century feature context from Southampton Castle, Upper Bugle Street, measuring 89.4mm, classified under Hasebe's (1952) table as small.

Twenty mandibles allowed the calculation of the ratio between the absolute length of the mandible and the height of the body of the vertical ramus.

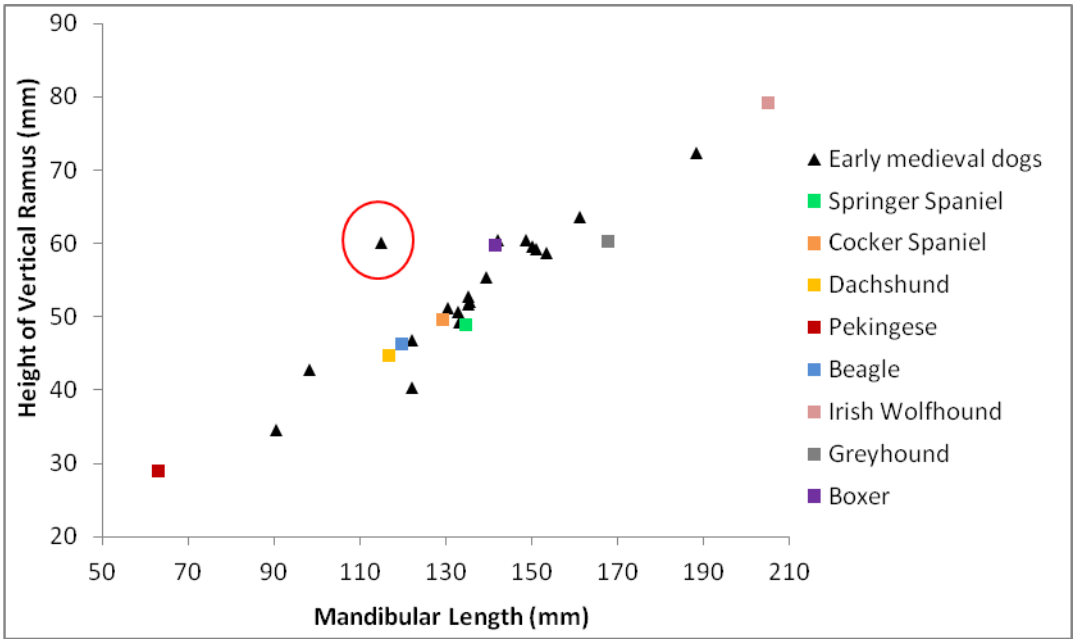

Figure 2.41. The relationship between the mandibular length and height of the vertical ramus.

Figure 2.41 illustrates how the early medieval dogs follow along a trend with the larger the dog, the larger the two measurements; the mandibular length and the height of the vertical ramus. A large range of sizes were represented in the scattergram with one nearly as big as the Irish Wolfhound and a few smaller than a Dachshund. There was an outlier (circled in red) situated directly above the Beagle specimen. This mandible was from a dog excavated from West Stow, and dates from around AD 400.

2.14 Limb Bone Measurements

Limb bone measurements can also be used to determine the changes in the size and morphology of dogs. They also serve as a basis for assumptions regarding the visible morphology. They range from the tiny Chihuahua to the giant Irish Wolfhound.

2.14.1 *Estimated Shoulder Height*

The estimated shoulder height measurement is one of the most useful and well used methods to illustrate dog variability, both in a descriptive and analytical way. The method used for calculating the estimated shoulder height of dogs was first devised by F Koudelka in 1885, and involved a multiplying factor using the total length of the long bones. His method included the following calculations:

- Humerus multiplied by 3.37.
- Radius multiplied by 3.32.
- Ulna multiplied by 2.67.
- Femur multiplied by 3.01.
- Tibia multiplied by 2.92.

Harcourt (1974) used this method for thirty-four dogs in his study and produced new factors to determine the estimated shoulder height, which gave a highly significant relationship (Table 2.11). The dogs used in his study were of no particular breed, but animals with extremely long or short, bowed legs were excluded. According to Harcourt (1974) all estimated shoulder heights should be expressed as centimetres, with the measurements taken in millimetres.

Table 2.11 Harcourt (1974) limb bone formula for determining estimated shoulder height (GL = greatest length).

Element	**Factor**
Humerus	(3.42 x GL) – 26.54
Radius	(3.18 x GL) + 19.51
Ulna	(2.78 x GL) + 6.21
Humerus and radius	(1.65 x GL) – 4.32
Femur	(3.14 x GL) – 12.96
Tibia	(2.92 x GL) + 9.41
Femur and tibia	(1.52 x GL) – 2.47

Clark (K 1995) developed a formula to determine the estimated shoulder height from the greatest length measurement from metapodials two, three, four and five (Table 2.12). This enables sixteen more elements per animal to become available. Additionally, the metapodia have a better rate of survival as a complete element, with their smaller total length reducing the effects of imposed stresses in the soil.

Table 2.12. Clark (K 1995) formula for determining estimated shoulder height from metapodia.

Element	**Factor**	**r^2**
Metacarpal 2	(0.94 x GL) – 1.56	0.989
Metacarpal 3	(0.83 x GL) – 2.03	0.993
Metacarpal 4	(0.84 x GL) – 2.60	0.994
Metacarpal 5	(0.98 x GL) – 1.56	0.989
Metatarsal 2	(0.86 x GL) – 2.04	0.995
Metatarsal 3	(0.77 x GL) – 2.26	0.996
Metatarsal 4	(0.75 x GL) – 2.68	0.996
Metatarsal 5	(0.83 x GL) – 1.75	0.996

A number of the animal bone reports did not provide the estimated shoulder heights for specific dog remains, but only a range for the whole assemblage; this meant these data could not be included within the present analysis. It was however possible to calculate the estimated shoulder height for 155 dogs from 62 sites (Figure 2.42). The smallest estimated shoulder height measured 22-24cm from a dog excavated at Caister on Sea, Norfolk, and dated to the middle Anglo-Saxon period. This dog would have been roughly the height of a Papillon, which range from 20-28cm (Cunliffe 1999, 291). The largest dog recorded was from a structure at 16 Watling Street in Canterbury, measuring 71.4-71.5cm, which is smaller than an Irish Wolfhound, which range from 81-86cm at the shoulder (Cunliffe 1999, 216). The detailed analysis of this particular skeleton by Clutton-Brock and Burleigh (1995) suggests that the dog was similar in height to, although more lightly built than, a Bloodhound, which they had compared with a skeleton held in the British Museum (Natural History) archives. Only three estimated shoulder heights were calculated from the metapodial measurements alone. There were four dogs with suitable measurements to calculate the estimated shoulder heights for

both limb bones and metapodials. In each case there were disparities in the metapodial estimated shoulder height compared with the limb bones. For example, the dog recovered from Lake End Road, Middle Thames Landscape, had a wide range in the estimated shoulder heights calculated between the limb bones and metapodials, with nearly 6cm between the two metapodial measurements and the largest one was 2.5cm bigger than the humerus calculation. The estimated shoulder heights calculated from the metapodials from a West Stow dog were 3cm smaller than the ones calculated from the radius and tibia. For this analysis, it was decided to choose the mean estimated shoulder height of the radius and tibia.

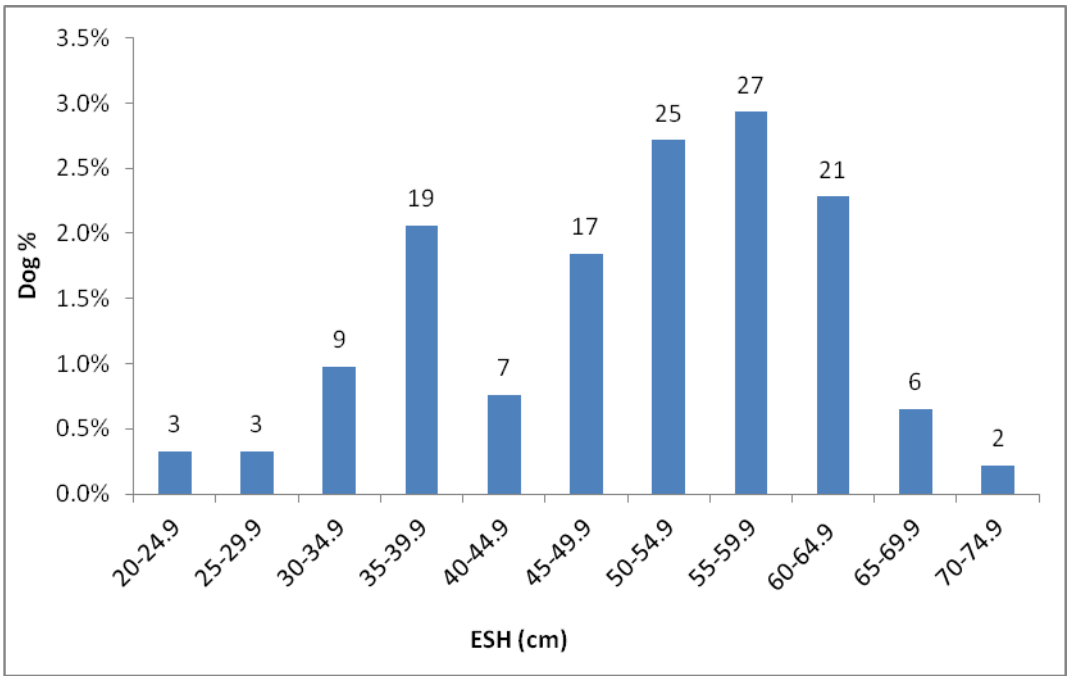

Figure 2.42. Estimated shoulder heights (ESH) for all the chronological periods (number of dogs at the top of bars).

Figure 2.42 shows that over half the estimated shoulder heights calculated were from dogs over 45cm, with a peak at 50-54.9cm. This would be about the same height as an English Springer Spaniel. The mean estimated shoulder height recorded was 54.0cm, although this was skewed by a number of very small estimated shoulder heights. Harcourt (1974) had observed two discrete groupings in the height data from his study but this is not evident in the data gathered from English sites.

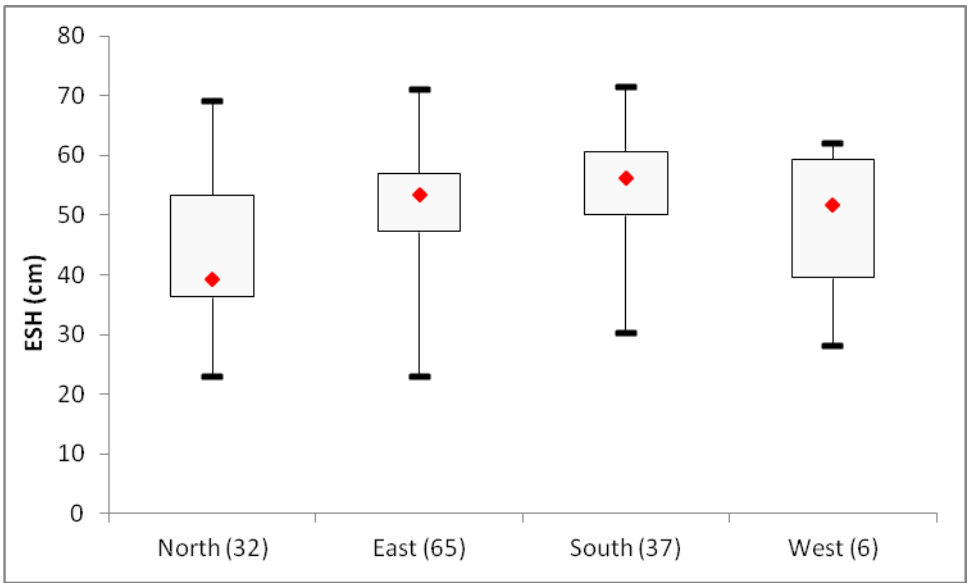

Figure 2.43. Estimated shoulder height (ESH) by regions with ♦ representing the median (number of dogs).

The estimated shoulder heights were broken down into regions and overall there were no dramatic observations, except for the smaller range in the West region, which could be due to the lack of data. Figure 2.43 indicates the spread of data and includes any outliers for the estimated shoulder heights. The top and bottom of the box represents the lower and and upper quartiles with the red square denoting the median. The East region had the widest range, with the middle 50% of the results skewed towards the taller estimated shoulder heights, whereas the South had a more even spread of data. Interestingly, in the North the heights skewed to the smaller size with the median below 40cms. Unfortunately only Flaxengate, Lincoln, from the North provided any estimated shoulder heights and the animal bone report states that most of the dogs were medium to large size with no indication of selective breeding (O'Connor 1982). Another North site, 16-22 Coppergate, York, animal bone report provided only a range for the dogs' heights for the Anglo-Scandinavian period, so this information could not be included into the graphs. However O'Connor (1989) noted they were all over 50cm tall with one specimen measuring 70cm, although this could have been from a wolf bone.

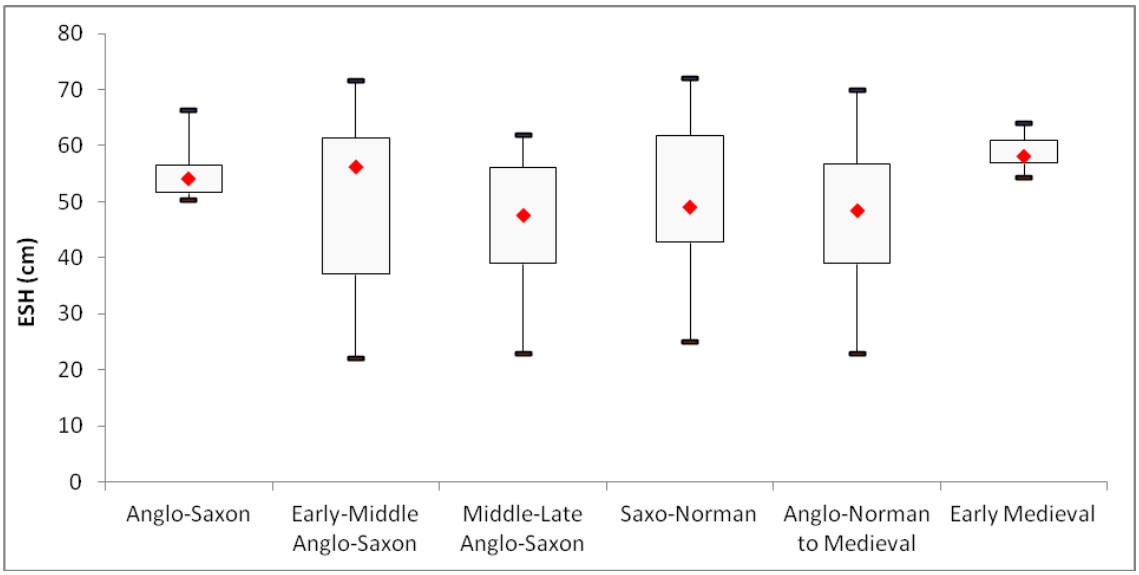

Figure 2.44. Estimated shoulder height (ESH) by chronological period (♦ representing the median).

Table 2.13. Summary of estimated shoulder heights for the chronological periods (in cm).

	N	Min.	Max.	Mean	Median	SD	CV
Anglo-Saxon	9	50.4	64.6	55.0	54.0	4.7	8.6%
Early-Middle Anglo-Saxon	27	23.0	71.5	50.6	56.2	13.9	27.4%
Middle-Late Anglo-Saxon	39	22.9	62.0	48.6	49.6	9.7	20.0%
Saxo-Norman	30	25.0	71.0	50.5	50.0	12.7	25.1%
Anglo-Norman to Medieval	29	22.9	70.0	47.6	48.3	11.8	24.8%
Early Medieval	6	53.4	64.0	58.7	58.2	3.8	6.4%

Together, Figure 2.44 and Table 2.13 provide a summary of the estimated shoulder heights divided up into the chronological periods. The standard deviation and co-efficient of variance values for each of the periods were high indicating that there was a great deal of variability in the height of the dogs. The estimated shoulder height ranges from Anglo-Saxon and early medieval categories were limited, with the smallest dog over 50cm tall. There was a higher frequency of larger dogs during the early to middle Anglo-Saxon period with a wider spread of sizes overall. Small-sized dogs were recorded throughout the entire Anglo-Saxon and Saxo-Norman periods. During the middle and late Anglo-Saxon periods there was no evidence of very tall dogs with none over 61cm. This changed in the Saxo-Norman period with a dog from St Nicholas

Street, Thetford, measuring over 70cm high. Interestingly the prevalence of larger dogs was reduced in the Anglo-Norman to Medieval period, at a time when hunting is well documented. Hunting was principally for the elite, due to much land in England being converted into royal forests. This meant that only the king or those with his warrant could legally enter them to hunt the four 'beasts of the forest', which were the roe, red and fallow deer and the wild boar (Birrell 2001). This situation would have led to tight controls in the breeding of larger dogs used for hunting. These animals would have been restricted to only high-status estates. This is indicated by Figure 2.45 where taller dogs were recovered from castle and rural sites, with no short dogs recovered at all. A short dog was recovered from Castle Hall, Southampton, at only 32cm at the shoulder (Devereux 1986, 37).

Dogs from urban sites had the widest variability in heights, with the median fitting neatly in the middle of the maximum and minimum at 46.8cm. Unfortunately only a small number of manorial dogs provided any estimated shoulder heights so no interpretation on these results can be given, except that they were of medium height. Cemetery site data was even more limited with only two estimated shoulder heights, one fairly small at 35.5cm and the other over 60cms.

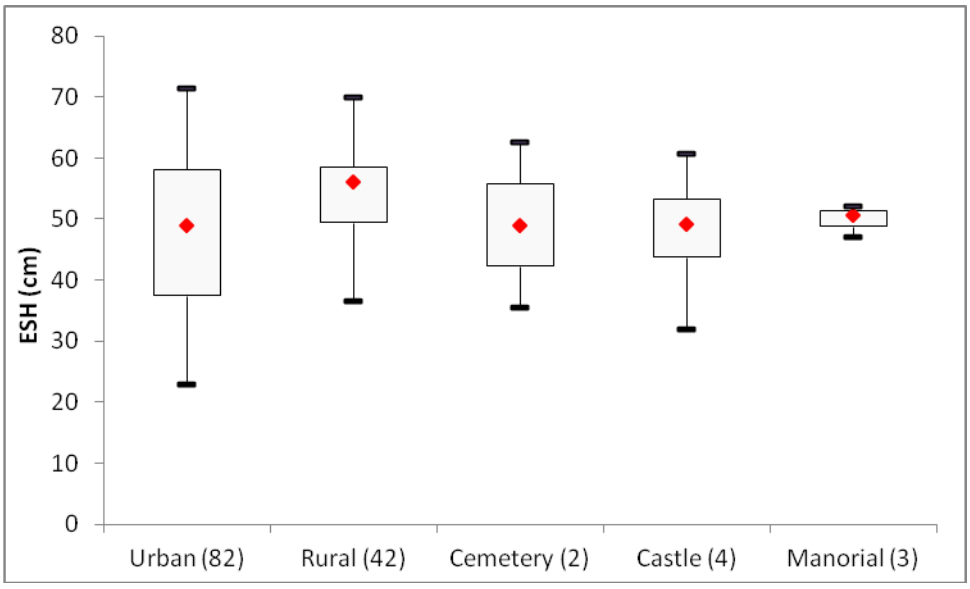

Figure 2.45. Estimated shoulder height (ESH) by the top five site types with ♦ representing the median (number of dogs).

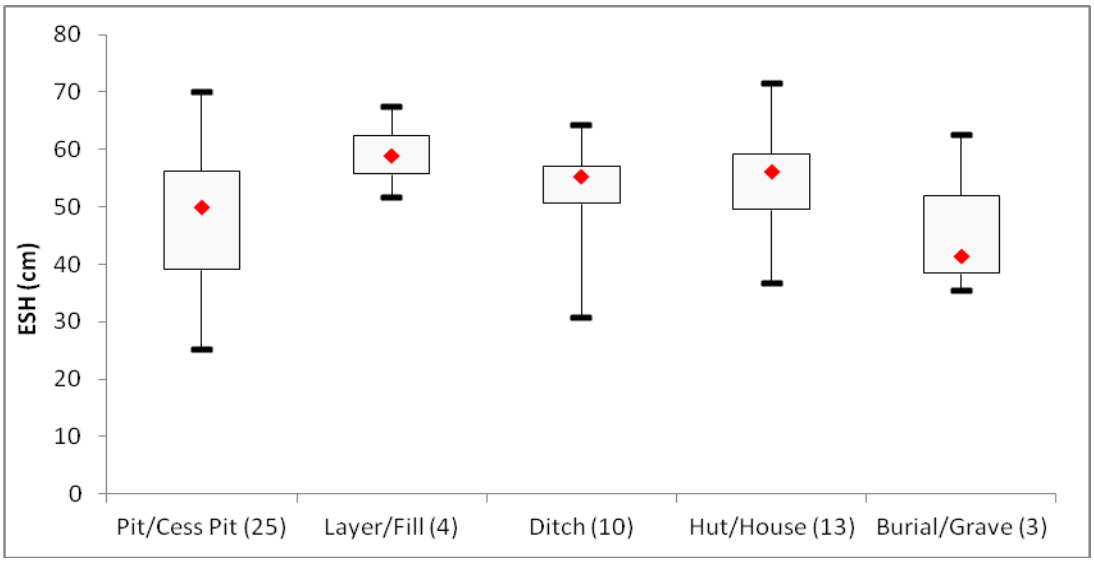

Figure 2.46. Estimated shoulder height (ESH) by the top five burial locations with ♦ representing the median (number of dogs).

Dogs recovered from pits and ditches were the most common burial locations that provided estimated shoulder height data and both these showed a wide variability in height (Figure 2.46). The layer/fill contexts had dogs measuring at the taller height, with the median nearly 60cm, although just seven dogs made up this category, limiting interpretation. Hut/house contexts had a smaller variability in height than the pit and ditches, with over half of them measuring between 58 to 62cm. Only three dogs provide estimated shoulder heights from burial/grave context, all being of varying heights.

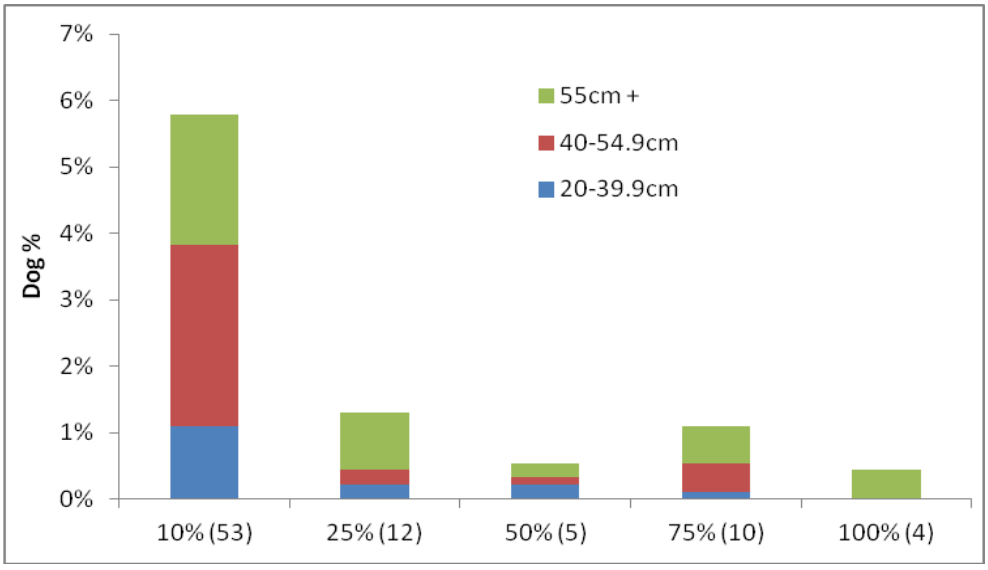

Figure 2.47. Estimated shoulder height by completeness data of the dogs (number of dogs).

Most of the estimated shoulder heights came from dogs that were 10% complete which is highlighted by Figure 2.47. There was no indication from the dataset that the height of the dogs had any effect on the completeness of the skeleton.

2.14.2 *Limb Bone Comparisons*

As with estimated shoulder height, the sample size for the different limb bone measurements available was too small for meaningful comparison by chronological periods or regions. The bone measurements have been compared with modern breeds for size comparisons. As with the skull dimensions, Hasebe (1952) produced a table (Table 2.14) classifying dogs into five categories from the greatest length measurement of the limb bone.

Table 2.14. Dog limb-bone size classification by Hasebe (1952) as cited in Shigehara (1994) (all measurements are in mm).

	Von den Driesch No.	**Type**				
		Small	**Medium-Small**	**Medium**	**Medium-Large**	**Large**
Humerus Length	GL	≤120	121-135	136-150	151-165	166≥
Radius Length	GL	≤115	116-130	131-145	146-160	161≥
Ulna Length	GL	≤140	141-155	156-170	171-185	186≥
Femur Length	GL	≤135	136-150	151-165	166-180	181≥
Tibia Length	GL	≤130	131-145	146-160	161-175	176≥

Table 2.15. Summary of greatest length measurements for each of the main limb bones.

	N	**Min.**	**Max.**	**Mean**	**Median**	**SD**	**CV**
Humerus	44	74.6	215.4	160.1	162.5	28	17.5%
Radius	43	72.9	216	153.3	156.5	35.7	23.3%
Ulna	16	124	241.3	192	200.5	33.7	17.6%
Femur	33	77.2	235.6	170.6	176	34.2	20.0%
Tibia	43	105.2	240.1	173.1	183	36.3	21.0%

Eighty-four dogs provided metrical information and the total length measurements data for the limb bones is summarised in Table 2.15. All the minimum measurements fit within the small dog size as set out by Hasebe (1952), with the maximum measurements corresponding to the large size. The mean of each of the limb bones were within the

large dog size, except for the radius, which fits in the medium-large size category. Both the standard deviation and co-efficient of variance values indicate a large amount of variability within the measurements for all the limb bones. Figure 2.48 illustrates that all the limb bones had a wide size range, with the humerus and ulna having a concentration of measurements around the median.

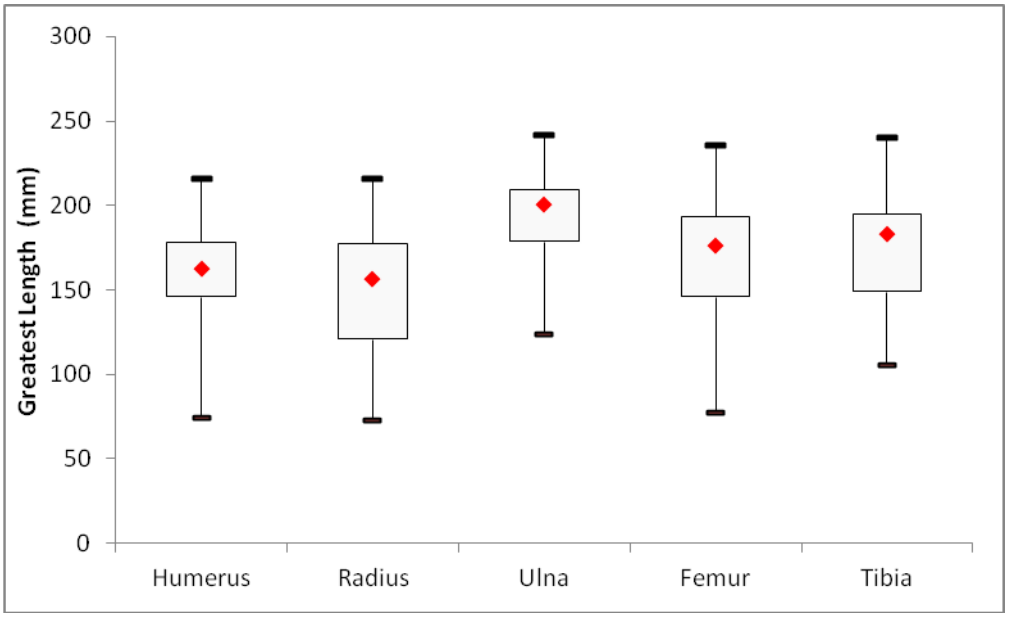

Figure 2.48. The total length by the main limb bones (♦ representing the median).

Figures 2.49 to 2.52 illustrate the relationships between the greatest length and distal breadth measurements from four of the limb bones (humerus, radius, femur and tibia). The results show a range in size variability in the early medieval specimens, from Beagle (a small-medium sized dog) to those as long as a Greyhound. None, however, were as extreme as the modern dog breeds, such as the Irish Wolfhound or the Pekingese, and no clusters were observed that could indicate specific size selection or sexual dimorphism. Only the tibia had two measurements, which do not appear to fit with those on the scattergram and are circled in Figure 2.52. These particular measurements had a smaller distal breadth in proportion to the greatest length, which would suggest that the dogs were a similar height to English Springer Spaniel, but had more slender legs at the joints.

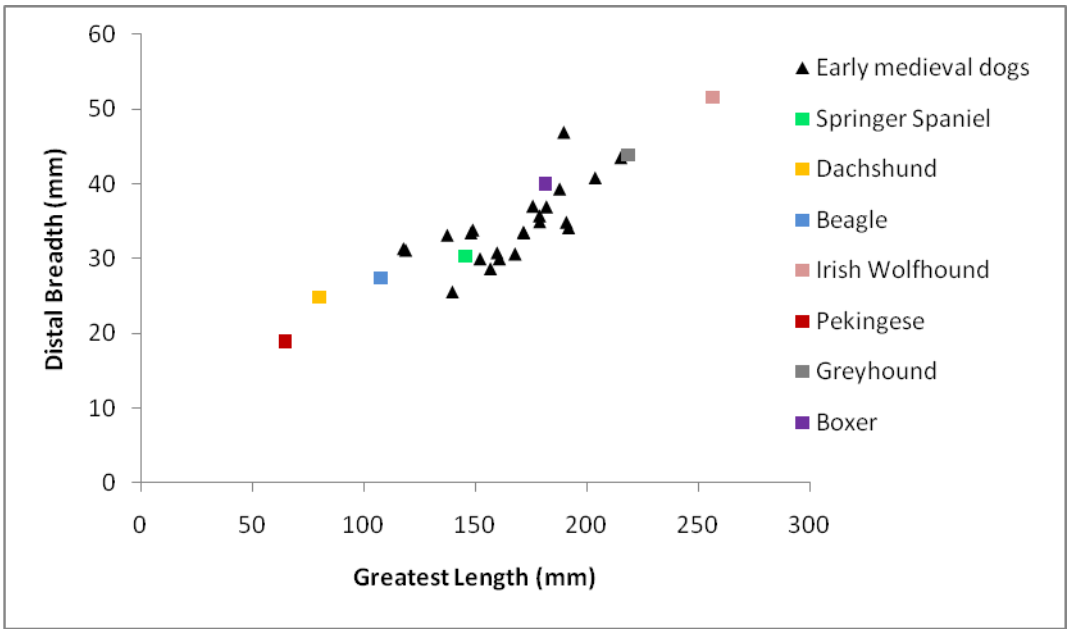

Figure 2.49. The relationship between the greatest length and distal breadth (mm) for the humerus.

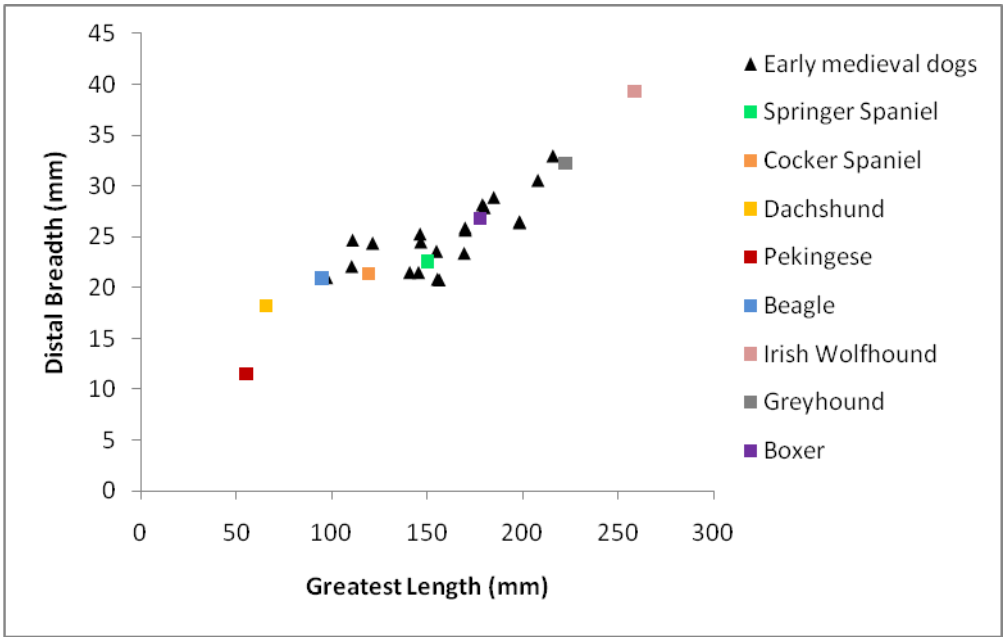

Figure 2.50. The relationship between the greatest length and distal breadth (mm) for the radius.

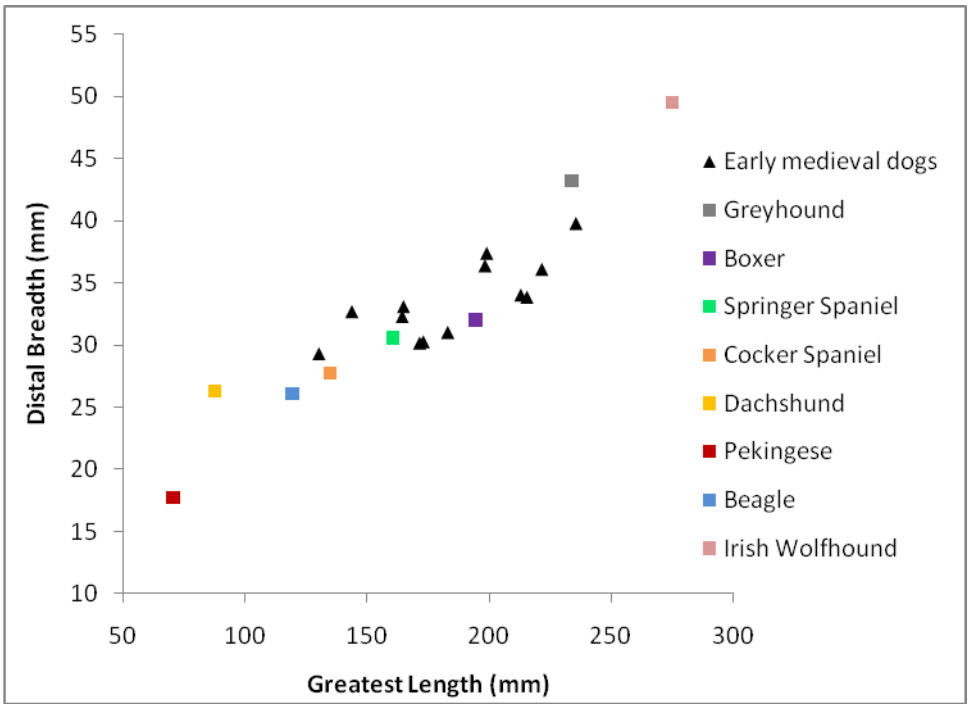

Figure 2.51. The relationship between the greatest length and distal breadth (mm) for the femur.

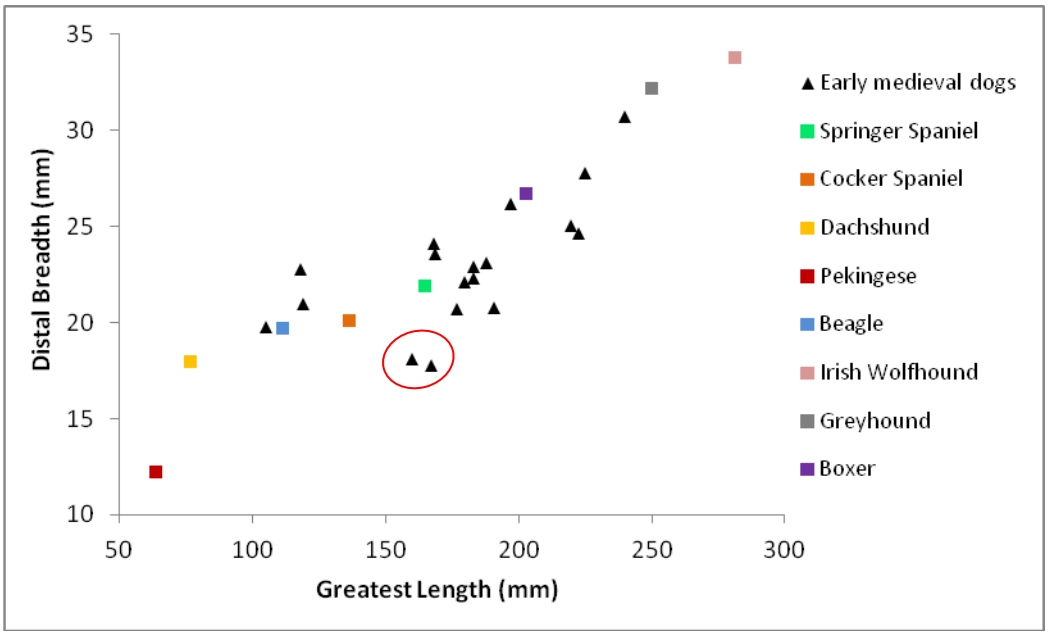

Figure 2.52. The relationship between the greatest length and distal breadth (mm) for the tibia.

2.14.3 *Slenderness Index*

Another index was developed to examine the slenderness of the limb bones by comparing the smallest diameter with the greatest length of the different limb bones (De Grossi Mazzorin and Tagliocozzo 2000). It is called the slenderness index and the formula is:

$$\text{Slenderness Index} = \frac{\text{Smallest diameter}}{\text{Greatest length}} \times 100$$

The overall form of the dogs was studied by plotting the slenderness index, against the estimated shoulder height. This technique can discriminate four types of dog; short and robust, short and slender, tall and slender and tall and robust.

Figures 2.53 to 2.56 illustrate the slenderness index, compared with the estimated shoulder height for each of the main limb bones. The early medieval dogs exhibited a linear trend, with the taller they were the more slender the build, although on each of the graphs (highlighted in the red circles) there were two or three dogs that had a high slenderness index similar to the Pekingese or Dachshund, but were slightly taller. This group consisted of dogs that had recorded pathology, in particular bowing in the limb bones. For example, one of the two outliers in the femur graph (Figure 2.55) was the dog recovered from Lake End Road, Middle Thames Landscapes, which exhibited bowing in the limbs. Clark (K 2002) believed the build of this skeleton was relatively robust in comparison to the length of its legs. The dog was described as having broad shoulders with the skull similar in size to a Labrador. She also measured the angle between the basal plane of the skull and the occipital bone, which indicates how the dog carried its head. This dog had an angle of 95 degrees, which suggests that the head was held in an upright position, similar to a Greyhound. There were no examples of dogs in the tall and robust category.

The modern breeds show more variation in slenderness against their height. For example, the Pomeranian, whose limb bones are slender and short, compared with the Pekingese, which are short and more robust. However, the number of specimens

examined was small and drawing conclusions based on their size and form was extremely difficult.

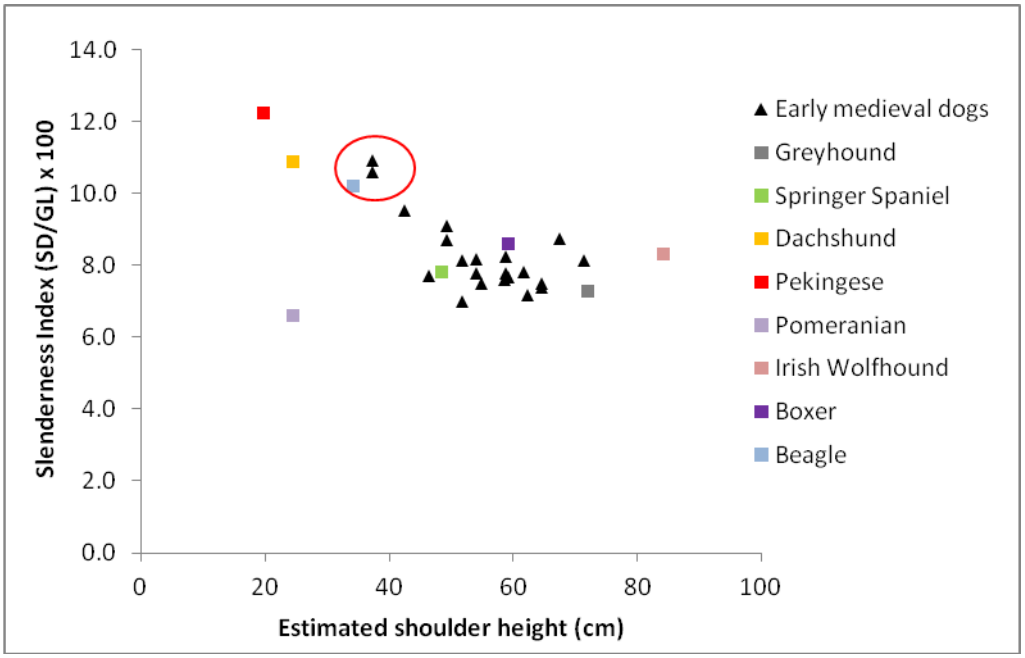

Figure 2.53. Slenderness index by estimated shoulder height for the humerus.

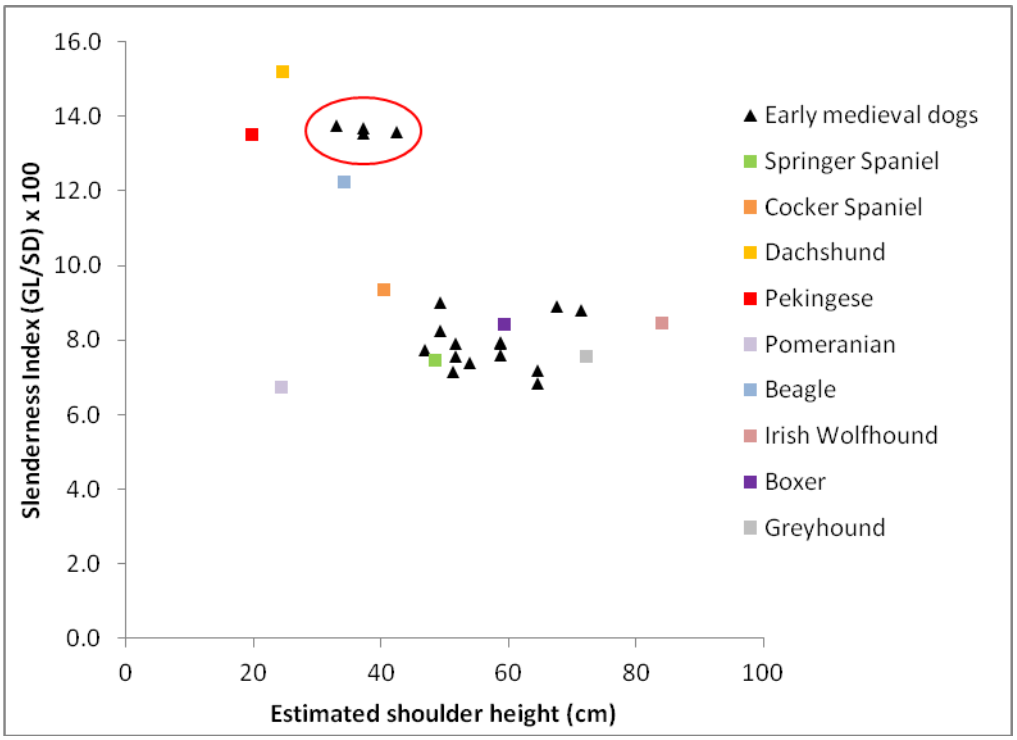

Figure 2.54. Slenderness index by estimated shoulder height for the radius.

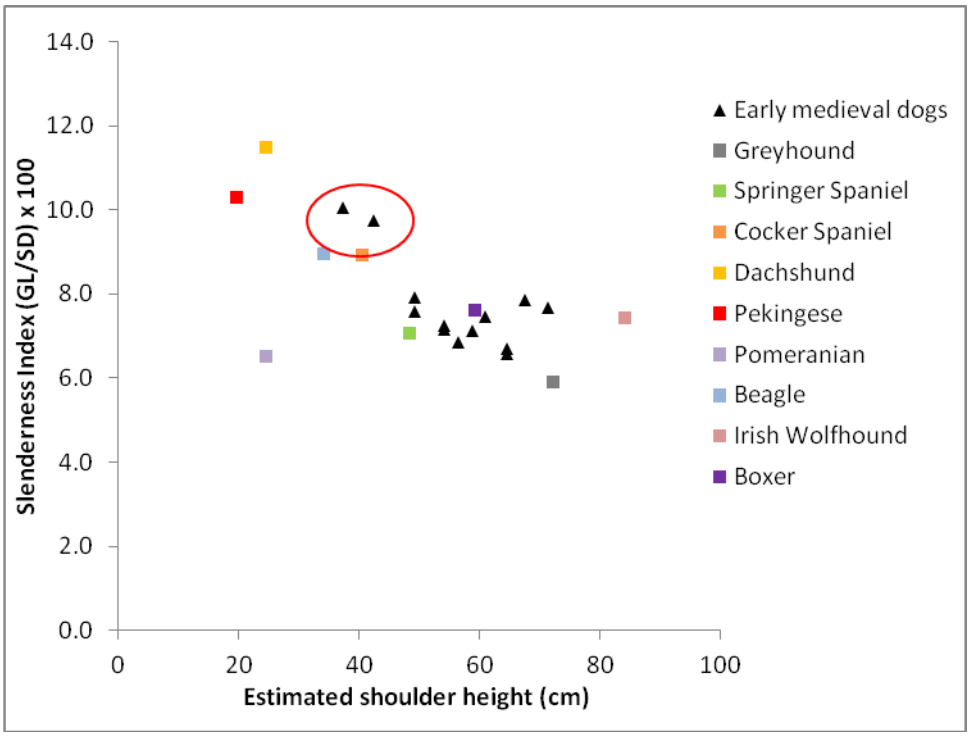

Figure 2.55. Slenderness index by estimated shoulder height for the femur.

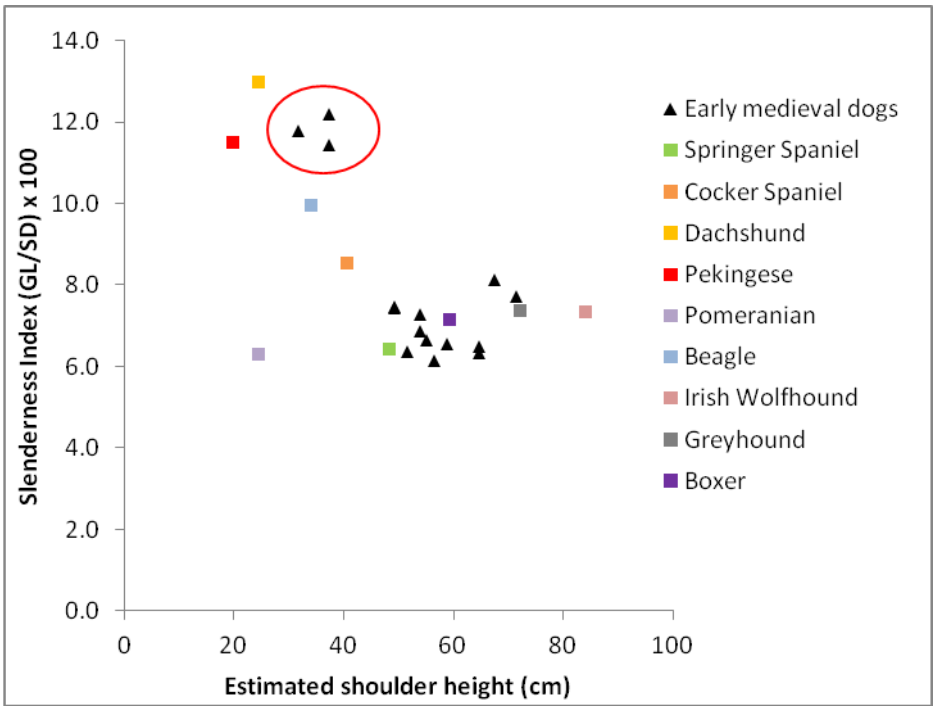

Figure 2.56. Slenderness index by estimated shoulder height for the tibia.

2.15 Additional Archaeological Evidence

In addition to the osteological evidence, dogs were also present within the archaeological record in other ways, such as tooth amulets, gnawing and coprolites.

2.15.1 *Dog Tooth Amulets*

Dog tooth amulets were recovered from a number of Anglo-Saxon graves in England. Anglo-Saxons believed that animal tooth amulets would provide the wearer or owner with a form of protection and provided additional strength (Yorke 2006, 250). They have also been interpreted as symbols of different groups within a community (Geake 1997, 98). This was a pre-Christian practice, and was more commonly observed in female adult and child inhumation burials, dating to the sixth and early seventh-century than in adult male graves (Meaney 1981, 135). However Geake (1997, 98) believed that their meaning could have taken on a more political significance during the Conversion period, in reaction to the Christian beliefs.

The following dog tooth amulets have been recovered from Anglo-Saxon inhumation graves:

1. Wheatley, Oxfordshire - two perforated canines from a 'dog or wolf' recovered from grave 27, along with Roman coins and a small boar tusk possibly contained within a bag. This burial was dated to the sixth century AD (Leeds 1916).

2. Abingdon I, Berkshire - a 'dog' tooth was found in a sixth-century woman's grave (grave 76) nearly 45mm long; it was pierced at the root for suspension (Leeds and Harden 1936, 45-6).

3. Milton-next-Sittingbourne I, Huggins Fields, Kent - two dogs' canines recovered from grave I. The canines were tipped with metal and were part of a necklace, which included an amethyst bead and dated to the seventh century (Meaney 1981, 32).

4. Cow Lowe, Derbyshire - a ‘dog’s or fox’s’ tooth was one of eleven pendants from a female seventh-century grave, contained within a wooden box (Bateman and Glover 1848, 95).

5. Lyminge II, Kent - a “perforated upper right temporary canine tooth” recovered from grave 27, was one of the nine small beads with a possible girl aged two to six years old (Warhurst 1955, 20). Other grave goods consisted of a bronze wire bracelet, an iron knife and a bronze purse-mount, which was cloisonné set with coloured glass.

6. Lower Farm, Bishop’s Cleeve, Gloucestershire – a perforated right canine measuring 36mm, was recovered from burial 25 and was part of a pendant (Holbrook 2000). This pendant was the only grave good. The canine had been pierced for suspension and Holbrook (2000) believed that the condition of the tooth enamel suggested that the dog or wolf was about five years or more at the age of death.

7. Great Chesterford, Essex – a dog or wolf permanent lower right canine was recovered from a female, aged 35-45 years old, in grave 37 (Figure 2.57). Serjeantson (1994) believed it was either a large dog or small wolf. A hole had been drilled in the base section, to allow this tooth to be used as a pendant.

Figure 2.57. Great Chesterford, Essex, dog or wolf canine amulet (Source: Serjeantson 1994, 148).

2.15.2 *Dog Gnawing*

The indirect evidence of dogs from their gnawing marks was regularly observed on early medieval animal bone assemblages from English sites. This indicated that the burial of domestic refuse was carried out in such a way to allow scavenging dogs to take advantage or the bones were being given to dogs and then disposed of (O'Connor 2000, 126). Pinter-Bellows (2000) identified the gnawing on the animal bones at South Manor area, Wharram Percy, as created by dogs due to the round pitting and widely spaced tooth marks. A number of animal bone reports described the evidence of canid gnawing rather than specifically from dogs. Holmes and Rielly (1994) commented that a large amount of gnawed meat bones were recovered at Bancroft, Buckinghamshire, which indicated that dogs were present on the site, but only two dogs were recovered from the animal bone assemblage.

Evidence of dog gnawing provides additional information on the dogs' diet. For example, at Marefair, Northampton, dog gnawing was only evident on approximately 8% of the animal bone assemblage, but nearly one third were recorded on the horse bones. As horse meat was not regularly eaten, Liddle (2005) suggests that either the bones were fed to dogs or that the horse bones were not covered up immediately and dogs preferred them over other meat.

2.15.3 *Dog Coprolites*

Differentiating between archaeological human and animal faecal matter is problematic but the contents can be analysed. The presence of animal bone and certain elements ingested whole, such as sheep phalanges, can indicate that the coprolite is from a dog (Carrott *et al.* 2004). However, Nicholson (1993) points out that the identification of coprolites within archaeological contexts is fairly rare due to their likelihood of disintegrating through time. Analysis of dog coprolites could provide information regarding their feeding habits and their physical condition. Toker *et al.* (2005) have suggested that signs of disease or old age could be determined from a breakdown of the glucose levels. They also believe the presence of high levels of magnesium within dog coprolites could indicate that the animals were being worked, due to magnesium being stored in the muscles of physically active working animals. Magnesium in the

coprolites could also be obtained from eating herbivores, such as beef or lamb meat. Dog excrement is known to have been collected and used by tanners to soften leather during the early medieval period (Waterer 1976). The skins were washed in a mix of dog faeces and bird droppings, which removed the lime and "promoted bacteriological action leaving the hide soft and flabby" (Leahy, K 2003, 84).

Evidence of dog coprolites was identified from a couple of sites in England. O'Connor (1989) identified the presence of dog faeces in a pit on one of the tenements at 16-22 Coppergate, York, contexts dating to the Anglo-Scandinavian period. The coprolites contained stone chips and cattle bone.

There were other sites that reported the presence of bones, that showed signs that they had been swallowed, for example, at South Manor area, Wharram Percy; however, it was not stated whether they had passed through a human or dog (Pinter-Bellows 2000). At Market Lavington, Wiltshire, the sieved material from the Anglo-Saxon period contained bone fragments that were described as having been "through the guts of a dog" (Bourdillon 2006, 164).

2.16 Summary

Over 900 dogs have been identified for this study from a wide cross-section of England with over 200 sites and covering thirty-five counties. There was a site bias towards the South region, and a dog bias to the East of England. This was due to a number of factors, but was primarily due to regional soil conditions and the degree of preservation of the bones themselves.

Dogs were most commonly located from urban site types throughout the early medieval period. The exception was during the early-middle Anglo-Saxon period, where they were mainly from rural settlements and cemetery sites, with the majority recorded in the East region. The large number of dogs recovered from castle sites during the Anglo-Norman to medieval period would indicate that they were being buried on site, and may indicate that hunting with dogs was being carried out from these establishments.

Nearly a quarter of all the dogs were recovered from a pit context, the rest from a wide variety of burial locations. The completeness of the dogs recorded was fairly low with the majority consisting of a few scattered bones. Evidence of partial or articulated dog skeletons was rare and these were normally found in sealed contexts such as from a grave or disused SFB or kiln. There were just a few examples of mass dog burials and these consisted of neonates or newborns with their possible mother.

Ageing data were limited, being reliant on the animal bone report author to mention this information. This was not regularly carried out on non-meat-bearing animals and generally only if there was something special or unusual, such as young or old, was ageing information given. Old dogs were often identified by those showing signs of age-related pathology, such as osteoarthritis. This was noted on a number of dogs in the dataset, as well as those with healed broken limb bones, all of which would suggest that these animals were being cared for, as they had become unable to scavenge for themselves.

A number of dogs exhibited bowing on the limb bones. This has been attributed to a number of conditions, depending on the severity and form taken. One example was very severe, with bowing and twisting in the lower limbs, which would have meant the animal would not have been able to fend for itself and would have required human care to survive.

Butchery marks appeared very rarely in the early medieval dog assemblage, with only the occasional skinning and use for meat. This indicated that it was not common practice during the early medieval period.

The biometrical data indicated that there was a wide variety in the size and shape of the dogs recovered from the early medieval period. Using the Hasebe (1952) classifications for the skull measurements, the majority of the dogs lie between the medium to large categories. There were some small and small-medium dogs recorded, but there were no examples of the extreme characteristics observed today, for example a brachycephalic skull.

The estimated shoulder heights records illustrated a wide range of variability (22 to 71.5cm tall), which was larger than the range observed by Harcourt (1974) with no indication of the two distinct groupings he recorded. This variability was noted throughout the chronological periods, with only a slightly smaller range during the middle to late Anglo-Saxon time. The smallest dogs were recovered from urban sites, with larger dogs being more common in rural settlements. Unfortunately, castle and manorial sites produced limited data, however it does indicate that generally larger dogs were being buried on those sites.

As expected, pits provided the widest range of estimated shoulder height. The layer/fill contexts produced only medium to large heights, which could indicate that taphonomic conditions caused only larger specimens to survive. The majority of dogs excavated from hut/house contexts were nearly 60cm, which is approximately the same at the shoulder as a modern Labrador Retriever.

The limb bone measurements showed that generally the dogs were fairly medium-large to large in type according to Hasebe's classification (1952), as well as being slender in proportion to their height. There were, also, a few examples that were short and robust, similar in shape to a modern Dachshund.

Other dog archaeological evidence was identified, for example the use of dog teeth as amulets. They were mainly recovered from female human graves and associated with a pre-Christian burial rites. The presence of dogs was also observed by evidence of gnawing marks on the animal bone assemblage as well as the identification of a couple of dog coprolites.

Chapter 3 – The Irish Dataset

3.1 Introduction

In the same manner as the English dataset, published and unpublished archaeological reports were consulted to obtain all relevant data on dogs from early medieval Ireland (*c.* AD 400 – 1250). In the previous chapter, there was a discussion on the limitations regarding the data collection but there were a number of additional issues that arose specifically to gathering early medieval Irish information.

3.2 Data Analysis

One of the main limitations associated with the study of early medieval Irish bone assemblages was the difficulty of accurately phasing and dating the archaeological deposits from which bone samples were generated. Archaeozoologists need to know how the bones were excavated, and what attempts were made at phasing material from a period with a temporal framework of over eight hundred years. Without detailed phasing, it is impossible to observe what changes in animal exploitation occurred through this time. Only a few sites have had this detailed phasing carried out, and observed changes were noted by McCormick (1991b) at Knowth, Moynagh Lough and Rathmullan. The Galway Excavations report used generalised periods, such as high medieval and post-medieval, but no further classification of these terms was provided (FitzPatrick *et al.* 2004). McCarthy (1995) commented on the lack of sieving carried out on early excavations, which has meant that important small mammal, bird and fish bones have been missed in the analysis.

The early medieval or Early Christian periods in Ireland were terms used generally and many reports again do not classify them in any further detail. Despite these problems and although there was some overlap, the assemblages were categorised (Table 3.1).

Table 3.1. Date range and sample sizes for each period group.

Period	**Date range**	**Number of assemblages**	**Number of dogs**
Early Christian	Fifth to ninth century	27	66
Viking	Ninth to mid-twelfth century	13	43
Early Norman	Mid-twelfth to mid-thirteenth century	18	39

McCormick's (1991b) comprehensive survey of early Norman Irish faunal material concentrated mainly on evidence from Leinster and Ulster. He states that this was primarily due to the collections elsewhere in Ireland being too small, and the provision of only a partial species list. Consequently, the information they provided was sufficient neither in detail nor in quality to allow any accurate assessment of the economy of the period. The sample of bones recovered during the excavations at Kiltiernan, Co. Galway, in the early 1950s was relatively large, but they were too mixed to be of any value in reconstructing the economy of the site. There are, however, a few detailed modern reports of large assemblages of early medieval bones from this country; these include Knowth, Co. Meath, Clonmacnoise, Co. Offaly, and a number of Leinster sites (McCormick and Murray 2007; Soderberg 2003).

The acidic nature of the soils in the northeast and Munster areas of Ireland has affected the quantity of animal bone recovered from these regions (Kelly, D 2005). More recently, sieving strategies have been specifically designed to ensure a more scientific attitude to on-site retrieval methods, particularly where there was a poor survival rate of bone material, such as at Lisleagh, Co. Cork. The waterlogged conditions that prevail on certain urban sites, such as Dublin, were particularly conducive to preservation, and the bones in these instances were generally structurally sound.

Like the English animal bone reports, there were problems with the amount of detailed information provided, many specialists often concentrating on the meat-bearing species, with little reference made to minor mammals and birds. Many site reports did not contain information on the completeness of the dogs, their age, metrical data or whether there was evidence of butchery or pathology. The research was limited therefore to site reports on which the animal bone analysis had been carried out. Consequently Wood Quay, Dublin, which "yielded in excess of two and a half thousand sacks of animal

bones" (Butler 1989, 106), had to be excluded, because the faunal report is still to be published and was not available to the author. This was particularly disappointing, because the waterlogged nature of these deposits dating from the Viking to the Anglo-Norman periods at the Dublin excavations had meant there was excellent bone survival.

In total, data from 53 Irish sites were utilised. These sites are listed in Table 3.2 and their geographical locations are shown in Figure 3.1. No assemblages were examined first-hand but a number of unpublished animal bone reports were obtained from the specialists directly by the author.

Table 3.2. List of Irish sites examined in this study.

Site ID	Site Name	References
1	Lagore Crannog, Co. Meath	Harcourt (1974); McCormick (1987a)
2	Ballynagallagh, Lough Gur, Co. Limerick	McCarthy (2006)
3	Rathgurreen, Co. Galway	Murray (2002)
4	Killanully Ringfort, Co. Cork	Halpin (1995); Mount (1995)
5	Dundalk: Marshes Upper 3, Co. Louth	McCormick (1992)
6	Drogheda: Shop Street, Co. Louth	McCormick (1984)
7	Millockstown, Co. Louth	McCormick (1986)
8	Shrule: Moyne Graveyard, Co. Mayo	McCormick (1987b)
9	Armagh: Cathedral Hill, Co. Armagh	Higgins (1984)
10	Larrybane: Promontory Fort, Co. Antrim	Jope (1961-2)
11	Dublin: Patrick Street, Site B	McCormick and Murphy (1997)
12	Dublin: Patrick Street, Site C	McCormick and Murphy (1997)
13	Rathmullan, Co. Down	Collins (C 1981-2)
14	Beginish Island, Co. Kerry	O'Kelly (1956)
15	Cahercommaun, Co. Clare	Stelfox and Roche (1938)
16	Leacanabuaile Stone Fort, Co. Kerry	O'Riordain and Foy (1941)
17	Ardcloon, Co. Mayo	Roche (1956)
18	Kiltiernan, Co. Galway	McCarthy (1995)
19	Raheen No. 2: Souterrain 1, Co. Cork	McCarthy (1994)
20	Croom 1, Co. Limerick	McCormick (1977)
21	Sluggary, Co. Limerick	McCarthy (2000)
22	Athenry Castle, Co. Galway	McCarthy (1991)
23	Ballynee Souterrain 1, Co. Meath	Butler (1990)
24	Navan: Ditch, Co. Meath	McCormick (2000)
25	Ballinderry Crannog No. 2, Co. Offaly	Stelfox (1941-2)
26	Dublin: Essex Street West	Bermingham (1995);
27	Dublin: Isolde's Tower	Bermingham (1994)
28	Waterford: Bakehouse Lane (E435)	McCormick (1997)
29	Waterford: Peter Street (PS2-4)	McCormick (1997)

30	Waterford: Lady Lane	McCormick (1997)
31	Dublin: South Great George's Street	Simpson (2005)
32	Sroove Crannog, Co. Sligo	Lofqvist (2002)
33	Moynagh Lough Crannog, Co. Meath	McCormick and Murray (2007)
34	Clogher, Co. Tyrone	McCormick and Murray (2007)
35	Clonmacnoise: New Graveyard, Co. Offaly	McCormick and Murray (2007); Soderberg (2003)
36	Doonloughan, Co. Galway	McCormick and Murray (2007)
37	Dublin: Fishamble Street Plot 2 & 3	McCormick and Murray (2007)
38	Dublin: Fishamble Street (Between Banks & Walls)	McCormick and Murray (2007)
39	Dun Eoghanachta, Inis Mor, Co. Galway	McCormick and Murray (2007)
40	Glebe, Co. Dublin	McCormick and Murray (2007)
41	Illaunloughan, Inis Mor, Co. Kerry	McCormick and Murray (2007)
42	Johnstown, Co. Mayo	McCormick and Murray (2007)
43	Knowth, Co. Meath	McCormick and Murray (2007)
44	Dublin: St Audoen's Church	Butler (2006)
45	Strangford Lough: Nendrum Monastery, Co. Down	Murphy (2007)
46	Cloncowan II, Co. Meath	Pipe (2007)
47	Armagh: Market Street, Co. Down	Murphy (2005)
48	Cork: 3-5 Barrack Street, Co. Cork	McCarthy (2003)
49	Cork: Tuckey Street, Co. Cork	McCarthy (2003)
50	Cork: Hanover Street, Co. Cork	McCarthy (2003)
51	Cork: 11-13 Washington Street, Co. Cork	McCarthy (2003)
52	Cork: Tobin Street, Co. Cork	McCarthy (2003)
53	Dublin: Kevin Street Garda Station, Bride St	Simpson (2008)

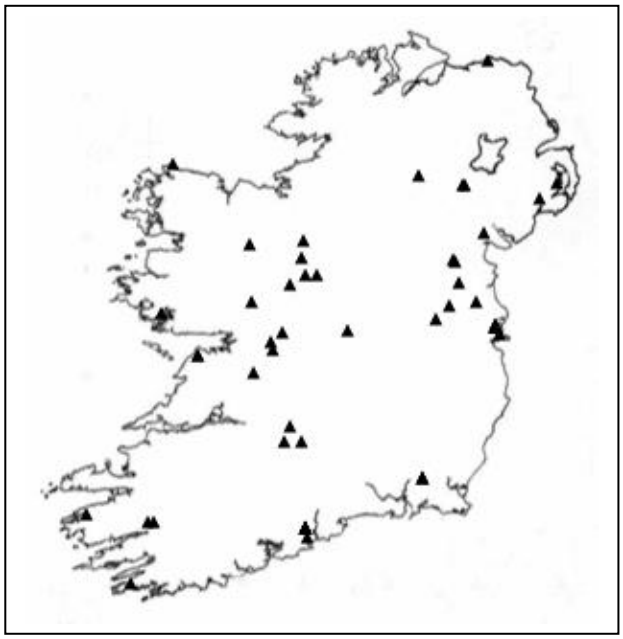

Figure 3.1. The geographical locations of the Irish sites.

3.3 Site Location

Early medieval dog skeletal remains were recovered from sixteen counties in Ireland. Table 3.3 divides Ireland into the four provinces with the number of sites against the number of dogs.

Table 3.3. Total number of sites and dogs divided by provinces.

	Number of sites	**Number of dogs**
Ulster	6	12
Leinster	21	77
Munster	17	37
Connacht	9	22
Total	**53**	**148**

Just over 50% of the dogs were recovered from the Leinster region with a dog-to-site ratio of 3.8. The Leinster province incorporates County Dublin, where more archaeological excavations have been carried out and published, thus more data were available. As mentioned before some Dublin areas had waterlogged soil conditions, which provided good conditions for bone survival. The Munster region had nearly as many sites as Leinster, but the dog-to-site ratio was much smaller at 2.18. McCarthy (1998) observed this similar pattern in animal bones in general from early medieval Munster, which could be the result of a combination of poor preservation and the problems caused by inadequate recovery strategies.

3.4 Site Type

The Irish dataset produced a number of different site types that were not similar to early medieval England, for example crannogs, souterrains and ringforts, although like the English data, dogs were most commonly found on urban sites (37%) (Figure 3.2). The site type with the highest ratio of dogs was crannogs with 5.8 per site compared with urban sites at 2.5. Crannogs were lake dwellings, which were either located on natural islands or constructed on artificial foundations, and are believed to have been occupied by only the wealthy and prestigious in early medieval Irish society (Edwards 1999, 34).

One of the most well-known crannogs was at Lagore, Co. Meath, which to date has produced the largest quantity of animal bones from a non-urban Irish site of this period.

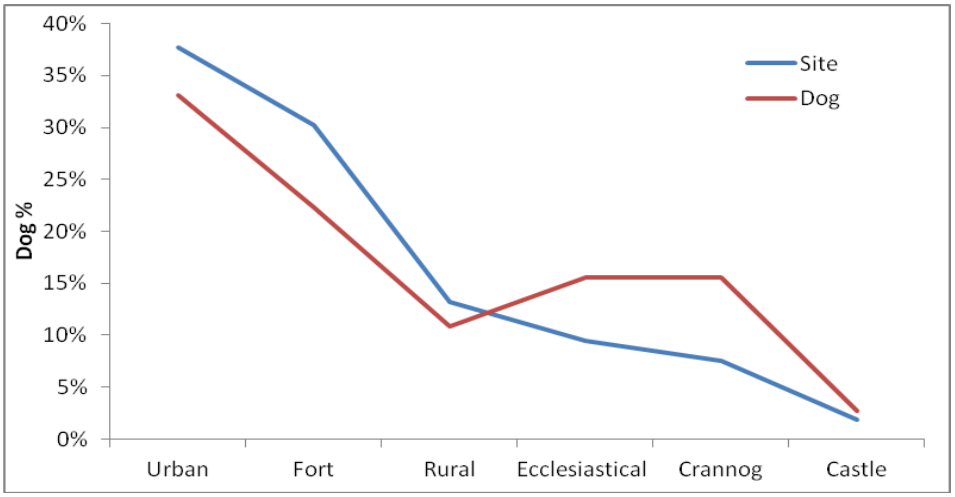

Figure 3.2. Percentage of sites and dogs by site type.

Three crannogs were in the top ten sites (Table 3.4), but unfortunately Lagore crannog and Ballinderry crannog No. 2 were excavated over fifty years ago, with fairly limited animal bone reports. The site with the most dogs recovered was New Graveyard, Clonmacnoise, Co. Offaly. It has been described as a monastic city and for this research has been classified in the ecclesiastical category. A detailed animal bone report for the New Graveyard site excavations was produced as a doctoral thesis (Soderberg 2003).

Table 3.4. Top ten sites for dogs from *c.* AD 400 to 1250.

	Site name	**Number of dogs**	**Site type**
1	Clonmacnoise: New Graveyard, Co. Offaly	14	Monastery
2	Dublin: Fishamble St (Plot 2 & 3)	12	Urban
3	Lagore Crannog, Co. Meath	10	Crannog
4	Waterford: Peter St (PS 2-4)	8	Urban
5	Waterford: Lady Lane	7	Urban
6	Ballinderry Crannog No. 2, Co. Offaly	5	Crannog
7	Moynagh Lough Crannog, Co. Meath	5	Crannog
8	Knowth, Co. Meath	5	Ringfort
9	Athenry Castle, Co. Galway	4	Castle
10	Rathmullen, Co. Down	4	Rath

For analysis purposes, all the fort types have been grouped together, such as ringforts, promontory forts, stone forts and hillforts. Ringforts were a common site in early

medieval Ireland, consisting of a circular space defined by a bank of earth or stone and approximately 30m in diameter (Edwards 1999, 13). Ringforts are believed to have a utilitarian purpose with houses and animal pens excavated within the banks, but like the crannogs they may have had other meanings (Fredengren 2002, 213). Five dogs were recovered from the high-status ringfort at Knowth, Co. Meath. This complex, multi-period site became a ringfort when two concentric ditches were dug around the prehistoric mound during the seventh-eighth century AD (McCormick and Murray 2007, 1). A similar multi-phase site was Clogher, Co. Tyrone, where two dogs were excavated from the deposits in the Iron Age ditches around the fort. The dogs dated to the Early Christian period and their presence consisted of just a few bones (McCormick and Murray 2007, 205-9). Only one dog was recovered from a promontory fort, at Larrybane, Co. Antrim (Jope 1961-2). Promontory forts provided an effective defence with the coastline on one side and ramparts on the other (Proudfoot and Wilson 1961-2). The dog remains consisted of only one bone.

The rural settlements category included souterrains. Souterrains were man-made stone chambers or passages that have been located in deserted fields or within other sites, such as ringforts or monastic settlements (Edwards 1999, 29). The great majority of souterrains were drystone-built, although earth-cut and rock-cut examples are also known, especially in Co. Cork.

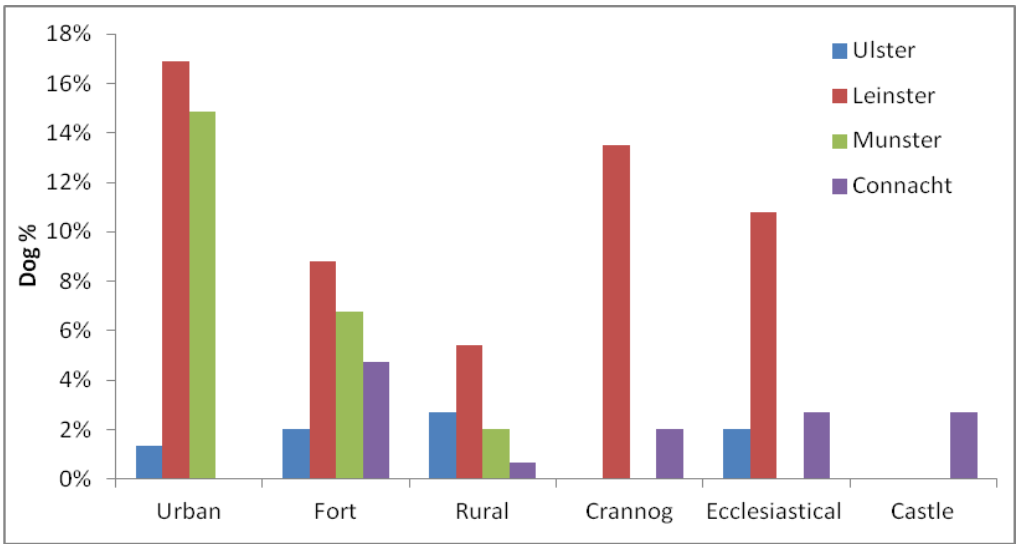

Figure 3.3. Percentage of dogs by site types and provinces.

The Leinster province dominated all the site types, except for the castle. The castle category consisted of only one site, Athenry Castle, Co. Galway, where four dogs were excavated from the mid-thirteenth-century contexts. The urban sites in the Leinster and Munster provinces were principally made up of dogs from the Dublin, Waterford and Cork excavations. Crannogs were primarily found in Leinster province, except for the Sroove Crannog, Co. Sligo, where three juvenile dogs were excavated from the what is believed to be a low-status crannog (Lofqvist 2002).

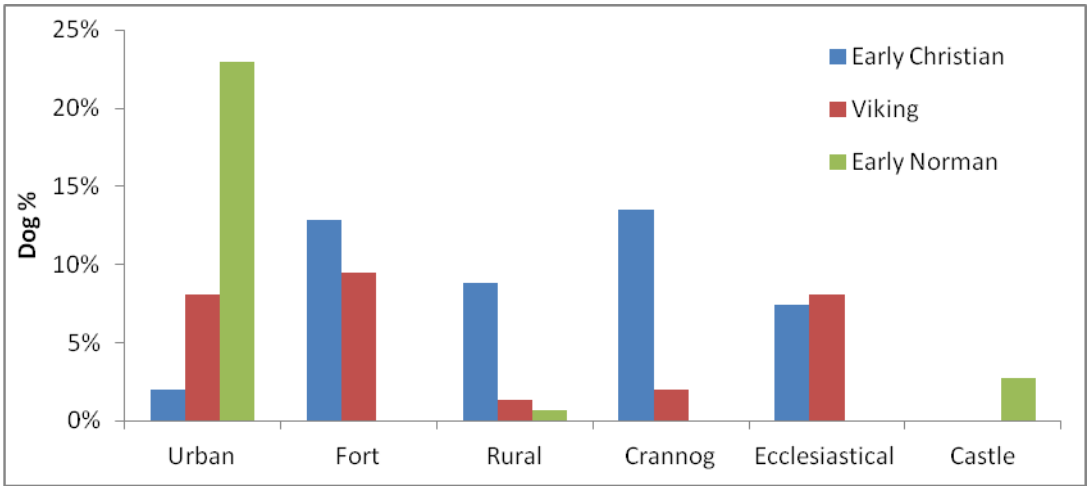

Figure 3.4. Percentage of dogs by site types and chronological periods.

As expected, dogs were rarely observed on urban (or proto-urban) sites until the Viking period onwards (Figure 3.4). This was due to urban centres not being established until the foundation of the Viking trading ports in the ninth and tenth centuries, such as Dublin and Waterford. There was, also, the development of urban communities around the larger monasteries, for example Clonmacnoise, Co. Offaly, during the second half of the Early Christian period (Soderberg 2003, 4).

All the dogs recovered from crannogs dated to the Early Christian period, except for the three from Sroove Crannog. Fredengren (2002, 246) believes that Sroove Crannog was being used by less wealthy groups compared to other crannogs, such as Lagore, and was utilised by the wider community for a longer period of time.

3.5 Taxa Ratios

The taxa ratios were taken from all available animal bone reports, in order to establish the proportion of dogs to other species recovered. There were forty-one sites with NISP animal bone reports, twenty-eight sites with MNI reports, but only eighteen provided both NISP and MNI information.

A general overview of the slaughter patterns during the early medieval period in Ireland showed that cattle were the most common animal bone recovered in the NISP counts by nearly twice, followed by pig, and then sheep/goat, with these three species making up 96.2% of the animal bone assemblage. During the early Norman period, there was slightly more sheep/goat than pig, which may have been due to rearing practices. McCormick (2008) pointed out that cows were of exceptional importance in the lives of the early medieval Irish, which led to the cow becoming a basic unit of wealth, and a person's status was based on the number of cows they had. From the MNI data, the picture was less dramatic, with cattle still the most common in all periods, except during the Viking period, when sheep/goat were the highest, the three main meat animals making up 91.3% of the animal bone assemblage. With the arrival of the Anglo-Normans in AD 1169, there was the establishment of more urban centres and introduction of new farming methods, such as utilising the horse for ploughing (McCormick 1991b). This led to changes in the fauna with the introduction of new species, such as fallow deer and rabbits, for both economic and social reasons.

Dogs only made up 0.7% of the total NISP count, with a higher proportion in the MNI at 1.8%. There was an interesting outlier, in the early Norman period, with 75 cats, of which 66 were excavated from Waterford city excavations. Their age profile indicated that they were generally being killed at a young age, and McCormick (1997) suggested they were being bred and killed for their pelts, then sold on the export and domestic fur market. This practise had also been recorded from other sites dating to the early Norman period from Ireland, such as Fishamble Street, Dublin, as well as over in England from the York excavations (O'Connor 1989).

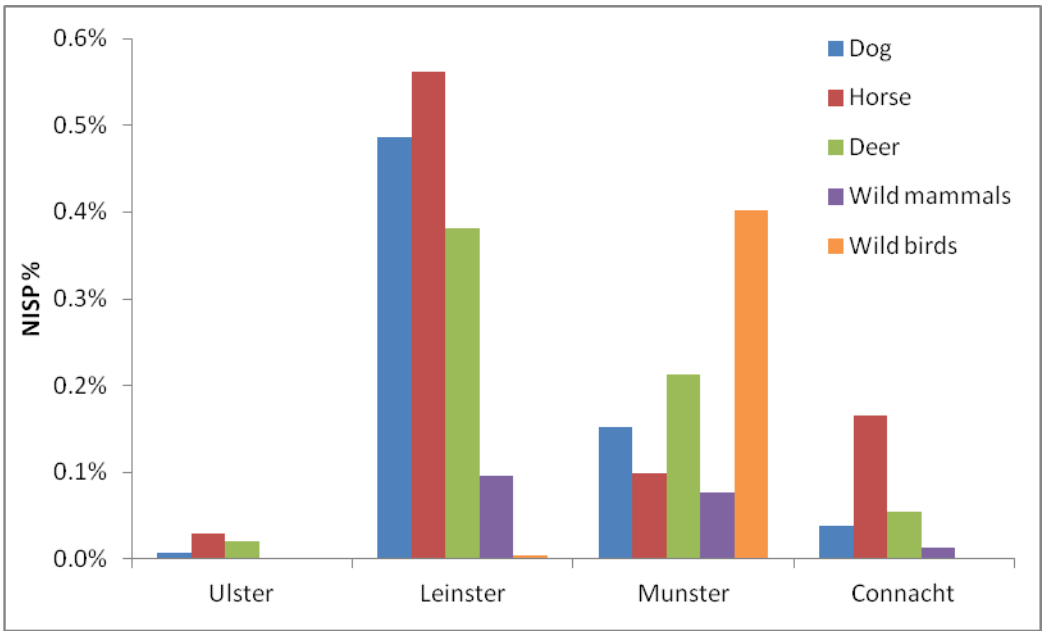

Figure 3.5. NISP percentages for dog, horse, deer, wild mammals and wild birds by provinces.

Figure 3.5 clearly shows that there was very little data available from the Ulster province, consisting of only four sites. Leinster provided the most NISP data, with dogs making up nearly 0.5%, with a peak in the horse bones. Munster showed a very different pattern, with a high peak in wild birds, followed by red deer and dog bones. This peak in wild birds was due to the large amount of wild bird bone recorded at the Early Christian monastic site of Illaunloughan, Inis Mor, Co. Kerry. The people on the island of Inis Mor were exploiting the seasonal bird, Manx shearwater, which made up 70% of the wild bird assemblage. Red deer was also recovered from this site, but it mainly consisted of antlers suggesting it was part of the industrial waste. Only the red deer was native during the early medieval period in Ireland with the fallow deer being introduced around AD 1244 (McCormick 1991b).

Dogs only made up 0.04% of the NISP count from the Connacht province which consisted of six sites. A peak in the horse bones recovered was due to the high quantity excavated from Sroove crannog, Co. Sligo. There was no evidence on the horse bones that they were being used as a food source and Lofqvist (2002) commented that the early Church had introduced a food taboo as regards eating horse, but this was sometimes ignored (Kelly, F 1997, 352–3).

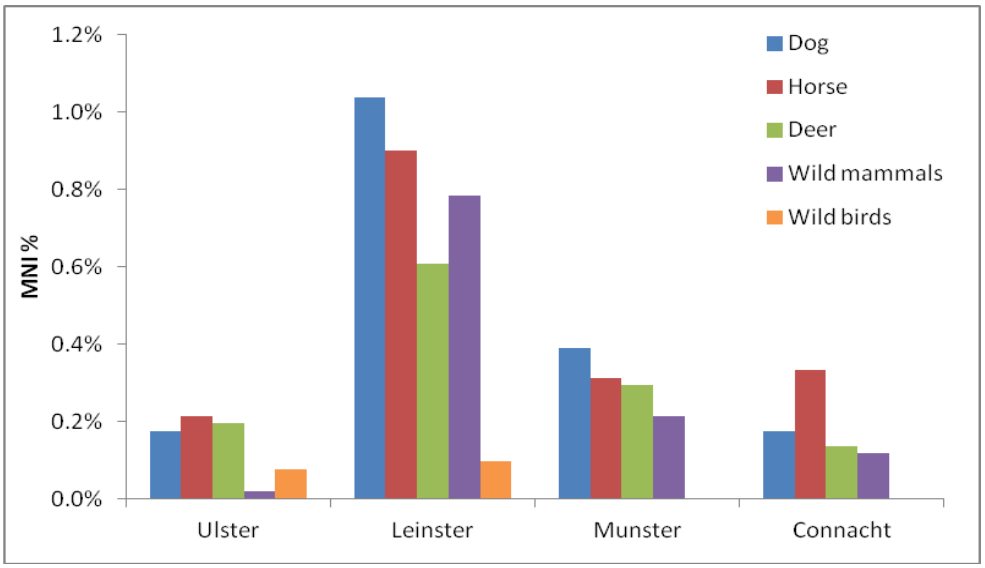

Figure 3.6. MNI percentages for dog, horse, deer, wild mammals and wild birds by provinces.

The MNI count by province (Figure 3.6) exhibited a slightly different pattern to the NISP results with dogs generally higher in proportion to the other minor animal species in the Leinster and Munster areas. This is probably due to the small assemblage size leading to distortion in the minor species. There was, however, a peak of wild mammals in Leinster, which comes from a high number recovered from the Dublin and Knowth excavations. Like the NISP count, there was a peak in the horse MNI in the Connacht province, which was the result of the large number excavated from Sroove Crannog.

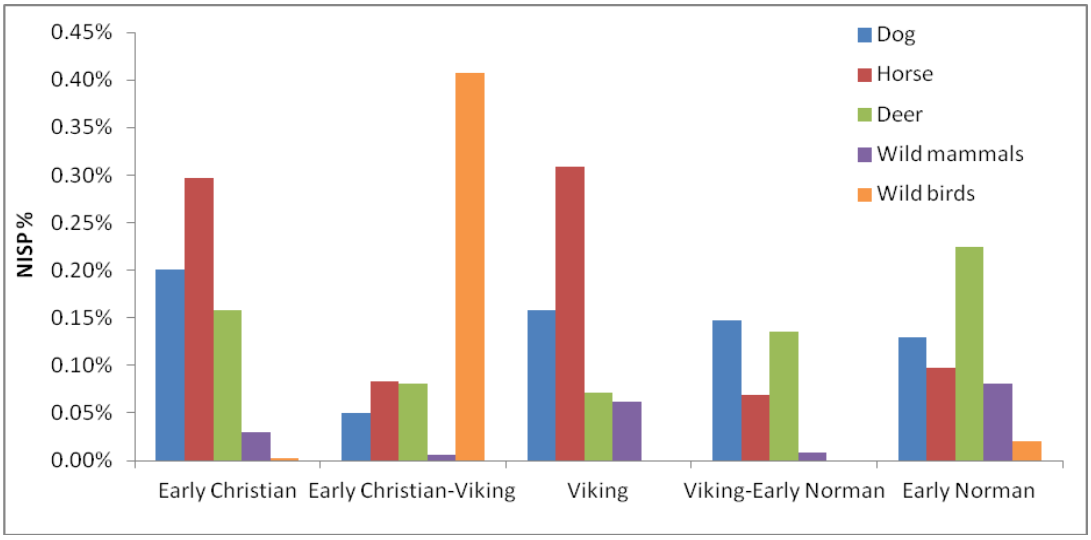

Figure 3.7. NISP percentages for dog, horse, deer, wild mammals and wild birds by chronological periods.

Throughout the chronological periods there was a steady NISP number for dogs between 0.15% and 0.2% (Figure 3.7). There was, however, a high quantity of wild bird bones noted in the Early Christian-Viking period, which was primarily due to those recorded from Illaughloughan, Inis Mor (McCormick and Murray 2007, 239). Unfortunately no MNI was provided for the wild birds on this site, so this information could not be included in Figure 3.7. Horse NISP count was much higher in the Early Christian through to the Viking period but dropped going into the early Norman period with deer now becoming prominent. There was a peak in the wild mammals during the early Norman period. A number of metacarpal and metatarsal wolf bones were recovered from a thirteenth century context at Peter Street, Waterford, which McCormick (1997) believed were attached to a pelt, due to the lack of any other bones. Wolf paw bones were also reported to have been recovered from excavations carried out at Ferrycarrig, Co. Wexford.

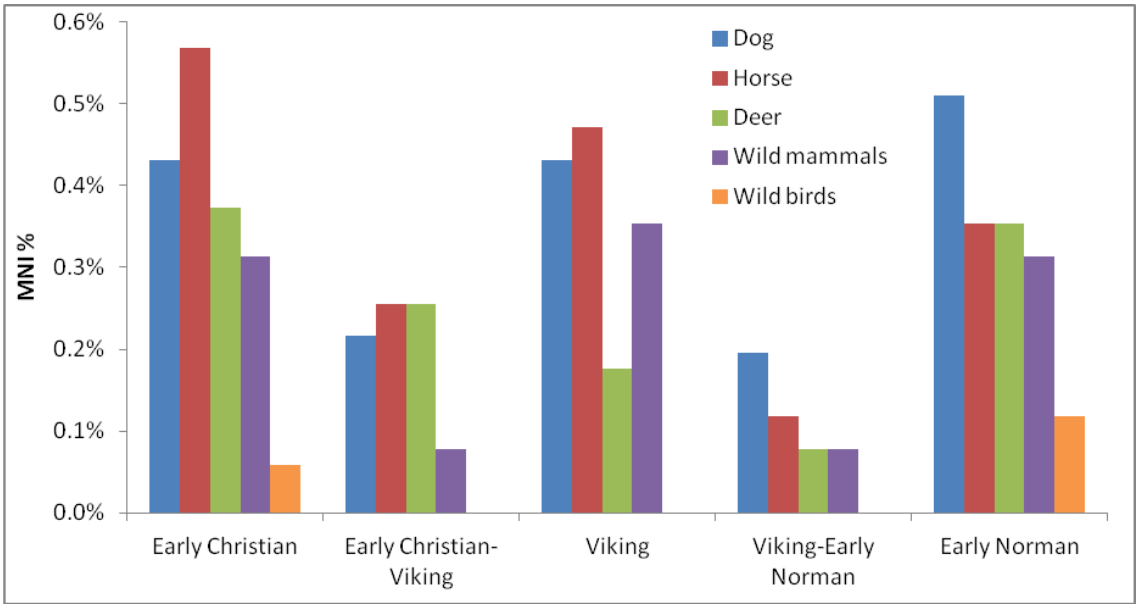

Figure 3.8. MNI percentages for dog, horse, deer, wild mammals and wild birds by chronological periods.

From the MNI counts horses were the most prominent of the minor species during the Early Christian and Viking period, with dogs becoming more frequent by the early Norman period (Figure 3.8). Deer bones were more common in the Early Christian and early Norman periods but no peaks were recorded. There was a peak in the wild mammal bones during the Viking period, primarily from the Dublin excavations.

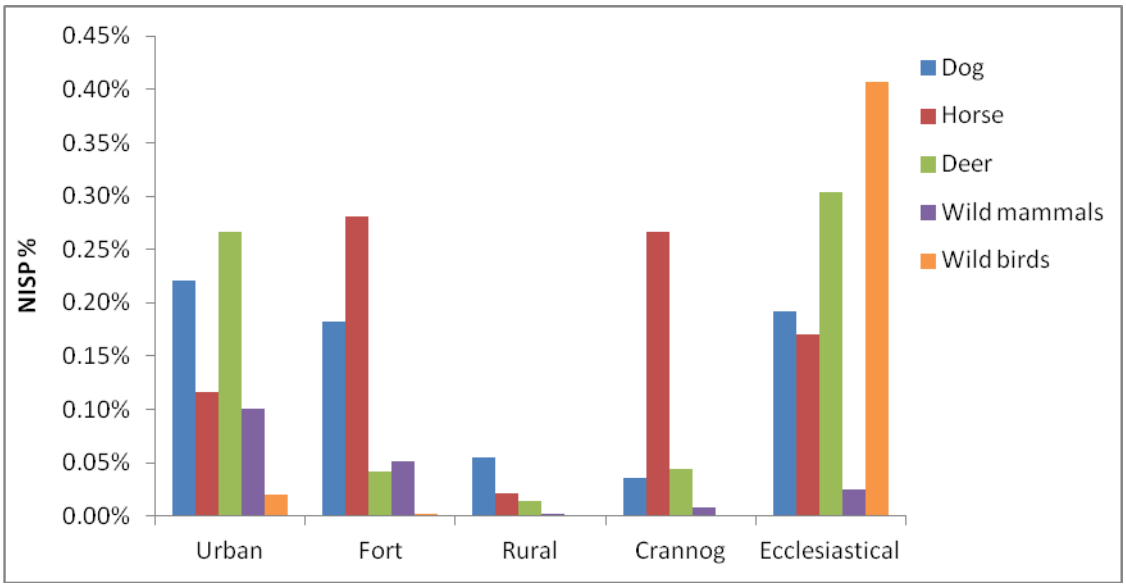

Figure 3.9. NISP percentages for dog, horse, deer, wild mammals and wild birds by site types.

The NISP counts by site type illustrate that dogs were prevalent on urban, fort and ecclesiastical sites, but with peaks of horse bones from forts and crannogs (Figure 3.9). Deer were the most common minor species on urban sites and were over 0.3% on ecclesiastical settlements. At the monastic site of Shrule, Co. Mayo, there was evidence of hunting taking place due to a large number of red deer bones recovered along with otter bones from the enclosure ditch (McCormick 1987b). Unfortunately there was only a small amount of NISP data available from the rural settlements, but from this limited information, it was noted that dogs were the most prevalent of the minor species. The peak in the wild birds from ecclesiastical sites was solely from the Illaunloughan monastery as mentioned earlier.

The lack of raptor bones identified from the early medieval bone reports would suggest that hawking was not being actively carried out during the Early Christian period. It was only in the early Norman period that there was documentary evidence to suggest that hawks, such as the goshawk and sparrowhawk, were viewed as valuable assets and were being traded and exported to England (Kelly, E 1991).

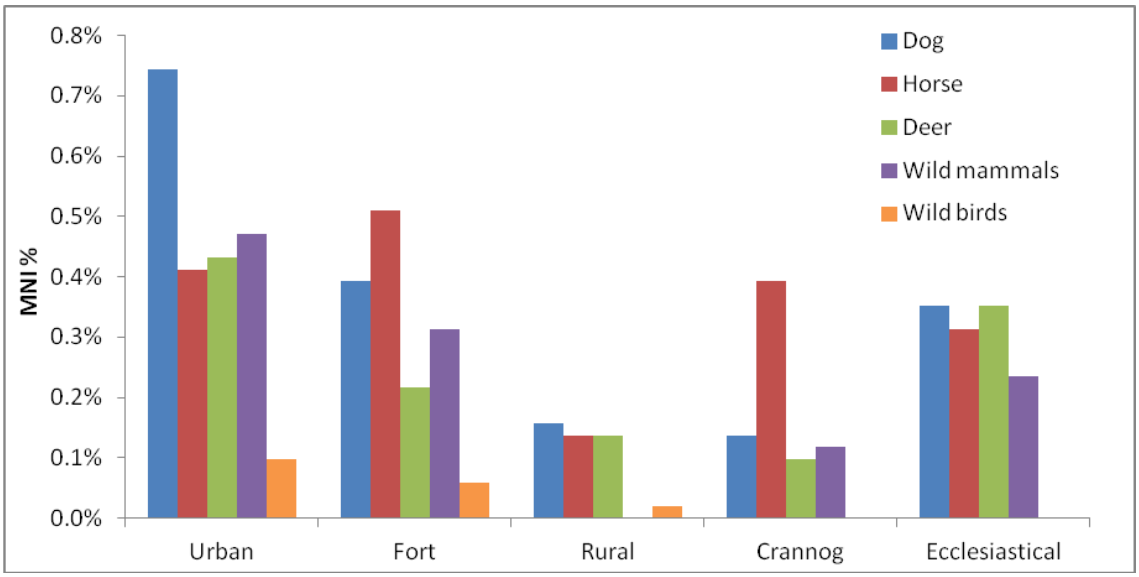

Figure 3.10. MNI percentages for dog, horse, deer, wild mammals and wild birds by site types.

Comparing the dog MNI with the NISP counts, suggests that dogs were recovered as scattered remains, with dogs having a higher percentage against the other minor species. Figure 3.10 shows dogs to be the most prevalent for the urban and ecclesiastical settlements, with horses more prominent from forts and crannogs. Wild mammals were noted on all site types, apart from rural settlements. Murray (2002) suggests that hunting was being practised at the ringfort at Rathgurreen, Co. Galway, with the presence of red deer and hare. The animal bone assemblage indicated that this community was fairly self-sufficient and exploited seasonal hunting with evidence of shellfish, fish and birds. This was also noted at the promontory fort at Larrybane, Co. Antrim, where sea fish bones were recorded in high quantities, indicating that fishing was being carried out.

Unlike the English NISP and MNI data, there was a lack of deer bones recorded from across the sites, which could indicate that either deer hunting was not being carried out to any great degree or the evidence for deer has not been recovered with the possibility that the carcasses were being disposed of away from the site itself. McCormick (1991b) observed that although deer hunting was referred to in early medieval Irish literature, the bone record indicated that deer was not an important food source. It was noted that a high percentage of the red deer recorded consisted of antler fragments, rather than bone. This could well imply that antler working was being carried out on site, for example at Sluggary Ringfort, Co. Limerick, and Ballynee souterrains, Co. Meath. Unfortunately

no NISP or MNI counts were available for the Cahercommaun fort, Co. Clare, but Stelfox and Roche (1938) noted the presence of a large quantity of red deer bones, with a discrepancy in the bones of certain parts of the animal. There were only four metacarpals and five metatarsals recorded, compared with 77 distal ends of the humerus. This could indicate that there was some kind of selection taking place, for example certain cuts of meat or the bones were being used for weapons, tools or ornaments, no evidence of their use was found within the archaeological records.

3.6 Burial Location

Under 60% of the dog records had burial location information, covering a range of different contextual locations (Table 3.5). Interestingly, the Irish data showed a lack of discrete, complete burials, and primarily consisted of scattered remains recovered from ditches and other features.

Table 3.5. Burial locations by number and percentage of dogs.

	Number of dogs	**Percentage of dogs**
Ditch	23	16%
Crannog	13	9%
Occupation layer	8	5%
Souterrain	6	4%
Outside palisade	5	3%
Backfill	4	3%
Ringfort	4	3%
Silt layer	4	3%
Cemetery/Church	2	1%
Deposit	2	1%
Midden	2	1%
Burial	1	1%
Feature	1	1%
Fill	1	1%
Furnace	1	1%
Hut	1	1%
Lake deposit	1	1%
Quay	1	1%
Trackway	1	1%
Wall	1	1%
No information	44	55%

Table 3.5 highlights the wide range of burial locations from which the dogs were excavated. It can be clearly seen that ditches were the most prevalent at 16%, followed by crannogs at 9%, then occupation layers at 5% and all the others were under 5%.

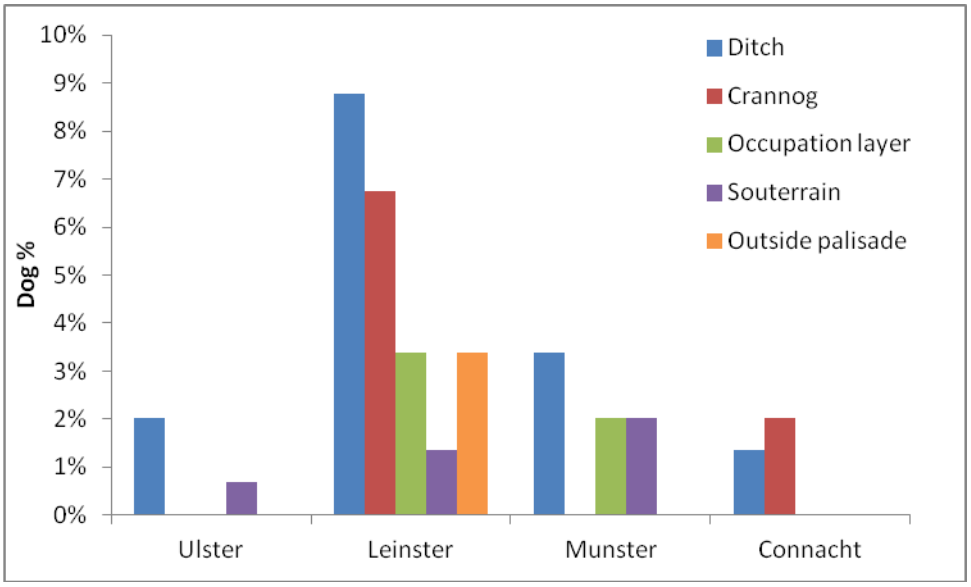

Figure 3.11. The top five burial locations by provinces.

Over half of all the dogs with burial location information came from Leinster, which was mainly due to the detailed animal bone reports. As would be expected this province had the most varied contexts with examples from the top five burial locations. Ditches were the only burial location to be recorded from all four provinces and the most common except for Connacht. Backfill was the most common burial location from this province, which consisted of four mature dogs dated to the mid-twelfth century AD recovered from backfill deposits over the ground surface before the construction of Athenry Castle, Co. Galway (McCarthy 1991). Unfortunately, only seven dogs from Ulster provided any burial location information with three of these from ditch contexts and one from a souterrain at Rathmullan, Co. Down. The animal bone remains excavated from souterrains generally consisted of food refuse from human habitation as noted at Rathmullan, Co. Down, which consisted mainly of meat mammals along with dog, horse and chicken bones and molluscs, and an exotic whale scapula (Collins, C 1981-2). A partial dog skeleton was excavated from a souterrain just outside the stone fort of Cahercommaun, Co. Clare, with fragmentary remains recovered from within the fort.

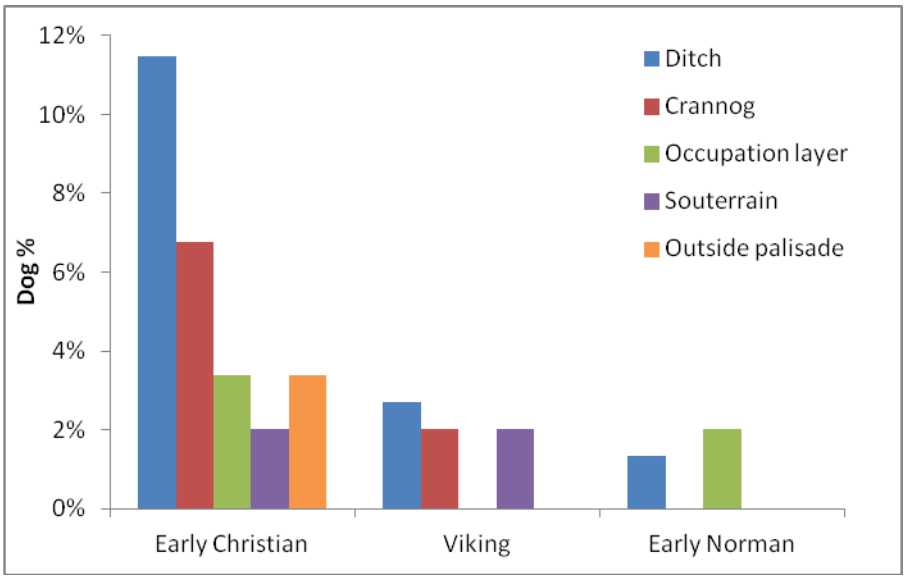

Figure 3.12. The top five burial locations by chronological periods.

Figure 3.12 illustrates the top five burial locations through the chronological periods. Ditches were the only context that dogs were recovered from in every period. Dogs were only recovered from crannogs and souterrains during the Early Christian and Viking periods, when these settlement types were active.

Four dogs were excavated from the high-status crannog at Moynagh Lough, Co. Meath, and were recorded to have come from the 'outside palisade' context, which was a wooden palisade that had been built to enclose the crannog, during the seventh to eighth century AD (Bradley 1984-5). A large quantity of animal bone was recovered from this area, and it is believed that this was refuse being disposed of by throwing it into the lake.

Only two dogs were recovered from a midden or pit deposit from early medieval Ireland. One dog was recovered from a midden, dated to the Viking period, and located in a dry-stone house excavated on Beginish Island, Co. Kerry (O'Kelly 1956). This was one of a number of houses that had formed a small settlement on the Island in the Irish Sea between Valencia Island and the Iveragh peninsula. The midden deposit was found in House 1, which was a pit house with a sunken floor 1.5m below the exterior surface. Sheehan *et al.* (2001) comment that the house's construction was similar to the SFBs excavated from Anglo-Saxon England.

The second near complete dog was recovered from a possible cess pit deposit at Kevin Street Garda Station, Dublin (Simpson 2008). The feature dated to the late twelfth century and also contained a male human skull (17-25 years old). It was believed the dog was placed in the pit soon after dying, fully fleshed along with the human skull. This is an unusual burial, and a possible example of someone who had committed a crime, as the placing of a dog within a grave was seen as a mark of offence to the dead person and his relatives. Giraldus Cambrensis wrote in *The Conquest of Ireland* that Dermitius' father was killed in Dublin by the people of the city and to insult his family further they buried his corpse with a dog (Forester 2000, 26).

Interpretation of the dogs recovered from early Norman period deposits was limited, due to lack of specific location provided. Many records had ambiguously described burial locations, such as 'fill', 'silt layer' and 'deposit'. Two dogs were recovered from the thirteenth-century river silt deposits outside Isolde's Tower, which was part of the walled defences of medieval Dublin (Bermingham 1994). Only a small quantity of animal bone was recovered from this area, which would suggest that it was not a regular dumping area for refuse.

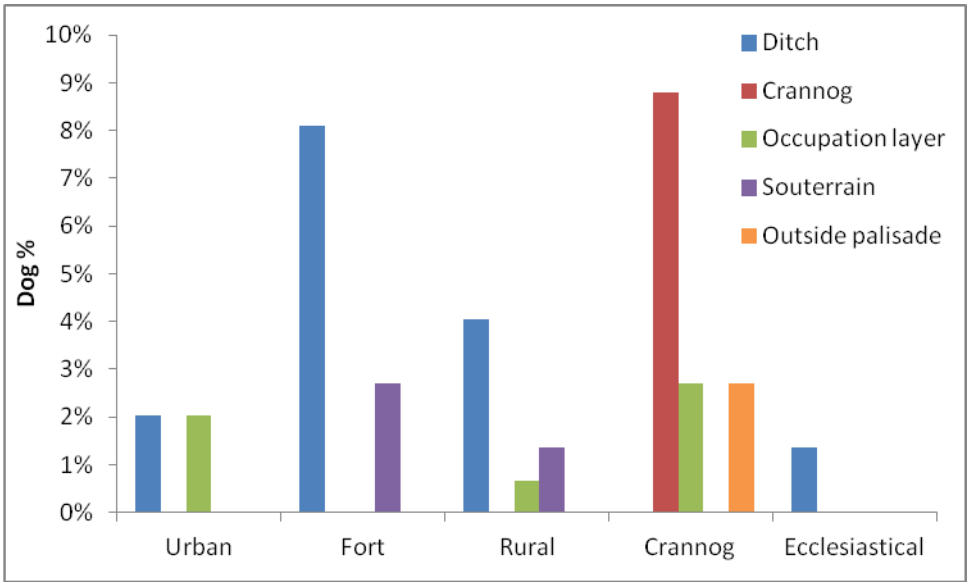

Figure 3.13. The top five burial locations by site types.

As expected, ditch was the most common burial location from fort-type settlements. A typical example was a dog recovered from the fosse around the ringfort at Ardcloon, Co. Mayo. The fosse appears to have been used as a rubbish dump during the late

seventh to early eighth century AD, with a large quantity of animal bone recovered and also the contents of hearths (Rynne 1956). Two dogs were recovered from the enclosure ditch around the Marshes Upper ringfort-type settlement at Dundalk, Co. Louth (McCormick 1992). One of these dogs was made up of a partial skeleton and measured just over 60cm tall. The contents of this Early Christian enclosure ditch suggested that it had been filled over a short period of time and consisted of general food refuse. The prehistoric fort at Navan produced evidence of two dogs from the upper levels of a ditch at Navan Fort dated to AD 380-590 (McCormick 2000).

Ditches were also the most common burial locations for rural settlements. Soderberg (2003) observed that on rural settlements dogs were recorded mainly from the exterior spaces, such as ditches, whereas on urban settlements, they tended to be spread more evenly throughout the site, although this was not the case at Cathedral Hill, Armagh, where a dog was recovered from a substantial ditch around the enclosure (Higgins 1984).

Dogs were recovered from the outside perimeters of crannogs, with five from the outside palisade at Moynagh Lough as mentioned earlier. Also, one was found in the mud deposits of the lake at Ballinderry Crannog No. 2, Co. Offaly. Many of the crannog animal bone reports have not specified where in the crannog the dogs were excavated from, so their burial location has been classified as 'crannog' in this database. But four dogs from Ballinderry Crannog No. 2 were described as coming from occupation layers, dated to the eighth century (Hencken 1941-2). At Lagore Crannog, Co. Meath, Hencken (1950) suggested that animal bone had been used as building material, as he had observed large amounts around the edges of the crannog, possibly forming a foundation and stabilising the palisade, whereas Lynn (1985/6) believed that the animal bones on crannog sites were simply the remnants of occupation.

Whilst a number of dogs were recovered from urban sites, there was unfortunately limited information available. In Cork, McCarthy (2003) notes that dogs were most commonly located on the backyard surface deposits, indicating that residents disposed of their animal corpses onto exposed areas of ground at the rear of their dwellings.

Unlike the English dataset, only one dog was identified from a grave context. The dog was found in a burial, which has been described by Simpson (2005) as part of a Viking warrior grave at South Great George's Street, Dublin. The dog skeleton was part of an animal bone assemblage excavated from a young male grave, which included cattle, sheep/goat, pig and horse. The animal bones were not thought to be part of the grave goods, and there was no sign of any taphonomic processes having taken place, indicating that they had been buried quickly. The animal bones could have been deposited in the grave merely as a convenient place to dispose of rubbish or they could have had a more significant meaning as noted in the dog recovered from Kevin Street Garda Station, Dublin.

Utilising disused areas for dumping domestic waste was common practice in urban sites, for example the deliberate infilling of the quayside, at Shop Street, Drogheda. A dog mandible was part of the animal refuse excavated from this area and the deposits were believed to have come from a number of sources (McCormick 1984). At Killanully ringfort, Co. Cork, a dog was excavated along with a collection of animal bone from a disused furnace (Mount 1995).

On the monastic site of Kiltiernan, Co. Galway, dog remains were recovered from a number of different burial locations; the cemetery, church and the enclosure wall, but no dog bones were found in the house contexts, even though a large quantity of animal bone was excavated from there (McCarthy 1995). At the Nendrum monastery, Strangford Lough, Co. Down, three dogs were recovered from the silts of the dam around the tide mill that served the community (McErlean and Crothers (eds) 2007).

3.7 Completeness of Skeletons

Like the English data, the completeness of dogs was divided into five categories; 10%, 25%, 50%, 75% and 100%. For this study, the author used her own judgement in determining which category each dog fitted. All the dogs had completeness data, but as mentioned previously, there was a lack of discrete dog burials, which meant that over 96% of the dog skeletons were recorded as 10% complete, with 2% at 25%, only 1% at 50% and 75%. No dogs were recorded in complete condition.

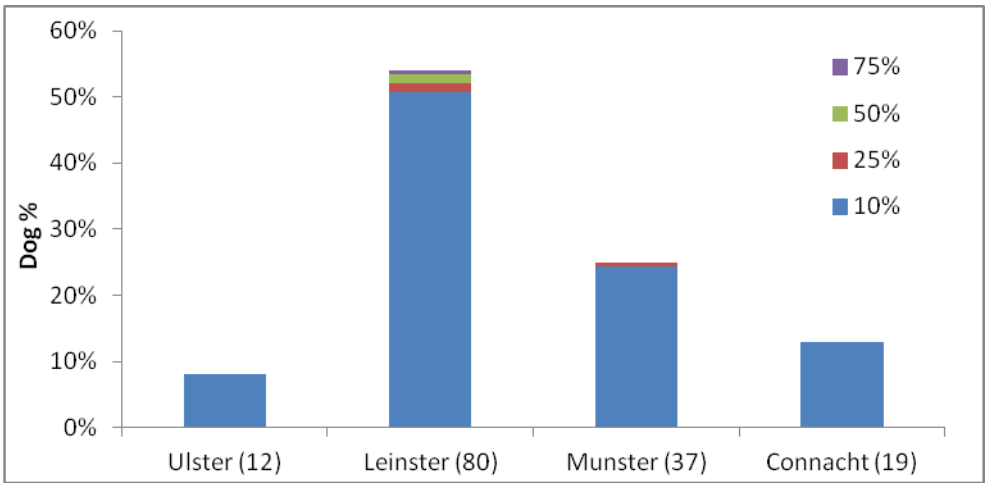

Figure 3.14. Completeness data of dogs by provinces (number of dogs).

As Figure 3.14 illustrates, only Leinster and Munster had any dogs that were more than 10% complete. The preservation of the bones was greatly affected by the soil conditions and taphonomic processes. At the ringfort site at Killanuilly, Co. Cork, over half of the identified animal bone assemblage consisted of teeth, which was due to the natural soil conditions (Halpin 1995). The acidic soil conditions in this region caused the porous bones to disintegrate through time, leaving just the more durable tooth enamel. This was also observed in County Louth, for example at the Marshes Upper, Dundalk, and Millockstown sites. McCormick (1992) noted at Millockstown that the bones were soft and wet in the soil and when removed began to disintegrate, this led to problems with interpreting the ageing profiles for the animals and signs of butchery marks within the assemblage.

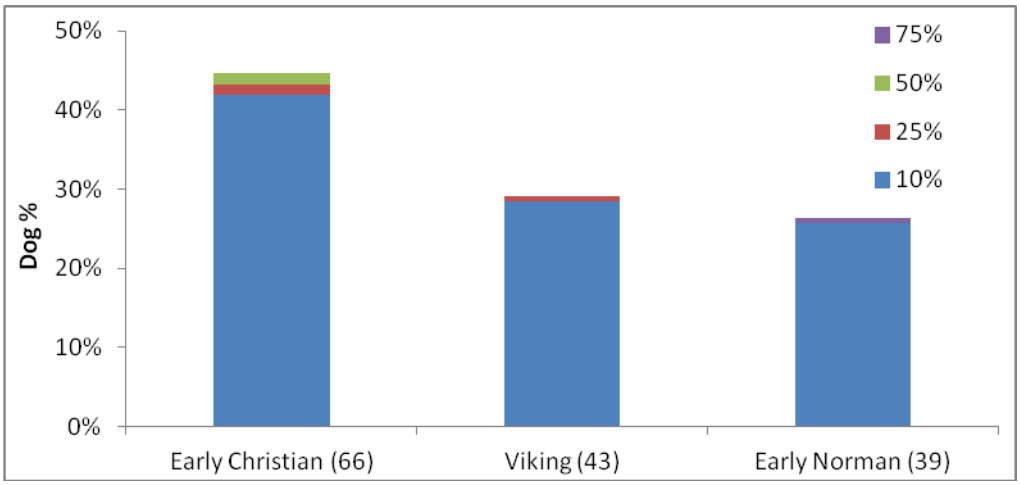

Figure 3.15. Completeness data of dogs by chronological periods (number of dogs).

The only dogs recorded at 50% complete were two puppies recovered from the ditch contexts at Cloncowan II, Co. Meath, dated to the fifth to sixth century (Pipe 2007). They were partially complete skeletons, so could be aged to a few months old at the time of death. The only Viking period dog above 10% completeness was from the enclosure ditch to the ringfort-type settlement at Upper Marshes 3, Dundalk, Co. Louth and fitted into the 25% complete category. As mentioned above, there was poor bone preservation on this site, but over fifty dog bones were excavated from its ditch, with all but one from a single skeleton (McCormick 1992). All the dogs from the early Norman period fitted into the 10% complete category, except for one dog at 75% complete from Kevin Street Garda Station, Dublin. This dog was recovered from an undisturbed pit deposit, which had led to the good preservation of the skeleton.

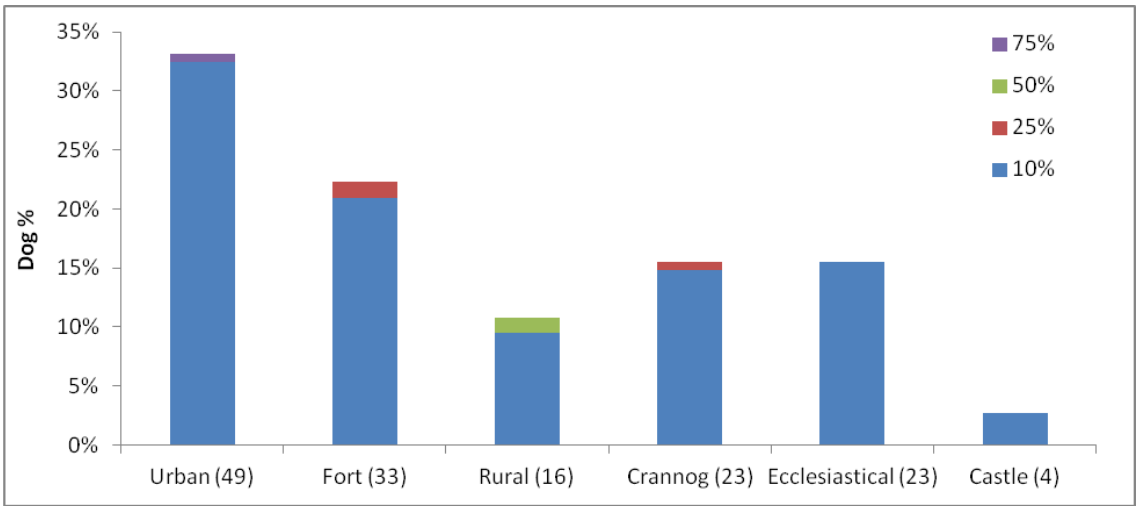

Figure 3.16. Completeness data of dogs by site types (number of dogs).

All the dogs recovered from urban, ecclesiastical and castle sites were only 10% complete or less, except for the Kevin Street Garda Station, Dublin, dog. McCarthy (2003) commented on the small quantities of dog bones recorded over the excavation sites around Cork, with the majority coming from backyard surface deposits. This was the case with the Dublin sites excavated, for example, at Isolde's Tower. Only the scattered remains from two dogs were recovered from the thirteenth-century river silt deposits outside the tower, which was part of the walled defences of medieval Dublin (Bermingham 1994).

Just one dog was recovered over 10% complete condition from a crannog, and Lofqvist (2002) notes that at Sroove crannog, Co. Sligo, the animal bones were in very poor condition, with very few complete bones. This was due to bones being exposed to the weather elements throughout the centuries, as well as apparently being walked upon by people when the crannog was in use.

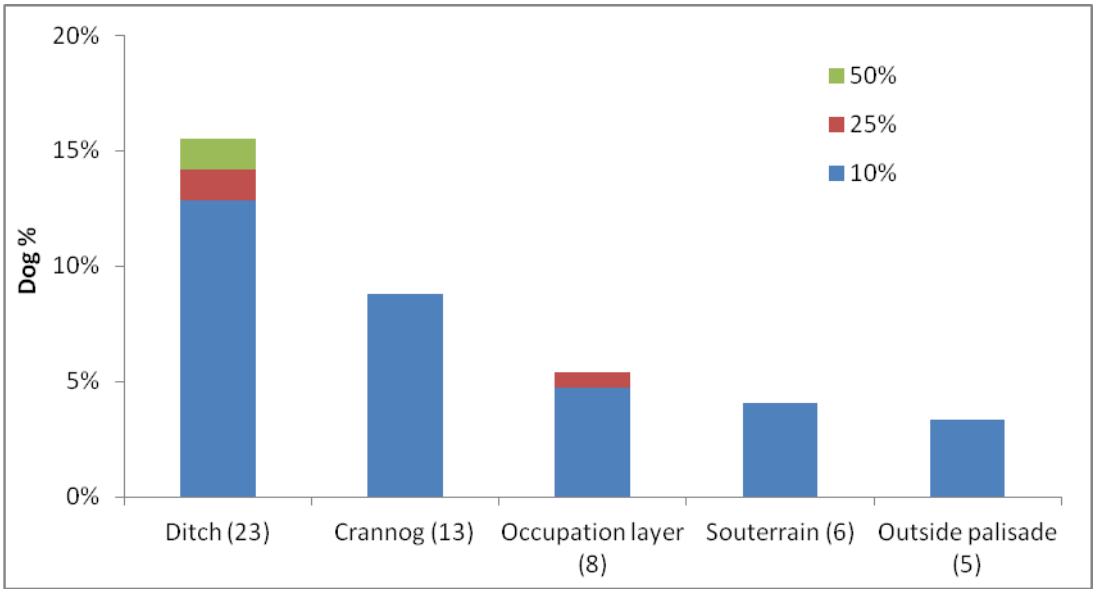

Figure 3.17. Completeness data of dogs by the top five burial locations (number of dogs).

There was a dog recovered from the occupation layers at Ballinderry crannog no. 2 in 25% complete condition. The dog was described by the Stelfox (1941-2, 72) as belonging to a "powerful breed of dog". The other four dogs from this site had not been so well preserved, which may have been due in part to the size of the bones. All the other more complete dogs were recovered from ditch contexts, such as the partial skeleton excavated from the bottom of the ditch at Croom 1 Ringfort, Co. Limerick, and dated to the Early Christian period (McCormick 1977).

3.8 Age Profile

The database developed for this research recorded the ages given in the archaeological reports and has placed them into six categories: foetal/neonatal; puppy (newborn to four months); immature (five months to one year); young adult (a year to two years old), adult (two years onwards) and old or mature (only assigned to those described as such

in the bone reports). Just over 20% of dog records provided age information. Figure 3.18 shows the breakdown in the age profiles. Interestingly there were no foetal or neonate dogs recorded from any of the early medieval Irish sites.

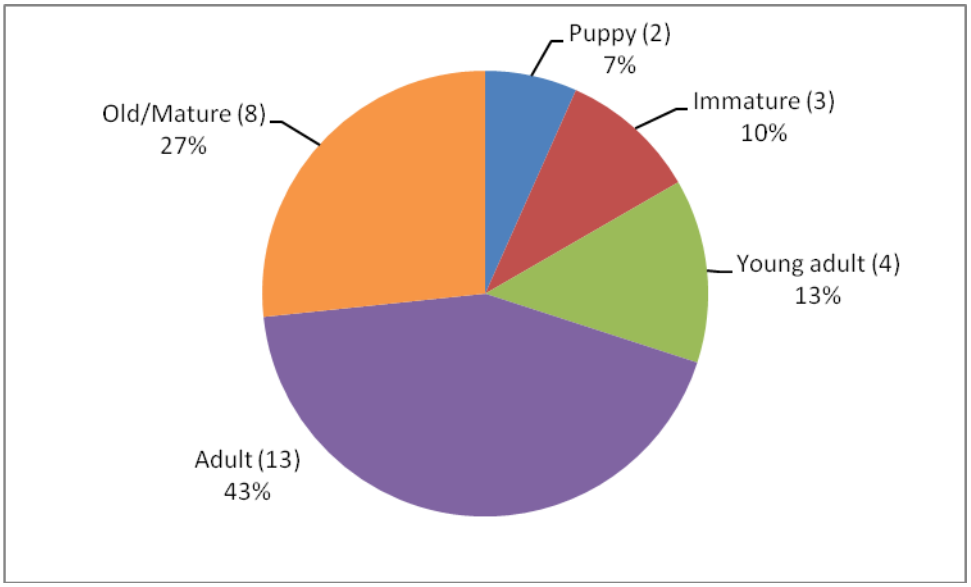

Figure 3.18. Age profile of the dogs (number of dogs).

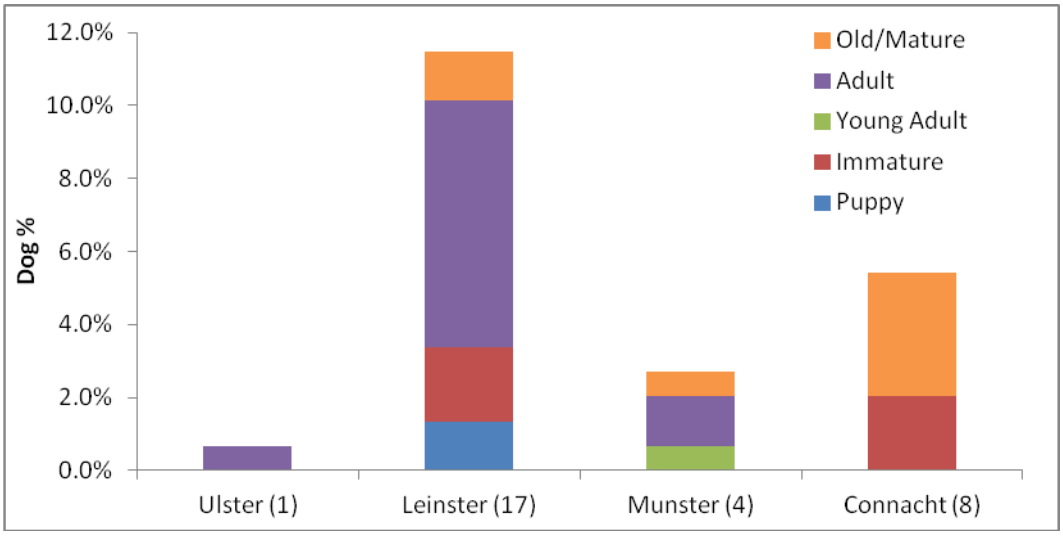

Figure 3.19. Dog age profiles by provinces (number of dogs).

Leinster province provided the most age profile information and showed the widest range from puppies to old/mature dogs. The two mature dogs came from the Fishamble Street Plot 2 & 3, Dublin, site and dated to tenth to eleventh century. McCormick and Murray (2007, 231) aged the dogs by the wear on their teeth. Only four dogs from Munster provided any age profile information. Unfortunately, the Waterford

excavations animal bone report contained summarised age profile data, which could not be integrated into the dog database. McCormick (1997) used Silver's (1969) epiphyseal fusion data for the limb bones to estimate the age of the dogs and observed there were immature and mature dogs from the early medieval contexts in Waterford. He believed the high mortality pattern for immature dogs was more than from natural causes and it could indicate the dogs were killed for other purposes, such as population control or skinning, although no skinning marks were recorded on the bones. McCormick had carried out the animal bone reports for both the Dublin and Waterford excavations; he observed that the dogs from Dublin generally had a longer life expectancy than those in Waterford.

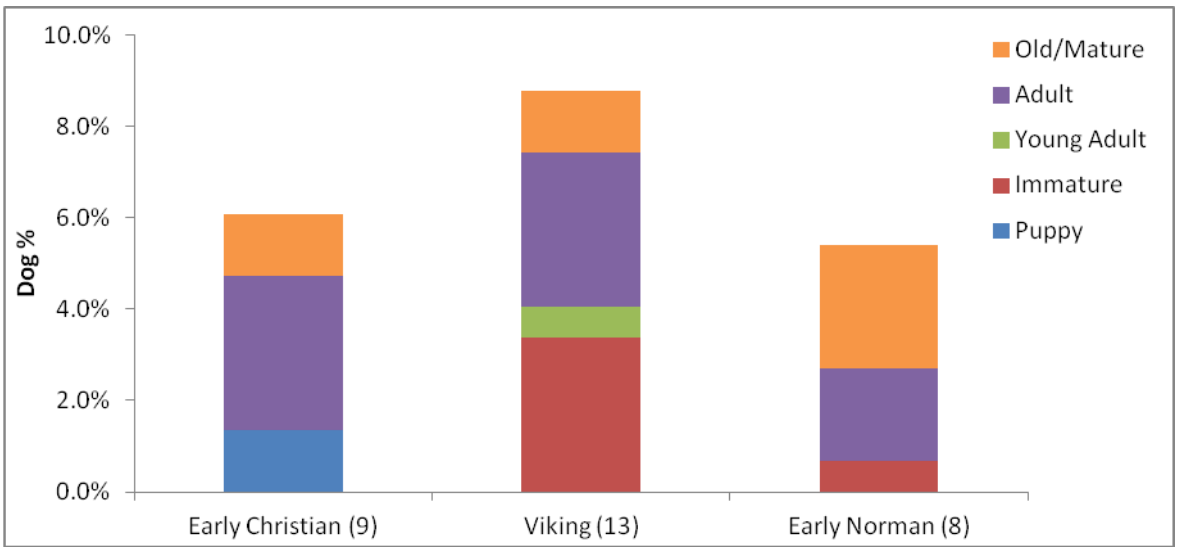

Figure 3.20. Dog age profiles by chronological periods (number of dogs).

All the chronological periods had dogs of various age profiles. Only the Early Christian had dogs younger than four months old. Two puppies were recovered from ditch contexts at Cloncowan II settlement, Co. Meath, dated to the fifth to sixth century (Pipe 2007). They were partially complete skeletons, so could be aged to a few months old at the time of death.

The youngest dogs from the Viking period were three immature dogs excavated from Sroove crannog, Co. Sligo, and date from late eighth to tenth century. As mentioned before, the bone survival on this site was poor, so the bones were fairly fragmented. But it was possible to age the three dogs to around six months old at the time of death.

The presence of old/mature dogs from all periods indicated that at least some dogs were being allowed to live to an older age rather than disposed of.

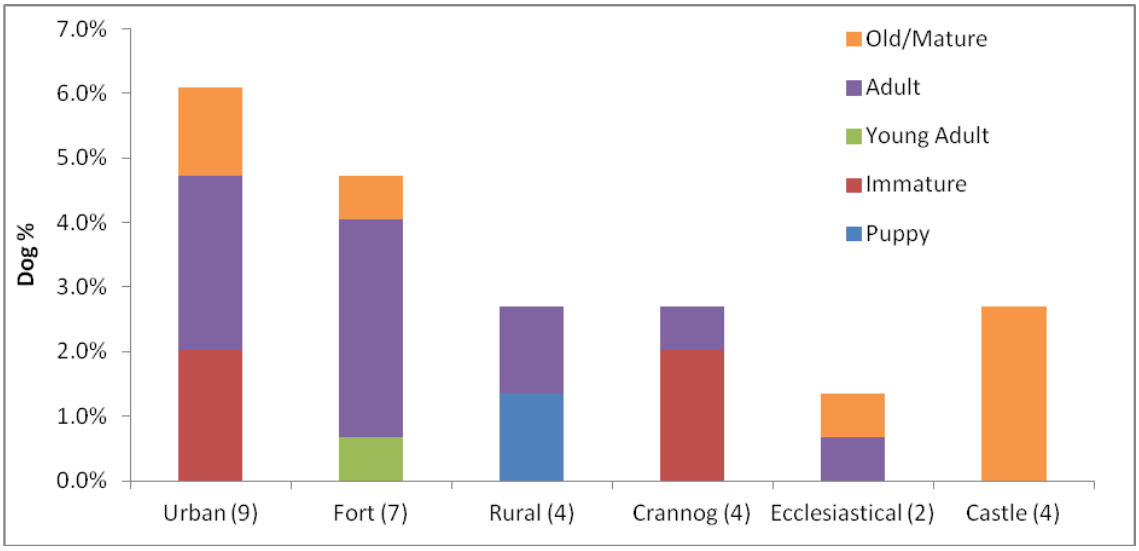

Figure 3.21. Dog age profiles by site types (number of dogs).

Interestingly all four dogs recovered from Athenry Castle, Co. Galway, were described as mature. These dogs were excavated from the backfill deposits used in the development of Athenry Castle. Only adult and old/mature dogs were noted on ecclesiastical sites with one mature dog recovered from Kiltiernan Church dated to the Early Christian period; McCarthy (1995) did not however explain how she came to this conclusion. Murphy (2007) aged one of the dogs from the dam silts at Nendrum monastery by the ante-mortem tooth lost and the moderate wear on the rest of the teeth from the mandible, indicating that this animal was an adult.

Urban sites had examples of dogs from the immature to mature age profiles. Bermingham (1995) applied Silver's (1969) information on epiphyseal fusion of a tibia, to age a dog skeleton as under a year old from the Essex Street West excavations in Dublin. Unfortunately, the animal bone report for the Cork excavations did not provide any age information, but McCarthy (2003) concludes that all the dogs observed had reached maturity with all fusion having taken place, with some believed to have been of some age.

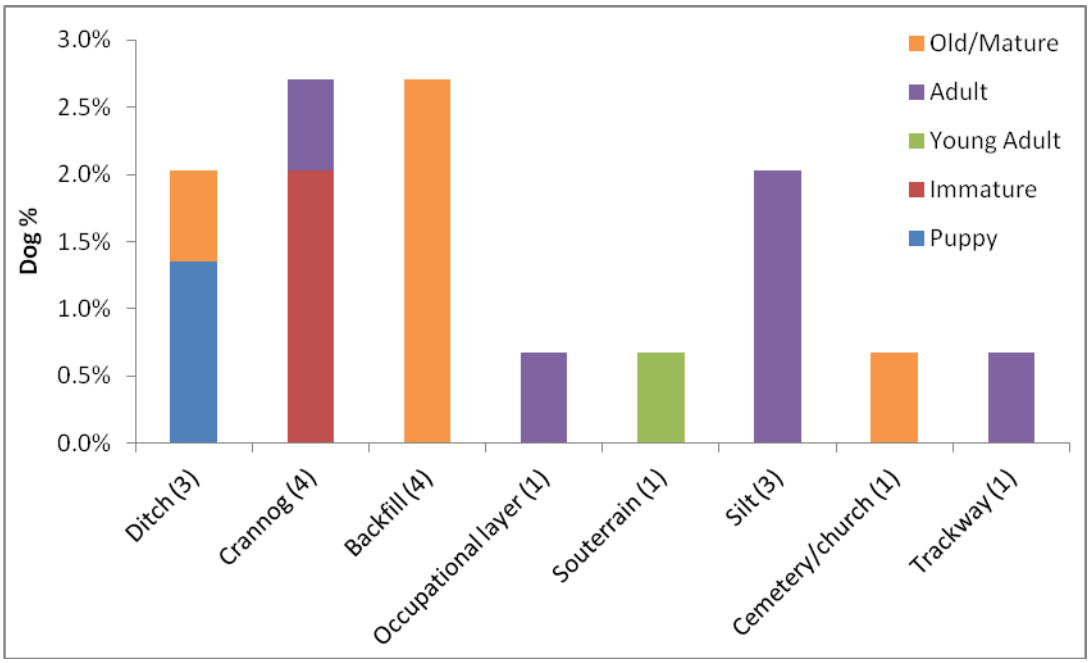

Figure 3.22. Dog age profiles by burial locations (number of dogs).

Unfortunately, when the dataset was broken down into burial locations, the data were very small with a maximum of four dogs per context type. No trends could therefore be observed from this limited data. Only one dog from a souterrain provided any age information and that came from Raheens No. 2 ringfort, Co.Cork (McCarthy 1994). It was aged to at least one and a half years old from the backfill deposits of a souterrain.

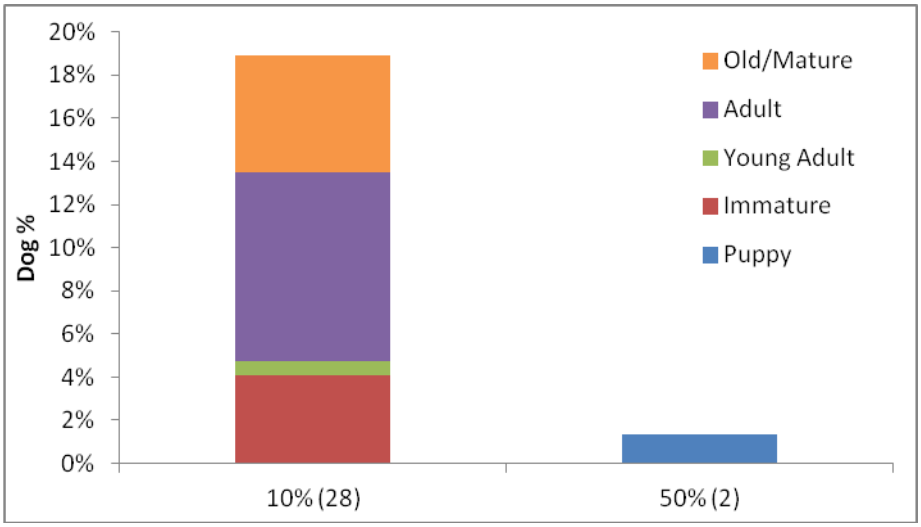

Figure 3.23. Dog age profiles by completeness information (number of dogs).

Due to the fragmentary nature of the dogs recovered from Irish contexts, the only dogs with age profiles with completeness data over 10% were the two puppies from the

Cloncowan II settlement were found 50% complete (Figure 3.23). Only six bones were recovered of a mature dog from the fills of a ditch at the Sluggary ringfort, Co. Limerick. The animal bones in the ditch were highly fragmented, which McCarthy (2000, 19) believed could indicate "maximum carcase utilisation but linked with the large amount of surface erosion could mean that some were crushed while exposed on the surface."

3.9 Sex Determination

Only one dog skeleton was positively sexed. It was a male adult dog excavated from a seventh-to eighth-century trackway at Ballynagallagh, Lough Gur, Co. Limerick. Although only a few bones were recovered from the dog, it was sexed due to the presence of the baculum bone (McCarthy 2006).

3.10 Butchery

There were six dogs that showed signs of butchery. These consisted of four from the Waterford excavations, which dated from eleventh to thirteenth century, and two from Fishamble Street, Dublin, which dated to tenth to eleventh century. The butchery on the Waterford dogs was more severe. One dog had been chopped through the braincase with its associated mandible also chopped. A humerus was chopped at the proximal and distal ends, which McCormick (1997) suggested that the dogs were being occasionally eaten in Waterford. Two further dog bones had knife marks, a pelvis and femur, both on the proximal articulation, indicating skinning. The two dogs excavated from Fishamble Street, Dublin, have been recorded as having cut or chop marks on them, indicating they too had been skinned.

It was noted at the Ballynagallagh, Lough Gur, site that the few dog bones recovered from the early medieval phases showed no signs of butchery, which was unlike those found from the late Bronze Age period (McCarthy 2006).

3.11 Pathology and Abnormalities

There were eleven dogs with recorded pathological conditions and abnormalities. One pathological example that was observed was believed to have been born with the abnormality and was from Knowth, Co. Meath. The fibula was fused to the related tibia at the distal end. No degenerative changes were associated with the articular surfaces, which would have indicated that the fusion was secondary to a traumatic incident. Therefore, it was probable that the fusion was long-standing and had occurred during the development of the dog in utero (McCormick and Murray 2007, 69).

3.11.1 *Degenerative Conditions*

There were only two dogs exhibiting degenerative conditions on their skeletal remains. Eburnation was recorded on a proximal articular surface area of a femur from Bakehouse Lane, Waterford, which was probably due to arthritis in the hip joint (McCormick 1997). A second example was from the excavations carried out at Knowth, Co. Meath. Degenerative changes were observed on phalanx one, on one half of its proximal articulating surface. This meant the affected area had an irregular, rough appearance. There was also macropit present at its posterior aspect. McCormick and Murray (2007, 69) believed that these changes indicate that the dog suffered from septic arthritis, as the lesions were localised, and none of the other joint surfaces of the bone had been affected.

3.11.2 *Trauma*

There were four examples of dogs exhibiting trauma pathology. A very small dog recovered from the seventh- to ninth-century occupational layers at Ballinderry Crannog No. 2 had a broken skull. There was no mention of any healing to the skull so it is assumed that the blow to the head happened at the time of death (Stelfox 1941-2). There were three dog skulls that had signs of healed injuries. Two from the Peter Street, Waterford, excavations had healed nasal bone injuries (McCormick 1997) and dated to the late eleventh to twelfth century. Healed nasal bone injuries were also observed on dogs dating to the Viking period from Wood Quay, Dublin, which McCormick (1997) believed were caused by the dogs being struck on the snout. Unfortunately, there was no

animal bone report available for this site. McCarthy (2003) noted that a dog skull recovered from Barrack Street, Cork, had a healed fracture line on the maxilla, which could also have been caused by a hit to the side of the snout.

3.11.3 *Bowed Limbs*

There was only one recorded example of bowing in the limb bones from the Irish dataset. The dog was recovered from the occupational layers at Ballinderry Crannog No. 2 and dated to the seventh to ninth century. It was described by Stelfox (1941-2) as a small, twisted ulna and the dog would have been 'bandy-legged'.

3.11.4 *Dental*

There were four dogs with recorded dental anomalies. A dog mandible recovered from Shop Street, Drogheda, exhibited some degree of tooth crowding. All the teeth had fully erupted, but McCormick (1984) had calculated a low crowding index at 93.3, which was due to a gap between premolar 2 and premolar 4. Clark (K 2000) commented that tooth crowding was likely to be a result of accelerated diminution of a jawbone. Two dogs recovered from Fishamble Street, Dublin, had advanced toothwear due to old age. And finally, one of the dogs from Nendrum Monastery, Strangford Lough, had lost its first premolar in its mandible ante mortem, but there was no sign of rehealing (Pipe 2007).

3.12 Biometrical Data

None of the Irish bones were examined by the author first hand, with all data being obtained from published and unpublished literature. As with the English dataset, measurements had been taken following the von den Driesch (1976) methodology and all information was derived from full fused animals.

A number of problems arose while gathering the measurements provided in the animal bone reports. For example, metrical data were provided, but not assigned to specific dogs, and had been simply listed in tables of measurements from a specific period, such as at Clonmacnoise (Soderberg 2003). In these cases, the data have been collated in an

additional measurement spreadsheet and included in the metrical analysis. In many cases no measurements were provided at all, with only the Lagore crannog dogs offering any skull measurements, which were taken from Harcourt (1974).

3.13 Skull Measurements

Unfortunately only nine early medieval craniums provided any metrical data, and they all came from Lagore Crannog, Co. Meath, and dated to the seventh to ninth century. Below is a summary (Table 3.6) of the main skull measurements along with the mean, standard deviation (SD) and co-efficient of variance (CV).

Table 3.6. Summary of the skull measurements (all measurements in mm).

	Von den Driesch No.	**N**	**Min.**	**Max.**	**Mean**	**SD**	**CV**
Skull Length	C1	9	174.3	227.3	207.4	20.3	9.8%
Cranial Width	C29	6	56.5	67.9	59.7	4.2	7.0%
Cranial Height	C38	6	51.7	68.9	62.2	6.6	10.6%
Facial Length	C8	9	83.4	112.9	101.5	9.7	9.6%
Facial Width	C30	8	101.9	122.0	110.8	6.4	5.8%
Snout Length	C12	5	75.7	102.0	87.9	9.5	10.8%
Snout Width	C36	8	35.0	44.3	39.4	3.0	7.6%
Palatal Length	C13a	6	83.9	111.9	100.0	10.5	10.5%
Palatal Breadth	C34	9	59.6	72.1	66.3	4.6	6.9%
Mandible Length	M1	4	99.3	160.0	133.0	30.3	22.8%
Mandible Height	M8	15	55.9	87.0	73.4	8.7	11.9%

The classification of skulls by total length (n= 9) shows that the smallest specimen measured 174.3mm and the largest was 232mm. Comparing the summary data from Table 3.6 with Hasebe's skull classifications discussed in the previous chapter, the smallest skull at 174.3mm fits in the medium sized category. The largest skull at 227.3mm, was well into the large sized skull bracket, with the mean measurement fitting the large size. When comparing the cranial and facial lengths they fitted into the medium-small to medium-large category. The standard deviation and co-efficient of variance values suggest that there was some degree of variability within the measurements taken, but not to the level observed within the English dataset.

3.13.1 *Cephalic Index*

The Cephalic Index illustrates the relationship between the width of the skull against its total length. There were eight skulls that had these measurements and, as Figure 3.24 shows, the Lagore crannog dogs all had fairly wide heads in proportion to the length with none smaller than an English Springer Spaniel. This ties in with the skull length measurements, all in Table 3.6 being medium sized and larger.

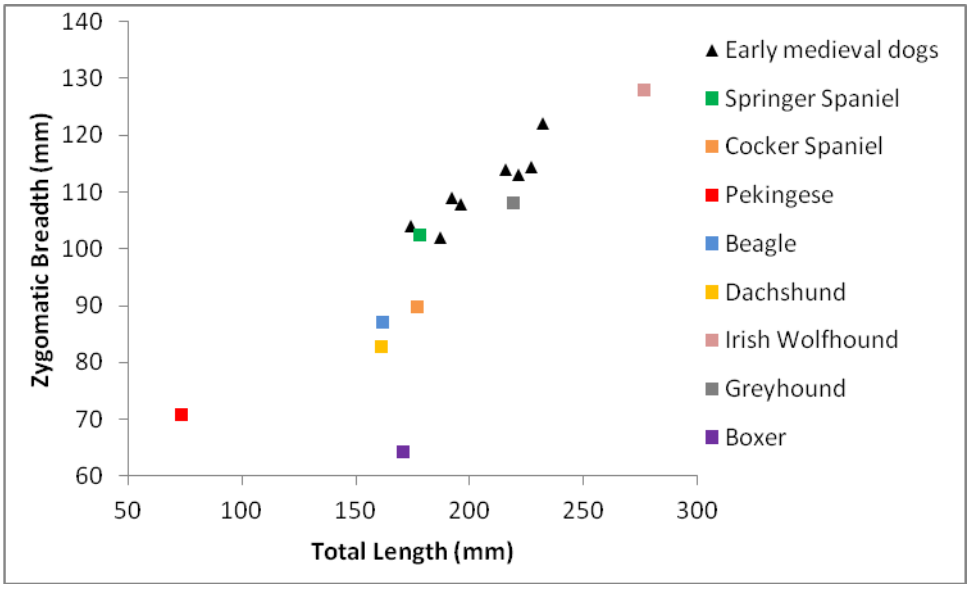

Figure 3.24. The relationship between the total length and zygomatic breadth.

3.13.2 *Snout Index*

The Snout Index compares the greatest length of the skull against the snout width, which is a very characteristic and variable feature on a dog's face. From the nine skulls at Lagore, Figure 3.25 shows that the shortest snout was similar in shape and length to an English Springer Spaniel, with a longer snout of a Greyhound.

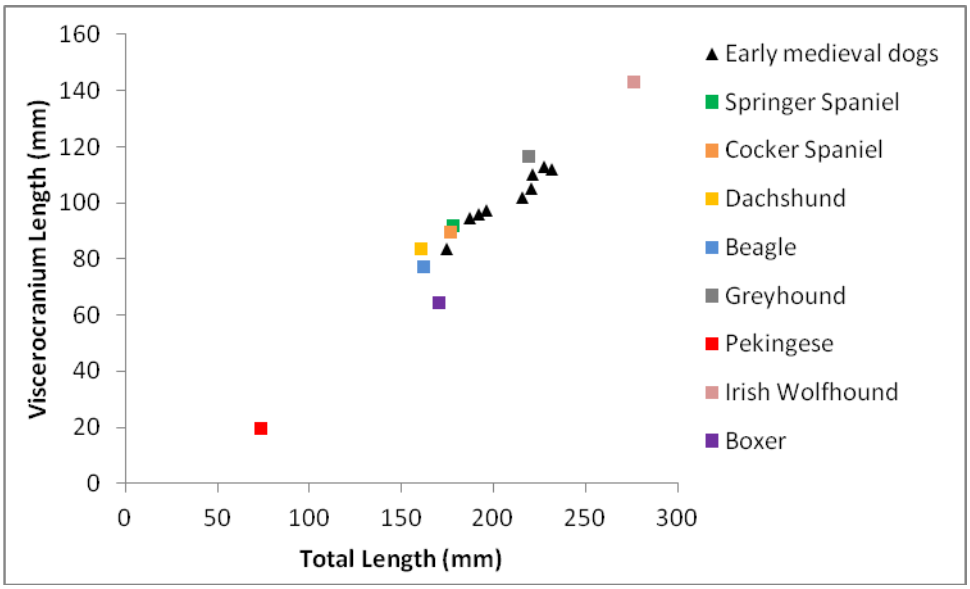

Figure 3.25. The relationship between the total length and viscerocranium length.

3.13.3 *Snout Width Index*

Snout Width Index compares the snout length with the snout width, which can highlight the prominent facial characteristic. The Lagore dogs were variable and Figure 3.26 shows that generally they had wider snouts in comparison to the modern breeds, especially when compared with the narrow snout of the Greyhound.

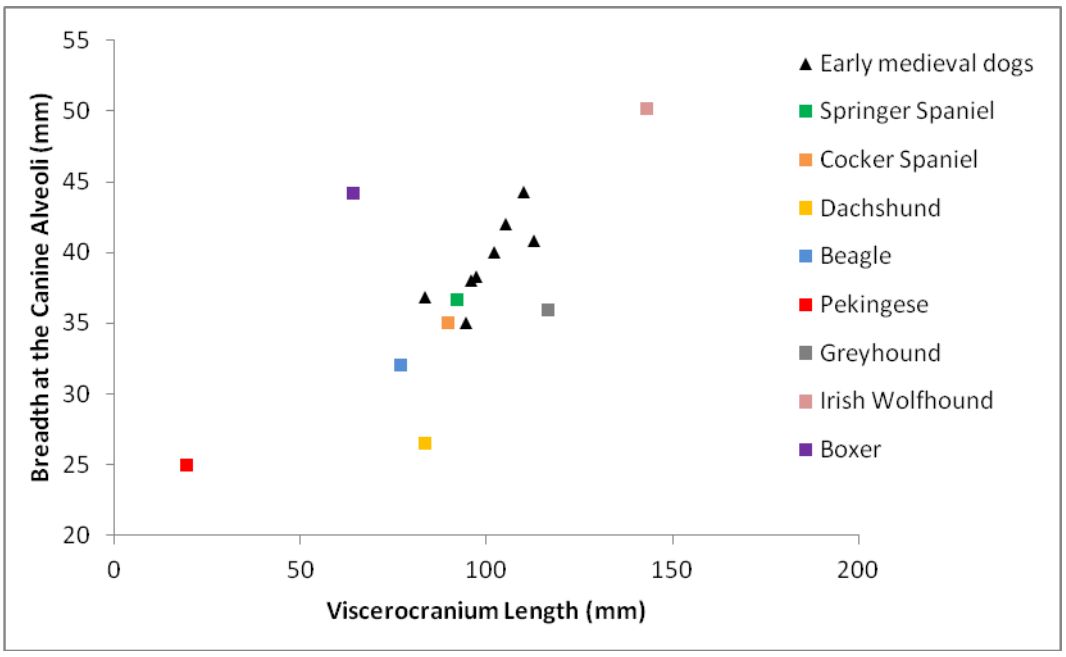

Figure 3.26. The relationship between the viserocranium length and the breadth at the canine alveoli.

3.13.4 *Neoteny Index*

Another set of skull measurements that are important to compare, is the total length against the frontal width, which highlight any brachycephalic breed characteristics. From the Lagore dogs, it can be seen that none of the dogs' skulls display any exaggerated neoteny features. All the skulls (n=6) fit between the Dachshund and Greyhound, with slightly smaller facial lengths in comparison to the total length (Figure 3.27).

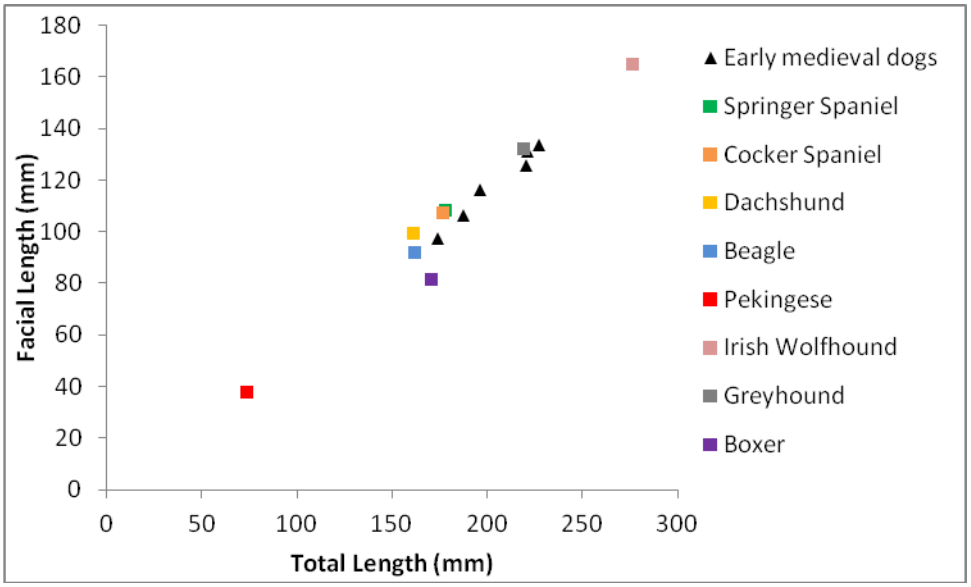

Figure 3.27. The relationship between the total length and facial length.

3.13.5 *Palatal Measurements*

The width to length proportion of the palate is a good indicator of the degree to which the snout elongates with various dogs. Like the snout width index, Figure 3.28 shows that the Lagore dogs had fairly wide palates in comparison to the length, with a couple of skulls as long as the Greyhound but wider.

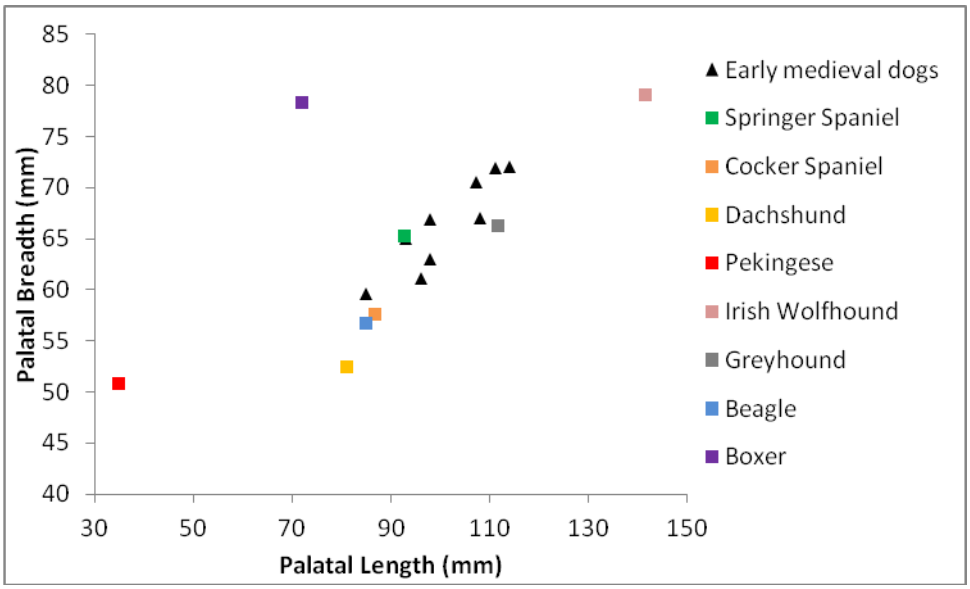

Figure 3.28. The relationship between the palatal length and palatal width.

3.13.6 *Mandible Measurements*

The mandible sample was comprised of twenty-two incomplete specimens. The total length was only available from four dogs and all from the monastic site at New Graveyard, Clonmacnoise. The smallest total length was 99.3mm and the longest total length was 160mm. Using Hasebe's (1952) classification of dog skull size, one was classified as small, the second as medium-small and the final two as large.

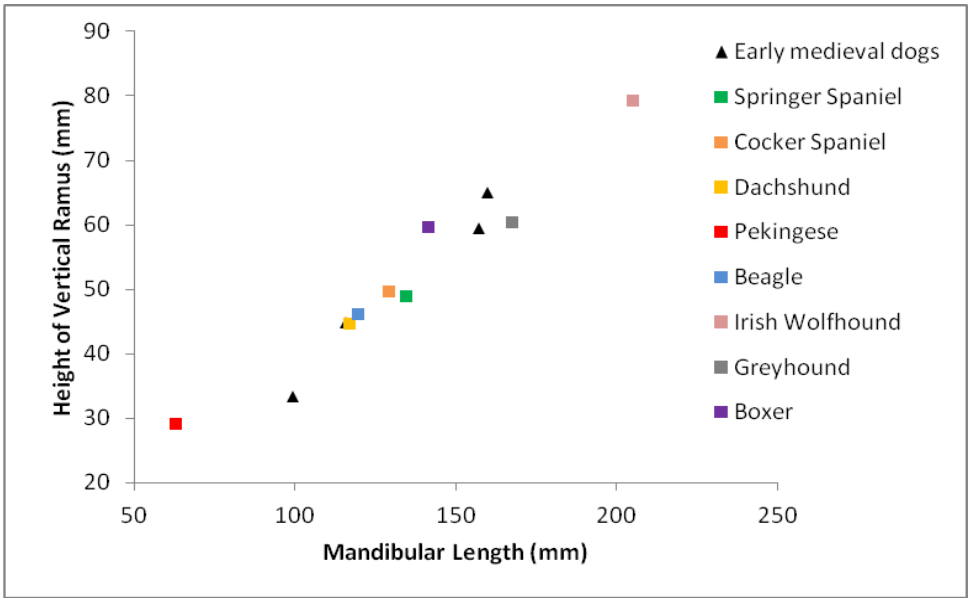

Figure 3.29. The relationship between the mandibular length and height of the vertical ramus.

Only four mandibles had the measurements for the absolute length of the mandible and the height of the body of the vertical ramus (Figure 3.29). Even these four mandibles illustrate variability in the mandible length compared to the height of the ramus. The very small example from the New Graveyard, Clonmacnoise, had a very short height and was only 100mm long, suggesting a petite jaw.

3.14 Limb Bone Measurements

All the measurements from Irish dogs have been obtained from the published and unpublished reports. Like the English data, a number of the animal bone reports did not provide the estimated shoulder heights for specific dog remains, but only a range for the whole assemblage; this meant these data could not be included within the analysis.

3.14.1 *Estimated Shoulder Height*

Harcourt's (1974) formulae were applied to the limb bone measurements available and it was possible to calculate the estimated shoulder height for 105 dogs from seventeen sites (Figure 3.30). Unfortunately some animal bone reports recorded metrical data in tables, but the data could not be allotted to specific dog burials within the database. So these data could be included in the analysis, they were placed in additional spreadsheets and combined with the dog-specific data to allow for a better understanding of the dogs recovered. The smallest estimated shoulder height was 23.9cm from a dog at Dun Eoghanachta, Inis Mor, Co. Galway and dated between the tenth to early eleventh century. This was approximately the same height at the withers as the smallest dog discovered in England. The tallest dog measured 74.8cm from Essex Street West, Dublin and dated to the thirteenth century. This dog was taller than any recorded from early medieval England, and was approximately the height of a Deerhound.

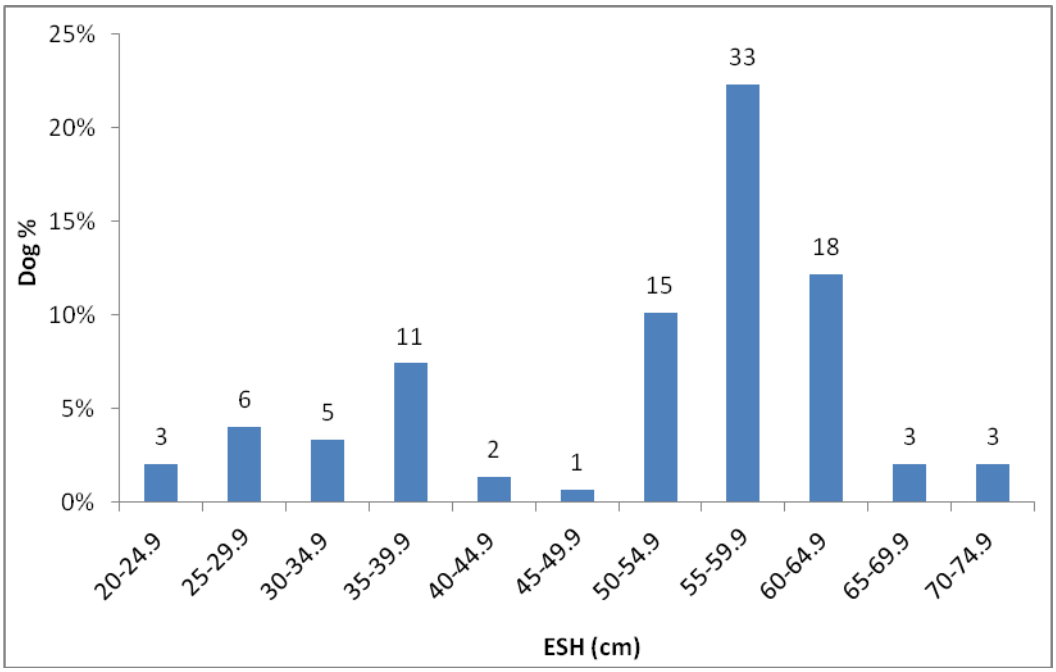

Figure 3.30. Estimated shoulder heights (ESH) for all the chronological periods (number of dogs at the top of bars).

Figure 3.30 highlights that there was a bimodal distribution within the estimated shoulder heights, with the smaller group between 20 and 45cm and the taller group between 50 and 75cm. This does support McCormick's (1991a, 44) theory that there were two distinct size groups that were the result of "rigidly supervised breeding of dogs". There were a number of issues with the metrical data available with the majority of the estimated shoulder heights provided by dogs dated to the Early Christian period so the full range of chronological periods were not represented. There were eleven sites that provided more than one estimated shoulder height, and only Lagore crannog, Moynagh Lough crannog, New Graveyard, Clonmacnoise and Peter Street, Waterford, produced more than five heights.

Table 3.7. Estimated shoulder heights for the chronological periods (in cm).

	N	**Min.**	**Max.**	**Mean**	**Median**	**SD**	**CV**
Early Christian	79	24.3	72.5	52.0	56.8	12.4	23.8%
Viking	5	23.9	65.9	46.7	50.9	18.2	39.0%
Early Norman	15	28.9	74.8	53.8	55.5	12.5	23.0%

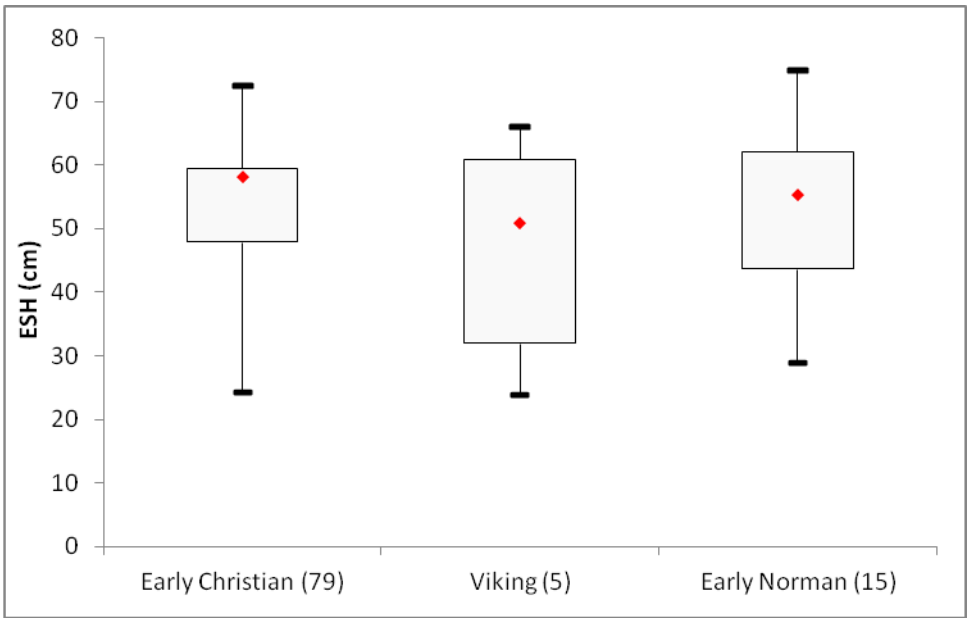

Figure 3.31. Estimated shoulder height (ESH) by chronological period with ♦ representing the median (number of dogs).

Table 3.7 shows that a high proportion of the estimated shoulder heights were from dogs dated to the Early Christian period, with over 75% of these coming from the measurements obtained on the Lagore crannog dogs. The widest variability in height occurred during the Early Christian period, with a median at nearly 57cm. Unfortunately there were only five dogs that dated to the Viking period with estimated shoulder height information. However, they did illustrate that there was still some variability in the height, but with a shorter median (Figure 3.31).

The early Norman period also had a wide variability in height, with the tallest dog at 74.8cm, which was recovered from the Essex Street West site in Dublin. Unfortunately, a number of animal bone reports gave a range of estimated shoulder heights for the whole site or the period rather than specific heights so they could not be included in the analysis. For example, in the Waterford excavations report McCormick (1997) recorded that the estimated shoulder height range was similar to that observed from Fishamble Street, Dublin, but noted that one dog had an estimated shoulder height of 72cm.

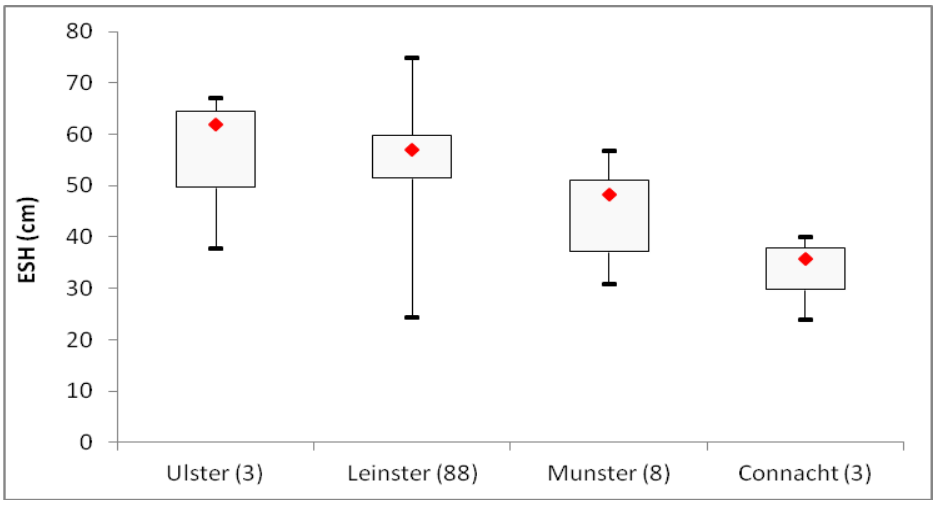

Figure 3.32. Estimated shoulder height (ESH) by province with ♦ representing the median (number of dogs).

Like the chronological period, there was a bias in the data towards the Leinster province. Figure 3.32 illustrates that this province displayed the widest range in heights with a median at nearly 60cm tall. There were only three dogs with estimated shoulder heights from Ulster, but they still demonstrated a range in height, skewed to the taller end of the scale, whereas the Munster and Connacht provinces had narrower ranges with generally shorter dogs. There was also only three estimated shoulder heights for dogs recovered from Connacht, they were under 40cm tall, including the shortest early medieval period dog from Ireland.

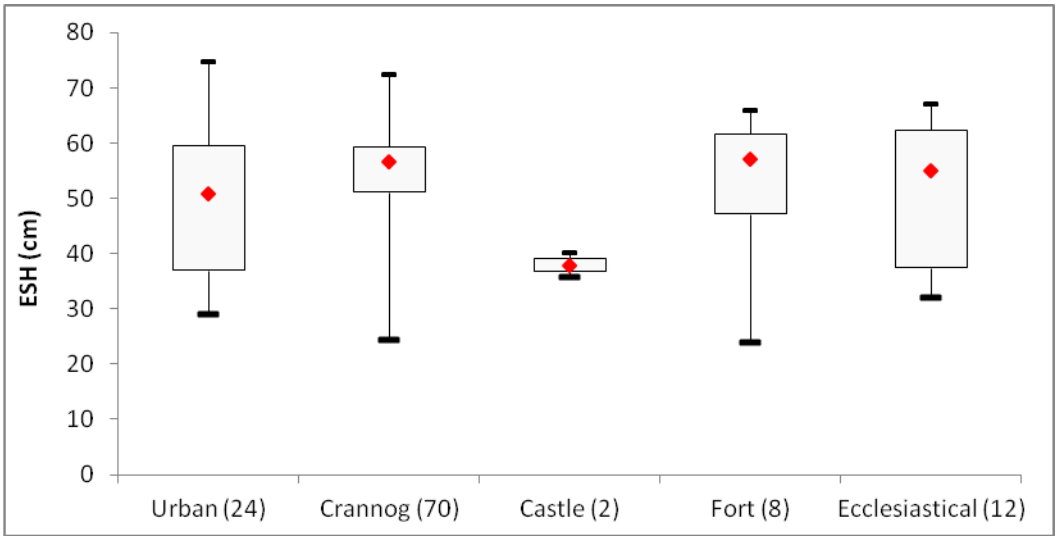

Figure 3.33. Estimated shoulder height (ESH) by site type with ♦ representing the median (number of dogs).

Urban, crannog, fort and ecclesiastical sites all produced a wide variability in estimated shoulder height with medians over 50cm. Only two dogs provided heights for the castle site type and they were both approximately 40cm tall. There were seventy estimated shoulder heights for crannog settlements; this was primarily due to the detailed metrical data provided from McCormick (1987a) on the Lagore site. Figure 3.33 shows that the majority of the crannog heights were between 50 and 60cm tall. However, this was not the case at Moynagh Lough crannog, where the majority of the dogs were not over 40cm tall. There was a more even spread of heights recorded from the ecclesiastical sites.

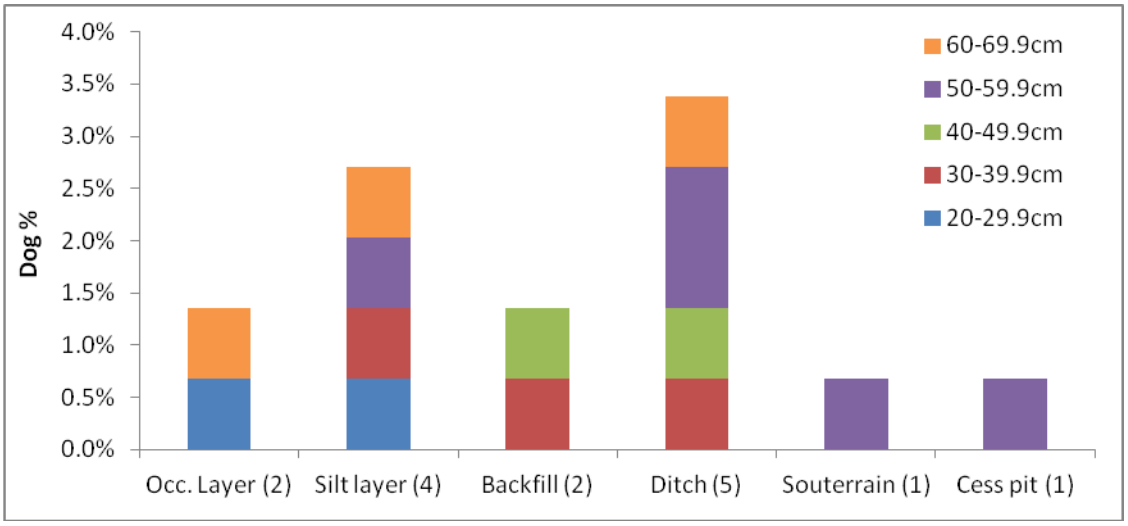

Figure 3.34. Estimated shoulder height by burial location (number of dogs).

Out of the 104 Irish dogs with estimated shoulder height information, only fourteen had burial location information. From the limited estimated shoulder heights available it can be seen that the ditch was the most represented burial location and had the widest variability in height (Figure 3.34). The occupation layer was the only burial location to have measurements, with one each from the smallest size category and the largest.

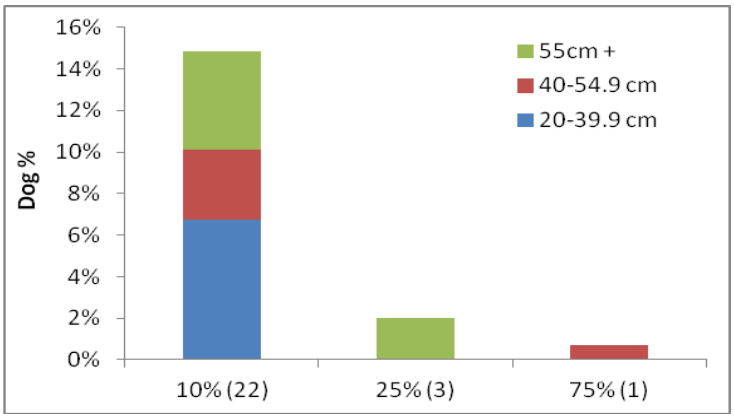

Figure 3.35. Estimated shoulder height by completeness information (number of dogs).

As expected the majority of the dogs with estimated shoulder height were in the 10% category (Figure 3.35). All the dogs at 25% complete were in the larger sized category, with two from ringfort ditches and one from the occupation layers at Ballinderry crannog no. 2.

3.14.2 *Limb Bone Comparisons*

As with the English data, the greatest length measurements from the limb bones were collated to examine the size range. From Table 3.8 it can be clearly seen that the minimum measurements all fit within the small dog size as set out by Hasebe (1952) as cited in Shigehara (1994) with all the maximum measurements corresponding with the large sized dog. The mean of each of the limb bones all fitted into either the medium or medium-large sized category, which indicates that the dogs were generally at least medium or larger in size. The standard deviation and co-efficient of variance values for all the limb bones also shows there was a great deal of variability within the greatest length measurements.

Table 3.8. Summary of the greatest length measurements for each of the main limb bones (all measurements in mm).

	N	**Min.**	**Max.**	**Mean**	**Median**	**SD**	**CV**
Humerus	29	85.1	200	149.1	166.5	35.2	23.6%
Radius	19	76.1	217.1	159	172.6	39.3	24.7%
Ulna	16	85	258.4	171.5	188.2	53	30.9%
Femur	25	82.9	209.5	163	169.5	35.7	21.9%
Tibia	24	85.5	234.8	174.2	188	38.4	22.0%

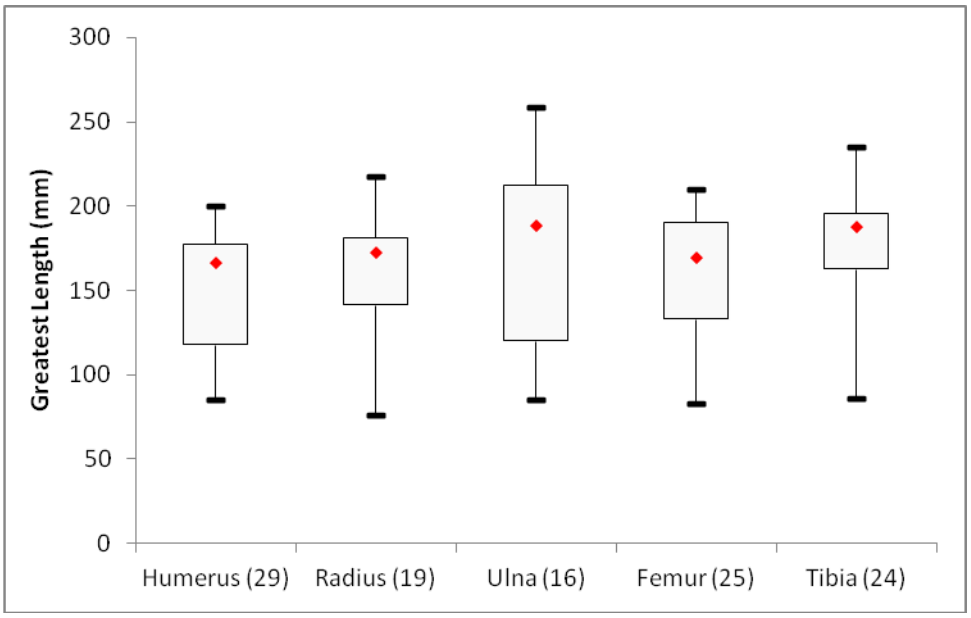

Figure 3.36. Greatest length measurement for the main limb bones with ♦ representing the median (number of dogs).

Figure 3.36 shows the variability in the greatest length of the limb bones with the ulna exhibiting the most. The humerus had the least variability and this was the most abundant of the bones measured.

Figures 3.37 to 3.40 illustrate the relationships between the greatest length and distal breadth from the different limb bones. Overall the limb bones show a wide range of variability with examples of short lengths and narrow distal breadths were recorded, although no specimens were as extreme as a Pekingese. Generally, the distal breadth measurements appear to be smaller than the comparative modern breeds. The results show a range in size variability from the Dachshund to those as long as a Greyhound.

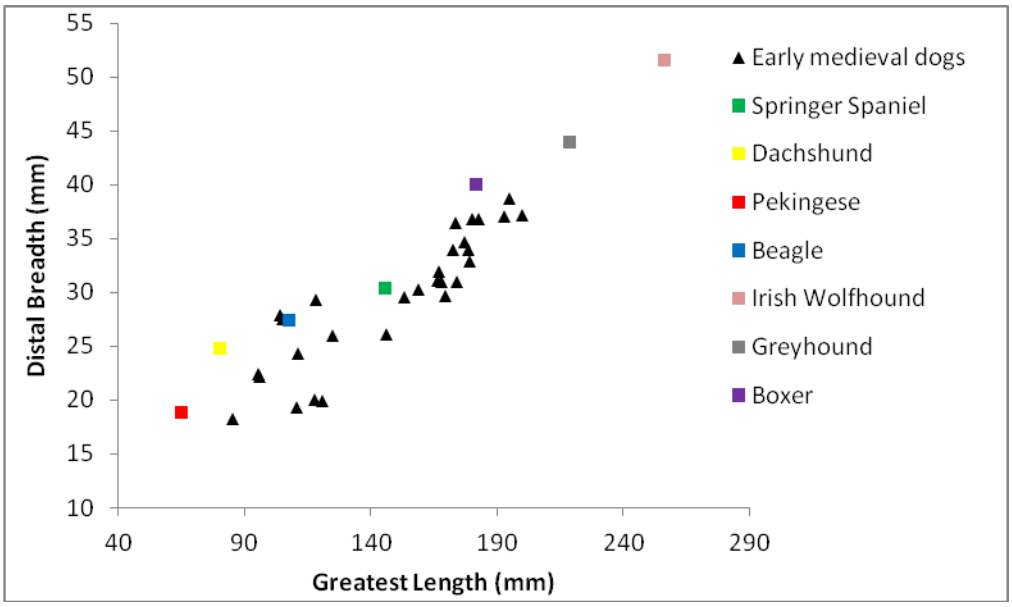

Figure 3.37. The relationship between the greatest length and distal breadth (mm) for the humerus.

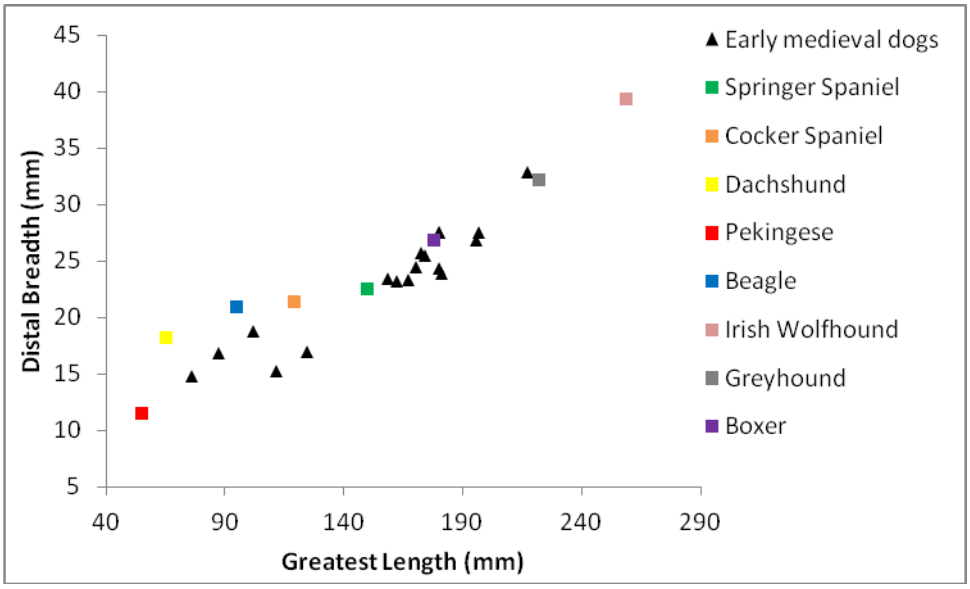

Figure 3.38. The relationship between the greatest length and distal breadth (mm) for the radius.

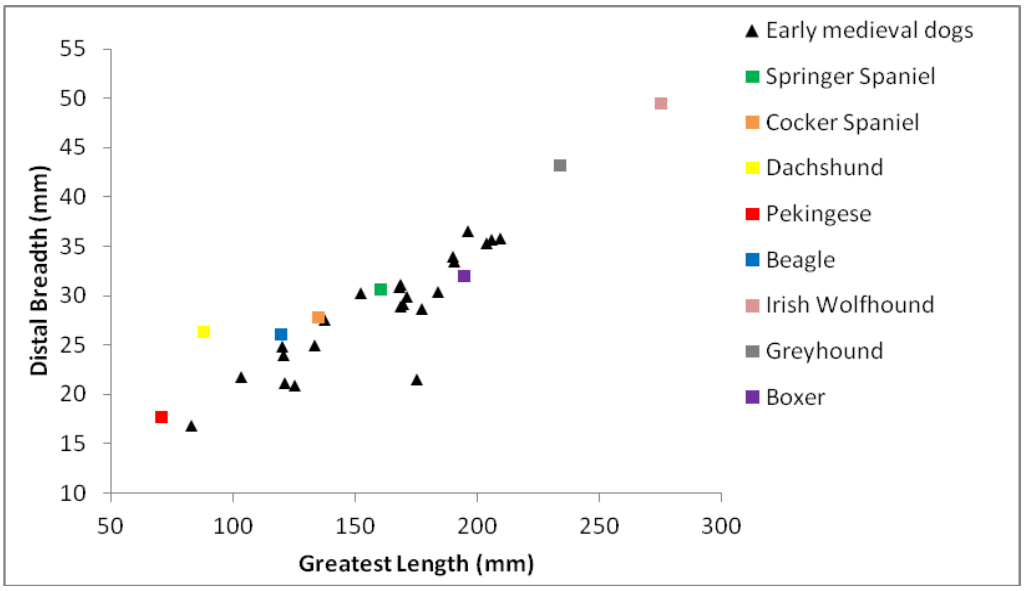

Figure 3.39. The relationship between the greatest length and distal breadth (mm) for the femur.

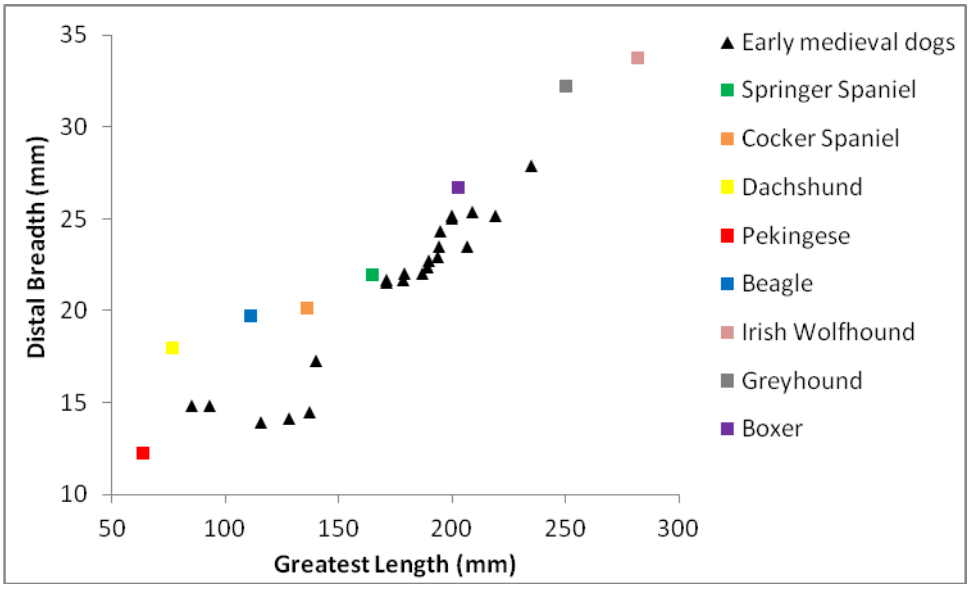

Figure 3.40. The relationship between the greatest length and distal breadth (mm) for the tibia.

3.14.3 *Slenderness Index*

The slenderness index was developed to examine the slenderness of the limb bones, by comparing the smallest diameter with the greatest length of the different limb bones. This technique can discriminate between four types of dog; short and robust, short and slender, tall and robust and tall and slender.

Figures 3.41 to 3.44 illustrate the slenderness index against the estimated shoulder height for the various limb bones. The early medieval dogs displayed a great deal of variability with some more robust and shorter in height, with other examples more slender and approximately the same height as a Pomeranian. The widest variation was observed in the humerus bone but this could have been due to a greater number of measurements being available. There were no examples of dogs that were tall and robust.

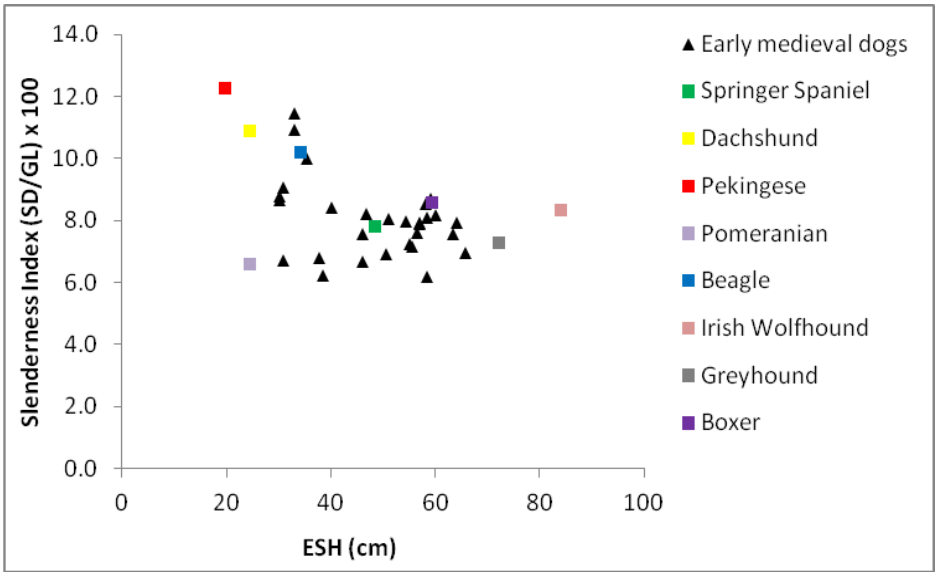

Figure 3.41. Slenderness index by estimated shoulder height for the humerus.

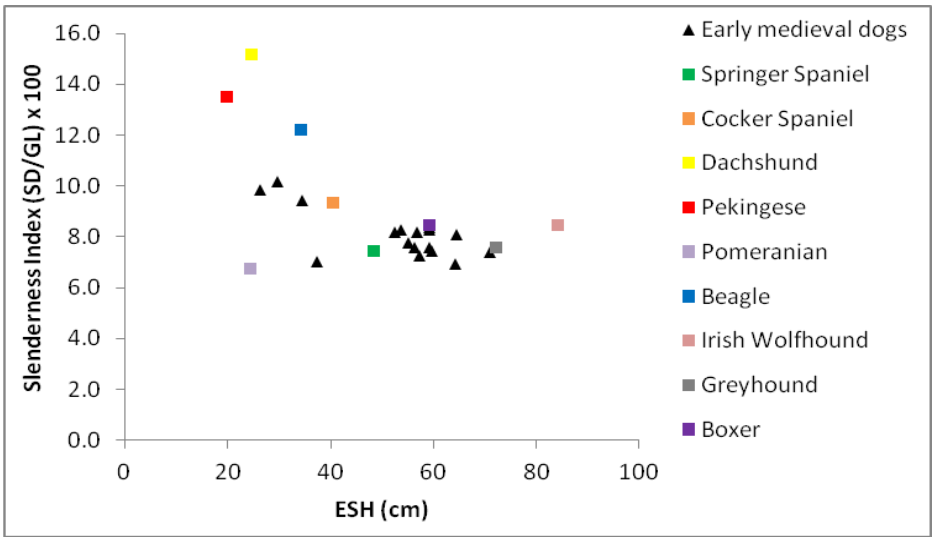

Figure 3.42. Slenderness index by estimated shoulder height for the radius.

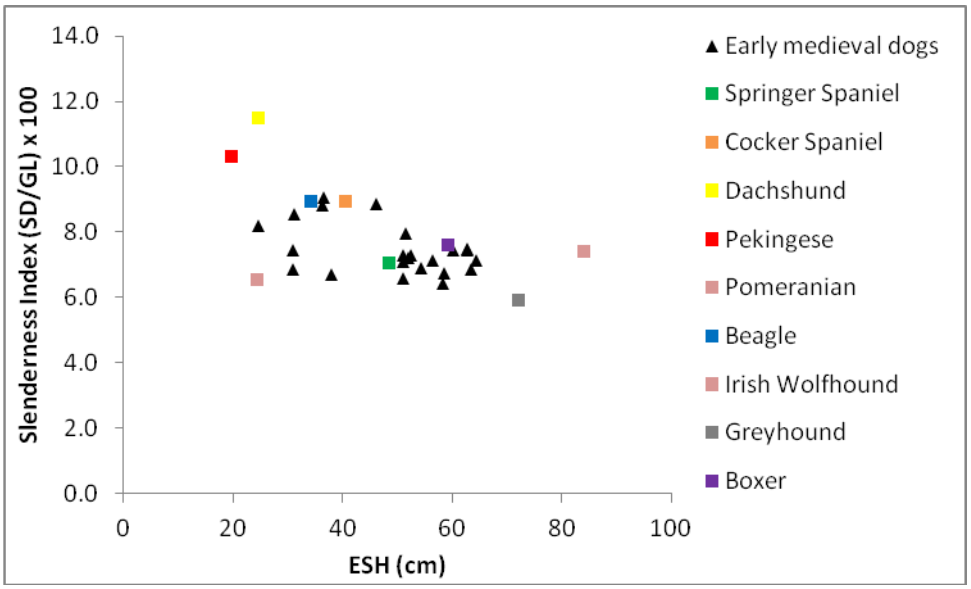

Figure 3.43. Slenderness index by estimated shoulder height for the femur.

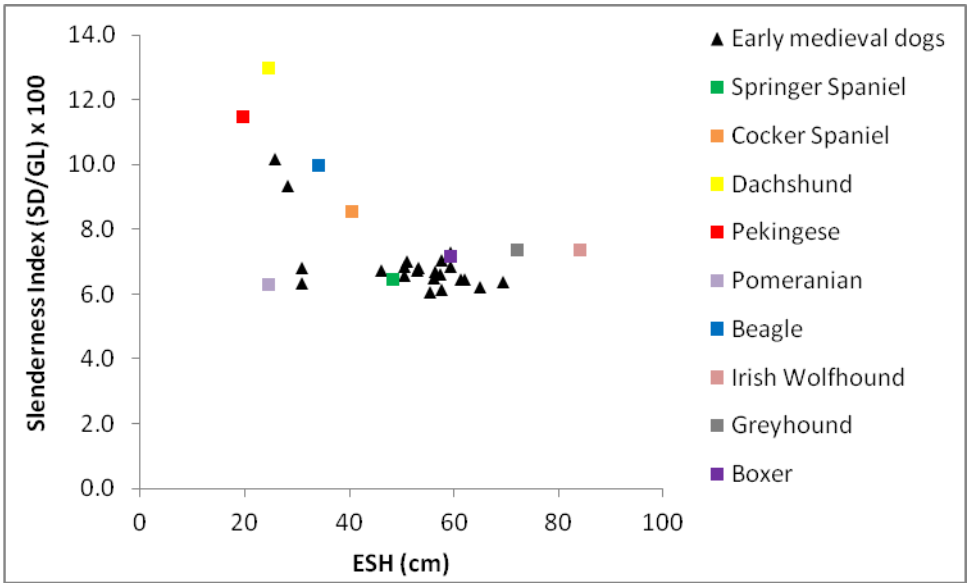

Figure 3.44. Slenderness index by estimated shoulder height for the tibia.

3.15 Additional Archaeological Evidence

In addition to the osteological evidence, dogs were also present within the Irish archaeological record in other ways, such as gnawing and coprolites.

3.15.1 *Dog Gnawing*

The indirect evidence of dogs by their gnawing marks was observed on several early medieval Irish animal bone assemblages. At the monastic site of Kiltriernan, Co. Galway, McCarthy (1995) noted that over 19% of the fragments had evidence of canid gnawing. On this site, animal bones were recovered from occupation layers and ground surfaces, thus providing more opportunity for animals to scavenge for food. This was also the case at Athenry Castle, Co. Galway, where canid gnawing was recorded on the animal bones from the backfill deposits used to level the surface for the construction of the castle. McCarthy (1991) comments that the level of gnawing and erosion recorded on the bones would indicate that before being incorporated in the backfill they had been exposed to the elements.

3.15.2 *Dog Coprolites*

There was only one reference to a dog coprolite recovered from an Irish site, which was at Moynagh Lough crannog (McCormick and Murray 2007, 261). The coprolite was excavated from a dump layer, which had assorted waste including metalworking debris, animal bones, seeds and acorn shells (Bradley 1993). The coprolite contained a digested sheep phalanx.

3.16 Summary

The landscape and economy of Ireland during the early medieval period were very different to England's. Although the data from Ireland were more limited than from England, there still appears to be a different pattern emerging. Urbanisation in Ireland only developed during the Viking period, but dogs from urban sites were the most common. The dogs recovered were biased to the Leinster and Munster provinces, because of the number of excavations being carried out in these areas, and the more detailed analysis published on the sites. Generally, the remains were scattered, with only six dogs over the 10% complete category.

There was a noticeable lack of wild mammal and wild bird bones recorded from all site types. Deer bones were also low in comparison with other species, which could indicate

that either hunting was not being carried out regularly or that the animal carcase was being disposed of before the hunting party returned to the settlement.

Dogs were most commonly excavated from ditches in early medieval Ireland. The majority of the dogs from fort sites were recovered from ditches around the settlements. The burial locations were very different to those observed in the English dataset, with only two recorded from a pit or midden feature. It would appear that general waste was disposed of differently, even in towns, such as Waterford, where dogs were excavated from ground surface layers along with other refuse, suggesting a more casual approach to dealing with domestic waste. Only one dog was recovered from a human grave, which has been described as a Viking warrior burial, but even here, the dog was just part of other domestic animals included in the burial. One dog was recovered with a human skull from a pit excavated in Dublin and dated to the early Norman period, which has been linked with a dishonourable burial rite.

Unfortunately, due to the limited data available, there was no clear trend in the age profile of the dogs. However, there were no examples of any dogs younger than a few months old, compared with the mass burials of neonates recorded in England. There was only one dog positively sexed and this was a male. There was also little evidence of butchery recorded on the dog bones, suggesting that eating of dog meat or its use for secondary products happened very rarely.

Pathology information indicated that some dogs had been hit on the snout regularly during their lives. But apart from a couple of examples of dogs with arthritis, there was nothing to imply that dogs were suffering. Equally there was no evidence to suggest they were being cared for when injures had occurred. Only one dog was recorded as having bowed limbs, but whether that was due to poor diet or a breed characteristic is impossible to determine.

Skull measurements were only obtained from the Lagore dogs, so the analysis of early medieval skull shape was hampered. What can be said about the dogs from this site is that they were all medium to large in size, with fairly long snouts and that they were proportionally wide as well. There were in addition a few mandible measurements from other sites, which suggested dogs with small sized jaws.

Dogs from all over Ireland provided postcranial measurements, which has enabled a better size profile. There was a range of variability in the estimated shoulder height throughout the chronological periods with evidence of a bimodal distribution of estimated shoulder height with a group round 20-45cm and 50-75cm. Further analysis in the limb bones showed there was variability in the dogs, with evidence of both robust and short-legged dogs, as well as short and slender ones.

Evidence of dogs was also present in the Irish archaeological record in the form of dog gnawing on other faunal remains, along with a dog coprolite identified at Moynagh Lough crannog.

Chapter 4 - The Iconographic, Textual and Artefact Evidence for the Domestic Dog in Early Medieval England and Ireland

Histories are more full of examples of
the fidelity of dogs than of friends.
Alexander Pope

This chapter examines representations of the domestic dog from the iconographic, textual and artefact evidence in early medieval England and Ireland. By the end of the Romano-British period, the dog held a symbolic role and functioned as a votive offering. Smith (K 2006, 72) concluded from her research on Romano-British iconography and epigraphy that dogs were connected with regeneration due to their role in the hunt. The dog's association with healing was also noted, a common theme through time and space.

4.1 Animals in Early Medieval Art

By understanding how past people produced their art, and the differences within that particular culture, we can start to appreciate their views on animals in general and dogs in particular. Animals were a key theme within all forms of art during this period, and animal ornament was applied with variety and complexity, illustrating the many different functions the creatures played in society (Hicks 1993, 4). With the introduction of Christianity during the first millennium AD in both England and Ireland, animals were still an important element in the new Christian decoration and imagery. The naturalistic Roman approach was developed to become more abstract with interlacing surface patterns (characteristic of Anglo-Saxon animal ornament). This led to few recognisable animal depictions on early Anglo-Saxon artefacts (Hicks 1993, 7). By the seventh century, Insular art (also known as Hiberno-Saxon art) had developed, blending Celtic, Classical and Germanic influences (Edwards 1999, 133).

Bede's *A History of the English Church and People* (Sherley-Price 1955, 86-7) mentions Pope Gregory's advice to Abbot Mellitus, on his mission to convert the Anglo-Saxons:

"they are no longer to sacrifice beasts to the Devil, but they may kill them for food to the praise of God and give thanks to the Giver of all gifts for His bounty."

Hicks (1993, 24) believed this advice may have been a response to the symbolic role of animals in pagan religion and to praise the animals' more functional role.

4.2 Early Medieval English Art

4.2.1 *Pre-Christian Period*

The earliest examples of early Anglo-Saxon art come mainly from objects of personal adornment, such as buckles, brooches and wrist-clasps. The 'Quoit brooch' style was current from the late fourth century AD, primarily in southern England, combining zoomorphic and geometric forms. Hound-like quadrupeds illustrated in profile have been observed in Quoit brooches with the design etched to indicate fur (Hicks 1993, 16). Recognisable animal forms reappeared in the seventh century, notably boars and predatory birds on weaponry.

Dogs were depicted in a hunting scene incised free-hand on two cremation urns, one recovered from Spong Hill, Norfolk (Figure 4.1), and the other recorded in the Myres *Corpus* (1977) but not provenanced (Figure 4.2). These two are very unusual; as Hicks (1993, 19) pointed out, fewer than twenty cremation urns decorated with animals are known, which suggest that these scenes were significant. Both the cremation urns are decorated with scenes of a deer hunt, the stags (with antlers) and hinds being chased and attacked by dogs. The dogs on the Spong Hill urn are drawn as hound-like slim animals with one biting the rear leg of the stag. There is some debate as to whether the hairy animal attacking the deer, on the unprovenanced urn, is a dog; both Myres (1977) and Owen (1981, 91) interpreted it as a boar. Although wild boars are known to attack young deer, it seems unlikely in this instance, as the deer is obviously a stag. From the simple outline profile of the animal it is difficult to establish, but could the additional strokes around the outline be suggesting a longhaired type dog or even a wolf? Similar strokes are observed on the deer at the far left of the picture and the dog's tail is far too long to be a boar's. If it is a dog, then both urns show dogs attacking the deer, with the action of the scene emphasised by simple profile lines. Owen (1981, 91) suggested that

hunting scenes on urns may have had a mythical or magical significance. However, perhaps whoever made the vessel merely drew the design to show off their artistic skills and/or represent activities taking place at the time.

Figure 4.1 has been removed due to Copyright reasons.

Figure 4.1. Cremation urn from Spong Hill (no. 2574) illustrating a deer hunt (Source: Hicks 1993, 22).

Figure 4.2 has been removed due to Copyright reasons.

Figure 4.2. Unprovenanced urn, Corpus no. 1966 (Source: Hicks 1993, 22).

The importance of the animal depictions on cremation urns is reinforced by the presence of animal remains within the urns. Twenty-seven dogs were identified from cremation urns in Spong Hill alone. With dogs not regularly used as a food source, it can be presumed that their presence in the urns was not as provision for the dead in their afterlife, but as Hicks (1993, 23) described "as evidence for the ritual commemoration of particular individuals, referring to their beliefs in life and their role in society."

Bond (1994) recorded that nearly half of the cremation urns analysed contained animal bone, which indicates not just a significant ritual sacrifice, but an economic one as well.

The Bromeswell copper-alloy bucket was excavated from a field only a kilometre north of the Sutton Hoo cemetery, and dated to the sixth century AD. A hunting scene is depicted on the outer surface with a Greek inscription and is believed to come from an East Mediterranean workshop (Mundell Mango *et al.* 1989). The inscription has been translated to mean "Use this in good health, Master Count, for many happy years". The hunting scene shows a stylised landscape with "two groups of bushy-haired warriors armed with shields, swords, spears and arrows and aided by a hound attack respectively a lion and another feline (possibly a tiger)" (Mundell Mango *et al.* 1989, 297). The dog is drawn in profile attacking the large feline and is wearing a collar. It portrays an athletic, Greyhound-type dog with the ribs indicated in the image by three lines on the loin (Figure 4.3).

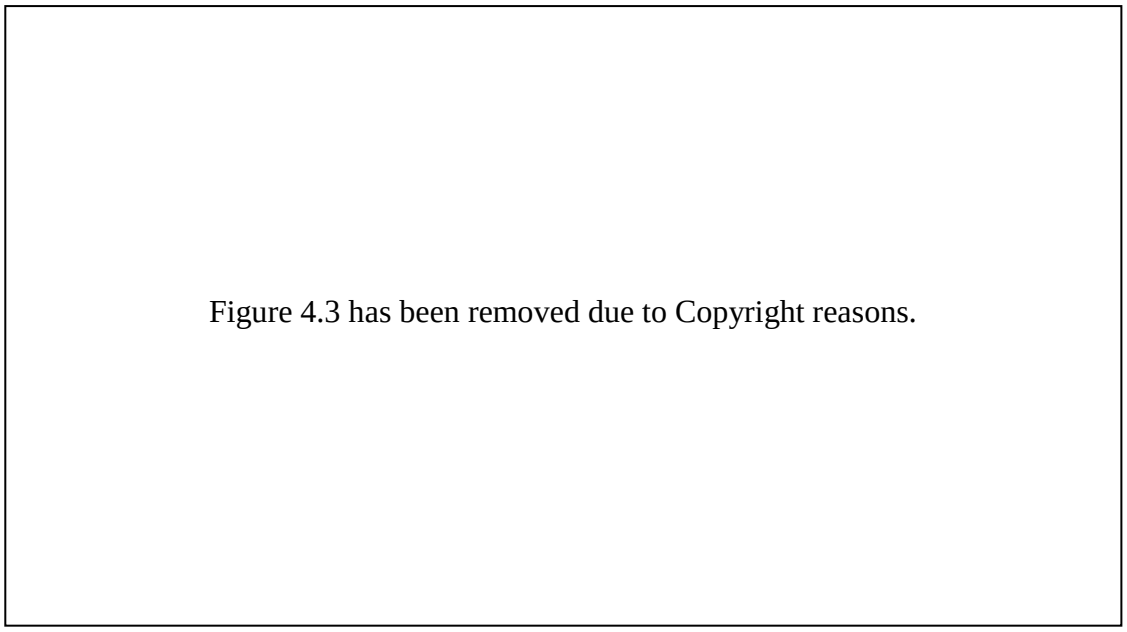

Figure 4.3. Hunting scene from the Bromeswell bucket (Source: Mundell Mango *et al.* 1989, 301).

4.2.2 *Christian Period*

4.2.2.1 *Metalwork*

The Strickland Brooch (Figures 4.4 and 4.5) has been dated to the mid-ninth century AD and is made of silver and gold. The sixteen animals decorating the brooch are dog-

like in appearance, all looking over their shoulders with collars indicated around their necks. Blue glass was used to emphasis the eye of the creatures. The dogs in the inner zone are in the sitting position, whereas the dogs on the outer zone look as though they are leaping and Bruce-Mitford (1956) has suggested that they appear to have their tongues out. Small dots punched into some areas of the curved surface give the brooch a sparkling appearance (Webster and Backhouse 1991, 232).

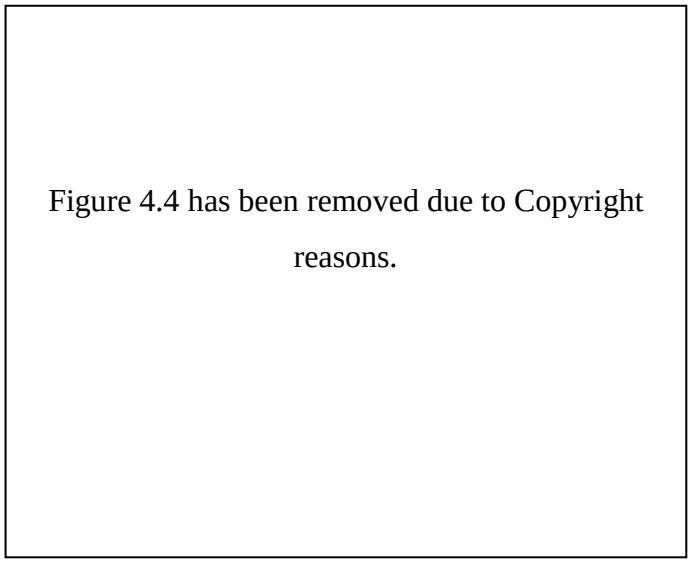

Figure 4.4. The Strickland Brooch (Source: Wilson, D M 1984, Figure 115).

Figure 4.5. Close up dog-like creature on Strickland Brooch (Source: Wilson, D M 1984, Figure 115).

4.2.2.2 *Stonework*

There was continuing development within animal ornament throughout the Anglo-Saxon period, with influences coming from imported artefacts and styles. By the tenth century there were additional influences coming from the Viking invasion, although

Hicks (1993, 139) pointed out that there was no major artistic change. An example of dogs represented in the Scandinavian style can be observed in the Heysham, Lancashire, 'hogback' (Figure 4.6). A 'hogback' was a stone monument, usually about 1.0 to 1.5m long and took the form of a building with a roof ridge, from which it gets its name (Lapidge 2001, 240). They are generally located in Cumberland and North Yorkshire, which were areas of Norse-Irish settlement. This particular hogback is attributed to the late tenth century and shows a carved group of animals, including a hound on the back of a deer, which is presumed to be a stag due to its antlers (Hicks 1993, 203). Lang (1984) cautiously described the animal as a canine beast rather than a dog, as it could have been a wolf. The layout of the hogback is arranged by narrative rather than symmetry. Like the two cremation urns, the dog is again illustrated attacking the deer. It should be noted that no specific Christian iconography is represented on this monument, and this is in keeping with other hogbacks.

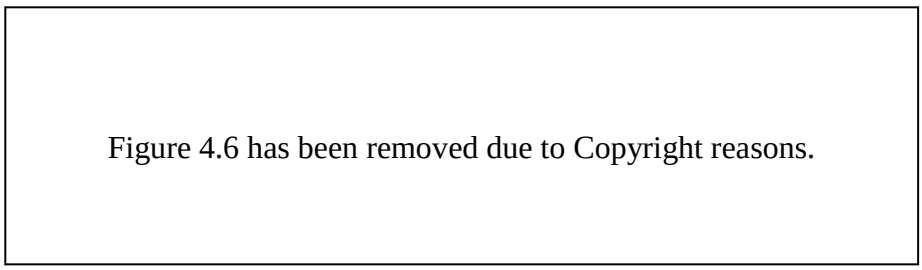

Figure 4.6. Hogback from Heysham, Lancashire (Source: Hicks 1993, 207).

The classic motif of the 'hart and hound' is observed on many monuments, such as Pictish stones, Viking age monuments (although not commonly in Scandinavian art) and more regularly on Irish High Crosses, particularly on the base. The deer and hound motif developed, and became, as Hicks described (1993, 207), detached from the Christian scene, representing the bringing together of the Christian and pagan beliefs. For example, the same motif was carved into the stone crosses from Kirklevington, North Yorkshire, and at Lancaster. Smith (K 2006, 50) commented that pagan Roman art links hunting scenes with rebirth and regeneration, this theme may have continued on into Christian art forms. However, Collins (A H 1913, 9) believed that the presence of dogs in hunting scenes probably had no intentional symbolism. Ritchie (1981, 41) suggested that the hunts illustrated on the sculpture slabs could be portraying notable hounds and famous hunts, which would have been known to the audience at the time.

Figure 4.7. Middleton Cross 1, Face A, North Yorkshire (Source: Hicks 1993, 208).

Figure 4.7 is an example of a detailed hunting scene. It shows the tenth-century Middleton Cross 1, face A, North Yorkshire, where the hounds are placed in a haphazard manner, both horizontally and vertically, around the stag. Hicks (1993, 208) pointed out that this is a Viking age distortion, which is also illustrated by the carvings on the Isle of Man, but rarely present on the logical compositions of the Irish and Pictish stones.

Possible biblical associations have been identified on stonework, for example on the cross-head 3 from St Mary Castlegate, York. This tenth-century sculpture has been discussed in detail by Whitworth (2011) and the three animals have been interpreted as either lions or dogs (Figure 4.8). Lang (1991, 98) believed they were dogs, which had been carved in a crouching position, facing the crossing. Whitworth (2011, 44) notes that the most relevant Scripture text to dogs within the context of a cross is from Psalm 21:

"For dogs encompass me; a company of evildoers encircles me; they have pierced my hands and feet —" (Psalm 21:16, English Standard Version).

This Psalm would have been well-known to church communities through frequent repetition so the audience would have understood its analogy.

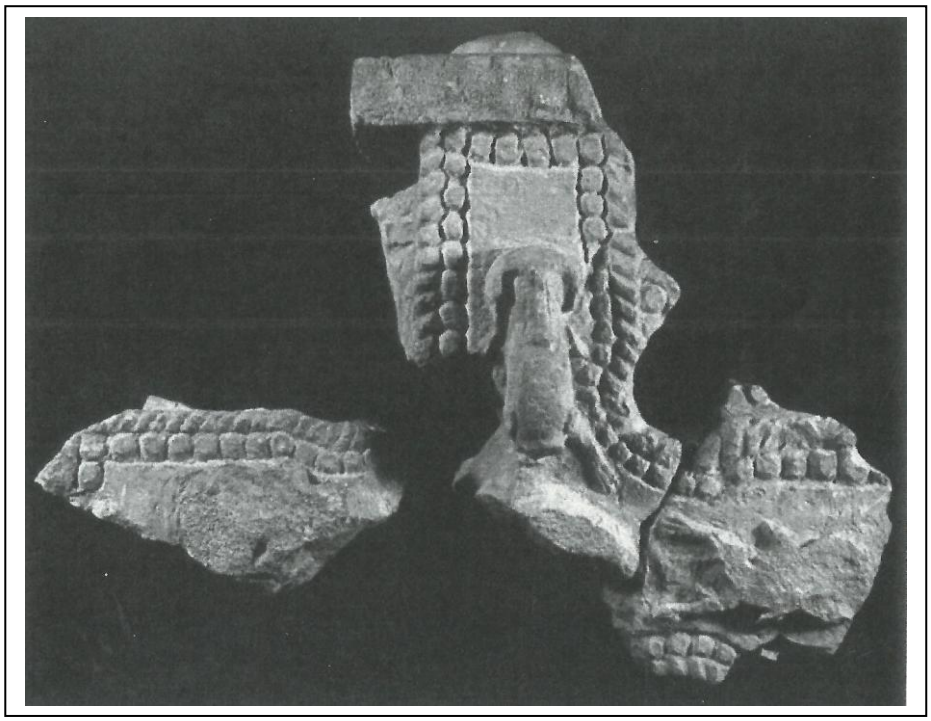

Figure 4.8. St Mary Castlegate 3 cross-heads, York (Source: Whitworth 2011, 43). Permission to reproduce this photograph has been granted by Corpus of Anglo-Saxon Stone Sculpture, photographer T. Middlemass.

Further biblical associations have been placed on the representation of a stag and dog carved on the cross-shaft at St Andrew's Church, Dacre, Cumbria, sculpture dated to the tenth-eleventh century (Figure 4.9). A crouching dog with a curled tail is carved on the back of a possible horned stag. Bailey (1980, 174) has interpreted this image as a 'hart and hound' motif, with its associations with the forces of evil chasing the Church, while others have made connections with the search for the errant soul. Whatever the meaning to this sculpture, it is a rare example of a carving with links in style to the Irish and Pictish hunting scenes, although less crowded and detailed (Cramp 1988, 92).

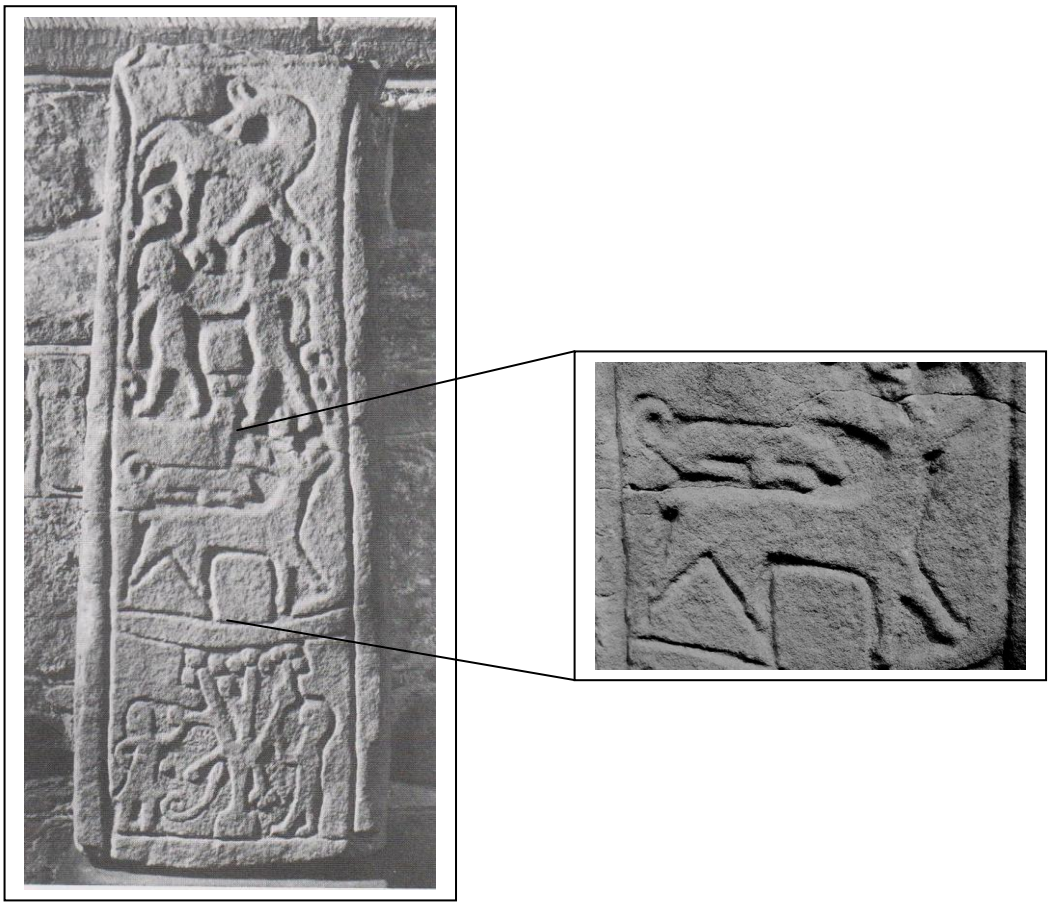

Figure 4.9. St Andrew's Church, Dacre, Cumbria, with a close up of the dog and stag (Source: Cramp 1988, Illustration 245). Permission to reproduce this photograph has been granted by Corpus of Anglo-Saxon Stone Sculpture, photographer T. Middlemass.

In the eleventh century, after the Norman Conquest, there were some changes to the artistic approach, although the 'hart and hound' motif was still regularly used in Anglo-Norman stonework. For example, on a capital in Durham Castle crypt and a tympanum at Parwich, Derbyshire, hounds are carved at right angles to the deer (Hicks 1993, 251). The capital at Durham Castle Chapel, dated to AD 1072, is an interesting case with three faces illustrating the hunting scene, one showing a pair of hounds biting at a stag, the next a huntsman holding two hounds, and the last showing the huntsman on his horse. These scenes are not purely confined to the hunting of deer, as illustrated at Tutbury Priory, Staffordshire, and at Little Langford, Wiltshire. These two very similar lintel carvings illustrate a boar being hunted by three dogs observed by a huntsman. Both these examples have narrative scenes on the lintels with symbolic creatures on the tympanum above (Hicks 1993, 267). The hunts may symbolise Psalm 42's parallel between the harts search for water and the Christian searching for God.

By the twelfth century, there was an increase in the use of figural ornament and narrative scenes influenced by manuscript sources (Hicks 1993, 267). The arch stone at Barfreston South Door, Kent, dating to the twelfth century, is a beautiful carved example. The carvings on the doorway are a profusion of figure sculpture made up of medallions and tympanum, with no particular scheme. There are influences from bestiaries, which became popular during this century. Fables and well-known stories are also suggested by the designer, as well as what seem to be his own designs, such as the medallion with the hound and hare (number 25), which is highlighted in Figure 4.10.

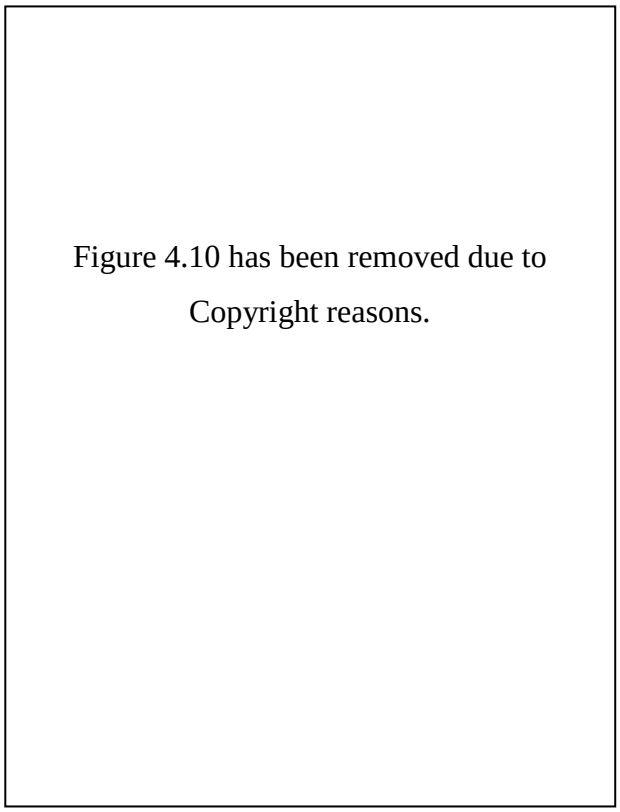

Figure 4.10. Medallion with the hound and hare - number 25 (in box) (Source: Collins, A H 1933, Plate IX).

Out of the twenty-seven medallions, the domestic dog was present on possibly five, all on the inner order. Number fifteen shows a man with crossed legs, playing a stringed instrument with a bow. On the left of the man is an ape playing a mouth organ, and on his right is a dog playing pipes. Number sixteen is either a bear or a large dog playing a harp, with a female acrobat moving to the music. Number seventeen is again either a bear or a dog which is either playing musical instruments or, as Collins (A H 1933)

believed, a bear with his paw in a hive. As mentioned above, number 25 shows two hounds running after a hare, which has doubled back and is escaping to the left. Could this be the first illustration of dogs chasing hares? From Figure 4.10 it can be seen that the dogs are wearing collars.

The font at Melbury Bubb (Figure 4.11), Dorset, also has references to bestiary animals carved in the circular stone shaft. The shaft was a reused piece of stonework and can only tentatively be dated to the early eleventh century. It shows a number of scenes with a stag fighting a serpent, lion and lioness (Cramp (2006, 104) believed the 'lioness' is a panther), and a hyena carrying a dead dog in its mouth (Hicks 1993, 258-9). The hyena often represents the Jews, illustrated robbing corpses from graves. Cramp (2006, 105) commented that all the creatures on the font are carved in profile except for the hyena, possibly suggesting good and evil animals.

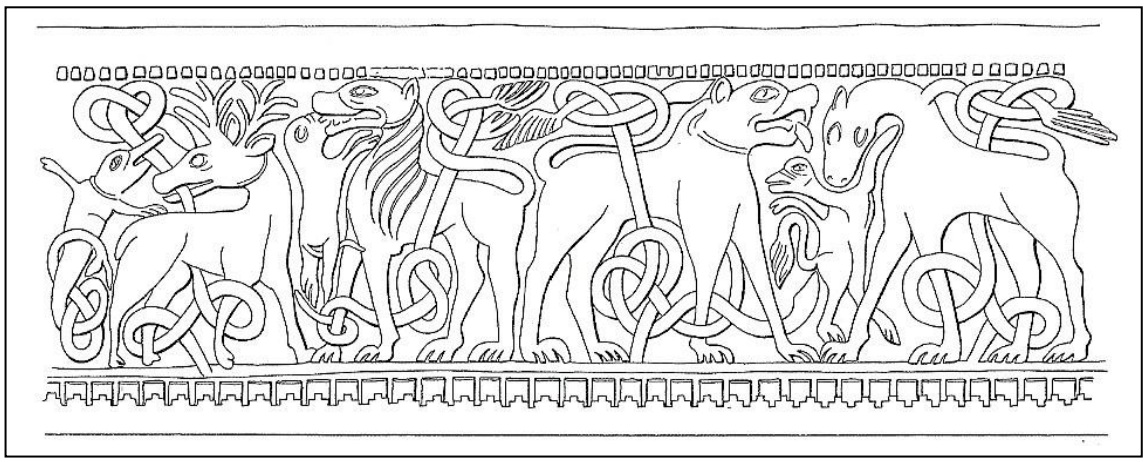

Figure 4.11. Melbury Bubb font, Dorset (Source: Cramp 2006, Illustration 73). Permission to reproduce this illustration has been granted by Corpus of Anglo-Saxon Stone Sculpture, drawing by Yvonne Beadnell.

Other examples of dogs represented on architectural stonework can be seen on the Norman corbels at Elkstone, Gloucester. This shows a stag and a dog, which Collins (A H 1913) described as a Greyhound, with its sleek, athletic body. At St Mary and St David Church, Kilpeck, Herefordshire, there is another interesting Romanesque example of a dog's head and hare carved into a corbel dated to *c.* AD 1140, which is quite cartoon-like in its simplicity (Figure 4.12). The hound-like dog is carved with droopy ears and wide face and snout.

Figure 4.12. Dog and hare, St Mary and St David Church, Kilpeck, Herefordshire (Source: Magrill 2009, 48).

An attractive example from the late twelfth century at St Cuthbert's Church, Fishlake, Yorkshire, is a decorative Romanesque doorway. St Cuthbert's must have been a large and important church to be adorned with such a high quality doorway. The subject matter of this doorway has been interpreted with the interior of the church representing Paradise, the three outer orders around the doorway to be read as the past, present and future in a history of salvation. Dogs only appear in the third order, which is believed to mean the threat from within (Wood 2000). A dog is carved with a goat in its mouth, with two further dogs behind it; one with drooping ears and the other wearing a collar, which is illustrated in Figure 4.13. It is unusual to see a goat as the quarry for hunting dogs, especially as it is not a beast of the forest, but a domestic animal. From bestiaries, dogs have mixed characteristics (which are discussed in more detail later), but generally they are portrayed as loyal and watchful, as well as being feral. Wood (2000, 34) believed that this carving demonstrates "the depletion of the flock of the righteous by slackness or by heresy in the priesthood." Wood (2000) also links these carvings to a papal election dispute from September 1159 and the resulting unrest, or a taunt at failed priests.

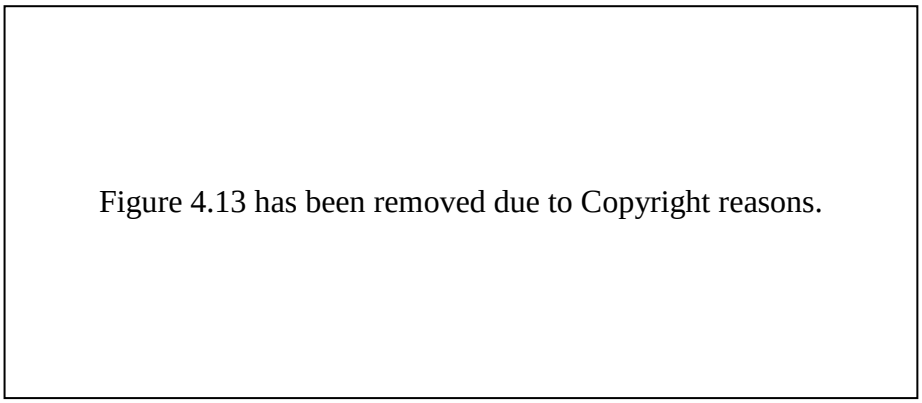

Figure 4.13. Detail of the St Cuthbert's Church, Fishlake (Source: Wood 2000, 33).

4.2.3 *Textiles: Bayeux Tapestry*

The Bayeux Tapestry is one of the most important pieces of artistic evidence dating to the Anglo-Norman period. The 232 foot long strip of embroidery illustrates the events leading up to William the Conqueror's invasion of England and the attack itself. The origins of this embroidery are much debated, with no concrete answers. The general opinion is that the Tapestry dates to 1080-90s (Yapp 1987), with the Tapestry commissioned by Odo, William's half-brother, who accompanied him on the military campaign in 1066. Musset (2005, 17) suggests that the tapestry was made in England due to "the dispassionate attitude towards the defeated Harold and lack of hostility towards the English, and the high reputation of English embroidery at the time." Beech (2005) has suggested the Tapestry was made at the abbey of St Florent of Saumur, in Loire Valley, France, although this theory has not been widely accepted among academics.

Looking at the Tapestry more closely, Lewis (M J 2005, 89) records 738 animals, birds and beasts represented, with twenty-four dogs included in the main frieze and the border. The animals were used in the main frieze to illustrate the narrative of the events as well as embellish the activities going on leading up to the conquest (Lewis, M J 2005, 94), whereas the borders depict an assortment of animals, both domestic and exotic, and these usually provide a commentary on the narrative of the main frieze. Fables were represented in the lower borders. Lewis (S 1999, 60) points out that all these fables "deal with trickery, deceit, betrayal and greed without exception exemplified by the wrongful appropriation of food."

In the main frieze, dogs were embroidered with a formulaic hound-like narrow body with a long, thin tail. There is no suggestion of different breed types being represented, although the dogs are not all the same size. They are portrayed as heavily built Greyhound-type dog with small upright ears and are wearing collars. Lewis (M J 2005, 95) believed the designer used an artistic representation of the dog rather than from 'life' due to a genetic image for the dog used throughout the tapestry. Parallels have been made of similar looking dogs observed on contemporary manuscripts, such as in Cotton Tiberius B v, Folio 7 and Cambridge, Trinity College B. 2, 34, Folio 137v.

All the dogs in the main frieze are connected with hunting activities and overall, are linked with the English and specifically Harold. Lewis (M J 2005, 105) has interpreted the dogs as symbols of status and national identity. The hawks illustrated in the embroidery also emphasise Harold's status and position of the handler. For example, when Guy gives Harold over to William, only the Duke is shown with a hawk, symbolising that Harold loses his hawk at the very moment that his clutch on power begins to slip away. The interpretation of the hawk's characteristics in the bestiary can be contradictory, as hawks can represent courage as well as being able to seize upon others (Lewis, M J 2005, 104).

There is an area of debate on the scene depicting Harold and his party heading to Bosham (Figure 4.14). There are three large hound-like dogs running in front of Harold and his horse, with two smaller dogs, running in front of them with relatively shorter legs and tail, and small upright ears (Yapp 1987). Wilson (D M 1985, 174) interpreted the latter as 'hares' being chased by hounds, although that is unlikely because the designer would have been familiar with hares and would have been able to draw them more accurately. Meaney (2000) believed them to be representing a terrier-like dog. In my opinion, the two smaller dogs are bulkier than the three lean hounds behind them. They are also embroidered in a different coloured thread, possibly to distinguish a breed difference or to indicate that they were further away, and thus darker in colour and smaller in size. Brooks and Walker (1979) point out that the Tapestry was to be viewed from a distance, which meant figures had to be large and clear so perspective was not attempted.

Figure 4.14. Bayeux Tapestry – Harold heading for Bosham (Source: Rud 2004, 39).

Dogs of different sizes were also suggested on the lower borders, as Figures 4.15 illustrates, the huntsman with his horn is portrayed with two pairs of dogs in front of him (Yapp 1987). The pair nearest the hunter have collars and leashes whereas the other pair have neither. A third pair of dogs are illustrated attacking a deer, one is wearing a blue collar and a bell. The dogs are embroidered in different sizes and coat colours throughout the Tapestry, which could indicate different breeds, or the Tapestry designer could have been using artistic licence.

Figure 4.15. Bayeux Tapestry – Messenger comes to Duke William (Source: Rud 2004, 46).

Figure 4.16 has been removed due to Copyright reasons.

Figure 4.16. Bayeux Tapestry – Dog chasing a hare in the border (Source: Wilson, D M 2004, 41).

Figure 4.16 shows a dog chasing a hare in the lower border of the tapestry and the dogs coat has strips embroidered, suggesting that it had a patterned coat rather than just solid colour. Dogs today have a range of coat colours and one is known as brindle, which have darker strips over a base colour, normally brown.

In the upper and lower borders were also nine illustrations of Aesop's fables with four repeated more than once. Theories abound as to why the designers chose to include particular fables, the most prevalent asserts that the tapestry makers simply tired of their task and lost their originality. Still, the various fables included in the Bayeux Tapestry add great meaning to the overall narrative.

The inclusion of fables in the border corresponds with medieval tradition, which often incorporated stories or analogies at the beginning of their works to suggest important themes. One fable describes how a bitch, ready to whelp, earnestly begged a shepherd for a place where she might litter. When her request was granted, she sought permission to rear her puppies in the same spot. The shepherd again consented. But finally the bitch, protected by the bodyguard of her litter, who had now grown up and were able to defend themselves, asserted her exclusive right to the place and would not permit the shepherd to approach. The fable provides a commentary on the main story (Figure 4.17) as it is first illustrated in the border below the scene showing Harold journeying to Normandy (Lewis, S 1999, 69). This fable is used for a second time, below the main frieze showing William leading his troops into battle at Hastings. Bernstein (1986, 131)

believes this fable works as an allegory to emphasis "Harold's ingratitude and guile when making promises, and then for his use of force to retain his possession."

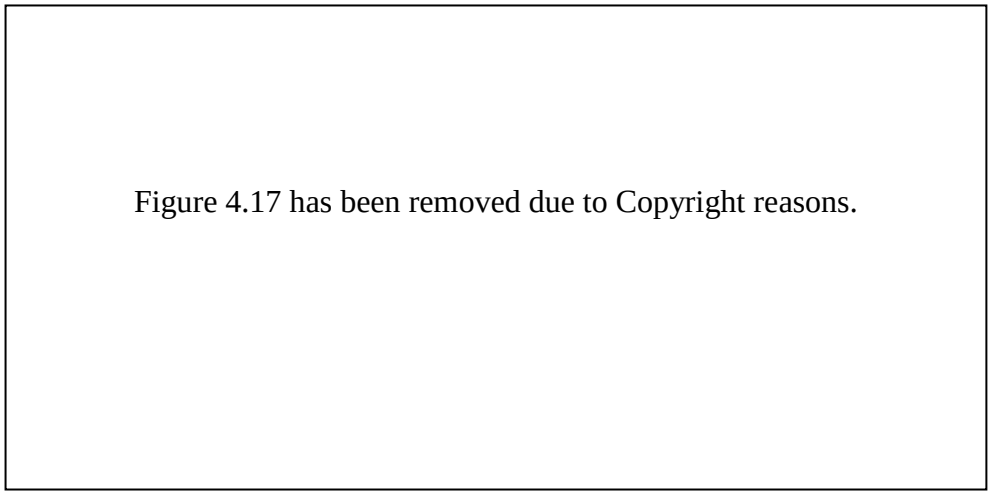

Figure 4.17. Bayeux Tapestry – Bitch and her litter (Source: Lewis, S 1999, 70).

4.2.4 *Manuscript Illuminations*

The coming of Christianity transformed the visual arts, as well as other parts of society. Illuminated manuscripts were unique, handmade objects, which required a number of craftsmen to produce the final piece, including the parchment maker, the scribe, and one or more illuminators. The Lindisfarne Gospels (British Library, Cotton Nero D.iv), dated to the late seventh/early eighth century AD, is a high quality illuminated manuscript produced in Northumbria (Wilson, D M 1984, 36). It presents the four gospels in Latin with an Old English translation added underneath in the tenth century. It includes five carpet pages and five pages with highly ornamented initials. These illuminations are in the Insular art style. Alcock (1998) comments that dog-heads were common within the manuscript, being used as part of ribbon-like interlacing bodies within cross designs, and as terminals and finials around the borders of pages. As can be seen by Figures 4.18 and 4.19 the dog heads represent a heavily built dog such as the mastiff-type with its large, strong jaw. This has led to the interpretation of these dogs as guardians (Alcock 1998).

Figure 4.18 has been removed due to Copyright reasons.

Figure 4.19 has been removed due to Copyright reasons.

Figure 4.18 and 4.19. Dog-head terminals from the Lindisfarne Gospels (Source: Alcock 1998, 524).

Similarities have been made between Lindisfarne Gospels and the St Chad Gospels due to the illumination style, and has been dated to the second quarter of the eighth century (Webster and Backhouse 1991, 127). These Gospels have been damaged through time, with only the Luke Gospel surviving in a complete state. A couple of mastiff-type dog heads are represented on the St Luke carpet page. Figure 4.20 highlights the dog-head terminals illuminated on the carpet page and its prominent use on both sides of St Luke, again these dog images could be interpreted as guarding the word of God.

Figure 4.20 has been removed due to Copyright reasons.

Figure 4.20. Luke miniature from St Chad Gospels (Source: Brown, M P 2007, 50).

4.2.5 Physiologus *and Bestiaries*

The early Christian book, known as *Physiologus,* was most likely written in the second century AD at Alexandria, Egypt. *Physiologus* was an "attempt to redefine the natural world in Christian terms" and was a compilation of material gathered from Greek,

Roman, Egyptian and other ancient Near Eastern sources; they comprised of nature writings, folklores, myths and superstitions with references to the Bible (Barber 1999, 9). The *Physiologus* was translated into Latin in the sixth-seventh century. By the ninth century, the *Physiologus* text was made up of thirty-six chapters, each concerned with a specific animal, plant, or mineral. Each animal chapter (the most numerous) began with a description of its characteristics, and then a section on the moral exempla of that animal linked with biblical references (Resl 2007). All the animals included in the *Physiologus* are mentioned in the Bible, so were familiar to readers by name, even if they had not observed them in person.

Bestiaries were an extended version of the *Physiologus,* developed by the twelfth century, but there was no standard text. Over the centuries, an assortment of other works relating to animals would enhance and expand the body of the work, such as Book XII of Isidore of Seville's *Etymologiae*. Over forty copies of bestiaries survive in England today; Yamamoto (2000) described the bestiaries as laying down the ground rules for interaction between the human and animal worlds.

The designs that illuminated these manuscripts will be discussed here, with the text described later in the early medieval English literature section. The dog was an important chapter in the *Physiologus* and bestiaries. Payne (A 1990, 51) commented that the artist could take six or seven drawings to illustrate the functions that the dog served to man, for example tracker dogs, hunters, sheep dogs, guard dogs, and as a faithful companion. Klingender (1971, 383) remarked on the artists being restricted to depict animals non-realistically due to their obligation to the theological interpretation of the text, and a responsibility to draw attention to select characteristics. It must be remembered that during the Anglo-Norman period, Christianity would have strongly influenced everyday life.

The Aberdeen Bestiary (Aberdeen University Library MS 24) will be the reference manuscript for a more detailed examination of the illuminations containing dogs. This bestiary is considered to be one of the best of its kind and is now accessible via the internet through www.abdn.ac.uk/bestiary. The manuscript was written and illuminated in England before the end of the twelfth century. This bestiary is particularly

remarkable as it contains notes, sketches and other evidence on how the manuscript was designed and executed.

The first dog illustration is noted on Folio 5r, which portrays Adam naming the animals (Figures 4.21 and 4.22). From the illumination, there are two dogs represented. On the left hand side under Adam, there is a panel with a spitz-like dog facing a goat. The fawn-coloured dog has its tail curved over its back with white tips to the end of its tail and paws. Its ears are small, pricked up on the dog's head. The muzzle is smaller than would be expected but looking at the other animals illustrated on this page it would appear, along with the eyes, to be the artist's style. At the bottom central panel is the other dog, which is almost identical but reversed facing to the left.

Figure 4.21 has been removed due to Copyright reasons.

Figure 4.21. Aberdeen Bestiary Folio 5r (Source: www.abdn.ac.uk/bestiary).

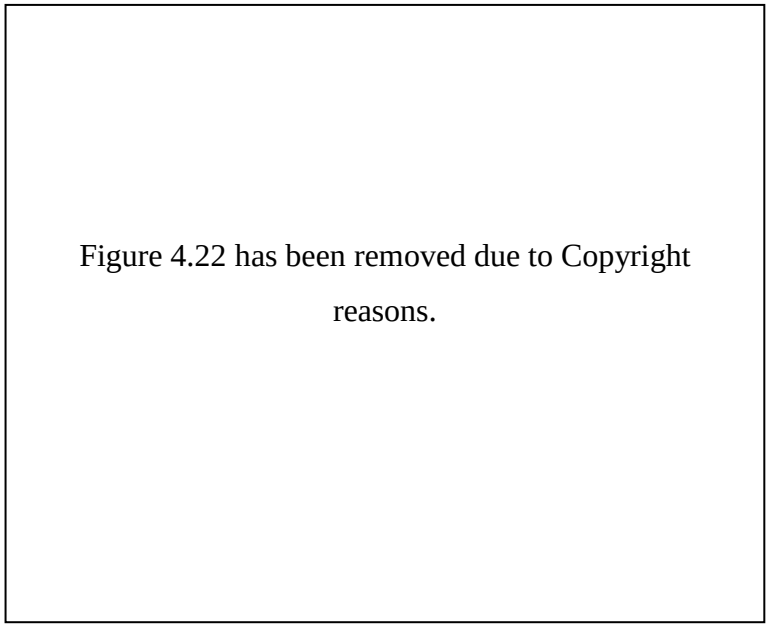

Figure 4.22. Aberdeen Bestiary Folio 5r – detail of left hand corner (Source: www.abdn.ac.uk/bestiary).

An interesting addition to this Bestiary is the sketch of the dog on Folio 12v at the bottom right margin. The Aberdeen Bestiary was never completed, so these imperfections add to the understanding of the processes that went into producing such a manuscript and shows that the illuminator had to practise.

The next section that includes dogs is the chapter on the nature of dogs, Folio 18r. At the beginning, there is a detailed illustration (Figure 4.23) of three attentive dogs in profile, one behind the other. Each dog is wearing a decorated collar with two chains visible, tied to a tree-like plant, which is illustrated on a number of illuminations within the bestiary. The dogs are hound-like in appearance, with droopy ears, lean, with no indication of long fur, and with long, thin tails that go down to the ground. Beavan (2008) comments that this illustration could be allegorical of the three spiritual guides described at the end of the dog section on Folio 20r.

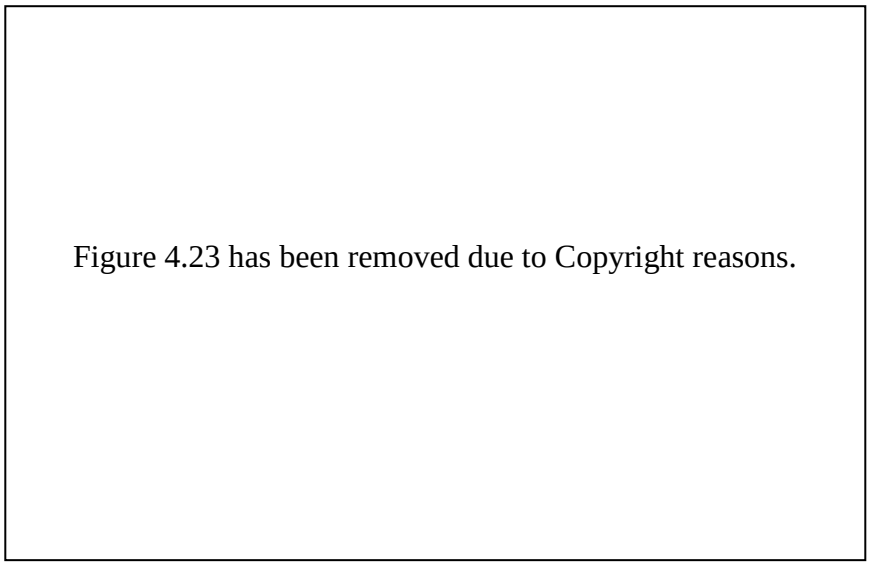

Figure 4.23. Aberdeen Bestiary Folio 18r – detail (Source: www.abdn.ac.uk/bestiary).

The next illumination is a large illustration divided into three sections, referring to the stories described on Folio 19v (Figure 4.24). The top section illustrates a hound-like, fawn-coloured dog with pricked-up ears. The scene depicts the fable of the dog and his reflection. In this example, the dog is carrying a piece of meat over a bridge; when seeing its reflection, he believes he sees another dog with a bigger piece of meat. The greedy animal goes to grab the reflected meat but in doing so falls into the water and then drops the meat. The moral of this fable is 'He that desires to have another men's goods often loses his own' (Gibbs 2009, 219).

The bottom scene shows two dogs licking their wounds with their healing tongues. The healing properties of a dogs' lick has been scientifically proven that there are antibacterial properties in the saliva of dogs (Hart and Powell 1990). As above, the dogs are illustrated hound-like, fawn-coloured dogs, but these two have droopy ears.

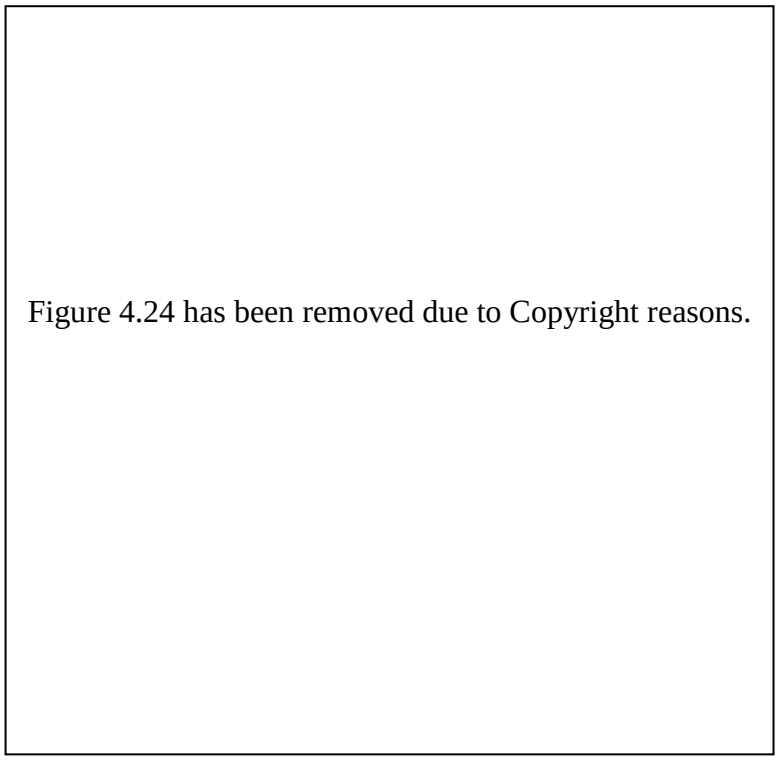

Figure 4.24. Aberdeen Bestiary Folio 19r – detail (Source: www.abdn.ac.uk/bestiary).

The Aberdeen Bestiary illustrates the different roles and qualities held by dogs, which could also be allegories for humans, this was achieved through the illuminations and text. Other bestiaries contained different legends to illustrate the characteristics of dogs, for example the loyalty of dogs in the tale of King Garamantes. An example of this is in a manuscript (BL, Royal MS 12) believed to have been produced by a librarian at Rochester Abbey, Kent, and dates to AD 1220-30s (Jones, M 2002, 37). On Folio 30v (Figure 4.25), on the left hand side of the illumination, King Garamantes is seen being captured and on the right he is shown being saved by his dogs. The dogs are depicted as big, strong, athletic animals with pricked up ears. Their coats are painted in two different colours, fawn and blue-grey.

Figure 4.25. Capture of King Garamantes on the left and being rescued by his dogs on the right (BL, Royal MS 12 Folio xiii, Folio 30v) (Source: Jones, M 2002, 37-8).

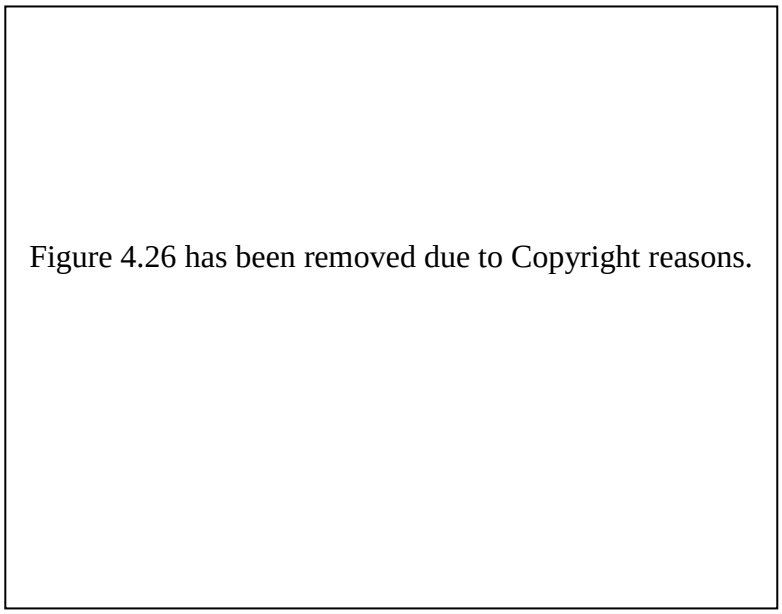

Figure 4.26. Capture of King Garamantes, dogs attacking the enemies (Source: Barber 1999, 73).

This tale is also portrayed in the MS Bodley 764 Bestiary (Figure 4.26). In this version the dogs are shown viciously attacking the enemies (Barber 1999, 73). The dogs are illustrated differently in this example with droopy ears, rounder muzzles and different coat colours. The following illumination (Figure 4.27) in this bestiary shows a dog lying by what appears to be its dead master, representing the loyal qualities of the dog, which are described in the text (Barber 1999, 75).

Figure 4.27. Dog lying next to its master (Barber 1999, 75).

4.3 Early Medieval Irish Art

Early medieval Irish art has attracted much attention from researchers due to its wealth of beautiful examples of Insular art, which was indigenous to Britain and Ireland. Most of the examples of this period are from religious contexts, which as Edwards (1999, 132) points out give us a distorted view, with the more ornate art being cherished and the secular objects less likely to survive the tests of time. Most metal items were melted down and reused.

4.3.1 *Stonework*

Stonework examples have survived well from this time period. Early Christian influence and use of symbolic animals can be seen on crosses, grave markers and stone pillars, but very little from architectural sculpture. Within Christianity the cross symbol is the embodiment of Christ.

Hunting scenes seem to be more common on the Irish sculptures than in England, and may reflect a difference in liturgies. There is a group of carved crosses, dated to the late eighth century, which are believed to come from the Clonmacnoise workshop, a

monastic site in the midlands of Ireland (Hicks 1993, 174). Of particular interest is the hunting scene that is represented in different forms on the shafts of these crosses. They each include the stag, hound and horse with rider. An example from this group is the Bealin cross, Co. Westmeath, which depicts the rider with a spear and the hound biting at the stag's leg above him (Figure 4.28). Hicks (1993, 174) points out that the audience would have been familiar with the hunt allegory with the deer symbolic of the soul being taken for Christianity or even Christ himself. The deer has also been used as a metaphor for immortality and resurrection, as it sheds and renews its antlers every year.

Figure 4.28 has been removed due to Copyright reasons.

Figure 4.28. Bealin Cross, north face (Source: Hicks 1993, 175).

Two crosses often compared with the Clonmacnoise workshop are at Ahenny, Co. Tipperary; they date to the same period and display common influences of Insular art. The North cross has a high decorative base with each side carved with its own narrative and it is the east side of the base that is of particular interest (Figure 4.29). The scene shows a chariot procession with a dog (with a curly tail) standing on the pole from the

yokes connecting the chariot and horses. Harbison (1992, 13) noted that this scene has been interpreted a number of ways, such as Art, king of Tara, going off to battle or as a metaphor for the bringing of the faith to Ireland. Another dog with a curly tail is represented on the south side of this cross (Figure 4.30). This carving illustrates a funeral procession; a number of interpretations as to whose funeral it is, including Art and Cormac Mac Cuillenáin, have been proposed (Harbison 1992, 12). The dog is placed at the bottom centre of the scene, walking behind three figures and before the horse, which is carrying a headless body. Unfortunately, the South Cross is highly worn on the base, but it can be deciphered that two hunting scenes were originally carved on the west and south side but whether dogs were included in these scenes cannot be determined.

Figure 4.29 has been removed due to Copyright reasons.

Figure 4.29. Ahenny North Cross, east face (Source: Harbison 1992, Figure 10).

Figure 4.30 has been removed due to Copyright reasons.

Figure 4.30. Ahenny North Cross, south face (Source: Harbison 1992, Figure 11).

The crosses at Kells, Co. Meath, are an interesting group, dated to the tenth century. The Kells community was affected during the early ninth century by an influx of Iona people forced to leave their homeland in the western isles of Scotland due to Viking raids (Hicks 1993, 227). The Kells South cross, also known as the Cross of Saints Patrick and Columba, has been interpreted as symbolizing the unity of these two communities. The cross is very ornate, particularly the bossed panel, which suggests influences from the Iona community and their style of cross art. On the east face, there is a man on the right with a staff; he is carrying an object that Hicks (1993, 230) has interpreted as a shield (Figure 4.31). The man appears to be driving a group of animals in front of him. The animal group consists of a stag, a bear with a dog below, a large bird, and two further dogs. There is a final quadruped next to the man, which cannot be identified. It is debatable whether, like the Ahenny North cross base, this illustrates Adam naming the animals. In comparison, the later Kells Market cross (Figure 4.32) has an almost identical scene, but for the addition of a second stag, which has led to its interpretation as Noah herding the animals into the Ark, although normally the ark would be included in the carving. The Kells Market cross has a secular theme with a hunting scene on the south face of the shaft, which is simply made up of a dog on the back of a stag and there is a man with a staff or spear to the right. On the north base there are two mythical centaurs, one holding a branch with a bird sitting on its back, the other centaur with a bow; there is a small dog above the arrow (Hicks 1993, 237).

Figure 4.31. Kells South Cross, east face (Source: Hicks 1993, 231).

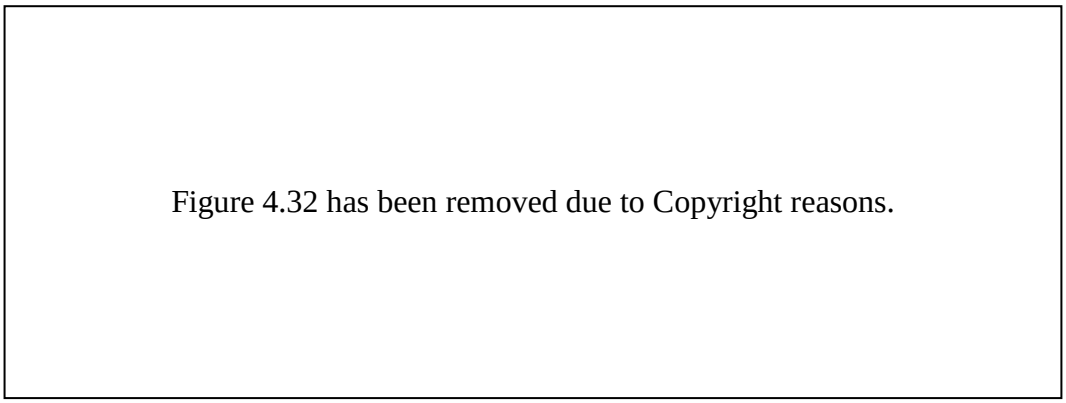

Figure 4.32. Kells Market Cross, west face (Source: Hicks 1993, 231).

Another cross that has a scene that could possibly be interpreted as Noah herding the animals is on the Castledermot South cross, Co. Kildare (Figure 4.33), believed to be ninth century in date. On the west face of the base, there is a group of different animals with two men on the left, both carrying either a spear or a club. In the middle of the scene there is a small dog above the stag, which could suggest that this is a hunting scene, although Harbison (1992, 39) believed the interpretation of this panel to be uncertain.

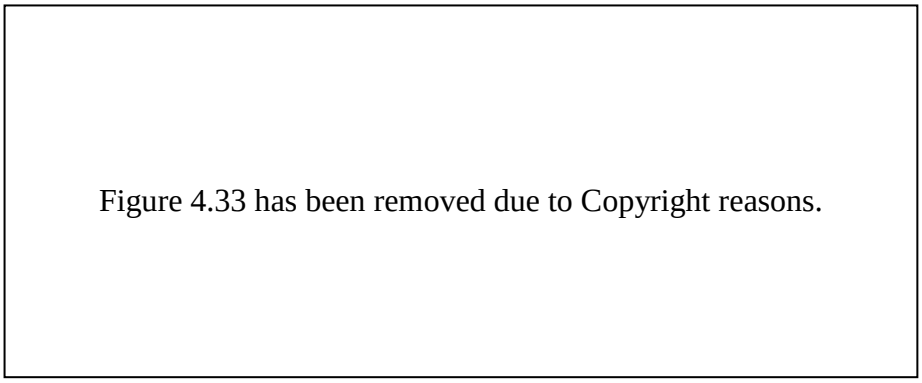

Figure 4.33. Castledermot South Cross, west base (Source: Hicks 1993, 231).

Another small dog is carved into the Oldcourt Cross, Co. Wicklow (Figure 4.34), in a scene similar to that at Castledermot (Hicks 1993, 234). On the south face a man is depicted on the left side carrying a staff with a number of animals in front of him. The group of animals includes a deer, a large bird, two large unidentifiable quadrupeds and a dog that appears to be lying at the man's feet.

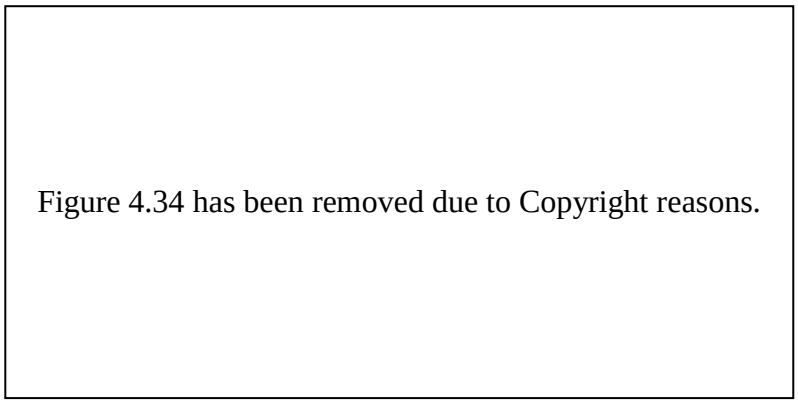

Figure 4.34. Oldcourt Cross, south face (Source: Hicks 1993, 231).

4.3.2 *Metalwork*

The early medieval Irish also produced ornamental metalwork, although dogs are rarely represented. However, one beautiful and rare example of dogs represented was on the Crozier of the Abbots of Clonmacnoise (Figure 4.35). The crozier has a wooden shaft, sheathed in bronze, strengthened by three mounts and surmounted by a hollow curved crook (Rose 2011). The crook is inlaid in silver and niello with a design of interlocking ribbons and snakes. The damaged crest consists of a procession of stylised dogs, which appear to be biting the rear of the dog in front. The procession ends at the front of the crook with a bearded human head. The inlaid work and style of animal ornament has led it to be dated to around the beginning of twelfth century. The crozier is believed to have been part of the shrine to Ciaran at Clonmacnoise but was raided many times during the medieval period (Farmer 1978, 80).

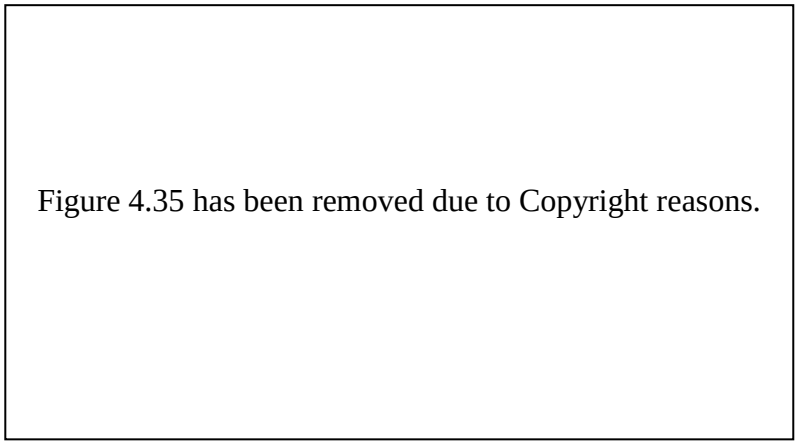

Figure 4.35. Clonmacnoise crozier (Source: Kelly, E P 2007, 30).

The stylised representation of dogs is further illustrated on the Kilmainham, Co. Dublin, and Killamery, Co. Killkenny, brooches. A penannular silver brooch of probable Irish origin, dating to late eighth to early ninth century, was recovered from Kilmainham, Co. Dublin. Figure 4.36 illustrates the backward-looking dog-like head was used at the ring and terminal junction on each side and highlighted by the red arrows (Youngs 1989, 96). A brooch similar in style to this was recovered from a grave mound at Eia, Sokndal, Norway. Kilmainham was an early monastery, which was later used as a Viking cemetery; unfortunately the circumstances in which this brooch was excavated are unknown.

Figure 4.36. Penannular brooch from Kilmainham, Co. Dublin (Source: Youngs 1989, 89).

The second brooch was a silver annular variety, excavated from Killamery, Co. Kilkenny (Figure 4.37), which is believed to be of Irish origin and dates to approximately the ninth century (Youngs 1989, 99). Two dog-like animals are portrayed on the detail on the back of the brooch, and the animals appear to be biting their tails.

Figure 4.37. Killamery Annular Brooch, back detail (Source: Youngs 1989, 99).

4.3.3 *Manuscript Illuminations*

As in the same way as for England, illuminated manuscripts have been identified and attributed to Irish ecclesiastical establishments. The growth of the church led to a constant demand for religious books, and only the wealthier monasteries were able to develop libraries, due to the cost of producing these manuscripts (Edwards 1999, 148). The books were not solely biblical documents, but included hymns, poetry, Easter tables, annals, ecclesiastical laws and prayers. The most famous and complex Irish example is the Book of Kells (Dublin, Trinity College Library, MS 58) dated to the early ninth century AD, which contains the four gospels written in Latin along with prefatory and advisory information. There were numerous depictions of animals within Evangelical symbols and the genealogy of Christ; Preece and Chamberlain (1993, 17) suggested that the use of animal ornament throughout the manuscript would have led to a positive outlook on the relationship between animals and humankind. The only depiction of a dog was on 48r (Figure 4.38), where a stylised dog is drawn with pricked up ears chasing a hare, and certain areas painted with blue and yellow ink (Kelly, F 1997, 17).

Figure 4.38. Dog and hare on r48 in the Book of Kells (Source: Meehan 1994, 75). Permission to reproduce this image has been granted by The Board of Trinity College Dublin.

Stylised dogs were also illustrated in the Book of Durrow, which is believed to have been produced in either Ireland or Northumbria and dated to around AD 675. Figure 4.39 is a section of the ribbon-style quadrupeds that are illustrated on the cross-carpet page of St John's Gospel (Folio 192v) and been described by some scholars as stylised dogs, interlaced together (Hull 2003, 65-6).

Figure 4.39 has been removed due to Copyright reasons.

Figure 4.39. Stylised dogs on the border of St John's Gospel carpet page (Source: Meehan 1996, 64).

4.4 Summary

It can be seen that dogs are represented in different contexts and forms in English and Irish early medieval art, with some portrayed more realistically than others. Unfortunately, many of the examples illustrate dogs in abstract scenes with no human figures for size comparison, in particular on Irish high crosses. When humans are present in the scenes, such as the Kells Market cross, the characters were positioned to

fill the space available so they were disproportionate. Only broad dog types could be identified from the art representation. The most commonly illustrated dog was the hound-type, similar to a Greyhound, although it does appear to be stronger built than the modern breed. The mastiff-type is represented in the Lindisfarne and St Chad Gospels, although only its head, with the presence of this dog imagery on certain pages suggests guardianship. There are also a few examples of a smaller dog with a curly tail, such as that in the Aberdeen Bestiary and on the North Cross at Ahenny.

Hicks (1993, 272) made the point that animals in general were used to help convey the new Christian faith around the British Isles. The use of animal ornament and imagery would have appealed to all audiences, whether they could read or not. Animals shown involved in secular activities, such as the deer hunt, were scenes the public could relate to. The artists would add a Christian twist such as equestrian clerics on the Clonmacnoise shafts, which aids in communicating the religious faith (Hicks 1993, 275).

4.5 Early Medieval Literature

A large number of documentary texts survive from the early medieval period from England and Ireland, which help provide an added insight into this period. The majority date to the late Anglo-Saxon period and onwards. They were written in Latin, Old English or Old Irish, depending on the scribe and the context of the documents. Documents surviving from this time consist of biblical translations, narrative history, legal documents, text books and poetry.

4.6 Dogs in Early Medieval English Literature

4.6.1 *Introduction*

With the process of conversion to Christianity, the Anglo-Saxons were introduced to an extensive range of literacy (Brown, M P 1991, 5). The series of works copied or composed in Anglo-Saxon England reveals a culture beholden to the learning of antiquity and the early Christian world with influences from the Celtic, Byzantine and Germanic.

4.6.2 *Ecclesiastical Literature*

The development and importance of the Christian Church during the Anglo-Saxon period meant that the writings produced in the churches were very influential and we must think of the audience that would have read and seen them. Both the Old and New Testament refer to dogs, which may well have influenced the reader's view of the animal. The literary audience would have been limited to those with access to the manuscripts who could read and those who would have been read to and looked at the images within the illuminated documents.

Menache (1997) noted the negative attitude expressed towards dogs in many religions, such as pagan, Christian, Jewish and Muslim. She established how these religions used their writings to weaken the unity between humans and dogs, stressing their differences. This suggests that clerics actually felt threatened by the attention humans paid to their dogs. Thomas Aquinas, a thirteenth-century philosopher-theologian, wrote, "people cannot show animals charity (love) or even friendship, because animals are not rational creatures and fellowship is based on reason" (cited in Salisbury 1994, 11). From the Book of Genesis, the bible emphasises that animals are for the benefit of humans.

"Then God said, "Let us make man in our image, after our likeness. And let them have dominion over the fish of the sea and over the birds of the heavens and over the livestock and over all the earth and over every creeping thing that creeps on the earth." And God blessed them. And God said to them, "Be fruitful and multiply and fill the earth and subdue it and have dominion over the fish of the sea and over the birds of the heavens and over every living thing that moves on the earth." (Genesis 1:26, English Standard Version)

The dog is mentioned thirty-five times in the Bible, mostly with negative or impure connotations (see Appendix 2 for the full list of references). In the book of *Revelation*, the dog is described as on a par with those excluded from the heavenly Jerusalem:

"Outside are the dogs and sorcerers and the sexually immoral and murderers and idolaters, and everyone who loves and practices falsehood." (Revelation 22:15, English Standard Version)

In the Gospels, Jesus further corroborates their dishonourable status in a passage from Matthew 7:

"Do not give dogs what is holy, and do not throw your pearls before pigs, lest they trample them underfoot and turn to attack you." (Matthew 7:6, English Standard Version)

Other passages express, by implication, the low esteem in which dogs are held and their qualities are comparable with those of the "morally depraved, such as pagans and the unbaptised" (Gilhus 2006, 170). In I Kings 14:11; 16:4; 21:19, and 24 it is referred to that nothing worse could happen to a person than dogs should devour his body. Dogs are, also, used as metaphors, such as in Psalms 22:

"For dogs encompass me; a company of evildoers encircles me; they have pierced my hands and feet —" (Psalm 22:16, English Standard Version)

This verse implies dogs are the enemy and in Psalms 59:6 they are made out to be traitors. In Philippians 3:2 dogs are used as an analogy for the enemies of Christianity (Gilhus 2006, 175). However, Job 30:1 refers to the use of dogs to guard flocks; and the comparison of inefficient watchmen with dumb dogs is made in Isaiah 56:10, which implies that at least some dogs were viewed as useful.

Bede (*Vita Sancti Cuthberti* I, 21; *Hexaemeron* 91) asserted that human beings were the masters over animals, since the former were said to have been created in God's image and therefore the beneficiaries of His wisdom. Moral analogies taken from the bible were used as part of the *Physiologus* and the bestiary manuscript, which, as mentioned before, were used to emphasise the characteristics of the animals and plants under discussion. The dog section in the bestiary is contradictory, as Payne (A 1990, 50) points out:

"one moment the writer compares guard-dogs to priests who drive away the devil and in the next that a dog returning to its vomit is like a sinner repeating his transgression."

Their good qualities of usefulness, fidelity and cleverness are highlighted with examples from Pliny, such as the dog that threw itself onto the funeral pyre of King Lisimachus. No descriptions of the looks or types of dogs are given in these manuscripts. In the Aberdeen Bestiary manuscript the dog is described as the most intelligent and understanding of all the animals, and in the translation from Folio 20v: "They alone recognise their names and love their master" (Beavan 2008).

4.6.3 *Hunting*

Hunting scenes, within both English and Irish early medieval art, were a common theme and this is reflected in the literature of the time as well. Animals were important to royalty and noblemen as symbols of power and influence as well as their economic value (Clutton-Brock 1976). Yamamoto (2000) comments that hunting was a popular pursuit for the high-status people in society and viewed not just as a sport, but it was good training for keeping men fit in case of war, whereas hunting for the poorer classes was necessary for additional food and possible income, if practised at all.

In Roman times, Britain was noted for its hunting dogs as Strabo (*Geography* IV, 5, 2) refers to dogs specifically bred by the Britons for the chase, and the use of native dogs for warfare. Claudian (*Stilicho* III, 301) claims that British dogs could break the necks of great bulls, which suggests that the dogs were large. However, the early third-century writer Oppian (*Cynegetica* 1, 468-80) stressed that British hunting dogs were small, emaciated and shaggy, yet ferocious, strong and adept at following scents (all sources cited by Ireland 1986).

At the beginning of the Anglo-Saxon period, no extant written laws prohibited commoners from hunting the forests and at that time bear and beaver were still quarry. It was not until hunting became a popular noble sport that things began to change, with laws drawn up to restrict the common people from hunting, and to protect the deer. Evidence for bear hunting after the Roman period is very slim with only a few bone fragments recovered from archaeological sites, such as at Coppergate, York, where Brown Bear terminal phalanges or claw bones were recovered. The Domesday Book entry for Norwich records that they should provide King Edward with a bear for baiting along with six dogs (Yalden 1999, 115).

An interesting account of the relationship between huntsman and his hounds is illustrated by Ælfric's *Colloquy*, which is a dialogue between a master and his pupils, who each take the role of different craftsmen. Ælfric was an abbot at Eynsham Abbey, Oxfordshire, who created this colloquy to assist in his teaching of Latin to his students (Anderson 1974). The craftsmen include baker, ploughboy, merchant and huntsman. There is debate as to how much importance should be taken from these writings; was Ælfric providing a rare glimpse of the common people of the Anglo-Saxon period or was it the monk's own annotations on the various activities going on in the Monastery? The dialogue between the master and the huntsman is translated below, and taken from Griffin (2007, 13):

Master: Do you have any skill?
Hunter: Yes, I have one skill.
Master: What is that?
Hunter: I am a hunter.
Master: Whose?
Hunter: The King's.
Master: How do you practise your craft?
Hunter: I weave my nets and put them in the right place, and I train my dogs to chase wild animals, until they suddenly come to the nets and thus are trapped, and I cut their throats in the nets.
Master: Don't you know how to hunt without nets?
Hunter: I can also hunt without nets.
Master: How?
Hunter: I chase the wild animals with swift dogs.
Master: What kind of animals do you usually catch?
Hunter: I catch stags and boars and deer and goats and sometimes hares.
Master: Did you go out hunting today?
Hunter: No, because today is Sunday, but I went hunting yesterday.
Master: What did you catch?
Hunter: Two stags and a boar.
Master: How did you catch them?
Hunter: I caught the stags in the nets, and I slew the boar.
Master: How did you dare to slay a boar?
Hunter: The dogs drove him towards me, and standing in front of him I suddenly cut his throat.
Master: That was very brave of you.
Hunter: A huntsman must not be fearful, because many kinds of beasts live in the woods.
Master: What do you do with the game?

Hunter: I give the king everything I catch, because I am his huntsman.
Master: What does he give you?
Hunter: He clothes me well and feeds me, sometimes he gives me a horse or an arm-ring, so that I will more willingly exercise my craft.

In this dialogue, the hunter was a servant of the King and his catch was given straight to the King. The hunter describes three hunting techniques employed to chase game. The first is the use of nets, which is very effective but was not believed to be a very skilled technique and not generally used by the nobility. The second method mentioned was the use of dogs to chase the wild animals. The hunter comments that he trained his dogs, so indicating that a relationship would have developed between the hunter and his animals. The third method is known as the 'drive hunt' or ambush. This method included a group of hunters being divided into two teams – the beaters, who drive the wild animals towards the second group, who are hidden with bows and as mentioned in this case a knife or sword (Griffin 2007, 13). Specially trained dogs can also be used as beaters. Griffin (2007,13) points out that this dialogue is coming from the servant's point of view and it should not be presumed that the king would have hunted using the same method as the servants.

The importance of hunting within the royal household is highlighted by a manuscript dated to 1136 called 'Establishment of the King's household' also known as *Constitutio domus regis*. The document is believed to have been written by the king's treasurer Nigel of Ely, who later became Bishop of Ely (Griffin 2007, 21). This account list provides the payments given to over a hundred individuals over the year. Of particular interest is those given to the hunt, providing an outline of the numbers of people involved and their value to the king. Those listed include knight huntsmen (the highest paid), keepers of dogs and kennels, huntsmen of wolf packs, horn blowers, hunt servants, and archers. The accounts indicate three different hunt dog packs kept by the king: the wolf pack for hunting wolves, the King's pack for more recreational hunting and the final and main pack used to hunt for the king's table. The wolf hunt pack consisted of eight Greyhounds and twenty-four racing dogs, suggesting that there was a distinction between these two types of dogs. No further details are provided for the types of dogs kept for the other two packs but it is suggested that dogs from either pack could be used for the king's hunt or for food hunting. Another list is given of the different types of dogs kept in the kennels, including hounds, bloodhounds, running

hounds, leash hounds, big leash hounds, small hounds, big harrier hounds, small harrier hounds, brachet hounds, racing hounds, and Greyhounds. Griffin (2007, 22) concludes that the training and breeding of these dogs indicates that the hunt had become a complex and well-developed activity by the early twelfth century.

Although hunting was a fashionable pursuit with the elite, it was also carried out by commoners with fear of prosecution if they were caught, especially in the Royal forests. High-status poachers were recorded in the eyres and their type of dog was called a *leporariis*, which is a sight-hound dog, similar to a Greyhound (Birrell 2001). Bows and arrows were commonly used in conjunction with the dogs to hunt deer. For example, Robert de Chandos is recorded as having taken a hart in January 1250 with the assistance of five men armed with bows and arrows and four Greyhounds.

To win the loyalty of his subjects, Richard I (1189-1199) made dispensations to the hunting laws, which reduced the severity of the penalties for poaching, which had included blinding and castration (Ritchie 1981, 65). The next king, John (1199-1216), continued to relax the controls on the forest in the Magna Carta, but only after he had driven the whole of England to rebellion. The Magna Carta was reissued in 1217 by Henry III (1216-1272), a special Forest Charter being set up to extend the existing forest hunting privileges to the nobility. This reduced the amount of land under Forest designation. Reeves (1995, 104) noted that documents suggest certain people were given royal grants of warren, which allowed the holder to keep dogs and hunt hares and foxes on specified land outside the royal forests. It was not until the reign of King John that people were encouraged to go fox hunting: on 2nd January 1206 the king wrote to Hugh de Neville to inform him that he had granted Peter Bordeaux a licence to hunt the hare and fox with his six or seven dogs, as well as three Greyhounds (Ritchie 1981, 80).

Documents describing the Royal itinerary for King John also comment that in May 1212 the hunting group, which accompanied the king on his tour included 167 Greyhounds, thirty-eight pack dogs and thirty-two brachets which were all under the supervision of 52 staff (Griffin 2007, 29). The sheer size of the Royal hunting party highlights how substantial and public the event would have been.

Clerics were also known to take part in hunting (Alderton 2000, 42). William de Clowne, Abbot of St Mary's in Leicestershire, was an expert on hare hunting and gave advice to Henry III (1216-72) and his son Prince Edward. It is suggested that William de Clowne asked to set up a regular sale of hounds and other dogs, which was granted by the King. Alderton (2000, 42) points out that the clerics did not have free rein over the Forest and from documents relating to Chertsey Abbey, it is known that their hunting with hounds was constrained to foxes, hares and pheasants. This diversion from clerical matters was not without its disapprovers, due to the large amount of time taken up looking after the dogs and the cost of food and bedding.

Dogs would have been used to hunt the wild fauna available in the early medieval period, such as deer, hare, fox, and rodents. Sykes (2007) concluded from her research that rabbits were first introduced to Britain after the Norman invasion during the Angevin period (second half of the twelfth century) and fallow deer were also introduced at this time. Contemporary documents note that in 1251, Henry III and his court consumed over 450 rabbits at a Christmas dinner (Rackham, O 1986).

During the Norman era, dogs were highly prized, to the extent that those looking after them were responsible for providing some form of veterinary care should they fall ill or become injured. Bread rather than meat appears to have figured prominently in the diet of such dogs at this time.

The hunt included horsemen, horses, hounds and in some circumstances birds of prey. Falconry became a sign of nobility, and it is recorded that birds of prey were sent as a gift to Æthelbald of Mercia by St Boniface (675-754), whilst in Germany, and requested from him by Æthelbert of Kent. Huff (1997) comments, that from the writings of *Vita Eawardi Regis,* Edward the Confessor's passion for hunting with hawks and hounds is mentioned. In the Domesday Book, an entry states that in the time of Edward the Confessor, the Berkshire thegns paid only their weapons, hawks and hounds.

Another sport involving dogs and enjoyed by the elite was bull baiting. Fleig (1996, 61) stated that the first records of this activity come from the reign of King John (1199-1216). It is recorded that dogs were specifically chosen for their large size and strong build. The event was held in an enclosed area where the chosen dog was sent out to

take down a loose bull. Fleig (1996, 62) notes that these events were not widespread in the country, due to the lack of appropriate and secure arenas to ensure that spectators did not get hurt.

4.6.4 *Beowulf*

Beowulf has been described as the most important Old English poem, so it is surprising that there is only one mention of hounds in this heroic epic. In lines 1358-60 a stag is being pursued by hounds and when he comes to the water edge, the stag would rather die than enter the mere where Grendel lived (Alexander 1973, 94). From the Bayeux Tapestry, dogs are frequently associated with the elite and hunting activity, which links in with this piece of literature, where they are represented with hunting deer.

4.6.5 *Exeter Book Riddle 15*

Exeter Book Riddle 15 is an Old English poem, with much debate on the meaning of its verse. The riddle describes an animal being hunting by a predator and Young (1944) believes it portrays an adder attacking a weasel family, whereas Meaney (2000) has interpreted it as a terrier-type dog hunting a red fox. Meaney (2000) points out that there is the suggestion of terrier-type dogs in the middle Anglo-Saxon period by a document by from Alcuin of York (*c.* AD 730-804), in which he advises the brothers at Monkwearmouth to stop hunting foxes and hares and concentrate on their prayers. She believed this refers to terrier-type dogs as they are known for their burrowing ability.

4.6.6 *Famine*

The only reference to dogs as a food source from the literature is from the *Liber Eliensis,* written at the end of the twelfth century, drawing on earlier sources. It records that during the extreme weather conditions between AD 695 and 700 the famine became so bad that people had to resort to eating horse, dog, cats and even human flesh (Fairweather 2005, 209).

4.7 Dogs in Early Medieval Irish Literature

4.7.1 *Introduction*

The first reference to Irish dogs is in a letter by Quinitus Aurelius Symmachus, a Roman Consul, to his brother Flavianus written in AD 391. The letter thanked him for the gift of seven dogs from Ireland, which Rome had viewed in wonder at their size and power. Hogan (1897, 11) believed they were a gift from an Irish chieftain as seven dogs appears to be the number of animals often given between kings and chieftains.

The oldest written records from Ireland itself date back to the fifth century AD and are inscriptions in Ogham (Kelly, F 1997, 6). There are a number of texts dating from the seventh to ninth century, which deal with early Irish society. Kelly (F 1997, 6) pointed out in his comprehensive study on early Irish farming that the old Irish law-texts are important for researching and understanding Irish society, however centuries of successive copyists' misreadings, omissions and additions means caution must be taken when interpreting them. Texts used in F Kelly's research included annals, saints' lives, ecclesiastical legislation, penitentials, sagas and poetry.

4.7.2 *Dog Types*

Unlike the English manuscripts, Irish early medieval sources can provide detailed information on the types of dogs in use. Below, the dog types mentioned have been placed into functional categories.

4.7.3 *Guard Dogs*

Árchú literally translates as 'slaughter-hound' and was a large aggressive guard dog that was bred and trained to kill. This prestigious dog would have been owned by people of power and nobility. It had the same value as a common man i.e. seven *cumals* (Kelly, F 1997, 116). The *árchú* is referenced in a number of Old Irish texts but Kelly (F 1997, 115) pointed out that the best description comes from the *Táin Bó Cúailnge.* The text describes the dog as being so powerful that it needed three chains and three men on each chain to control it. In the *Corpus iuris hibernici*, hereafter *CIH* (Binchy (ed.) 1978), the

árchú duties are described as the ability to track blood, to capture a man and to protect a man under attack from two warriors (*CIH* iv 1390.24-35).

The guard dog is generally regarded as the most important type of dog, and if it was killed illegally then the punishment was severe. In the law-text *Bretha Nemed Toísech* it is stated that if a guard dog is killed illegally then the dog's owner must be paid ten cows and supply a replacement dog of the same breed.

4.7.4 *Hunting Dogs*

Mílchú literally means 'animal-hound'. Again, this dog was associated with nobility although not as highly valued. The O'Davoren's Glossary (*CIH* iv 1516.12) values the hunting dog at two *séts* (Kelly, F 1997, 17). This dog was bred for speed and ability to hunt prey. *Gadar* is also used in Old Irish texts to describe a hunting dog. *CIH* iv 1268.14 describes the *mílchú* and *gadar* as different types but no details are provided of their differences. Kelly (F 1997, 118) pointed out that in all other references it is assumed that these two words were the same. Lewis (C A 1975, 22) commented that in one of the heroic poems of Fionn, the *gadar* is described as "… a shag-haired dog of dirty grey", whilst others praise its music: "And sweeter to us than singing was their baying".

Archocaid was another term used for a hunting dog; it was defined in a ninth-century glossary (*CIH* iii 889.8) as 'hound of the chase'. In later glossaries (probably dating to the twelfth century) it is described as a hound for hunting deer and tracking thieves (*CIH* iv 1469.27: Kelly, F 1997, 119). In the law text *Críth Gablach*, which discusses the status of individuals, it remarks that 'a lord of precedence' should have a hunting dog and the lady must have a companion dog (*CIH* ii 567.26: Kelly, F 1997, 120).

With the prestigious Irish Wolfhound of today, Irish dogs are synonymous with the hunting of wolves. Kelly (F 1997, 119) points out that there are no Old Irish sources that refer to this type of hunting and it was not until the sixteenth century that references to this large specific breed are mentioned (Scharff 1924). The tale *Táin Bó Fraích* refers to the hunting with hounds for deer, foxes, hares, boars, and otters but not wolves (Leahy, A H 1905).

4.7.5 *Herding Dogs*

Conbúachaill meaning herd dogs are referred to in the texts and defined by the type of herd they looked after, such as cows, calves, and sheep. The *conbúachaill cacha cethrae* was defined as the 'herd dog of every livestock' within *CIH* ii 376.26-377.6. These useful dogs were highly valued and an Irish canon law (*Irish penitentials* 174 § 3) states that if a herd dog is killed illegally then the punishment of five cows is to be paid and a replacement dog of the same breed. Additionally the perpetrator will have to pay the value of any of the flock lost to wild animals, until the end of the year (Kelly, F 1997, 120). Lucas (1989, 22) concluded from the literary sources that a herd dog function was primarily as a guard-dog to the flock rather than for herding or rounding up the animals.

4.7.6 *Companion Dogs*

Orcae or *oirce* is the term used by Old Irish triad (*Triads* 32 § 241) and was classified as dogs for people's amusement. The name *messán* was also used to describe a little dog (Scharff 1924). These dogs were associated with queens, noble ladies, and certain professions. Kelly (F 1997, 120) commented on a legal text (*CIH* iv 1268), which lists a physician, a harpist, a queen and a hospitaller as professions that could own such a dog. These dogs were given the same value as a hunting dog of two *séts*. Companion dogs were also believed to have supernatural qualities and Kelly (F 1997, 120) commented on documents remarking on their ability to protect women from fairies when giving birth (*CIH* iii 806.33-807.10).

4.7.7 *Dog Legislation*

Dogs are noted within Old Irish law-texts regarding legislation and punishable offences. *Bretha Comaithchesa (CIH* i 74.26-30) comments on the seriousness of a dog defecating on another man's land. The punishment involved the dog owner removing the faeces and replacing the contaminated soil. Then they must provide "the land owner with the same quantities of butter, curds and dough" (Kelly, F 1997, 143).

The large number of references to dog attacks highlights the severity of the problem during this period. As discussed earlier, the guard dog was a large and aggressive animal, so unsurprisingly the law-texts take a strong line on dogs attacking humans. A number of sources comment on forms of restraint. An interesting legal text known as *Conslechtae,* meaning *'*Tract on Dogs', comes from the final third of the *Senchas Már*. This secular lawbook dates to the eighth or ninth century and deals with the legal rights of ordinary people (Charles-Edwards 2008). It states that any dog known to be aggressive should have a bell or rattle round its neck (*CIH* i 111.22), along with the importance of having the dog chained up during the day. They were however allowed to roam during the night until sunrise (Breatnach 1996). Herd dogs could attack within the herd's enclosure, but not outside it (Kelly, F 1997, 148).

The documents also comment on the permissible reasons for killing a dog, which included a stray dog being dangerous or a nuisance, such as a straying bitch in heat (*CIH* i 112.38-9: Kelly, F 1997, 150). Law-texts state that the dog owner is not responsible for his dog if the animal kills in retaliation while following its natural hunting instincts (*CIH* ii 579.2: Kelly, F 1997, 177). An interesting reference in the law-text on distraint refers to an incident with a dog being bewitched (*CIH* ii 388.13-4; v 1692.35-6 = *Ancient laws of Ireland* I 180.30). The offender defends himself saying he was testing the spell and did not mean to kill the dog (cited in Kelly, F 1997, 175).

4.7.8 *Irish Annals*

There are a few references to dogs in the Irish Annuals. In the *Annals of the Four Masters* (O'Donovan (ed.) 1851, 1054.10) there is an anecdotal story about a Greyhound having been picked up by a group of blackbirds that subsequently dropped it to its death. In *Miscellaneous Irish Annals* (Ó hInnse (ed.) 1947, 1169.4) it states that Dermot MacMurrough was left in possession of Dublin in 1169, in order that he might avenge both the slaying of his father by the residents of that town, and the further insult they committed when they placed a dead dog in his father's grave. This incident may reflect the Bible teaching, *I Kings* 21:19–24 that the worse final fate for a person is to be eaten by a dog.

In the *Fragmentary Annuals*, in 866 there is reference to a battle between Cennétig, son of Gáethíne, king of Loíches and the attacking Norwegians. After the battle the Norwegians fled to the bogs and were killed there, their corpses being later consumed by dogs (Radner 1978, 125). In 1210, it is documented that the Earl of Albeniz from Spain sent ten dogs to Ireland. Spanish imported dogs are referenced in the legend of Cú Chulainn (see below). Dogs were also being exported from Ireland; Edward I paid for stag hounds to be found, and sent over from Ireland to England (Redlich 1981, 24).

4.7.9 *Rabies Virus*

The animal disease, rabies virus, is recorded in law-texts as affecting dogs, cattle, pigs and poultry. The Irish words *conach* or *confad* were used to describe this disease meaning 'dog death (by rabies)' or it can mean madness, fury rabidity (Ó Corráin 2000). One source states that if a dog is diagnosed with rabies then its owner must put out a public warning, kill and burn the dog and have its ashes placed in a stream (*CIH* i 285.21-2: Kelly, F 1997, 215). This strong response suggests that people were aware of the severity of the disease and how infectious the dead carcass was to other humans and animals.

4.7.10 *Food Source*

Like early medieval England, literary texts suggest that dogs were consumed during times of famine. For example, *Chronicum Scotorum* (*CS* 1116) states that there was a great famine in the spring of AD 1116, where people had to sell their children for food, and even eat each other and dogs (Hennessy (ed.) 1866, 319). Reference was made in the tenth century Cormac's Glossary (Stokes (ed.) 1862, 25) to a poet or druid who ate or chewed a piece of dogflesh as part of a ritual that would produce revelations from the pagan gods (McCormick 2002, 107).

4.7.11 *Totem Animals*

Kelly (F 1997, 353) comments on the presence of totem animals in early Irish literature. The taboo is linked with the idea of a totem-animal, which has intimate association with an individual or family often, a person may take the name of his totem-animal, such as

Cú Chulainn, whose totem-animal was the dog. The Book of Leinster (Best *et al.* (eds) 1956) comments on this food taboo when it provides the list of Cú Chulainn taboos:

"*Geiss dó dano cárna chmanma do ithi*"
"it was taboo for him to eat the flesh of that which had the same name" (i.e. a dog)
The *Book of Leinster* ii 445, 13883-4

4.7.12 *Legends*

Dogs regularly appear in Irish legends, although the source of this type of information is not datable. Like the biblical writings, legends can add to our understanding of how people viewed dogs and what may have influenced them.

The most famous Irish legend involving a dog is that of Cú Chulainn, the hero of the Ultonian Cycle. Cú Chulainn was originally called Setanta as a child, but one day he was attacked by a large guard dog (which was noted as having come from Spain) and was described as having the strength of a hundred men. To protect himself, Setanta hurled a ball into the mouth of the massive dog, which caused the animal to choke and die. The dog belonged to Culann the Smith, who was very upset to lose his prized dog. So Setanta offered to train and rear another dog of the same breed, and until then, he would take the place of the guard dog. Setanta was from then on called Cú Chulainn (Irish meaning Hound of Culann). Breatnach (1996) notes that the actions of Cú Chulainn was not as overgenerous as one might at first think, his actions link in with the legislation on illegal killing of dogs as described above. Cú Chulainn dies by eating dogflesh, which is described in the Book of Leinster (LL 13882-93) where three crones have "cooked on spits or rowantree a dog with poisons and spells", and by eating the flesh of his namesake, so he had ensured his own death (McCormick 2002, 107; more Irish legends featuring dogs are provided in detail by Redlich 1981).

Irish dogs were also referred to in Viking sagas. Kelly (F 1997, 118) commented on the Viking *Njáls Saga* where an Irish dog called Sámr was described as strong as a man. In the Icelandic history, there is a story about the life of the tenth-century king, Olaf Tryggvason, where an Irish herd dog is depicted driving its owner's cattle away from the larger herd, which are being removed in a raid (Redlich 1981, 21).

The tale of Cairbre Músc, son of Conaire, highlights how dogs were also prized for their companion qualities as well as their roles as guarding and herding animals. While visiting the east of England, Cairbre Músc, son of Conaire, decided he wanted to bring back one of their renowned lapdogs to Ireland (Stokes (ed.) 1868, 112). There was a ban on exporting lapdogs at the time, so Cairbre Músc got the lapdog to chew an important dagger belonging to him by rubbing meat fat all over it. Under the law of the time, this meant he could take the dog home out of retribution for the damage caused. He called the lapdog *Mug-éime*, which means 'slave of the haft'. On his return there was a quarrel over the lapdog between Cairbre, the king of Munster, Ailill Flann the Little and the king of Tara, Cormac Mac Airt; so to settle the disagreement they each took it in turns to look after the lapdog. In time, the *Mug-éime* had three puppies and they each kept one.

4.7.13 *Placenames*

Redlich (1981, 182-3) commented on the frequency that the Irish name for dog, *madra* or *mada*, occurs in placenames, either as the full name or part of the name, such as *namaddy*, *namaddoo*, *namaddra*. Examples include Ballynamaddoo in Co. Cavan, Ballynamaddy, Co. Antrim, Legamaddy, Co. Down, and Ballynamaddree, Co. Cork, which is often referred to as the Town of the Dogs. 'Bally' in Irish placenames refers to a townland or larger settlement.

Lough-na-Gun which translated means The Lake of Greyhounds is now known as Lough Rea 'The Rushy Lake'. This earlier name is believed to have originated from Fionn Mac Cumhail's legend regarding his dogs.

4.8 Summary

The literary sources for domestic dogs were much wider and more varied than in the case of artistic representations. The detail given on the dogs is more specific, such as different Irish words given for the various roles carried out by the dogs. The biblical sources give a negative view on dogs but this is contradicted by the literary and artistic references discussed above. Dogs were part of everyday life for the elite and the common person, from being part of the hunting group to guarding cattle and sheep.

Their part within the hunting pack was highlighted in the English literature particularly, with a number of references to their presence in royal hunting parties. They also formed important roles within stories. In the legends and poems they are viewed positively and some were highly prized, such as *Mug-éime*. The English and Irish literature backed the archaeological data, indicating that dogs were not eaten frequently; the literature suggests that they may have been consumed in famines, but the archaeology does not substantiate this.

Although not specifically within the early medieval period, it is worth noting that some 150 years after AD 1250, two very important books were produced. These provide detailed accounts of the hunting process and the animals involved. The first book written around 1370 by Henri de Ferrières from Normandy was titled *Hunting Book of King Practice and Queen Theory* (Wingfield Digby and Hefford 1971, 44). The second book was *Le Livre de Chasse* by Gaston Phoebus, Count of Foix and written around the end of the fourteenth century AD. This latter volume was translated into English in the fifteenth century and called *The Master of Game*.

4.9 Dog-Related Artefacts

Artefacts, that are believed to be dog related, have been excavated from early medieval England and Ireland.

4.9.1 *Possible Dog Harness*

A possible dog harness was identified from Queen Victoria Street, London, and dated to around the end of the ninth century AD (Zarnecki *et al.* 1984, 277-8). It consists of two groups of three chains connected together by a decorative pendant. The chains are made of copper alloy and measures 30cm in length by 32cm in width (Figure 4.40) The harness was fairly lightweight and Zarnecki *et al.* (1984, 277-8) considered it was too small for a horse so could have been used on a dog or possibly a pair of dogs. The decoration on the pendant consists of a human mask on one end and an animal head on the other. They are in the Scandinavian style and could have been produced in the Danelaw.

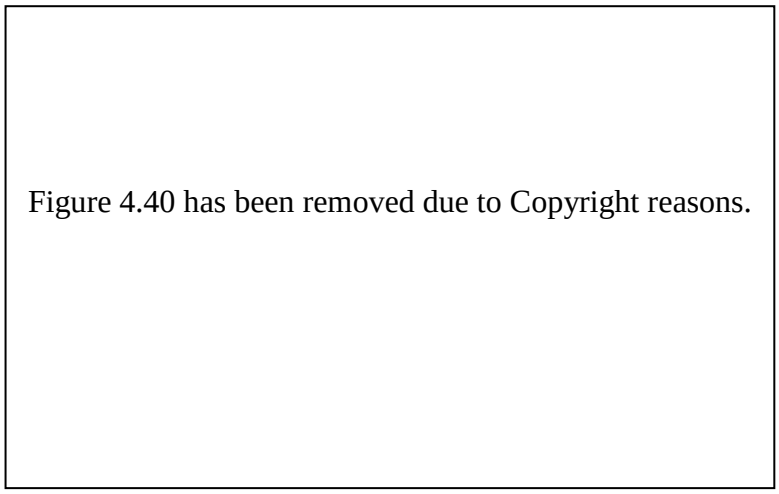

Figure 4.40. Possible dog harness from Queen Victoria Street, London (Source: Zarnecki *et al.* 1984, 277).

4.9.2 *Dog Collars*

Four possible dog collars have been excavated from Irish sites, dated to the early medieval period. Three examples were excavated from the lowest occupation layers at Lagore crannog, Co. Meath, and described by Scott (B G 1978) as being either slave or dog collars. The first possible collar consisted of two pieces with a long chain attached and dated to around the mid-seventh century AD. The two halves are believed to have been made at different times by two different smiths. They fasten together at the back by a riveted hinge (Figure 4.41). The collar was decorated with twists of square-sectioned bars arranged in pairs forming a herringbone pattern on one side and the twists all running in the same direction on the other side creating a different pattern (Figure 4.42). The construction is believed to have foreign influences (Scott, B G 1978). The heavy-duty chain attached to this collar was 3.65m long, which would appear very long for securing an animal or a human.

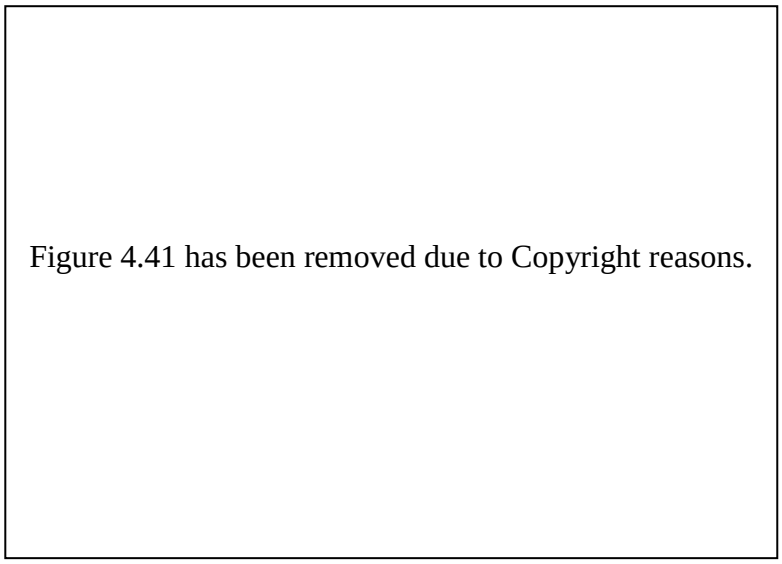

Figure 4.41. Decorated two-piece collar – not to scale (Source: Scott, B G 1978, 216).

Figure 4.42. The twist detail on the decorative two-piece collar – not to scale (Source: Scott, B G 1978, 216).

The second collar from Lagore crannog was made in one piece, which Scott (B G 1978) parallels with similar examples found in Romano-British contexts from Iron Age Britain, such as Llyn Cerrig Bach, Anglesey, and a late Romano-British collar recovered from Great Chesterford, Essex. This one-piece collar consisted of a single bar with ringed ends, which fastened by putting the chain through both link chains (Figure 4.43).

Figure 4.43. One-piece collar - not to scale (Source: Scott B G 1978, 219).

The third collar recovered from Lagore crannog was in very poor condition and Figure 4.44 illustrates a reconstruction of what it may have looked like. It was another two-piece collar type, although of a simpler design, with the chain going through the opposing ring to fasten the collar (Scott, B G 1978). Examination of the strap ends shows each consisted of two folded-over plates connected by a thin strip of metal raised into a loop through which a large oval link is passed. This was similar in design to dog collars recovered from the boat-burials at Vendel, Sweden (Öhman 1983). Two of the four large male dog skeletons excavated from grave III were wearing collars and dated to *c.* 600-800. These collars were constructed of folded iron plates measuring 5 x 4.5cm, and would have been attached to a broad piece of leather. Unlike the Lagore example, it was believed that these two Swedish collars would have originally had nails sticking out though them. A number of such spike collars have been recovered from early medieval Scandinavian contexts.

Figure 4.44. Reconstruction of the third Lagore crannog collar (Source: Scott, B G 1978, 220).

Although the exact purpose for these Irish collar-like artefacts are unknown, they were functional items, with the two-piece example highlighting influences from abroad with skilled workmanship. Scott (B G 1978) believes that these collars could have been used for restraining slaves or hostages. Equally they could have been used to control the dogs kept for guarding the crannog. The decorated collar could be viewed as too ornate for use on a slave, but could well have adorned a prized dog, kept by the high-status occupants at the crannog.

The fourth possible dog collar was excavated from urban contexts at Waterford and dates to the twelfth century AD (Figure 4.45). It consists of an open-work band of copper alloy and is approximately 120mm in diameter, and would have easily fitted around the neck of a modern Greyhound. There is evidence that it may have been expanded during its use with the placement of the fastening and leashing system (Le Patourel 1997). There are six holes, arranged in pairs around the collar, which were used to attach the leather backing. Le Patourel (1997) believed this collar was imported, but did not identify what brought her to this conclusion.

Figure 4.45. Possible dog collar from Waterford (Source: Le Patourel 1997, 524).

4.9.3 *Possible Twin Dog-Leash Holder*

An object described as a possible ornamental twin dog-leash holder was identified from the British Museum collection and labelled as 'from Cirencester'. The possible dog-leash holder was made of copper-alloy and Zarnecki *et al.* (1984, 250) interpreted the two animals as winged dragons with two swags of stylised flora (Figure 4.46). However, a dog-like head is represented on the various terminals on this item, with a fairly long muzzle and small, pricked-up ears. Although the exact purpose for this object is uncertain, it is believed to be too large for use in hawking and not large enough for the reins of a horse.

Figure 4.46. A possible twin dog-leash holder from Cirencester (Source: Zarnecki *et al.* 1984, 250).

4.10 Summary

Only a few dog-related artefacts have been identified from the English and Irish archaeological record. This is mainly due to the ambiguous nature in determining the original purpose for the objects and in some cases not knowing the context with which they were excavated. However, these possible dog-related artefacts provide further information on the how dogs may have been controlled and adorned during their lives.

Chapter 5 – Discussion: English and Irish Datasets

5. 1 Introduction

The aim of this chapter is to draw together previous discussions and examine the patterns and trends that appear when comparing the English and Irish datasets. Each subject area will be discussed separately, and then a general summary at the end of the chapter will review the common themes.

The English and Irish datasets were both limited by a number of issues relating to the animal bone information available. These problems are primarily due to animal bone specialists often concentrating on the meat-bearing species, with little reference made to minor mammals and birds. Many reports did not contain the more detailed information, such as the location of the dog remains, completeness of the skeleton, their age at death, metrical data or whether there was evidence of butchery or pathology. This lack of comprehensive data has naturally limited the interpretation of the results, and this was particularly prominent from Ireland.

5.2 How Common Were Dogs?

In total, 1069 dogs were recorded in this study; the vast majority (86%) were from sites in England. This, however, is not an indication that dogs were more common in England, it is more a reflection of the nature of the archaeological datasets from both countries. Simply, more data were available from England and therefore more dogs have been recorded. However, looking at the ratio of dogs per site for the early medieval period, there were 4.4 on the English sites and 2.8 on the Irish settlements. This indicates that more dogs per site were being recovered from England, which could suggest they were being kept in higher numbers.

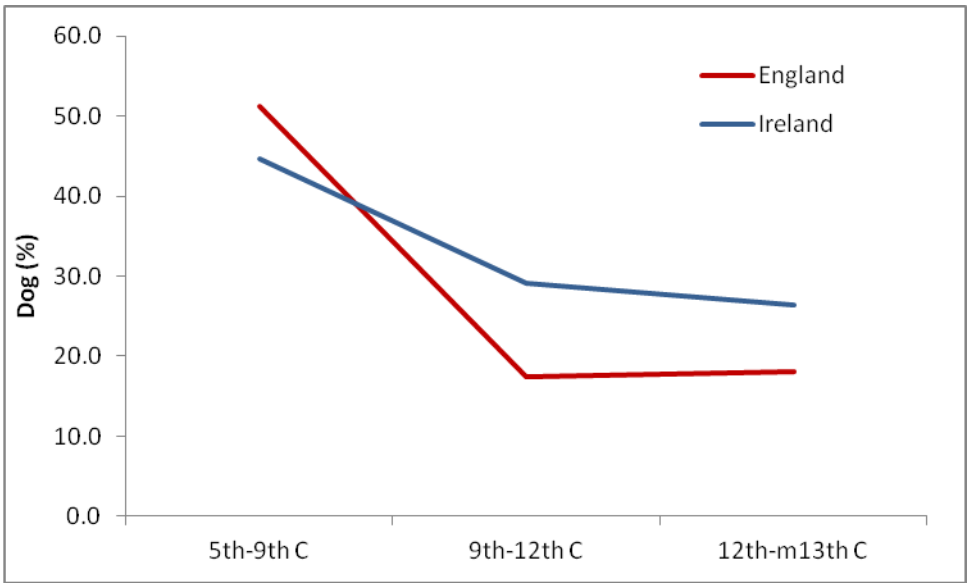

Figure 5.1. Percentage of dogs per country by chronological period.

It should be noted that there was a concentration of dogs recovered from fifth- to ninth-century contexts in England, whereas dogs were recovered more evenly throughout the chronological periods from Ireland (Figure 5.1). The concentration noted in the English dataset is primarily due to the high number of dogs recovered from inhumation and cremation cemeteries during this particular time period (this will be discussed in more detail later).

5.3 Site Location and Type

Dogs were recovered from a smaller range of site types from Ireland compared to England. Figure 5.2 illustrates the dogs per site ratio for the top ten site types. English dogs were well represented from the urban, rural and manorial settlements, whereas Irish dogs had a higher proportion of dogs per site from the ecclesiastical, castle and crannog sites. There was a bias towards higher status sites from Ireland due to the nature of the excavations carried out there. It is only in recent years with developments in the infrastructure within Ireland that archaeology has been carried out on a large scale around the country but reports are slow to be published.

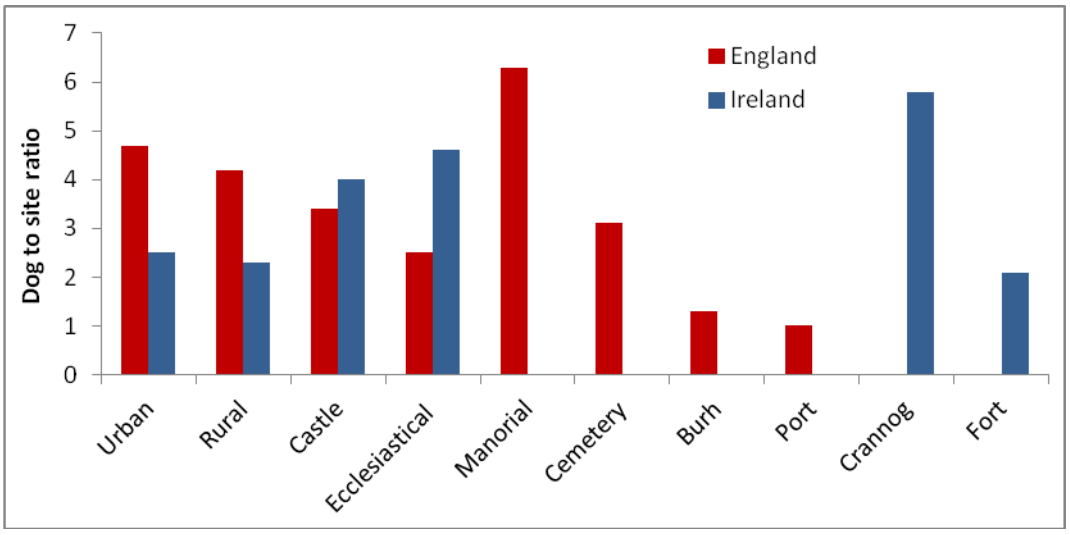

Figure 5.2. Dog to site ratio for the top ten different site types.

Looking at the percentage of dogs per site (Figure 5.3), it can be seen that the most common site type for both countries was the urban settlements. However, there was no other similarity between the two, with English dogs being recovered from rural settlements, whereas in Ireland, dogs were being recovered from contexts, such as forts and crannogs. There were a number of site types that were specific to the country during the early medieval period, such as manors and burhs to England and crannogs and forts to Ireland. This was due to the differences in the social organisation of the two countries during this period. Dogs were excavated from port areas in Ireland, but these areas were located within urban and fort settlements, such as Waterford, Dublin and Larrybane Promontory Fort.

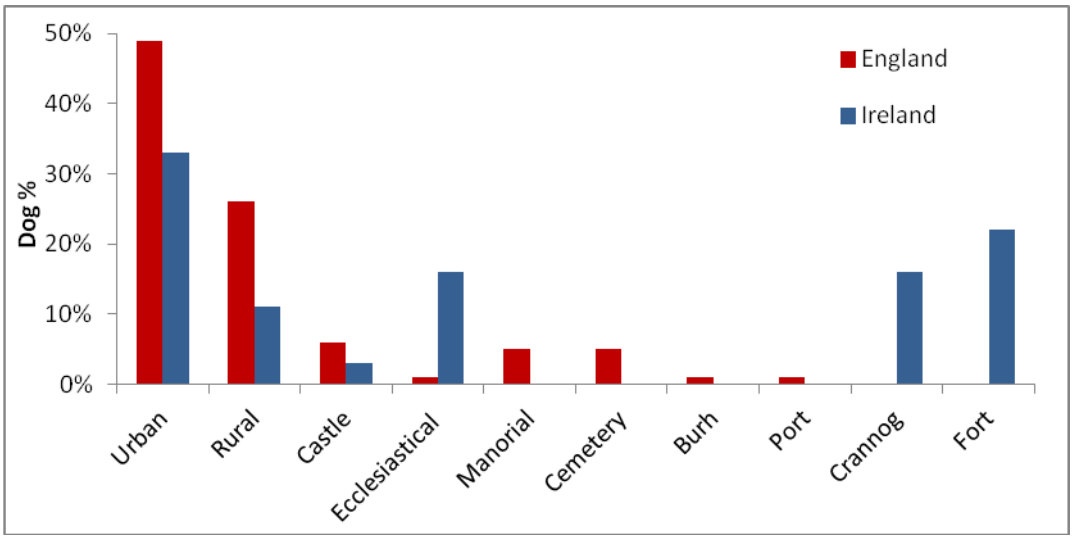

Figure 5.3. Percentage of dogs by the top ten site types.

No dogs were recovered from any early medieval Irish cemetery sites, and only one example of a dog was excavated from a burial context, at South Great George's Street, Dublin. Simpson (2005) described this dog as coming from a Viking 'warrior' grave. However, the dog bones were part of an animal bone assemblage contained within the grave, and not believed to be part of the grave goods, as they were in a very fragmented condition. There was no sign of this assemblage having been burnt or eroded, which suggests that it had been included in the burial very soon after being killed or having died.

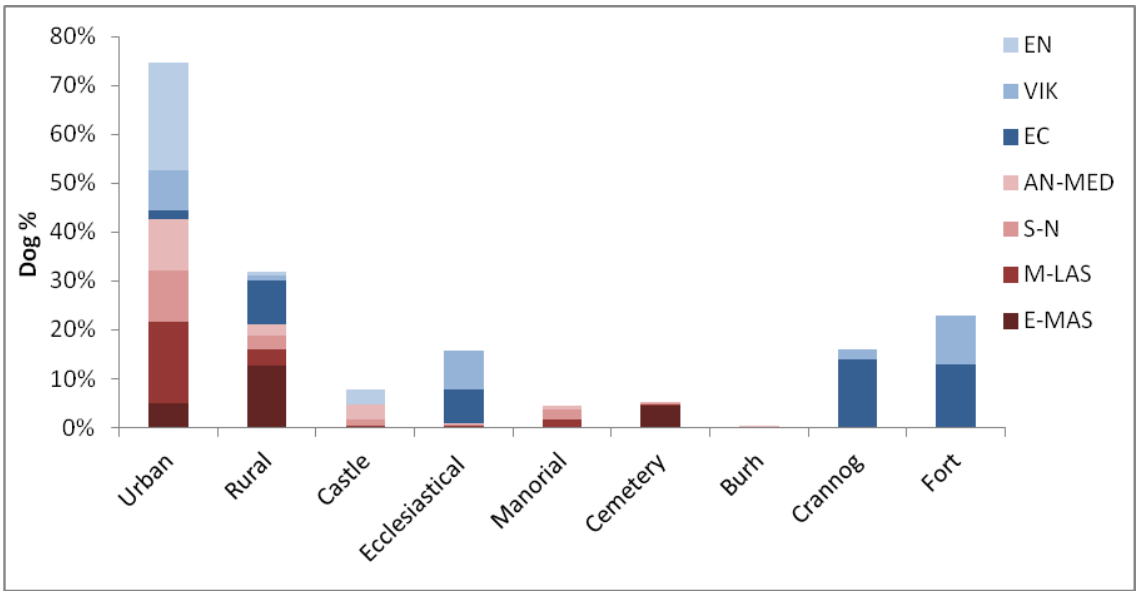

Figure 5.4. Percentage of dogs by site type and chronological period.

Figure 5.4 compares site type by chronological period, which highlights that the majority of the Irish urban dogs were recovered from the latter half of the early medieval period, whereas English dogs were more evenly spread. It is generally believed by archaeologists and historians that there was a change in the social organisation of Ireland around AD 800 from "clientship to a system of labour services to a lord indicative of feudalism" (O'Keeffe 2000, 26). This would explain the recorded decline in dogs recovered from ringforts and crannogs after the Viking period and it is thought that the new urban centres were populated with people from these settlements. Ringforts would have provided an enclosed space for dwellings to incorporate the extended family (O'Sullivan *et al.* 2008). Dogs were often found in the ditches associated with these forts, along with the rest of the domestic refuse.

It should also be noted that there were a number of site types that had no dogs recorded in this research project, such cashels, cemeteries, caves, and round towers from Ireland. Their absence from these site types could be due to a number of reasons; for example the dogs were not kept on these sites or they were disposed of elsewhere or they have not yet been recorded in the archaeological records due to the small assemblages.

5.4 Taxa Ratios

Both countries provided NISP and MNI taxa data, with a higher percentage from Ireland. Looking at the dog percentage in relation to other animal species from the taxa ratio data, English dogs were represented in higher numbers in both the NISP and MNI data at 1.3% and 3.4% respectively during the early medieval period, with Irish dogs making up only 0.7% of the NISP count and 1.8% of the MNI. In both countries, the NISP percentage for dogs was only half that of the MNI values. The discrepancy between the NISP and MNI could well be due to minor species being over-estimated in MNI (O'Connor 2000, 60).

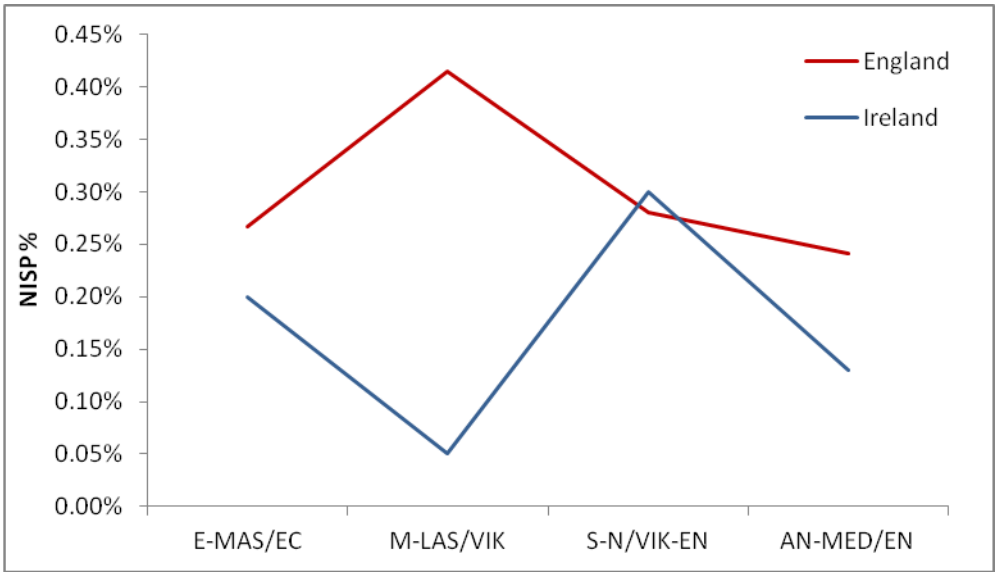

Figure 5.5. Percentage of dog NISP by chronological period for England and Ireland.

Figure 5.5 illustrates the changes in percentages of dogs represented within the NISP data throughout the chronological periods. The English dogs fluctuated between 0.25% and just over 0.4%, whereas the Irish NISP counts were more dramatic with a dip in

numbers identified during the Viking and early Norman period. This was due to lack of reports available for these time periods, with only seven sites from the Viking period and just ten for the early Norman period.

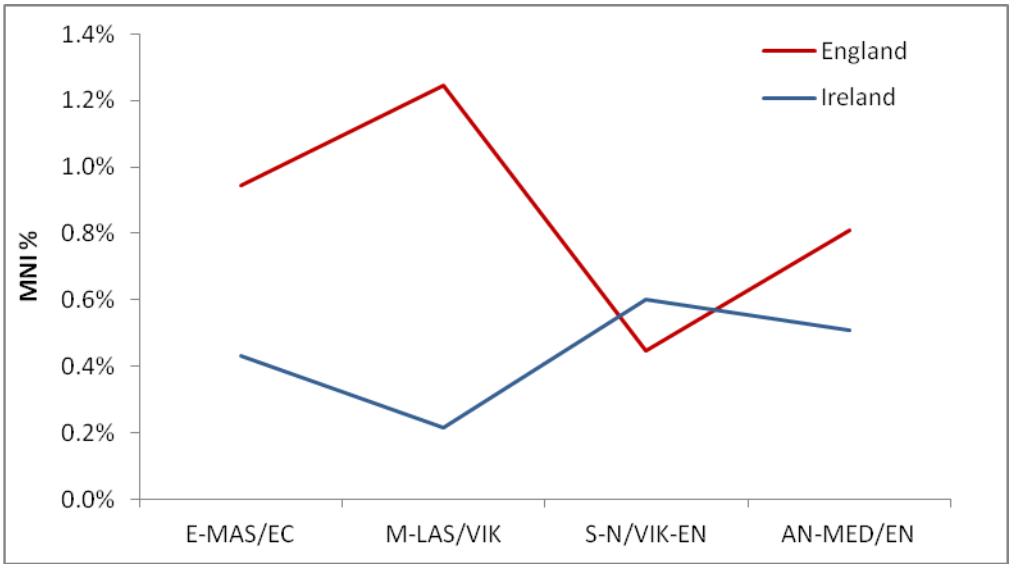

Figure 5.6. Percentage of dog MNI by chronological period for England and Ireland.

Figure 5.6 illustrates the changes in percentages of dogs represented within the MNI data throughout the chronological periods. The MNI data display a similar pattern to the NISP, with a peak in English dogs during the middle-late Anglo-Saxon period and a drop during the Saxo-Norman era. Again the Irish percentages were lower than the English during all periods except for the Viking-early Norman period, with the Irish MNI dogs at no point going over 0.7% within the animal bone assemblages.

One of the main differences between the two countries taxa ratio data was the lack of deer bones recorded from Irish sites, which could indicate that deer hunting was not being carried out to any great degree in comparison to England or that the deer bones have not been recorded due to the excavation methodologies or the animals were being disposed of away from the site.

5.5 Burial Location

The datasets reveal 67% of English dogs had burial location information available, compared with just under 60% for Irish examples. Figure 5.7 illustrates the difference between the two countries in burial locations recorded.

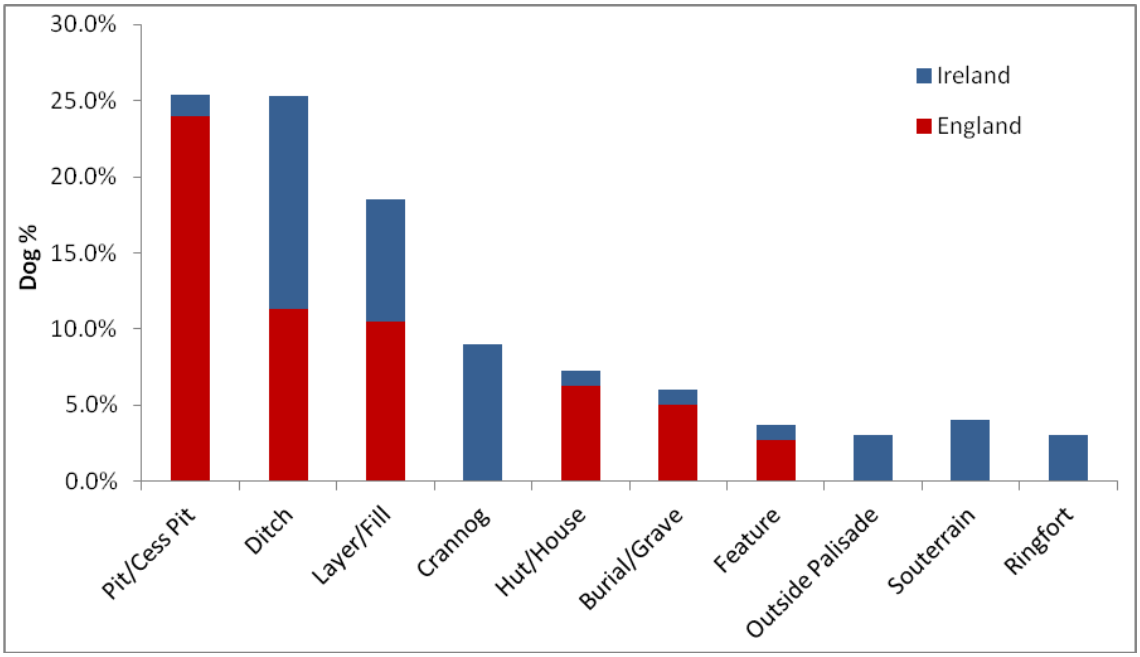

Figure 5.7. Top ten burial locations for English and Irish dogs.

The most obvious difference between the two countries was the pit context, which was the most common burial location for English dogs, at just under 25%; however in Ireland there were only two examples. One of these two dogs came from a midden deposit within a house structure, dated to the Viking period. The structure had been described as a possible SFB due to its Scandinavian qualities to its construction, which were not common in Ireland (O'Kelly 1956). O'Sullivan and Nicholl (2010) have observed that pits are mysterious features on Irish sites, as they can be difficult to distinguish. They have observed that on some enclosures, rubbish had been collected and dumped at the edge of the site or close to the entrance or outside houses. This would suggest that during the early medieval period the Irish could have been disposing of their rubbish in ways other than middens and pits, such as utilising disused areas. This was indeed recorded at Shop Street, Drogheda, where there was deliberate infilling of the quayside (McCormick 1984).

The high number of dogs recovered from pits during the early medieval period in England compared to Ireland, has led to the suggestion that these dogs were associated with a possible 'ritual' process, although Hamerow (2006) notes that they could also have been part of a cultural approach to dealing with 'rubbish'. Looking at the dogs recovered from pit contexts more closely, it would appear that they generally consisted of isolated bones (85% were only 10% complete) contained within domestic refuse deposits. For example, at Flaxengate, Lincoln, twenty-four out of the sixty-five dogs recovered were as scattered remains, within pit and dump contexts (O'Connor 1982). These pit and dump contexts consisted of an assortment of animal bones, representing general food waste from the dwellings within Lincoln. No pattern was observed for the location of where the dog bones were found in these pits. Details of the location of dog bones within the pit deposits were however rarely available. The dog recovered from the cess pit at Kevin Street Garda Station, Dublin, could be a possible example of dog burial with a 'ritual' association as it was placed beside a male human skull and Old Irish texts record that being buried with a dog was interpreted as an insult to the individual and his family.

Layer and ditch contexts were fairly evenly represented by dogs from both England and Ireland. The skeletal remains of dogs recovered from ditches in England appear to have been scattered with little evidence of discrete burials. The ditch context was the most common burial location recorded for Irish dogs with remains recovered in boundary ditches, although generally as isolated bones. The ditches from Irish raths, crannogs and forts were treated as dumping points, such as the fosse around the ringfort at Ardcloon, Co. Mayo. The fosse appears to have been used as a rubbish dump during the late seventh to early eighth century, with large quantities of animal bone recovered, along with the contents of hearths (Rynne 1956). The rubbish at Moynagh Lough crannog was disposed of over the wooden palisade and at Ballinderry Crannog No. 2, a large number of animal bones were recovered from the lake deposits (Hencken 1941-2). Overall, it would appear that in Irish sites, dogs were being disposed of along with the other domestic rubbish, in the ditches around the settlements, rather than in pits within the confines of the dwelling areas. O'Sullivan and Nicholl (2010) have interpreted the disposing of rubbish in the ditches and boundary areas around forts and crannogs as a possible way of communicating a message to outsiders. Any potential visitors would be

able to see and smell the prosperous nature of the settlement by the quality and quantity of feasting taking place on site.

A high proportion of animal skulls was recorded from a number of crannogs. For example, 959 animal skulls were recovered from Lagore crannog, with over half from cattle and seven from dogs. Hencken (1950) noted that over a third of the cattle skulls had pole-axe marks. The exact location for the dog skulls was not provided in the excavation report, but their preservation was good and provided detailed measurements (discussed later). O'Sullivan and Nicholl (2010) suggested that this large quantity of animal skulls were deliberately deposited and would have been displayed prominently as a form of protection to the site.

Soderberg (2003) observed that on Irish rural settlements dogs were being recovered mainly from the exterior spaces, such as ditches, whereas on the urban settlements, they tended to appear more evenly throughout the site, such as occupational layers. For example, at Cork, scattered dog remains, along with other animal bones, were recovered from the backyard surface deposits. This suggests that the occupants were dumping any refuse at the rear of their dwellings on the exposed ground. As McCarthy (2003) pointed out that this was an informal way to deal with refuse, as this approach would have encouraged scavenging animals and insects, and over time this would have created a strong odour. However this was not the case at Cathedral Hill, Armagh, where a dog was recovered from a more substantial ditch around the enclosure (Higgins 1984). Unfortunately the animal bone reports from the other major urban centres in Ireland, such as Dublin and Waterford, do not provide burial location details, so no general conclusions can be made on this practice within urban centres.

Another significant difference observed between the two countries was fifty-six English dogs recovered from the fills of huts or *Grubenhauser,* but only one was recorded from Ireland. These remains ranged from just a few bones to partial or complete skeletons. The partial or complete dog skeletons have been described by a number of authors as representing 'special deposits' with possible ritual meaning as noted in the pits. For example, Levitan (1992) interpreted the partial skeleton recovered from the floor of a SFB at Audlett Drive, Abingdon, as a sacrificial offering to mark the foundation or abandonment of the structure. However, Tipper (2004) interpreted the dogs recovered

from a number of SFB fills at West Stow as the utilisation of disused huts for the disposal of rubbish and placing carcasses away from scavenging animals and containing the decomposing smell.

Dogs excavated from grave contexts were essentially unique to England. Forty-six dogs were recovered from fills within burials/graves and two further dogs were excavated within close proximity of these features. The remains ranged from just a few bones to partial and complete skeletons. Sixteen dogs were associated with inhumation burials, whereas thirty-one were identified from within cremation urns. Only one dog was excavated from an Irish site in a similar location, but this was from the Viking inhumation burial from South Great George's Street, Dublin and has been discussed previously.

Examining the English inhumation burials in more detail, seven dogs were identified from male adult graves, one dog was found in association with a possible family grave consisting of a male, female and two young female skeletons, and another dog was recovered with an adult and juvenile. No dogs were identified from any female grave context; although a number of graves with dogs contained unsexed human skeletons, whether this was due to taphonomic conditions or the sex details were not provided in the archaeological report is unknown.

The inhumation burials range in date from the early Anglo-Saxon period to the thirteenth century. The dogs recovered from the male human graves were generally part of an assemblage of other animal bones and grave goods, such as shield bosses, swords, and knives. This could suggest that the dogs were part of the grave goods, indicating that they were symbolic for the deceased. A burial of a possible male 'warrior' was excavated at Loveden Hill, Lincolnshire, which was richly furnished with grave goods and dog remains also included. This mature dog was suffering from arthritis suggesting it had led an active life so it could have represented another grave good for this warrior. This was also the case of the dog recovered from a young male grave at Great Chesterford, Essex (Serjeantson 1994). Again the grave was richly furnished and the dog was a mature in age with signs of an active life as well as poor dentition with missing and broken teeth. Young human males were not usually given a spear, let alone a shield-boss, so the presence of the dog may be a further indicator of something

exceptional. There is a tendency for graves of young people to contain adult goods only later in the period.

One dog burial that has led to a number of interpretations is the decapitated dog recovered from Stockbridge Down, Hampshire, which was excavated between the thighs of the male human skeleton next to the skull of the human (Hill 1937). Hill (1937) comments that also excavated from the grave were six silver coins from the left armpit region, which may have been hidden on the human at the time of burial. The site has been interpreted as an execution burial ground, dating to the early Anglo-Norman period, due to the two decapitated skeletons and a further sixteen burials recovered with either their wrists crossed or closely together. This is the only recorded example of an early medieval dog, which had evidence of being decapitated or associated with a mutilated human skeleton, although this has been observed in a number of Romano-British sites, for example at Lankhills, Winchester; Alington Avenue, Dorchester; and Cassington Roman Cemetery, Oxfordshire (Smith, K 2006, 38). K Smith suggested that this was a pagan Romano-British burial rite for those who committed such a severe offence during life that in death the body must be treated in a dishonourable manner. Decapitation in the Romano-British period was linked with stopping the dead from walking and harming the living. It seems more probable that the man from Stockbridge Down had been caught illegally hunting in the Royal Forest around the area and had been killed by decapitation along with his hunting dog, although recently Reynolds (2009, 172) has interpreted this burial as possible evidence for bestiality.

All the inhumation burials contained just one dog and none were associated with any other specific animals. This was surprising, as in other cultures during this period, dogs had long been associated with horses as part of the grave deposits, for example, in the Viking Scandinavian cemeteries. Sikora (2003-4) commented on Viking horses being viewed as a ‘transferable icon’, which meant that the horse would take on the affiliation of any god or goddess that the person or their relations were worshipping at the time.

Dog tooth amulets were only recovered from English inhumation burials and were generally from female adults or child inhumation burials dating up till the seventh century when this practice seems to go out of favour with its pagan associations. This is similar to cremation burials in Ireland with this burial practice rarely carried out in this

country during the early medieval period, which was mainly due to it being frowned upon by the Christian community (Harrison 2001). All the English dogs that were identified dated to the early Anglo-Saxon period and were recorded in both male and female adult human burials, as well as in separate children's ones. Nineteen dogs were found in adult urns (five from female and four from male) and six from child urns, with two dogs being found in the same urn. The custom of cremation seems to decline before and during the seventh century in England, although later cremations have been recovered from Ingleby, Heath Wood (Richards 2004). Only four cemeteries identified dogs in cremation burials. Spong Hill, Norfolk, had the largest number of cremated dogs, with twenty-seven being identified from about 1500 urns with suitable bones for study. Four were recovered from male graves, three with females, eleven with (unsexed) adults, two with juveniles and one with a child. No sex or metrical data was available for these dogs; although Bond (1994) commented that some dogs were 'terrier-size' or 'wolf-size', for example small or large dogs. She suggested that wolves could be represented amongst these bones, but this cannot be proved due to the fragmented material available.

Bond (1994) discussed the lack of dogs recorded in published animal bone reports from Anglo-Saxon cremation cemeteries, which she felt was surprising due to dogs, like horses, having a long association with votive contexts in north-west Europe (Todd 1975, 182). Wilson (D 1992, 97) commented on animal bone deposits being evidence for food for the afterlife. Dog and horse burials have been interpreted as votive offerings as they appear to have been placed on the pyre whole and in an articulated state. McKinley (1994) commented on the range of skeletal elements present as cremated bones, which also suggests that the dogs were being placed on the pyres whole. They were not viewed as food, but rather seen as a status symbol or personal possession. Like the cremated dogs in this study, horse burials from Sancton I and Spong Hill were spread evenly between males and females (Bond 1996). Prummel (1992) concluded from her research on early medieval dog burials from Germanic tribes that the dogs did not die a natural death, but were killed, with most dying fairly young (over 60% younger than five years old).

A burial location that was only recorded from early medieval England was the well. Nine dogs were recovered from well contexts. This is reminiscent of a familiar practice

during the Romano-British period of disposal of animal carcasses in disused wells. Some viewed this as a simple disposal of unwanted animals, but Smith (K 2006, 16) noted that Romans viewed man-made holes in the ground as channels to the land of the gods where offerings could be made. However, the practice of disposing of a dog or any other animal corpse in a well could be interpreted as a convenient and hygienic method of removal when the well ceased to be used (Maltby 1993).

5.6 Completeness of Skeletons

Figure 5.8 clearly shows the majority of the dogs from both countries were recovered in 10% completeness. However, there was a greater proportion of English dogs at the higher percentage of completeness, with twenty-three at 75% and five at 100%; there were no examples recovered from Ireland at these levels. This difference could be due to a number of issues, such as preservation conditions, excavation techniques used by the contractor or the disposal methods of dogs during the early medieval Irish period. As discussed in chapter three, the preservation conditions for bone in a number of counties in Ireland were very poor, due to the acidity levels, which have hampered the completeness of the skeletal remains, when recovered.

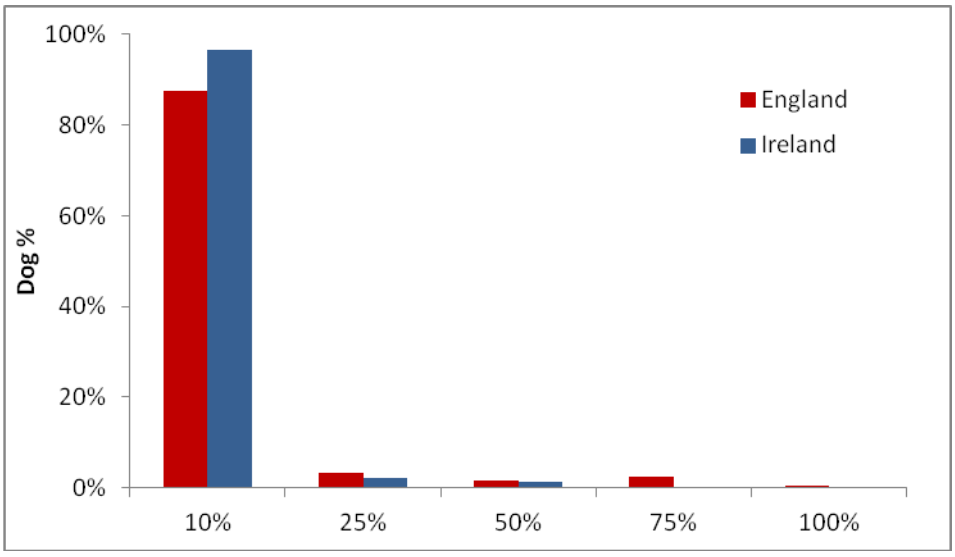

Figure 5.8. Completeness data for English and Irish dogs.

Looking further at the completeness data in relation to the dogs' burial location and chronological period, neither country showed any pattern. The English data does

suggest that the older the dog was at the time of death, the better preserved the skeletal remains. For example, all the 100% complete dogs were described as immature and older, which fits in with Bartosiewicz's (2008) belief that the age at death of the animal has a direct link with the bone preservation, due to its higher bone density, which would suggest that older animals will stand a better chance of post-mortem preservation. However, the older the animal is, the higher the probability it could have suffered from any pathological lesions, so lowering its bone density. There was no observed pattern between age and completeness within the Irish data. The most complete Irish dogs, at 75%, was the dog recovered from the cess pit at St Kevin Garda Station, Dublin.

5.7 Age Profile

Only 20% of the dogs from both countries had ageing data, so the age profile for the early medieval dog population was somewhat limited. The two age profiles mirror one another in relation to their percentages, with a slightly higher proportion of mature dogs being recorded from the Irish sites as illustrated in Figure 5.9. However, no foetal or neonate dogs were recorded from the early medieval Irish sites, with the youngest observed at a few months old and recovered from a ditch. Due to the fragmentary nature of the dog bones recovered from Irish contexts, only the two puppies from the Cloncowan II settlement were found 50% complete, with the rest of the age profile being just 10% complete.

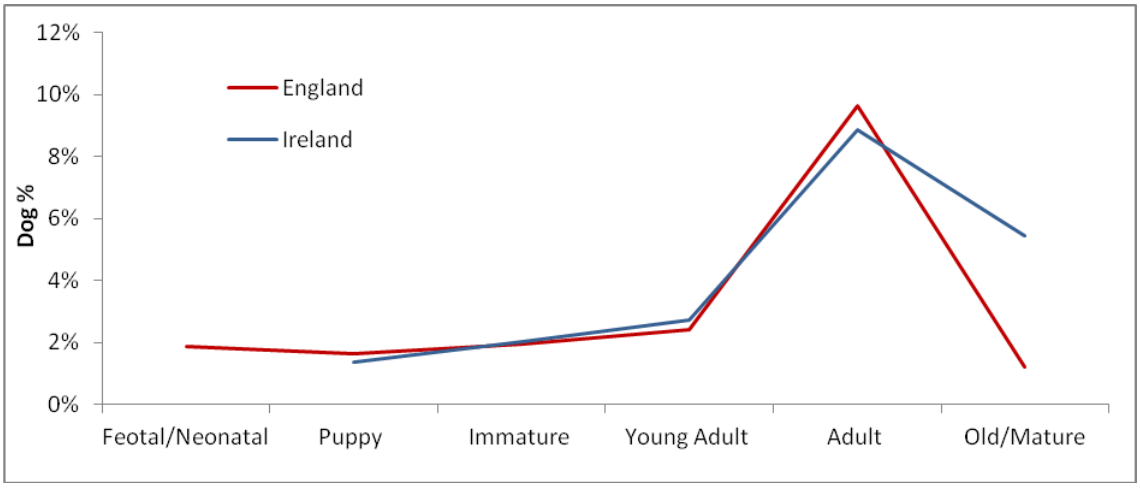

Figure 5.9. Dog age profiles for English and Irish dogs.

All the feotal/neonates recovered from England were located in pits, with examples of multiple dogs within the same contexts. These two mass burials have been interpreted as either possible forms of population control or a pregnant dog has died giving birth. Excavations from Romano-British sites have noted concentrations of young dog burials within pits and wells. For example at Owslebury, Hampshire, the concentrations of dog remains were noted in some of the third-and fourth-century pits. Maltby (1987) felt that this might indicate some form of population control, especially as these concentrations were comprised of a substantial number of neonatal remains. This could also possibly indicate that selective breeding was being practiced to improve breed type requirements.

Waterford had a high mortality pattern for immature dogs, which McCormick (1997) believes was more than natural causes and it could indicate the dogs were be killed for specific purposes, such as population control or skinning, although no skinning marks were recorded on the dog bones excavated. McCormick carried out the animal bone reports for both the Dublin and Waterford excavations; he was able to note that the dogs from Dublin generally had a longer life expectancy than those in Waterford.

5.8 Sex Determination

With only ten males and two females positively identified from England and just one male from Ireland, the data are too limited to make any conclusions.

5.9 Butchery

In total, only twenty dogs had recorded signs of butchery, with ten dog skeletons suggesting they had been skinned and ten had been chopped for possible meat use. Only 1.5% of dogs from England had any signs of butchery, compared to 4% from Ireland. This rarity of the recorded butchery marks from either country would suggest that the use of dogs, for meat or as a skin source, was not a common practice.

5.10 Pathology and Abnormalities

In total, there were 55 dogs recorded with some form of pathological condition or abnormality, with a number of dogs exhibiting more than one. Irish dogs had proportionally slightly more pathological conditions at 7%, with the English dogs at 4%. Trauma was the most common pathology recorded from both countries, with various degrees of severity from broken limbs to blows to the skull leading to death. A couple of dogs displayed a number of trauma conditions. Two Irish examples had been hit a number of times on the cranium, but had survived with evidence of healing having taken place. A dog excavated from Brandon Road, Thetford, had a bent vertebral spine, which Jones (G 1993) suggested could have been caused by the animal being struck by a human on its back.

There were a couple of dogs from the English data, which had suffered injuries that would have required human attention and care to keep the animal alive, for example, the dog recovered from Causeway Lane, Leicester, which had both a broken radius and ulna on one leg. The limb itself would have been swollen and tender during the healing process, so it would have been very difficult for this dog to have survived without human care. It indicates that this particular animal at least was viewed as being worth this attention; otherwise it would have been disposed of or just left to fend for itself and probably died. During the healing process this limb had foreshortened, so the animal would have walked with a limp (Gidney 1999).

Thirteen dogs were identified with bowed limbs, including one example from Ireland. The majority of bones recorded as bowed were from the lower part of the limbs (radius and tibia). As discussed in Chapter Two regarding the examples recovered from

England, the main probable cause for bowing would be a prenatal evolutionary disturbance, an endochondral ossification disorder (Hilzheimer, cited in Teichert 1987). This condition is observed in brachycephalic breeds, but this could not unfortunately be tested on the archaeological examples in this research, as none of the dogs with bowed bones were recovered with the skull necessary to test this hypothesis. The single Irish example was identified from the occupation layers at Ballinderry 2 crannog.

In total, fifteen cases of dental abnormalities were observed from England and Ireland. These dental abnormalities mainly consisted of toothwear and tooth-loss, which would be expected through general wear and tear in life. The diet of the dogs would have an effect on the condition of their teeth. Miles and Grigson (1990) observed that canids in the wild rarely had periodontal disease, which they believed was due to the animals' diet of raw meat that require ripping with their teeth. Modern dogs fed on a soft food diet, which then clings to the teeth and gums, are prone to periodontal disease and gingivitis. Advanced toothwear was noted on both the English and Irish dogs, which could have been caused by gnawing on bones and abrasive material in their diet.

There was only one example identified with tooth crowding, which was recorded at Shop Street, Drogheda. This, McCormick (1984) observed, had a low crowding index of 93.3. Tooth crowding has been linked with selective breeding, especially in brachycephalic types. Brothwell (1991) commented on the malocclusions which developed through the crossing of dogs with different snout lengths.

5.11 Morphology - Skull and Postcranial Measurements

Only a small portion of the remains were studied directly by the author, with the majority of the metrical data being obtained from the published and unpublished literature.

5.11.1 *Skull Morphology*

Unfortunately there was a lack of skull metrical data available for analysis, especially from Ireland, which has limited the interpretation. Only forty-six early medieval craniums from England and nine from Lagore Crannog, Ireland, were available; thus

both countries' samples were too small to be subdivided into chronological periods or regions. A Mann-Whitney U Test was carried out on the various skull measurements from both countries and even with only one site from Ireland, there was no significance difference between the countries ($P < 0.05$, two-tailed).

Table 5.1. Summary of the skull measurements (all measurements in mm).

	Von den Driesch No.	**Country**	**N**	**Min.**	**Max.**	**Mean**	**SD**	**CV**
Skull Length	C1	England	24	154.5	217.0	194.8	13.6	7.0%
		Ireland	9	174.3	227.3	207.4	20.3	9.8%
Cranial Width	C29	England	24	46.7	72.2	57.6	5.0	8.7%
		Ireland	6	56.5	67.9	59.7	4.2	7.0%
Cranial Height	C38	England	22	42.5	68.2	58.7	5.3	9.0%
		Ireland	6	51.7	68.9	62.2	6.6	10.6%
Facial Length	C8	England	22	73.8	113.8	97.0	10.0	10.3%
		Ireland	9	83.4	112.9	101.5	9.7	9.6%
Facial Width	C30	England	9	93.9	118.8	105.6	7.4	7.0%
		Ireland	8	101.9	122.0	110.8	6.4	5.8%
Snout Length	C12	England	19	63.0	96.5	83.1	9.7	11.7%
		Ireland	5	75.7	102.0	87.9	9.5	10.8%
Snout Width	C36	England	19	24.5	45.6	36.8	4.8	13.0%
		Ireland	8	35.0	44.3	39.4	3.0	7.6%
Palatal Length	C13a	England	16	78.0	107.4	95.2	8.9	9.3%
		Ireland	6	83.9	111.9	100.0	10.5	10.5%
Palatal Breadth	C34	England	23	43.6	73.9	62.7	6.2	9.9%
		Ireland	9	59.6	72.1	66.3	4.6	6.9%
Mandible Length	M1	England	31	89.4	188.5	136.6	20.6	15.1%
		Ireland	4	99.3	160.0	133.0	30.3	22.8%
Mandible Height	M8	England	47	51.9	85.0	72.4	7.4	10.2%
		Ireland	15	55.9	87.0	73.4	8.7	11.9%

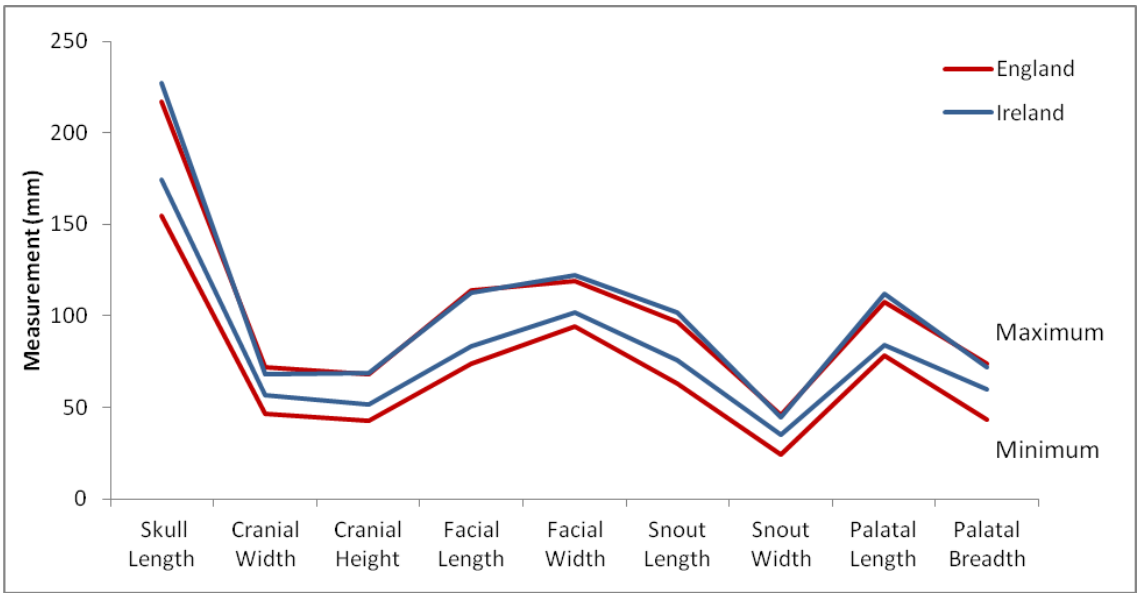

Figure 5.10. Minimum and maximum skull measurements for England and Ireland.

The summary skull measurements table (Table 5.1) and graph (Figure 5.10) clearly show that the Irish dogs' minimum measurements are consistently larger than the English, although the maximum measurements are essentially the same. With just one site making up the Irish measurements, it is difficult to make any firm interpretation on these results, except to note that the Lagore crannog dog skulls fitted in Hasebe's classifications (Shigehera 1994) of medium-small and large categories, with their means fitting between the medium-large and large. Only the cranial width mean fell into the medium-small category, which was similar to the English dogs, with large heads and long snouts, but not overly wide. The English skulls fit within the small and large brackets, with the mean measurements for the facial length, snout length and palatal breadth all fitting the medium-large category, whereas the cranial width mean was within the medium-small bracket. This would suggest that, although many of the dogs had medium-large length skulls and snouts, their width at the cranium stayed relatively narrow.

5.11.2 *Cephalic Index*

The cephalic index illustrates the relationship between the width of the skull against its total length. Figure 5.11 shows that the dogs recovered from England had a narrow cephalic index range with the median approximately 56, compared with those from Ireland has a wider spread with the median at approximately 54.

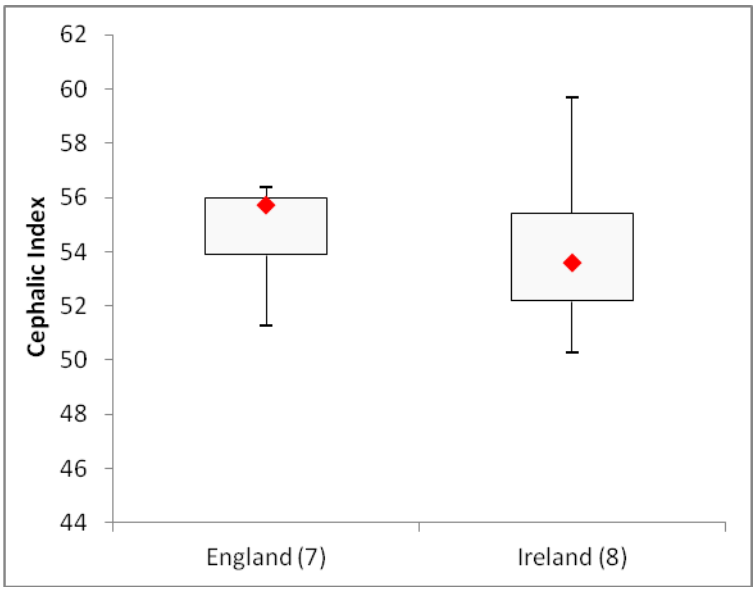

Figure 5.11. Cephalic index for English and Irish dogs with ♦ representing the median (number of dogs).

When the measurements used to determine the cephalic index were displayed graphically (Figure 5.12), the English dogs can be seen centred around the medium to large size dogs, such as the modern English Springer Spaniel and Greyhound. The Irish dogs cover a wider range, with three specimens longer in skull length and width than the Greyhound. Neither country had any examples of dog skulls that had a short snout in length and narrow in width.

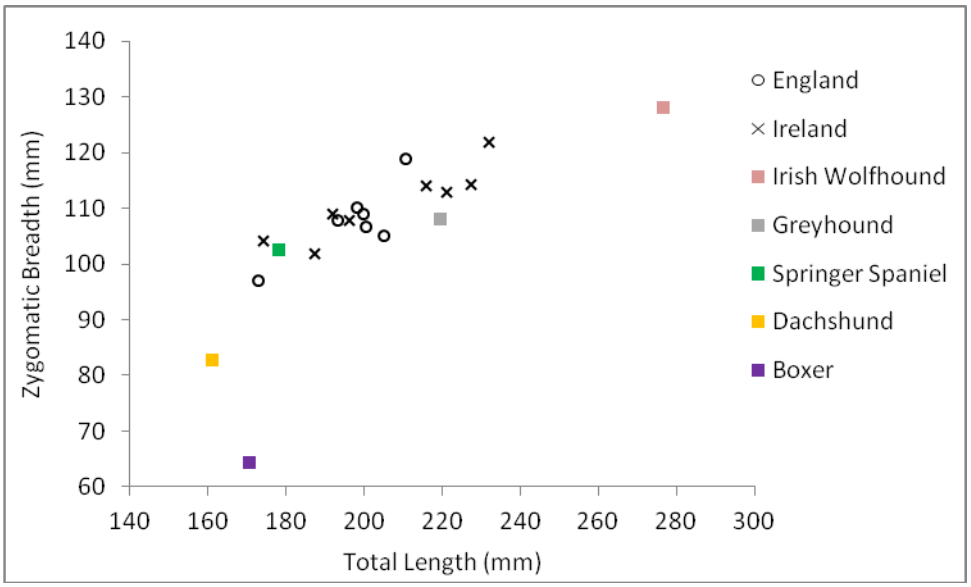

Figure 5.12. The relationship between total length and zygomatic breadth.

5.11.3 *Snout Index*

In the case of the snout index, the English dogs provided a much wider range than the Irish examples, although the median for both the two countries was approximately 50 (Figure 5.13). The narrow range for the Irish Lagore snout index would indicate that the proportions of the snout length to the skull length were fairly homogeneous.

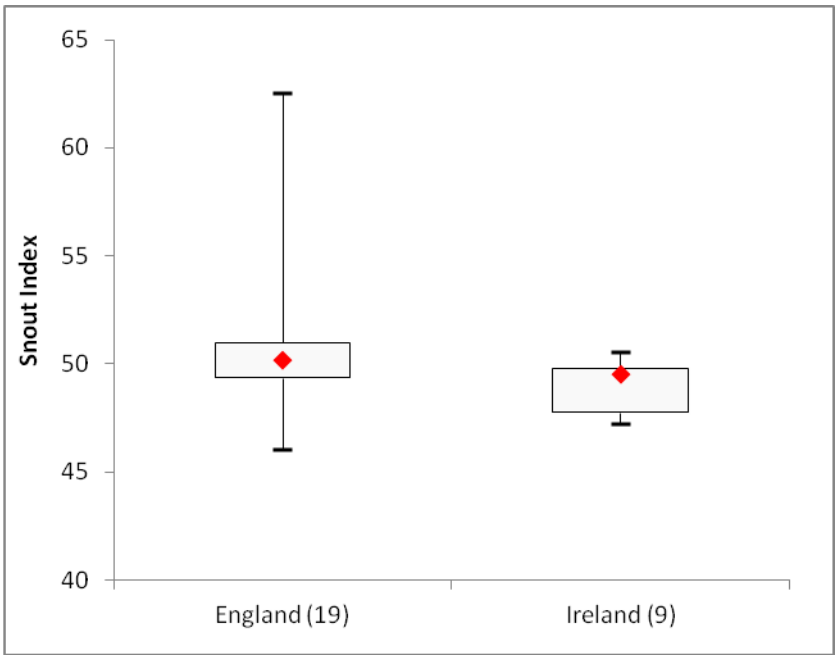

Figure 5.13. Snout index for English and Irish dogs with ♦ representing the median (number of dogs).

When the measurements for the snout index are viewed graphically (Figure 5.14), it can be seen that the English examples are more scattered, with a few outliers above the main cluster of specimens, and one dog having smaller proportions than the Dachshund specimen. In contrast, the Irish dog examples were clustered around either the Greyhound or the English Springer Spaniel examples.

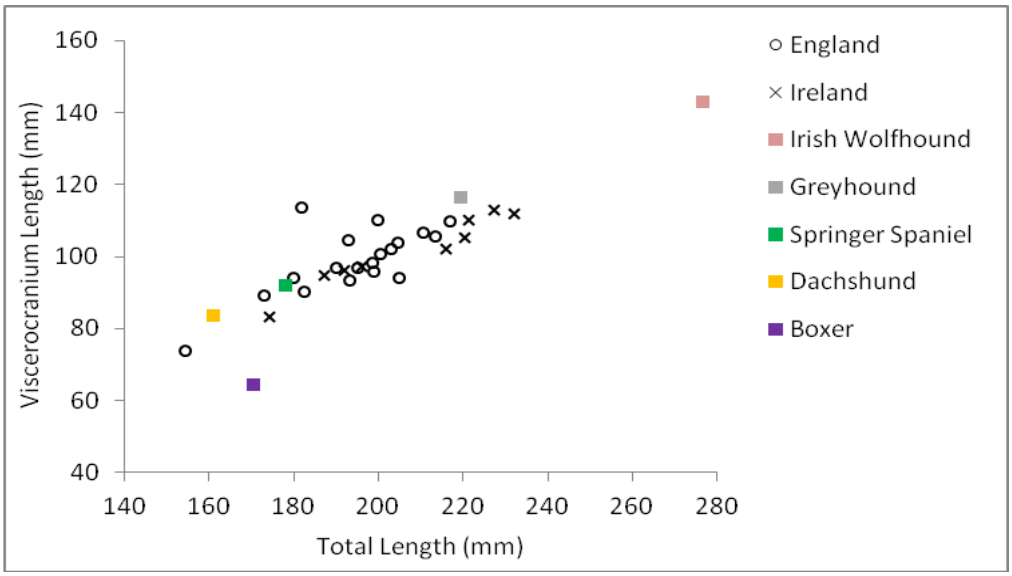

Figure 5.14. The relationship between the total length and viscerocranium length.

5.11.4 *Snout Width Index*

The snout width index, which compared the snout length against the snout width, provided a different picture to the snout index. In this case the Irish dogs displayed a larger range of proportions (Figure 5.15). However, both countries had a similar median at approximately 39, with the smallest English dog at 33. Ireland had the largest specimen at nearly 44, but the majority of the dogs centred on the median.

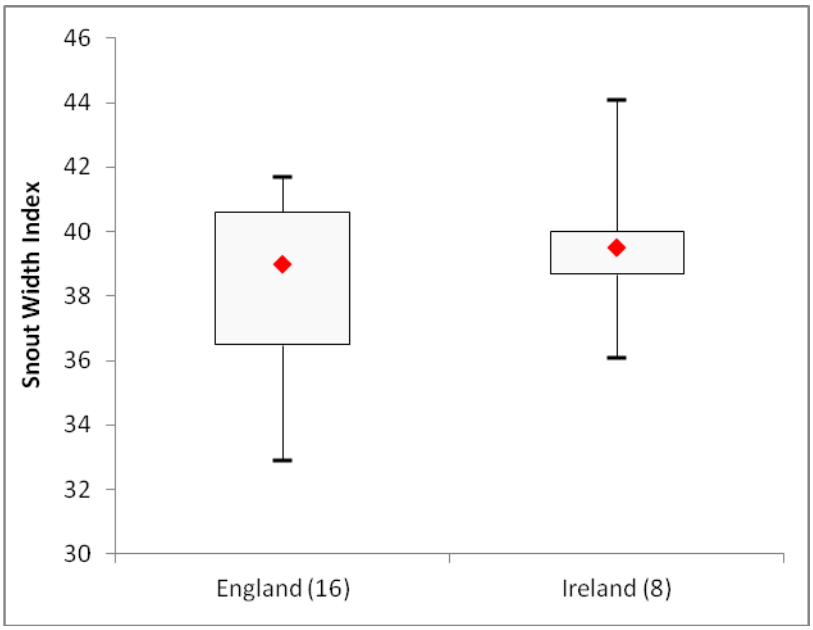

Figure 5.15. Snout width index for English and Irish dogs with ♦ representing the median (number of dogs).

When the measurements are viewed graphically (Figure 5.16), it can be seen that the English dogs were generally smaller in dimensions than the Irish specimens, with one even smaller than the modern Dachshund example. The main cluster of both English and Irish dogs is observed just above the English Springer Spaniel, which suggests that the majority of the dogs examined had medium to large proportioned snout widths. There was only one English specimen that had similar proportions to a doliochocephalic skull, such as a Greyhound, with a long snout and narrow snout width.

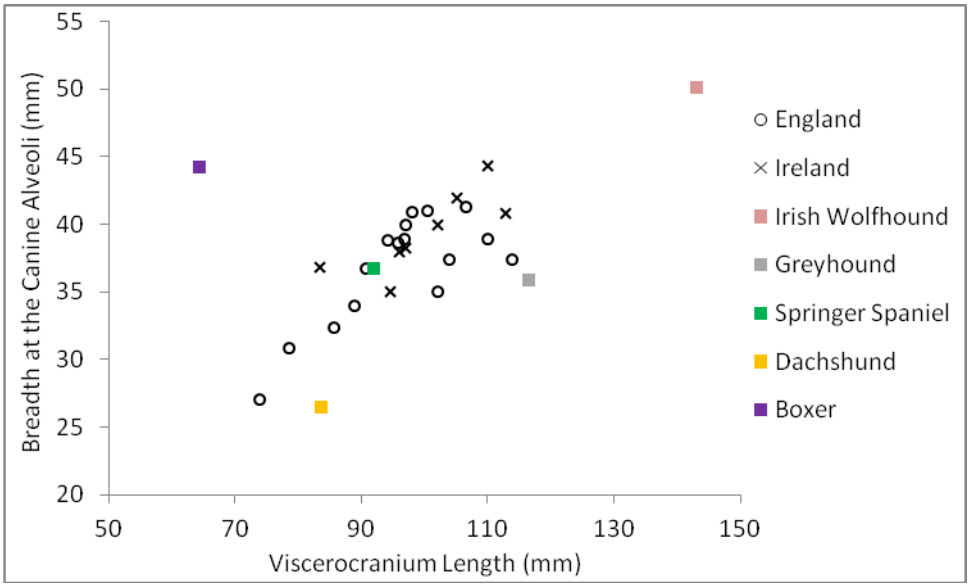

Figure 5.16. The relationship between the viserocranium length and breadth at the canine alveoli.

5.11.5 *Neoteny Index*

Comparing the measurements for facial length against total length, it can be observed that both English and Irish dogs displayed a wide range (Figure 5.17). Similar to the snout width index, the Irish dogs clustered around the Greyhound and the English Springer Spaniel examples. There were no dogs displaying the extreme neoteny qualities, which is a characteristic of the brachycephalic skull. The nearest example to this was from New Town, Southampton, which had a short total length and was the smallest skull overall recorded for early medieval England and Ireland.

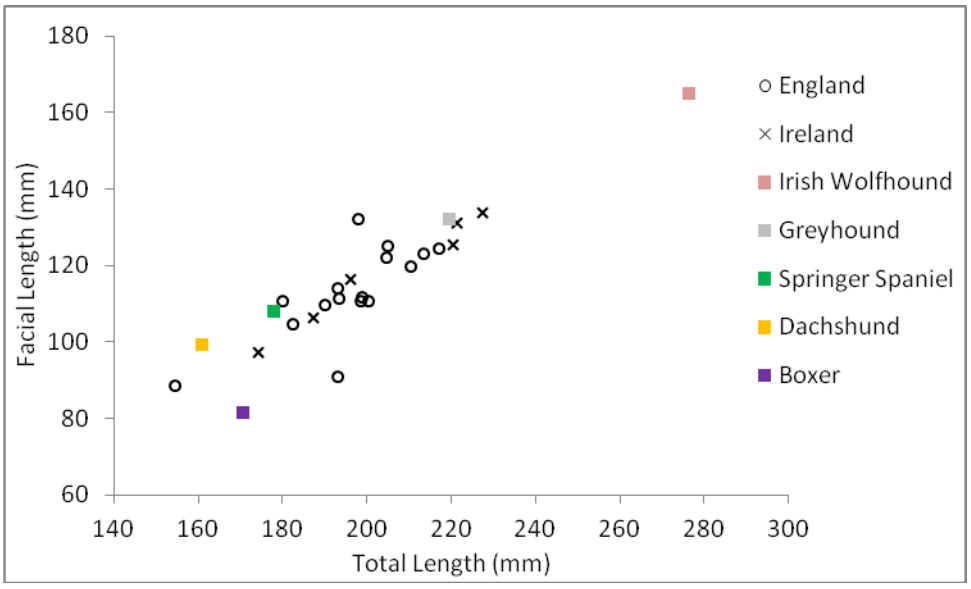

Figure 5.17. The relationship between the total length and facial length.

5.11.6 *Palatal Measurements*

The palatal length and breadth measurements were compared from English and Irish dogs (Figure 5.18) with the main cluster of data located between the English Springer Spaniel and Greyhound, indicating that the palatal lengths were, on the whole, in proportion to their width. There were a few examples smaller than this main cluster, with one English specimen smaller in dimensions than the Dachshund. There were no examples, from either country, with similar proportions to the brachycephalic skull shape.

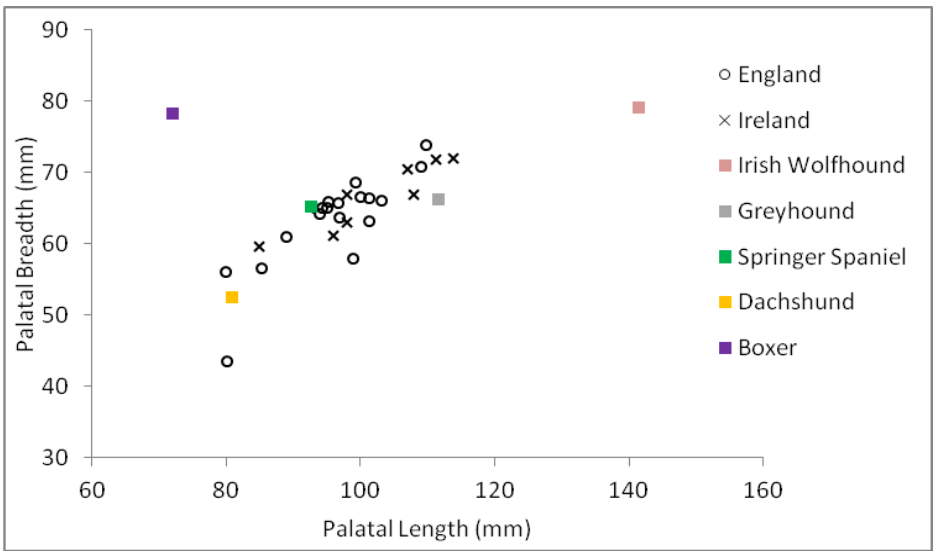

Figure 5.18. The relationship between the palatal length and palatal width.

5.11.7 *Mandible Measurements*

In total, the mandible sample comprised of thirty-five essentially complete specimens from both countries. Using Hasebe's classifications on the early medieval mandibles, nearly 80% of the English dogs were termed medium or larger. The total length was only available from four Irish dogs, all from the monastic site at New Graveyard, Clonmacnoise. These four mandibles illustrated variability in the mandible length compared to the height of the ramus as highlighted in Figure 5.19. The majority of the results from both countries clustered between the English Springer Spaniel and the Greyhound, with just a few outliers present. There was one example from both England and Ireland that had a very short mandibular ramus height, and at only 100mm long suggests these dogs had petite jaws. The English data also provided a very large mandible in both height and length, which was from16 Watling Street, Canterbury (Clutton-Brock and Burleigh 1995). This whole skeleton was described as wolf-like in appearance, although it was classified as a dog due to its small teeth in relation to the size of it skull and the slenderness of the limb bones.

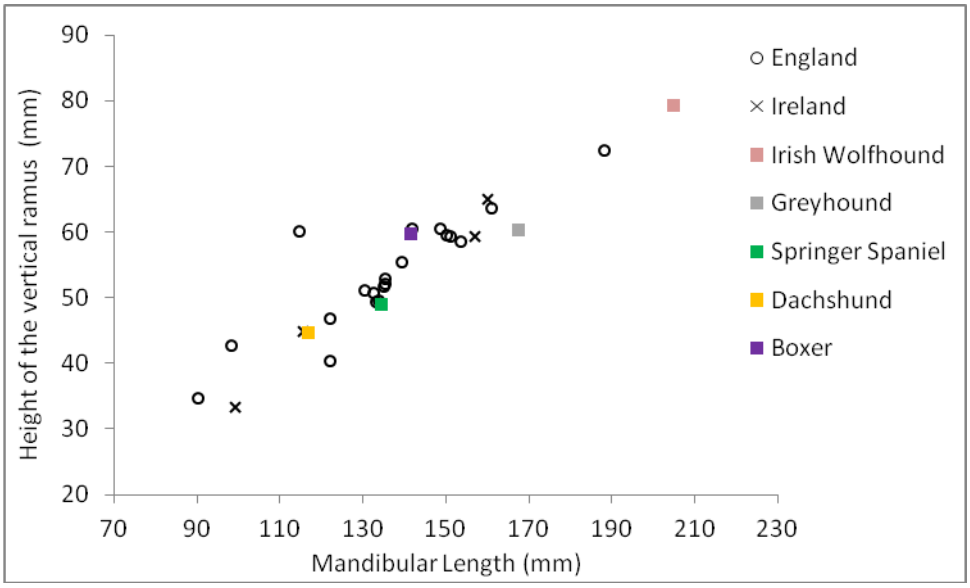

Figure 5.19. The relationship between the mandibular length and height of the vertical ramus.

5.11.8 *Limb Bone Measurements*

Limb bone measurements are used to determine the size and shape of the dogs. The most common method applied, and observed from the animal bone reports, in both countries, was the estimated shoulder height.

5.11.9 *Estimated Shoulder Height*

In total, 259 dogs provided estimated shoulder heights, with each country having examples from both ends of the height range (Figure 5.20). Ireland provided dogs from a number of sites and chronological periods. The early medieval English data showed no real discrete groups in the size distribution, which did not agree with Harcourt's findings for the Anglo-Saxon period (1974). However, the Irish dogs displayed a bimodal distribution within the estimated shoulder heights, with the shorter group between 20-45cm and the taller group between 50-75cm. These data supports McCormick's (1991b, 44) theory that there were two distinct size groups, which he believed was the result of selective breeding. A Mann-Whitney U Test was carried out on the estimated shoulder heights from both countries, which showed there was no significance difference between them through the chronological periods ($P < 0.05$, two-tailed). This could indicate that these groupings were probably due to recovery bias from Irish excavations, especially due to the gnawing evidence recovered on the faunal remains from early medieval sites, which would suggest that dogs were allowed to wander around the settlements in both countries. Dog collars and chains have been recovered from Ireland, which would indicate that some dogs were being kept under a certain level of control. If this was the case, then conscious breeding and development of certain traits, such as short snouts or a robust body shape, could have been practised.

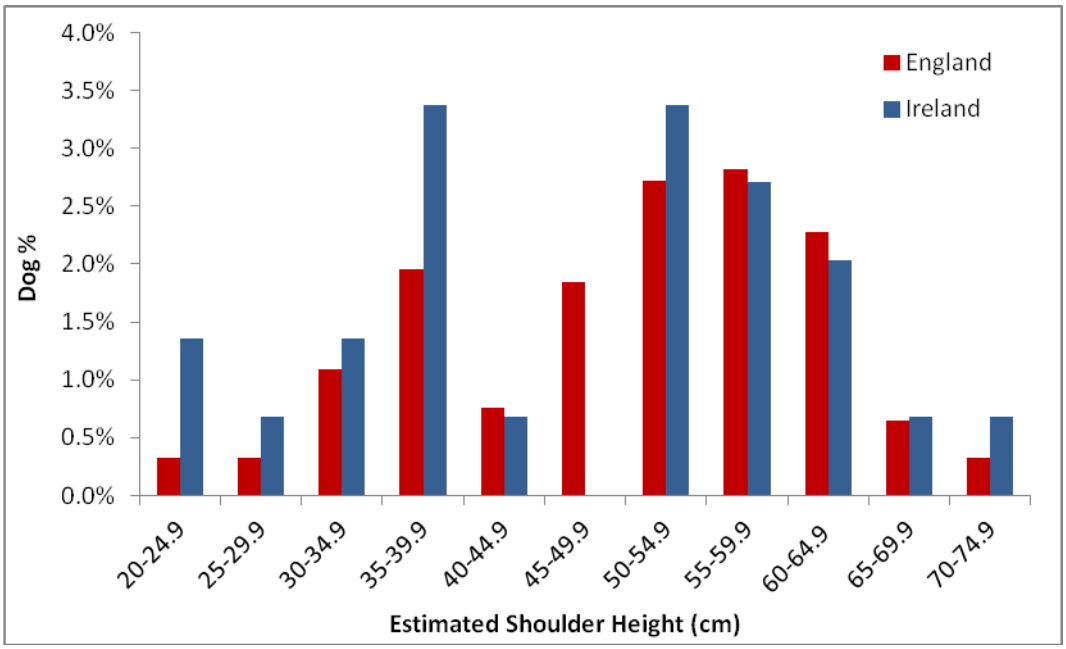

Figure 5.20. Estimated shoulder heights for English and Irish dogs.

When the two countries' estimated shoulder heights were broken down into chronological periods, Irish dogs showed a narrower range during the ninth-twelfth century, compared to the English (Table 5.2 and Figure 5.21). This was probably due to the lack of data from the Irish sites dating to this period, so limiting any intepretation. Otherwise, all the periods showed a similar range of minimum and maximum estimated shoulder heights. Irish dogs however were generally larger in size during the twelfth-thirteenth century, with no very small (under 25cm) examples being recorded. The decline in taller dogs during the Anglo-Norman period in England could well be due to the restrictions placed by the King on hunting. Only authorised people were allowed to use the King's forests for hunting, and this would have led to large hunting dogs being reserved for high-status estates only, which was not the case in Ireland.

Table 5.2. Summary of estimated shoulder heights for the combined time periods (in cm).

		N	Min.	Max.	Mean	Median	SD	CV
5th -9th Century	England	25	23.0	71.5	50.6	56.2	13.9	27.4%
	Ireland	79	24.3	72.5	52.0	56.8	12.4	23.8%
9th-12th Century	England	68	22.9	71	49.4	50	11.1	22.5%
	Ireland	5	23.9	65.9	46.7	50.9	18.2	39.0%
12th-13th Century	England	29	22.9	70.0	47.6	48.3	11.8	24.8%
	Ireland	15	28.9	74.8	53.8	55.5	12.5	23.0%

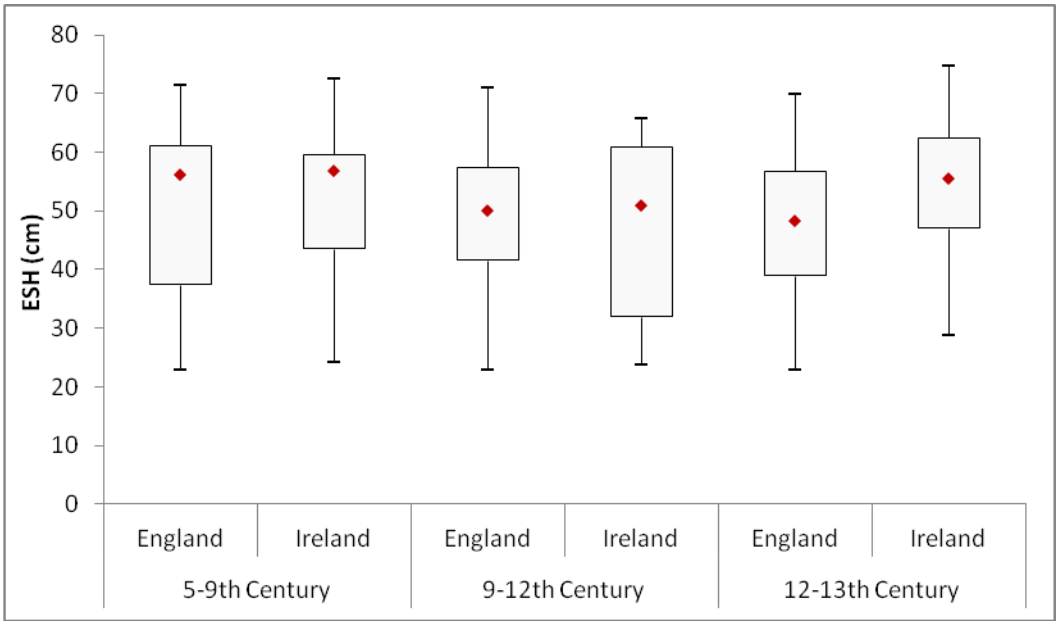

Figure 5.21. Estimated shoulder heights (ESH) for English and Irish dogs in combined time periods (♦ representing the median).

5.11.10 *Limb Bone Comparisons*

The greatest length of the different main limb bones, from both countries, displayed a wide variability (Figure 5.22). A Mann-Whitney U Test was carried out on the greatest length measurements from both countries and showed there was no significance difference between them ($P < 0.05$, two-tailed). The ulna measurements from Irish dogs showed a wider variability than the English data. The femur greatest lengths from the English examples however had a wider spread in comparison to those from Ireland. From the summary table (Table 5.3), both the standard deviation and coefficient of variance indicate the large amount of variability within the measurements for all the limb bones. When the limb bone greatest length results were compared with the data gathered by Harcourt (1974), it showed that the minimum and maximums were spread even more, with examples of shorter and taller dogs.

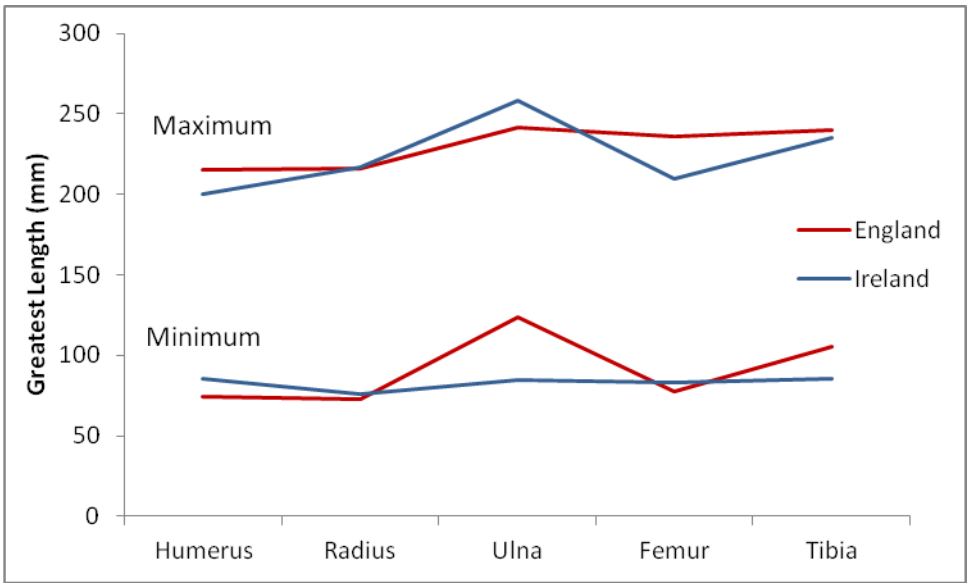

Figure 5.22. Minimum and maximum greatest length measurements for the main limb bones for English and Irish dogs.

Table 5.3. Summary of the greatest length measurements for the main limb bones (all measurements in mm).

		N	Min.	Max.	Mean	Median	SD	CV
Humerus	England	44	74.6	215.4	160.1	162.5	28	17.5%
	Ireland	29	85.1	200	149.1	166.5	35.2	23.6%
Radius	England	43	72.9	216	153.3	156.5	35.7	23.3%
	Ireland	19	76.1	217.1	159	172.6	39.3	24.7%
Ulna	England	16	124	241.3	192	200.5	33.7	17.6%
	Ireland	16	85	258.4	171.5	188.2	53	30.9%
Femur	England	33	77.2	235.6	170.6	176	34.2	20.0%
	Ireland	25	82.9	209.5	163	169.5	35.7	21.9%
Tibia	England	43	105.2	240.1	173.1	183	36.3	21.0%
	Ireland	24	85.5	234.8	174.2	188	38.4	22.0%

Figures 5.23 to 5.26 illustrate the relationship between the greatest length and distal breadth from four of the limb bones (humerus, radius, femur and tibia). The results for both countries show a range in size variability in the early medieval specimens, from the Beagle (a small-medium sized dog) to those as long as a Greyhound. Neither country had any examples of extreme shortening or of very tall dogs, such as the Pekingese or indeed the Irish Wolfhound. There were no clusters observed in the data that could indicate specific size selection or sexual dimorphism. Overall, it appears that Irish limb bones were narrower at the distal breadth, especially at the shorter greatest length

sector. Generally, the distal breadth measurements appear to be smaller than the comparative modern breeds from both countries.

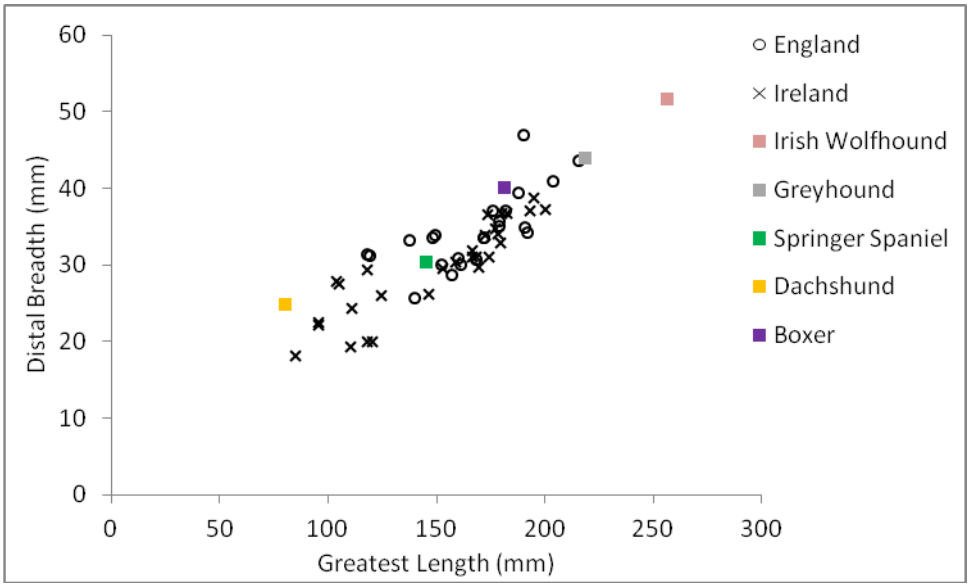

Figure 5.23. The relationship between the greatest length and distal breadth for the humerus.

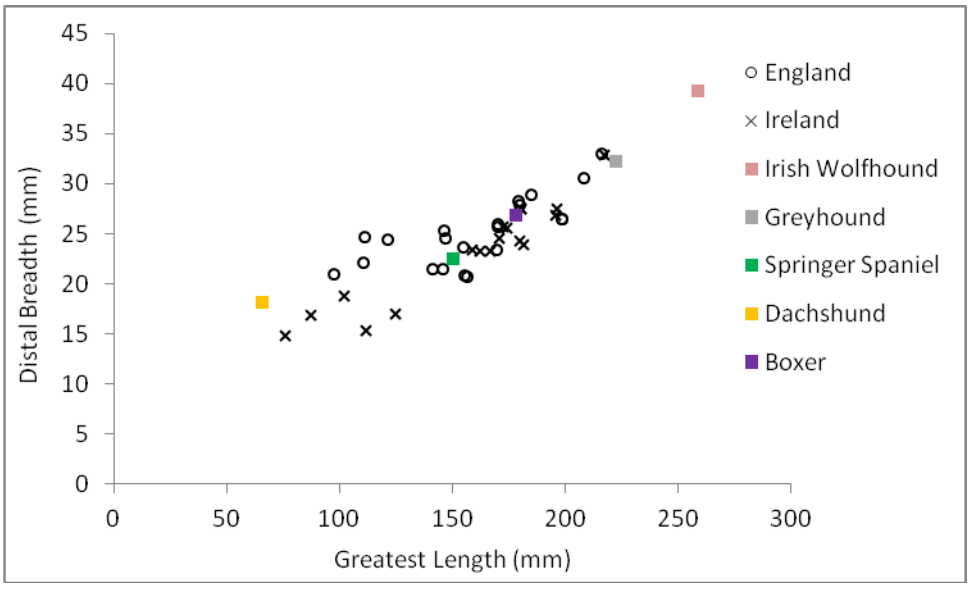

Figure 5.24. The relationship between the greatest length and distal breadth for the radius.

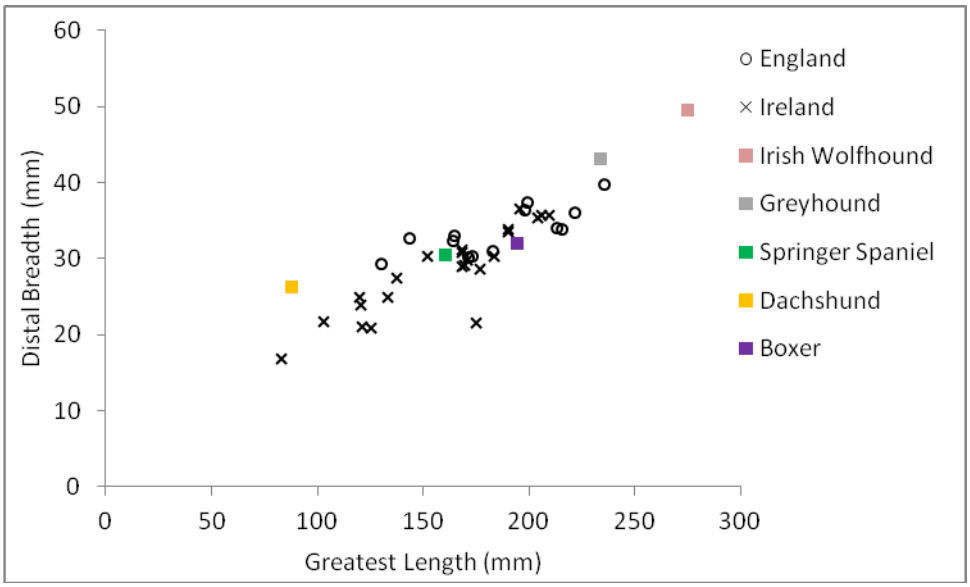

Figure 5.25. The relationship between the greatest length and distal breadth for the femur.

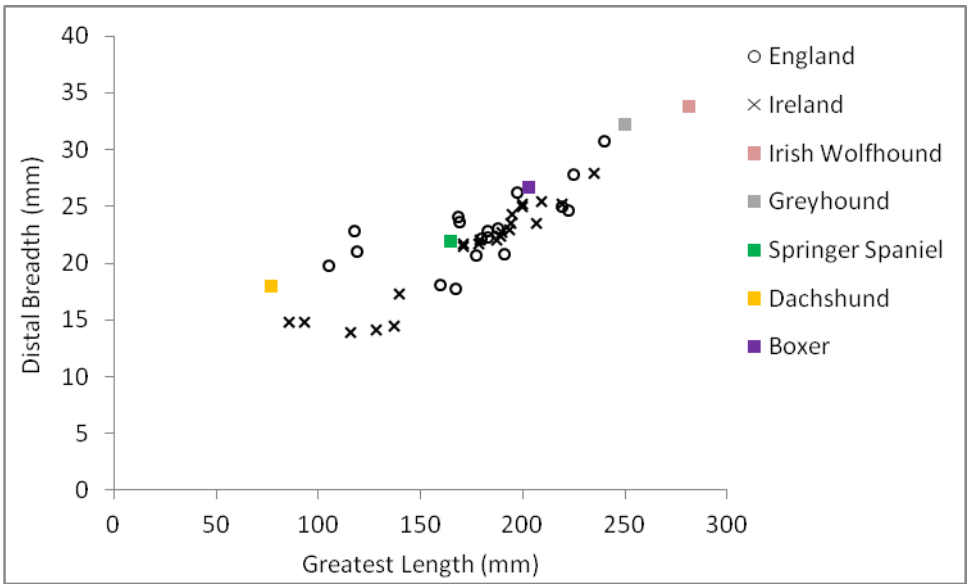

Figure 5.26. The relationship between the greatest length and distal breadth for the tibia.

5.11.11 *Slenderness Index*

The slenderness index examines the smallest diameter with the greatest length for the different limb bones. Below are the comparisons (Figure 5.27 to 5.30) of the English and Irish data, along with modern breeds for reference. Comparing the slenderness index against the estimated shoulder height in this way, highlights any specimens which may fall into the four categories; short and slender, short and robust, tall and slender or

tall and robust. It can be seen that all the limb bones had some degree of slenderness variability. But it was only from the Irish data that any could be described as short and slender, especially when compared with the modern breed, the Pomeranian. However, the English data exhibited a number of specimens whose limb bones could be classified as short and robust, similar to the modern Dachshund, but slightly taller. Looking at these specific dogs more closely, it was noted that bowing had been recorded in the limb bones of these animals, which causes the bones to be more robust and shortens the greatest length measurements.

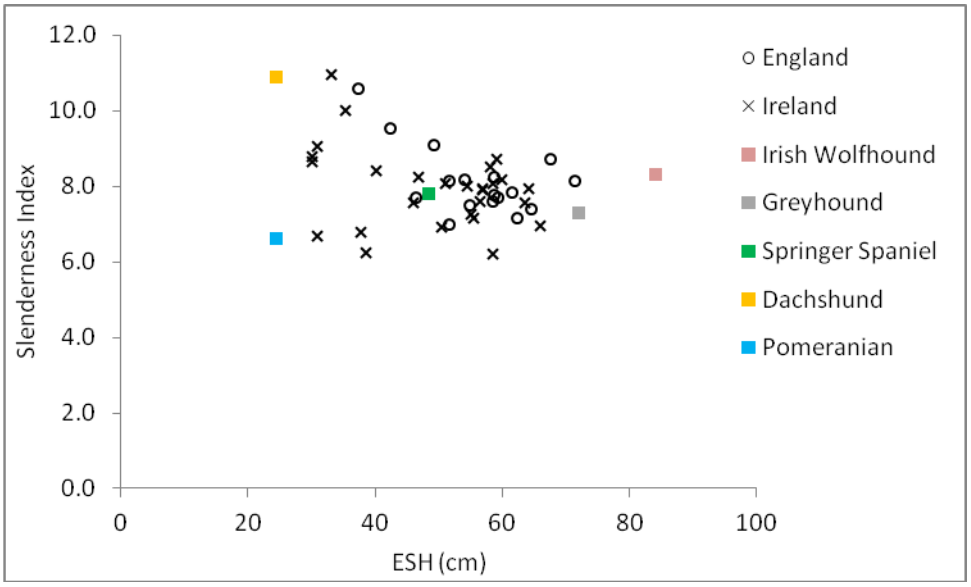

Figure 5.27. Slenderness index by estimated shoulder height for the humerus.

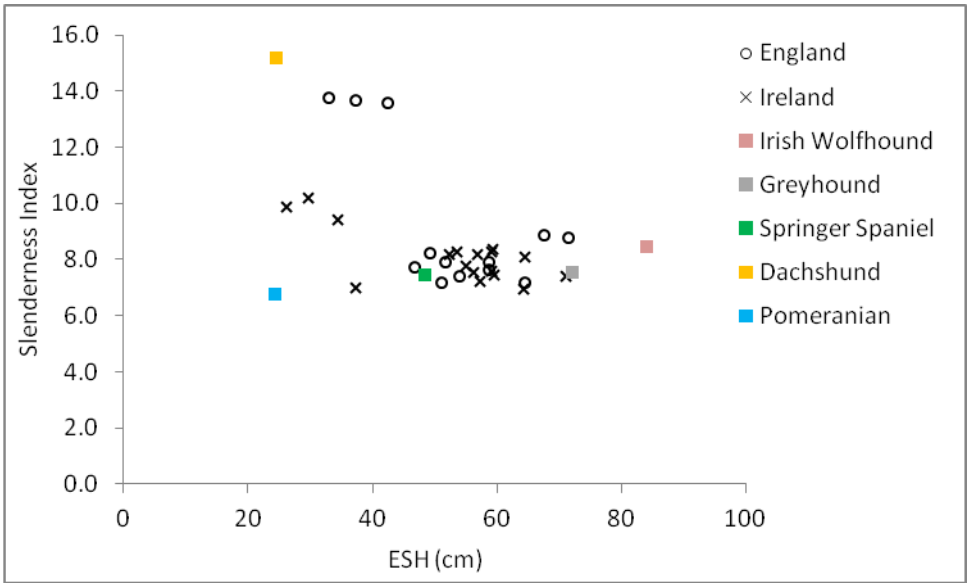

Figure 5.28. Slenderness index by estimated shoulder height for the radius.

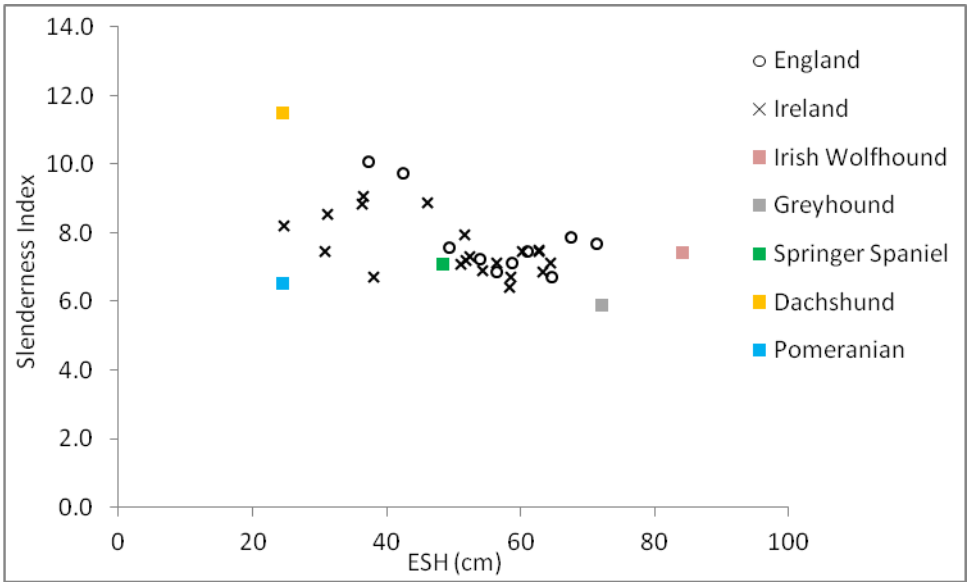

Figure 5.29. Slenderness index by estimated shoulder height for the femur.

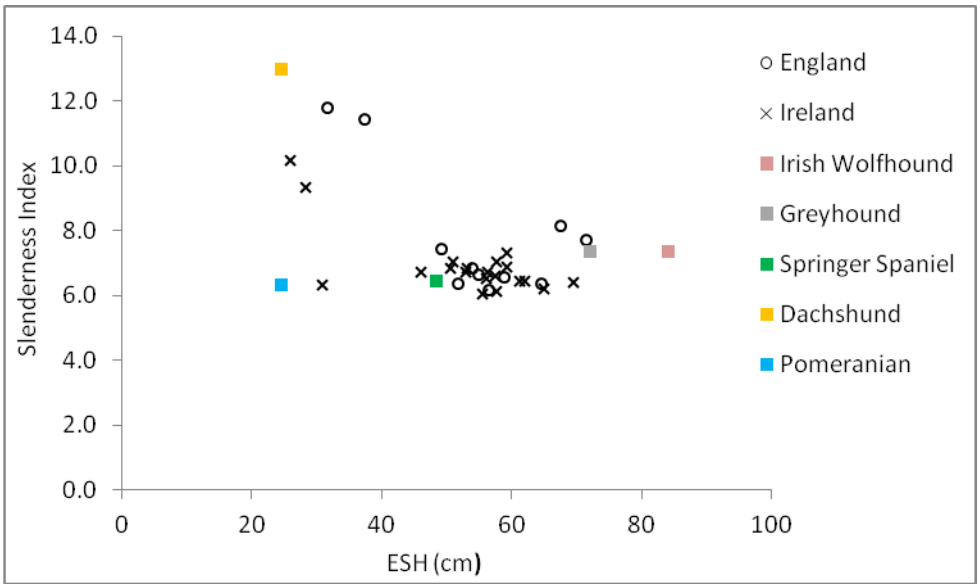

Figure 5.30. Slenderness index by estimated shoulder height for the tibia.

5.12 Summary

The level of analysis between the two countries' datasets was hampered by the limited availability of the data and the quantification methods used by the original animal bone specialists assessing the assemblages. The detailed information required, to fully interpret dogs within the archaeological record, was particularly restricted from the Irish bone reports. However, this study has been able to show that there were differences

between the dogs recovered in the two countries. The first difference noted was the presence of more dogs per site in England, as well as being in a more complete condition, with no Irish dogs recovered over 75% completeness. This difference could be due to a number of reasons; such as superior preservation conditions on English sites, that dogs were deposited in features which were less likely to be disturbed, or that better excavation methods were applied on English sites. It was also observed that mature dogs were generally recovered more complete from these discrete deposits, such as pits or graves, which was probably due to improved bone preservation when the animal was older at the time of death.

The site types from these two countries were quite distinct, due to the different social organisation of the countries during the early medieval period. However, urban settlements were the most common site type for both countries. Irish dogs were only recovered in towns from the Viking period onwards, as before then the country consisted of rural and specific dwellings, such as crannogs and forts. In England, during the early-middle Anglo-Saxon period, there was a high frequency of dogs being recovered from rural settlements and cemetery sites, with a change in the late Anglo-Saxon period onwards to urban, manorial and castle sites.

As noted by other authors, the MNI percentages were higher than the NISP for both countries; this was due to the fragmentary nature of the dog skeletons excavated and the bias towards minor species due to the small assemblage sizes, especially in Ireland. It was also observed that there was a comparative lack of deer bones from the Irish sites throughout the early medieval period. This would indicate that deer hunting was not being practised to any great degree and deer was not seen as an important food source, although there were references to this activity in the early medieval Irish art and literature so it maybe the deer bones were being disposed of away from the settlement.

The most discernible difference observed between the two countries was in the burial locations of the dogs recovered. The pit was the most common burial location from the England sites, but only two dogs were recovered from Ireland in this context. It would appear that the early medieval Irish generally disposed of their dogs and domestic refuse in the boundary ditches or disused features around the settlements. The presence of multiple dogs within one burial context was only observed from England. This could

indicate either unwanted dogs being dumped in pits or they could represent 'special deposits' of possible ritual significance.

The rarity of butchery evidence from either country would suggest that the use of dogs for meat, or as a skin source, was not common practice. Although the pathology observed on some of the dogs from both countries indicates that they suffered trauma during their live. There are examples, especially from England, that would suggest human care and attention was employed to keep certain animals alive. Bowing in the lower limbs was also noted in a number of cases, although only one example was from Ireland. It would seem that this bowing was probably due to prenatal evolutionary disease, rather than a specific breed characteristic; however, this could not be proven, due to the incomplete nature of these dog skeletons. The advanced level of toothwear, observed from both countries, indicates that the dogs' diet consisted of gnawing on animal bones and other abrasive food.

The biometrical data from both countries revealed the presence of physically different types of dogs during the early medieval period. Wide variability in the morphology of the dog skulls was observed from both countries, even though the Irish metrical data only consisted of examples from the Lagore crannog. There was evidence of dogs with shorter snouts in comparison to the length of skull, but there were no examples of the broad, short snout type, typical of the brachycephalic breeds. There were large estimated shoulder height ranges from both countries, with dogs becoming slightly smaller during the Anglo-Norman period in England. Interestingly, there was evidence of a bimodal distribution for the early medieval Irish dogs, but statistical tests have proven that there was no significant difference between the two countries estimated shoulder heights. When the limb bones were assessed with regard to slenderness dimensions, there was evidence, from both countries, short and robust, short and slender, and tall and slender with no examples of tall and robust.

Chapter 6 – *It's a Dog's Life*

"It's a dog's life – something that you say meaning that life is hard and unpleasant"
Cambridge Idioms Dictionary (2006)

6.1 Introduction

This chapter will examine in more detail the relationship between humans and dogs in early medieval England and Ireland, and attempt to understand how people perceived, utilised and engaged with dogs at this time. The chapter will be divided into sections covering the key themes set out in Chapter One, on the function, morphology and treatment of dogs. The main influences, such as religion and cultural changes during the early medieval period, will also be discussed.

6.2 The Function of the Dog in Early Medieval England and Ireland

This section will explore the different functions that the dog could have played in early medieval society, from the various data obtained from archaeological reports and also the art and literature sources. The dog bones themselves can only provide limited information, as they can simply suggest that a dog was skinned or chopped for meat after its death; however, the animal would have carried out a different function during its lifetime.

The domestic dog's value to humans principally lies in its ability to assist them with aspects of their work, such as hunting, herding or guarding. Dogs, like humans, are pack animals and are intuitively able to understand the human social hierarchy, and therefore can fit in with human social groups. This is also the case in some cultures where dogs are not actually viewed as companion animals (Clutton-Brock 1999, 50). This trait has led dogs to develop and hold an unusual status in many societies, which Serpell (1995b, 246) terms 'quasi-human'. Not all dogs would have 'worked', but their role and function within society could have been embodied in their valuable mutual bond with humans, as a companion animal. The domestic dog played the symbolic role

in the Romano-British period as a guide in the afterlife (Smith, K 2006, 50), this belief is still present within the Teenek Indians, Mexico, community today (De Vidas 2002).

It has been noted that many animal bone report authors directly linked the size of the dog to its function. For example, Armitage (1998-9) described the medium-sized dog recovered from St Peters Walk, Northampton, as being not big enough to hunt large game, such as deer, but more likely to have been a household pet or guard dog. However, this generalisation regarding size and function should not be applied to the osteological remains. Function cannot be determined from the remains alone, indeed as mentioned earlier dogs could have played important roles in death, such as guides in the afterlife. Prummel (1992) reviewed early medieval dog burials of Germanic tribes in Europe and surmised that dogs were used as grave gifts, similar to the horse burials. She believed that the animals took on a symbolic role at the funeral and represented the prestige, importance and wealth of the deceased.

6.2.1 *Hunting Dogs*

In this study, the term hunting dog refers to an animal that assists humans in the act of hunting or tracking other animals. The dog's role as a hunter would require it to perform various tasks, from tracking the prey, to flushing the quarry and to assist in its capture. Ethnozooarchaeological studies, examining the success rates of moose hunters in Finland, showed that working with dogs increased the people's hunting success (Ruusila and Pesonen 2004). Hunting scenes with the hunter and a dog were portrayed in historical texts and art throughout the Roman period in Britain (Smith, K 2006, 44) and these scenes often represented "the transition between life and death in the chase, which contributed to its symbolic association with regeneration and healing." During the early medieval period, hunting was a popular social pursuit for the elite in society, and was viewed not just as a sport, but as good training for keeping men fit in case of war, whereas for the lower classes hunting was assisted in gathering additional food and possible income (Yamamoto 2000).

6.2.1.1 *English Evidence*

Evidence for dogs being involved in the act of hunting was observed on various artefacts throughout the early medieval period, ranging from cremation urns to depictions on door archways. Very few examples of decorated urns have been recorded however. Thus the two specimens dating to the early Anglo-Saxon period recovered from Spong Hill and the unprovenanced urn would indicate that these scenes were significant. The simple outline scenes illustrating the dogs chasing a deer or stag suggest that this hunting scene may have had a mythical or magical significance, especially so with the presence of the animal bones within one of the urns (Owen 1981, 91). Dogs were also inscribed on the side of the Bromeswell bucket and they were represented as working alongside armed warriors with their shields, spears and arrows, attacking a possible lion or tiger.

The term 'hart and hound' motif was given to a number of representations of dogs illustrated hunting deer on early medieval artwork. Collins (1913, 9) believed this motif had a secular interpretation, with no intentional symbolism. It has been suggested that in some cases, the scenes could have been illustrating notable dogs and also famous hunts, which would have been known to the audience at the time (Ritchie 1981, 41). As mentioned before, Smith (K 2006, 50) commented that pagan Roman art links hunting scenes with rebirth and regeneration. This could imply that within a Christian scene, it could represent the combining pagan and Christian beliefs, however Hicks (1993, 207) believed the pagan symbolism for hunting had become detached from the Christian movement. Hicks (1993, 267) thought these hunts could symbolise Psalm 42's parallel between the hart's search for water and the Christian's search for God. Connections have been made to suggest that these scenes signify the forces of evil pursuing the Church (Bailey 1980, 174).

The use of dogs (along with bows and arrows) for hunting deer was well documented in the eyres. Typical example is the record that Robert de Chandos, along with five men armed with bows and arrows and four dogs resembling greyhounds, had taken a hart in January 1250 (Birrel 2001). The archaeological record also indicates this, with elevated levels of deer bones recovered from the high-status settlements, such as castles, during the Anglo-Norman period.

One of the most well known images of dogs running alongside the hunter and his horse was embroidered on the Bayeux Tapestry. Dogs were portrayed in a number of hunting activities with the huntsmen in the main frieze as well as the borders. The scene depicting Harold and his party heading towards Bosham illustrates three large hound-like dogs running in front of the King and his horse along with two smaller dogs, with relatively shorter legs and tail, and with small upright ears (Yapp 1987). It would appear that the designer wanted to highlight a difference in dog types, with two smaller dogs portrayed as bulkier and so embroidered them in a different coloured thread to the three lean hounds behind them (Lewis, M J 2005, 105). This was continued throughout the Tapestry with dogs embroidered in different coloured threads to indicate that the dogs were not uniformed in their shape, size and colour.

Dogs were also depicted hunting animals other than deer, for example the Lintel carvings at Tutbury Priory, Staffordshire, and at Little Langford, Wiltshire, illustrate boar hunts. A dog was carved on the decorative doorway at St Cuthbert's Church, Fishlake, Yorkshire, which had the unusual quarry of a goat in its mouth, with two further dogs behind it. This image has been interpreted as reduction in the congregation of the moral by neglect (Wood 2000).

The first certain depiction of dogs linked with hare hunting was from the twelfth century AD. Stone-carved examples were recorded on one of the medallions in the arch stone at Barfreston South Door, Kent, and there is a corbel of a dog's head and hare was also recorded at St Mary and St David Church, Kilpeck.

The earliest evidence of hunting with hawks appears in the Anglo-Saxon period. A letter from Æthelbert of Kent to St Boniface (AD 675-754), requests from Boniface a pair of hawks to be bred and trained for hunting crows as a gift to Æthelbald of Mercia (Carrington 1996). The dog's main function when working with hawks is to rouse the quarry for the bird to then chase and capture. Oggins (1981) noted the charter dated AD 792 giving dispensation to the Kentish churches and monasteries from having to provide food and maintain the Mercian royal hunting party if they should visit. The hunting party included the huntsmen, hounds, hawks, horses and their carers. Oggins

(1981) also commented that there was no evidence to suggest that the Viking invasion had any major influence on the development of falconry in England.

Hawks were illustrated alongside dogs on the Bayeux Tapestry and used to emphasise the social position of the handler. In the Tapestry, when Guy gives Harold over to William, only the Duke is shown with a hawk, symbolising that Harold loses his hawk, at the very moment that his hold on power begins to slip away. Sykes (2007, 66) noted that hunting and hawking gained increasing status during the late Anglo-Saxon period and became a sign of elitism, which coincided with the social reorganisation of the ninth century. She observed increased proportions of wild species from some high-status settlements, such as Brandon, Suffolk, and Flixborough, Lincolnshire, and the remains of a goshawk along with three dogs recovered from eleventh-century deposits at Castle Mall, Norwich (Albarella *et al.* 1997). The goshawk was one of four main hawks to be kept for hunting, the others being the peregrine, merlin and sparrowhawk. Prummel (1997) comments that the goshawk was traditionally only used by the lower nobility and rich commoners. The Domesday Book mentions that Norwich made a pre-Conquest payment (annually?) of a goshawk to the Earl (Brown, R A 1984, 61). Huff (1997) comments that the writings of *Vita Edwardi Regis* mentions Edward the Confessor's passion for hunting with hawks and hounds. Again in the Domesday Book, there was an entry that states the thegns of Berkshire were paid by Edward the Confessor with their weapons, hawks and hounds. The faunal remains also suggest the importance of hunting on high-status settlements from the late Anglo-Saxon period onwards with three times the amount of wild mammal bones recovered compared to previous periods (Sykes 2011).

As discussed in Chapter Four, the dialogue between a master and his pupils in Ælfric's *Colloquy* highlights the relationship between the huntsman and his hounds. It is debatable whether these writings were an accurate description of the common people of the Anglo-Saxon period. They may be the monk's own annotations on the various activities going on in the monastery. However, it does describe three possible hunting techniques used to chase game and two of these required the use of dogs. It also refers to a specially trained dog-type, known as a beater, whose role was to drive the wild animals towards the main group of hunters armed with bows and swords (Griffin 2007, 13). Beaters are still used in modern-day hunting, with either humans or humans and

dogs walking ahead of the main group to rouse the game. The chasing game method of using dogs to flush out the deer is described in the Life of St Dunstan (dated *c*. 1000) when King Edmund was staying at Cheddar in the 940s. Sykes (2011) remarks that this links in with the high level of red deer bones, dated to this period, recovered from the excavations carried out at Cheddar Palace.

A hunting dog could have worked alongside one individual person or could have been one of a pack of dogs. For example, the account list dated to 1136 called 'Establishment of the King's household' recorded three different hunting dog packs kept by the King. As well as the dogs, there were a large number of people involved in the King's hunting activities, including the knight huntsmen, keepers of dogs and kennels, horn blowers, hunt servants, and archers (Griffin 2007, 22). These huntsmen would have been professional and were ranked higher than labourers (Sykes 2011). The number of people and different types of dogs involved in the hunt, suggest that the sport had become a complex and well organised activity by the early twelfth century AD.

Hunting for foxes was not popular until the reign of King John. A letter from the King, dated 2nd January 1206, to Hugh de Neville was written to inform him that he had granted Peter Bordeaux a licence to hunt the hare and fox with his six or seven dogs (Ritchie 1981, 80).

It was not normally possible to identify if a particular dog had been used for hunting from the archaeological records. However, there was one example from Stockbridge Down, Hampshire, that may well have been involved with an illegal hunt. The unusual grave of a decapitated dog remains being recovered along with a decapitated male has led to this being interpreted as an execution burial, possibly of a man caught hunting unlawfully in the Royal forests. The coins recovered under his left armpit may have been hidden on the individual when he was captured and were not discovered by the prosecutors. Recently Reynolds (2009, 172) has provided an alternative interpretation to the presence of the dog within the grave and believes this burial is a possible example of punishment for bestiality. This site is believed to be an execution burial ground, dating to the early Anglo-Norman period, which consisted of two other decapitated skeletons, and a further sixteen burials recovered with either their wrist crossed or closely together (Hill 1937).

6.2.1.2 *Irish Evidence*

Examples of dogs associated with hunting were well represented in the early medieval Irish sources, with hunting scenes depicted on stone crosses, grave markers and stone pillars. Examples of the hunting scene were represented on the Irish sculpture much earlier, which is probably due to the different theological teaching practices being carried out. The classic scene of a stag, dog and horse with rider was carved on a number of crosses associated with the Clonmacnoise workshop (Hicks 1993, 174). This hunting scene would have been familiar to its early medieval audience and the hunt allegory; the deer signifying the soul being taken for Christianity, or even Christ himself (Hicks 1993, 174). The deer has also been used as a metaphor for immortality and resurrection, as it sheds and renews its antlers every year.

Kelly (F 1997, 293) noted that deer hunting was primarily being practised by royalty and the aristocracy in Ireland. As discussed in Chapter Four, there were a number of names used to describe hunting dogs in the Old Irish texts, each implying that this was either a different type of dog or it had a different function within the hunt. The tale of *Táin Bó Fraích* refers to dogs being used for hunting deer, foxes, hares, boars, and otters. But there were no references in the Irish texts to indicate that dogs were used for hunting wolves (Leahy, A H 1905) as well as little archaeological evidence of wolf bones recovered from early medieval sites.

Deer hunting was frequently referred to in the Irish art and literary sources, but the archaeology records suggest that deer was not an important source of food for the early medieval population (Newman 2002). This would indicate that hunting was viewed as more of a sport and social activity, to those involved. Deer hunting may indeed have only been carried out by the high-status individuals and the deer bones were being disposed of elsewhere. McCarthy (1998) highlights the key problem in Irish zooarchaeology of over-reliance on the rich literary sources for this time period for interpreting the limited animal bones found on early medieval archaeological sites. She noted that the written sources were often generalised and may be idealised accounts.

There were no references to dogs hunting with hawks in the Old Irish texts or in the Irish artwork. During the Early Christian period, falconry was not practised. By the

early Norman period however there was documentary evidence to suggest that hawks, such as the goshawk and sparrowhawk, were viewed as valuable assets and were being traded and exported to England (Kelly, E 1991). The lack of raptor bones identified from the early medieval animal bone reports would suggest that hawking was indeed not being actively carried out during the early medieval period in Ireland.

6.2.2 *Herding Dogs*

The role of the herding dog is to move livestock from one place to another; this is achieved by the dog creating fear-flocking and flight behaviour in the animals (Coppinger and Schneider 1995). Dogs have been bred to herd many different types of livestock by various methods, usually requiring a trained, specialised dog type. Pryor (1999, 98) discusses his experiences of using a trained dog to herd a primitive sheep breed and observed they reacted the same as modern sheep types, forming a tight flock so they could be herded effectively.

6.2.2.1 *English Evidence*

The only reference from the English records is from the Bayeux Tapestry, which illustrates the fable of the shepherd and his dog. However, this does not provide any information on the animals the dogs would have herded or their role within society.

6.2.2.2 *Irish Evidence*

Evidence for dogs used for the herding animals was observed on the Irish stone crosses, but these represented religious scenes. For example, the Kells Market cross depicts Noah herding the animals into the ark. Generally, the shepherd image was represented carrying a staff or crook in one hand within these scenes, and in conjunction with other hunting scenes on the stone crosses. The Old Irish texts had a specific word to classify herding dogs, *conbúachaill.* This type of dog was linked with herding cows, calves and sheep, although Lucas (1989, 22) believed herding dogs' main function during this period, was to guard the flock, rather than herding or rounding up the animals. The literary sources recorded that herding dogs were allowed to attacked thieves within the herd's enclosure, but not outside it (Kelly, F 1997, 148).

6.2.3 *Guarding Dogs*

Guarding dogs can refer to those used to protect property or livestock. Varying traits would be required of the dog for these very different roles. Bertrand (2009, 25) notes that a dog's natural territorial aptitude was probably one of the original reasons humans kept dogs. Their warning bark at known and unknown visitors would have increased human survival rates. Dogs bred to protect livestock, especially sheep, must be trustworthy, attentive and protective as it is their role not to disrupt the livestock but to live amongst them and interrupt their predators (Coppinger and Schneider 1995). Russell (2012, 285) notes that less training is required to teach a dog to guard a flock of sheep, then to herd them. Guard dogs used to protect homes and businesses, as well as livestock-guarding types, are still common today. In some cultures, such as Kagoro, Nigeria, dogs are kept to protect property against threats both from the living and the dead (Olowo-Ojade 1989).

6.2.3.1 *English Evidence*

The guarding qualities of the dog were symbolised on early medieval manuscripts, with dog-heads placed at terminals and finials around the borders of pages within the Lindisfarne and St Chad Gospels. The dog heads illustrated were of a heavily-built type, such as the mastiff-type with its large, strong jaw. These images have been interpreted as symbolising the guardians of the word of god (Alcock 1998). No other literary or artistic representations of guard dogs were found.

6.2.3.2 *Irish Evidence*

Unlike the English examples, no dog images were identified in the Old Irish illuminations representing guarding the word of God but the texts do describe the guard dog as being the most important type of dog, with very severe punishments if any were illegally killed. A large, aggressive guard dog was described as *árchú*, which would have been used to defend property or livestock. The *Táin Bó Cúailnge* describes the dog as being so powerful that it needed three chains and three men on each chain to control it. They were used to track blood, to capture a man or to protect a man under attack from two warriors (Kelly, F 1997, 115). In Ireland the importance of herding

cattle to safe places would have been paramount. Guard dogs would have been used as extra protection to keep the animals within the ringforts safe at night (McCormick and Murray 2007).

The importance of guard dogs to the early medieval Irish was highlighted in their most famous Irish legend, about Cú Chulainn. The response of Cú Chulainn after he kills the large guard dog is a sign of the importance that these animals held to their owners (Breatnach 1996).

6.2.4 *Fighting Dogs*

Dog fighting: as a form of entertainment, where dogs were pitched against one another or other animals and generally leading to the death of at least one of the animals. A fighting dog would need to be a large, low, heavy breed with a powerful build and strongly developed head.

There are a few references to dogs being used in fighting during the early medieval period in England. Literary evidence suggests that bull baiting was taking place during King John's reign (AD 1199-1216). Bull baiting was carried out in an enclosed area and the chosen dog would be released to take down a loose or tethered bull. The dogs would have been trained to go for the nose of the bull and generally biting the head of the animal (Thomas, K 1983, 144). It can be assumed that these dogs would have been chosen for their large size, build and strength. There were no references to suggest that dogs were being specifically trained for this activity. Fleig (1996, 61) notes that these events were not widespread in the country, due in part to the lack of appropriate and secure arenas to ensure that spectators did not get hurt.

Bearbaiting was also being practised during the Anglo-Saxon period and was specifically associated with the royal household (Kiser 2007). A late Anglo-Saxon document for Norwich states that town should provide the King with a bear and six dogs, although no information is provided on the type of dogs used for this activity.

6.2.5 *Companion Dogs*

The term ‘companion animal’ is used rather than ‘pet’ as the latter can imply a lack of any utility, which is not the case, as the companion dog plays an important role within the society. Images of companion dogs were observed in the Western provinces of Rome. For example, they were often portrayed curled up at the feet of one of the mother goddesses, and have been interpreted as symbols of fertility (Smith, K 2006, 58). The psychological, physiological and therapeutic benefits of companion dogs are well documented, with case studies describing their ability to lower a human’s blood pressure to helping emotionally disturbed children (Hart 1995). There was no evidence in the archaeology or the literary sources to suggest that dogs were being anthropomorphised, such as human or non-human names given the animals. However, evidence for this practice is observed in the medieval period, for example on the brass plate for Sir Bryan de Stapleton at Ingham, Norfolk, there was a dog illustrated with ‘Jakke’ inscribed next to it and dated 1438 (Thomas, K 1983, 114).

6.2.5.1 *English Evidence*

There were no artistic or literary references to dogs used as companion animals from the early medieval English record. However, the archaeological record does provide possible examples of dogs that have been kept as companions, due to the animal having a deformity, such as bowed limbs, which would have restricted the animal’s working life. An old/mature dog was recovered from an inhumation grave of an old man and a child at Loveden Hill and was believed to have been lame for some time, due to a deformity to one of its legs, so would have required human attention (Wilkinson 1980).

6.2.5.2 *Irish Evidence*

An *orcae* or *oirce* (a dog for people’s amusement) and a *messán* (a little dog) were terms used in Old Irish texts to describe companion dogs (Scharff 1924). These dogs were associated with high-status individuals within the texts, such as queens, noble ladies, and certain professions. There were also references to companion dogs having supernatural qualities and Kelly (F 1997, 120) commented on documents noting their ability to protect women from fairies when giving birth (*CIH* iii 806.33-807.10).

The rarity of this type of dog in early medieval Ireland was highlighted by the tale of *Cairbre Músc*, who had to use devious methods to obtain one of England's renowned lapdogs (Stokes (ed.) 1868, 112).

6.2.6 *Draught Dogs*

There was no artistic or literary evidence to suggest that dogs were used for draught purposes from either country during the early medieval period. The only possible indication of dogs being used for this function was from a possible dog harness, excavated from Queen Victoria Street, London, and dated to around the end of the ninth century AD. It was believed this could have been used to attach one or two dogs to a vehicle (Zarnecki *et al.* 1984, 277-8). The harness was fairly decorative, which would suggest that it was not for heavy use.

The osteological remains from both countries showed no indication that dogs had been used for extensive draught work. There were no observations of eburnation or degenerative changes around the joint areas, which would have suggested strain on the weight-bearing joints (Bartosiewicz 2008).

6.2.7 *Food Source*

In theory, dogmeat as a food source has no different properties to pork, and in some countries it is highly regarded, such as Southeast Asia and China. In certain cultures, dogmeat is only consumed for ceremonial purposes, as it is believed to give people power and to cure diseases of the spirit (McHugh 2004, 33). Serpell (1995b, 249) discussed the Sioux Indians of North America, who kept named dogs, which they recognise as having individual personalities, but they also raise unnamed dogs for meat and for use in sacrificial rituals.

6.2.7.1 *English Evidence*

The only reference to dogs as a food source from the English literature was from the *Liber Eliensis*, written at the end of the twelfth century, drawing on earlier sources. It

recorded that in the famine between AD 695 and 700 people resorted to eating horse, dog, cats and even human flesh (Fairweather 2005, 209). There was no artistic evidence to suggest dogs were used as a food source although there were butchery marks on some dog bones. There were only six cases of heavy chop marks, which might indicate they were dismembered for possible human consumption; Gidney (1996) has suggested that the butchered bones could have been used to extract fat for cosmetic and medical purposes.

6.2.7.2 *Irish Evidence*

Like early medieval England, there was no artistic evidence that dogs were consumed for meat, but literary texts suggest that dogs were eaten during times of famine. For example, *Chronicum Scotorum* (*CS* 1116) states that there was a great famine in the spring of AD 1116, where people had to sell their children for food, and even eat each other and the dogs (Hennessy (ed.) 1866, 319). There was also a reference in the tenth century Cormac's Glossary (Stokes (ed.) 1862, 25) to a poet or druid who ate or chewed a piece of dogflesh as part of a ritual that would produce revelations from the pagan gods. This would suggest that the eating of dogmeat was seen as a pagan activity (McCormick 2002, 107). The archaeology records reveal only six dogs with signs that they may have been killed for meat consumption, and all these cases dated to the Viking period onwards.

6.2.8 *Skin or Fur Source*

Determining whether a dog was killed for its skin is difficult to identify from the osteological remains. Hufthammer (1994) commented that she had skinned both dog and fox without leaving any clear knife marks on the bones. A possible dog skin blanket was recovered from a second-century child burial at Asthall, Oxfordshire (Booth *et al.* 1996). It was identified by the presence of only the dog's fore and hind legs bones in the grave, which had still been attached to the pelt. Booth *et al.* (1996) noted that dog skins would have limited used due to their size as observed on the child burial from Asthall, the skin only covered the shoulders down to the ankles.

There was no suggestion from any sources that the hair of dogs was used. However, the practice of using dog hair has been observed in a number of other cultures, for example among the Zuni and Coastal Salish tribes of North America and the European Arctic Samoyed people, who kept dogs specifically for shearing (McHugh 2004, 29).

6.2.8.1 *English Evidence*

There were no artistic or literary evidence to suggest that dogs were killed for their skins. However, eight dogs with skinning marks on their bones were recovered, five from Market Lavington alone. The Glebe South Leckhampstead, dog had numerous knife marks to indicate it had been skinned with the tail cut off with its pelt.

6.2.8.2 *Irish Evidence*

Like England, there was no literary or artistic evidence to suggest dogs were killed for their skins. There were four dogs recorded with skinning marks, two from Waterford and a further two from Fishamble Street, Dublin. McCormick (1997) notes that cats from the early Norman contexts at Waterford were being killed for their pelts, due to the high number of young cats recovered from the excavations. There was also evidence of a possible wolf pelt, so there was a suggestion that the port town was trading in animal pelts during the early Norman period.

6.2.9 *Tanning*

Dog, pigeon and human excreta have been used in the tanning process to soften the leather (Goodburn 1978). The skins were washed in a mix of dog faeces and bird droppings, which removed the lime (Semple 2006).

There were no artistic or literary references to dogs' excrement being used during the early medieval period, although dog coprolites were found on a few archaeological sites in England and Ireland. No conclusions can be made on whether these coprolites were used for this purpose as these examples were recovered with other domestic rubbish.

6.3 Morphology

The osteological remains, along with the iconography and literary evidence, were examined to construct an image of the various dog morphologies during the early medieval period in England and Ireland.

There are certain characteristics of the body shape and appearance of a dog that could not be obtained from the skeletal remains. Unfortunately, no mummified remains were recovered from either country, which could have shed light on the length, colour or texture of the dogs' coat, as well as the position of their ears and tail. The only representations available on these traits were from the iconographic evidence, which will be discussed below.

When assessing the osteological material, modern dog breed bone remains have been used as a comparison to assist in determining the outline of the dogs' appearance. As mentioned previously, modern dog breeds have been developed over the last 200 years by intentional breeding, designed using heritable traits to produce specific breed standards (Clutton-Brock 1995).

Dogs represented within the early medieval iconography must be viewed cautiously, to establish whether the image was a realistic one of the time or a more stylised impression. Klingender (1971, 383) observed that the artists were restricted to depicting animals non-realistically, due to their obligation to the theological interpretation of the text, and a responsibility to draw attention to select characteristics. A symbol becomes 'alive' when it effectively generates psychological engagement with intricate interrelated ideas and beliefs (Stevens 1998, 76).

6.3.1 *English Dog Morphology*

The majority of the English early medieval iconographic representations of dogs could be described as just dog-like animals, from the simple outline profiles on the Anglo-Saxon cremations urns to the more stylised images illustrated on the Strickland Brooch.

6.3.1.1 *Cranial Evidence*

There was a number of different head shape types identified in the iconography, for example the mastiff-like head of the dogs on the Lindisfarne and St Chad Gospels with their large jaws and square head, compared with the sleek-lined hound-type represented on the Bayeux Tapestry. These different shaped dogs signified their diverse functions, with the large-mouthed, fierce-looking guard dogs, compared to the swift moving dogs required for hunting. A rather naïve image of a dogs' head was carved on the corbel, St Mary and St David Church, Kilpeck, Herefordshire, with the head sculpted in a caricature style, with long droopy ears and a wide face and snout.

Understanding the formation of dogs' ears during the early medieval period could only be observed from artistic representation. Messent and Serpell (1981, 5) noted that the changes in the positioning of the ears were an important form of communication between wolves, with the development of the more rigid and smaller ears in domestic dogs which has limited this interaction. The dogs illustrated in the Aberdeen Bestiary were shown with pricked up ears, as well as the rolled type, which are rounded, with a triangular flap folding forwards and lying close to the head (Cunliffe 1999, 29). The Spitz-like dog illustrated in the Aberdeen Bestiary had a fairly small muzzle, but when this dog image is compared with other animals represented on the page, it would appear to be the artist's style. Of the twenty-four dogs represented on the Bayeux Tapestry, all the dogs on the main frieze were embroidered in a formulaic hound-like style of varying sizes, all with a lean body and long thin tail. They were depicted with small pricked ears, differing from modern hounds, which generally have rounded ears that lie close to the head, for example the Foxhound.

The archaeological record, along with iconography and literary references, of the dogs' muzzle region all displayed normal or scissor bite in the mouth. There were no examples of overshot (when the upper teeth project beyond the lower teeth) or indeed undershot bite found in modern breeds, such as Bulldogs or Pugs.

The English osteological evidence clearly showed that during the early medieval period, there was a variety in total length and width of the skulls, as well as other features, such as the snout. The dog skull that recorded the smallest total length was from a late

Anglo-Saxon ditch, at New Town, Southampton, with a length of 154.4mm. It is worth noting that this was 20mm shorter than the smallest recorded by Harcourt (1974) in his survey of Anglo-Saxon dogs. However, there is a Romano-British example even shorter at only 116mm. Only one dog fitted into the small category of Hasebe's classification (1952), compared with seven in the large category. The general overview of the skull shape and size, using Hasebe's classification method, indicates that many of the dogs had medium-large length skulls and snouts, but their width at the cranium stayed relatively narrow.

When the facial indexes were applied to the skull measurements that were available, a more detailed picture developed. The cephalic index (the relationship between the width of the skull against its total length) illustrated from the seven examples that they fitted the medium to large dog shaped skulls. This made them similar in dimension to the modern English Springer Spaniel skull in the collection. Due to the lack of complete skulls with the necessary measurements, the interpretation was limited. This index may be biased towards larger dogs, as they would naturally be less susceptible to taphonomic breakage to the zygomatic arch bones.

The two indexes used to determine the shape of the dogs' snouts illustrated that they were generally medium to long in length, but medium in width. There were no examples of extreme shortening, such as those observed in brachycephalic skulls, the smallest snout index ratio recorded from an early Anglo-Saxon dog was from West Stow. This dog's proportions were slightly smaller than the modern Beagle. There was also an example with similar dimensions to a Dachshund, with a fairly long snout in proportion to its head, but thin in width. This outlier in the data was recorded from a late Anglo-Saxon to medieval context from Alma Road, Romsey, due to its long and narrow snout in proportion to its total length, suggesting it had a long, thin face (Grimm 2007). The presence of distinctly shortened muzzles was observed at Flaxengate, Lincoln, but unfortunately no detailed skull measurements were available from this study (O'Connor 1982, 50).

Neotenisation in dogs, which is particularly prominent in the skull area, such as the short broad snout, big eyes, high forehead and round head, was not observed in any of the iconography or mentioned within any literary references from the early medieval

period. There were a few possible examples within the osteological remains, such as the small skull recovered from New Town, Southampton. This dog had measurements that suggested it had these traits, with dimensions smaller than a Beagle. However, the majority of the early medieval dogs lay in a range of dimensions similar to the English Springer Spaniel, which has a fairly rounded skull with a well-proportioned snout, and the Greyhound shape with its long, sleek face.

The early medieval mandibles highlighted a similar pattern to the craniums, with 80% fitting into Hasebe's classification as medium to large. The smallest mandible was from a thirteenth-century feature context from Southampton Castle, Upper Bugle Street, and was classified under Hasebe's (1952) table as small. The largest mandible was from a seventh-century dog excavated from 16 Watling Street, Canterbury, which was nearly the size of an Irish Wolfhound. A very large dog was also observed from West Stow, dating to around AD 400, which similar in size to those observed during the Romano-British period.

6.3.1.2 *Post-Cranial Evidence*

The early medieval English iconography illustrates dogs in a wide variety of shapes and sizes, although their height can be difficult to determine, when there are no humans or other objects for comparison. For example the Strickland Brooch, which is illustrated with stylised dogs but with no other recognisable object for height comparison.

The literary evidence for the physical characteristics of the dogs was very limited, although a number of types were referred to. For example, in the account list written by the King's treasurer Nigel of Ely the wolf pack was described as consisting of eight Greyhounds and twenty-four racing dogs, suggesting that there was a distinction between these two types of dogs (Griffin 2007, 22).

The osteological results from early medieval England indicated that dogs ranged from 22-24cm in height, as small as a Papillon, to approximately 71.5cm, as tall as a Deerhound. Over half the estimated shoulder heights calculated were from dogs over 45cm, with a peak at 50-54.9cm, which is similar in height to an English Springer Spaniel. No discrete groupings were observed in the size distribution, which disproves

Harcourt's findings suggesting that selective breeding was being carried out during this period. There was no regional variation, except for a smaller range in the West region, but this could be due to the lack of data from this area. There was a higher frequency of larger-sized dogs during the early to middle Anglo-Saxon period with a wider spread of sizes overall. Small-sized dogs were recorded throughout the entire Anglo-Saxon and Anglo-Norman periods, however during the middle to late Anglo-Saxon period there was no evidence of very tall dogs. Interestingly, the prevalence of taller dogs reduced in the Anglo-Norman-Medieval period, at a time when hunting was well-documented. During this period, hunting was tightly controlled, with only the King or those with his warrant, were legally able to hunt the four 'beasts of the forest', the roe, red and fallow deer and the wild boar (Birrell 2001). This situation would have led to strict controls in the breeding of larger dogs of the type used for hunting. These animals would have been restricted to only high-status estates. As expected, taller dogs were recovered from castle and rural sites, with no short dogs recovered at all.

Use of Hasebe's classification for limb bones showed there was a wide variability in length, with examples from the small to the large categories, the means fitting into the medium-large bracket. Comparing the slenderness against the distal breadth revealed there were no extreme examples or any clusters to suggest specific size selection or sexual dimorphism. There were examples in the dataset of three main size-types of dogs; short and robust, short and slender, and tall and slender. The two examples within the short and robust group did however exhibit bowing in the limb bones, which would tie in with the robusticity recorded in the bone width. It was also noted by Clark (K 2002) that the general build of one of these dogs was relatively large in comparison to the length of its legs. This dog was described as having broad shoulders and with the skull similar in size to a Labrador Retriever. In addition there were a couple of examples with small and slender limb bones, similar in proportions to a Pomeranian.

Another feature that is characteristic of body shape is its tail. No information on the tail could be obtained from the osteological record. There were indications of different types of tail carriage illustrated within the early medieval iconography. Most of the iconographic examples show the dog with a long thin tail, nearly down to the ground, such as those portrayed on the Bayeux Tapestry. However, there was a dog in the

Aberdeen Bestiary on Folio 5r and on the Dacre stone, shown with its tail curled over its back, very similar to a Spitz-type breed.

The only evidence on dog coat colours was suggested from the illustrations in the illuminated manuscripts. The dogs in the Aberdeen Bestiary were depicted in a number of coat colours, with fawn, brown and blue-grey. The dog noted on Folio 5r had a fawn-coloured coat, pricked-up ears and its tail curled over its back, with white tips to the end of its tail and paws.

6.3.2 *Irish Dog Morphology*

The iconographic representations of dogs were limited from Ireland, with most images coming from religious contexts, which as Edwards (1999, 132) points out, meant that they were often illustrated in a stylised manner. However, they were generally portrayed in hound-like appearance, wearing a collar, but disproportionate with the other characters represented, especially on the stone crosses where space was at a premium.

6.3.2.1 *Cranial Evidence*

The images of the dog heads from early medieval Ireland were predominantly portrayed with medium-sized heads and fairly long snouts, although the exact dimensions cannot be determined. For example, the dog represented in the Book of Kells was a stylised image; however the dog was illustrated with a long snout and pricked-up ears and chasing a hare. The osteological data were fairly limited, with only Lagore crannog providing any cranium metrical data and all dating to the seventh to ninth century AD. However, this one site alone presented a variety of cranium sizes, ranging for medium to large according to Hasebe's classifications (1952). The indices data suggest that they had fairly wide heads, in proportion to their length, with none smaller than an English Springer Spaniel. Their snouts were all fairly long, with some examples similar in length to a Greyhound, although not as narrow. There was no indication of any neoteny characteristics from the Lagore crannog. Dogs from other Irish sites did provide mandibular information, suggesting a wider range in the mandible size, with dogs categorised as small and medium-small by Hasebe's guide.

There was just one example of tooth crowding recorded, with all the teeth fully erupted (McCormick 1984). Clark (K 2000) commented that tooth crowding of this nature was likely to be as a result of accelerated diminution of a jawbone.

6.3.2.2 *Post-Cranial Evidence*

Generally, the iconography portrayed the dogs with lean bodies, with tall legs and their long thin tails nearly reaching the ground. The dog images on the stone crosses were often out of proportion with the other characters represented, so their actual height was difficult to determine. The Old Irish texts provided information indicating that there were different types of dogs during the early medieval period. However, there was very little detail of this animal's appearance, other than if they were big or small. For example, *árchú* was described as large and aggressive type, which was so powerful it required three chains and three men to control it (Kelly, F 1997, 115). The heroic poem about Fionn, describes a hunting dog as having dark grey fur, which was rugged texture (Lewis, C A 1975). This is the only literary reference describing the coat colour of a dog. Although the Irish had two names to describe a companion animal, there was no description of its appearance. In the tale of *Cairbre Músc* it suggests that it was a very special type of dog and probably small in stature (Stokes (ed.) 1868, 112).

The estimated shoulder heights from early medieval Ireland provided a better understanding of the wide variation that existed during this period. A bimodal distribution was observed in the estimated shoulder heights, with the smaller group between 20 and 45cm and the taller group between 50 and 75cm. This agrees with McCormick's (1991b) theory that there were two distinct size groups, which could have resulted from the conscious breeding and development of traits. This could have been achieved due to the broadly rural society of Early Christian Ireland, which was firmly hierarchical and kin-based, so would have led to minimal interactions between kinships. McCormick (1991b) noted that it was not until the Anglo-Norman period that significant changes were observed in the organisation of the country. However, this bimodal distribution could have been due to a lack of dogs recovered from Irish sites. The statistical test carried out on the data indicated that there was no significant difference between the England and Irish dog estimated shoulder heights.

The widest variability in height occurred during the Early Christian period, with a mean of 52cm, although the tallest dog found was recovered from early Norman contexts, and was taller than the English examples. The smallest dog was recovered from the Viking period, however there was limited data from this time. There did not appear to be any bias towards certain heights at the different site types, although there were some site specific height preferences. For example, the dogs from Lagore crannog had a mean estimated shoulder height of 54cm, whereas at Moynagh Lough crannog, the majority of dogs were no taller than 40cm at the shoulder. The limb bones measurements confirmed the estimated shoulder height results, with a broad range in size during the early medieval period, with dogs categorised as small to large by Hasebe's classifications. The slenderness dimensions indicated a great deal of variability, with examples of short and robust, short and slender, and tall and slender.

There were a few dogs represented with a curled tail over their back of their body. For example, on the Ahenny North cross the dog's tail is curled over the top of its body, although this could have been carved in that way simply due to the space restrictions of the cross base.

6.4 Treatment of Dogs in Life and Death

This section will explore how dogs were treated during their lifetime and at their death throughout the early medieval period in England and Ireland. This will be carried out by examining the literary sources for information on the diet and status of the dogs within society. The osteological remains will also be analysed for evidence of the dogs being struck or signs of malnourishment. By analysing the age at death and burial location data for the dogs, it is hoped light will be shed on how people perceived these animals while they were alive and at their death. It will also evaluate what influences may have affected people's perceptions during early medieval England and Ireland.

6.4.1 *English Evidence*

6.4.1.1 *Treatment in Life*

An indication of the dogs' diet was observed from a number of sources, including the condition of their teeth. As mentioned previously, Miles and Grigson (1990) observed that canids in the wild rarely had periodontal disease, which they believed was due to the animals' diet of raw meat, which required ripping with their teeth. Although there were a few examples of dogs being toothless, or with advanced toothwear and periodontal disease, there was no evidence to suggest they were being fed an overly abrasive diet.

The presence of dog gnawing marks was recorded on faunal remains on many of the early medieval sites indicating that dogs were feeding directly off the bone. These gnawed bones were recovered from domestic refuse pits, but it was uncertain whether the dogs were scavenging the meat bones or if the gnawed bones were being disposed of in the pits. Where analysis had been carried out on the level of the dog-gnawed bones in the animal bone assemblages, there was some indication that dogs were either being fed horse meat, or when they were scavenging they were favouring horse. For example, at Marefair, Northampton, dog gnawing was only evident on approximately 8% of the animal bone assemblage, but nearly one third of this was recorded on horse bones. There is also evidence on medieval sites of horse joints being used to feed dogs, for example at Dudley Castle and Witney Palace, Oxfordshire (Thomas, R 2005b). Stable isotope analysis carried out on the Anglo-Saxon human and faunal remains from the cemetery at Berinsfield, Oxfordshire, indicated the dogs' diet was omnivorous with enriched δ^{15}N values (Privat *et al.* 2002).

There was documentary evidence to suggest that bread, rather than meat, was prominent in the diet of some highly-prized dogs at this time. It was recorded that Cheltenham and King's Barton, Gloucestershire, each had to provide King Edward's dogs with three thousand loaves annually (Maitland 1907, 146). Hufthammer (1994) when reviewing the epiphyseal fusion times for dogs, noted that if the dogs had received irregular and poor nutritional food, it would have delayed the fusion times and taken longer for the animals to reach adulthood. The dog coprolites from one of the tenements at 16-22

Coppergate, York, contexts dating to the Anglo-Scandinavian levels contained stone chips and cattle bone (O'Connor 1989).

The function the dog held in its life may well have affected the treatment it would have received. The hunting dogs of the King, which were housed in kennels and had keepers to tend to them, it can be surmised, were treated with more respect than the stray dog in the village. Obviously, the cost of food and bedding required for the hunting dogs was high, as disapprovers commented on a certain cleric's fondness for hunting at Chertsey Abbey and the unnecessary expenditure (Alderton 2000, 42).

No collars or chains were identified from the English archaeological record, except for the possible dog harness and twin leash holder. The frequency of dogs wearing a collar, with a leash attached, in the iconography would suggest that they were in reality in common use.

The osteological remains indicated that some dogs had suffered severe fractures, which would have required human care and attention to have kept the animals alive. For example, the dog recovered from Causeway Lane, Leicester, had broken its forelimb, which had foreshortened and would have been swollen and been painful to the animal. Gidney (1999) believed that this dog would have required human care when recovering from this injury. There was evidence of highly prized dogs from the Anglo-Norman period receiving some form of veterinary care by their kennel keepers, if they fell ill or became injured (Ritchie 1981, 47). The Anglo-Saxon manuscript called *The Medicine of Quadrupeds* deals with treating illness with animal extracts, which included remedies on how to deal with a rabid dog bite. The author recommends eating the head and liver of the affected dog (Smith, F 1976, 69)!

The presence of bowing in the lower limbs of dog skeletal remains has been recorded from the late Iron Age onwards. Bowed limbs were recorded from a number of early medieval sites, with some exhibiting twisting in the bone shaft as well. There are differing views on the reason for this bowing, but the general opinion is that it is caused by a medical condition, rather than a breed characteristic. Spira (1982, 11) comments that generally bowed, foreshorten limb bones have earlier epiphyses fusion times, they are however still strong and robust. This would agree with the results observed in the

slenderness index from England, with the bowed-limb examples being recorded in the short and robust category. Whether these dogs would have required extra human care during their lives is unknown.

Old or mature dogs exhibiting signs of osteoarthritis could indicate special treatment being provided, with the dogs no longer being able to work to their full capacity. The old male dog recovered from a grave at Great Chesterford displayed osteoarthritis in both its hind legs, with eburnation and ossified tendons to the patella, which would suggest its movement would have been limited.

The osteological record, however, highlighted that dogs did not often live to a mature age, with evidence of dogs being struck repeatedly and over a period of time in some cases. For example, the eighteen-month old dog recovered from George Street, Aylesbury, dated to late twelfth to early thirteenth century, had broken its right femur at approximately a year, which had begun to heal, although it would have walked with a limp (Jones, G 1983). However, it is believed that a blow to the head had killed the dog, due to a crushed cranium. Another dog, which had suffered multi-traumas, was recorded from a middle Anglo-Saxon pit at Middle Thames Landscape, Lake End Road excavations (Powell and Clark 2002a). This was a bowed-leg dog that had healed fractured ribs and vertebrae, infection on the hind leg, but had been killed by a blow to the head. However, as some healing had begun around the cranium bones where the blow had occurred, the animal did not die instantly. It cannot be certain whether these dogs had been deliberately hit by humans, as the injuries could have been caused by something accidentally falling on or hitting them. Some authors have suggested the pathology observed on the snouts was due to people hitting the dog to discourage them barking. One dog exhibited pathology that suggested it had been hit on the snout numerous times, due to healed lesions around the nasal bones and maxillae. All the dogs which had presumably been killed by blows to the head were less than two years old.

6.4.1.2 *Treatment at Death*

Information on the treatment of dogs at death was obtained by examining the location of where the animals were either buried or disposed of. As mentioned previously in this

chapter, the osteological remains and literary sources suggest that early medieval English dogs were not regularly killed for their skin or as a source of meat.

The dog burial locations from England and Ireland differed significantly during the early medieval period. In this section these differences will be examined, along with the influences that may have brought about these changes.

A number of changes in the burial location were observed through the chronological periods. However, dog remains were found in boundary ditches throughout the early medieval period, although generally as isolated bones. Hamerow (2006) observed the deposition of burials during the Anglo-Saxon period within the entrance and boundary areas of settlements but these animals had been ritually treated and were recovered partial complete. In the Romano-British period, the burying of a dog or an icon of the animal at doorways of homesteads was believed to guard the owners from intruders and unwanted visitors (Smith, K 2006, 12). The location of the dog remains within the settlement was rarely recorded within the animal bone report but it would it appear that their disposal was fairly homogenous. There was evidence of more dogs recovered from the northern areas of Thetford as observed by Holmes (2011, 163), as well as higher proportions of dog bones recorded from features around the outskirts of London, Winchester and Hamwic. They were generally associated with other domestic refuse including other non-food waste, such as horse bones and antler-working debris (Holmes 2011, 161).

Dogs recovered from the fills of huts or *Grubenhauser* were only recorded between the fifth and ninth century, with the change in building techniques and style. These types of buildings produced a high number of dogs, from just a few bones to partial or complete skeletons. The partial or complete dog skeletons have been described by a number of authors as representing 'special deposits' with possible ritual meaning as noted in the pits, whereas others have interpreted their presence in the disused features as a convenient way of disposing of rubbish and dead carcases away from scavenging animals.

During the early-middle Anglo-Saxon period, the grave was one of most common burial locations for dogs. The archaeological and iconography sources indicated there was a

connection between dogs and death, and more than simply a status symbol for the human buried. Their presence within the graves as well as on religious stone carvings, would suggest that there was symbolic meaning to their inclusion on this important events or artefacts (Gräslund 2004). However, as Smith (K 2006, 25) points out identifying from the archaeological record between the spiritual and domestic context such as a ritual feast would be very difficult.

From the studies so far carried out on animal bones recovered from cremation cemeteries, dogs appear to be well-represented. As previous stated dogs were not viewed as a food source, so it would seem that their presence in the cremation urn must signify something else. Hicks (1993, 23) believed that dogs were included on the individual's pyre as emblems of that persons' beliefs in life and their role in society. The animal could have acted as a symbol of that person's strength and wealth.

The latest cremations burials, containing dog remains, were recovered from Heath Wood, Ingleby, Derbyshire, which dated to middle to late Anglo-Saxon period. Richards *et al.* (1995) have described this site as the only Scandinavian cremation cemetery in England. Three dogs were recovered from this site from three different mounds. All the animals identified in the Heath Wood mounds were domestic, whereas wild animal bone was recorded in some Swedish Viking cremations. The Anglo-Saxon cremations in England such as those from Spong Hill and Sancton included wild animals, for example bear, red deer and fox (Bond 1996). The account given by Ibn Fadlan of the ship cremation held in Rus by the Scandinavian settlers, dated to AD 921-922, described how dogs, horses, cattle and chicken were sacrificed and cut up and placed around the body along with the man's weapons as viewed as votive offerings (Parker Pearson 1999, 1-2). As Prummel (1992) mentions, there would be a certain degree of prestige associated with the inclusion of certain animals with the burial; also it becomes important to know that a large and valuable horse was burnt or buried along with the body. Animal bone studies on cremation material can help in the understanding of cremation ritual, pyre technology and the effects on the local fuel resources. It must be taken into account that the larger the animal, the more fuel that is needed for the pyre. Recent debates regarding the role and significance of animals in early Anglo-Saxon cremations have associated animal sacrifice with the shamanistic ideology of transformation of the dead individual between different ontological and

cosmological states (Williams, H 2005; Pluskowski 2011 and Fern 2012). In these cultures, animals are viewed as a vehicle that can transform the identities of the dead during rituals.

The use of cremation as a form of burial declined in the seventh century and has been linked with the reintroduction of Christianity (Hoggett 2007). It appears that cremation was associated with paganism and Christian teaching notes that a human body was required to be buried complete to allow for the possibility of the resurrection.

The dogs were observed in inhumation graves throughout the early medieval period, although the majority dated to the early to middle Anglo-Saxon period. There does appear to be a trend for dogs to be recovered from male human graves; along with other animal bones and weapons, such as shield bosses, swords, and knives. Similarly to the cremations, dogs could have been included in the grave as symbols of the deceased. However, this would probably not have been the case for the dog excavated from Stockbridge Down, which was discussed earlier in the chapter. This burial has been interpreted by Reynolds (2009, 172) as a possible decapitation due to the male being linked with bestiality. He noted other bestiality cases from the late medieval period where both the human and animal were killed by the same method. Bartosiewicz (2012) notes that a body of a mutilated woman along with six dogs was excavated from Visegrád-Várkert, Hungary, dating to the eleventh century and has been interpreted as a 'witch burial'. This was due to the grave being placed outside the cemetery limits, which was a sign of retribution, as church laws did not allow the burial of unbaptised children, the unlawful and animals in consecrated ground.

King (J M 2004) discussed the importance in the location of finds within graves, suggesting items that are excavated from higher contexts than the rest of the grave assemblage may be interpreted as gifts. He believed that possessions belonging to the individual would not have been divided in the grave. Interestingly, the large dog excavated from the grave of a young boy at Great Chesterford was located at the foot of the burial at a higher level. It is not known whether this animal was a specially placed offering or if it had recently died and the grave was seen as a suitable location in which to dispose of the body.

The grave containing an adult male and female, along with two young females at Adelaide Place, Canterbury, included a small, elderly dog, which was excavated from the lap area of the adult male. This grave has been interpreted as a family burial and indicates a close relationship between the dog and the rest of the family group (Paul Bennett pers. comm.). Research carried out by the University of Milano, Italy, into the human-dog bond showed that, regardless of how their owners treat them, dogs remain always attached to their owners (Prato-Previde *et al.* 2003). Dogs were viewed as a member of the Italian family, with sacrifices made for their dogs.

Prummel (1992) concluded from her research on the early medieval dog burials excavated from Germanic tribes, that dogs represented grave gifts, which were symbols of the prestige, importance and wealth that the deceased had attained in life. King (J M 2004) interprets grave goods as gifts, which he defines as being an offering or tribute to the afterlife. However, Scull (2011) has also interpreted the use of grave goods as a form of gift giving to aid in strengthening the status and identity of the deceased, as well as for the living relations. Clutton-Brock (1976) comments on the potentially high value of a well-trained hunting dog. If a worthy hunting dog was specifically killed and placed into the grave of its owner as a personal belonging, then it could be viewed as a grave good or gift.

Additionally to the presence of partial or articulated dog skeleton in the inhumation burials, dog tooth amulets were recorded from a number of female and child graves, dated between the sixth and early seventh century. This pre-Christian custom was interpreted as providing the wearer protection and strength during their life, as well as at death (Yorke 2006, 250). Once Christianity became the predominant religion in England, tooth amulets disappear from graves and were replaced by crosses or objects inscribed with a cross, which suggests that Christians had adopted and customised some pagan traditions. The lack of dogs recovered from graves sites after the eighth century would strongly indicate the introduction of Christianity. There was a change in the way religion was practised, moving away from everyday locations, which led to a change in attitudes to expressing power, heritage and ancestry. For example, the recording of histories and events became an important activity to spread the word of God, as well as the King (Ware 2005).

By the middle-late Anglo-Saxon period the pit had become the most common burial location, which continued into the Saxo-Norman and medieval periods. This change in disposal place could be due to a number of factors, including the development of more urban and high-status settlements, along with the adoption of Christian beliefs and burial practices. The high number of dogs recovered from pits during early medieval England has led to the suggestion that these dogs were associated with a possible 'ritual' process, as noted from the hut contexts discussed earlier. Due to the majority of the dogs being recovered as isolated bones, it would suggest that these dogs were being disposed of with the rest of the domestic rubbish. For example, at Flaxengate, Lincoln, twenty-four out of sixty-five dogs were recovered as scattered remains within pit and dump contexts (O'Connor 1982). These pit and dump contexts consisted of an assortment of animal bones, representing general food waste from dwellings within Lincoln. There was no pattern observed in the location of where the dog bones were found within the pits recovered from Lincoln. The dog bones' location within the pit deposits was rarely available, but where it was provided, there does not appear to be any pattern.

Two pit examples that were different from the norm were neonate mass burials, both dating to the middle-late Anglo-Saxon period. Both reports surmised that these were a form of population control at these settlements, especially as one also consisted of an adult female believed to be the mother. The mass disposal of newborns in cess pits and wells appeared to be common practice during the Romano-British period (Woodward *et al.* 1993, 327). The Romans viewed man-made holes in the ground such as these as channels to the land of gods where offerings could be made (Smith, K 2006, 16). Only nine dogs were recovered from well contexts during the early medieval period, none were noted to represent a 'special deposit' due to the domestic refuse nature of these contexts.

The Norman Conquest does not appear to have changed the treatment of dogs at death, except for the increase in the number being recorded from castle and other high-status sites. The dogs were still primarily disposed of in pit contexts. Their high incidence in these settlements, along with wild species, would indicate that hunting with dogs was being carried out from these establishments. Lupo (2011) noted the high mortality of hunting dogs from Central Africa foragers. If the dogs died during hunting activities,

their bodies would be left in the forest rather brought back to camp. This could suggest that the hunting dogs from the Anglo-Norman period were better looked after or that the number of dogs kept at the castles was far more than have been recovered by archaeological methods.

The high level of isolated dog bones recovered from occupational layers, throughout the early medieval period, would indicate that discreet burials of the animals were not regularly carried out. However, taphonomic processes would have played a part in the distribution of bones.

The archaeological evidence shows that humans continued to have dogs around them, despite biblical aversion, with more positive presentation of the animals written and illustrated in the bestiaries. In some bestiaries, dogs were compared to priests as they "guard Christian souls against the wiles of the devil" Hassig (1995, 161). As Resl (2007) points out that dogs are a clear example of how medieval opinions on animals should not be established on their biblical representation.

6.4.2 *Irish Evidence*

6.4.2.1 *Treatment in Life*

There was no indication from the toothwear from the early medieval Irish dogs in this study to suggest that they were receiving any unusual diet and no incidences of periodontal disease were recorded. Like the English dogs, there was clear evidence of gnawing on the animal bone assemblages recovered from the sites and that dogs were feeding on the animal waste bones. Gnawed bones were recovered from occupation layers and ground surfaces, suggesting that the bones were freely available for the dogs to scavenge. Only one coprolite was identified from early medieval Ireland, which contained a digested sheep phalanx.

Unfortunately, there were no references to the type of housing, if any, that dogs were kept in during the early medieval period. However, the possible collars identified from Lagore crannog and Waterford, as well as those depicted on the dog iconography, would suggest that these items were being used to restrain the animals at times. There

were a number of references in the Old Irish texts regarding dog attacks, which would necessitate the need for strong collars and chains. The law-texts appear to take a strict approach to attacks on humans by dogs, and one recommends that aggressive dogs should wear bells or rattle around their necks. However, the *CIH* (i 111.22) notes that dogs should be chained up during the day, but were allowed to roam during the night until sunrise (Breatnach 1996).

Unlike the English data, there was no osteological evidence from Ireland to indicate that the dogs had recovered from broken limbs or other signs of healing. There was only one dog observed with bowing and twisting in a limb bone, and was excavated from the high-status crannog at Ballinderry No. 2. This small dog may have suffered a disorder early on in life or it could have been an import from England as mentioned in the tale of *Cairbre Músc* discussed earlier. Crannogs were high-status dwellings, and this dog could have been gifted to the family from visiting people.

There were a number of dogs recovered that were classed as old or mature in age and appear throughout the chronological periods. However, only a couple of dogs recorded any degenerative symptoms, apart from advanced toothwear, such as osteoarthritis and septic arthritis. Four mature dogs were recovered from the castle foundations at Athenry, Co. Galway. It would appear that these dogs had simply been disposed of, with the other material, used to create the foundation for the castle.

There were no references to veterinary care in the Irish texts, although the rabies virus was identified (Ó Corráin 2000). The advice in the *CIH* (i 285.21-2) for the owner to kill and burn the dog and place its ashes in the stream would suggest that people were aware of the severity of the disease and infectious nature of the dead carcass (Kelly, F 1997, 215).

The osteological record highlighted that some dogs did not live to a mature age, with evidence of them being killed by a hit on the head, for example a small dog from Ballinderry crannog. There were also examples of dogs being struck on the snout a number of times, with evidence of healed nasal and maxilla injuries recorded, from a number of dogs excavated from the urban settlements of Dublin, Waterford and Cork. All these examples dated from the Viking period onwards when urban settlements

began to develop in Ireland. Dogs could have caused conflict with inhabitants of the urban areas due to excessive barking, leading to them being struck as a form of noise control.

6.4.2.2 *Treatment at Death*

Like the English data, the only information available on the treatment of dogs at death was obtained by examining where the animals were either being buried or disposed of. There was no indication from the osteological remains or the literary sources to suggest that early medieval Irish dogs were regularly killed for their skin or as a source of meat.

Dogs were excavated from ditch contexts in every period, however dogs were only recovered from crannogs and souterrains during the Early Christian and Viking periods, when these settlements were active. The dogs were either excavated from occupation layers or in the lake deposits around the crannogs. A large quantity of animal skulls appear to have been deliberately deposited on crannogs, which O'Sullivan and Nicholl (2010) suggest they could have been displayed prominently as a form of protection to the site. The entrance ways of any settlement were very important to protect the inhabitants and any livestock within from unwanted visitors, such as wolves or thieves.

Dog remains were found in boundary ditches of many settlement types, although they generally consisted of just a few scattered bones. The ditches from raths, crannogs and forts have been interpreted as dumping points, with dog carcasses being disposed of along with the other domestic rubbish, rather than the confines of the settlement. O'Sullivan and Nicholl (2010) have interpreted the disposing of rubbish in the ditches and boundary areas around forts and crannogs as a possible way of communicating a message to outsiders. Any potential visitors would be able to see and smell the prosperous nature of the settlement by the quality and quantity of feasting taking place on site. This could have been the case at Moynagh Lough crannog, where the rubbish was disposed over the wooden palisade.

Pits from early medieval sites have been described as mysterious features and difficult to distinguish (O'Sullivan and Nicholl 2010). This was definitely the case with this study, with only two dogs being recovered from a pit deposit and that was within a SFB,

which was Scandinavian in style, and a cess pit, which included a human skull. It would appear the early medieval Irish, throughout the early medieval period, preferred to dispose of their dogs and other domestic rubbish in disused areas, such as ditches and quaysides. However, on urban settlements, dog bones were excavated more regularly from occupation layers. For example, at Cork, scattered dog remains, along with other animal bones, were recovered from the backyard surface deposits. This suggests that the occupants were dumping any refuse at the rear of their dwellings on the exposed ground. O'Sullivan (2008) research on the cultural biography of early medieval houses in Ireland has led him to believe that faunal remains could have been left around the hearth intentionally as reminders to the people using the building of past feasts and activities.

The close relationship between humans and dogs was well represented in the English data with their presence in graves, especially during the early to middle Anglo-Saxon period. However, this was not the case in Ireland, with only two dogs recovered associated with human remains, one from an inhumation grave and the second from a cess pit. The dog from the inhumation grave was excavated from a possible Viking warrior grave in Dublin; although the dog bones were part of an animal bone assemblage contained within the grave, and not believed to be part of the grave goods, as they were in a very fragmented condition. Whereas the dog excavated from the cess pit was recovered with a human skull, which has been linked with a lawbreaker as the placing of a dog within a grave was seen as an offence to the dead person and his family. This could be linked with the tale of Dermitius' father who was buried with a dead dog which was viewed as an insult to his family (Forester 2000, 26). The apparent absence of dogs from grave deposits is poignant and more reminiscent of the late Anglo-Saxon to Anglo-Norman period from England.

Unfortunately there was little information on where dogs were being buried or disposed of within ecclesiastical settlements, however the data does indicate that they were living to maturity, with no dogs being recorded younger than adult from this study.

Chapter 7 – Conclusions

The primary aim of this study was to explore the human-dog relationship within early medieval England and Ireland, as well as attempt to understand how people perceived, utilised and engaged with their dogs. The key themes explored were the dogs' function, morphology and treatment during the early medieval period.

7.1 English Evidence

The archaeological evidence was found to be varied, with different levels of detail reported. The English dataset consisted of over 900 dogs recovered from thirty-five counties. The completeness of the dogs recorded was fairly low with the majority consisting of a few scattered bones. Evidence of partial or articulated dog skeletons were rare and these were normally found in sealed contexts, such as from a grave or disused SFB. Dogs were most commonly located in urban site types throughout the early medieval period, with nearly a quarter of all the dogs recovered from a pit context. Mature dogs were, in general, recovered in a more complete condition and from discrete deposits, such as pits and graves.

7.1.1 *Anglo-Saxon Dogs*

Harcourt (1974) concluded during the Anglo-Saxon period that the degree of skeletal variability had reduced, but the average size had increased from the Romano-British period. He also observed that the long bone measurements indicated two distinct populations of dog groups, although the skull measurements showed little variation in size. This present study has shown, with the use of more data, that Harcourt's conclusions on dogs from the Anglo-Saxon period were only correct to a certain extent. The archaeological evidence indicates there was more variation in dog height and morphological shape during the early medieval period than previously believed; with no distinct groupings in the estimated shoulder height observed. It would appear the height range recorded was similar to the dogs Harcourt measured dating to the Romano-British period, although the head morphology was less varied. There were no examples of the brachycephalic type dogs that were first observed in pre-Roman England. An additional

source of evidence not normally available to archaeologists derives from sculptures and coloured illuminations; these provide an indication of the shapes and forms of the dogs' ears, tails and coat colours. Although its stylistic nature means that this evidence must be viewed tentatively, it confirms that during this period, dogs varied in size and shape, with the most common image of the dog was hound-like in shape. The dog heads in the Lindisfarne and St Chad Gospels were Mastiff-type in shape, which could indicate selective breeding was being practised, but not discernible in the archaeological record.

There was a bias to dogs excavated in the East region; this was due to a number of factors, but primarily due to the regional soil conditions leading to good preservation of the bones themselves. As well as a number of well-excavated settlements and cemeteries within this region, that have been published in detail.

Initially in the early Anglo-Saxon period, dogs were primarily recovered from rural settlements with dogs excavated from a variety of burial locations, including ditches, huts and graves. Dogs recovered from male graves were generally part of an assemblage of other animal bones and grave goods, such as shield bosses, swords and knives. By the end of the seventh century, with the development of Christianity, there appears to be a change in the way dogs were treated in death. Fewer dogs were recovered from grave contexts, which could be due to Christian teachings portrayal of dogs as impure, as well as a decline in grave goods in general.

During the Anglo-Saxon period, England became urbanised with towns developing, and by the end of the period, the majority of the dogs were excavated from these urban sites. The development of urban and high-status settlements also brought about a change in the way people disposed of their dead dogs, which appears to have been with the rest of the domestic waste. This is one of the factors that led to the pit becoming the most common burial location, as it continued to be into the Saxo-Norman and medieval period. Urbanisation during this period may have led to an increase in the dog population. Indeed, there was evidence of possible population control being carried out on two late Anglo-Saxon sites, where grouped foetal/neonatal dog remains were recovered.

Dogs with bowed lower limbs were recovered from sites dated throughout the Anglo-Saxon period. A number of mature dogs also showed signs of osteoarthritis along with healed broken limb bones, which would suggest that these animals were being cared for, as they would not have been able to scavenge for themselves.

7.1.2 *Saxo-Norman Dogs*

During the Saxo-Norman period, dogs were primarily located from urban site types. The presence of dog bones on high-status sites, such as castles and manor-houses, along with the art and literary evidence indicates the increase popularity of dogs and hunting.

A wide range of estimated shoulder heights was recorded from dogs dating to Saxo-Norman period, with smaller dogs being recovered from urban sites. This suggests that smaller dogs were more common and possibly more popular within the confines of an urban environment as some people may have had restricted living space.

The archaeology and literary evidence suggest that the Norman Conquest did not affect the treatment of dogs at death except for the increase in the number being recorded from castle and other high-status sites in England.

7.1.3 *Anglo-Norman to Medieval Dogs*

The archaeological evidence shows a decrease in the average estimated shoulder height during the Anglo-Norman period, which could be linked to the stricter controls placed on hunting activities by the kings. Dogs recovered from high-status settlements were generally taller, with no short-legged dogs recorded from castles. The Bayeux Tapestry highlights the presence of dogs within the hunting party. The Tapestry, also, indicates the possible dog coat colours and their morphology, which was hound-like in shape, similar to a modern Greyhound.

In spite of biblical aversion, the importance of dogs during this period is emphasized by the number of pages devoted to them in the bestiaries. These presented the beneficial qualities of dogs along with tales of their usefulness to man, in contrast to the Old

Testament teaching. Their illustrations highlight the different shapes and colours with an example of a Spitz-like dog in the Aberdeen Bestiary.

7.2 Irish Evidence

The landscape and economy of Ireland during the early medieval period were very different to England. Although the data from Ireland were more limited, there still appears to be a different pattern emerging. The Irish evidence consisted of just under 150 dogs with a bias to the Leinster and Munster provinces, due to more excavations having been carried out there along with more detailed analyse available. Comprehensive site reports have been published from mainly urban settlements, which may have led to the higher dog numbers being recorded from this site type. Generally the dog remains were scattered, with only six dogs classified in categories over 10% completeness. The ageing data were limited, but did display a similar pattern to the English dog data, except there were no examples of dogs younger than a few months old.

The Irish estimated shoulder height data agreed with McCormick's theory of a bimodal distribution for the early medieval dogs (1991b). However, statistical tests applied to the measurements in this study indicate that there was no significant difference between the English and Irish dog heights. The data could suggest that distinctly shorter and taller individuals were consciously being bred on particular sites to develop certain traits and functions, such as guarding the settlement. This could have been easily achieved due to the broadly rural society of Early Christian Ireland, which was firmly hierarchical and kin-based. It was not until the Anglo-Norman period that significant changes were observed in the social organisation of Ireland. Further investigation of the animal bones from early medieval Ireland would be required to determine more confidently whether the two height groupings of dogs were consistent or if the lack of data from certain site types and time periods has led to this bimodal distribution. Cranium measurements were only obtained from dogs excavated from Lagore Crannog, so the analysis of early medieval skull shape was hampered. However, from this one site sample there was evidence of dogs with medium- to large-sized skulls and fairly long and proportionally wide snouts. There were in addition a few mandible measurements from other sites, which suggested dogs with smaller jaws.

7.2.1 *Early Christian Dogs*

The burial locations of dogs from Ireland were very different to those observed from England during this time period. The crannog had the highest ratio of dogs, which was probably due to these sites being better preserved, leading to them being well excavated and published in detail.

No dogs were recovered from grave deposits during this period, which would suggest that the Irish were practising Christian beliefs early on in the conversion to Christianity. Dog remains were often recovered from exterior spaces, such as ditches during the Early Christian period, which could be due to the primarily rural nature of settlement locations and crannogs.

There was no indication of dog population control being carried out in Early Christian Ireland with only two puppy skeletons being recovered.

Unlike England, the wide variety in dog shape has not been recorded in pre-early medieval Ireland, which was probably due to the limited influence from the Roman Empire. There were no examples of any brachycephalic skulls from the dog remains. Only one example of a dog exhibiting bowed limbs, which was recovered from the high status site of Ballinderry No. 2 Crannog. It has been suggested that dog may have been a gift from Britain. Dogs from the Early Christian period displayed the widest range of estimated shoulder heights with a median of over 56cm.

The possible evidence of dog collars from the archaeological record and tales from the Irish literature would suggest that dogs needed to be controlled. This could also indicate that conscious breeding and development of certain traits, such as large robust body shapes could have been practised.

7.2.2 *Viking Dogs*

The most common burial location during the Viking period was the ditch. Only two dogs were recorded from a pit context, so it would appear the Irish disposed of their general waste differently to the English. For example, in Waterford and Cork, dog

bones were excavated from ground surface layers along with other domestic refuse, suggesting a more informal approach to dealing with their waste.

There was only one example of a dog being recovered from a grave context. The grave has been interpreted as a Viking warrior, who was buried in Dublin. The animal bones were excavated from the grave, but were not believed to be part of the grave goods; they had been positioned in the grave as a convenient and hygienic place to dispose of them.

There was a major change in the social organisation of Ireland around AD 800 from clientship to a more feudal system, which could explain the decline in dogs excavated from ringforts and crannogs during the Viking period. The Viking trading ports developed into urban centres in the ninth and tenth centuries, and came to replace ringforts and crannogs as foci.

Unfortunately, there was very limited estimated shoulder height information for dogs from this period; however, they did display a range of variability in height.

7.2.3 *Early Norman Dogs*

The archaeology provides little evidence of deer hunting during early medieval period; however, the artistic and literary sources do suggest that dogs were viewed as a hunting animal. In the early Norman period there was documentary evidence to suggest hawking was taking place with birds of prey viewed as valuable assets and were being traded and exported to England.

Dog remains were primarily recovered from castle and urban sites during this period. This was due to a number of factors, such as the movement of people, as well as the type of sites that have been excavated and published from Ireland.

There were a high proportion of dogs described as old or mature from urban sites during this period, which could be due to dogs leading a scavenging way of life and their ability to survive in the urban sites even if owners were not caring for them. There was evidence that these urban dogs were causing a nuisance with signs on the dog skeletal

remains that they had been struck on the snout, possibly due to excessive barking leading to inhabitants striking the dogs as a form of noise control.

The estimated shoulder heights for this period were wide with one dog recorded as nearly 75cm from Dublin. This could indicate that people were breeding dogs for height to assist in guarding their properties. Alternatively, it could suggest that the people living in the urban settlements were involved in hunting large game or predators, such as wolves.

7.3 Limitations

Whilst this research has endeavoured to examine the human-dog relationship in early medieval England and Ireland as thoroughly as possible, the study is far from complete. Generally, not all the necessary information was contained within the animal bone reports and like other specialist reports, they are often limited in space due to publication costs so leading to a reduction in the detailed data. These issues have left gaps in the archaeological datasets, which were particularly prominent in the dog ageing, sexing, completeness, metrical data and the presence of pathology or butchery sections.

Obtaining information on excavated unpublished Irish sites proved to be very difficult due to inaccessibility both of animal bone reports and of whole archives. Many of the published Irish animal bone reports proved equally problematic as they were lacking any detail regarding the minor species, especially relating to phasing and metrical information. This was due to a number of reasons, but principally to the low number of large animal bone assemblages excavated from Ireland. Those sites that have been well excavated are generally high-status sites, such as crannogs and castles, where funding has been concentrated. The use of MNI for determining the number of dogs is particularly problematic when used in small samples and this is especially the case in Ireland, where many of the sites had small assemblage sizes, which could have led to a misrepresentation in the minor species. As previously mentioned, the acidic soil conditions in certain areas from both countries would have led to a distortion in the recovery rate of dog remains.

7.4 Treatment of Dogs in Life

By comparing the English and Irish datasets along with the contemporary art and literature, it has been possible to examine the treatment of dogs in life and at death. The evidence of gnawed animal bones suggests that the dogs' diet from both countries consisted of meat, but whether humans gave them these bones or if they were scavenging is unknown. English historical sources suggest that dogs owned by high-status individuals had a diet that included bread.

Evidence suggests that a dog's function in life would have reflected the treatment that it received. The hunting dogs of the king, which were housed in kennels and had keepers to tend to them, it can be surmised, were treated with more respect than the stray dog in the village. Possible examples of dog collars have only been recovered from Ireland. However, dog collars and leashes were well represented in artistic sources from both countries, such as the Bayeux Tapestry and bestiaries, indicating that people were using forms of control and restraint on their animals.

The pathology observed on dog remains from both countries indicated that many had suffered trauma during their lives, such as being struck on the snout. However, there were examples, especially from England, that would suggest human care and attention was employed to keep certain ill animals alive. Dog diseases were also recorded in the literary sources, for example in early medieval Ireland, dogs diagnosed with rabies were killed and cremated as presumably the contagious nature of the disorder was recognised. No change in the treatment of dogs during their life was observed during the different phases throughout the early medieval period.

This study has illustrated the importance of combining zooarchaeological data with other sources, such as the contemporary literature and artistic evidence, to highlight the various roles and functions dogs played during the early medieval period. The collective English evidence has illustrated the dog's increased presence within the hunting party by the Anglo-Norman period in England. The dog's role as a guard animal appears to be much more important to the early Irish communities with their different social structure and kinship. In modern Western society, the dog's most common function is as a companion animal, but this was hardly perceptible within the

early medieval sources and archaeological record. This does not mean dogs did not play this role, but more that it was not specifically documented, with much of the literature centred on high-status activities, such as hunting and official duties, rather than on the everyday lives of the people. As Alberalla (1999) notes, in agricultural societies there is little wastage of animal resources and companion animals are rarely exempt, which would suggest that dogs viewed as companion animals could also be acting as guard dogs, or another function within the social group.

7.5 Treatment of Dog at Death

There was a distinct difference observed between England and Ireland on how they treated dogs at death. During the early-middle Anglo-Saxon period the SFB and grave contexts were the most common burial locations within England. This has led to a discussion on whether these represented a 'special deposit' or if they were placed there after death as a convenient use of a feature. Prummel's research (1992) viewed the animal bone groups recovered from early medieval grave burials as grave goods but some may also have been place as 'special deposits' in other contexts. Their presence within the burials was predominantly from the early Anglo-Saxon period, before Christianity had fully developed. Only one dog was found within a human grave from Christian Ireland, and this burial was believed to have been of Viking origin.

The pit became the most common burial location from the middle-late Anglo-Saxon period onwards at English sites, but only two dogs were recovered from pits in Ireland. This change in preferred burial location at English sites could be due to a number of reasons and was probably influenced by changes in society with more urban settlements developing and the growth of Christianity. Although the function of the dog while it was alive did not change, people's view of dogs on their death did modify. There were changes in the human burial rites during and after the conversion. Christian teaching provided a negative view of dogs with examples of their depraved qualities highlighted within biblical scripture. This could have influenced people to dispose of their dead dogs along with the domestic refuse. This appears to be the case in Ireland with dog remains disposed of in a casual manner, especially within urban settlements.

Dogs recovered from boundary ditches and entranceways were observed from both countries. Some burials in England have been linked with a Romano-British tradition in which dogs (or an icon of the animal) were buried and placed in these features as a symbol of guarding. However, this does not seem to be the case in Ireland and in most incidents the dogs recovered consisted of just a few bones. It would appear that the early medieval Irish utilised their ditches as a way of disposing of their domestic rubbish, including dog remains. O'Sullivan and Nicholl (2010) have suggested that disposing of the rubbish, such as the bones from a feast, into the boundary ditches could have been used as a way of communicating to visitors that the occupants were of high-status.

The presence of multiple dogs within one context was only observed from England. This could indicate either unwanted dogs being dumped or they could represent 'special deposits' of possible ritual significance. However, there was no evidence to suggest the continuation of the Romano-British tradition of mass 'puppy' burials, which have been found, particularly in well contexts.

Butchery marks appeared very rarely in the early medieval dog assemblage from either country, with only the occasional skinning and chop marks. This suggests that it was not common practice during the early medieval period and contemporary literary references suggest that dog meat was only eaten during times of famine.

7.6 Future Research

In the process of this research, other paths for investigation became apparent and due to time constraints, it was not possible to follow all of them. As discussed previously, there was disparity in the information available from the published and unpublished reports. Until detailed animal bone reports are more readily accessible, further analysis will require consulting the site archives, which would be both time-consuming and cost-prohibitive. The key areas that require developing further would be dog ageing, sexing, butchery and pathology. More detailed metrical analysis could be carried out to provide a more comprehensive review of their morphology with better phasing information, especially on the Irish dog bones to determine if the bimodal distribution is reflective of

the dogs' heights or whether the Irish estimated shoulder height data was due to the lack of data from the different site types.

It would be interesting to carry out an intra-site study of the dogs, examining where each dog was recovered within the site and the relationship these burial locations had with each other. This would require large assemblages from a well-recorded sites and would be particularly difficult from Ireland.

The interdisciplinary approach to this research project could be expanded to examine other countries, such as France, Germany and Scandinavia, to investigate how religion and movements of people had an effect on their perceptions of dogs. This could also incorporate stable isotope analysis on the bones to determine the origins of the dogs to investigate further if they were being exchanged between the countries. In particular, it may be able to determine if 'small' dogs were being exported from England to Ireland as described in the tale of *Mug-éime*.

7.7 Summary

In conclusion, this interdisciplinary study has gone further and looked in greater depth at the relationship that dogs had with humans during the early medieval period than previous work. By investigating a wide spectrum of aspects, including completeness, age profile, butchery marks, pathology and biometric data, along with the iconographic and literary evidence, it has shown that dogs were more complex and diverse than previous literature would suggest. By comparing the burial locations of the dogs, it has further illustrated the wide variety and differences between England and Ireland during the early medieval period.

The study has also shown that religious instruction affected attitudes to dogs and then disposal, and that Christian teaching altered established practices. The literary and iconographic sources provided the most information on the function and treatment of dogs during life, which could not have been gained from the archaeology record. There is inevitably some bias especially from the literary sources towards information regarding high-status sites and individuals, with limited information on the commoner

and their relationship with their dogs; however, archaeology helps to provide this wider perspective.

Appendix 1 – English Regions

Table A1 categorises the English counties into four regions (North, East, South and West) used in this research study.

Table A1. English counties categorised by region.

North	East	South	West
Cheshire	Bedfordshire	Berkshire	Gloucestershire
Co. Durham	Buckinghamshire	Cornwall	Herefordshire
Derbyshire	Cambridgeshire	Devon	Oxfordshire
Lincolnshire	Essex	East Sussex	Shropshire
North Humberside	Leicestershire	Hampshire	Staffordshire
Northumberland	Norfolk	Kent	Warwickshire
Nottinghamshire	Northamptonshire	London	Worcestershire
Tyne & Wear	Suffolk	Somerset	
Yorkshire		Surrey	
		West Sussex	
		Wiltshire	

Appendix 2 - Biblical References

Below are the thirty-five references to the dog taken from the Bible (English Standard Version).

1. ‘But not a **dog** shall growl against any of the people of Israel, either man or beast, that you may know that the LORD makes a distinction between Egypt and Israel.’ (Exodus 11:7)

2. ‘“You shall be consecrated to me. Therefore you shall not eat any flesh that is torn by beasts in the field; you shall throw it to the **dogs**.”’ (Exodus 22:31)

3. ‘You shall not bring the fee of a prostitute or the wages of a **dog** into the house of the LORD your God in payment for any vow, for both of these are an abomination to the LORD your God.’ (Deuteronomy 23:18)

4. ‘So he brought the people down to the water. And the LORD said to Gideon, “Every one who laps the water with his tongue, as a **dog** laps, you shall set by himself. Likewise, every one who kneels down to drink.”’ (Judges 7:5)

5. ‘And the Philistine said to David, “Am I a **dog**, that you come to me with sticks?” And the Philistine cursed David by his gods.’ (1 Samuel 17:43)

6. ‘After whom has the king of Israel come out? After whom do you pursue? After a dead **dog**! After a flea!’ (1 Samuel 24:14)

7. ‘Then Abner was very angry over the words of Ish-bosheth and said, “Am I a **dog's** head of Judah? To this day I keep showing steadfast love to the house of Saul your father, to his brothers, and to his friends, and have not given you into the hand of David. And yet you charge me today with a fault concerning a woman.’ (2 Samuel 3:8)

8. ‘And he paid homage and said, “What is your servant, that you should show regard for a dead **dog** such as I?”’ (2 Samuel 9:8)

9. ‘Then Abishai the son of Zeruiah said to the king, “Why should this dead **dog** curse my lord the king? Let me go over and take off his head.”’ (2 Samuel 16:9)

10. ‘Anyone belonging to Jeroboam who dies in the city the **dogs** shall eat, and anyone who dies in the open country the birds of the heavens shall eat, for the LORD has spoken it.”’ (1 Kings 14:11)

11. ‘Anyone belonging to Baasha who dies in the city the **dogs** shall eat, and anyone of his who dies in the field the birds of the heavens shall eat.”’ (1 Kings 16:4)

12. ‘And you shall say to him, ‘Thus says the LORD, “Have you killed and also taken possession?”’ And you shall say to him, ‘Thus says the LORD: “In the place where **dogs** licked up the blood of Naboth shall **dogs** lick your own blood.”’ (1 Kings 21:19)

13. ‘And of Jezebel the LORD also said, ‘The **dogs** shall eat Jezebel within the walls of Jezreel.” Anyone belonging to Ahab who dies in the city the **dogs** shall eat, and anyone of his who dies in the open country the birds of the heavens shall eat.”’ (1 Kings 21:23-24)

14. ‘And they washed the chariot by the pool of Samaria, and the **dogs** licked up his blood, and the prostitutes washed themselves in it, according to the word of the LORD that he had spoken.’ (1 Kings 22:38)

15. ‘And Hazael said, “What is your servant, who is but a **dog**, that he should do this great thing?” Elisha answered, “The LORD has shown me that you are to be king over Syria.”’ (2 Kings 8:13)

16. ‘And the **dogs** shall eat Jezebel in the territory of Jezreel, and none shall bury her.” Then he opened the door and fled.’ (2 Kings 9:10)

17. ‘When they came back and told him, he said, “This is the word of the LORD, which he spoke by his servant Elijah the Tishbite: ‘In the territory of Jezreel the **dogs** shall eat the flesh of Jezebel,…’ (2 Kings 9:36)

18. “But now they laugh at me, men who are younger than I, whose fathers I would have disdained to set with the **dogs** of my flock.”’ (Job 30: 1)

19. ‘For **dogs** encompass me; a company of evildoers encircles me; they have pierced my hands and feet —‘ (Psalm 22:16)

20. ‘Deliver my soul from the sword, my precious life from the power of the **dog**!’ (Psalm 22:20)

21. ‘Each evening they come back, howling like **dogs** and prowling about the city.’ (Psalm 59:6 and 14)

22. ‘that you may strike your feet in their blood, that the tongues of your **dogs** may have their portion from the foe.”’ (Psalm 68:23)

23. ‘Like a **dog** that returns to his vomit is a fool who repeats his folly.’ (Proverbs 26:11)

24. ‘Whoever meddles in a quarrel not his own is like one who takes a passing **dog** by the ears.’ (Proverbs 26:17)

25. ‘But he who is joined with all the living has hope, for a living **dog** is better than a dead lion.’ (Ecclesiastes 9:4)

26. ‘His watchmen are blind; they are all without knowledge; they are all silent **dogs**; they cannot bark, dreaming, lying down, loving to slumber. The **dogs** have a mighty appetite; they never have enough. But they are shepherds who have no understanding; they have all turned to their own way, each to his own gain, one and all.’ (Isaiah 56:10-11)

27. ‘ “He who slaughters an ox is like one who kills a man; he who sacrifices a lamb, like one who breaks a **dog's** neck; he who presents a grain offering, like one who offers pig's blood; he who makes a memorial offering of frankincense, like one who blesses an idol. These have chosen their own ways, and their soul delights in their abominations;’ (Isaiah 66:3)

28. ‘I will appoint over them four kinds of destroyers, declares the LORD: the sword to kill, the **dogs** to tear, and the birds of the air and the beasts of the earth to devour and destroy.’ (Jeremiah 15:3)

29. ‘“Do not give **dogs** what is holy, and do not throw your pearls before pigs, lest they trample them underfoot and turn to attack you.’ (Matthew 7:6)

30. ‘And he answered, “It is not right to take the children's bread and throw it to the **dogs**.” She said, “Yes, Lord, yet even the **dogs** eat the crumbs that fall from their masters' table.”’ (Matthew 15:26-27)

31. ‘And he said to her, “Let the children be fed first, for it is not right to take the children's bread and throw it to the **dogs**.” But she answered him, “Yes, Lord; yet even the **dogs** under the table eat the children's crumbs.”’ (Mark 7:27-28)

32. ‘who desired to be fed with what fell from the rich man's table. Moreover, even the **dogs** came and licked his sores.’ (Luke 16:21)

33. ‘Look out for the **dogs**, look out for the evildoers, look out for those who mutilate the flesh.’ (Philippians 3:2)

34. ‘What the true proverb says has happened to them: “The **dog** returns to its own vomit, and the sow, after washing herself, returns to wallow in the mire.”’ (2 Peter 2:22)

35. ‘Outside are the **dogs** and sorcerers and the sexually immoral and murderers and idolaters, and everyone who loves and practices falsehood.’ (Revelation 22:15)

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