HUNTING AND HERDING IN CENTRAL ANATOLIAN PREHISTORY:

The 9th and 7th Millennium Sites at Pinarbaşi

Denise B. Carruthers

Ph. D.

University of Edinburgh

2003

ABSTRACT

This dissertation examines the faunal remains from a series of Neolithic archaeological sites located in Central Anatolia dated from the 9th to the 6th millennium cal BC. The purpose of this research is to reinterpret previously published faunal datasets and present new faunal data from Central Anatolia in order to elucidate subsistence patterns for this region

The research is divided into two sections. The first section will review published palaeoenvironmental, archaeological and zooarchaeological data which have been used to established subsistence behaviour for the region. Critical to this review is the addition of new zooarchaeological data sets from Aşikli Höyük and the renewed excavations at Çatalhöyük (East). The second section presents the results of the zooarchaoelogical analysis of faunal remains from the newly excavated sites at Pinarbaşi A and B located on the Konya Plain in Central Anatolia. Pinarbaşi, Site A is the earliest excavated site in Central Anatolia, dated at 8500 cal BC; Site B is contemporaneous with the latter part of the Çatalhöyük (East) sequence and is dated at 6400 cal BC.

The re-examination of faunal data published from Central Anatolian sites appear to contradict commonly accepted patterns which characterise the Region as the centre of cattle domestication for the Near East. Based on the faunal data analysed, there is not enough data to currently state that cattle were locally domesticated within Central Anatolia and then distributed outwards to other centres.

The examination of Pinarbaşi A faunal data indicates hunting and broad spectrum subsistence was practiced at 8500 cal BC in Central Anatolia. However, due to the small morphological size of sheep bones recovered, herding is speculated. In addition, there is also evidence of longer, semi-sedentary occupation of the site due to the presence of cultural material that includes indigenous microlith tools and stone and mudbrick foundations. Pinarbaşi B's faunal assemblage revealed subsistence practices characteristic of a herd based economy. Sheep and goat remains dominate the assemblage in addition to the continuation of seasonal hunting of larger wild taxa.

Based on the new data from Pinarbaşi Site A and B, and the reanalysis of new and existing faunal data, it is argued that Central Anatolian settlement and subsistence patterns did not display a pattern of gradual change in subsistence from hunting and gathering to plant and subsequently animal domestication that appear in the rest of the Levant but rather the domestication of animals appears to be quite early based on Central Anatolia's present chronological composition. Central Anatolian sites appear to be settled with domestic caprines. It is only speculated that in later levels of Çatalhöyük (East), Erbaba and Çatalhöyük (West) that domestic cattle will be found.

Declaration

I declare that this thesis has been composed by me

and that the work contained within it has been conducted by me.

TABLE OF CONTENTS

List of Maps

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACKNOWLEDGEMENTS

In the course of working on this dissertation I had the opportunity to ask for and receive advice from many people. I would like to thank Dr Trevor Watkins, the excavator at Pinarbaşi, for allowing me to work on the faunal material. My sincere thanks to Dr Nicola Murray who introduced me to faunal analysis and provided me with the Pinarbaşi faunal collection that is the basis of this thesis. I would like to thank Dr Laszlo Bartosiewicz for his detailed editing comments and guidance. I would also like to thank Dr Sarah Whitcher Kansa for her constant encouragement and advice in steering me through the intricacies of writing a dissertation. I would also like to thank Adam Jackson who was my field assistant in 1997.

I would like to thank Dr Louise Martin and Dr Nerissa Russell for allowing me to work with them at Çatalhöyük in 1997 and providing me with comparative material in order to perform my analysis. I would also like to thank Dr Eleni Asouti and Emma Jenkins for sharing their unpublished data from Pinarbaşi with me. I would also like to thank Dr Hijlke Buitenhuis for providing me with data from Aşikli Höyük and Musular. In addition, I would also like to thank the zooarchaeological community, especially those members of ASWA whom over the years have provided an encouraging environment in which to discuss and exchange zooarchaeological knowledge, research and more importantly the flow of data.

Funding for my doctoral research was gratefully provided by a Carnegie Scholarship and an Overseas Research Studentship Grant from Edinburgh University. Grants were also received from the British Institute of Archaeology in Ankara and a Small Projects Grant from the University of Edinburgh. I am also grateful to the British Institute for Archaeology at Ankara, Turkey for access to their zooarchaeological reference collection. I would also like to thank the Institute's London staff for their help over the years.

I would finally like to thank my family for their constant encouragement, support and love. Dan Carruthers, my best friend, who's emotional and financial support made this thesis possible. My parents, Dave and Nan Arnott for always stressing the importance of an education. To John and Julie Carruthers for their constant encouragement.

CHAPTER 1: INTRODUCTION

The transition to agriculture is considered one of the most important events to have occurred in the course of human prehistory. Since humans walked the earth, they were gatherers and hunters, dependent on wild plants and animals for subsistence. However, just over 10,000 years ago humans began to cultivate cereals and legumes and husband goats and sheep. The location and reason for the transition to sedentary village life and farming are two of the most contentious questions within prehistoric archaeological research.

The title of this research dissertation is 'Hunting and Herding within Central Anatolian Prehistory'. These two forms of subsistence acquisition have traditionally been separated as it was believed that the archaic form gave way to the 'revolutionary' new mode of the latter. In brief, the earliest sedentary villages with domestic caprines (goat and sheep) are believed to have arose in the Taurus-Zagros ranges and in their foothills from where they were later herded into western Syria, the Jordan valley and Israel (the Northern Levantine Fertile Crescent[1]) during the early to middle Prepottery Neolithic B complex around 9,000 BC (Bar-Yosef 2000). The presence of domestic taxa slowly began to dominate the diet of settled villages resulting in very little wild taxa being present within the diet (Munroe 2002). In this model, colonists spread the agricultural way of life into new areas, such as south-eastern Anatolia by the 8th millennium BC and beyond that only in the 7th millennium BC (Watkins 1998). It has been recently speculated that the arena within which the transition to agriculture developed occurred over a much wider region and in much more diverse environments than the Taurus-Zagros ranges of the Fertile Crescent (Watkins 1998).

Central Anatolia has traditionally been highly unexplored with regards to agricultural research. It is only in the last decade that researchers interested in Palaeolithic and Neolithic periods are initiating extensive survey, excavations and palaeoenvironmental studies within the region. Prior to this influx of research,

---

[1] The 'crescent' extends from Israel through Lebanon and Syria, then through the plains and hills of Iraq and southern Turkey and all the way to down to the head of the Persian Gulf.

Central Anatolia was classified as a region far too inhospitable for early Neolithic settlements; a region used primarily as a bridge between the main formation area of agriculture in the east and the secondary diffusion group which migrated into Europe (Özdogan 1998). Evidence from Anatolian sites such as Karain and Öküzini where goats and sheep dominated the mammalian assemblage since the Middle Palaeolithic were ignored (Bar-Yosef 2000).

Reluctance to accept regional variation in the transition to agriculture resulted in early Anatolian sites being classified outside the 'core' area of agricultural development and labelled as anomalies (Özdogan 1998). Within faunal research, reconstructions portrayed Central Anatolia as an area of cattle domestication, where sheep and goat were domesticated much later[2] (Çambal 1995).

The last decade has provided sufficient archaeological material to provide a more complete chrono-cultural portrait of Central Anatolia. Until recently, a cultural hiatus has existed between the post-Palaeolithic and pre-Neolithic cultures within Central Anatolia. Small numbers of late Palaeolithic sites have been found in Thrace and the western Black Sea (Özdogan 1998). However, the Kebaran culture and the rich Natufian culture identified as the predecessors of the Neolithic were not identified within Central Anatolia and a link between Epipalaeolithic and the earliest representation of sedentary Aceramic settlements such as Aşikli Höyük and Çatalhöyük (East) were missing in Central Anatolia. The cultural hiatus forced researchers to continue to link the origins of Central Anatolian sites to waves of migrants who moved from the Levant into the region in mid-7th millennium BC.

Recent archaeological and zooarchaeological research in Central Anatolia is now available that is beginning to fill missing gaps in the cultural sequences. New data now hints at a past stretching beyond Aşikli Höyük and Çatalhöyük (East). In addition, it has now been proposed that the Neolithic of Central Anatolia is a distinct entity, developing concurrently in parallel with the Neolithic of the Levant in all aspects of culture, including settlement pattern, architecture, technology, cult practices and subsistence patterns (Özdogan 2001).

---

[2] Levantine domestication models follow a goat, sheep and then cattle pattern (Clutton-Brock 1999).

The focus of this research is the faunal remains from a series of archaeological sites located in Central Anatolia. The Neolithic sites date from the mid 9th to the late 6th millennium cal BC. The purpose of this research is to reinterpret past datasets and add new zooarchaeological data from Central Anatolia in order to revaluate the conceived subsistence patterns currently established for this region, during this highly crucial transitional period in human prehistory.

This will be achieved by focussing the research on the faunal material from a case study site that presently exhibits two periods of occupation, Pinarbaşi Site A is a 9th millennium occupation and Site B a 7th millennium occupation. Pinarbaşi's prehistoric sequence possibly stretches from the Epipalaeolithic through to the mid-late Neolithic. Until excavations were begun at Pinarbaşi, no continuous prehistoric sequence with such a long time span existed within Central Anatolia. Zooarchaeologically, Pinarbaşi's faunal assemblage will begin to fill in the very fragmented reconstruction that presently exists. Pinarbaşi therefore offers excellent potential for investigating when people first settled the Central Anatolian Plateau, and whether they arrived carrying supplies of seed and the practice of cultivation in addition to domestic animals or were hunter-gatherers. This analysis will test the hypothesis of a restricted Levantine region of innovation coupled with a subsequent expansion of populations (Watkins 1998).

In addition, the renewed excavations at Çatalhöyük (East), the reanalysis of Erbaba faunal material (Makarewicz 1999) and the new excavations at Musular and Aşikli Höyük (Buitenhuis 1994, 1999, 2002) have all produced faunal data that contradict conclusions drawn from previous zooarchaeological publications (Westley 1970; Mellaart 1967, 1975; Perkins 1969). The belief that Central Anatolia was a large centre of cattle domestication and breeding, and that sheep and goats were domesticated much later; can now be re-examined (Buitenhuis 1994).

The faunal material from six key Central Anatolian sites (Aşikli Höyük, Can Hasan III, Suberde, Musular, Çatalhöyük (East) and Erbaba in addition to the new material from Pinarbaşi Site A and B, will be used to investigate subsistence practices for the region. The reinterpreted subsistence data from Central Anatolia will then be compared with the Levant to see if they are similar or whether alternative cultural and subsistence behaviour existed within Central Anatolia. Key research questions include:

i) Is Site A's faunal assemblage characteristic of an Early Central Anatolia I site? Analysis of Site A's faunal assemblage will ascertain if it is characteristic of a hunting based strategy which includes a broader species range of fox, hare, tortoise, fish and fowl or if there is evidence of specialized selective hunting or management practices. Furthermore, if there is evidence of specialized activities, how does carcasses treatment differ between taxa.

ii) Is Site B's faunal assemblage characteristic of an Early Central Anatolia III site? Analysis of Site B's faunal assemblage will be concentrated towards determining whether the inhabitants practised herding and the type of domesticates managed. In addition, wild versus domestic taxa will be analysed to see if carcass remains are treated differently.

iii) What kind of sites are Site A and B? Faunal data will be used to interpret the type of activities that were taking place at the site (i.e., kill-site, butchery location). Issues of seasonality and mobility will be addressed, since a major concern is to establish whether the sites were used year-round or it served as an area seeing seasonal use.

iv) Is there evidence within the faunal data to suggest that hunter gatherers adopted herding independently in Central Anatolian during the early Holocene? This investigation will elucidate possible mechanisms involved (i.e., diffusion, migration, independent centre of domestication or a combination of the three) in the transition to agriculture that took place in Central Anatolia (from Bar-Yosef & Meadow 1995).

v) Did climate affect settlement in Central Anatolia during the end of the Pleistocene? Inhospitable climatic conditions at the end of the Pleistocene beginning of the Holocene have been used to justify the lack of settlement sites found in Central Anatolia during this period. Environmental data will be reviewed in order to establish the degree to which climatic conditions affected human populations and their settlement in Central Anatolia. Climatic pressure is one of the primary models used to explain the transition from hunting to the establishment of agricultural communities 10,000 BP (see Chapter 3). Horwitz's (1993) research states that sites with favourable environmental conditions display a subsistence base of wild fauna whereas sites with poor environments are dominated by domestic fauna. The faunal material from Central Anatolia will be reviewed to see if environment and environmental conditions affected their settlement and economies.

In order to answer the main research questions in this study, the analysis will be presented as follows.

Chapter 2 will outline the zooarchaeological methodologies that will be applied to Pinarbaşi Site A and Site B in order to address key research questions of this study outlined above.

Chapter 3 presents a background of archaeological theory and research of agricultural origins and animal domestication. This chapter is divided into three sections. The first section is a historical review of the dominant theoretical approaches and models that have been proposed over the last century to explain the origins and reasons for animal domestication in the Near East. The second section defines the chronological and cultural terminology applied during this transitional period in Central Anatolia. The third section defines what is meant by a domestic animal and then outlines the archaeologically evidence of domestic animals in the Near East.

In Chapter 4 the environmental conditions of Central Anatolia from the Late Pleistocene into Early Holocene will be reviewed in order to establish an ecological backdrop from which societies in Central Anatolia developed. Anatolia does not constitute a uniform habitat, but rather consists of extremely varied environmental zones, ranging from semi-arid basins to areas with heavy rainfall, each separated by ranges of mountains. A palaeoenvironmental review will establish the degree in which climactic conditions affected human populations and their settlement patterns in Central Anatolia.

Chapter 5 will review archaeological data from Central Anatolia which are contemporary to Pinarbaşi Site A and Site B. Data from Aşikli Höyük, Can Hasan III, Suberde, Musular, Erbaba III, and Çatalhöyük (East) will be described with regard to chronology, phases, settlement size, chipped stone assemblages, key aspects of material culture and subsistence strategies. The faunal data from these sites will then be compared with the palaeoenvironmental data outlined in Chapter 3 to see if ecological reconstructions based on faunal remains corroborate the reconstructions research by palaeogeographers.

Chapter 6 will introduce the case study sites of Pinarbaşi: Site A and B. The site's archaeology in terms of chronology, chipped stone, palaeobotany and other material culture will be reviewed.

Chapter 7 will present the faunal remains from Pinarbaşi Site A; Chapter 8 Pinarbaşi Site B. The primary objective will be to analyse the behaviour exhibited by humans during these two periods of occupation.

Chapter 9 will synthesize the result from Pinarbaşi Site A and B. These results are then examined in relation to the other Central Anatolia sites presented in Chapter 5.

Chapter 10 summarises the result of the study and reviews the key research questions. The chapter will also highlight the important contribution the sites at Pinarbaşi have made to interpreting human behaviour and subsistence practices in Central Anatolia.

CHAPTER 2: ZOOARCHAEOLOGICAL METHODOLOGY

This chapter will describe the methodological approaches by which the transition from hunting to herding during the Central Anatolian Neolithic was examined. The applied methodologies were selected with the goal of producing primary data relating to the key research issue of whether taxa from Pinarbaşi Site A and B were domestic and whether the domestication process was a regional or introduced phenomenon. The following zooarchaelogical methodological procedures were applied to Pinarbaşi Site A and B faunal material.

1) Taphonomic factors which bias the primary data. Factors that affected the animal bone survival and condition of the bone recovered from Pinarbaşi Site A and B.

2) Representation of the major and minor taxa within the assemblage in order to establish economic importance of certain species and detect subsistence strategies. This data will also be used to establish zoogeographic distributions of species, and may be used for comparisons with other Anatolian Neolithic sites.

3) The analysis of age classes to determine if there was a selection of age groups that would indicate management (i.e. herding, loose-herding or hunting). Age profiles will also be used to infer seasonality.

4) The analysis of sex ratios of taxa will be used to interpret husbandry strategies.

5) Body part representation of the taxa will assist in the analysis of butchering, transport, food preparation, and disposal habits. It will also aid in the analysis of activity areas and site function.

6) Carcass treatment with regard to butchery, cut marks, burning and fragmentation patterns indicate the degree to which taxa was consumed at the site, and can help determine the overall function of the site.

Zooarchaeologist, Richard Meadow (1984: 311) believes there is a fundamental flaw in trying to distinguish between a hunted or herded economy because there is no such thing as a "typical" hunting or herding pattern. A herder will tend to follow different culling practices for each of the various products desired from his animals (eg., meat, milk, hair, traction, security (Payne 1973; Redding 1984). Identification may therefore prove problematic due to the combination of taphonomic processes and the presence of mixed economic strategies. Furthermore, socio-cultural preferences may override economic reasons when herders select subsistence resources. Disease or injury may also effect the management of herded resources. For hunting, there is debate as to whether human predators generally killed whatever they could or practised some sort of intentional selection (game management). Even under "random-hunting" situations, patterns mimicking those produced under game-management or even herding conditions can be expected to occur. Such patterns will reflect seasonal variations in animal behaviour, longer term fluctuations in population demography, the relative accessibility of different ages and sexes, and even the intensity of hunting pressure on the prey population (Uerpmann 1979). With these points in mind, zooarchaeologists work within a defined framework in an attempt to distinguish between the two forms of subsistence acquisition within the archaeological record.

The chapter is divided into two sections. The first section outlines the methodological approaches applied to each taxa from Site A and B. The second section will review the zooarchaeological criteria used to identify different taxa within the archaeological assemblage.

2.1 ZOOARCHAEOLOGICAL METHODOLOGY

Zooarchaeological methodology is divided into three sections. The first section will review taphonomic factors which affect the creation of an archaeological assemblage and attach biases to this data. These factors are outside of the archaeologists control and must be taken into account when analysing an archaeological assemblage. The second section outlines the three types of deposits in which faunal material are normally recovered. The third section reviews the archaeological recovery techniques performed during excavation at Pinarbaşi Site A and B which resulted in the archaeofaunal data presented in Chapter 7 and 8.

2.1.1 Taphonomy

The study of the sequence of events or processes that lead to living animals bones becoming part of the fossil record is called taphonomy and literally means the laws of burial (Reitz and Wing 1999: 110). Taphonomic processes which affect the survival of animal bone material from archaeological deposits are considered first-order processes. The study and interpretation of the transitional process from an animal in the biosphere to the lithosphere includes the animals' life assemblage, death assemblage, and deposited assemblage which is subject to biotic and abiotic post-depositional processes (Reitz and Wing 1999: 111). These processes result in the disappearance of certain bones prior to and during the formation of an archaeological deposit (Davis 1995). All three of these processes are subject to human cultural and behaviour decisions in addition to environmental processes. Each of these transitional processes will be reviewed.

2.1.1.1 The animals life assemblage

An animal's life assemblage or ecosystem in which it inhabits is much larger and more diverse when compared to the portion of native fauna human groups utilise from a specific environment. The selective processes which affect the presence of certain animals within environmental specific areas and the decision by humans which taxa to utilise from this same environment affects what is discarded into a death assemblage (Reitz and Wing 1999: 111).

2.1.1.2 The animals death assemblage

An animals' death assemblage refers to the initial deposition of an animal within an archaeological context as a result of human action. Deposition can result from natural death through disease (domesticated animals), accident, age and butchery by humans. The choices humans make regarding animals used for food as well as those used for other purposes (skins, shelter, containers, sinew, bone for tools and ornaments etc) differ from one culture and region to another and will therefore influence the bones deposited within an archaeological assemblage (Reitz and Wing 1999).

2.1.1.3 Deposited assemblage

The deposited assemblage refers to the animal remains discarded at an archaeological site by humans. Not all animal remains exploited by humans will be represented within the deposited assemblage. The deposited assemblage refers to the remains of animals intentionally buried, discarded or lost at the site during initial discard. The deposited assemblage is subject to change while the site is inhabited by humans. Change processes include butchery, cooking, trampling and scavenging by other animals that all impact on the composition and condition of the deposited assemblage. The deposited assemblage will also be subject to abiotic and biotic post-depositional process that will further change the deposited assemblage once the site is abandoned (Reitz and Wing 1999).

Abiotic post-depositional processes refer to displacement of animal bone material due to natural forces. These include wind, water, percolation of water through the sediments, erosion, vegetation and climatic conditions such as alternating weather periods of dry, wet, cold and hot (Lyman 1994; Reitz and Wing 1999). Other abiotic processes include the physical and chemical reactions which take place within the soil or sand in which the bone lays which result in mineralization, chemical altered bone and deformation (Lyman 1994: 417).

Biotic post-depositional processes are primarily cultural and include species availability and their abundances, livestock domestication and the choice of hunting and foraging areas exploited (Reitz and Wing 1999). Other biological processes include disturbance by burrowing animals such as rabbits, moles and snakes.

2.1.2 Types of deposits created by faunal assemblages

The examination of faunal remains from archaeological deposits allows zooarchaeologist to reconstruct human past uses and associations with animals (Reitz and Wing 1999). The majority of archaeological deposits excavated fall within three categories: village, home base and small temporary camp refuse; kill or processing site residue; and intentionally buried animals (Reitz and Wing 1999). Each will be reviewed.

2.1.2.1 Village or home base refuse, including that associated with small temporary camps

Village refuse refers to animal bone remains recovered in deposits associated with a habitation site whether short term camps or long term stable occupations. Residential debris often accumulates to form a midden or pile of refuse often located around a hearth or along a contour such as a house wall. Refuse is also found in pits, wells and latrines. With careful examination it is often possible to detect episodes of dispersal such as container loads of refuse (Reitz and Wing 1999).

2.1.2.2 Kill or processing site residue

A kill or processing site represents a single activity rather than the full array of behaviours and refuse related to village or residential site. Kill sites are composed of remains dominated by a single species and only a few tool types. They may also have distinctive elements reflecting transportation and disposal decisions (Reitz and Wing 1999).

2.1.2.3 Intentionally buried animals

Intentionally buried animal are typified by skeletal completeness. They are often associated with human burials or architectural features. Intentionally buried animals are usually less subject to the damages caused by exposure and foot traffic outlined above (Reitz and Wing 1999).

2.1.3 Archaeological recovery techniques

Archaeological recovery techniques are considered second-order processes which refer to the choices made by archaeologists that directly affect the recovered bone material. These techniques include where to excavate, how to recover samples, sampling strategy, retrieval strategy the precision in identification of the remains and the completeness of analysis and produced report (Reitz and Wing 1999: 111). The following sections will outline the archaeological recovery employed at Pinarbaşi Site A and B which resulted in the archaeofaunal data presented in Chapter 7 and 8.

2.1.3.1 Background of excavation which impacts on methodology

Excavation was begun at Pinarbaşi in September 1994. The excavation was comprised of a small team whose main focus was to assess the sites archaeological potential. Faunal remains were collected as part of these excavations as outlined below (Section 2.1.2). Four laboratory sample sized bags of animal bone were allowed to be exported for analysis to Edinburgh, Scotland. The remainder of the animal bone material was stored in the Karaman Museum, Karaman, Turkey. In September 1995, a 12 person team returned to Pinarbaşi to conduct 4 week of excavation. The faunal material exported in 1994 was returned at this time to Karaman. The Turkish representative again allowed a small sample of bone to be exported to Edinburgh from the 1995 excavations under the condition that it was returned the following year. I selected primarily identifiable samples from contexts that would benefit from a more detailed study in laboratory conditions in Edinburgh. Again a large sample of bone was stored in the Karaman Museum from these excavations. The 1995 excavations were the last conducted at the site. Permits to excavate were not obtained by Dr. Watkins for 1996, 1997 and 1998 due to administrative problems. In 1998 funding was cancelled by all supporters for the project. In June of 1997 I obtained a British Academy research grant in addition to an Edinburgh University Small Project Grant that allowed me to return to Karaman with the 1995 exported animal bone material. An assistant accompanied me as I was only provided with funding that would allow a months stay in Turkey in order to analyse two seasons worth of unexported animal bone material. With the help of Dr. Roger Mathews, the then Director of the British Institute for Archaeology in Ankara, I was able to have some of the animal bones transferred from Karaman Province to the British Institute's faunal reference lab in Ankara for analysis. Due to the very short time period permitted to analyse material not all of the material received the full analysis that would naturally be performed in a zooarchaelogical investigation in laboratory conditions. The incidents outlined above therefore impacted on the data collected by this author. The following sections describe the methodology that was followed while collecting zooarchaeological data from Pinarbaşi Site A and B animal bone material.

2.1.3.2 Retrieval Strategy

A programme of systematic and quantified processing of bulk sampling was followed at both sites. A 100% retrieval method was employed in order to obtain large environmental samples. Two methods of recovery were practiced: dry sieving and flotation. Both were done on site, with the residues being brought back to the Karaman Museum for processing.

2.1.3.3 Dry Sieve

All contexts were dry sieved by processing 70 ml bucket samples through a 5 mm dry sieve. Animal bone was then hand picked from the sieve and placed in bags that recorded the amount of bucket material sampled, in addition to the context and siever's name. The dry sieved animal bone was then taken back to the Karaman Museum where some of it was washed[3] and then re-bagged.

2.1.3.4 Flotation

Material deemed to be rich in botanical and charcoal remains by the excavators were processed in 70 ml bucket samples on site through a water separation tank with a 1 mm mesh. The heavy residues collected were then sieved into three fractions: greater than 5 mm, 3 mm, and 1 mm. In the 1994 season, after experimenting with the time taken to sort samples, we modified our sorting strategy to 100% of the greater than 5 mm, 20% of the greater than 3 mm, and only a test amount of 5% of the greater than 1 mm. The animal bone material extracted during sorting was dried on site, packed in polythene bags and boxes and stored in the Karaman Museum. The above procedures were continued in the 1995 season; however, we added a greater than 10 mm category which was sorted at 100%.

Floating material only when it appears to be rich in botanical and charcoal remains instead of systematically throughout the excavation biases the wet-sieved vertebrate assemblage collected. Dr. Watkins goal when deciding to float material was to extract as much environmental evidence such as seeds, cereal grains, charcoal, and small bones from Pinarbaşi's samples. The recovery of animal bone by floatation allows an estimate to be made of what proportion of smaller animal bones were missed during hand and dry sieve retrieval techniques by adjusting body-part representation figures to compensate. Dr. Watkins subjective recovery methodology must therefore be taken into consideration during analysis of the faunal assemblages colleted for Site A and B.

2.1.3.5 Sampling Strategy

Thirty-eight contexts were recorded during the excavation, seven from Site A and thirty-one from Site B. Three secure early Neolithic contexts were recovered from Site A. These are ABJ, ABR and ABU. The other four contexts contained material of mixed date, primarily from the late third/early fourth millennium. These contexts

[3] Wet cleaning may accelerate cracking and exfoliation of bone, therefore only materials heavily covered in soil residue were washed.

were excluded from the study. Site B produced twenty-nine secure 6th millennium context dates. Three contexts contained mixed material that produced five pottery shards and a small hearth (BAF) that produced a late fourth millennium BC date. These contexts were excluded from the study.

2.1.3.6 Recording of Primary Data

The animal bone material recovered during 1994 and 1995 from the flotation tank was analysed in Turkey at the British Institute of Archaeology, at Ankara's faunal reference laboratory in June 1997. The data was initially recorded on printed sheets in Ankara and then entered into a customised Microsoft Access database in Edinburgh.

A portion of the animal bone material recovered during 1994 and 1995 from the dry sieve was exported to the University of Edinburgh, Department of Archaeology for analysis. This analysis was undertaken in the Department's environmental laboratory using their faunal reference collection. Material was also taken to the National Museum of Scotland and the faunal labs at the Institute of Archaeology, University College London. Dry sieved material not exported to Edinburgh was transported to Ankara for analysis in June 1997. Due to time constrains as much primary data as possible was recorded.

The material was sorted into identifiable[4] and unidentifiable[5] categories. Identification of bone fragments is very subjective and is based on the level of identification required, the researcher's experience, the comparative material available and also the condition of the bone retrieved during excavation. Identifiable Bone Elements

Identifiable bones are defined as bones that are identifiable to species and to a recorded skeletal element. Element portion, side, age[6], sex[7], measurements[8],

[4] Identifiable is defined as specimens that are unquestionably assigned to a particular taxon (Reitz & Wing 1999).

[5] Unidentifiable is defined as specimens that are not identifiable to taxon however, may be classified as large, medium and small mammal and if possible body part.

[6] Anatomical features reflecting age include form and porosity of the specimen; epiphyseal fusion and closure of cranial sutures; tooth growth and replacement sequences; tooth wear; incremental structures associated with growth; as well as antler and horn development and size (Reitz & Wing 1999).

[7] Anatomical features reflecting sex include identification of bacula, spurs and medullary bone. If possible size and morphological differences such as the relatively larger male canines and muscle scars on the skull and long

specimen weight and if there were any signs of burning were also recorded. In addition, the presence of any cultural modifications was recorded, such as the location and number of cut marks. The modification of bone surfaces by carnivores, such as punctures, furrowing or the erosion of cortical bone by digestive juices, was also recorded. Other notable attributes of specimens were recorded as comments, such as the presence of osteophytes, healed fractures, or congenital abnormalities. Identifiable bones were each given an excavation year code (e.g., PB94, PB95) and a number code (1, 2, 3). The number codes continued consecutively from one year to the next.

2.1.3.7 Unidentifiable Bone Fragments

Unidentifiable bones are defined as bones that could not be identified to taxon or body part conclusively. A bulk recording of unidentifiable bone fragments was practised. Bones were first separated according to general species size. These were large mammal (e.g., *Bos, Equids*), medium mammal (e.g., *Caprinae, Sus*) and carnivores. The bone was then further subdivided into the following categories: long bone, rib, cranium, vertebrae or teeth. Each bone was then recorded as being burnt or unburnt. A size distribution of the bone fragments was then recorded as less than 2 cm, 2-5 cm, 5-10 cm and greater than 10 cm. A count was then performed on all fragments within their categories and the total weight recorded

2.1.3.8 Quantification: Relative frequencies of taxa

This section will review the methodology used when classifying bones as 'countable'. Bones classified as countable were then used to estimate relative frequencies of taxa. The number of identified specimens (NISP) and minimum number of individuals (MNI) are the two most common methods used to estimate relative frequencies of taxa in faunal assemblages[9]. In addition, the calculation of

---

bones were described if identified. The conformation and muscle attachments of the pelvis were also noted. Measurements were taken if possible. (Reitz and Wing 1999).

[8] Measurements taken conformed to the exact definition and orientation of standards in the published literature of von den Driesch (1976) and Shipman *et al.* (1984).

[9] There also exists specimen weight, the minimum number of a particular skeleton element or portion of a taxon (MNE) and minimum number of animal units necessary to account for the specimens in a collection (MAU) (Lyman 1994: 103-105). However, these methods of quantification were not broadly used in any of the Anatolian assemblages and therefore not applicable to this research study.

diagnostic zone (DZ) estimates was performed. These three quantification procedures will be reviewed.

2.1.3.9 Number of Identified Specimens (NISP)

NISP is the total number of identifiable specimens in a faunal sample[10]. Identified refers to the 'identified taxon and element'. The taxon can be a subspecies, species, genus, family or higher taxonomic category (Lyman 1994).

A countable bone must therefore be assigned to a species and element of the body to be countable. Smith and Halstead's (1989) 'half bone' count method was favoured because it allows for all fragments to be counted. The count includes any combination of end or end fragment and shaft or shaft fragment. This allows for the inclusion of shaft pieces and identifiable small end fragments to be included in the overall calculation.

The calculation of NISP has been highly criticised and critiqued[11] (e.g., Grayson 1984; Klein and Cruz-Uribe 1984). The most notable criticism of this method with regard to performing a comparison with multiple sites is that the majority of faunal reports do not fully document retrieval procedures. This therefore biases the degree of comparability between the sites with regard to the identification lists they produce.

A second factor affecting comparability pertains to the differential preservation of elements with regards to butchering, trampling and accumulation environments. Accumulation environment refers to the type of site where the bones were retrieved, for example a cave, rock shelter or open-air site. All have different taphonomic factors of preservation that will affect the overall bone assemblage and therefore specimen counts. Because of these biases, NISP calculations were not used as the sole index of species' abundance (Klein and Cruz-Uribe 1984).

NISP calculations have been used with all of the sites selected for comparison within this study and therefore will also be applied to the Pinarbaşi faunal material.

---

[10] Lyman (1994) notes that the tenacity and identification skills of the analyst may influence NISP measures.

[11] See also Chaplin 1971; Daly 1969; Gilbert and Singer 1982; Grayson 1984; Klein and Cruz-Uribe 1984; Lyman 1982, 1994; Payne 1972; Perkins 1973; Reed 1963; Uerpmann 1973.

2.1.3.10 Minimum Number of Animal Units (MAU)

The MAU is defined as the minimum number of animal units per taxon that is necessary to account for all of the skeletal specimens found (Reitz & Wing 1999). Identified means identified to taxon and skeletal specimen. Because of the large number or criticisms surrounding NISP, MAU was also calculated. MAU's are simply calculated by taking the minimum number of elements (say, of tibiae) of a species recovered from a site and dividing it by the number of times that element occurs in the body. Thus, if there were a minimum of 50 red deer tibiae recovered from a site, the MAU would be 25. In this way, the MAU values can be scaled in relation to the most common body part recovered, and presented as relative frequencies.

2.1.3.11 Diagnostic Zone's (DZ)

The calculation of a diagnostic zone (DZ) number for the site refers to restricting the calculation of total bones present based on only counting certain bones with certain regions present (Watson 1979; Dobney & Rielly 1988; Davis 1992). The quantification of diagnostic zones (DZs) attempts to remove the effects of fragmentation and the potential inter-relatedness of bone fragments from within a site that is found in NISP (Frame 1999). It is therefore, considered a more accurate measure of taxonomic abundance. Davis's (1992) method whereby counting only certain bones with certain regions present was used. Following Wasse (2000), a few minor adjustments were made to Davis in order to fit the Pinarbaşi material. Epiphyses were counted versus unfused long bones due to the higher recovery of epiphyses at the site. Epiphyses are also easier to identify to species versus diaphyses.

The diagnostic zones recorded in this study are listed in Table 2.1. They are primarily those outlined by Davis (1992).

Diagnostic Zone	Description
Mandible	If more than half the tooth row/tooth sockets are present
Scapula	If more than half the glenoid articulation is present
Distal Humerus (fused/fusing)	Medial half of the trochlea
Distal Humerus (Unfused)	Medial half of the epiphysis
Distal Radius (Fused)	Medial half of the articular surface
Distal Radius (Unfused)	Medial half of the epiphysis
Distal Metacarpal (Fused/Fusing)	Condyles
Distal Metacarpal (Unfused)	Condyles
Ischium	The acetabulum rim formed by the ischium
Distal Femur (Fused/Fusing)	Lateral condyle
Distal Femur (Unfused)	Lateral part of the epiphysis
Distal Tibia (Fused/Fusing)	Medial part of the articulation
Distal Tibia (Unfused)	Medial part of the ephiphsis
Astragalus	Lateral surface
Calcaneum	All of the sustenaculum and more than half of the surface which articulates with the astragalus
Distal Metatarsal (Fused/Fusing)	Condyles
Distal Metatarsal (Unfused)	Condyles
Proximal First Phalanx (Fused/Fusing)	Articular surface
Proximal First Phalanx (Unfused)	Epiphysis
Third Phalanx	Articular surface

Table 2.1: Description of DZ recorded in the study.

2.1.3.12 Relative frequencies of taxa interpretation

The calculation of NISP, MAU and DZ has many biases and has been either supported or criticised by zooarchaeological researchers (e.g., Grayson 1984; Klein & Cruz-Uribe 1984; Bökönyi 1970; Watson 1979). Payne (1985) argues that MAU and NISP measure two different aspects of a collection. NISP minimises the importance of species represented and exaggerates the importance of species whose elements are more readily identified. Payne (1985) also notes that MAU emphasises the importance of rare animals in small samples. Klein and Cruz-Uribe (1984) state that the MAU is a minimum estimate of the number of individuals and NISP is the maximum estimate, suggesting that the actual number of species at the site is between the ranges of these two numbers (Reitz & Wing 1999: 202).

The main difficulty with regard to the analysis undertaken arose when trying to make inter-site comparisons. To overcome any data biases only those sites with comparable NISP, DZ and MAU summary calculations were used. NISP was used when comparing similar species. To create a range of comparable data for future studies, all three techniques will be performed.

2.1.3.13 Taxonomic Richness

Taxonomic richness of an assemblage refers to the number of different taxa within an assemblage in relation to the number of individuals per taxon. Grigson's (1995) research in the Negev concluded that calculating taxonomic richness determines the productivity of the local environment as well as the decisions of humans regarding the exploitation of their environment. The formula used to calculate taxonomic richness is $d=S-1/\ln(N)$, S is the number of different taxa in the assemblage and N is the total number of identified specimens (Grigson 1995)

2.1.3.14 Carcass Treatment

The butchery of an animal by humans can be used to infer not only whether the animals were utilized for meat or secondary products but can also provide insight into the use of the site by the inhabitants, for example, a kill-butchery site or a final butchery and consumption site (Lyman 1992: 301). The latter investigation is very important when dealing with a site such as Pinarbaşi and deciphering its position within the Neolithic settlement of central Anatolia. Deciphering the butchery process by humans is difficult to assess due to the multiple taphonomic processes that affect the animal from death to those recovered during excavation. Three methods used to interpret butchery process patterns are fragmentation patterns, body part representation, butchery marks such as cut and chop marks and food processing evidence in the form of burning.

2.1.3.14.1 Fragmentation Patterns

Bone fragmentation during the butchery process refers to the percentage of bone that has survived to be analysed. The percentage of survivorship of each bone was recorded using a modified version of Whitcher's five stage rating system (2000). Code numbers describe the size of the preserved fragment in relation to the complete element it represents (Table 2.2). This technique was favoured over Dobney and Rielly's (1988) because it allowed for a much easier comparison between the extents of bone fragmentation between major and minor taxa at the site.

Code	Percentage	Description
1	100	The bone is complete.
2	76-99	Between 76% and 99% of the bone is present.
3	51-75	Between 51% and 75% of the bone is present.
4	26-50	Between 26% and 50% of the bone is present.
5	<25	Less than 25% of the bone is present.

Table 2.2: Bone fragmentation codes.

Dobney and Rielly's (1988) diagnostic zone recording system was initially applied however this method was abandoned due to the high level of data collection detail required. It was felt that the level of detail Dobney and Reilly's method employed was outside of the main research questions.

2.1.3.14.2 Carcass or Body Part Representation

The analysis of body parts allows for inferences to be made with regard to human butchery and consumption practices at the site. In particular, noting which parts of each taxa were discarded and preserved within the assemblage as part of food and refuse waste can be used to assess if each taxon was treated the same way during butchery.

Body part representation calculations were based on MAU counts. Adjustments were made based on the number of times each element occurs in the skeleton. The NISP, adjustment number and MAU calculation is presented for each skeletal element. Five body part sub division categories were made. For the major taxa these are:

Head: horncore, cranium, mandible, mandibular tooth, maxillary tooth.
Back: atlas, axis, rib, cervical, thoracic, lumbar, sacrum and caudal vertebrae.
Upper Forelimb: scapula, humerus, radius, ulna.
Upper Hindlimb: innominate, femur, tibia, patella.
Feet: astragalus, calcaneus, carpal, tarsal, metacarpal, metatarsal, phalanx 1, phalanx 2, phalanx 3.

2.1.3.14.3 Butchery: cut/chop marks

Butchering an animal is a process whereby it is killed, skinned, dismembered and de-fleshed. The analysis of cut marks allows for the assessment of butchering practices employed by the prehistoric occupants of the site. Cut mark-recording methods included their anatomical location and orientation, frequency and cut function. Cut function refers to the function of the cut. Binford (1981) refers to three function activities 1) skinning where cut marks are found around the shaft of lower legs and phalanges and along the lower margins of the mandible or skull; 2) disarticulation where cut marks occur on the articular surfaces of the ends of long bones; 3) filleting where cuts parallel the long axis of the bone (Lyman 1994: 298). Carnivore and rodent gnawing marks were also recorded. All cut mark identifications were made with the naked eye; no microscopic analysis was performed.

Early stage butchery of an animal is evident if large numbers of lower limb bones are recovered from a site. Evidence of disarticulation of the lower limbs may be seen in the presence of cuts on the anterior surface of a naviculo-cuboid tarsal of a sheep or goat and on the distal articulation of a pig astragalus. Presumably this type of disarticulation took place using a tool which would have been inserted in the joint between the tarsals and metatarsals. A cruder method of removing the feet would be to chop across the shaft of the metapodial (Rixson 1989)

2.1.3.14.4 Burning

Burnt bone infers roasting of cooked fresh meat and the processing activities aimed at preparing meat for storage. The analysis of cooking or storage activities is very problematic due to the numerous processes that affect the bone during each activity not to mention the post depositional processes. Burnt bone found at Pinarbaşi was noted on the identifiable and fragments data.

2.2 SPECIES IDENTIFICATION

Modern reference collections[12] and material from archaeological collections[13] in addition to reference manuals were used to identify Pinarbaşi's late Pleistocene/early Holocene animal bones. Bones were identified to species level only when morphologically irrefutable identifications could be made; otherwise a broader taxon name was used.

---

[12] Reference collections from the following were used; University of Edinburgh, Department of Archaeology; National Museum of Scotland, Edinburgh; Institute of Archaeology, University College London and the British Institute for Archaeology in Ankara.

[13] Kind permission was given by Dr David French to compare the Pinarbaşi material with the Can Hasan III animal bones. Dr's Louise Martin and Nerissa Russell allowed comparison of the Çatalhöyük faunal material.

The methodological criteria applied to identify each taxon along with age[14] and sex determination will be reviewed. Measurements were taken on all elements of all species where possible. Measurement data was used to aid in the separation of species, explore intra-specific variation and examine sexual dimorphism within species. Measurements follow Boessneck and von den Driesch (1976).

2.2.1 Spectrum of Central Anatolian archaeofauna

This section describes the methodological procedures used in the identification and analysis of taxa from Pinarbaşi Site A and B.

2.2.1.1 Cattle - *Bos primigenius*, *Bison bonasus* & *Bos taurus*

Two species of wild cattle are known to have inhabited Anatolia during the Pleistocene and early Holocene: the auroch, *Bos primigenius* and the wisent, *Bison bonasus* (Uerpmann 1987: 71).

Postcranial skeletal characteristics of cattle (*Bos taurus*) and bison (*Bison bonasus*) have been established in order to distinguish osteologically between the two species (Balkwill & Cumbaa 1992). Balkwill and Cumbaa's (1992) research concluded there are grouped characteristics for each element that is used to reliably distinguish the two species. Over one hundred and ninety of these characteristics are outlined by Balkwill and Cumbaa (1992) and were referenced when needed in this study.

Wild cattle and domestic cattle (*Bos Taurus)* have traditionally been distinguished on the basis of size differences in the bones (von den Driesch 1976). However, caution is taken when using size differences to distinguish domestic from wild forms as dimension reduction is not always present in certain specimens and at early dated sites in the Middle East (Grigson 1969).

---

[14] Anatomical features reflecting age include form and porosity of the specimen; epiphyseal fusion and closure of cranial sutures; tooth growth and replacement sequences; tooth wear; incremental structures associated with growth; as well as antler and horn development and size[14] (Reitz & Wing 1999: 159).

2.2.1.1.1 Size

Cattle bone size was recorded by taking measurements of each element according to those outlined by von den Driesch (1976). Postcranial measurements are recorded on metatarsal (Bd), calcaeus (SD) and Phalanx 2 (Bp, GL, SD and Bd).

A difference in the size and robustness of postranial bones is used as the main method to distinguish between wild and domestic cattle. When assessing bone size comparisons to distinguish between wild and domestic taxa, ideally one should use the absolute size of various bone elements (Grigson 1989). However, if an assemblage contains a very small number of measurable bones the accuracy of the measurements from the central tendency (e.g., mean and median) and of dispersion (e.g., standard deviation) for each dimension are likely to be affected by sampling errors (Meadow 1999). In order to increase comparability of the small number of bones and reduce sampling errors, a size index scaling technique whereby size changes regardless of element, can be calculated.

A size index scaling technique is applicable to sheep, goat, pigs and cattle. Four size index scaling techniques with related algorithms have been developed. All four techniques combine on a single graph measurements from different skeletal parts. The four different techniques are: Size Index (SI) method developed by Piere Ducos, the Relative Size Index (RSI) and Variable Size Index (VSI) methods developed by Hans-Peter Uerpmann and the Logarithm Size Index (LSI) method developed by Richard Meadow (1999). All the techniques compare the dimensions of archaeological specimens with the corresponding dimensions of a standard animal. The standard is either from a single individual or a population of animals from which mean dimensions are calculated (Meadow 1999).

In brief, Ducos's Size Index (SI) method calculates averages from selected skeletal dimension taken from the archaeological assemblage and then compares those standards to individual measurements taken from the remainder of the assemblage (Meadow 1999). Uerpmann's Relative Size Index (RSI) and Variable Size Index (VSI) methods are similar to Duco's, however the SI methods standard is calculated from modern specimens which are then compared to the archaeological assemblage (Meadow 1999). The VSI differs from the RSI in that Uerpmann developed mean and standard deviations for the standard animals. Instead of estimating a coefficient of variation as done in the RSI method, the VSI uses an actual standard deviation of the mean for each chosen dimension of each selected skeletal part which is used (Meadow 1999). Meadow's Logarithm Size Index (LSI) method scales measurements by converting the dimensions of both a standard animal and the measurable archaeological specimens into logarithms and subtracting the one from the other. For a complete review of the above methods see Meadow (1999).

Meadow's Logarithm Size Index method was applied to the Pinarbaşi material and therefore a more detailed review of this technique will be presented (Meadow 1999). As stated above, Meadow's method scales measurements by converting the measurements into logarithms. The formula is:

$$LSI = \log X - \log \text{standard}$$

Where X equals the dimension of the archaeological specimen and log standard equals the corresponding dimension of the standard animal or standard population. This formula results in specimens larger than the standard having positive values and those smaller than the standard having negative values. Meadow's method allows you to plot each log difference using an abbreviation for the skeletal part represented, allowing for a range of variability for each element to be evaluated (Meadow 1999).

Meadow's Logarithm Size-Index method was applied to the Pinarbaşi material because multiple sites from Anatolia have been analysed using his method and a direct comparison with the Pinarbaşi cattle material was then possible (Buitenhuis 2001). The standard cattle measurements used in this analysis were from a female *Bos primigenius* from Ullerslev, Denmark, measured by Öksüz, (2000), (see Appendix 1). Meadow (1999) warns against using a standard animal that is not from the archaeological site's region. Since a *Bos primigenius* from Ullerslev Denmark and not one from Anatolia was used as the standard, the data will be analysed to examine trends through time in the region versus the absolute position of the values on the size index diagram (Meadow 1999).

Meadow (1999: 293) also warns against combining length dimensions with those of breadth and depth as certain bones within the skeleton (phalanges, carpal and tarsals) have significantly different length, breadth and depth measurements for each bone. Even if length and breath/depth dimensions are plotted separately, differing frequencies of different skeletal parts in two collections can potentially affect the distribution of size indices (Meadow 1999: 293). Meadow (1999) also warns that all four size index distribution methods must be considered as secondary data because size indices are derived values subject to the effects of various assumption and problems which result from averaging data and using size distributions of a standard population. He stresses that all four methods are reflections of the size characteristics of the archaeological population under investigation and must be used in conjunction with the examination of measurements from each bone on an element by element basis (Meadow 1999).

2.2.1.1.2 Age and Sex structure

An age and sex structure is aimed at generating data that distinguishes a domestic from that of a wild population. Critical to this analysis is a large faunal sample size. Age structures for cattle are calculated through two techniques: epiphysial fusion stages and tooth eruption and wear analysis. Epiphysial fusion stages of cattle bones occur at different stages depending on the element. Fusion stage profiles for cattle are based on Silver (1969). Deciduous and permanent teeth of mammals erupt and wear according to specific age ranges. Dental eruption and wear sequencing for cattle was based on Grant (1978). Sex determination of cattle bones can be inferred from the elements size. Bone measurements of an archaeological sample are taken based on von den Driesch (1976) and then compared to a large number of measurements of animals known to be domestic, wild cows and wild bulls (Grigson 1989).

2.2.1.2 Horse - *Equus ferus*, *Equus hemionus* and *Equus hydruntinus*

Three species of wild equids inhabited Anatolia during the final stages of the Pleistocene and Early Holocene. These are the wild horse (*Equus ferus)*, the hemoine or onager (*Equus hemionus)* and the hydruntine (*Equus hydruntinus)* (Uerpmann 1987).

2.2.1.2.1 Identification of horse species

Three methods have been developed to differentiate between each species. These are canine and incisor morphology, dental enamel patterning of cheek teeth (Davis 1980) and osteometric criteria (Davis 1995; Eisenmann 1986). Each will be reviewed.

2.2.1.2.1.1 Canine and incisor morphology

Davis (1980) considers canines to be very unreliable in species determination due to their extremely simple form. He noted two distinguishing features in incisors: 1) incisors of hemiones are more hypsodont than are those of asses and 2) incisors are narrowest in asses, broader in half-asses, and widest in true horses. However, since these characteristics cannot be expressed in numerical formulae nor tabulated as absolute morphological traits, Davis (1980) considers them as too subjective for the purposed of identification. These methods have, therefore, not been employed in this study.

2.2.1.2.1.2 Dental enamel patterning

Species identification based on teeth followed the dental enamel patterning outlined by Davis (1980: 293-294) and Payne (1991). Davis outlines distinctions between mandibular and maxillary teeth enamel folding and enamel patterns. This method has been criticised as being highly subjective and therefore Payne's method whereby measurements of these patterns are taken was also performed. Each method will be briefly reviewed.

2.2.1.2.1.2.1 Davis Method

Davis (1980) states that mandibular teeth are distinct based on external (buccal) fold shape, shape of internal fold and curvature of the external walls of proto-and hypoconids. Maxillary teeth exhibit species characteristics through protocone morphology; mesostyle and anterior and posterior interstylar faces and the shape of the caballine fold shape (Figure 2.1). Davis refers to *Equus caballus* in this study which is the domestic form of *Equus ferus*. No morphological change between *Equus ferus* and *Equus caballus* teeth has been recorded and therefore the two are interchangeable. *Equus caballus* has been used in this section as it refers directly to Davis's research.

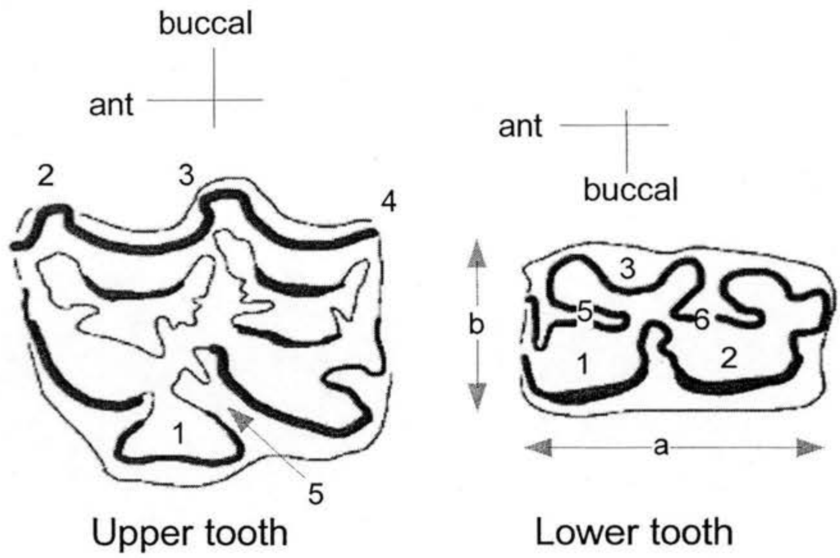


Figure 2.1: Key to dental terminology. Upper tooth: 1, protocone; 2, parastyle; 3, mesostyle; 4, metastyle; 5, caballine fold. Lower tooth: 1, protoconid; 2, typoconid; 3, internal, lingual fold; 4, external, buccal fold; 5, metaflexid; 6, entoflexid. Measurements: a, crown length; b, anterior crown width (Davis 1980).

Mandibular Teeth

External (buccal) fold: Species distinction is based on the depth of penetration towards the internal (lingual) fold. No penetration occurs in the premolars of recent and Late Pleistocene equids. In *E. hydruntinus* and zebra molars (as well as variably in *E. stenonis*) penetration is usually complete, and the external fold often contacts the internal one. A small proportion of teeth, however, show exceptions to this rule. In *E. asinus* and *E. hemionus* no penetration occurs, and *E. caballus* is intermediate in this respect; the external fold reaches the region between the ento-and metaflexids.

Shape of the internal fold: This is 'V' shaped in *E. hemionus*, *E. asinus*, *E. hydruntinus* and the zebras, but 'U' shaped in *E. caballus* (Davis 1980).

Curvature of the external walls of proto-and hypoconids: This is probably not a good discriminator, although there is a tendency for the walls of the molars of *E. hydruntinus* and zebras to be very rounded, whereas those of *E. asinus*, *E. caballus* and *E. hemionus* are flatter. The rounding of these walls in the molars is presumably linked with the deep penetration of the external fold, and hence the premolars are flatter.

Maxillary teeth

Protocone: Considered the best discriminator for upper teeth. In *E. hydruntinus* the protocone is small and triangular in shape ('shoe'-shaped), the anterior half being much smaller than the posterior. The lingual wall of the protocone tends to be straight, although a slight concavity is sometimes observed. *In E. hemionus* and *E. asinus* the protocone is oval, the anterior and posterior halves tend to be of equal size and the lingual wall is often concave. *E. caballus* differs in that the protocone is elongated along the posterior side.

Mesostyle and anterior and posterior interstylar faces: Davis's (1980: 294) research found this distinction too variable for species separation.

'Caballine' fold: This is absent from *E. hydruntinus*, but variably present in *E. asinus* and *E. caballus*.

2.2.1.2.1.2.2 Payne Method

Payne's (1991) approach follows that of Eisenmann (1986), with modifications and additions by Payne (1991: 134). The measurements and terms used are illustrated in Figure 2.2. In brief the distinction between fossil equids is based on three separate criteria; morphology, wear stages and measurements of the upper and lower teeth.

Morphological characteristics were scored for each upper and lower tooth. In upper teeth, the development of the caballine fold was graded as follows (Figure 2.3): O None, tr, Trace, + Present, ++ Marked. In lower teeth the development of the pli hypoconid and ptychostylied are also graded (Figure 2.4): O None, tr, Trace, + Present, ++ Marked. Four grades classify the degree of penetration of the buccal sulcus: 1. tip does not reach the line joining the buccal-most parts for the enamel of the postflexid and preflexid. 2. tip crosses that line but does not reach the line joining the preflexid and the postflexid at their nearest point of approach. 3. tip is across that line but is still more than 0.5 mm from the lingual sulcus. 4. tip is within 0.5 mm of the lingual sulcus.

Measurements are taken in both upper and lower teeth at and in the plane of the occlusal surface (Payne 1991: 135-136). The measurements are:

OL is the mesio-distal occlusal length.
Be is the buccolingual occlusal length.
Bapf is the distance by which the mesial horn of the postfossette projects bucally beyond the distal horn of the profossette, at right angles to the direction along which OL is taken.
LP is the greatest length of the protocone.
B3 is the width across the protoconid and metaconid.
B4 is the width across the hypoconid and the metastylid.
Lnd is the greatest length of the 'double know" (metaconid + metastylid)
LF is the greatest length of the postflexid.
Bei is the smallest distance between the internal enamel of the buccal surcus and the internal enamel of the lingual surcus.

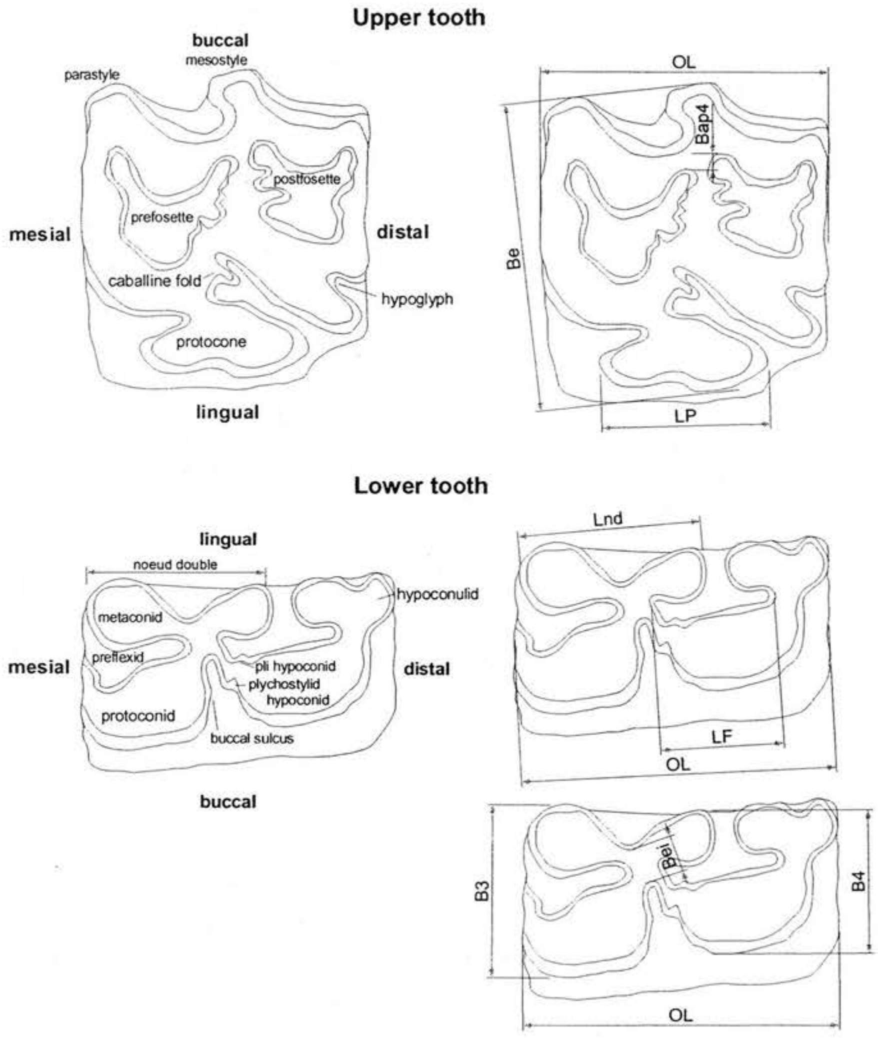


Figure 2.2: Upper and lower equid cheek teeth illustrated with the terms and measurements used by Payne (1991).

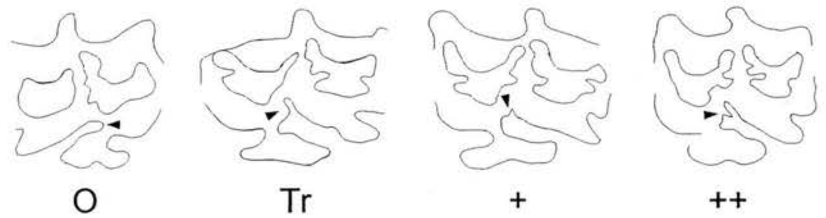


Figure 2.3: Enamel patterns of upper cheekteeth to illustrate the classes used to record the development of the caballine fold (arrowed) (Payne 1991).

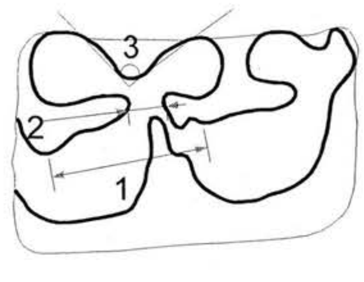


Figure 2.4: illustration of a lower cheektooth with the classes used to record the penetration of the buccal sulcus (Payne 1991).

2.2.1.2.2 Size

A difference in the size and robustness of postranial bones is used as the main method to distinguish between different types of equids (Eisenmann 1986). Eisenmann's osteology research distinguishes between modern, fossil horses, half asses and asses based on size ranges recorded for postcranial bones. Postcranial measurements are recorded on scapula (GB, GLP), astragalus (LIT and LmT), metapodia (Bda, Bdfp and Bd) and phalanx 1 (GL). Postcranial measurements were taken as described by Boessneck and von den Driesch (1978). Postcranial measurements are recorded on astragalus (BFd), radius (Bd, Bfd), tibia (SD), metatarsal (Bd, SD), proximal phalange (SD, BD, Bd, Dp, Bp, GL, Bp, BFp, BFd), middle phalange (GL, Bp, SD, Bd, Dp, BFp) and distal phalange (BF, Ld, HP).

2.2.1.2.3 Age determination

Age determination of equids is based on teeth crown heights, wear stages and epiphyseal fusion stages.

A crown height is determined by measuring 'the minimum distance between the occlusal surface and the line separating the enamel of the crown from the dentine on the roots, measured to the buccal surface of mandibular teeth and on the lingual surface of maxillary teeth. Two measurements were taken; height (H) and mesiodistal diameter (mdd) (Payne 1991).

Wear stages were calculated based on Payne (1991). Equid teeth were classified into five wear stages: 1. Early wear, 2. Full wear in upper third of crown, 3. Full wear in middle third of crown, 4. Full wear in lower third of crown, 5. Crown worn close to roots. Payne (1991) does clarify that this classification is highly subjective and it is recorded in order to help understand some of the variation seen in the measurements and morphological data.

Epiphyseal fusion stages outlined by Silver (1969) were applied.

2.2.1.2.4 Sex determination

The main method used to distinguish between male and female horses is based on canine morphology and metrical analysis. Sex determination based on canine morphology requires the analysis of the degree of dimorphism on the tooth (Eisenmann 1986). This method is based on tooth shape and considered by Davis (1980) too subjective when sexing equines. Metrical analysis compares sexual dimorphism size ranges between elements (Eisenmann 1986). Both methods assume a single species sample and since three equid species inhabited the Anatolian Plateau, and the size range exhibited by these taxa is large, identification of sex based on canine morphology and metrical analysis is subject to error.

2.2.1.3 Caprines – wild sheep (*Ovis orientalis)* and wild goat (*Capra aegagrus)*

The range of occupation dates detected for Pinarbaşi place the identification of caprines at a very crucial point in human prehistory when the domestication of these taxa was taking place. Therefore the identification of wild versus domestic forms of sheep and goat is critical to our understanding of the development of human populations on the Anatolian Plain during this transitionary period. Wild caprines that would have been available to hunters in the local environment include *Ovis orientalis* and *Capra aegagrus*.

2.2.1.3.1 Identification of sheep and goats

Sheep and goat were identified to species level using Boessneck's (1969) osteological differences between sheep and goat method in addition to a metrical analysis of metacarpal and metatarsal bones. Morphological distinguishing characteristics between elements of sheep and goat are outlined by Boessneck (1969). These include element shape, size and muscle attachments. The metapodial measurement technique involves the measurement of the dorsovolar or dorsoplantar diameter of the peripheral trochlear section immediately adjoining the vericillus. This measurement is then subtracted from the parallel diameter measurement of the verticillus. The metacarpus index calculated for the medial trochlea is always over 63 for sheep and below 63 for goat. In the metatarsus, there is an overlapping area between 59, however the smallest figure for sheep is usually 62.5 and the largest for goat 62.5. This study did not consider the measurements of both trochlea and condyle if the epiphysis was unfused.

2.2.1.3.2 Size

Caprine bone size was recorded by taking measurements of each element according to those outlined by von den Driesch (1976). Postcranial measurements are recorded on atlas (BFcd, GL, GLF, H and GB), humerus (Bd), radius (Bd), tibia (Bd), metatarsal (Bd, SD, Bp), calcaneus (GL, GB), astragalus (DM, Glm, GLI, DI), proximal phalange (DP, Bp, GL, Bd), middle phalange (GL, Bp, SD, Bd) and distal phalange (Ld).

Domestic sheep (*Ovis aries*) and goats (*Capra hircus*) can be distinguished from wild sheep (*Ovis orientalis*) and goats *(Capra aegagrus)* during the study time period based on size reduction (Meadow 1999). Meadow's (1999) Log Size Index method outlined in section 2.2.1.1.1 was applied to the caprine bones. The formula is:

$$\text{LSI} = \log X - \log \text{standard}$$

The standard animal used in the comparison is that of an Anatolian wild sheep and wild goat population measured by Hijlke Buitenhuis (2001), (see Appendix 1). Using caprines from the Anatolian region as the standard allows for a direct comparison between sites and trends through time to be compared Meadow's (1999) Log Size

Index method was chosen as it provided a direct comparison with other Anatolian faunal assemblages that have been analysed using this technique (Buitenhuis 2001).

2.2.1.3.3 Age determination

Ageing techniques were restricted to those of eruption and wear stages of mandibular teeth and epiphyseal fusion. Dental eruption and wear was recorded according to the stages described by Payne (1973), Grant (1982) and Zeder (1991). Teeth eruption and their subsequent wear occur according to their placement in the jaw and over a time period. Wear patterns occur on the enamel of each tooth on the occlusal surface of the premolars and molars. Payne (1973), Grant (1982) and Zeder (1991) have established methods by which the age of a sheep/goat can be determined based on the wear pattern at the time of death. Age ranges can also be established by determining the epiphysial fusion stage at which a bone has progressed. Animal bones grow through out maturity until they reach maximum lengths at which time fuse all parts. Epiphysial fusion occurs at different stages depending on the species and element. Silver (1969) has established bone fusion stages for sheep and goat.

The relative proportions of different age groups can be analysed using Payne's (1973) model for evidence of either hunting or a herding economy. Payne's (1973) hunting model predicts a high mortality at birth and soon after, lower levels for healthy adults, and then a high range again in older age animals. Payne's (1973) herding model, optimised for meat predicts an economy in which young males are killed when they reach the optimum point in weight-gain (18-30 months) with only a few being kept for breeding. The survivorship curve reflects a high kill-off of young male animals within the first and second years, with a smaller population of mature animals being kept as a breeding population. There is then a rise in older age animals as non-reproductive females are then killed for their meat.

2.2.1.3.4 Sex determination

Sex may be determined by analysing the size and morphology of complete bones (Boessneck 1969). The most reliable element used to sex caprines is the ischium. The ischium arch forms a narrow 'v' in the males and one that is rather open in females (Boessneck 1969). Morphological and metrical differences based on horn cores is also used to sex caprines, however, is very difficult to assess and has not been performed in this study due to the absence of horn cores within the assemblage.

2.2.1.4 Pig: Wild Boar (*Sus scrofa*) and domestic pig (*Sus domesticus*)

Similar to caprines, the range of occupation dates at Pinarbaşi places the identification of pig at a very crucial point in the domestication history of these taxa within Anatolia (Chapter 5). The ability to identify wild versus domestic pigs is based on altered morphological characteristics (Payne and Bull 1988). Skull changes include a shortening of the rostral region of the cranium and associated changes in the mandible (Mayer *et al.* 1998). Since teeth are also affected by size changes in the skull, measuring tooth size (width vs. length) and crown height can also indicated domestic taxa. Pig bone and teeth measurements were taken according to those outlined by Payne and Bull (1988). Meadow's (1999) Log Size Index method outlined in section 2.2.1.1.1 is also applicable to the pig bones. The formula is:

$$LSI = \log X - \log \text{standard}$$

2.2.1.4.1 Age determination

Ageing techniques were restricted to those of eruption and wear stages of mandibular teeth and epiphyseal fusion. Dental eruption and wear was recorded according to the stages described by Grant (1982). The age ranges used for epiphysial fusion follow those outlined by Silver (1969).

2.2.1.4.2 Sex determination

Sex determination can be made based on the size and curvature of canines (Silver 1969). Male boars have larger and stronger developed lower canines with a distinct curl than those of females. In addition, metrical analysis compares sexual dimorphism between elements (Boessneck and von den Driesch 1978).

2.2.1.5 Red Deer - *Cervidae*

Three species of deer have occupied Anatolia since the late Pleistocene and into the Holocene, the Anatolian fallow deer (*Dama dama*), red deer (*Cervus elaphus*) and roe deer (*Capreleolus capreolus*). All three species have been recovered from archaeological sites contemporary to Sites A and B within Anatolia (Uerpmann 1987).

2.2.1.5.1 Age determination

Ageing of deer bone was based on bone fusion data by Egorov (1967).

2.2.1.6 Canids - *Canis lupus, Canis lupus pallies* and *Canis familiaris*

Three types of canid might be expected at Pinarbaşi, wolf (*Canis lupus*), a sub species of wolf (*Canis lupus pallies)* and domestic dog (*Canis familiarus). Canis lupus pallies* had a distribution that included Turkey and extended through to India. Domestic dog (*Canis familiaris*) can be distinguished from the wolf (*Canis lupus*) by its smaller size (Clutton-Brock 1987). However, the use of size is not the most reliable means of separating the bones of domestic dog from wolves because *Canis lupus pallies* is much smaller than *Canis lupus*, which makes the identification of domestic dog in an assemblage difficult on the basis of size differences alone. In addition, there is evidence that considerable variation in the size of village dogs existed in Neolithic sites (Clutton-Brock 1999).

2.2.1.7 Fox: Red Fox (*Vulpes vulpes*), Ruppell's sand fox (*Vulpes ruppelli*) and the fennec (*Fennacus zerda*).

There are three species of fox inhabiting Anatolia during the final stages of the Pleistocene and early Holocene. Red fox (*Vulpes vulpes*), Ruppell's sand fox (*Vulpes ruppelli*) and the fennec (*Fennacus zerda*). Identification of fox species is made based on post-cranial element morphological comparisons and teeth measurements outlined by Davis (1977). Fox reference material was obtained from the Museum of Scotland in Edinburgh. Teeth measurement comparison is usually performed on complete mandibular tooth rows. However, isolated teeth, specifically M1's, can also be compared when the length and breadth is taken.

2.2.1.8 Hare - *Lepus* sp.

There are two species of hare inhabiting Anatolia during the final stages of the Pleistocene and early Holocene, *Lepus capensis* and *Lepus europaeus*. Hare bones from Pinarbaşi were identified only to taxon (*Lepus* sp.) as it is not possible to distinguish between them on morphological or metrical grounds.

2.2.1.9 Cat - *Felis silvestris*

The wild cat occupies primarily woodland areas and is found throughout Europe and the eastern Mediterranean regions (Clutton-Brock 1999). It is considered extremely rare in the fossil record of prehistoric human occupations (Tchernov 1994). Identifications are based on Gilbert's (1987) illustrations.

2.2.1.10 Badger - Meles meles and Melivora capensis

There are two species of badger inhabiting Anatolia during the final stages of the Pleistocene and early Holocene. They are European badger (*Meles meles)* and Honey badger (*Melivora capensis)*. Honey badgers are not part of the same sub-family as the "true badgers". However, they are very similar in form and habits and share the same common name. There are no methodological techniques for separating the two species and they can only be identified to genus (*Meles* sp.).

2.2.1.11 Bird - Aves

The majority of the bird bone material was left in Turkey because a bird bone specialist was tentatively scheduled to start analysis on this material in 1995. Due to the cancellation of the project and very few bird bones being recovered and their storage location, no specialist was hired or accepted the project. The primary focus of the mammal bone material for this research was then broadened to include bird bone material. My knowledge of bird bone material was very limited and no bird reference material was available in Ankara. Identifications were made primarily with Cohen and Serjeantson's (1996) manual. Accurate identification of bird bones is therefore very tentative. The use of Cohen and Serjeantson's (1996) manual must be considered as a preliminary assessment only. The manual can only be used to show which families or species may be ruled out and suggest which groups of reference specimens need to be consulted or which bones need to be referred to a specialist (Cohen and Serjeantson 1996). The manual was primarily used to identify principal bones of the skeleton.

A few bird bones which appeared to be unique to the Pinarbaşi assemblage were exported to Edinburgh and identifications were made by Joanne H. Cooper at the Natural History Museum in Hertforshire.

CHAPTER 3: ANIMAL DOMESTICATION IN SOUTHWEST ASIA

The primary aim of this research is the investigation of human behaviour regarding subsistence activities during the transition from hunting to animal domestication in Central Anatolia. In order to perform this investigation, a background of theoretical and practical archaeological research with regards to the origins of animal domestication must be established. This chapter is divided into three sections. The first section is a historical review of the dominant theoretical approaches and models that have been proposed over the last century to explain the origins and reasons for animal domestication in the Near East. The second section deals with archaeological terminology and defines the chronological and cultural terminology applied during this transitional period in Central Anatolia. The third section defines what is meant by a domestic animal and then outlines the archaeologically evidence for the primary domesticates in the Near East.

3.1 THE ORIGINS OF AGRICULTURE: THEORETICAL DEBATE

The transition to agriculture occurred over a relatively short period of time (ca. 10,000 - 5000 yrs ago) and in several widely separated parts of the Old and New World[15]. This subsistence shift radically transformed human ecology, social organisation, demography, art and religion. A vast number and variety of explanatory models have been proposed to explain the shift to food production. It is beyond the scope of this work to review all of them; instead highlights from selected models that have had the most significant influence on archaeological research into agricultural origins will be presented. The majority of theoretical models fall into one of three broad categories: environmental, population pressure and cultural (for reviews see Rindos 1984, Pryor 1986, Redding 1988, Blumler & Byrne 1991).

[15] Vavilov (1926) identified eight difference Old and New World centres of domestication. They are: Southeast Asia (including India and Indonesia), China (including Korea and Japan), Southwest Asia (including Turkey, Iran, and Afghanistan), the Mediterranean Basin, Ethiopia (with Yemen), Mesoamerica (with Cuba), and the Andes, from Colombia to Peru (Trigger 1992).

3.1.1 Environmental change

Environmental change models emphasise the environmental as the causal factor that necessitated change in human behaviour, resulting in domestication[16].

Gordon V. Childe (1928) has had the most profound impact on environmental change models, with his emphasis on the technological revolution that resulted within societies when they adopted a new "mode of production". For Childe, the 'revolution' was a result of environmental desiccation that occurred at the end of the Pleistocene (ca. 10,000 B.C). This desiccation forced both humans and animals to concentrate within oases regions. The new enforced juxtaposition of animals, plants and humans in oasis environments, promoted a new symbiosis that led directly to domestication (Childe 1952 & 1956; Trigger 1992: 252). Childe introduced the term "Neolithic Revolution" to describe the transition and consequences it had upon cultural development.

3.1.2 Population pressure

Population pressure models emphasize how population growth forced foragers to adopt agriculture due in part to scarce resources. Major contributors to population pressure models are Binford (1968), Flannery (1968), Cohen (1977) and Moore (1987).

The first population pressure model was proposed by Thomas Malthus (1798). Malthus (1798) stated that human populations naturally grow faster than the power of the earth to produce subsistence. Population increases therefore directly impact on human technological development in order to guarantee survival. Therefore, domestication of plants and animal fulfilled a need to provide more food to the ever increasing population (Trigger 1992).

Lewis Binford (1968) and Kent Flannery's (1968) models build on Malthus's theory by adding sedentism to the equation. Population stress was due to a population increase that occurred in the Epipalaeolithic. Populations increased in the

---

[16] The *environmental deterministic model* first originated in the 1840's by Worsaae, who argued archaeological finds must be "studied in relationship to their palaeoenvironmental settings" (Trigger 1992: 247). In 1904, Raphael Pumpelly[16] (1908) proposed the 'oasis theory' as an explanation for the origins of food-production. He argued that the Near East became much drier following the last Ice Age, therefore, hunter-gatherers were compelled to gather around surviving sources of water and to "conquer new means of support" by domesticating wild animals and grasses (Trigger 1992: 248).

Epipalaeolithic due to the adoption of a broad spectrum of resources which allowed for the establishment of pre-farming settled villages which increased human population levels. The resulting population stress led to the domestication of plant and animal species during the Neolithic. Agriculture then enabled a growing population to expand into marginal areas where food supplies could be guaranteed (Trigger 1992). There was no dramatic changeover from hunting to farming but rather familiarisation in the form of resource management. Settlement and an increase in population forced communities to domesticate.

3.1.3 Cultural invention

Cultural invention models emphasize social and cultural developments that directly lead to agriculture. Major contributors to cultural invention models are Braidwood (1960), Bender (1978), Cauvin and Cauvin (1984) and Hodder (1990).

The cultural invention model is based on late nineteenth century cultural materialist theories that believed the origin of agriculture was a natural process of cultural evolution that could only be achieved once a culture had attained a level of sufficient knowledge and sophistication (Cohen 1977: 3).

Robert J. Braidwood's (1960) proposed model held that the transition to agriculture took place in a "nuclear zone" where the origins of the naturally distributed wild varieties of plants (cereals) and animals (sheep and goats) resided. Braidwood argued that from this "nuclear zone" the ideas and techniques of domestication would be learned and then diffused to other parts of the world, either through the spread of technology or the immigration of the farmers themselves (Cavalli-Sforza 1996). For Braidwood, the domestication of animals was the result of accumulated knowledge rather than marked cataclysmic changes that were caused by external forces.

Barbara Bender (1978) proposed a model that saw the adoption of agriculture due to the competition created from different cultural groups. Bender (1978) argued that before farming began, there was a competition between local groups who tried to achieve dominance over their neighbours through ritual and exchange. It was these social demands that led to the need to increase subsistence resources and the development of food production (Bender 1978: 214). For Bender, the power of cultural need far exceeded any pressures that nature could impart.

Cauvin and Cauvin (1984) and Hodder (1990) emphasized social change prior to the adoption of domestication and believe that domestication was a mechanism for conveying a new social practice. Hodder's research focused on the idea that the initial taming of animals in the Near East was a metaphor and a mechanism for social and economic transformation. As the wild was brought in and domesticated through ideas and practices surrounding the home, people were brought in and settled into social and economic village life (Hodder 1990).

Contemporary researchers are now combining all three models to explain the change to agriculture. Gopher (1995) proposes a reconstruction which lays the emphasis on internal change originating in the very structure of the society but not isolated from external influences and local environmental conditions.

3.2 ARCHAEOLOGICAL TERMINOLOGY

The archaeological terminology used to define Central Anatolia's Neolithic has been taken from Levantine, Northern Syrian and South-eastern Anatolian regional cultural sequences. The transfer of Levantine terminologies to Central Anatolian sites has been fraught with difficulties given the lack of a complete cultural sequence within Central Anatolia. Therefore, chronological sequences, which are based on single elements, such as lithics, or the presence or absence of pottery, fails to represent Central Anatolian sites where exploitation patterns and the environment are emphasized (Özbaşaran and Buitenhuis 2002). Recent research in Central Anatolia, specifically at Aşikli Höyük and Çatalhöyük (East), has provided sequences which now makes it possible to redefine the region (Özbaşaran and Buitenhuis 2002). Members of the Central Anatolian Neolithic Workshop Group (CANeW), led by Mirhiban Özbaşaran and Hijlke Buitenhuis, have developed an independent regional terminology for Central Anatolia (2002). CANeW's proposed terminologies aim to create an overall picture of the region that incorporates changes in the structure and socio-economy of sites as they adopt new economic strategies. CANeW's terminologies cover the period between hunter-gathers and the beginning of urbanism.

Due to the recent introduction of CANeW's terminologies to Central Anatolian sites, both Levantine and CANeW's terminologies will be reviewed. A review of the Levantine terminologies and chronologies will establish the foundations in which

Central Anatolian sites have been characterised and then the CANeW terminology and chronology can be compared in their level of detail.

3.2.1 Levantine terminology and chronology

The Levantine chronological sequence is divided into the following cultural periods: Natufian, Pre-Pre Pottery Neolithic A (PPNA), Pre Pottery Neolithic B (PPNB), Pottery Neolithic A (PNA) and Pottery Neolithic B (PNB) (Table 3.1). What follows is a general chrono-cultural summary of each period, with emphasis on settlement size and location, stone artefacts, bone tools, burials, ornamentation and art objects and subsistence.

Levantine Chronology
Epipalaeolithic (20,000-10,000 BP):
Natufian (12,500-10,000 BP),
Aceramic Neolithic (10,000-7500 BP)
Pre Pottery Neolithic A (PPNA) (10,500-9,200 BP)
Khiamian (10,500-10,300/10,100 BP)
Sultanian (10,300/10,100-9,300/9,200 BP),
Pre Pottery Neolithic B (PPNB) (9,600-7,500 BP),
Early 9,600-9,200 BP
Middle 9,200-8,500 BP
Late 8,500-8,000 BP
Final/PPNC 8,000-7,500 BP
Late Neolithic Ceramic (7,500-5,200 BP)
Pottery Neolithic A (PNA) 7,500-6,500 BP
Pottery Neolithic B (PNB) -6,500-5,200 BP

Table 3.1: Levantine terminology and chronology.

3.2.1.1 Late Epipalaeolithic Natufian ca. 12,500 - 10,000 BP

The late Epipalaeolithic Natufian cultural sequence spans from approximately 12,500-10,000 BP[17] (Goring-Morris 1995). It is divided into two distinct social units based on flint technology; early (12,500 to 11,000 BP) and late (11,000 to 10,300/10,000 BP) (Bar-Yosef 1989).

The Natufians are distinct from the proceeding Kebaran, Geometric Kebaran and Mushabian[18] cultures based on the adoption of a sedentary life in permanent villages.

---

17 The Epipalaeolithic has been sub divided into three: Early (ca. 20,000-14,500 BP), Middle (ca. 14,500- 12,250 BP) and Late (12,250-10,000 BP) (Goring-Morris 1995).

18 The Kebaran, Geometric Kebaran and Mushabian social units continue to be similar to the preceding Palaeolithic assemblages in that they are located in cave and very small open air sites. They continue to produce

Sedentism is considered the catalyst that resulted in new food procuring and producing strategies that directly impacted on the full domestication of plants and animal that is witnessed in the Neolithic (Bar-Yosef 1998).

The Natufians are distinct based on their site size, an increase in the use of ground stone technology and non portable tools (mortars, querns), the presence of substantial structures and installations (pits, bedrock mortars, fixed hearths, basins), the internment of individuals in living sites and separate cemeteries and the indication of social hierarchy interpreted from variations in burial practices (Murray 1990). Each of these will be summarised.

3.2.1.1.1 Settlement Size and Location

Natufian settlement sites continue to be found in caves, rock shelter and open air locations. However, open air sites are characterised as large and for the first time semi-sedentary (c.15 to 1,000 m^2) (Bar-Yosef 1998). The sites are characterised as being either base camps or transitory sites. Base camp architecture consists of semi-subterranean dwellings built of stone (and probably brush and wood) that are usually clustered together. They contain all aspect of material culture including burials (Bar-Yosef 1998). Transitory sites fall within 10 to 15 m^2 in size and lack structures, graves and heave ground stone tools. Lacking from Natufian settlement sites is evidence of storage. However, inferred evidence indicates that baskets were present (Bar-Yosef 1998).

3.2.1.1.2 Stone Artefacts

The Natufian can be defined on the basis of lithic and ground stone industries. The Natufian lithic industry is characterized by extensively used cores and the production of small, short wide bladelets and flakes. The assemblages consist of lunates, scrapers, burins and backed blades which are combined with wood and bone for the manufacture of composite tools such as sickle blades (used for harvesting wild grain, canes and straw), arrows, projectile points, knives, etc. Increased portability and the introduction of long-ranging weapons characterise the toolkit (Bar-Yosef 1989). The

very little evidence of permanent installations such as structures or pits. The three are distinct from the Palaeolithic period based on the dominance of mircoliths within the toolkit and the introduction of ground stone tools (Murray 1990).

Natufians are divided into two periods based on tool types; early (12,500 to 11,000 BP) and late (11,000 to 10,300/10,000 BP). Early Natufian mircoliths include Helwan and backed lunates, trapeze-rectangles and tri-angles (Bar-Yosef 1989). Late Natufian microliths are smaller than the early Natufian and the backed lunates generally dominate (Bar-Yosef and Valla 1979).

The quantity and variety of ground stone tools increased during the Natufian to include bedrock mortars, portable mortars, bowls, cupholes, mullers and pestles (Bar-Yosef 1989).

3.2.1.1.3 Bone Tools

The Natufian bone industry contains the richest amount of material recovered from any Levantine cultural group. Bone tools include points, harpoons, and hooks for hunting and fishing. Use-wear analysis indicates tools used for hide working and basketry. Bone beads and pendants were shaped by grinding and drilling and many are adorned with decorations (Bar-Yosef 1989).

3.2.1.1.4 Burials, Ornamentation and Art Objects

Graves have been uncovered within and directly outside of Natufian dwellings. Burials appear to have occurred after the dwellings were abandoned in contrast early Neolithic sites where internment occurs while the structures are still in use. Natufian burials demonstrate variability in treatment of individuals that is possibly a reflection of social organisation during life. Primary and secondary burials occur with single and multiple individuals in either supine, semilexed or flexed position. Many bodies are adorned with ornamentation such as head decorations, necklaces, bracelets, belts, earrings and pendants (Bar-Yosef 1989).

Ornamentation on stone and bone objects appear in net, chevron (or zigzag) and meander patterns. The majority of the patterning appears on spatulas, stone bowls and sickle shaft straightners.

3.2.1.1.5 Subsistence

Natufian subsistence is characterised by its food gathering and hunting based strategies. Gathering activities are much broader than the previous period and include intensive and extensive harvesting of wild cereals in addition to the gathering of pulses, almonds, acorns and other fruits (Hillman 1996). The preservation of botanical information is poor from Natufian sites and is inferred from the presence of tools such as sickles, mortars, bowls and pestles, that all suggest the harvesting and processing of these crops (Bar-Yosef 1989).

The faunal assemblages are dominated by ungulate hunting with an emphasis on gazelle and fallow deer. However, a marked increase in a broader species base that includes fox, hare, tortoise, fish and fowl due to the introduction of long-ranging weapons is noted. Coastal sites are dominated by deer, cattle and wild boar versus steppic sites where equids and ibex dominate (Bar-Yosef 1989).

3.2.1.2 The Levantine Neolithic 10,300 to 8000 BP

The Neolithic is characterised by the absence or presence of pottery and the level of cultivation and domestication of crops and animals. The period is subdivided into Pre Pottery Neolithic A (PPNA), the Pre Pottery Neolithic B (PPNB), Pottery Neolithic A (PNA) and Pottery Neolithic B (PNB) (Bar-Yosef 1989).

The Pre Pottery Neolithic is distinct from the preceding Natufian based on settlement size, the practice of a combination of hunting, gathering, fishing, agriculture of cereals and pulses and livestock husbandry. Technological innovations begin in the PPNA with the use of mudbrick in the construction of rectangular houses, evidence of spinning and basketry become evident and the appearance of arrowheads in lithic assemblages. During the PPNB an increase in ritual and cult practices flourish as a separation in living and ritual space occurs and the creation of artistic-symbolic objects are made.

3.2.1.2.1 Pre Pottery Neolithic A 10,500/10,300 to 9,300 BP

The PPNA is characterised by large scale sedentary villages where an economy based on intensive plant exploitation, that included long-term storage, existed without pottery. In addition, long distance exchange networks are believed to have existed between Levantine settlements, central Anatolia and the Mediterranean coast[19]. The period has two recognised social units based on tool technology and

[19] Jericho, Netiv Hagdud, Nahal Oren and Hatuoula all contain central Anatolian obsidian in addition to marine shells from the Mediterranean and Red Sea.

geographical location; Khiamian (10,500 to 10,300/10,100 BP) and Sultanian (10,300 to 9,300 BP)

3.2.1.2.1.1 Settlement Location and Size

The majority PPNA sites are located along the boundary between the Mediterranean and the Irano-Turanian steppic belt, known as the Lenantine Corridor. These sites are at least three to eight times larger than the largest Natufian sites. Similar to the Natufian, structures are still pit-houses with stone foundations. However they are much larger and classified as superstructure with unbaked mud bricks that support larger areas. Larger domestic hearths are located within the structures that are often accompanies with silo type structures made of bud-brick or stone.

3.2.1.2.1.2 Stone Artefacts

Lithics from the Khiamian industry include el-Khiam projectile points, asphalt-hafted sickle blades, some mircoliths and a large number of perforators. Bifacial celts are absent from the toolkit. Sultanian tools are identical to Khiamian except there are a greater variety of el-Khiam points and axes-adzes and polished celts are now produced. Pounding tools which include slabs, cupholes, hand stones and griding bowls are abundant.

3.2.1.2.1.3 Burials, Ornamentation and Art Objects

Single burials with no grave goods are the standard form of interment. Skulls are removed from corpses and placed within domestic structures. The differential treatment of corpses has been interpreted as an indication of social hierarchy and possible early ritual practices.

Anthropomorphic figures created from limestone or clay are common. Figurines are gender specific and have been linked to possible religious significance. Female forms are the most common and are interpreted as fertility and goddess icons.

3.2.1.2.1.4 Subsistence

PPNA settlements are characterised as consumers of a broad spectrum of resources. Wild fruits and seeds continue to be gathered, gazelle, equids, cattle, deer and foxes are hunted, in addition to large numbers of birds, lizards and tortoises trapped. The domestication of cereals (emmer, einkorn and barley) is established and goats are beginning to enter a proto-domestic if not full domestication status (Garrod 1999). For example in Ganj Dareh, in Iran's Zagros Mountains and Tell Aswad in Syria domestic goat has been identified (Zeder 2000, Legge 1996). In addition, domestic pig has possibly been identified at Hallan Çemi (Rosenberg *et al.* 1998). Redding notes the small size of pig molars and an extremely high proportion of juveniles (Rosenberg *et al.* 1998). A bias towards males indicates a domestic population (Wasse 2000).

3.2.1.2.2 Pre Pottery Neolithic B/C 9,300/9,200-8,700/8,500 BP

The PPNB is characterised as representing villages of farmers who had rectangular houses with lime plaster floors and a rich large scale tool industry. The tool industry is uniform during the PPNB, unlike the PPNA where two distinct cultures can be distinguished. Only one is recognised during the PPNB (Cauvin 2000). Tools appear to emphasise craftsmanship and quality versus quantity. New funeral rites are introduced along with a broadening of cultivated species and the presence of caprine herding. Village size continues to increase and a differentiation between structure function is clear. Long-term storage is assumed, however pottery is still absent. The period is divided into early (c. 9,600 to c. 9,300 BP) middle (c. 9,300 to c. 8,500 BP) and late (c. 8,500 to c. 8,000 BP) and final or PPNC (Cauvin 2000).

3.2.1.2.2.1 Settlement Size and Location

The size of settlement sites in the PPNB continued to increase throughout the period. Sizes ranging from 4 hectares in the middle PPNB to over 10 hectares in the late PPNB are recorded. Settlement location fluctuates throughout the period however the Levantine Corridor appears to be the main settlement zone of PPNB cultures with large scale sites. However, smaller sized PPNB sites are located throughout the Near East. Settlement appears to move southward through the Corridor starting in the early PPNB and reaching the southern Corridor by the late PPNB. However by the later PPNB populations again appear to move back into highland regions (Cauvin 2000). Multi-roomed rectangular architecture with floors and walls plastered with lime are a trademark of the period. A typical form is called the 'pier-house' which consists of a rectangular building with two or three internal oblong rooms. Internal columns or posts are present which would have supported the roof and mud brick walls, large hearth areas are also present (Cauvin 2000). Large public structures are present and appear to be purposely set apart from more common buildings.

Sites appear to be part of extended trade networks since obsidian, marine shells, green stone, basalt mortars and pestles are all recovered from Corridor sites and these all represent imported commodities (Levy 1995).

3.2.1.2.2.2 Stone Artefacts

The PPNB chipped stone assemblage is characterised with the large scale use of naviform cores which produced large flint blades. The blades were primarily used to create large arrow-heads whose base and point are thinned by long flat parallel removals known as 'lamellar retouch'. The retouch technique is performed on several points including Helwan, Byblos, Jericho and Amuq. Axes and hoes continue to be found however they are made of polished greenstone. Sickle-blades are now created by placing flint blades into, for example horn and fashioning the blades with lime plaster. The tool is now more refined than the larger thicker type found in the Sultanian period (Cauvin 2000). Scrapers and burins are still present.

3.2.1.2.2.3 Bone Tools

Bone tranchet axes, awls and flat knives remain similar to those recovered during the PPNA.

3.2.1.2.2.4 Burials, Ornamentation and Art Objects

Funerary rites and practices become exceedingly ritualised during this PPNB. The act of cranial separation which began in the PPNA is amplified in the PPNB as skulls appear to become objects within the house separate from the buried body. Crania are often lined up, painted and organised in locations that suggest shrine areas. Anthropomorphic representations of male figurines are found for the first time alongside female images. These figurines are often quite small and are fashioned form clay. Interpretations range from decoration, toys to ritual purposes. Buried caches of plaster statuary, figurines and stone masks are also numerous.

3.2.1.2.2.5 Subsistence

Subsistence strategies in the PPNB are characterised by the presence of farmers who continued to include a broad range of wild taxa. Emmer wheat is introduced into the Levantine Corridor fully domestic in addition to einkorn, six row barley, lentils, peas and beans and there is a further broadening of domestic crops[20](Garrard 1999). Goats then sheep are herded and are fully domesticated by the middle to late PPNB in the southern Levantine Corridor, the upper Euphrates valley and the Zagros Uplands.

3.2.1.3 Pottery Neolithic

The adoption of pottery is used as a cultural divide between the Aceramic and Ceramic Neolithic. The classification of cultural groups based on tool technology shifted to pottery as it was a better marker in defining the geographic sphere, chronological developments and correlations of cultures (Mazar 1985).

The difference between the Pottery Neolithic (PN) and the PPNB/PPNC is characterised as a change in an economic or social sphere. The PN economy is concentrated on agriculture and animal husbandry. There is a reorganization of settlements to agricultural villages in smaller territories. There is evidence of a social reorganisation as infants become part of the social group.

The period is divided into Pottery Neolithic A (c. 8,500-7000 BP) and Pottery Neolithic B (c. 7,000-5,750 BP) (Cauvin 2000). Distinct cultural groups include the Yarmukian, Wadi Raba and Lodian. The Hassuna, Samarra, Halaf and Ubiad cultures are related to Mesopotamian urbanized cultures (Gopher 1995). Because this period contains a diverse range of cultural groups throughout the Levantine region, a very simplified overview will be presented given the wealth of available data.

3.2.1.3.1 Settlement Size and Location

Settlement sites during the early PN are much smaller and limited to the fertile plains, in contrast to those distributed throughout the PPNB/PPNC. Site size appears to be limited to less than one acre and range from singular house structures to small size villages. The production of lime plaster for architectural features is reintroduced. Trade or exchange networks between settlements range from short to long range

[20] Emmer wheat believed to have been introduced domestication from Anatolia (Cauvin 2000).

distribution networks. For example, obsidian from Anatolia, minerals from Sinai, the Negev and Jordan were moved through the region. Seashells and pottery from the Mediterranean were also popular.

3.2.1.3.2 Pottery

The development of pottery has been linked to the early plastering of floors and the creation of sunken basins within the floors. Pottery is differentiated by ethnic, tribal, geopolitical, shape, decoration and motifs. Early Neolithic pottery is comprised of very simple handmade vessels made on mats and fired at very low temperatures. Common shapes are bowls, deep kraters, storage jars and small closed jars. All the vessels have simple flat bases with plain and unmolded rims with small knob handles and round legs (Mazar 1985). Decoration was done using a reserved skip technique that created patterns of light coloured triangles and chevrons on a red slipped background. These were organised into incised herringbone patterns with bands of red paint creating zigzag dressings.

Clay figurines are predominantly of anthropomorphic figures shaped using an additive technology. The figurines are often found in considerable numbers at the site.

3.2.1.3.3 Stone Artefacts

Flint tools included many sickle blades and tanged arrowheads as well as chisels, axes and knives. Arrowhead frequencies begin to decrease in the assemblage and also take on a new shape and size from the PPN. They are smaller in size which must have been matched also in bow technology. The smaller size in arrowheads and bows has been interpreted to represent the possible introduction of poison tips that required a finer penetrating point. Sickle blades and segmented tools also become shorter during the PPN may correspond with the introduction of a new harvesting technique.

Other stone artefacts include stepped querns and the appearance of elongated grinding slabs and two handed grinding stones. Stone figurines are found in large quantities and have been interpreted as fertility objects.

3.2.1.3.4 Textiles

Clay spindle whorls appear in varying quantities and indicate the development of spinning and a cloth technology. No direct evidence of textiles or looms have been recovered, however given the recovery of spindles and the presence of domestic caprines, the presence of textiles is likely.

3.2.1.3.5 Burials, Ornamentation and Art Objects

All PN graves are located in and around structures. The custom of separating skulls and treating them was no longer performed. The burials contain at least one individual, usually in a flex position and they are mostly primary. Grave goods are rare. For the first time, baby and fetus skeletons are found in pottery jars.

3.2.1.3.6 Subsistence

Subsistence appears to encompass full agriculture in addition to pastoral nomadic groups. Faunal assemblages include both domestic goat, sheep, cattle and pig and wild taxa.

3.2.2 CANeW terminology

The Early Central Anatolia (ECA) cultural sequence is divided into five stages (Table 3.2). What follows is a general chrono-cultural summary of each stage, with emphasis on settlement size and location, material culture, burial, and subsistence (Özbaşaran and Buitenhuis 2002).

CANeW Terminology	Time Span	Central Anatolian Sites	Traditional (Levantine) Terminology
ECA I	c.12,50-9000 cal BC		Late or Epi Palaeolithic
ECA II	c. 9000 – 7,500 cal BC	Aşikli, Musular, Suberde, Canhasan III	Aceramic Neolithic
ECA III A&B	A: 7,500 – 6,700/6,600 cal BC B: 6,700/6,600 – 6000 cal BC	Çatalhöyük (East), Erbaba	Neolithic (Early & Late)
ECA IV	6000 - 5500 cal BC	Köşk Höyük, Tepecik-Ciftlik, Çatalhöyük (West), Can hasan I	Early Chalcolithic
ECA V	5500 - 4000 cal BC	Güvercinkayasi	Middle Chalcolithic

Table 3.2: CANeW terminology and Levantine terminology.

3.2.2.1 Early Central Anatolian I: ECA I

The Early Central Anatolian I period is dated from c. 12,500-9000 cal BC. The ECA I division was created as it marks a climatic break in the Younger Dryas when the environmental conditions became warmer and more humid in Central Anatolia. This period has no defined cultural material from excavated sites within Central Anatolia.

3.2.2.2 Early Central Anatolian II ECA II

The Early Central Anatolian II period is dated from c. 9000-7,500 cal BC. The period can be characterised as containing sites with long term settlement with hunting and gathering subsistence.

3.2.2.2.1 Settlement Size and Location

Settlements sites are found in two areas within the region: lying on the banks of a river or on alluvial fans which were subject to flooding. Each landscape is rich in wild resources and the exploitation areas experience warm and humid climatic conditions. Sites have substantial architecture constructed with domestic structures, quadrangular in plan, with hearths and plastered floors.

3.2.2.2.2 Material Culture

Obsidian is the main raw material for the lithic industry. Bipolar technology stands as a distinguishing technique for this phase. Points are produced from long, regular, parallel sided blades. Lime processing and copper manufacturing is also an independent innovation unique to Central Anatolia during this time.

3.2.2.2.3 Burial

Burial practices consist of intramural inhumations, usually in pits under the floor of houses, sometimes wrapped in reed mats.

3.2.2.2.4 Subsistence

The subsistence pattern for this period depends on hunting and gathering or the management of wild resources. Wild plants are gathered and there is evidence of crop cultivation from einkorn, emmer wheat, barley and lentils. There is no evidence of animal domestication in this phase. However, initial indications of age selection of sheep and goat are observed as a high number of young animals are found and a limited number of adults. This indicates a degree of control over the taxa versus 'casual' hunting.

3.2.2.3 Early Central Anatolian III: ECA III (7,500-6000 cal BC)

Early Central Anatolian III has been divided into A and B. The division is a result of the different development which occurred at Çatalhöyük (East) (ECAIII B).

3.2.2.3.1 Early Central Anatolian III A (ECAIII A) 7,500-6,700/6,600 cal BC

ECAIII A sites are characterized as permanent settlements where food is now produced through agriculture.

3.2.2.3.1.1 Settlement Size and Location

ECAIII sites are large and located next to arable land.

3.2.2.3.2 Material Culture

Material culture shows the introduction of pottery. Cattle seem to play a significant symbolic role in the beliefs of the people.

3.2.2.3.2.1 Burial

Burial practices continue to be intramural inhumations, usually in pits under the floor of houses.

3.2.2.3.2.2 Subsistence

Animals such as sheep and goat and perhaps cattle start to be domesticated. Crops are now managed and site location dictated by arable land.

3.2.2.3.3 Early Central Anatolian III B (ECAIII B) 6,700/6,600-6000 cal BC

The ECA III B is characterised by Çatalhöyük (East) and the changes which occurred in the material culture from the site, especially in the pottery and lithic technology. Settlement size and location, burial and subsistence are the same as ECAIII A.

3.2.2.3.3.1 Material Culture

Material culture at Çatalhöyük (East) is marked by a change in pottery and lithic technology. The change in pottery production at Çatalhöyük (East) has been attributed to a change that resulted in the way food was cooked and prepared. The change in pottery production is speculated to have resulted from a change in diet and or in the management of agriculture at the site. Lithics are made by pressure flaking the obsidian away from the flake to form a blade. In addition, the chipped stone industry shows a marked decline in the later levels (III and II) at the site.

3.2.2.4 Early Central Anatolian IV: ECA IV (6000-5500 cal BC)

Few data is known from this phase due to ongoing excavations. It can however be characterised as representative of full farming sites whose settlement patterns appear to represent a network of smaller sites located around larger ones.

3.2.2.4.1 Material Culture

Pottery with well developed figures of animals and humans indicate the importance of husbandry within the material culture.

3.2.2.4.2 Subsistence

Subsistence is based on full agriculture of plants and animals, although hunting and gathering still plays a significant role.

3.2.2.5 Early Central Anatolian V: ECA V (5500-4000 cal BC)

This phase is characterised by large settlements which appear to be specialised in function towards animal production, plant cultivation, hunting or metallurgy.

3.2.2.5.1 Settlement Size and Location

The location of the sites in this phase appears to be related to the type and function of the settlement (pastoral landscape, trade routes, defensive position). Architectural layouts of the settlements and the specific craftsmanship as reflected in various finds indicate social stratification during this phase.

3.2.3 Summary of terminologies

The Levantine terminologies are highly detailed when compared to the new CANeW terminologies. Based on the recovered cultural material and site identifications from Central Anatolia, it is not yet possible to define each stage of the proposal in detail through all the elements with the available data (Özbaşaran and Buitenhuis 2002). The CANeW terminologies must therefore be seen as a framework in which new result can be placed and which can easily be adapted to include new developments (Özbaşaran and Buitenhuis 2002). Scholars are free to use either terminological system in their work; therefore the following presented research will use the CANeW terminologies and chronologies when referring to Central Anatolian sites.

3.3 ANIMAL DOMESTICATION

Trying to explain the transition from hunting and gathering to agricultural subsistence and also to find archaeological evidence of this transition has become a major area of research within prehistoric archaeological studies. The control by humans of their food supply has been cited as the catalyst which subsequently led to other long term changes in the structure and organisation of societies; these include permanent settlement, urbanisation, social stratification, craft specialisation and division of labour. The transition to agriculture is also considered the pivotal point when human relationships changed from interconnections with other animals to those with other humans, simply a change from a human/animal to a human/human emphasis (Ingold 1996).

Similar to the terminological debate that has surrounded cultural and chronological definitions outlined in the previous section, a similar debate surrounds what constitutes a domestic animal. The term 'domestication' must therefore be defined from a zooarchaeological perspective in order to clarify the difference between a hunted and domestic economy. This section summarises the academic debate regarding what is considered a domestic animal and then defines what is meant by a domestic animal with regards to the research being carried out by this author. The archaeological evidence for the origins of the four major domestic herbivore taxa (goat, sheep, cattle and pig) will then be reviewed.

3.3.1 Defining domestication

The domestication of animals is studied by a range of disciplines that include biologists, zoologists, archaeologists, zooarchaeologists, pre-historians, anthropologists, and geographers (Bökönyi 1989; Clutton-Brock 1989, 1999; Ducos 1978; Harris 1996; Ingold 1984; Meadow 1984; Ucko & Dimbleby 1969; Serpell 1989; Wilson 1988; Zeuner 1963). Despite the volume of literature on animal domestication, debate continues to this day about its origin and definition.

Initially, a domestic animal was regarded as simply 'one whose breeding is largely controlled by humans' (Davis 1987:126). This definition was criticized as it failed to explain the process of domestication over time and focused primarily on the end result which was the identification of a domestic animal (Meadow 1989).

The primary debate centered on whether domestication was to be understood as a rational decision by humans or modeled as part of evolution. The conventional belief that domestication was wholly directed by humans was criticized by neo-Darwinists who support a more mutual consensual relationship between humans and animals (Anderson 1998). Neo-Darwinists claim that certain animals chose domestication in the interests of species survival, while others note that humans do not have a monopoly on domestic relations, for example, ants have a domestic relationship with aphids (Anderson 1998).

As a zooarchaeologist, the domestication of animals is viewed from a cultural perspective. Zooarchaeology is defined as the study of fossilised faunal remains from archaeological sites (Davis 1995). The accumulated faunal remains reflect human behavioural patterns in addition to behavioural patterns of animals associated with humans. A zooarchaeological definition of domestication falls within the conventional belief that the entire process of how domestication was achieved, and what archaeologically constitutes a domestic animal was wholly directed by humans and therefore a definition of domestication must focus on the role of human behaviour in the process. This has resulted in a combination of cultural and zoological terms within the definition of domestication. Sandor Bökönyi (1989:22) defines domestication as "the capture and taming by man of animals of a species with particular behavioural characteristics, their removal from their natural living area and breeding community and their maintenance under controlled breeding conditions for mutual benefits". Bökönyi (1989) includes wild animals because he believes they can be culturally controlled without being domesticated. Pierre Ducos (1978:54) believes "domestication exists when living animals are integrated as objects into the socio-economic organisation of the human group, in the sense that, while living, those animals are objects for ownership, inheritance, exchange, trade, etc. as are other objects (or persons) with which human groups have something to do.". J. Clutton-Brock's (1987:21) defines domestication as "a domestic animal is one that has been bred in captivity for purposes of economic profit to a human community that maintains complete mastery over its breeding, organisation of territory, and food supply.

These definitions emphasize the changing relationship between humans and animals that took place from hunting to a herding society (Ingold 1996). Ingold (1996) notes, a hunter and game are really predator and prey. In contrast, a pastoral society has the relationship of owner and commodity. The emphasis is not on the technical nature of the work, the ecological definition of the resource, or the relationship with the animal (Ingold 1996). Instead, the emphasis falls on the social relationship between humans and animals. In a hunting society the relationships worked to bring the animals down in order to share a collective resource. In a herding society, the objective of the relationship is to protect and maintain a resource that a restricted number of individuals have access to (Ingold 1996). The emphasis on 'relationship' has led to the re-examination of a century old theory by Francis Galton (1883) who proposed that the process of animal domestication arose as a natural consequence of mankind's pet-keeping tendencies (Serpell 1989). Serpell (1989) writes that Galton's theory provides a plausible scenario for the development of a more intensive system relationship between animals and human. The decision to exploit pet animals as sources of food or labour may have been forced upon certain Palaeolithic groups by the necessities of survival in a world of increasing food shortages (Serpell 1989).

The animals themselves therefore had to fit within the human environment. The species had to exhibit certain criteria that made them potential domesticates, these include: palatable, amenable to human dominance, they had to be able to reproduce under captivity, and of most importance, they must not compete with humans for food (Hole 1989). In addition, it appears that during the process of domestication, the species that were selected for domestication by man had a set of social-cognitive abilities that enable them to communicate with humans in unique ways (Hare *et al.*

2002). A definition of domestication must therefore encompass both the animal/human and human/human relationships (Ingold 1996). This recent research suggests that the process towards domestication for animals was twofold, biological and cultural.

Cultural process includes the incorporation of the species within the human social structure as objects of ownership[21]. A biological process refers to the evolution, both natural and artificial, of the domesticated animal whom after successive generations develops into a subspecies or breeds irrespective of geographical conditions (Clutton-Brock, 1989:7). Clutton-Brock (1999) asserts that domestication is not limited to a single, biological process; rather, it is a dual process that involves biological changes coupled with cultural changes. The biological process of domestication resembles natural selection because the parent animals are forced to be reproductively isolated from the wild population. The small founder group of captive animals is, at first, very inbred; however, in time it will undergo a process of genetic drift, which is an accumulation of random mutations that occur in small populations. Over successive generations, the domesticated animals will also undergo genetic changes in response to their new, human environment (Clutton-Brock, 1999).

The degree to which animals are incorporated into the human social structure during the gradual and dynamic process of domestication is also debated. The process has been subdivided along a continuum of hunting to cultural control to domestication (Hecker 1982; Hongo and Meadow 1998). Hunting is defined as harvesting from the wild without specific concern for individual animals. Cultural control and terms such as *proto-élevage*, incipient domestication and proto domestic all try to qualify the degree of domestication attained during the process (Hecker 1982; Horowitz 1989; Ducos 1989; Bökönyi 1989). These terms refer to some sort of relationship between humans and animals that does not include breeding in captivity. Under these conditions, humans may keep individual animals, cull them selectively from free-ranging stock or manage them in such a fashion that does not isolate breeding stock from the wild population (Hongo and Meadow 1998). Clarifying when the process of domestication begins and what constitutes a domestic animal at this early stage

[21] The emphasis on the cultural control component has been debated because not all species under human influence have become domesticated (Bökönyi, 1989: 23).

appears mainly a debate in semantics. Domestication is a gradual and dynamic process therefore within this process there must have been degrees of success and failure. *Proto-élevage* and proto-domestic have been termed to deal with faunal remains from sites that appear to only fulfil a few of the accepted minimum criteria outlined by zooarchaeologists to classify a faunal assemblage as domestic versus hunted (see Section 3.3.2).

Within the body of this research, domestication is therefore defined as a compilation of the above outlined definitions. Domestication exists when living animals with particular behavioural characteristics are removed from their natural living area and breeding community, and maintained under controlled breeding conditions by man in his chosen living area. These animals are then integrated as objects into the socio-economic organisation of the human group, in the sense that, while living, the animals are objects for ownership, inheritance, exchange, trade, etc. The distinguishing factor between hunting and food production by human is that their attention has shifted from the dead animal to securing, selecting and maintaining the most important product of the living animal: its offspring (Bökönyi 1989; P. Ducos 1989; J. Clutton-Brock 1989; Meadow 1984). In contrast to the debate surrounding domestication, Zooarchaeological researchers agree on seven criteria by which the bones of domestic animals can be distinguished from those of its wild progenitors. These criteria will be disused in the next section.

3.3.2 Zooarchaeological criteria for distinguishing between wild and domestic taxa

Key to the investigations into animal domestication has been the development of zooarchaeology as an area of study within archaeology. The tradition can be traced back to nineteenth-century naturalists, such as Japetus Streenstrup and William Buckland who carried out experiments to determine how faunal remains were introduced into archaeological sites (Trigger 1992: 7). However, it has only been within the last 20-30 years[22] that zooarchaeological research has become standard practice within archaeological excavations (Trigger 1992: 7). By applying multiple techniques including; demographic, geographic, morphological and genetic DNA, zooarchaeologists can attempt to reconstruct prehistoric subsistence economies,

[22]For a summary of the history of zooarchaeology see Davis, 1987: 20-21.

animal behaviour and palaeoenvironmental information from the archaeological record.

The criteria used by zooarchaeologists to distinguish between the bones of a domestic animals and its wild progenitor can be grouped under seven classes. They are; presence of a foreign species, morphological change, size differences, species frequency change with a succession of faunas, cultural factors, sex and age-related culling and genetic tracing using mitochondrial DNA[23] (Bökönyi 1969, Clutton-Brock 1999, Davis 1995, Meadow 1989; Christopher *et al.* 2001). It must be remembered that domestic animals are subject to artificial selection for characteristics that may be favoured for economic, cultural or aesthetic reasons rather than for survival of the species (Clutton-Brock 1999: 21). When analysing faunal remains for evidence of domestication, where possible, the application of all these methods should be employed together as an integrated approach (Meadow 1984: 313). They will each be briefly reviewed.

3.3.2.1 Foreign species

The presence of a species at a site in a region that is beyond the natural range of its wild ancestors is considered one of the most reliable indicators for a domestic animal versus a wild relative[24]. Knowledge of the distribution and behaviour of the wild population is crucial in order to distinguish between either the possibility of the introduction of a non-native taxon or the possibility of local domestication (Davis 1995: 133; Meadow 1989: 84).

3.3.2.2 Morphological change

Morphological change refers to the general shape of the animal bone. These include general body proportions, body size, horn shapes, colouring, hair and fleece change (Davis 1995: 135). The attempted domestication of *Vulpes vulpes* by Belyaev and Trut (1999) note morphological changes appearing as early as the 30th generation in a controlled fox population (Trut 1999: 163). These morphological changes include pigmentation, skeletal changes in male fox skulls and even a development of a bark

---

[23]Bökönyi (1969) has also suggested artefacts associated with domestication and artistic representation that depict domestication.

[24] Martin (1994) notes a fault with this technique given that species known distribution and habitat of today are projected into prehistory with no regard that they could have been slightly different.

similar to domestic dogs (Trut 1999). Bökönyi's (1976: 21) estimates that the length of a generation is 2-3 years in small species (dog, sheep, goat, pig) and 6-5 years in larger species (cattle and horse). A major criticism of using morphological characteristics when investigating the initial stages of domestication rests on the assumption that the changes would not have had time to manifest themselves within the domesticated taxon and hence the archaeological record (Davis 1995). Davis (1995) states that major morphological changes are the result of the later stages of animal husbandry and are hence associated with the development of selected breeds not early domesticates. Based on Belyaev and Trut's (1999) experiments with foxes, it appears that a short period of time is needed to produce morphological change and therefore detectable within archaeological contexts with occupations greater than 50 years.

3.3.2.3 Size difference

The reduction of a species size has been used as a morphological indicator to distinguish between the skeletal remains of domestic and wild animals within prehistoric sites (Clutton-Brock 1999: 22). The process of domestication almost always is accompanied by a reduction in size of the body (Clutton-Brock 1999: 22). This has been attributed to the level of nutrition. It is assumed that domesticates in prehistory would have been restricted in mobility which would have resulted in overgrazing and also the reduction of a diversified food source (Meadow 1984: 312). Nutritional restrictions plus the possibility of parasitic infestations compounded by the taking of milk from the mothers by humans could have affected the food intake and metabolism of the young, which is directly linked to a reduction in overall size (Davis 1999). It has also been proposed that humans could possibly have selected smaller females when domesticating, who in turn would bear smaller young. This is justified as possibly being a factor that increased chances of survival during lean periods in marginal environments plus smaller animals are easier to manage (Jarman & Wilkinson 1972, Boessneck & von den Driesch 1978). Davis (1999: 136) disagrees because many animals display an inverse relationship between body size and docility. However, size reduction can also be influenced by environmental change i.e. temperature increase. Davis (1987) found a correlation between a temperature increase between 9,000-10,000 BC and then decrease in the size of foxes, gazelles, aurochs, boar and wild goat in Israel. Uerpmann's (1987) research has revealed a continued size reduction in Middle Eastern wild sheep since the Pleistocene, and Pietschmann (1977) has documented the same pattern for red deer in Europe.

Two recent studies, however, appear to indicate that a size change or morphological change did not accompany the early stages of animal domestication. Zeder and Hesse's (2000) research at Garj Dareh in Iran, concluded that the intensive selective culling of goats did not result in any size change. This same pattern was also recorded by Vigne *et al.* (2000) at Shillourokambos on Cyprus, where it was noted that introduced populations of pig, fallow deer, sheep, goats and cattle did not result in any size change by the end of the 9th millennium cal BC. Therefore, size reduction indicators must be interpreted with caution when analysing faunal material from sites associated with the the early stages of animal management.

3.3.2.4 Species frequency

This method examines whether there is a significant increase in the frequency of a species, particularly those of the major domesticates (sheep, goats, cattle, pigs), within a faunal assemblage. The assumption being that the frequency of species in hunted faunal assemblages will reflect the abundance of species in the area rather than domestic assemblages where cultural preferences for one species would dominate (Davis 1999).

3.3.2.5 Cultural signs

Cultural signs refer to evidence within the archaeological record which may indicate that there was a close relationship between ancient man and animals (Davis 1999). Cultural signs include the deliberate burial of whole or parts of animals with humans in what has been interpreted as affectionate rather than gastronomic relationships (Davis 1999: 148).

Digested food bones with evidence of corrosion found within Natufian faunal assemblages at Hatoula in Israel and research by Payne and Munson on dog digestion have led them to conclude that domestic dogs were present with humans in Israel between 8 and 10,000 bc (Davis 1999: 148). Pathological bone specimens from animals are found primarily in post-Neolithic assemblages. The presence of animal bones with pathologies such as fractures or disease in pre-Neolithic and early

Aceramic Neolithic sites is interpreted by Davis (1999) as indications of an animal husbandry relationships existing. Davis (1999) states that the likelihood of sick or injured animals being hunted and trapped by man and ending up in archaeological deposits is quite slim. Therefore, the presence of animal bones with pathologies such as disease, fractures, maloccluding teeth and joint diseases in pre-Neolithic assemblages must be considered as an indication of early domestication.

The recovery of shed caprine milk teeth within Aceramic Neolithic deposits at Franchthi cave and sites in southern France have been interpreted as signifying sheep and goat penning (Davis 1999). Caprines begin to shed deciduous teeth at approximately one year of age until the twenty fourth month (Silver 1969). Shed deciduous teeth are naturally lost from the mouth during grazing or ingested and dropped in dung. If a significant number of heavily worn deciduous teeth are found within archaeological contexts the likelihood of this occurring naturally in the wild is very slim and therefore the human control by penning is suggested.

3.3.2.6 Age and sex

The study of the age and sex composition of the animal species found within the faunal assemblage is used as an indicator for domestication. Ideally, age and sex ratios of a domestic population are different from those found within a wild population[25]. Therefore if a demographic reconstruction is made of an archaeofaunal assemblage, and it is different from the wild model, then domestication is evident. However, doubts have been raised about the feasibility of estimating an average "wild" population (Jarman and Wilkinson 1972; Meadow 1989). Factors such as the particular type of species, its behaviour and seasonality have to be considered before a reliable model can be developed. There are also environmental factors and human manipulation which affect a herd population. These factors make it difficult to statistically model an ideal wild population and must be taken into account when analysing the faunal assemblage and making arguments about its domestic status (Meadow 1989: 87).

Meadow (1984: 312) writes that while age and sex ratios can provide important information on human-animal relationships, such data cannot justifiably be used as

[25] This was contested by Meadow (1989).

the principal support for a hypothesis of animal domestication or for demonstrating the presence of domestic animals at a site. The most that can be said is that a particular pattern is consistent with a particular interpretation.

3.3.2.7 Genetic: Mitochondrial DNA

The identification of animal and plant domestication is rapidly moving to the molecular level; genetic fingerprinting allows identification of modern wild populations most similar to their domesticated relatives and their geographic home. Researchers such as Troy and MacHugh from University College, Dublin have developed a technique whereby mitochondrial DNA samples from fossil taxa can be compared with the mitochondrial DNA of modern taxa. By looking at the number of mutations that has taken place between the DNA-sequences of two taxa it is possible to see how closely related they are. Genetic mutations accumulate in the DNA, as one "letter" of the genetic code is replaced by another over time. It is therefore possible to estimate how much time has passed since they shared a common ancestor, since the rate at which letters are substituted usually remains constant for particular types of taxa. Resent mitochondrial DNA research has been performed on cattle, sheep, goat and pigs to trace their domestic origin (Troy *et al* 2001).

3.3.3 Archaeological evidence for domestic taxa

A key component of this research is reassessing Anatolia's classification as an anomaly with regard to animal domestication origins. The substantial body of data published on the origins of Middle Eastern food production for the four major herbivore taxa have produced a consensus that animal husbandry in the Near East was not initiated prior to the beginning of the Middle PPNB (early 8th millennium BC), and did not spread westward beyond its place of origin into southeastern Anatolia before the Late PPNB (second half of the 8th millennium BC). Sheep and goat were considered to have been herded during the Middle PPNB in the Taurus/Zagros region, domestic cattle emerging during the Late PPNB in the Central Anatolian site of Çatalhöyük (East) and finally pigs as a late and unimportant addition to the repertoire of Middle Eastern domesticates (Helmer 1992; Bar-Yosef and Meadow 1995; Legge 1996; Rosenberg 1998).

However, studies recently published on archaeofaunal remains substantially revise our understanding of animal domestication in the Middle East (Nelson 1998; Horwitz and Ducos 1998; Rosenberg *et al.* 1998; Peters *et al.* 2000; Zeder and Hesse 2000). The earliest complex relationship between human and animals now begins towards the end of the 11th millennium B.P., uncalibrated with pigs at Hallan Çemi located in eastern Anatolia. Goat and sheep domestication occurred in the first half of the 9th millennium BP. (Wasse 2000). Legge (1996) suggests that goats were domesticated throughout the Fertile Crescent while sheep were first domesticated in the Taurus/Zagros region and introduced into the Levant during the latter half of the 9th millennium BP. Cattle domestication appears at Çayönü in south-eastern Anatolia at 8000 BC (9000 b.p.) which is contemporary with the PPNB in the Levant (Öksüz 2000). The domestication and then spread of the four major domesticates from their area of origin took place as early as the Middle PPNB. Archaeological data for each taxa will be reviewed in more detail below. The dog will be included in the summary as recent research in mitochondrial DNA analysis on domestic dog origins has further expanded the application of the technique to sheep, goat and cattle.

3.3.3.1 Pig

The latest archaeological data places the pig as the first known domesticate in the Middle East (Rosenberg and Redding 1998). The suggested occurrence of wild boar (*Sus scrofa*) domestication has been associated with two sites dated to the PPNA and located in south-eastern Turkey; Çayönü and Hallan Çemi. Hongo and Meadow (2000) note a progressively earlier kill-off and appearance of smaller animals at the Grill Building and Channeled Building subphase at Çayönü which corresponds to 8000 BC (9000 bp). At Hallan Çemi, pig remains recovered from the site have been identified as domestic based on the small size of molars, an extremely high proportion of juveniles and a bias towards males (Rosenberg *et al.* 1998; Pringle 1998). However von den Driesch believes the data presented from Hallan Çemi is more representative of a wild not domestic population (von den Driesche and Wodtke 1997: 525-528). A size reduction over time is also noted on the pig remains from Gūrcūtepe located in eastern Turkey, dated to between Late-Final PPNB (Peters *et al.* 2000). Pre pottery Neolithic B levels of Jericho (c.7000 BC), Jarmo in Iraqi Kurdistan, Umm Dabaghiyah, Pelagawra Cave, Tell es-Sawwan, Choga Mami, Lebweh also contain pig remains that are considered domestic (Clutton-Brock 1999).

3.3.3.2 Caprines

Wild goats (*Capra aegagrus*) and wild sheep (*Ovis orientalis)* were the first ungulates to be domesticated. Based on their natural distribution, the area where sheep and goat could have been domesticated extends from western Turkey to Baluchistan and from the Caucasus to Sinai (Uerpmann 1996). Based on the present archaeological evidence it appears that goats were domesticated slightly earlier than sheep (Legge 1996).

3.3.3.2.1 Goats

The earliest evidence for domestic goat appears in the highlands of Iran at Ganj Dareh (dated between 9000 and 8450 BP) and Ali Kosh while the sheep continue to remain wild (Zeder and Hesse 2000). At Çayönü which is located in south-eastern Turkey, Hongo *et al.* (2002) and Hongo and Meadow (2000) note a progressively earlier kill-off and appearance of smaller animals at the Channeled (9,100-9,000 b.p.) and Cobble (9,000-8,600 b.p.) paved subphases. Evidence of management in the Levant has been recorded by Ducos (1993) at the early Pre-Pottery Neolithic B (PPNB) site of Tell Aswad (7800 - 6600 BC). The goat remains make up a very high proportion of the fauna and has been interpreted as herded (Ducos 1993). In the middle PPNB at Jericho (7200-6500 BC) in Jordan, goat remains have been classified as 'possibly' domestic due to the dramatic shift from a gazelle dominated assemblage to goat (Garrard *et al.* 1996; Legge 1996). Research at Tell Abu Hureyra (dated from 9400 BP) in Syria has revealed an increased importance being placed on sheep and goat from the early PPNB (Legge 1996; Wasse 2000). Goats have also been classified as domestic at 'Ain Ghazal (radiocarbon dates post-date 9000 BP) in Jordan due to the high incidence of foot pathology which has been interpreted as an indicator of herd management (Clutton-Brock 1979; Köhler-Rollefson *et al.* 1988; Garrard *et al.* 1996). The small size of the goats at the late PPNB site of Beidha in Jordan (8,330 and 7,000 BC) has indicated possible domestication (Perkins 1966; Hecker 1984).

Regional studies in Israel indicate that there is evidence of a shift from gazelle being the most prominent species during in the middle PPNB at Nahel Oren and Yiftah'el to goats in the late PPNB at Abu Gosh, Beisamoun and Atlit (Garrard *et al.* 1996).

3.3.3.2.2 Sheep

There is a great deal of debate amongst zooarchaeologists regarding the place and period of wild sheep (*Ovis orientalis*) domestication (Uerpmann 1987, 1989 & 1996). Bones of wild sheep make up almost half of the faunal assemblage from the 9th millennium BC Iraqi sites of M'Lefaat (Turnbull 1983) and Zawi Chemi Shanidar (Garrard *et al.* 1996). This data was initially interpreted by Perkins (1964) as an indication of domestication; however, this is no longer regarded as valid (Bökönyi 1969; Uerpmann 1979). Sheep at Tell Aswad II and Ghoraife I in the Domascus Basin and Abu Hureyra 2A and Mureybet IVb in the Levantine Corridor are considered either proto domestic or domestic (Ducos 1993). At Çayönü, Hongo *et al.* (2002) and Hongo and Meadow (2000) note a progressively earlier kill-off and appearance of smaller animals at the Channeled (9,100-9,000 b.p.) and Large Room (8,300-8,000 b.p.) subphases. Helmer (1988) argues that the middle of the seventh millennium BC site of Cafer Höyük contains domestic sheep due to evidence of size reduction.

Garrard *et al.* (1996) concludes there is no evidence in the northern and southern Levant for large-scale sheep domestication prior to 6500 BC. Similar to the changes noted above in goat domestication, the sheep represented about 14% of the fauna from the Natufian levels at Wadi Judayid (Henry & Turnbull 1985) in southern Jordan and 6% in the Mesolithic and up to 12% (sheep and goat combined) in the Aceramic Neolithic levels at Tell Abu Hureyra (Legge 1996). There is then a dramatic increase in sheep numbers by the late PPNB (*c.* 6300 BC). Basta in southern Jordan (Becker 1991) has sheep and goat making up 80% of the fauna and at Tell Abu Hureyra there is a combined total of 70% (Legge 1996).

In the Levant, Ducos (1993) recorded the appearance of sheep at Tell Aswad and Ghoraifé in the Damascus region around *c.* 6500 BC (Garrard *et al.* 1996). Similar evidence can be found in the region around 'Ain Ghazal which had very few sheep prior to 6500 BC however after 6000 BC they are abundant within the archaeological record (Garrard *et al.* 1996).

The dated evidence suggests domestic goats appear in Iraq and then Lebanon during the PPNA however, it wasn't until the middle of the PPNB that they appeared in the southern Levant. Domestic sheep appear in the middle to late PPNB in the same region (Wasse 2000).

3.3.3.3 Cattle

For the last thirty years, Çatalhöyük (East), located in central Anatolia and dated to c. 6200 BC, has been identified as containing the earliest evidence for domestic cattle (Perkins 1969). Perkins's (1969) concluded that the cattle became domesticated halfway through the occupational sequence based on a metrical study and the dominance (70%) of the taxa within the faunal assemblage. Ducos's (1988) study found the cattle to be morphologically wild but based on cull patterns believed they were subject to *proto-élévage*. In addition, Sherratt (1982) proposed that the size of the site and the elaborate artwork achieved by the inhabitants of Çatalhöyük (East) must have been supported by a large base of wealth derived from exporting cattle to surrounding settlements that had not yet domesticated their own cattle (Russell and Martin 2000). Renewed excavations at the site have since refuted this data (Martin *et al.* 2002). The cattle appear to represent 15% of the total faunal assemblage and there is no indication within the earliest layers of the site of any size reduction compared to wild cattle specimens. There does however appear to be two species of cattle at the site; an auroch and bison (*Bison bonansus*) which may account for the visually distinct bone sizes that do not appear to be related to sexual dimorphism (Russell and Martin 2000; Martin *et al.* 2002). Martin (*et al.* 2002) does however note that preliminary examination of later deposits has detected a size reduction in cattle, dated approximately around 6200 BC, however the samples analysed to date are too small in number to draw any conclusions at this point.

The earliest known site to detect cattle domestication is now attributed to the site of Çayönü located in south-eastern Anatolia. Analyses of cattle material from the first four subphases at Çayönü, note a progressively earlier kill-off pattern and presence of fewer smaller specimens at the Channeled (9,100-9,000 b.p.) subphase which is contemporary with the PPNB in the Levant (Öksüz 2000 and Hongo *et al.* 2002). A clear shift, both in the size and kill-off patterns of cattle were evident by the end of the Prepottery Neolithic period marked as the Large Room (8,300-8,000 b.p.) subphase at the site (Hongo *et al.* 2002).

Other early domestic cattle sites include Jericho (Pottery Neolithic A) and 'Ain Ghazal in Jordan where von den Driesch and Wodtke (1997) have argued that the villagers of 'Ain Ghazal had already captured aurochs calves and tried to breed them in the settlement during the PPNB. Other early domestic cattle sites include

Ashkalon in Israel, Qalat el Mudiq in Syria and Neolithic Fikirtepe and Amug A&B in Anatolia (Clutton-Brock 1999).

Recent genetic research on mitochondrial DNA has concluded that there were two separate domestication events of cattle. One in India, as evident in *Bos indicus* type cattle remains recovered from recent excavations dated to 9,000 BC in the Indus Valley (Cunningham 1996) and that of the European cattle *Bos taurus* which appears to be derived from a Near-Eastern origin (*Troy et al.* 2001).

3.3.3.4 Dog

The fossil record offers evidence that domestication occurred about 13,000 years ago in the Near East whereas molecular clock data imply an earlier date. Archaeological evidence for the domestication of the dog appears within the Natufian Period. The Pelegawra dog was identified as domestic on the basis of its small size by Turnbull and Reed (1974) at ca. 12,000 b.p. However Uerpmann (1982) disagrees as he believes the date of the context to be contaminated by later deposits. Davis (1987 and Davis and Valla 1978) has argued for the presence of dog at Natufian sites in Israel. Hayomim Terrace has produced small canid teeth remains, Mallaha which contained a puppy skeleton in addition to Hatoula where corroded bones have been interpreted as having been digested by carnivores during occupation.

Mitochondrial DNA (mtDNA) sequence variation research performed by Savolainen *et al.* (2002) on 654 domestic dogs, which represents all major dog populations worldwide, indicated that 95% of all sequences belonged to three phylogenetic groups universally represented at similar frequencies The results suggest a common origin from a single gene pool for all dog populations. There was a larger genetic variation in East Asia than in other regions and the pattern of phylogeographic variation suggest an East Asian origin for the domestic dog at round 15,000 years ago (Savolainen *et al.* 2002).

3.4 SUMMARY

The three models presented in the first section of this chapter outline the dominant theoretical approaches that have been proposed over the last century to explain the origins and reasons for animal domestication; environment, population pressure and cultural. These models and theories will be tested within Central Anatolia's 9th to 6th

millennia cal BC time frame based on site and faunal data presented in Chapters 5-8. The terminological debate outlined in section two justifies the application of the new CANeW chronology and terminologies applied to this study. Section three outlined what constitutes a domestic animal. In brief domestication is defined as the keeping and breeding under controlled conditions of captivity of individual animals and their genetic isolation from wild populations (Hongo and Meadow 1998). In addition this section summarised the currently accepted domestic origins for the four major herbivore taxa suggesting that pigs were domesticated slightly earlier than sheep and goats then cattle in south-eastern Anatolia and that their diffusion took place as early as the Middle PPNB. It is now evident that Anatolia does play a key role within early domestic origins of the major herbivore taxa, however the order and location of the domestication has been shifted to the pig in south-eastern Anatolia.

In spite of the recently published studies, there are still huge gaps in our understanding of the transition to agriculture and the major domesticates identified as spearheading this revolution. In the last 25 years, 95% of research focused on early domestication origins within the Middle East has focused on about 5% of the area (Vigne 2001). The first farmers of Anatolia, for example, are virtually unknown (Asouti and Fairbairn 2002) and there are only a handful of sites excavated from this region which now appear to contradict our understanding of animal domestication. Chapters 5-8, will therefore build on the reviewed information from this chapter with the purpose of elucidating human behaviour in Central Anatolian from the 9^{th} to 6^{th} millennia cal BC with regards to subsistence and animal domestication.

CHAPTER 4: LATE PLEISTOCENE/EARLY HOLOCENE ENVIRONMENT OF ANATOLIA

This chapter will review the environmental setting of Anatolia during the terminal Pleistocene and early Holocene boundary. The first section will review Anatolia's environment and the second section will review environmental data pertaining to the Central Anatolian Neolithic regional map, where the study sites are located (Map 4.1[26]). Because climatically driven models have dominated archaeological theory associated with the emergence of plant and animal domestication, a review of recent environmental reconstructions pertaining to Anatolia is essential.

4.1 THE PRESENT ENVIRONMENT IN ANATOLIA – CLIMATE AND VEGETATION

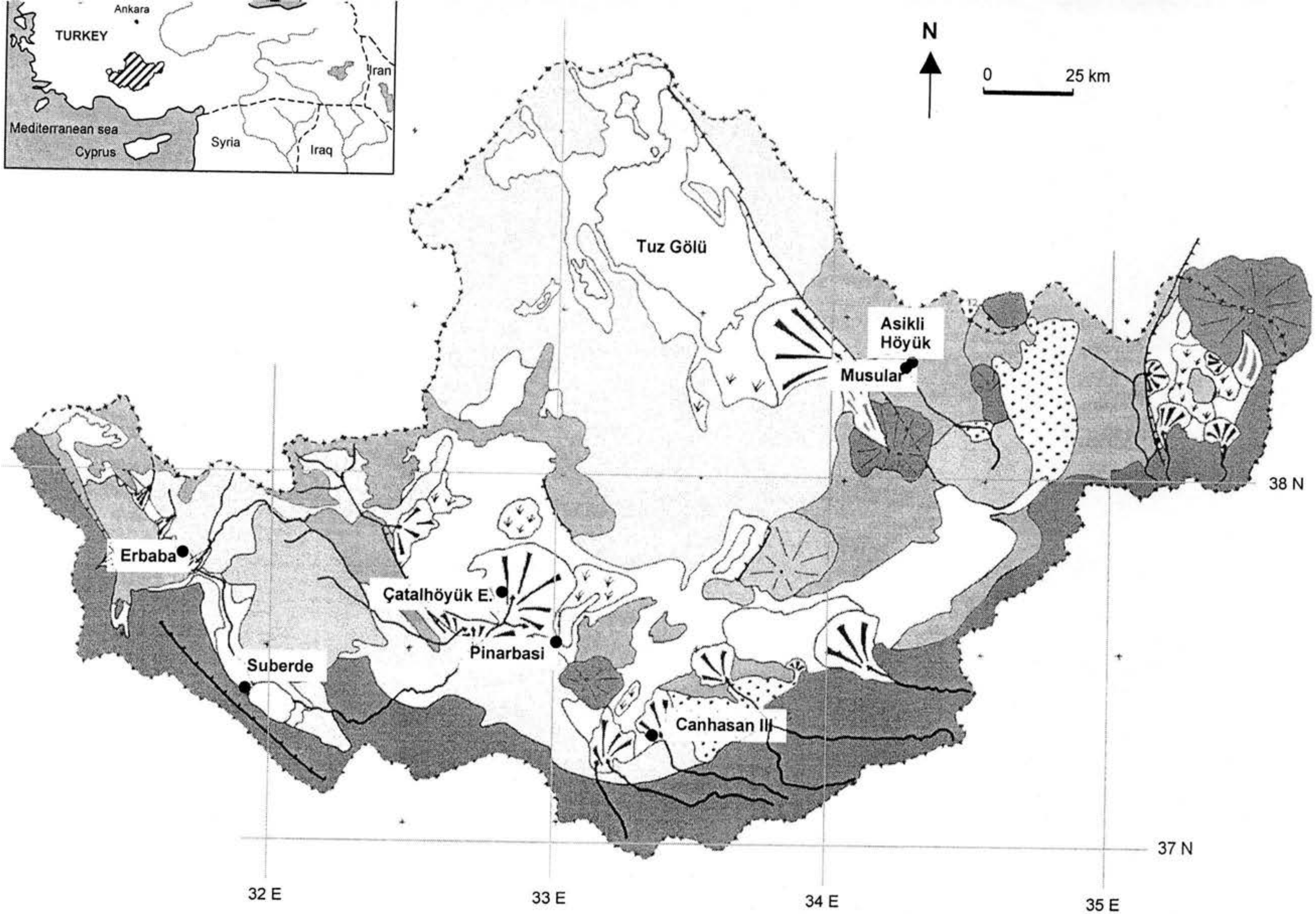
Anatolia[27] is located in the northern half of the eastern Mediterranean/Near Eastern region of southwest Asia. It has a total landmass of approximately 774,815 km^2. The Bosphorus, the Sea of Marmara, and the Dardanelles divide Anatolia from Europe and Asia. The country is characterised by a great variation in landforms and climate. The dominant topographic features are plateaus, mountains, alluvial plains and narrow coastal plains.

Anatolia experiences dramatic climactic fluctuations due to atmospheric systems that are influenced by Europe, parts of Asia and Africa. Warm to hot dry conditions prevail in the months of July, August and September with a rainy season starting in mid-October and lasting through to May. Winter temperatures are higher in the coastal ranges and lower inland and at higher elevations. The level of precipitation is affected by the distance from the sea and by altitude. The Central Anatolian plateau is the driest zone in Anatolia. At present, large annual rainfall fluctuations characterize the region, with storm tracks following seasonal paths.

---

[26] Map 4.1 legend (Kuzucuoğlu 2002: 51) is available in Appendix 1.

[27] Anatolia refers to Turkey and its modern boundary.



Map 4.1: Limits of the Central Anatolian region (Kuzucuoğlu 2002). *For legend, see Appendix 1.*

The topographic contrasts between high and low altitudes, together with the effects of variable temperatures and rainfall, result in a rather varied, mixed pattern of vegetation belts and patchy environments throughout Anatolia. The terminal Pleistocene climatic changes resulted in latitudinal, longitudinal and altitudinal shifts of vegetation belts. Today, western Anatolia is covered by broadleaf and needle leaf trees and shrubs resistant to cold. Cold-adapted deciduous broadleaf woodland characterises the eastern mountains and large areas of the Zagros. Dwarf shrubland and steppic vegetation dominate the eastern Anatolian plateau and form a wide, arching belt south of the northern Levantine, Taurus and Northern Zagros hilly ranges.

4.2 PALAEOENVIRONMENTAL CONDITIONS OF THE LATE PLEISTOCENE AND EARLY HOLOCENE IN ANATOLIA

Recent research, combining the Milankovich model, the isotopically-derived temperature-curves from remote but continuously accumulating sedimentary environments and the more sporadic snap-shots of local vegetational evidence, is beginning to form a coherent reconstruction of late Pleistocene and early Holocene palaeoenvironments of Anatolia (Sherratt 1997). Evidence now suggests that the Pleistocene climate was more unstable than once proposed. The end of the Pleistocene did not represent a simple shift from glacial to interglacial modes but rather a period of very pronounced instability in which temperatures oscillated with a speed and amplitude far greater than anything experienced in the Holocene (Sherratt 1997). The period is now characterised as a de-stabilising transition in which sudden reversals of prevailing average conditions were standard. The late Pleistocene is divided into three stages: late glacial (20,000 to 15,000 BP) followed by the Bolling-Allerod interstadial (15,000 to 13,000 BP) and then the Younger-Dryas stadial[28] (13,000 to 11,500 BP) which led into the milder phase of the Early Holocene. From this general model, it is no surprise that the changes in Anatolia's physical environment during the late Pleistocene were extremely complex and challenging to reconstruct (Sherratt 1997).

[28] Named after a pollen-zone originally defined in Scandinavia, called after *Dryas octopetala*, the mountain avens (Sherratt 1997: 271).

4.2.1 Environmental conditions in Anatolia during the Late Pleistocene (24,000-10,000 BP)

During the Late Glacial Maximum (20,000-21,000 years ago[29]) the climate of Anatolia was cold and dry. Coastal hilly areas received winter precipitation and were covered by forest growth (Sherratt 1997). The sea level around Anatolia was about 90-100 m lower than at present. The Straits of Marmara were transformed into land, a lake occupied the Sea of Marmara and the Black Sea was in a state of regression and desalination (Erinç 1978). Glaciers covered the highest mountainous areas of Anatolia. Cold arid or semi-arid climatic conditions prevailed. The mean annual temperatures dropped by 4° to 5° C and this was accompanied by increased precipitation in the form of snow. A snow pack reduction by ablation and evaporation increased the accumulation of ice (Erinç 1978). Glaciers formed and expanded on the east Pontic Mountains in the north, and in the Cilo and Sat Mountains in the southeast. The entire length of the Taurus ranges and several mountains of the interior carried small valley and cirque glaciers or ice caps. In the Munzur Mountain ranges that cross eastern Anatolia, there was a glacier formation almost 15 km in length (Erinç 1978).

The reduced evaporation also caused a considerable rise in lake levels (Van, Tuz, Burdur, İznik, Acigöl, Hazar) throughout the closed basin regions of Anatolia. In addition, new lakes were formed, the largest one being Lake Konya with a depth of between 15-30 m and 90-100 km long at its maximum (Erol 1987; Roberts *et al.* 1979). Roberts *et al.* (1979) date the major phase of high lake levels in the Konya Basin occurring between 23,000 and 17,000 BP. Because the sediment input exceeded the basin's subsidence, Lake Konya's morphology was shallow and extensive rather than deep. During climatically arid phases (ca 17,000-13,000 BP) the basin appears to have dried out completely (Roberts *et al.* 1999). The result is a relatively short-lived lake with a single extensive occupation of the basin of no more than 6,000-7,000 years out of the last 50,000 years. These contrasts suggest a varied climatic environment that must have existed within Anatolia in order to maintain substantially different water sources.

---

[29] Based on new calibration estimates using the marine carbonate curve, which suggests approximately two millennia needs to be added to radiocarbon determinations before 10,000 BP (Sherratt 1997).

The alternating stadial and inter-stadial conditions of the late Pleistocene greatly affected the territorial extension and floristic structure of vegetation in Anatolia. During stadial periods, vertical vegetation zones were lowered by several hundred metres. The Mediterranean vegetational belt became narrower; the Palaeoboreal forest vegetation expanded in the north and the steppe vegetation retreated towards the southeast. During inter-stadials there was a constant displacement of vegetation that resulted in a very mixed flora throughout Anatolia. This displacement saw the survival of Glacial, Mediterranean and Colchic vegetation throughout the region (Erinç 1978).

Herb pollen dated between 13,000 and 11,000 BP indicates an arid climatic condition during the greater part of the late stadial. Precipitation slowly increased from 14,000 BP, more rapidly from 13,500/13,000 BP to a peak around 11,500 BP. This corresponds with the dating of the Younger Dryas (11,000/10,800-10,300/10,000 BP), which has been characterised throughout southwest Asia as a short cold period. The Konya Basin and the surrounding area were almost completely devoid of trees due to dryness during this period, characterising the region as steppe and desert-steppe vegetation

Just before the start of the Holocene (c. 10,000 BP) there was a rise in temperature, causing the lakes in closed basins of Anatolia to recede or dry up and an increase in forestation to occur. Recent analysis of soil profiles and pollen diagrams from Öküzine indicate improved conditions by the final stages of the Palaeolithic period (Özdoğan 1999). With the onset of the Holocene, certain lake levels were restored.

4.2.2 Environmental conditions in Anatolia during the Early Holocene (10,000-8,000 BP)

The early Holocene is characterised as a period of large scale rapid change in climate that pulled the eastern Mediterranean domain out of the extreme aridity that characterised the Younger Dryas period. The development of warmer and wetter conditions that characterise the early Holocene developed slowly from 12,500 BP to 11,000 BP. Pollen records reveal that at the end of the Younger Dryas the climate, in less than a 1000 years, evolved from its most arid to its mildest and wettest mode with no frost winters and moist summers at 9000 BP (Roberts *et al.* 1999).

The rise in sea and lake levels continued until the mid-Holocene. Lake level fluctuations are considered a direct consequence of changing surface water balance and therefore provide reliable data on long term hydrological changes (Yakar 1994: 12). Roberts (1982: 235) was able to distinguish between low and mid-altitude paleoenvironments through the analysis of arid/semi-arid basins[30] and intermountain lake basins[31]. Using core and pollen evidence from the Van basin, Roberts' (1982) reconstructed model of eastern Anatolia indicates that 10,000 years ago there was steppic vegetation due to an arid climate. *Chenopodiaceae*, *Ephadra* and *Artemisia* dominated. By 6,400 BP the climate was more humid due to higher precipitation, resulting in increased tree growth. Palaeoenvironmental evidence for southeastern Anatolia has been indirectly reconstructed from sediment cores taken from the Ghab valley in northeast Syria (Yakar 1994). Forest vegetation expanded and reached its maximum between 11,000 and 10,000 BP. Pollen samples had high quantities of *Quercus, Pisticia, Olea* and *Ostrya/Carpinus orientalis* between 10,000 to 8,000 BP.

Roberts (1982: 240) notes a similar transition from his work on the Konya basin. A sediment core sequence, dated during the early part of the Holocene, indicates the presence of a relatively dry alluvial plain. The pollen record confirms steppic vegetation with scattered oak stands in mountainous areas. However, after ca. 8,000 BP extensive flooding created a number of shallow lakes. This event was repeated in the early 6th and 4th millennium BP, which resulted in the formation of the back swamps and alluvial sediment deposits still visible today (Roberts 1982: 281).

The reconstruction is extremely different in south-western Anatolia. Pollen diagrams from Lake Söğüt saw a very high concentration of tree pollen around 9000 BP, suggesting the replacement of steppe vegetation by forests due to an increase in precipitation levels. A pollen diagram from Beyşehir reveals a paleoenvironment dominated by Cedrus around 6100 BP, consistent with drier conditions. From 9100-4100 BP the pollen diagram has a high concentration of oak and juniper forests,

---

[30] Arid and semi-arid basin areas have a precipitation of less than 400 mm per year. These basins were covered with shallow but extensive fresh-to-brackish water lakes during part of the Quaternary (e.g., Konya basin). However, these lakes dried up. Lakes that became hyper-saline during the same period survived as extensive permanent water bodies (e.g., Tuz Golu, Aci Gol) (Yakar 1994: 12).

[31] The intermontane basin is found in the humid and sub-humid zones of Anatolia. Intermontane lakes (Van, Beysehir and Burdur) of the Pleistocene survived mainly because of their considerable depth and also because the post-glacial evaporation rates did not drastically increased their salinity (Yakar 1994: 12)

which suggest a slightly drier climate than that experienced at present (Yakar 1994: 17).

The western part of the Central Anatolian Plateau was dominated by an open vegetational pattern in the late Pleistocene. Pollen diagrams from the Karamik marshes reveal an environment abundant in *Artemisia* and *Gramineae.* This herbaceous environment was replaced with a coniferous forest of *Cedrus*. From 9000 BP the steppe environment re-expanded. Palynological evidence from Süberde (8570 BP ± 140 years) indicates a climate that was markedly cooler and moister than at present. There were also large tracts of forest around 8500 BP of *Pinus silvestris* and *Betula* that are now only found in the northern and northeastern region of Anatolia (Erinç 1978). By 8000 BP there was a decline in herbaceous pollen values and an open vegetational pattern returned. An extremely dry phase dated between 7000 and 5000 BP followed the previous humid stage. This resulted in the shrinkage of forests and increased steppe environment. Climactic fluctuations continued and at 2500 BP pollen cores from Gordion in central Anatolia shows a well developed non-deciduous forest which contained *Taxus baccata, Pinus silverstris, Cedrus libanni*, etc. (Erinç 1978).

4.3 CENTRAL ANATOLIA

The archaeological sites at Pinarbaşi are located on the Konya Plain which lies within the Central Anatolian Plateau in Central Anatolia. All of these regions lie within the geographic area defined as the Central Anatolian Neolithic territory (CANeW) (Map 4.1). The CANeW territory is bounded by the Kizilirmak River valley in the north, the Taurus Mountains in the south, the Beyşehir Lake to the west and the Cappadocian Plateau to the east (Kuzucuoğlu 2002).

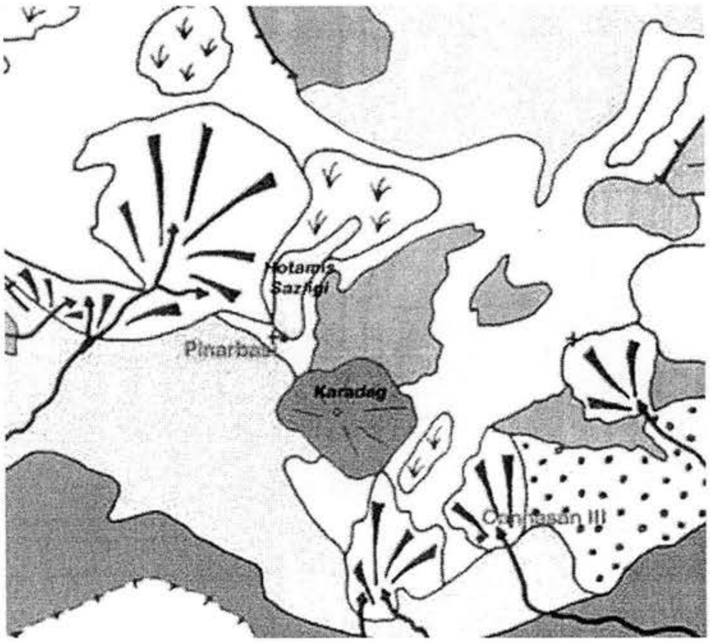
4.3.1 Central Anatolia Plateau and Konya Plain

The Central Anatolia Plateau is bounded by the Pontian Mountains in the north and the Taurus Mountains in the south. The plateau rises progressively towards the east, and is broken by the valleys of about fifteen rivers, including the Tigris and the Euphrates. There are numerous lakes and some, such as Lake Van, are as large as inland seas. The climate is continental with cold winters and ward summers. Annual precipitation of <500mm/yr is concentrated in winter and spring. A steppe-like vegetation covers the lowlands and limestone plateaus, while residual forests are contracted on non-limestone heights (Kuzucuoğlu 2002).

The Konya Plain is the largest alluvial plain in Central Anatolia with an average altitude of ca. 1000 m. The plain is located in the south-eastern region of the Central Anatolian Plateau. The Konya Plain is bordered in the north by the Salt Lake Basin and Bozdağ (1544 m.), on the southwest, south and southeast by the Taurus Mountains. To the west the plain extends up to the south-eastern slopes of the Sultandağlari Range, which is east and southeast of Niğde. There are three alluvial fans on the plain in the direct vicinity of Pinarbaşi: Konya, Çarsamba and Ibrala (Map 3.2). The plain is primarily watered by the Çarşamba Çayi system and secondary seasonal streams.

The climate of the Konya Plain today is semi-arid, with average precipitation below 300 mm. The plain experiences substantial seasonal temperature changes, with winter temperatures around freezing and mean summer temperatures greater than 20°C. The natural cover of the Konya Plain is steppe or open vegetation. Today the Konya Plain is partly occupied by patches of swamps and sand dunes (Erinç 1978). In the mountains south and southeast of the plain *Pinus nigra* and *Abies cilicia* dominate, whereas *Pinus brutia* forests are found over the watershed region. Oak is also common along the slopes of volcanoes that rise from the plain (Yakar 1994: 180).

At the time of the last glacial maximum (c. 25,000 to 20,000 BP), a huge shallow inland sea filled the whole of the Konya Plain (Roberts *et al.* 1999). As the climate recovered towards that of today in the last millennia of the Pleistocene period, the lake dried out, leaving an extensive alluvial fan. At the end of the Pleistocene period, in the Younger Dryas period there was a short-lived phase of moister conditions, and several smaller lakes formed within the basin. However, the lakes dried out by the beginning of the Holocene (Roberts *et al.* 1996: 19). Shoreline depositional landforms and wave-cut cliffs are evidence of the shallow but extensive palaeolake (Erol 1987).



Map 4.2: Location of Pinarbaşi on Konya Plain with surrounding alluvial fans (Kuzucuoğlu 2002). *For legend, see Appendix 1.*

As rivers and wadis entered the Konya Plain, most of their sediment load was deposited as fan-shaped masses of alluvium (Map 4.2[32]), the largest fan being deposited by the Çarsamba River and covers 474 km². Although broadly fan-shaped, its hydro-geomorphological characteristics are today more akin to an alluvial floodplain than an alluvial-fan environment. Overbank deposition of silts and clays over very low slopes have pushed these alluvial features towards the centre of the plain, on top of the lacustrine beds of palaeo-lake Konya (Roberts *et al.* 1996: 19).

A lithostratigraphic sequence from the alluvial fan of Ibrala located near Karaman provided evidence of changing sedimentary regimes. The fan underwent an extensive programme of hand auguring, showing that the Holocene alluvium was fine-grained, moderately sorted, and was underlain by a course-grained and poorly sorted lower alluvium of late Pleistocene age. On the distal part of the fan, a wedge of lacustrine marls and silty sand of probable deltaic origin separated two alluvial units. There was thus a sharp contrast between the alluvial regime of the Ibrala fan during the Holocene and in the Late Pleistocene, which appears to be related to major climatic changes at the end of the last glaciation (Roberts *et al.* 1996: 20).

---

[32] Map 4.2 is a close-up of Map 4.1. Map legend is listed in Appendix 1.

Based on palynological data, the paleoenvironment of the Konya Plain between 13,000 and 11,000 BP can be characterised as very extreme (Bottema 1987: 299). The low arboreal pollen percentages indicate that the plain was devoid of trees during this time. The herb pollen levels indicate that it was very dry during the period; conditions that would have prevented tree growth. This is consistent with an increase in precipitation. Between 11,000 and 11,200 BP moisture levels rose on the plain. However, from 11,200-10,500 BP drier conditions returned. After 10,500 BP, forest cover spread over the Taurus Mountains bordering the Konya Plain, *Betula* dominated, but was eventually replaced by *Quercus* at about 9,000 BP (Bottema 1987: 300). After 10,000 BP, *Gramineae* pollen increased and at the same time *Chenopodiaceae* pollen decreased.

4.3.1.1 Konya Basin Palaeoenvironmental research programme (KOPAL)

In 1994 the Konya Basin Palaeoenvironmental Research Programme (KOPAL), headed by Neil Roberts (1996, 1999 & 2001) began to investigate the environmental history of the Konya Plain[33]. The KOPAL team took multiple core samples around Pinarbaşi, Adabağ and Suleymanhaci Gölü (Roberts *et al.* 1999)[34]. Vibro-cores were taken in Pinarbaşi's spring, which is located directly below the archaeological site. The cores reached a depth of 1076 cm. The recovered cores were comprised of alternating grey to beige calcareous silts, which contained gastropods and diatomites. Between 647 and 785 cm, there was a locally darker (more organic) layer along with a layer of black to dark-brown silty humified peat. Core PN94C covered the period from 50,000 to 25,000 BP. Diatoms, ostracods and stable isotope data from this core confirm that Pinarbaşi was a freshwater site throughout this period. The dominance of periphytic and benthic diatoms through the record indicates that this freshwater was part of a shallow lake. The organic unit yielded an infinite C^{14} age and subsequent OSL[35] and U-TH[36] dates confirmed a major hiatus at or near to the surface of the sedimentary sequence (Reed *et al.* 1999). Unfortunately, the hiatus

[33] The Konya Basin Palaeoenvironmental Research Programme is investigating the late Quaternary environmental history of the Konya Plain in relation to its human occupation and, in particular, to the origin of Neolithic agriculture. Their initial concern is to examine the relations between changes in the natural environment (climate, vegetation, geomorphology, etc.) and the domestication of plants and animals during a time period when global climate was changing from glacial to interglacial conditions (Roberts *et al.* 1996).

[34] For an extensive summary see *The Late Quaternary in the Eastern Mediterranean Region*, 1999. vol. 18 no. 4-5. In Quaternary Science Reviews.

[35] Optically stimulated luminescence.

corresponds with the archaeological deposits at Pinarbaşi and no contemporary data could be extracted from the core.

Palaeological studies around Sugla Lake indicated a steppe climate that was hot and dry in the summers and cold and rainy in the winters throughout the Neolithic. Aytug's (1967) results showed that large trees similar to the ones that grow along the Taurus Mountains today such as pine, fir and cedar were common in addition to water-loving trees such as willows and lindens directly around Sugla Lake.

4.3.1.2 Pinarbaşi environmental reconstruction based on wood charcoal remains

Research by Asouti (2002) on the wood charcoal macro-remains from Pinarbaşi has revealed a charcoal assemblage dominated by tree and shrub taxa that can be attributed to a vegetation type very much akin to woodland-steppe comprising widely-spaced, drought-resistant trees such as almonds (*Amygdalus*), terebinths (*Pistacia*), hackberries (*Celtis*) and buckthorns (*Rhamnus*), with an understorey of shrubs such as Asteraceae (e.g. *Artemisia*) and Lamiaceae, alternating with stretches of grassland. They also include a smaller hygrophilous component (*Fraxinus*, *Phragmites*, *Tamarix*, *Vitex*) that can be identified with submerged marshes and riparian forests growing around the freshwater spring-fed pool and the shallow saline lake depressions receiving seasonal runoff from the volcanic uplands of Karadağ (Asouti 2002). Similar hydrological conditions during the early Holocene have been suggested for the marshes bordering the Pınarbaşı rock-shelters (Roberts et al. 1999).

4.3.1.3 Summary

The above palaeoenvironmental outline of the Konya Plain can be summarised within the CANeW chronology as follows:

ECA I: The Konya Plain is primarily dry during this period; however, running and spring water is discharged from the Taurus range while vegetation slowly increases (Kuzucuoğlu 2002).

---

[36] Uranium-thorium dating.

ECA II: Climate and environment are similar to the previous period, however, humidity starts to rise and affects local growth of endogenic resources (Kuzucuoğlu 2002).

ECA III: The forests begin to expand as does humidity levels due to the increase in water availability (Kuzucuoğlu 2002).

ECA IV: Humidity levels continue to increase favouring vegetation growth on forested slopes. Climatic conditions are approaching the mid-Holocene climatic optimum (Kuzucuoğlu 2002).

ECA V: This period corresponds to the Holocene climatic optimum in Anatolia. It is characterised by a period of climatic change and or desiccation in the region (Kuzucuoğlu 2002).

4.4 SUMMARY

Anatolia's palaeovegetational map fluctuated repeatedly in the early Holecene as a result of climatic fluctuations. The palaeovegetational map at the beginning of the Holocene indicates that continuous forests covered northern, western and southern regions of Anatolia. Forest steppe vegetation or steppe/scattered tree stands covered areas in the western part of the Central Anatolian Plateau, including the Eskisehir Plain, the Afyon province and the Lake District. Similar vegetation also covered the southern part of eastern Anatolia including the Malatya Plain, Altinova in Elazig, Bingöl, Mus and Bitlis regions (Yakar 1994:19). Palaeoenvironmental research indicates that the large Konya palaeolake receded after the height of the last glaciation leaving behind large standing water bodies in addition to extensive marshy areas in the early Holocene which was prone to extensive season flooding (Kuzucuoğlu 2002). The localised environment around Pinarbaşi appears to not have received as much seasonal flooding as other settlement sites. These environmental conditions would have been very favourable to grazing ungulates which dominate early Neolithic faunal assemblages. This will be further explored in Chapter 5.

CHAPTER 5: THE ARCHAEOLOGY OF CENTRAL ANATOLIA

The previous two chapters have outlined the archaeological terminology used to characterise sites and have described the environment of Central Anatolia from the end of the Pleistocene to the beginning of the Holocene. This chapter will review existing faunal data that has been recovered from Central Anatolian sites from the 9^{th} to the 6^{th} millennium cal BC.

The impetus of this review is new research being conducted within Central Anatolia that allows for a re-examination of subsistence practices within the region to take place. When the majority of the Central Anatolian sites were excavated recovery procedures, identifications and methodological approaches were very limited. These limitations are demonstrated in the quality of the faunal reports that were produced. For example, very little of the animal bone material recovered from Westley's (1970) analysis at Hacilar and Perkins analysis at Erbaba (Bordaz 1974) and Çatalhöyük (East) (Perkins 1969) was studied in any detail and the conclusions which were drawn from these early publications, however, were controversial, characterising Central Anatolian as a centre of primary cattle domestication where sheep and goat were domesticated much later (Buitenhuis 1994).

Zooarchaeological research within Central Anatolia has increased in the last decade. Recent field projects and excavations, including the renewed excavations at Çatalhöyük (East) (Martin *et al.* 2000) and Makarewicz's (1999) re-examination of the Erbaba faunal assemblage have resulted in an increase in data pertaining to the study period and therefore allows for a revised synthesis of Central Anatolia to be performed. The summary of this data will also provide a backdrop against which the sites at Pinarbaşi can be placed.

The chapter is divided into two sections. The first section summarises the faunal data in order to establish a pattern of animal subsistence practices in Central Anatolia from the 9^{th} to the 6^{th} millennium cal. BC. The second section uses the faunal data as an aide to environmental reconstruction to ensure that they are consistent with those outlined in Chapter 4.

5.1 CENTRAL ANATOLIAN PLATEAU SITES

The current dated archaeological record for Central Anatolia begins at 8400 cal BC at Asikli Höyük and ends at 5100 cal BC at Can Hasan I (Figure 5.1). These sites have produced the extensive cultural material from which Central Anatolia has been defined. The reconstruction of a complete cultural sequence from the early ECA I to the early ECA II in Central Anatolia is considered fragmented due to the scarcity of sites within the region (Buitenhuis 1994). Survey work in the last decade has resulted in the identification of at least 3 artefact scatters which have been classified as ECA I on the basis of the recovery of stone tools (Baird 1996; Appendix 1). The reconstruction of Central Anatolia's archaeological record will therefore be extended to the ECA I to include these recent finds.

There are currently 66 identified sites within the Central Anatolian Region dated between the ECA I and ECA III periods[37]. 14 have been excavated and 43 have been recorded during surveys. Of these, 2 are rock shelters, 7 are artefact scatters, 9 are open-air sites, 38 are mounds and 10 are atelier's (Tables 5.1 & 5.2).

Period	Excavated	Survey	Total
ECA I	-	3	3
ECA II	6	17	23
ECA III	8	23	40
Total	**14**	**43**	**66**

Table 5.1: The number of excavated and surveyed sites in Central Anatolia (as of March 2002).

Region	Rock Shelter	Artefact Scatter	Open Air Site	Mound	Atelier	Cave	Total
ECA I	-	3	-	-	-	-	3
ECA II	-	2	6	7	8	-	23
ECA III	2	2	3	31	2	-	40
Total	**2**	**7**	**9**	**38**	**10**	**0**	**66**

Table 5.2: Classification of the Central Anatolian Sites in Table 5.1.

[37] The identification of 96 sites within Central Anatolia is based on data derived from the TAY (Archaeological Settlements of Turkey) Project (http://tayproject.org/) database as of March 14, 2002. TAY has been designed to build a chronological inventory of findings about the cultural heritage of Turkey and to share this information with the international community. For a complete list of Epipalaeolithic sites in Anatolia see Appendix 1, Aceramic Neolithic sites, Appendix 2 and Ceramic Neolithic sites, Appendix 3.

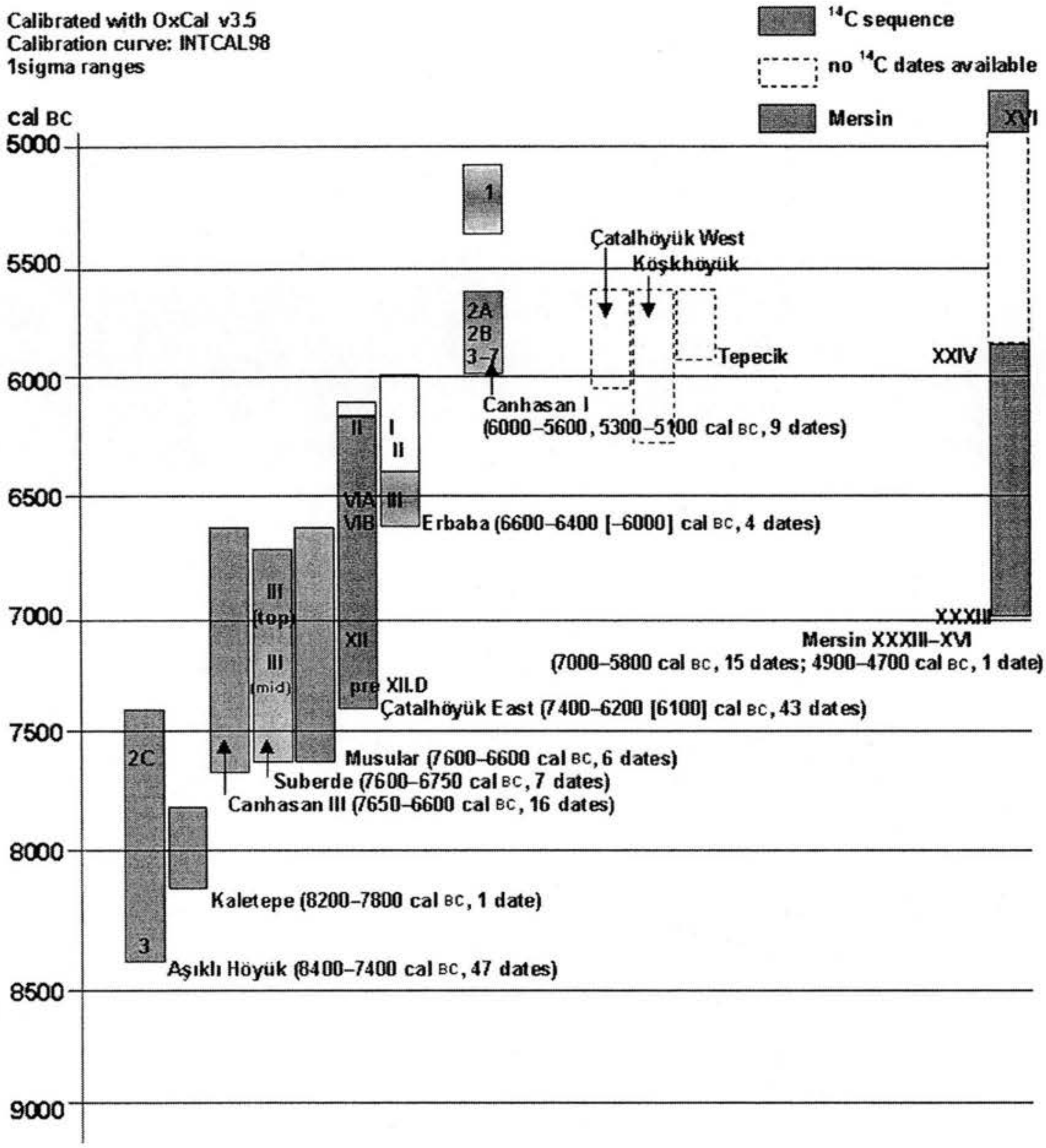


Figure 5.1: Central Anatolia: 9th-6th millennia cal BC[38]

5.1.1 Early Central Anatolian I (ECA I)

Three sites with ECA I type artefacts have been identified in Central Anatolia. They are Macunçay (Bostanci 1967), Dervisin Hani (Cohen 1989) and Kizil I (Baird 1996) (Appendix 1). All of the sites have been identified during survey and classified as ECA I based on the recovery of microliths. Macunçay produced 1,000 chipped stone fragments that are comprised of triangles, tranchets and lunetes with asymmetric angles. A few scrapers and points less than 4 cm in length were also found. At

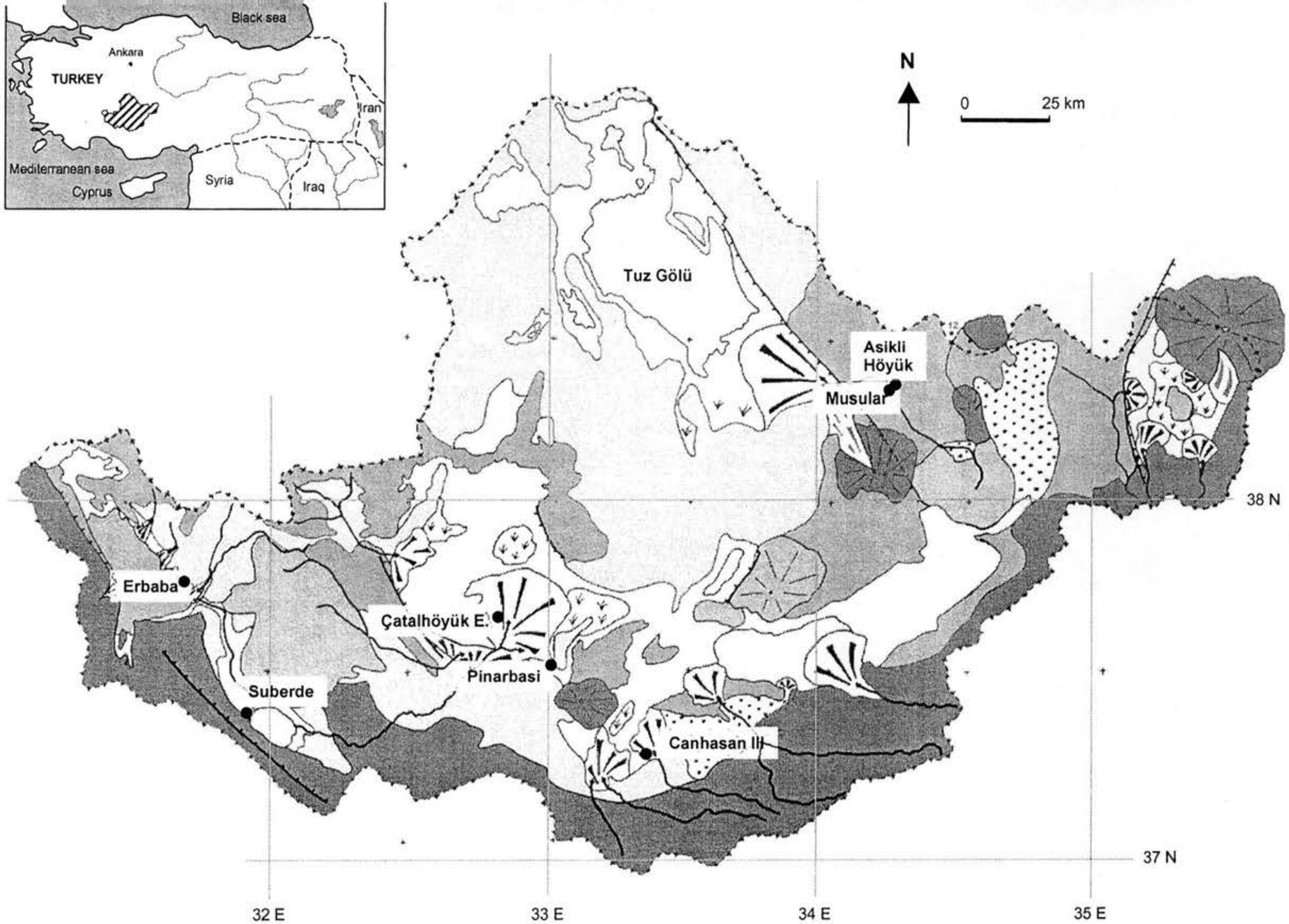
[38] Data compiled by Laurens Thissen, with the collaboration of Craig Cessford & Maryanne Newton. Source http://www.chez.com/canew/canchart.htm

Dervisin Hani, microlith tools and end scrapers, discoid scrapers and stemmed points were recovered. At Kizil I, ECA I type assemblage was recovered from redeposited material (Baird 1996). The lack of radiocarbon dates and other cultural material apart from tools leaves the chronological sequence within Central Anatolia's ECA I incomplete. In addition, sites have been dismissed as lacking an adequate sample size and additional technical features to confidently assign the sites to the ECA I period (Cohen & Erol 1969) However, it is clear from these initial findings that Central Anatolia was far from barren and inhospitable during the ECA I. There is no evidence at this time to suggest a unique microlith technology was present within Central Anatolia and therefore the potential for recovering other cultural material, characteristic of the Levantine Epipalaeolithic, is assumed to exist (Chapter 2). The presence of ECA I artefact scatters that includes microliths infers the presence of a broad species base of taxa to justify the creation of this tool kit within Central Anatolia during the period (Chapter 3). The problem remains that no secure cultural sequence with deposited faunal material has been recovered from Central Anatolia. However, the discovery of ECA I artefacts in secure contexts at Pinarbaşi Site A appears to produce, for the first time, data that may elucidate questions pertaining to the settlement of Central Anatolia during the ECA I. Pinarbaşi Site A will be discussed fully in Chapters 6 and 7.

5.1.2 Early Central Anatolian II and III (ECAII/ECA III)

There are presently 23 Aceramic and 40 Ceramic Neolithic sites identified in Central Anatolia (Table 5.1) (Appendix II and III). 40 have been recorded during surveys and 14 have been excavated. Of these, 2 are rock shelters, 4 are artefact scatters, 9 are open air sites, 38 are mounds and 10 are ateliers (Table 5.2). At present, almost half of the known sites within Central Anatolia have only been subject to preliminary surface collection and recordings.

The most significant sites in terms of the recovery of faunal remains in chronological order are Aşikli Höyük, Can Hasan III, Suberde, Musular, Çatalhöyük (East) and



Map 5.1: Map of Central Anatolian Plateau with location of key archaeological sites (Kuzucuoğlu 2002). For legend, see Appendix 1.

Erbaba (Map 5.1). A summary of the archaeological data from these sites will be presented with an emphasis on subsistence[39].

5.1.2.1 Aşikli Höyük & Musular

The sites of Aşikli Höyük & Musular are reviewed together because a possible interrelation exists between the two sites (Buitenhuis 1997; forthcoming).

5.1.2.1.1 Aşikli Höyük

Aşıklı Höyük is a large village settlement dated between 8400-7400 *cal* BC, corresponding to the middle PPNB of the Levant and early ECAII in Central Anatolian chronology (Esin 1998). The site is located on the western edge of the Taurus mountain range, approximately 25 km southeast of the city of Aksaray (Map 5.1). The residential architecture consists of rectangular mudbrick structures comprised of one to three rooms with entrances to these houses through the roof. The floors and walls of the houses are plastered. Hearths, which are the most common element within these structures, are usually placed in the corner of the rooms. The site also contains structures which appear to be for specialised functional use. Baked and half baked clay figurines and cones comprise the clay artefacts (Esin 1998). All of the chipped stone finds are made of obsidian. The obsidian technology at Aşıklı is based on a blade industry. The number of blade and blade cores greatly exceed the number of flake and flake cores. Other tool types include retouched blades, retouched flakes, pointed blades, points, microliths, borers and perforators (Balkan-Atli 1993; Esin 1999).

In addition to celts, slingstones, whetstones and various stone beads, many mortars and pestles, upper and lower grinding stones and a few cooking braziers were found (Esin 1998). Many bone awls, spatulas, fish-hook-like bone tools, clips, buckles, beads from deer teeth and antlers were found (Esin 1998). The dead at Aşıklı are buried into pits in the floors of the houses mostly in flexed position although there are examples of burials with the legs extended back. Floors were re-plastered after the burial activities. While most of the burials of men, women, children, babies and foetuses are single burials, double burials occasionally appear.

---

[39] Source, http://tayproject.eies.itu.edu.tr.

The Aşıklı inhabitants supplied part of their subsistence by cultivating plants. These species include einkorn (*Triticum monococcum*), emmer wheat (*Triticum dicoccum*), durum wheat (*Triticum durum*), barley (*Hordeum distichum*), vetch (*Vicia ervilia*), lentils (*Lens culinaris*) and peas (*Pisum satuvim*). Almond, pistachio nuts, berry of terebinth, and various grasses were also present (van Zeist-de Roller 1995).

5.1.2.1.1.1 Faunal Data

A total of ca. 44,000[40] animal bone fragments have been identified to species from Aşıklı (Buitenhuis 1997). All of the animal bone material comes from within architectural debris and consists almost exclusively of kitchen refuse. The majority of the animal bone material was hand collected (81%) versus dry sieving (Buitenhuis 1997). Buitenhuis (forthcoming) notes that hand collection at Aşıklı was good, and the few sieved samples that he has reviewed show the same faunal composition as the hand collected assemblage. Aşıklı is the first site from this period to show a significant dominance of caprines, primarily sheep (87.5%) within an assemblage (Figure 5.2). Buitenhuis's (1997) analysis indicated that the sheep and goat are morphologically indistinguishable from wild caprines. However, given Zeder and Hesse's (2000) recent work at Ganj Derah, size reduction is no longer considered one of the primary indications of domestication and management practices.

The age pattern, based on tooth wear and epiphysal fusion patterns, reveal a cull pattern which showed the majority of caprines were killed between the ages of 2.5-4 years (Buitenhuis 1994; 1997). The number of young animals was very small, however very young animals aged less than 6 weeks are present within the assemblage. Caprine sex ratios indicate there are no obvious division among the animals killed suggesting a winter pattern for the major kill-off as during this period *Ovis* herds gather and males and females mingle more than during the summer (Buitenhuis 1997).

[40] The 44,000 identifiable animal bones represent 25% of the total faunal assemblage (Buitenhuis forthcoming).

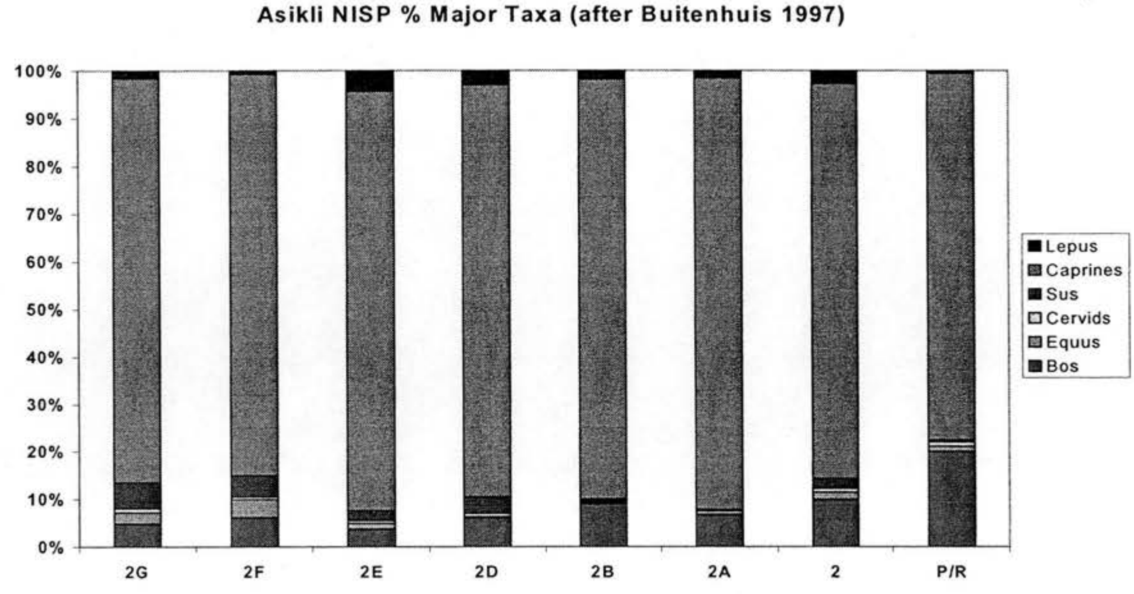


Figure 5.2. The relative proportions of selected taxa from the different levels of Asikli Höyük (Buitenhuis 1997) expressed as %NISP

The age pattern indicates the killing of animals primarily between January to April, which is the last period of gestation and of birth and the lack of animals. The high number of peri-natal elements is not consistent with known hunting practices in which pregnant animals are normally killed. In addition, no large numbers of animals older than 4 years are present which suggest a control over the kill-off which is not consistent with free hunting practices. Therefore, based on the dominance of caprines within the assemblage, their cull pattern and the presence of very young individuals that would not have been killed by hunters, the caprines from Aşıklı are interpreted by Buitenhuis (1994; 1997) as proto-domestic with possible evidence of herd management. Buitenhuis is conservative at this time in suggesting an external origin for the ideas of herd management practices at the site (1994; 1997).

Other taxa present are cattle (8.5%), horse (0.9%), pig/boar (2.2%), deer (0.7%), fox (0.2%), hare (2.5%), wolf (0.01%), numerous bird species (0.2%) but only two fish bones. The equid and deer represent wild fauna and the status of cattle and pigs is still undetermined (Buitenhuis 1997).

Buitenhuis's analysis of taphonomic preservation indicates the presence of different skeletal parts scattered throughout the site. Heads and hooves are less frequently found within the house refuse compared to the number of other postcranial parts. In contrast, the remains of ribcage and vertebrate column elements are very common which would not be expected from a hunting model. Buitenhuis (1994; 1997) concludes that this indicates the initial butchering was conducted at a processing site, such as Musular where the animals are slaughtered, and then brought to house area of the site fully dressed[41].

5.1.2.1.2 Musular

The site of Musular is located immediately west of Aşıklı. The open-air site lies on a rock outcrop and extends over a 220 x 120 m area. The site is contemporaneous with the latest occupation phase of Aşıklı and has been interpreted as a possible slaughtering and processing site for the larger settlement of Aşıklı (Buitenhuis forthcoming).

The Aceramic Neolithic settlement is present within the central part of the site. The architecture associated with this period yielded rectangular four room structures with stone foundations. Other architectural features include a mudbrick wall at least 10 m in length whose purpose remains undetermined. In addition, a rectangular single room structure, which has been interpreted as a temple, was identified. The temple structure has stone walls and a carefully painted red floor which suggests that the structure may have had a special, non-domestic function. The Aceramic Neolithic finds include obsidian chipped stone tools such as scrapers on flakes, points, splinter pieces, backed blades, burins and denticulates. Ground stone finds include several whetstones, a grooved object made from pumice stone and two stone bowl fragments. Bone tools include a spoon-shaped decorated object, a fragment of a buckle or comb-like object, a spatula and many awls. Graves were recovered within the settlement and skeletons continue to be buried in flexed position (Buitenhuis forthcoming).

5.1.2.1.2.1 Faunal Data

A total of 11,413[42] NISP animal bones were recovered for analysis from the Aceramic Neolithic deposit of the site. Recovery procedures at Musular were the same as those performed at Aşıklı. The majority of the animal bone material was hand collected with very little of the material being dry sieved. Buitenhuis

---

[41] The term 'dressed' mean eviscerating, removing the hide or skin, head and sometimes hooves of an animal, and/or otherwise preparing the animal's carcass for cutting and further processing.

[42] The 11,413 NISP animal bones identified from the 2000 and 2001 excavation seasons represent 10% of the total faunal assemblage (Buitenhuis forthcoming).

(forthcoming) notes that hand collecting will create a bias for remains of larger animals, as these stand out and are more easily picked up. However, he believes the hand collection at Musular was quite good, and the few sieved samples that he has reviewed show the same faunal composition as the hand collected assemblage (Buitenhuis forthcoming). Overall, the numbers of fragments from smaller mammals do increase, but in terms of their weight the representation of the different species do not change. Sieving the material did not provide material of species and groups that are not represented by the hand collected material. Remains of small mammal species, birds and reptiles are extremely rare, and no remains of fish have been discovered (Buitenhuis forthcoming).

The assemblage is dominated by ovicaprids (54.4%) and bovids (42.2%), followed by pig (1.5%), horse (.8%) and deer (.6%), canids (.3%) and hare (.1%). Of particular note is that small mammals, birds, reptiles and amphibians are almost completely absent from the sample.

The high percentage of cattle remains has no parallel at any other site within Central Anatolia. The cattle also appear to serve as primarily a source of meat versus ritual functions as seen at Çatalhöyük (East) (Section 5.1.2.4) since very few cranial remains are present. The number of cranial remains is usually quite high in settlement material; however it is very low at Musular. Also, the number of dental remains from the maxilla and mandibular teeth are relatively low and most are from very small fragments. It appears in this early analysis that cranial remains have been treated differently from the postcranial remains at Musular. The slaughter pattern based on the epiphyseal fusion of postcranial remains indicates hardly any younger animals are present in the material. Almost all of the cattle reached ages older than one year, and only 36 % were killed before they were 3-3 ½ years old. However, only 29% of the remains are from animals older than 4-5 years. The slaughter pattern indicates that most remains were from adults between 3-3.5 and 4-5 years. Size analysis using Meadow's (1999) Log size index method, indicates the cattle all compared well with the wild cattle from Aşıklı and Cayönüo (Buitenhuis forthcoming) and have therefore been interpreted as a wild population. Based on these findings, Buitenhuis (1997; forthcoming) believes the inhabitants of Musular were practicing intensive management or proto-domestic of the wild cattle population in order to select a particular age group from the wild which is similar to the behaviour exhibited on the ovicaprids at Aşıklı.

Ovicaprid cranial remains are quite high; however, they are comprised primarily of small fragments. In addition, the number of identifiable dental remains is quite small. Buitenhuis (forthcoming) believes that as with cattle, the crania of ovicaprids are primarily absent from Musular. Postcranial remains are well represented, although the number of phalanges is quite low compared to other elements. Buitenhuis (forthcoming) interprets the absence of cranial and foot remains as a result of specific slaughtering and processing pattern that may indicate Musular was not the primary butchery site for caprines. This interpretation is similar to that proposed at Aşıklı (5.1.2.1.1.1) whereby completely dressed carcasses are brought to the site to be further used (Buitenhuis 1994). The ovicaprid assemblage is dominated by adult males that appear to be morphologically wild. Buitenhuis (forthcoming) believes that hunting was practiced on bachelor male herds in which age and sex selection took place, resulting in managed breeding herds of wild females. This interpretation is similar to that at Aşıklı, although a higher percentage of young individuals are present in the Aşıklı collection.

There are 71 fragments identified as *Sus scrofa*. All skeletal elements are represented, but there are a high number of pelvis fragments. Size analysis using Meadow's (1999) Log size index method indicates the pigs of Musular are wild.

Other species are quite rare and smaller species such as small mammals, birds, reptiles, amphibians and reptiles are almost completely missing. Buitenhuis (forthcoming) does note that not sieving may be partly responsible for their absence at Musular, but the same recovery techniques were applied at Aşıklı which had a much wider faunal variety.

Buitenhuis (forthcoming) states that his analysis of the Musular faunal assemblage displays a highly sophisticated pattern of exploitation of wild fauna, illustrating the capability of the people to exploit and manage wild populations of ovicaprids and cattle in such a way that they are able to select from the total population without overexploiting the fauna. Buitenhuis (forthcoming) believes a relationship existed between Musular and Aşıklı, in which Musular was a slaughtering/processing area around the settlement site of Aşıklı. The specialised processing of ovicaprids and cattle took place at Musular which resulted in these taxa dominating the assemblage.

Larger adult individuals were butchered at Musular while smaller, more manageable individuals were taken into the settlement of Aşıklı. The assemblage from Aşıklı appears to be typical of food refuse while Musular represents a primary or secondary butchery location serving the larger site.

5.1.2.2 Can Hasan III

Can Hasan III is an Aceramic Neolithic village dated between 7650-6600 *cal* BC (ECA II). It is located 1.5 km. north of the village of Can Hasan on the Konya Plain (Map 5.1). The residential architecture at Can Hasan III is comprised of two room rectangular mudbrick structures. Building foundations are also made from mudbrick. The walls and floors are plastered and some were painted red. The two roomed structures are separated by intramural doorways. Other architectural features include benches, ovens and wall-ovens (French *et al.* 1972). The village plan includes central courtyards, several adjacent structures as well as alleyways. Unbaked and semi-baked objects were found (French 1970). Of the 70,000 chipped stone finds, 3,500 have been classified as tools. The raw material is mostly obsidian. Retouched points, point scrapers, steeply retouched blades, perforators, geometric crescents and trapezoidal shapes were found. Flint tools are rare; however, sickle blades were recovered. Bone artefacts include awls, spatulas and beads (French *et al.* 1972).

The botanical assemblage is comprised of two types of wild Einkorn wheat, domesticated Einkorn (in one and two row varieties), two types of hard wheat, durum wheat, rye, one row variety of barley, lentils and legumes with large seeds, as well as walnuts, berries, wild grapes and many types of grasses (French *et al.* 1972).

5.1.2.2.1 Faunal Data

The majority of the faunal material from Can Hasan III was published in a preliminary form where only species present have been identified (Payne 1973, French *et al.* 1972). Payne's (1973) preliminary identifications emphasize the importance of cattle (*Bos* sp.), sheep/goat (Ovis/Capra), pig (*Sus scrofa*) and equid[43] (*Equus hemionus* and *Equus hydruntinus*) within the assemblage. Other species, in smaller quantities, such as red deer (Cervus elaphus), roe deer (Capreolus capreolus),

---

[43] Payne (1991) has published extensive analysis of the equid remains from Can Hasan III which support his preliminary identification of *Equus hemionus* and *Equus hydruntinus* at the site.

hare (*Lepus*), canids (*Canis, Vulpes*), birds (*Aves*), snakes (*Ophidia*), tortoise (*Testudo*) and other small mammals were also present.

5.1.2.3 Suberde

Suberde is an Aceramic Neolithic village site dated between 7600-6750 *cal* BC (ECA II) (Bordaz 1965, 1966, 1968, 1973; Payne 1972; Perkins 1973; Perkins and Daly 1968). It is located on top of a limestone ridge called Görüklük Tepe. It lies where the Konya Plain borders the Taurus Mountains near the modern village of Suberde (Map 5.1). The residential architecture consists of square mudbrick houses. Some of the houses have stone foundations; however the majority of the buildings are constructed with just mudbrick held together with a clay mortar. The floors are often lined with stones and then plastered. Hearths are constructed above room floors and have received a plaster out layer. Poorly baked clay objects representing human and animal figurines have been found. A large amount of obsidian and flint chipped stone tools and debitage products were recovered. Tools include flakes, blades, points, triangular points, scrapers, perforators and backed blades. There is also evidence that some flint blades were used as sickles. Ground stone tools include polished celts in addition to burnishing, hammering and grinding stones. Bone tools include awls of different sizes and shapes, beads and pendants.

It has not been determined whether the variety of plants recovered was domesticated. Initial surveys suggest that agriculture was practiced. Wheat, barley, peas and lentils were used in their diets. Aquatic-products may have added to subsistence since shells of fresh-water mussels, which were probably collected from Lake Sugla, were found.

5.1.2.3.1 Faunal Data

Over 300,000 animal bones were collected from the two seasons of excavations (Perkins and Daly 1968). It appears from Perkins and Daly's (1968) article that the bones were recovered by hand collection and there is no indication that any sieving was performed during the recovery process. Only 14,000 (10%) bones formed the study collection. The majority of the assemblage (9,000 bones) was identified as sheep and goat. Sheep dominated the assemblage with a 5.7:1 ratio to goats. Combined, the caprines represent 70% of the lower level faunal assemblage and 50% in the upper level assemblage. *Bos* represent 14% in the lower level assemblage and increased to 30% in the upper level (300 bones in total). Boar remained constant within both levels at 14% (1400 bones). The remainder of the assemblage included red deer 7% (340 bones), jackal, fox, bear, wildcat, martins, badger, hedgehog, hare, roe deer and fallow deer. Only a very small number of fish bones, freshwater-clam shells and bird bones (species of pelican) were recovered. This is not surprising given that all the material was hand collected and no sieving for these relatively small bones was performed.

Based on their morphological study and the distribution of age classes, Perkins and Daly (1968) concluded that there was no indication of domestication in any of the 20 species identified apart from the dog. The cattle are classified as wild based on Perkins and Daly's interpretation of body parts producing a 'schlepp effect' pattern (1968). The 'schlepp effect' refers to the absence of leg bones within an assemblage resulting from the transport of large game animals from a kill site to a home settlement. The pattern produced by schlepping the carcass results in fewer leg bones but large quantities of foot bones being present within the assemblage. Suberde *Bos* data indicates 83% of the bones were from the foot and 17% were from the leg (Perkins and Daly 1968). Perkins and Daly (1968) interpreted this pattern as evidence for the *Bos* being wild. Perkins and Daly also interpreted the large percentage of sheep and goat as wild, hunted by means of co-operative drives which slaughtered entire flocks (1968:110). Payne (1972) questions this conclusion because the age cull profiles of the caprines are primarily between 3 months and 3 years and a wild population age range would not produce such a restricted profile. No morphological data was ever published to indicate if the population was wild or domestic. Payne interprets the dominance of caprines within the assemblage and their restricted age profile to indicate a herd management behaviour resulting from domestication practices (Payne 1972). Payne's interpretation has been more broadly accepted and the classification of Suberde as an early caprine domestic site within Central Anatolia appears more probable than a hunter's village. In addition, recent analysis of the faunal remains at Aşıklı Höyük by Buitenhuis (1994; 1997) (section 5.1.2.1.1.1) has indicated a similar age profile that has been interpreted as evidence of increasing management to produce a year-round supply of meat.

5.1.2.4 Çatalhöyük (East)

Çatalhöyük (East), meaning 'forked mound', is the largest village site in Central Anatolia. The site has been extensively researched and published and due to the sheer quantity of data available on the site, only a brief characterisation will be made with regard to the cultural material. The site is situated on the Konya Plain on the banks of the Çarşamba Çayi and is dated to between 7400 to 6200 cal. BC (ECAIII).

The excavated area comprises a village site of 300 mud brick and plaster houses described a closely packed agglutinative architecture which lack streets. The houses were accessed via the roof with the aid of ladders. The floors of the rooms were lime-plastered, painted with red-colour panels and covered with reed mats. Built-in benches and platforms lined the walls with small niches and ovens carved into them. Indoor grain bins were associated with some of the residences and figurines were recovered from several of these rooms. Non-utilitarian rooms were also present which have been interpreted as shrine rooms. Elaborate wall paintings and objects including decorated animal skulls were found in these rooms (Mellart 1967).

Burial customs vary between primary and secondary internments. Bodies were recovered bundled and placed beneath the floors of the sleeping chambers often with the head removed. Grave goods are rarely found; however yellow ochre stains and personal jewellery have been recovered.

Stone tools include delicately chipped arrow points, spearheads, and daggers; ground stone tools included mortars, pestles, querns, axes and adzes. Bone tools include awls, needles, hairpins and knife handles. Wooden bowls and woven baskets have also been recovered. Ceramic vessels have been recovered from levels as early as 7000 BC (Cauvin 2000). Pottery is primarily light in colour burnished ware. Most remarkable of all are the clay figurines. Women predominate as art subjects, but cattle, goats and other animal figurines are also common (Mellart 1967).

5.1.2.4.1 Faunal Data

The animal bone material recovered from the 1960's excavations has been analysed by Dexter Perkins Jr. (1969) and then Piere Ducos (1988). Based on their analyses, Çatalhöyük (East) became heralded as the earliest centre of cattle domestication in Near East. Perkins' metrical study of the cattle bones concluded that they were the only domestic subsistence taxon at the site and they became domesticated halfway through the occupational sequence[44]. Of the 2000 identifiable animal bones recovered, cattle represented 80% of layers X-XII and 70% of layer VI, sheep 6% and 25%, deer 6% and 2% and horse 9% and 4% respectively. Small mammals, birds and fish were very scarce, however domestic dog was identified[45] (Perkins 1969). Ducos and Grigson's (1989) analysis of the same material concluded that the cattle were morphologically wild based on size. However, Ducos (1989) also noted that based on cull pattern analyses, the cattle and sheep appeared to be subject to proto-élévage.

The renewed excavations at Çatalhöyük (East) and analysis of newly excavated faunal material do not confirm the pattern of animal exploitation previously suggested by Perkins and Ducos (Russell and Martin 2000; Martin *et al.* 2002). Martin and Russell's (2000) analysis reveal a consistent pattern throughout all contexts that sheep and goat comprise at least 60% to 80% of the assemblage and cattle less than 20%. However, cattle do dominate the off site excavation area called KOPAL. Martin (*et al.* 2002) interprets this area as a primary butchery site of cattle, cervids and boar. Equids are represented by never more than 15% and cervids, boar/pig and hare make up relatively small percentages throughout all the contexts.

It appears that the previously recorded predominance of cattle within the 1960's excavation was simply a result of the haphazard hand collection of large pieces of cattle bone[46] (Russell and Martin 2000). Preliminary morphological analysis on bones and horn cores indicates there is no evidence of size reduction at the earliest levels. There is initial indication that cattle appear slightly smaller in the later cultural deposits of the site. This data is preliminary and comparative work with the Aşıklı cattle material is still pending (Martin pers com.). At present it appears that the Çatalhöyük (East) cattle are the same size as those from Aşıklı (Martin *et al.* 2002). Cull pattern data is still pending and therefore evidence for herd management or control is outstanding. Based on these new results, it appears Çatalhöyük (East) no

---

[44] It must be noted here that excavations at Çatalhöyük took place for the sole purpose of uncovering a site in Central Anatolia that predated Hacilar. Hacilar's cultural material was considered fully developed from the time of occupation and therefore a predecessor to the Hacilar culture was needed that possibly contained transitional domestic fauna (Mellart 1964).

[45] Domestic dog was identified by B Lawrence (Perkins 1969).

[46] It was suggested that the large amount of cattle bones recovered from the Mellaart excavations was due to the financial bonus given to local workmen when they hand collected large bones from the trench (personal comment to this author by Dr David French 1996).

longer represents a cattle-centred economy which was Perkins original supporting argument for cattle domestication.

Sheep and goat not only dominate the Çatalhöyük (East) assemblage (60%), it appears that they arrived at the site domesticated as their size and cull patterns confirm long term human control. Some morphologically wild samples are also present within the assemblage but this has been interpreted by Martin (*et al.* 2002) as opportunistic hunting of local wild sheep and goat populations.

Figure 5.3[47] shows a breakdown of selected taxa by area and groups of levels, with KOPAL being an offsite trench, South Pre Level XII representing the earliest on-site deposits excavated, South XII–VII representing a continuation of the occupation sequence, and North/BACH/Summit covering the latest levels (VII–V) so far studied by the renewed excavation project (Martin *et al.* 2002).

The on-site areas show a roughly consistent pattern, with cattle at less than 20 %, equids varying somewhat through the South area sequence but never constituting more than 15 %, and cervids, boar/pig and hare making up relatively small proportions. Sheep and goats make up roughly 80 % of the earlier South area deposits and the North/BACH/Summit deposits, and a slightly lower 65 % of South Level XII–VII deposits. This strongly contrasts the off-site KOPAL area where cattle dominate and there are relatively high proportions of cervids and boar/pig, with far less sheep and goats, suggesting that the site-edge area sampled saw very different preparation, consumption and discard activities to the onsite areas (Martin *et al.* 2002).

From the new excavations, a broad range of other taxa is present within the assemblage. They include red deer, roe deer, fallow deer, wild boar, foxes, wolves, dog, bear, wild cat, gazelle, badger and hedgehog, as well some small mustelid species. Non-mammalian taxa include bird, frog, tortoise and fish (Frame *et al.*1999).

---

[47] Figure 3 shows relative proportions quantified by Diagnostic Zones (DZs) following Watson 1979. This method discounts horncores, antlers and other non-standard skeletal elements which may create biases in representation between species (which is a problem of using NISP).

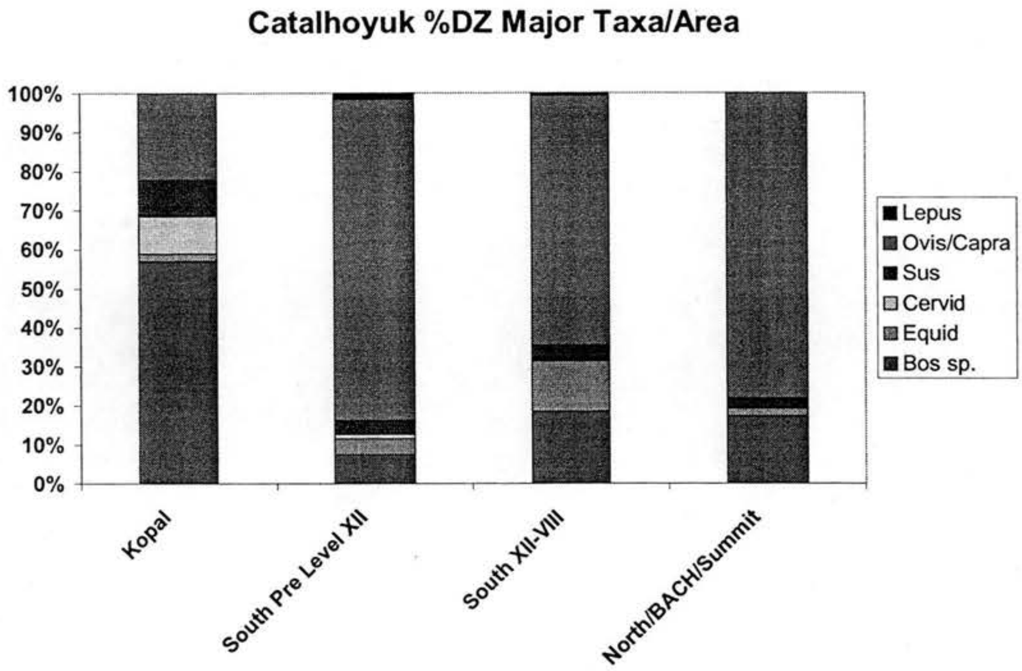


*Figure 5.3. The relative proportions of selected taxa from the different areas/levels of Çatalhöyük East, expressed as %Diagnostic Zones (*Martin *et al. 2002).*

1.1.2.5 Erbaba

Erbaba is a mound site located near Lake Beyşehir in south Central Anatolia (Map 5.1). The lower level (Layer III) cultural assemblage resembles Çatalhöyük (East) VII-VI and has been dated to between 6600-6400 cal BC (ECAIII). Architectural occupational phases yielded several rows of cell planned rectangular houses facing northeast. The small roomed structures have stone foundations and irregular limestone blocks for walls held together with mud-mortar. The majority of the rooms have red plastering on the floor. No doorways were found suggesting that the houses had entrances on the roofs. Layer III pottery has mica, sand and grit tempering and has been called "Fine Grit Tempered Ware". Clay finds include a figurine of a woman and a male figurine portrayed in a sitting position. Flint was used in the production of larger and heavier tools including scrapers. Obsidian was preferred for non-retouched blades and flakes. Points, sickle blades, notched and denticulated blades, end and side scrapers, perforators and burins are among the obsidian tools. Points are rare while sickle blades comprise 15% of the chipped stone production. Ground stone includes pounding stones, polishing stones, hammering and grinding stones. Emmer wheat, Einkorn, durum wheat, barley, lentils and peas were cultivated (Bordaz & Bordaz 1974).

5.1.2.5.1 Faunal Data

The Erbaba faunal remains were originally studied by Perkins and Daly (1973) however a recent reanalysis by Makarewicz (Martin *et al.* 2002) will also be reviewed. Perkins and Daly (1973) analysed over 15,000 identifiable bones. Sheep and goat dominate the assemblage at 84%, cattle 14%, deer 1% and pig 1% (Bordaz & Bordaz 1974). Birds and fish are rare, however no reference is given to recovery procedures and the lack of these taxa is probably due to sieving procedures. Based on thin section study, age and morphological comparisons, cattle, sheep and goat are classified as domesticated (however no supporting data was ever provided). Perkins and Daly observed a percentage shift in sheep/goat and cattle from level III to level I with cattle becoming more prominent within the assemblage and concluded that this transition indicated cattle were domestic (Bordaz & Bordaz 1974). Again, this claim was not supported by statistical data. Perkins and Daly's analysis characterise Erbaba as the earliest multiple animal domestic site in the Near East.

Level III faunal material has been recently re-examined by Makarewicz (1999). Makarewicz's (1999) analysis concurs with Perkins and Daly's (Bordaz & Bordaz 1974) analysis that cattle, sheep and goats were domesticated based on her analysis of size. Again, no metrical data has been presented to support this claim, and Makarewicz's study sample was too small to produce conclusive results (Martin *et al.* 2002). Given the date of the site, it is probable that sheep and goat were domesticated. However, convincing data to support the domestication of cattle within Central Anatolia is still unsubstantiated (Martin *et al.* 2002).

5.1.3 Summary of Central Anatolian study sites

All of the major Central Anatolian sites (Aşikli Höyük, Can Hasan III, Suberde, Musular, Çatalhöyük (East) and Erbaba appear to have affiliation with cultural traits similar to the Levantine traits outlined in Chapter 3[48]. However several cultural traits are completely indigenous to the Central Anatolian region. These include tightly packed house configurations (agglutinative plan), sanctuary rooms, post mortem decapitation customs and the prestige weaponry of obsidian and flint daggers created from oval and tanged points covered with flat pressure flaking (Cauvin 2000).

[48] These include rectangular houses with plastered floors and the chipped stone industry (Cauvin 2000).

All of the villages appear to be fully agricultural in crop cultivation and posses the knowledge to control major wild animal species (cattle, sheep and goat) and or domestic animals. The faunal summary presented above is beginning to display a similar pattern of species representation within assemblages for Central Anatolia (Table 5.3). Caprines represent at least 60% of the assemblage with cattle 15%, boar 10-15%, deer 10% and then the remainder of the assemblage comprised of species such as wolf, dog, cat, badger etc. Birds and fish are consistently rare within all of the assemblages which is surprising given the environmental conditions in Central Anatolia that would have produced favourable ecological habitats for these taxa.

All of the major Central Anatolian sites appear initially settled either with the knowledge to domesticate or with domesticated caprines. All of the cattle material reported are morphologically wild in size. There is however a possible indication of selective culling occurring within the wild herds. Erbaba does claim to have domestic cattle, however no substantiating data has been provided. Based on these new results, Central Anatolian sites are no longer represented by cattle-centred economies. The sites are settled with domesticated caprines and then what appears to be loose herd management practices later applied to indigenous wild populations of cattle and pig (Martin *et al.* 2002). It appears Central Anatolia followed a similar pattern of caprine domestication as the rest of the Levant. However, it appears that Central Anatolian sites did domesticate indigenous cattle and therefore the region can be included within the broader range of cattle domestication that occurred within Anatolia, the Taurus and Zagros Mountain region (Bar-Yosef 2000).

The subsistence strategies exhibited at the sites also appear to be highly complex and sophisticated as a broader inter-site relationship appears to be emerging. The two largest settlement sites, Aşikli Höyük and Çatalhöyük (East), appear to have small processing sites around their settlements (Musular and KOPAL) where primary butchery of larger species took place. A secondary external site located within the general proximity of the main site whose function was to serve the larger site is a new discovery not only in Central Anatolia but within this early time period within south-western Asia. This sophisticated inter-site relationship hints at a broader more complex animal procurement strategy that must have existed within Central Anatolia from its earliest occupation layers (Martin *et al.* 2002).

Aşikli Höyük (Buitenhuis 1997)	Can Hasan III (French 1972; Payne 1973)	Suberde (Perkins 1969)	Musular (Buitenhuis 2002)	Çatalhöyük East (Martin et. Al 2000)	Erbaba (Bordaz 1974)
Lagomorpha	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**
Lepus capensis		*Lepus capensis*	*Lepus capensis*	*Lepus capensis*	*Lepus capensis*
Carnivora	**Carnivora**	**Carnivora**	**Carnivora**	**Carnivora**	**Carnivora**
		Ursus arctos		*Ursus arctos*	
		Meles meles	*Meles meles*	*Meles meles*	
		Martes sp.			
Vulpes vulpes	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*
Canis lupus	*Canis lupus*		*Canis lupus*	*Canis lupus*	
	Canis familiaris	*Canis familiaris*	*Canis familiaris*	*Canis familiaris*	
		Canis aureus			
		Felis silvestris		*Felis silvestris*	
Artiodactyla	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**
Sus scrofa	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*
			Bos sp.		
Bos primigenius		*Bos primigenius*	*Bos primigenius*	*Bos primigenius*	*Bos primigenius*
				Bison bonansus	
	Capra sp.			*Capra* sp.	*Capra* sp.
Capra aegagrus	*Capra aegagrus*	*Capra aegagrus*	*Capra aegagrus*		
				Gazella gazella	
	Ovis sp.			*Ovis* sp.	
					Ovis aries
Ovis orientalis		*Ovis orientalis*	*Ovis orientalis*		
Capreolus capreolus	*Capreolus capreolus*	*Capreolus capreolus*		*Capreolus capreolus*	
Cervus elaphus	*Cervus elaphus*	*Cervus elaphus*	*Cervus elaphus*	*Cervus elaphus*	
Dama dama		*Dama dama*	*Dama dama*	*Dama dama*	
Perissadactyla	**Perissadactyla**	**Perissadactyla**	**Perissadactyla**	**Perissadactyla**	**Perissadactyla**
		Equus sp. (hemionus?)			
Equus hydruntinus	*Equus hydruntinus*		*Equus hydruntinus*	*Equus hydruntinus*	
Equus hemionus	*Equus hemionus*			*Equus hemionus*	*Equus hemionus*
Equus caballus			*Equus caballus*	*Equus caballus*	

Table 5.3: Comparative mammal list at main sites in Central Anatolia.

5.2 Central Anatolian Early Holocene Environmental Reconstruction Based on Faunal Data

Animal bones recovered from stratified archaeological deposits can be used as an indirect method for reconstructing palaeoenvironments. All animal species have specific environmental preferences. Therefore, if the remains of a species are recovered from a prehistoric settlement, it is logical to assume that the species preferred habitat is close to that settlement[49]. This section is divided into two. The first section will be a zoogeographical summary of the main herbivore taxa; cattle,

[49] It must also be stated that faunal material recovered from an archaeological site only represents the species that were being exploited and therefore is not a complete reconstruction of all local species (Bökönyi 1982:149). In addition this assumption does not account for extended trade networks that possibly would have transported exotic taxa into foreign regions.

sheep, goat, pigs, equids and deer with reference to their ecology and ethology which dominate the archaeological record of Central Anatolia. The second section is an environmental reconstruction using the above zoogeographical preferences of the four main herbivore taxa which appear in the main Central Anatolia sites (Aşikli Höyük, Can Hasan III, Suberde, Musular, Çatalhöyük (East) and Erbaba).

5.2.1 Zoogeography of the four main herbivore taxa present in Central Anatolia

Each large herbivore found within the Central Anatolia archaeological deposits has specific habitat preferences. The late Pleistocene and early Holocene zoogeography of cattle, sheep, goats, pigs, equids and deer with comments on their ecology and ethology will be summarised.

5.2.1.1 Cattle: *Bos primigenius* and the wisent, *Bison bonasus*

Both species of cattle can be found in a broad range of different environments. However, they prefer woodland vegetation with open grasslands and a large supply of water (Uerpmann 1987: 71). Social organisation includes the integration of males and females into mixed herds. Herds are of variable size but generally consist of around 20 individuals. However, it is well documented that bison will form into several large herds of up to hundreds or even thousands of animals. Outside the rutting period, males are either solitary or in male groups of two to ten 3 or 4 year old individuals (Bouissou *et al.* 2001).

Bos primigenius's wide horn spread would have prevented it from moving around in dense forest which has led Grigson (1969) to speculate that there is a possibility that separate 'woodland' and 'plains' forms of auroch developed. Grigson (1969) states that the plains auroch would possibly been larger in size than the woodland variety. The overall size of *Bos primigenius* also reduced at the end of the Pleistocene due to post-Pleistocene dwarfing related to climatic change (Grigson 1989). Studies also indicate that European aurochs are larger than Levantine samples (Grigson 1989). All these must be considered when analysing *Bos primigenius* size as standard comparative samples come from Denmark (Grigson 1989).

5.2.1.2 Caprines: *Ovis orientalis* and *Capra aegagrus*

Ovis orientalis are able to survive in a variety of habits. They are grazing ungulates that prefer hilly regions and the foothills of mountains although their capability to climb is slightly less developed than in goats (Clutton-Brock 1999). Their good running ability allows them to occupy relatively flat areas that contain valleys and gullies, which are used for protection (Uerpmann 1987). For coverage, wild sheep prefer semidesertic, steppic or dwarf brush vegetation versus denser strand of high brush or woodlands (Uerpmann 1987). General behaviour characteristics of the sheep are vigilance, flocking and a strong mother-offspring bond in which the young display a following relationship with their dam (Fisher and Matthews 2001).

Capra aegagrus is found over much of the same range as the Asiatic mouflon (*Ovis orientalis*), however, it prefers a much higher mountainous habitat. Today it inhabits the Taurus Mountains of Turkey and can be found in the mountain ranges of Europe, Asia and Ethiopia (Clutton-Brock 1999). It prefers a typical rocky habitat but has been known to occupy cliffs and slopes which are comparatively lush. The goat's diet consists primarily of grass, twigs, leaves, berries and bark (Uerpmann 1987).

5.2.1.3 Pig: *Sus scrofa*

The wild boar, *Sus scrofa*, is one of the most widespread large animals of the Middle East and is found throughout Turkey's archaeological record and is still found today in the mountain regions (Uerpmann 1987: 41). It is adapted to a wide variety of environments including wooded hills, forests and occasionally in semi-desert; however, habitant preference is for a river thicket and reed bed environment which provides a diet of fruits, berries, acorns and mushrooms (Uerpmann 1987: 41). Boars require daily watering and on average consume three times more water than feed daily (Zeder 1994). Boars are communal animals which form small herds of three to four females with related piglets and juveniles. Males are usually solitary, except in rutting season. Wild pigs do not migrate great distances, however they will move seasonally between river bottoms and hillside forests. Voigt (1978) believes that the seasonal transhumance of pigs over short distances is feasible. However, Zeder (1994) notes that pig water and fodder requirements and also their low heat tolerance would mitigate long distance transhumance in arid and semidesertic environments.

5.2.1.4 Equids

During the Pleistocene, equids were the most abundant medium-sized grazing animals of the grasslands and steppes of Africa, Asia, and the Americas (Uerpmann 1999). The equids are grazers and their high-crowned teeth and digestive tract are specialized for the assimilation of grasses. Equid home ranges can be as small as 30 km square in the best habitat, but they could extend it to over 600 km square in migratory populations. The basic social unit is the breeding herd of a stallion with an average of four or five mares and their foals. Stallions fight viciously for control of females. Males that do not hold breeding herds join bachelor groups of up to 1 5, with dominance rank depending on age (Bauer, McMorrow, & Yalden, 1994).

Three species of wild equids inhabited Anatolia during the final stages of the Pleistocene and Early Holocene. These are the wild horse (*Equus ferus)*, the hemoine or onager (*Equus hemionus)* and the hydruntine (*Equus hydruntinus)* (Uerpmann 1987).

Equus ferus was widespread in Eurasia, ranging from the Iberian Peninsula in the west to Beringia and Alaska in the east. The southern limit of their range reached the Levant and southwestern Iran during the last glacial maximum. In the Holocene the range of the wild horse became restricted by the expansion of forests and by shifts of climatic boundaries, the wild horse preferring a cold temperate continental zone with open plains.

Equus hemionus's range covered most of the steppe and desert regions from the Black sea to the Ural Mountains in the north and east to the Gobi Desert. In the south they occupied Anatolia, the Negev and the deserts of Arabia, Persia, Afghanistan, and Pakistan, habitat preference being highland or lowland desert, semidesert, or steppe flat country.

Equus hydruntinus inhabited southern Europe and western Asian until the late prehistoric period. Little is known of this extinct equid although its bones and teeth are often found in archaeological sites and have been closely associated to a type of zebra. Comparative Plains Zebra (*Equus burchelli*) behaviour indicates an equid that prefers a habitat with more annual rainfall as well as more accumulated vegetation than other equid species. Habitat preference is open woodland, scrub and grassland. The Zebra must go to a water source at least once a day and rarely moves more than 1 to 2 km from it. This preference is most likely due to the large amounts of food the zebra eats. The Plains Zebra is primarily a grazer but will occasionally browse, eating grasses, and focusing more on quantity rather than quality of food. The Plains Zebra's home range covers 110-220 sq. kilometres and they will travel up to 60 km to reach grazing land (Bauer, McMorrow, & Yalden, 1994)

5.2.1.5 Deer: *Dama dama, Capreolus capreolus* and *Cervus elaphus*

Fallow deer, *Dama dama,* prefer deciduous or mixed woodlands on gently rolling terrain. They feed in open, grassy areas but require tree cover and undergrowth for shelter and winter food. Roe deer are found in a wide variety of habitats, ranging from open moor to a thick covered conifer or deciduous woodland. The ideal habitat could be considered as coppice and pockets of deciduous woodland.

Roe deer, *Capreolus capreolus,* are predominantly selective browsers; however they also graze, feeding on shoots, herbs, grasses, fruits, nuts, fungi, pine needles and twiggy browse when necessary.

Red deer, *Cervus elaphus,* have had a historically wide distribution as they can adapt to a variety of habitats (Uerpmann 1987). Ideal habitat is grasslands or meadows interspersed with forests. Grasses and forests are preferred during spring and early summer, and woody browse is preferred during winter.

5.2.2 Environmental reconstruction by region

By applying the above zoogeographical preferences of the four main herbivore taxa outlined above, to the study sites in Central Anatolia (Aşikli Höyük, Can Hasan III, Suberde, Musular, Çatalhöyük (East) and Erbaba), it is possible to reconstruct palaeoenvironmental conditions during the study period from the zooarchaeological record. Central Anatolia will be divided into eastern (Aşikli Höyük and Musular), western (Suberde and Erbaba) and central (Can Hasan III and Çatalhöyük (East)) for this reconstruction.

5.2.2.1 Eastern - Central Anatolia

The fauna from Aşikli are dominated by caprines and cattle and primarily just cattle at Musular. Both species appear to be indigenous to the region based on their identification as wild. The dominance of wild sheep indicates a plateau region abundant in grasses, sedges, and forbs in addition to a light forest cover due to the presence of wild cattle. The small number of deer and boar bones recovered from Aşikli and Musular indicates a low tree cover in the area (Payne 1985). Payne (1985) states that the red deer would have been tolerant of fairly open conditions when grazing in smaller herd sizes and wild boar would have been concentrated in reed-marshland areas rather than their favoured woodland areas hence their small presence within the assemblage (Yakar 1994). The presence of caprines, wild cattle and the small numbers of deer and boar therefore indicate a fairly open environment around the two sites with restricted light forest cover from mid 9th millennium cal BC to the mid 7th millennium cal BC in the eastern part of Central Anatolia. This reconstruction matches Roberts (1982) analysis whereby steppic vegetation due to an arid climate dominated the region and by 6,400 BP the climate was more humid due to higher precipitation, which resulted in increased tree growth (Chapter 4).

5.2.2.2 Western – Central Anatolia

At Suberde and Erbaba, the faunal assemblages are composed primarily of wild sheep then aurochs, red deer, wild boar and then small amounts of goat, roe deer, fallow deer and brown bear (Perkins & Daly 1968; Perkins 1973). This has been interpreted by Perkins and Daly (1968) and Perkins (1973) as indicating an environment from 7600-6400 cal BC that was dominated by grasses and probably very little forest cover. Given the presence of aurochs, red deer, boar and bear which all favour forested environments (section 5.2); there was probably a more substantial forest cover in this region from 7600-6400 cal BC.

5.2.2.3 Central - Central Anatolia

The faunal assemblage at Can Hasan III was dominated by species that preferred habitats with forest and forest steppe, indicating that the site lay in an area with dry and grassy vegetation and less likely along a lake or in a forested area (Payne 1972; Bökönyi 1982). At Çatalhöyük (East), Perkins (1969) speculated that there was a withdrawal of the forest cover as red deer bones are rare, even though auroch and onager are still fairly common[50] (Perkins 1969; Yakar 1994). However, Asouti's (2000) research indicates the Konya Plain had a substantial oak woodland mosaic and grassy areas which would have provided an ideal habitat for all three deer species. Roberts' (1999) reconstruction of the Konya Plain also reveals a relatively dry alluvial plain with steppic vegetation and scattered oak woodlands in mountainous areas; however after 8,000 BP extensive flooding created a number of shallow lakes which would account for the reduction in forest cover.

The above reconstruction of Central Anatolia's environment is restricted to primary dietary species based on human preference and selection. It does however appear to

[50] Perkins (1969) believed the cattle to be domesticated and therefore no longer subject to natural habitat preference.

support the extensive palaeoenvironmental reconstructions being conducted by Roberts (2000) (reviewed in Chapter 4).

5.3 SUMMARY

The presence of ECA I type material attests to the activity of communities within Central Anatolia pre-9000 cal BP. There is no doubt that these sites will be excavated in the near future and complete cultural assemblages recovered. Based on the faunal material presented above, it appears that food-production in Central Anatolia was due to a diffusion of primary village farming communities from possibly south-eastern sources. The transition to agriculture for the Central Anatolian region appears to begin with caprines then cattle. At this time it appears that the Levant continues to be the diffusional source of these ideas, specifically south eastern Anatolia. There does appear to be a local sequence of development of cattle domestication within Central Anatolia, however, cattle were not the first domesticates of the region. The range of species recovered from the archaeological deposits corresponds with the palaeoenviromental data presented in Chapter 4 that characterises Central Anatolia during the Holocene as a relatively dry alluvial plain with steppic vegetation that was prone to seasonal extensive flooding.

This overview of existing faunal studies of early Neolithic material from Central Anatolia highlights the lack of information presently available before 8400 cal BC and the gap that exists in the faunal record from the end of the 7^{th} millennium cal BC which corresponds to the end of the Çatalhöyük (East) and Erbaba sequences to Can Hasan I (Figure 5.1). The newly excavated sites at Pinarbaşi Site A and Site B will now be introduced and will begin to fill in the chronological sequence of Central Anatolia (Chapter 6, 7 & 8).

CHAPTER 6: PINARBAŞI SITE A AND B

The previous chapters have outlined the archaeological terminology used to characterise sites and described the environment of Central Anatolian from the end of the Pleistocene to the beginning of the Holocene. In addition, the existing faunal data that has been recovered from Central Anatolian sites from the 9^{th} to the 6^{th} millennium cal. BC has been reviewed. This chapter introduces the newly excavated sites of Pinabaşi Site A and B and reviews the cultural assemblage from these sites. Background information regarding the excavation will be summarised and the significant finds outlined.

6.1 BACKGROUND

Dr David French first drew attention to the sites at Pinarbaşi while he was working at Can Hasan in the 1970's. At that time, French noted small amounts of chipped stone scatters during a preliminary survey of the area (Watkins 1996). In 1993, Dr Trevor Watkins and Dr Douglas Baird visited the site as part of the Konya Plain Survey[51]. A preliminary inspection of the site noted a series of small-scale occupations, constructions and tombs dating from the Late Chalcolithic/Early Bronze Age to the Byzantine. However, recent damage to the site by looters had unearthed evidence of small-scale obsidian bladelets and flakes. The material was found in several rock shelters and in an open site located at the edge of a small spring-fed lake just to the north of the rock shelters. The spoil-heap at this site also contained genuine microliths along with two pieces of decorated stone[52]. Indications were that there were possibly numerous Epipaleolithic settlement sites at Pinarbaşi.

Prior to this discovery, no rock shelters or open village sites of an early prehistoric date had been discovered within Central Anatolia. Because of the existence of Pinarbaşi prehistoric material and the threat of damage to the site from looting, the

[51] The purpose of the Konya Plain Survey was to provide a detailed reconstruction of the settlement history of the Konya Plain. Trevor Watkins and Douglas Baird undertook a reconnaissance season in September 1993, working mainly in the area around the site of Çatalhöyük itself. The objectives of the short season was to assess the task and the potential of a major survey of settlement sites on the Konya Plain, particularly the area around Çatalhöyük, and to test field methods for use in future seasons. The visit to Pinarbaşi was an extra, since it involved travelling beyond the area defined for the initial survey.

[52] The survey team also noted other possible rock-shelters, and a series of bedrock mortars on a rocky terrace. Byzantine sherds and remains of two field terrace walls were found across the slope below the rock-shelters.

survey team recommended in their 1993 report to the Turkish Directorate-General of Museums and Antiquities that a rescue excavation be undertaken (Watkins 1996). The Karaman Museum[53] confirmed this recommendation to the Director-General, who subsequently granted a 5 year rescue excavation permit to Cengis Topal, Assistant Director of the Karaman Museum and Dr Trevor Watkins, Department of Archaeology, University of Edinburgh[54]. The excavation was also incorporated into the Çatalhöyük Research Project[55] because of its potential for shedding light on what may be termed the long-term history of Çatalhöyük (East).

As outlined in Chapter 2, events and incidents occurred that resulted in only two seasons of excavation being conducted at Pinarbaşi, the first in September 1994 and the second in September 1995. Permits to excavate were not obtained by Dr. Watkins for 1996, 1997 and 1998 due to administrative problems. The incidents outlined in Chapter 2 therefore impacted on the data collected and available to specialist for analysis. The following sections therefore summarise Pinarbaşi Site A and B's cultural material as interpreted by the primary excavator Dr. Watkins, lithic specialist Dr. Baird, wood charcoal specialist Dr. Asouti and small mammal bone specialist Emma Jenkins.

6.2 PINARBAŞI LOCATION

The archaeological sites of Pinarbaşi are located at the southern edge of the Konya Plain in Central Turkey (Map 6.1). Pinarbaşi is located directly north-west from the great volcanic massif of Kara Dağ that rises over a thousand metres above the surrounding plain. The sites are located within a ridge of limestone hills that are the result of volcanic up-thrusting (Figure 6.1 & 6.2). The northern tip of the ridge forms a cliff, immediately below which is a spring that feeds a permanent shallow lake that extends northwards into the seasonal water and reed-marshes of Eski Hotamişgölü[56]. At the base of the cliff, there are several rock shelters. The area then slopes towards

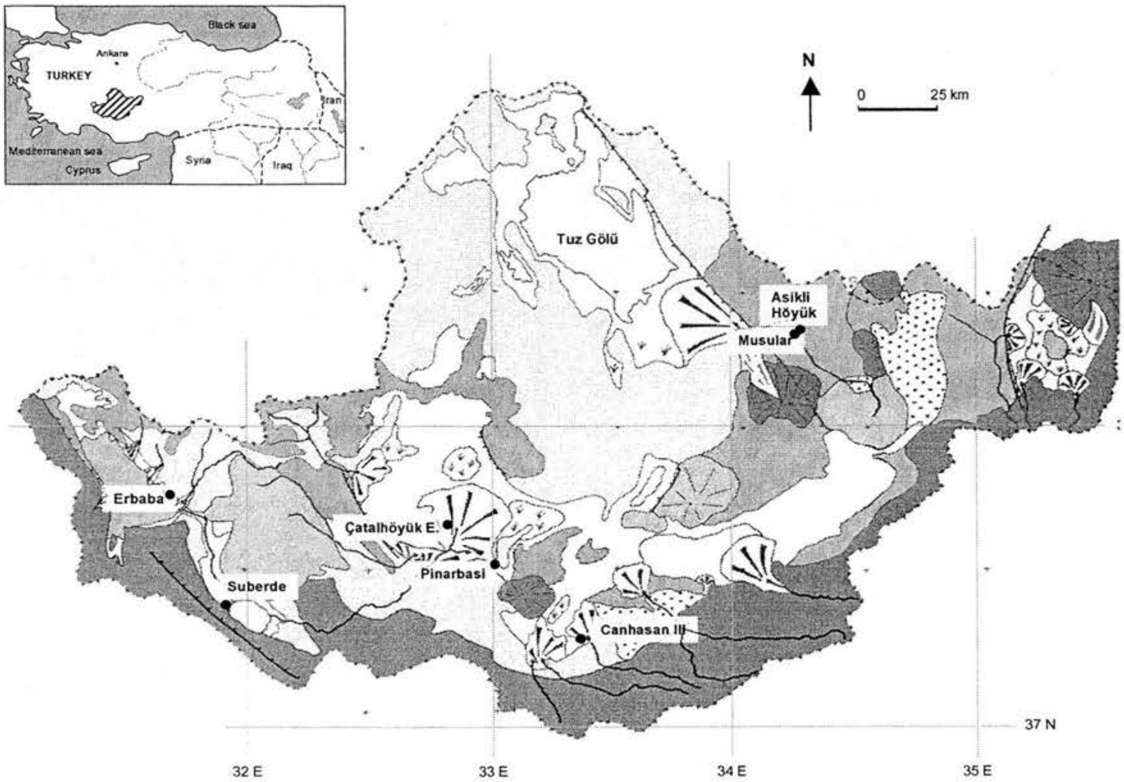
[53] Pinarbaşi is situated within the territory of the Province of Karaman.

[54] The excavations were funded by the British Academy, the British Institute of Archaeology at Ankara, The Society of Antiquaries of London and various funds at the University of Edinburgh.

[55] The Çatalhöyük Research Project is centred on the renewed investigation of the Neolithic settlement site of Çatalhöyük on the Konya plain in central Anatolia. The project is the conception of Professor Ian Hodder of Cambridge University, who is its overall director.

[56] At the end of the Pleistocene this area was one of five shallow basins on the Konya Plain.

the lake where it extends into a short peninsula that terminates in a pile of massive limestone boulders.



Map 6.1: Central Anatolian regional map with location of Pinarbaşi (Map taken from Kuzucuoğlu 2002). For legend references see Appendix 1.

The location of Pinarbaşi is of particular importance because it is located within an ecotone. An ecotone is defined as a transitional zone between different adjacent ecological communities, such as forest and grasslands. It has some of the characteristics of each bordering community and often contains species not found in the overlapping communities (McClenachan *et. al.* 2001). At Pinarbaşi, three kilometres southeast from the site is forested basalt volcanic massif of Kara Dag, immediately behind the site is a ridge of limestone hills, the peninsula below the rock-shelters projects into a lake rich in fish and surrounded by many square kilometres of marsh and reed-beds, to the north are seasonal salt marshes, and to the west is the vast expanse of the Konya Plain, to the southwest are the Taurus Mountains. All of these environments are adjacent to each other at the site and would have provided the inhabitants with a higher density of resource opportunities within a very short distance.

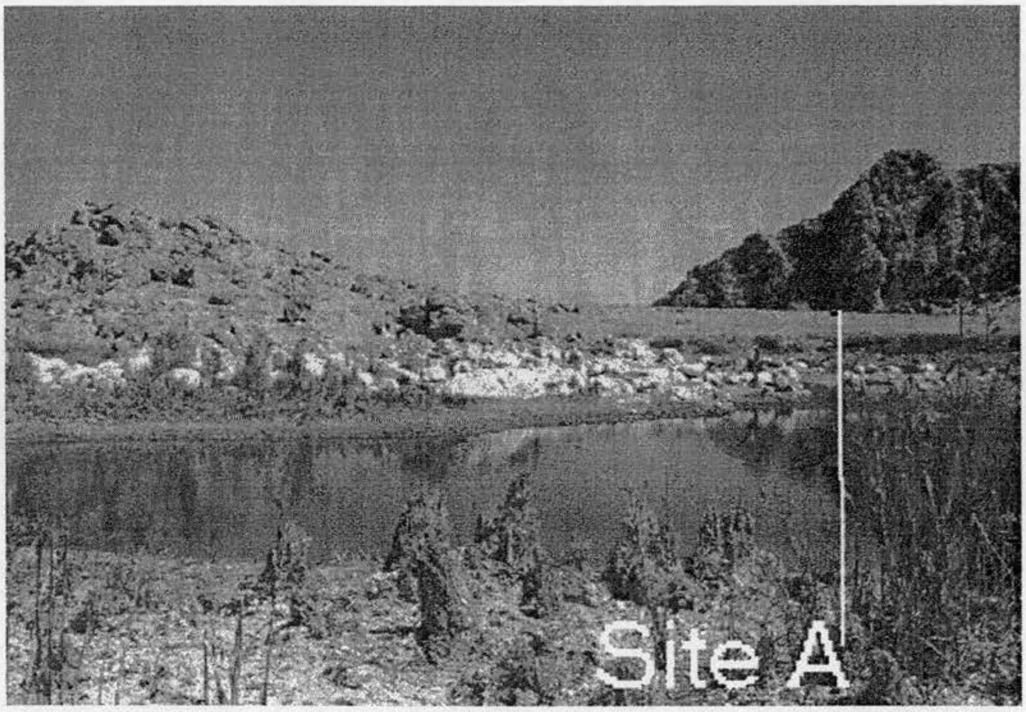


Figure 6.1: Pinarbaşi Site A.

Figure 6.2: Pinarbaşi Site B.

6.3 OPEN AIR SITE A AND ROCK SHELTERS B-F

Pinarbaşi's sites consist of an open air settlement named Site A and a rock shelter Site B, plus five additional rock shelters with archaeological material noted during the 1994 survey (Figure 6.3). The main aim of the 1994 and 1995 excavations was to learn how deep the stratigraphy was at Sites A and B, obtain cultural material from both sites, assess the quality of the archaeological material, obtain botanical and zoological material to assess the research potential for a detailed regional environmental reconstruction and obtain samples for radiocarbon dating (Watkins 1996). The 1995 excavation season concentrated on Site B with a goal of doubling the area excavated in 1994.

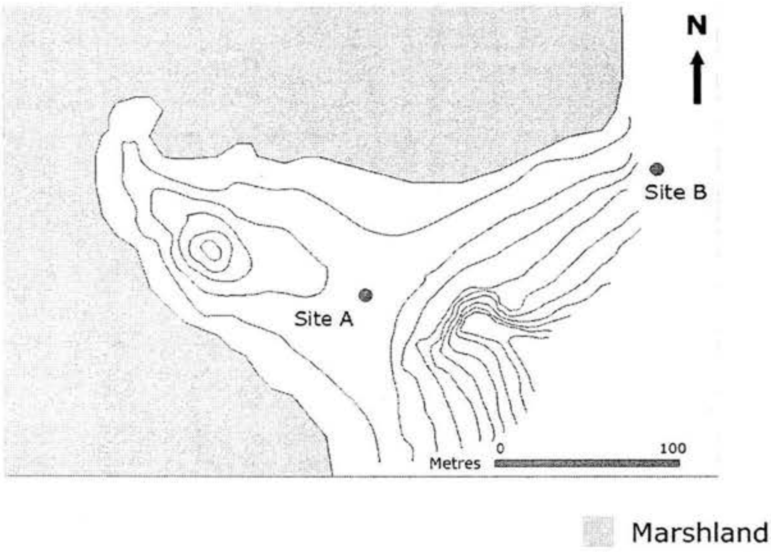


Figure 6.3: Location of Sites A and B at Pinarbaşi.

6.3.1 Radiocarbon dating

Radiocarbon dates were obtained from six wood charcoal fragments which date the occupation of Site A to the second half of the 9th millennium cal BC and Site B to the 7th millennium cal BC (Table 6.1). It must be noted that no radiocarbon dates were taken from bone, antler, ivory, shell or charred seed samples, all of which are suitable for radiocarbon dating and were recovered during the excavations[57]. Dr. Watkins obtained six free radiocarbon analyses from the Oxford Radiocarbon Accelerator Unit at Oxford University. Dr. Watkins felt that since all the charcoal material was

---

[57] Geochron Laboratories web site
http://archaeology.about.com/gi/dynamic/offsite.htm?site=http%3A%2F%2Fwww.geochronlabs.com%2F

recovered from fire installation structures and therefore associated with cultural artefacts such as bone, only charcoal samples needed to be dated (Watkins, pers comm.)

Lab Ref.	Site	Context	Material	Ages BP (BC)	Calibrated age; 95.4% confidence; BC
OxA-5499	A	ABJ	Charcoal	9050±80 (7100±80)	8331-8310 (0.04); 8255-8223 (0.03); 8215-7943 (0.93)
OxA-5500	A	ABR	Charcoal	9290±80 (7340±80)	8582-8572 (0.01); 8521-8509 (0.01); 8496-8089 (0.98)
OxA-5501	A	ABU	Charcoal	9140±80 (7190±80)	8352-8015 (1.00)
OxA-5502	B	BAI	Charcoal	5725±65 (3775±65)	4764-4741 (0.02); 4725-4454 (0.97); 4416-4402 (0.01)
OxA-5503	B	BAT	Charcoal	7145±70 (5195±70)	6159-6144 (0.01); 6122-6085 (0.07); 6060-6064 (0.92)
OxA-5504	B	BBA	Charcoal	7450±70 (5500±70)	6415-6160 (0.95); 6143-6123 (0.02); 6086-6064 (0.03)

Table 6.1: Radiocarbon dates of Site A and B[58].

Charcoal and bone association with cultural features such as house remains or fireplaces make them suitable choices for radiocarbon dating. A crucial problem is that the resulting date measures only the time since the death of a tree or animal, and it is up to the archaeologist to record evidence that the death of the organism is directly related to or associated with the human activities represented by the artifacts and cultural features. Many sites in Arctic Canada contain charcoal derived from driftwood that was collected by ancient people and used for fuel. A radiocarbon date on driftwood may be several centuries older than expected, because the tree may have died hundreds of years before it was used to light a fire (Morlan 2001). Bone offers some advantages over charcoal because demonstrating a secure association between bones and artefacts is often easier than to demonstrate a definite link between charcoal and artefacts. It is therefore common to have at least two different types of samples dated in archaeological deposits so as to create a redundancy on datable

[58] The six dates were obtained from carbonised wood fragments recovered by flotation in the 1994 season. Calibrated age ranges were prepared by the Oxford University Radiocarbon Accelerator Unit.

ABJ: a thin stratum of fine soil, chocolate brown in colour, into which the early prehistoric grave had been cut. ABJ overlies ABR. ABJ produced an assemblage that contains no material other than the early prehistoric chipped stone.

ABR: a thin stratum of fine soil, reddish brown in colour, underlying ABJ and overlying ABU, and containing exclusively early prehistoric chipped stone assemblage.

ABU: the lowest stratum reached so far, a stratum of fine soil, charcoal grey in colour, underlying ABU and associated with various stony or stone-built features.

BAI: a lens full of carbonized wood below a capping of stones in a shallow pit. Together with another similar pit, the latest sealed stratified context in the sequence, immediately below the shallow surface layer.

BAT: deposit of deliberate fill within the area enclosed by the curving wall. BAT is the high in the series of sloping deposits with lenses of charcoal.

BBA: deposit of deliberate fill within the area enclosed by the curving wall, BBA is stratigraphically below BAT.

material. Since this was not done at Pinarbaşi, the dates must be regarded with caution until a more extensive sampling procedure is conducted.

6.3.2 Open Air Settlement Site A

Initial survey inspection of Site A in 1993 revealed multiple period deposits directly below the surface stratum and visible masonry tombs. A looter's pit revealed significant numbers of chipped stones including recognisable bladelets, very small-scale débitage, and a small number of quite distinctive microliths. The indications were that there were late Roman tombs on the peninsula, an Early Bronze Age settlement, and an occupation dating to the end of the Palaeolithic.

In 1994 a 3 x 3 m area was opened beside the looters pit (Figure 6.4). In total, just over 0.90 m in depth was explored in the sounding and 49 contexts were identified (Table 6.2). The first 30 cm of the deposit belonged to the third millennium BC. It contained a linear feature, which appears to be a shallow ditch. Amongst the finds were fine and corse ware pottery, possibly Roman or Byzantine date, some chipped stone and two bronze coins of a Roman date.

The next phase was an intermediate deposit in which early Bronze Age material was mixed with much earlier material. A pithos burial and possible cist burial were uncovered. The cist projected a short distance into the trench on the west side and was not excavated. The pithos burial was set into a very tight fitting oval cut measuring 1.15 x 0.16 m.

It is believed that the burial was that of a juvenile. Associated with the burial were fine red painted pottery sherds and a complete goblet along with burnished Early Bronze Age fabric. When the pithos burial was discovered, it was decided to reduce the excavated area to a one metre wide strip along the southern side of the square.

The last stratum reached consisted of dark humic loamy layers that have been associated with three possible structures. These include part of a stony curvilinear feature and two possible structural features formed from small and medium sized stones and pebbles compacted with a mud matrix. Another potential structural element consists of rectangular mudbrick blocks (Figure 6.4: South Facing). The stratum produced significant quantities of well-preserved animal bone and microlith

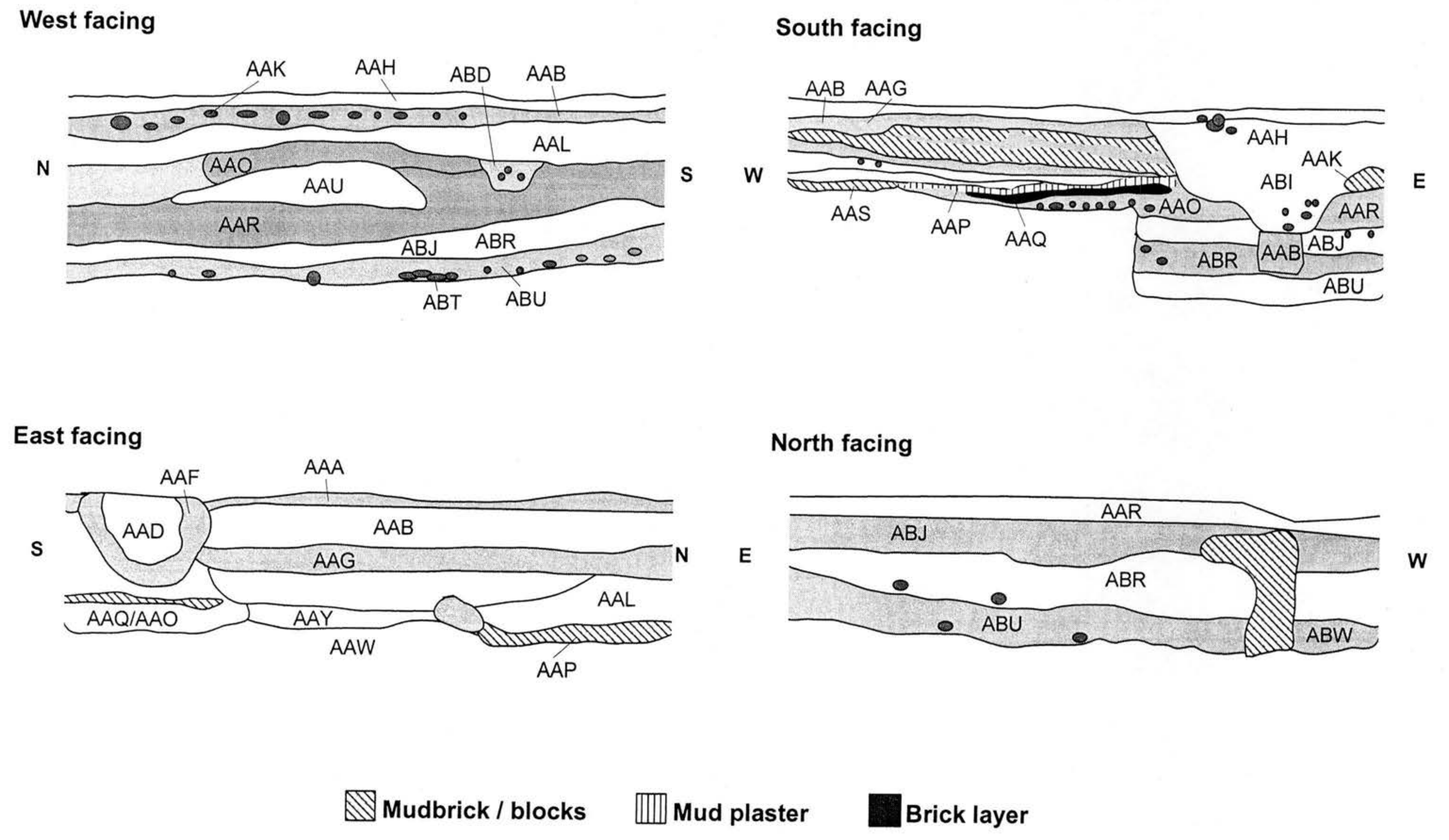


Figure 6.4: Sections in Site A

Context	Description	Area of Trench
AAA	Topsoil	Entire
AAB	Lens/Deposit in the S'ern	1/2 of trench
AAC	Line of stones running W-E	S of cut AAF
AAD	Across trench, fill of linear feature W-E	Central
AAE	Cut for AAF	
AAF	Cut for AAE, Deposit/Layer Beneath	
AAG	Line of stones running W-E	2/3 of trench
AAH	Fill of AAJ	NE corner
AAI	Fill around in situ Pot	SW corner
AAJ	Cut for fill AAI	SW corner
AAK	Mud brick Horizon, spit layer beneath	SW corner
AAL	Cut for AAG	Oval area
AAM	Cut for AAH	NE corner
AAN	Cut for AAK	
AAO	Different soil layer beneath AAL	Half of trench
AAP	Fragmentary plaster floor surface, possibly overlaying AAO	
AAQ	Penetrating deposit beneath AAP	
AAR	Soil layer beneath AAO, mud brick collapse beneath	Whole trench
AAS	AAD and above AAR	N & W corner
AAT	Possible mud brick structure below AAO	
AAU	Ash fine deposit beneath AAO	
AAV	Stone setting up against w'ern baulk	N & W corner
AAW	Fill for cut AAX, which is cut also for seating AAV	
AAX	Cut for fill AAW and stone seating AAV	
AAY	Fill for cut AAZ into which SF AAY set	SW corner
AAZ	Cut filled with AAY into which SF lie is set	
ABA	Fill inside SF, set in cut AAZ	
ABB	Stony cub circular setting	NE corner
ABC	Stony area in SE corner	SE corner
ABD	Sub circular stony setting up against wall	
ABE	SW corner extension of linear arrangement	SW corner
ABF	Arrangement of stones in SW extension	SW corner
ABG	Lower fill inside AAZ	
ABH	Fill of stony feature ABB	NE corner
ABI	Set in cut ABI	
ABJ	Split deposit in 1x3	
ABK	Fill feature in NE part of ABL	
ABL	Cut for ABK	
ABM	Fill of grave cut ABV	
ABN	Grave cut with fill ABM	SE corner
ABO	Cut for fill AAU, plaster fill feature	SE corner
ABP	Fill for semicircular hard feature in cut ABQ	Ne corner
ABQ	Cut, semicircular fill with ABP	
ABR	Lens below ABJ	
ABS	Muddy plaster linear feature below ABJ	
ABT	Stony lens	
ABU	Layer below ABR to North of ABS	
ABV	Yellow plastering rise.	
ABW	Humic deposit to N of ABV not excavated.	

Table 6.2: Site A context data.

pieces. In addition a decorated stone shaft straightener was found along with some ground-stone tools (smoother and pounder fragments). Radiocarbon dates place the occupation in the late ECA I and early ECA II period (Table 6.1).

Context	Type of sample sorted	Volume of soil sorted (L)
ABJ	Dry Sieve	30
ABJ	Float	102
ABR	Float	140
ABU	Float	280
Total		**552**

Table 6.3: Dated Site A context data.

In total, 552L of soil was processed from contexts ABR, ABU and ABJ (Table 6.3). The lower deposit showed no sign of ending, and it can be concluded that some depth of deposit still remains to be explored at a future date.

6.3.2.1 Chipped Stone

The analysis revealed a relatively uniform assemblage characterised by distinctive microlith points (Watkins 1996). Unlike the rock shelter, a lot of flint and obsidian was recovered. More than 80% of the tools were obsidian and 20% were flint. Watkins attributes the quantity of obsidian recovered to either a high degree of mobility of the users of the site or to the presence of a sophisticated exchange network underway during this period (1996). Classic geometric forms are very rare but there was a tendency to produce a microlith with an elongated, asymmetric triangle or arch backed piece (Watkins 1996: 55). The dominant microlith types are scalene bladelets with convex oblique or oblique truncations and backed bladelets with truncations.

6.3.3 Rock Shelters

Survey work in 1994 identified five rock shelters with occupation material. They have been recorded as Sites B, C, D, E and F. Site B was the focus of 1994 and 1995 excavations.

6.3.3.1 Site B

Rock shelter Site B is located on the eastern most side of the limestone cliff facing west (Figure 6.3). Before excavation began, the site had a flat surface beneath the overhang of the cliff face. Several huge boulders projected from the surface of the soil. To the south of the flat surface, there were two large boulders on the surface. These were compounded with smaller stones that formed a barrier, which continued as a dry stone wall around the rest of the area (Figure 6.5). There is an entrance about 2 m wide within the stone wall just as the wall curved around to meet the rock wall to the north of the rock shelter. Directly against the rock face was a large looters pit, which had been partly refilled (Watkins 1996).

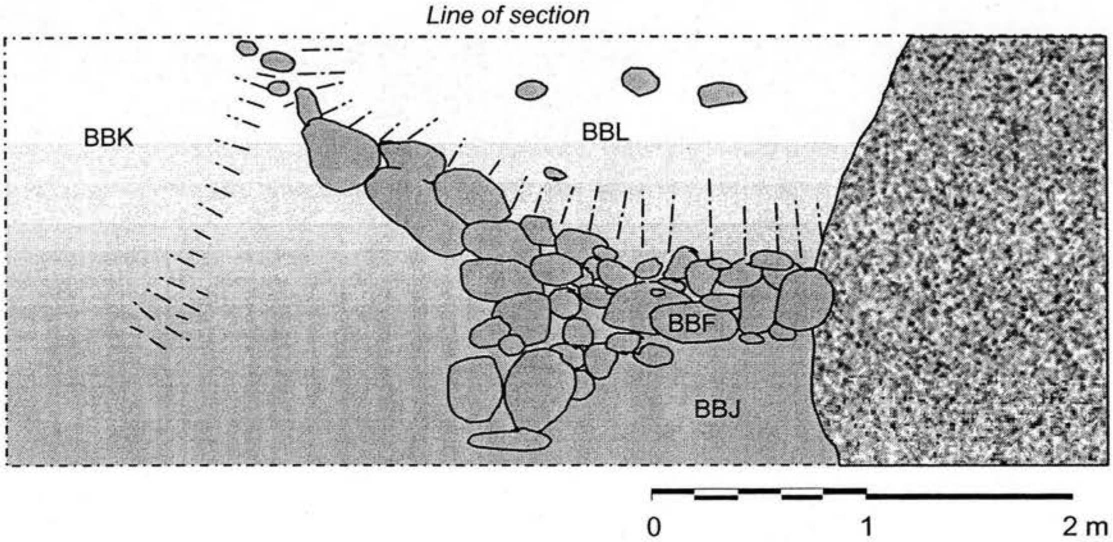


Figure 6.5: Plan of Site B stone retaining wall.

In 1994 Trench 1 (4.5 x 2 m wide) (Figure 6.6) was excavated to the south of the looters area at a right angle to the rock face. In 1995 Trench 2 (Figure 6.6) was cut parallel to Trench 1. In 1994 the area damaged by looters was emptied and the sides cleaned. The pit was 1 m deep and dug entirely through stratified archaeological deposits. The rock face exposed at the back of the rock shelter was blackened by smoke and observations suggested that there were considerable depths of archaeological deposits below the pit.

In total, 5,612 litres of soil was processed through Site B's 45contexts (Table 6.4). Table 6.3 list of material processed at the site including context information, volume of soil processed and type of processing technique employed. The description of the contexts is limited to those associated with Trench 1 as none was supplied to this researcher from Dr. Watkins.

Context	Description	Type of sample	Volume of soil sorted (L)
BAC	Friable and stony	Float	119
BAD	Fill of eastern stone cluster	Float	54
BAF	Black ashy fill	Float	16
BAI	Charcoal lens below BAD	Dry Sieve	66
BAJ	Charcoal/ash below BAE	Float	16
BAK	Main grey stone layer	Float	340
BAM	Soft brown fill in BAH	Float	78
BAP	Burns lens below BAO & BAG	Float	2
BAQ	Yellow baked layer below BAP	Float	?
BAT	Stony fill below base of BAS	Float	60
BAU	Greyish layer cut by BAJ	Float	40
BAV	Lower part of BAU	Float	36
BAW	Equivalent of BAK, east of temp baulk	Float	80
BAX	Greyish below BAK/BAW	Float	76
BAY	Stone free silts at base of BAH	Float	60
BAZ	Sit below BAX	Float	100
BBA	Spit below BAZ	Float	100
BBC		Dry Sieve	170
BBC		Float	96
BBD		Dry Sieve	120
BBD		Float	273
BBE		Dry Sieve	160
BBE		Float	149
BBG		Dry Sieve	70
BBG		Float	155
BBH	Pit	Dry Sieve	1090
BBH		Float	204
BBI		Dry Sieve	40
BBI		Float	157
BBJ		Dry Sieve	30
BBJ		Float	39
BBK		Dry Sieve	20
BBK		Float	39
BBL		Dry Sieve	60
BCB		Dry Sieve	290
BCC		Dry Sieve	160
BCF		Dry Sieve	120
BCF		Float	49
BCG		Dry Sieve	190
BCG		Float	17
BCH		Dry Sieve	80
BCH		Float	17
BCI		Dry Sieve	270
BCJ		Dry Sieve	43.8
BCL		Dry Sieve	260
Total			**5611.8**

Table 6.4: Site B context data.

Seven stratigraphic phases were defined in the two trenches. Immediately below the surface of Trench 1 there were clearly defined deposits. The latest features were a series of pits, preceded by a carefully made and maintained clay hearth, and a strange, cist-like construction. Significant amounts of small wood charcoal were recovered in flotation. A radiocarbon date placed its use in the early 5th millennium cal BC. Below these structures was a layer of grey ashy material that lay all over Trench 1 and the outer part of Trench 2 (Figure 6.7). This material was up to 0.15 m deep. Indications are that this was possibly a build up of occupation material due to the high amounts of splintered animal bone recovered in the deposit.

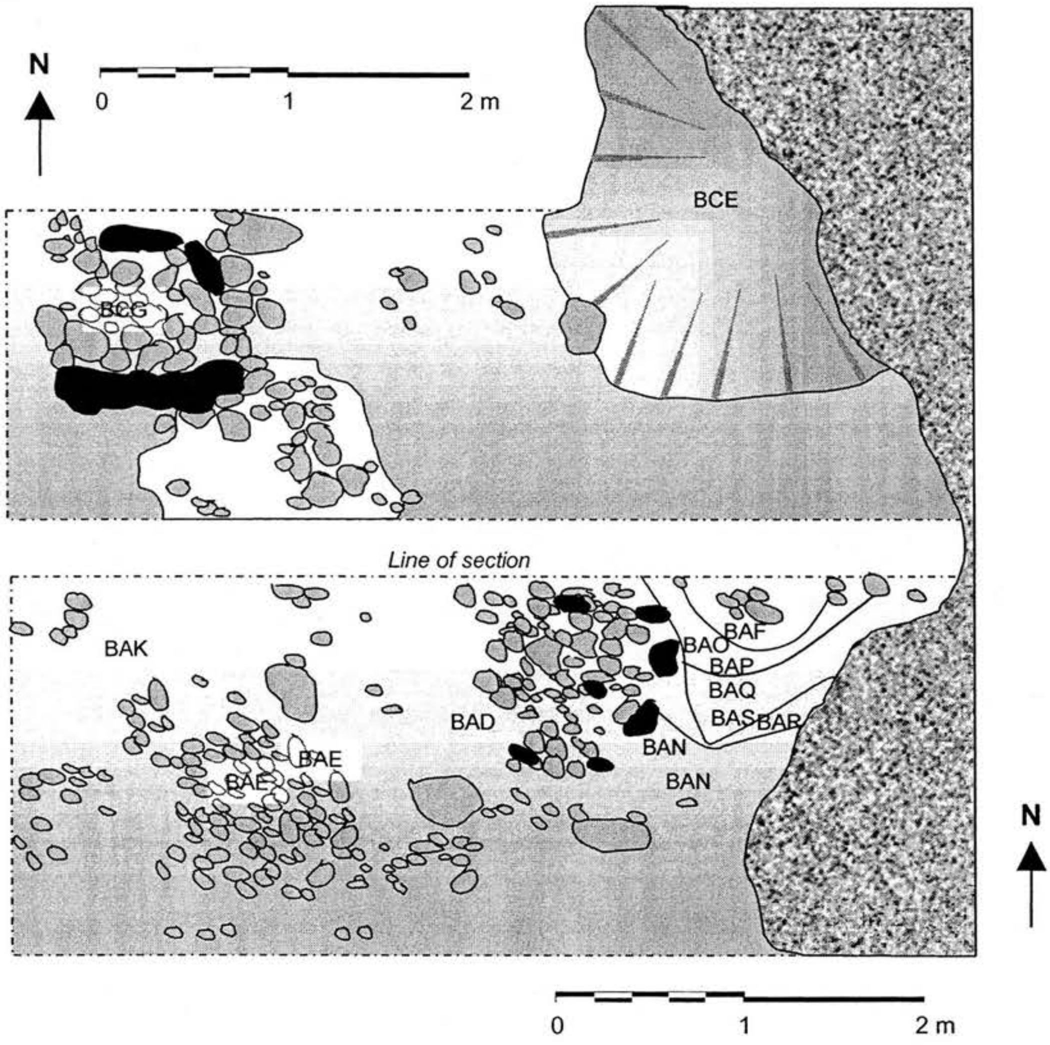


Figure 6.6: Plan of Site B latest features. The trench is aligned on magnetic north. The southern Trench is Trench 1; the northern trench is Trench 2.

Below the grey ashy material in Trench 1 was a curving wall made of large blocks of limestone that ran against the north side of the trench towards the back wall of the rock shelter. The wall was crudely built of three or four courses of very large stones.

There is no sign of any bonding material having been used. The fill material within the wall was comprised of ash and charcoal. The wall was standing on a deposit of light brown soil and gravel mix, possibly frost-fractured limestone that originated from the roof of the rock-shelter. The material does contain animal bone and chipped stone. The depth of this material has yet to be determined.

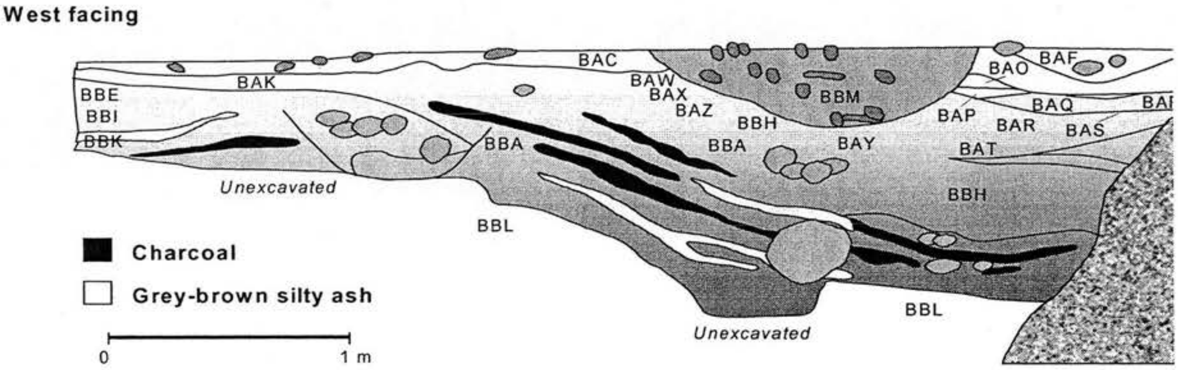


Figure 6.7: Sections in Site B.

The earliest deposits excavated consisted of a series of tips into a large, stone, curvilinear building. The date of the stone structure and most of the material is Neolithic, and the latest levels appear to be the same date as the occupation of Çatalhöyük (East) with the exception of one of the pit-like hearths, which has produced a 6th millennium BP date. Pinarbaşi dates are chronologically parallel with the excavations at Çatalhöyük (East). There are indications from the obsidian and flint pieces recovered that there are earlier Neolithic levels below the last layer excavated in addition to a microlithic industry typical of ECA I typology. The indications from the rock shelter are, therefore, of a detailed stratigraphy that may stretch from the ECA III back to the ECA I Neolithic periods (Watkins 1996).

6.3.3.1.1 The Chipped Stone

The chipped stone pieces have point types and bi-face fragments that suggest an earlier 9th millennium BP date. The recovery of two opposed platform cores suggest a chipped stone technology typical of production strategies in the PPNB period. Microliths and elements of a small-scale bladelet-based industry are also present in very small quantities and presumably, as residuals. It is noteworthy that they are different from those found in the earliest levels in Site A and they are presumed to be from a substantially earlier prehistoric occupation in or around the rock shelter

(Watkins 1996). However, chipped stone was less dense in the Neolithic deposits of the rock shelter than in early ECA II levels at Site A. The tools recovered from Site B represent largely chipped stone production activities, which would have included either biface production and or core preparation activities (Watkins 1996).

6.3.3.2 Site C

Rock shelter Site C is located on the east facing side of the limestone cliff. This site is comprised of a small chamber with a chimney-like formation. The chamber has been modified and there is a rock-cut step or bench close to its present ground level, along with several foot-holds leading upwards into the chimney and a small eroded, Christian inscription in indecipherable Greek. At the mouth of the cave there is a bank of deposits pushed out of the cave when it was modified, possibly in Byzantine times. From the eroded bank, small-scale bladlets made from chipped stone and obsidian was recovered.

6.3.3.3 Site D

Rock shelter Site D is located north of Site B, just below Site C. The site is described as resembling the peak of a shallow cave or rock-shelter, meaning the entire area is filled with deposit. A number of small-scale pieces of obsidian were observed eroding out of the archaeological deposit.

6.3.3.4 Site E

Rock shelter Site E is located only a few metres north of Site D. The site is located in a substantial rock crevice, 4 m wide and stretching back five or six metres into the rock. The crevice is partly roofed with rock. The nearly flat surface of the soil in this area is dark and fine. Small-scale chipped stone pieces were collected from the surface, both within and outside the crevice, and down the slope to the north.

6.3.3.5 Site F

Rock shelter Site F is located on a low vertical face of rock that faces north and looks out onto the peninsula. A very small amount of chipped stone was found along with a collection of mortars of different sizes. Three mortars are located in the natural surface of the rock where it forms a shelf immediately below the vertical face of the limestone ridge. It is still unclear whether this area forms a separate and distinct site.

6.4 ENVIRONMENTAL DATA: CARBONISED SEEDS AND WOOD CHARCOAL MACRO REMAINS

The majority of the botanical material is comprised of carbonised seeds and wood charcoal, often in microscopic pieces. Very few seeds were recovered. Of significant interest is the quantity difference produced by the two sites. Site A produced very little carbonised plant remains. Unfortunately, the amounts recovered were inadequate for radiocarbon dating. This is not uncommon with ECA I and early ECA II sites, as carbonised plant remains are not easily found unless particular deposits can be located (Watkins 1996).

In the 1995 season, flotation of one metric tonne of deposit produced over 10 kg of carbonised plant materials from the Rock Shelter Site B. Most of the material visible in the sieve was wood charcoal, but seeds were also present. The first few seeds to be segregated and looked at seem to be club-rush, which is still available in the margins of the lake today. It is easily harvested and apparently nutritious, and the fact that the seeds are occurring carbonised presumably indicates that they were being processed on site and were in use (Watkins 1996).

The uniformity of the charcoal assemblage from both sites outlined in Chapter 4.3.1.2 suggests that the groups occupying the rock-shelter used the available firewood resources on a very opportunistic manner, by extracting what was available in the local vegetation, primarily *Amygdalus* and *Pistacia*. This interpretation is further corroborated by the negligible presence in the archaeobotanical samples of taxa associated with higher elevations such as oak and juniper, despite the close proximity of Pınarbaşı to the volcanic uplands of Karadağ. The rock-shelter was probably located inside the woodland-steppe niche. Despite the limited preservation of small-sized woods such as reeds and small shrubs, it is also worth considering the possibility that some selective criterion in the choice of fuel was applied (especially if we take into account the marked under-representation of locally available lakeside species such as tamarisk and ash). Both almond and terebinth furnish high quality firewood (dense, drying easily and burning with a strong flame). Almond is also reputed to produce a particularly pleasant fragrance when burnt, whilst terebinth owes much of its properties to its resin content (Miller 1985). It is possible that such burning qualities played an important role in their selection as firewood as well as their availability in the vicinity of the sites. In addition, the seasonal occupation of the area by mobile groups of hunters and herders resulted in little pressure being exerted on the local vegetation. Woodlands had ample time to recover from woodcutting and, presumably, suffered very little from the effects of animal browsing. Wood charcoal from the dominant taxa (*Amygdalus*, *Pistacia*) comprised mostly small and medium-sized round wood with occasional finds of twigs (Asouti 2002).

6.5 MICROFAUNAL REMAINS

The microfaunal remains from Site A and B at Pinarbaşi are presently part of doctoral research being conducted by Emma Jenkins at Cambridge University, Dept of Archaeology. Preliminary analysis reveals there are a wider range of microfaunal species at Pinarbaşi than there are at Çatalhöyük. In particular, there are voles and hamsters at the sites which appear to have been accumulated by a small carnivore. The array of species identified so far are as follows: *Arvicola terrestris*, *Microtus* sp. (guntheri or *socialis*), *Cricetus cricetus*, *Mus* sp., *Crocidura suaveolens*, *Meriones* sp. (probably *tristrami*), *Cricetulus micrgratorius*, *Apodemus cf mystacinus*, *Spalax microphthalmus* and *Mesocricetus auratus* (Jenkins pers. comm.)

6.6 SUMMARY

6.6.1 Site A

Site A's 8500 cal BC date contains three structures. These include a stony curvilinear feature and two structural features formed from stones and compacted mud. The stone foundation with mortar composite and mud brick walls are similar to the typical residential house architecture characterised by PPNA and PPNB settlements (Chapter 3). The toolkit is characterised by distinctive microlith points (Watkins 1996). It must be stressed that the 8500 cal BC date derived from the site was taken above cultural material that remains to be excavated, indicating an older cultural sequence and period, possibly ECA I, remains in situ.

Based on the cultural material outlined above and radiocarbon dates, Site A is the oldest semi-permanent settlement within Central Anatolia (Figure 6.8). The central question relating to Site A is what subsistence was practiced by these earliest settlers of Central Anatolia? A detailed study of the animal bones in Chapter 7 will address these questions.

6.6.2 Site B

Site B's 6400-6200 cal BC and 6100-5950 cal BC dates now provide a chronological link between the end of Çatalhöyük (East) sequence and Can Hasan I within Central Anatolia (Figure 6.8). Based on the radiocarbon dates and the resemblance between the chipped stone tools found at Site B and Çatalhöyük (East), Site B is clearly part of a broader network of settlements that existed contemporaneously on the Konya Plain in Central Anatolia. Of particular interest is the lack of heavy ground stone tools and pottery at the site. The absence of food preparation equipment such as mortars, pestles and querns, suggests that the people either did not use cereals and pulses or they were brought to the site already prepared. The only pottery recovered was Neolithic and came from deposits immediately below the surface of Trench 2. The late Neolithic chipped stone assemblage is very heavily dominated by obsidian with very little flint. Of particular importance is the rarity of obsidian cores in contrast to the high recovery of preparation flakes. This suggests that the occupants of the site resided long enough to need cores for making tools. There is also a distinct shortage of bone tools. Only one fragment of a bone needle was recovered. Fire pits are common suggesting extensive occupation of the site. Stone walls were also present (Watkins 1996).

The central questions relating to Site B concern the nature of the occupation and its relationship with the other Central Anatolian sites, specifically Çatalhöyük (East). Was Site B a small permanent community at the margins of the settled society, or was it used seasonally as a hunting station for killing and butchering caprines, wild cattle and horse by larger settlements such as Çatalhöyük (East)? The faunal data from Site B will fill in the gap in the sequence from the end of the 7^{th} millennium cal BC that corresponds with the end of the Çatalhöyük (East) and Erbaba sequences to Can Hasan I. A detailed study of the animal bones in Chapter 8 will address these questions.

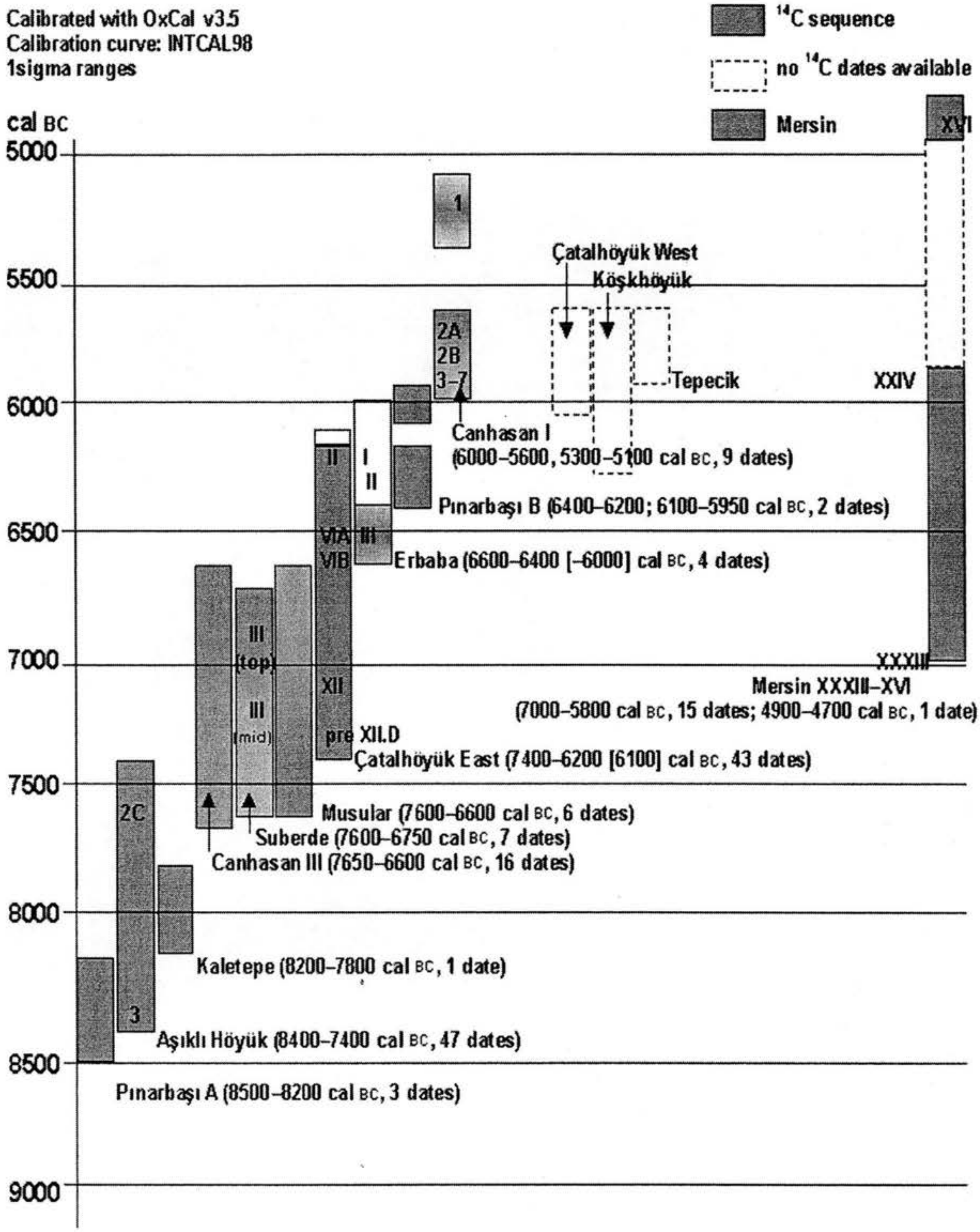


Figure 6.8: Central Anatolian chronology chart: 9th-6th millennia cal BC[59].

[59] Data compiled by Laurens Thissen, with the collaboration of Craig Cessford & Maryanne Newton (http://www.chez.com/canew/canchart.htm.

CHAPTER 7: PINARBAŞI SITE A FAUNAL DATA RESULTS

This chapter analyses the primary data from faunal material recovered from Site A at Pinarbaşi. The chapter is divided into four sections. The first section presents a general overview of the taxa recovered from the site. The second and third sections analyse the major and minor taxa from the assemblage. Analysis of taphonomy, age profiles, sex ratios, body part representation and butchery practices were undertaken for each taxon. The fourth section analyses unidentifiable bone fragment data in order to detect possible body part mass not recorded within the identifiable assemblage.

7.1 GENERAL OVERVIEW

Pinarbaşi's Open Air Site A is comprised of animal bone from contexts ABR (9290±80 BP), ABU (9140±80 BP) and ABJ (9050±80 BP). Site A produced 942 animal bones for analysis from 552L of processed soil material. 162 bones were identified to taxon and 780 were from fragments that could not be identified to a specific taxon or a skeletal element. Table 7.1 lists the NISP of identifiable taxa within each context with weight of bone and litres of soil processed. The small number of bones recovered from the three contexts is a result of the size of area excavated and the time spent excavating the area. The three datable contexts from Site A were excavated on the final three days of the 1994 season and work in this area was not completed. Since the site only produced 162 identifiable animal bones, quantitative treatment of this assemblage beyond species identification must be treated with caution. Until a much larger faunal assemblage is recovered the following analysis and results from 162 animal bones is tentative and subject to change and reinterpretation.

The 162 animal bones weighing 614 grams were recovered from 552L of dry sieved and floated soil material (Table 7.1 and 7.2). Context ABR had all of its 140 litres of soil processed through floatation; context ABU had all of its 280 litres of soil processed through floatation and context ABJ had 132L of soil processed, 30 litres of

Taxa		ABR				ABU				ABJ				Total			
		NISP	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
wild cattle	*Bos primigenius*	-	-	-	-	7	7%	276.4	62%	4	62%	82.9	57%	11	7%	359.3	58%
equid	*Equus* sp.	-	-	-	-	1	1%	27	6%	1	10%	12.5	9%	3	2%	59.5	10%
	Equus hydruntinus					1	1%	20	5%								
sheep	*Ovis* sp.	-	-	-	-	10	10%	72.7	16%	2	16%	11.6	8%	12	7%	84.3	14%
sheep/goat		2	10%	2.1	10%	25	24%	8.85	2%	-	2%	-	-	27	17%	11.0	2%
cervid	*Cervus elaphus*	-	-	-	-	2	2%	13.5	3%	1	3%	2.6	2%	3	2%	16.1	3%
pig	*Sus scrofa*	3	14%	2.5	12%	5	5%	3.4	1%	5	1%	13.2	9%	13	8%	19.1	3%
fox	*Vulpes vulpes*	7	33%	8.4	40%	32	30%	8.8	2%	11	2%	5.5	4%	50	31%	22.7	4%
hare	*Lepus* sp.	3	14%	0.5	2%	4	4%	2.1	0%	3	0%	6.7	5%	10	6%	9.3	2%
bird	Aves	5	24%	7.35	35%	17	16%	14.9	3%	7	3%	10.4	7%	29	18%	32.7	5%
beaver	*Castor fiber*	1	5%	0.2	1%	-	-	-	-	-	-	-	-	1	1%	0.2	0%
fish	Pisces	-	-	-	-	1	1%	0.05	0%	2	0%	0.1	0%	3	2%	0.2	0%
Total		***21***		***21.1***		***105***		***447.7***		***36***		***145.5***		***162***		***614.2***	
Liters of soil processed per context				140				280				132				552	
NISP per soil volume (NISP/L)		0.15				0.38				0.27				0.29			
Bone weight per soil volume (g/L)				0.15				1.60				1.10				1.11	

Table 7.1: Identifiable Taxa NISP by context with weight of bone and litres of soil processed.

Context	Type of sample sorted	Volume of soil (L)
ABJ	DS	30
ABJ	F	102
ABR	F	140
ABU	F	280
Total		**552**

Table 7.2: Type of retrieval strategy employed in each context and the volume of litres of soil processed using that technique. DS refers to Dry Sieve and F to Float.

soil was dry sieved and 102L of soil floated[60]. The high number of animal bone material recovered from context ABU may therefore be attributed to the litres of soil processed within this context. To remove the effects of the soil volumes, normalised weight-volume ratios were calculated (Table 7.3). Normalised weight-volume ratios are calculated by dividing the total bone weight from the context by the number of litres of soil processed in that context. A normalised weight-volume ratio total for each context was also calculated, statistically the total is meaningless, however it is meant to convey the relative intensities of one context related to the others in terms of its propensity to produce bone mass (Table 7.3). By comparing the normalized values, context ABU contains 10 times the weight of bone given 1 litre of soil than context ABR and 1.5 times the weight of bone given 1 litre of soil than context ABJ (Table 7.2). Therefore in terms of the context's propensity to produce bone mass, context ABU is the most prolific in real terms. Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 7.1). NISP normalized values corroborate those calculated by weight volume ratios as context ABU remains the most prolific (0.38) in real terms. Calculations of the minimum animal unit (MAU) (Table 7.9 and 7.16) corroborate the pattern of frequency shown using NISP and total weight and volume data indicating that the increase in species frequency within context ABU is not subject to methods of calculating species frequencies or recovery procedures.

	ABR	ABU	ABJ
ABR	1.00	10.63	7.33
ABU	0.09	1.00	0.69
ABJ	0.14	1.45	1.00
Total	1.23	13.08	9.02

Table 7.3: Summary of relative weight/volume ratios for Taxa Site A.

When taxonomic richness is assessed based on relative proportions of taxa present (NISP), context ABJ has a slightly higher taxonomic richness than ABU (Table 7.4). The richness of taxa within context ABJ may be attributed to the lack of sheep/goat

---

60 The dry sieve and float volume figures were calculated by E. Jenkins and D. Carruthers from the labels attached to analysed faunal material as the excavator of the project, Dr. Trevor Watkins, no longer had this information on file.

remains recovered from the context as the inhabitants appear to focus on hunting other species.

Context	Total # of Different Taxa (S)	Total # of Bones (N)	Species Richness (d=S-1/ln(N))
ABR	6	21	**1.642**
ABU	10	105	**1.934**
ABJ	9	36	**2.269**

Table 7.4: Richness of taxa from contexts ABR, ABU and ABJ.

The overall condition and preservation of the 162 identifiable bones was very good. The bones do not appear to have sustained extensive bone weathering features and prolonged surface exposure prior to burial and therefore, the time period of bone accumulation within the archaeological contexts appears to have occurred quite quickly (Lyman 1994: 358). This is an important fact due to the location of the site being close to a marshland which would have been a primary water source for human and animal groups. The movement of people and live animals around the archaeological site would have increased the likelihood of the bone assemblage being trampled and vertically moved from its original area of deposition (Lyman 1994). In addition, no calcification was present on the bone which is rare given the location of the site so close to the marsh which would have been prone to seasonal flooding.

The bones recovered are not as highly fragmented as would be expected from a Site dated to the ECA II. On average, over 55% of the element is present from every bone. However, it must be noted that many of the bones are from the feet that include complete carpal and tarsal bones that are not usually processed beyond dismemberment, as they contain no meat or large quantities of marrow.

Upon initial review, *Vulpes vulpes* represents 31% of the assemblage. In order to better assess the most significant contributor to the Pinarbaşi faunal economy, the taxa were divided into major and minor taxa classifications. The major taxa include sheep/goat, cattle, horse, deer and boar. Fox, hare, beaver, bird, and fish represent minor taxa. It is important, however, not to underestimate the potential significance of minor taxa such as fox, hare or bird on their overall meat contribution.

7.2 Representation of Major Taxa at Site A

The major taxa consist of cattle, sheep/goat, horse, boar and deer. The major taxa are distinguished from the minor taxa solely on their size and meat weight contribution to the diet. The 69 animal bones identified as major taxa weigh 549 grams (Table 7.4). Context ABU contains the largest NISP count (51) which is 74% of the major taxa assemblage. To remove the effects soil volumes had on NISP, normalized weight-volume ratios were calculated (Table 7.5). In comparing these normalized values, context ABU contains 45 times the weight of bone given 1 litre of soil than context ABR and 1.6 times the weight of bone given 1 litre of soil than context ABJ (Table 7.6). Therefore in terms of the context's propensity to produce bone mass, context ABU is still the most prolific in real terms. Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 7.5). NISP normalized values corroborate those calculated by weight volume ratios as context ABU remains the most prolific (0.18) in real terms.

Sheep/goat bones represent 56% of the major taxa assemblage, then pig (19%) and cattle (16%) (Table 7.5). A number of trends in the representation of the four main herbivore taxa at Pinarbaşi Site A are visible. In Figure 7.1 the proportions of all of the species increases from context ABR into ABU and then decreases again within context ABJ. This may indicate an increased use of the site by humans for a specific period. Sheep and goat represent 69% of context ABU. Cattle and equid bones were not recovered from context ABR. However, they were recovered in ABU and ABJ. Cattle and pig bones represent 69% of ABJ's bone assemblage. The number of pig bones appears to remain constant throughout the three contexts.

		ABR				ABU				ABJ				Total			
Major Taxa		**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
wild cattle	*Bos primigenius*	-	-	-	-	7	14%	276.4	66%	4	31%	82.9	68%	11	16%	359.3	65%
equid	*Equus* sp.	-	-	-	-	1	2%	27.0	6%	1	8%	12.5	10%	3	4%	59.5	11%
	Equus hydruntinus					1	2%	20.0	5								
sheep	*Ovis* sp.	-	-	-	-	10	20%	72.7	17%	2	15%	11.6	9%	12	17%	84.3	15%
sheep/goat		2	40%	2.1	46%	25	49%	8.85	2%	-	-	-	-	27	39%	11.0	2%
cervid	*Cervus elaphus*	-	-	-	-	2	4%	13.5	3%	1	8%	2.6	2%	3	4%	16.1	3%
pig	*Sus scrofa*	3	60%	2.5	54%	5	10%	3.4	1%	5	38%	13.2	11%	13	19%	19.1	3%
Total		***5***		***4.6***		***51***		***421.85***		***13***		***122.8***		***69***		***549.25***	
Liters of soil processed per context				140				280				132				552	
NISP per soil volume (NISP/L)		0.04				0.18				0.10				0.13			
Bone weight per soil volume (g/L)				0.03				1.51				0.93				1.00	

Table 7.5: Major Taxa NISP by context with weight of bone and litres of soil processed.

	ABR	ABU	ABJ
ABR	1.00	45.85	28.31
ABU	0.02	1.00	0.62
ABJ	0.04	1.62	1.00
Total	1.06	48.47	29.93

Table 7.6: Summary of relative weight/volume ratios for Major Taxa Site A.

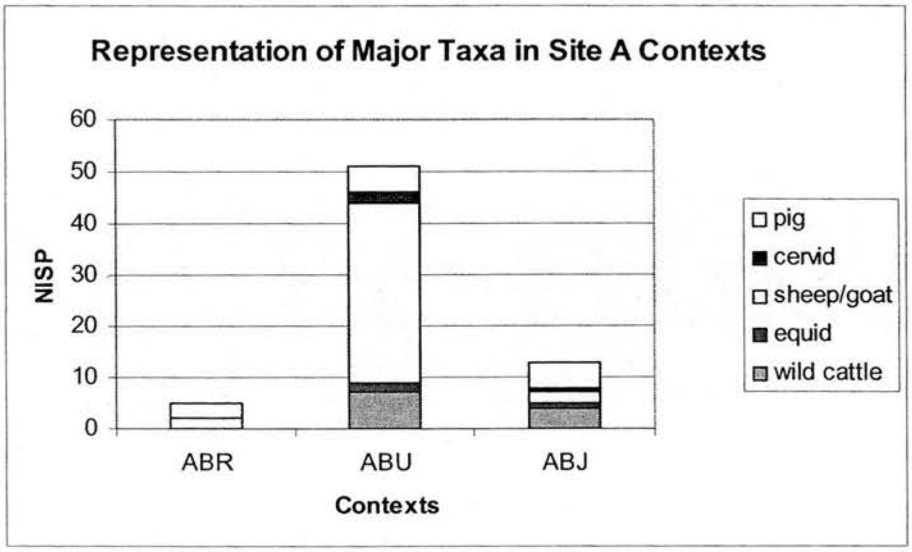


Figure 7.1: Representation of major taxa in Site A by context.

Major	Taxa	<2	%	2-5	%	5-10	%	>10	%	NISP
wild cattle	*Bos primigenius*	-	-	9	82%	1	9%	1	9%	11
equid	*Equus* sp.	-	-	1	50%	1	50%	-	-	2
	Equus hydruntinus					1	100%			1
Sheep	*Ovis* sp.	7	58%	4	33%	1	8%	-	-	12
sheep/goat		21	78%	6	22%	-	-	-	-	27
cervid	*Cervus elaphus*	1	33%	1	33%	1	33%	-	-	3
pig	*Sus scrofa*	8	62%	5	38%	-	-	-	-	13
Total		**37**	**54%**	**26**	**38%**	**5**	**7%**	**1**	**1%**	**69**

Table 7.7: Representation of major taxa NISP counts by element size category Site A

Major Taxa		Context								
		ABR		ABU		ABJ		Total		
		NISP	Burnt	NISP	Burnt	NISP	Burnt	NISP	Burnt	%
wild cattle	*Bos primigenius*	-	-	7	1	4	1	11	2	18%
equid	*Equus* sp.	-	-	1	-	1	-	2	0	-
	Equus hydruntinus	-	-	1	-	-	-	1		-
sheep/goat*		2	1	35	5	2		39	6	15%
cervid	*Cervus elaphus*	-	-	2	-	1	-	3	0	-
pig	*Sus scrofa*	3	1	5	2	5	-	13	3	23%
Total		**5**	**2**	**51**	**8**	**13**	**1**	**69**	**11**	**16%**

Table 7.8: Representation of burnt bone from major taxa NISP counts by context Site A

Major Taxa	100%	76-99%	51-75%	26-50%	<25%
Bos primigenius	3	4	2	0	2
Equus sp.	1	1	1	0	0
Ovis sp.	4	2	0	5	1
sheep/goat*	9	8	1	6	3
Cervus elaphus	1	1	0	1	0
Sus scrofa	0	3	5	5	0

Table 7.9: Representation of major taxa NISP counts percentage of bone present.

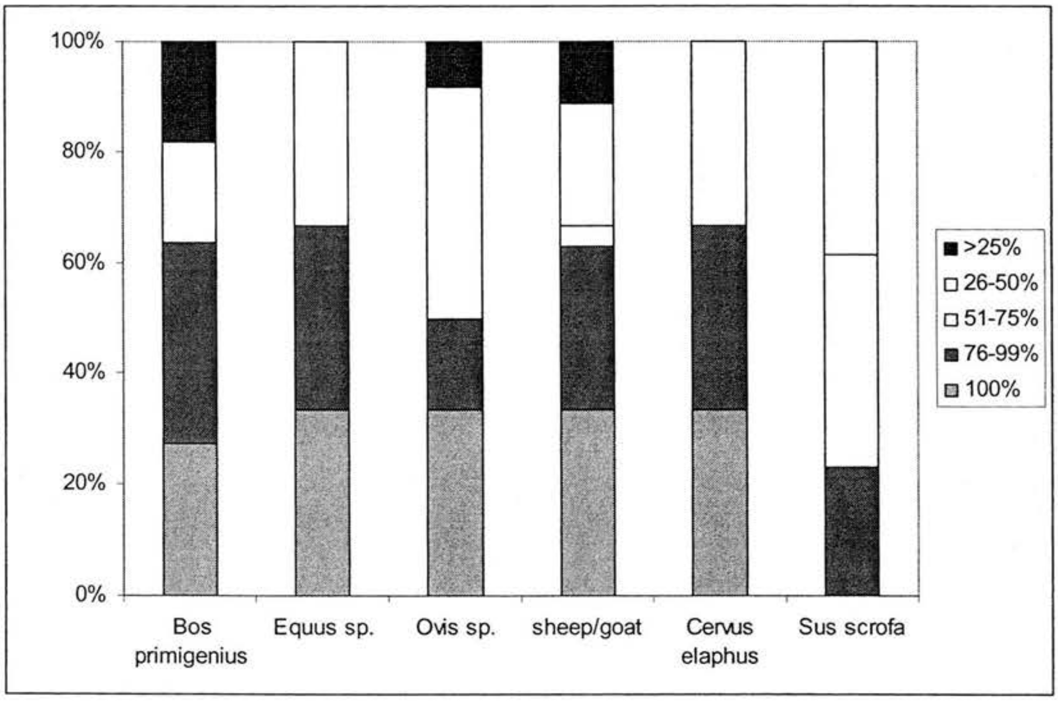


Figure 7.2: Percentage of major taxa bones within each fragment size category Site B (data Table 7.3)

Bos				Sheep/Goat				Boar				Equid				Red Deer			
Element	**NISP**	***Divided by:***	**MA.U**	**Element**	**NISP**	***Divided by:***	**M.A.U.**	**Element**	**NISP**	***Divided by:***	**M.A.U.**	**Element**	**NISP**	***Divided by:***	**M.A.U.**	**Element**	**NISP**	***Divided by:***	**M.A.U.**
Head				**Head**				**Head**				**Head**				**Head**			
horncore	0	2	0.0	horncore	0	2	0.0	horncore	0	0	0.0	horncore	0	0	0.0	horncore	0	2	0.0
cranium	1	14	0.1	cranium	0	14	0.0	cranium	0	14	0.0	cranium	0	14	0.0	cranium	0	14	0.0
mandible	0	2	0.0	mandible	0	2	0.0	mandible	0	2	0.0	mandible	0	2	0.0	mandible	0	2	0.0
mand tooth	1	20	0.1	Mand tooth	5	20	0.3	mand tooth	3	22	0.1	mand tooth	1	20	0.1	mand tooth	1	20	0.1
max tooth	0	12	0.0	max tooth	1	12	0.1	max tooth	7	22	0.3	max tooth	1	20	0.1	max tooth	0	12	0.0
Back				**Back**				**Back**				**Back**				**Back**			
atlas	0	1	0.0	atlas	1	1	1.0	atlas	0	1	0.0	atlas	0	1	0.0	atlas	0	1	0.0
axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0
rib	0	13	0.0	Rib	0	13	0.0	rib	0	14	0.0	rib	0	18	0.0	rib	0	13	0.0
vert/cv	0	5	0.0	vert/cv	0	5	0.0	vert/cv	0	5	0.0	vert/cv	0	5	0.0	vert/cv	0	5	0.0
vert/tv	0	13	0.0	vert/tv	0	13	0.0	vert/tv	0	14	0.0	vert/tv	0	18	0.0	vert/tv	0	13	0.0
vert/lv	0	6	0.0	vert/lv	0	7	0.0	vert/lv	0	7	0.0	vert/lv	0	6	0.0	vert/lv	0	7	0.0
vert/sv	0	5	0.0	vert/sv	0	4	0.0	vert/sv	0	4	0.0	vert/sv	0	5	0.0	vert/sv	0	4	0.0
vert/cd	0	18	0.0	vert/cd	0	7	0.0	vert/cd	0	20	0.0	vert/cd	0	13	0.0	vert/cd	0	7	0.0
Upper Forelimb				**Upper Forelimb**				**Upper Forelimb**				**Upper Forelimb**				**Upper Forelimb**			
scapula	0	2	0.0	scapula	0	2	0.0	scapula	0	2	0.0	scapula	0	2	0.0	scapula	1	2	0.5
humerus	0	2	0.0	humerus	0	2	0.0	humerus	0	2	0.0	humerus	0	2	0.0	humerus	0	2	0.0
radius	0	2	0.0	radius	1	2	0.5	radius	0	2	0.0	radius	0	2	0.0	radius	0	2	0.0
ulna	0	2	0.0	ulna	2	2	1.0	ulna	0	2	0.0	ulna	0	2	0.0	ulna	0	2	0.0
Upper Hindlimb				**Upper Hindlimb**				**Upper Hindlimb**				**Upper Hindlimb**				**Upper Hindlimb**			
innominate	0	2	0.0	innominate	3	2	1.5	innominate	0	2	0.0	innominate	0	2	0.0	innominate	0	2	0.0
femur	1	2	0.5	femur	0	2	0.0	femur	0	2	0.0	femur	0	2	0.0	femur	0	2	0.0
tibia	1	2	0.5	tibia	1	2	0.5	tibia	0	2	0.0	tibia	0	2	0.0	tibia	0	2	0.0
patella	0	2	0.0	patella	0	2	0.0	patella	0	2	0.0	patella	0	2	0.0	patella	0	2	0.0
Feet				**Feet**				**Feet**				**Feet**				**Feet**			
astrag	0	2	0.0	astrag	3	2	1.5	astrag	0	2	0.0	astrag	0	2	0.0	astrag	0	2	0.0
calc	0	2	0.0	calc	3	2	1.5	calc	0	2	0.0	calc	0	2	0.0	calc	0	2	0.0
capral/tarsal	5	18	0.3	capral/tarsal	7	18	0.4	capral/tarsal	0	26	0.0	capral/tarsal	1	22	0.1	capral/tarsal	1	18	0.1
mcarpal	1	2	0.5	mcarpal	1	2	0.5	mcarpal	1	8	0.1	mcarpal	0	2	0.0	mcarpal	0	2	0.0
mtarsal	0	2	0.0	mtarsal	2	2	1.0	mtarsal	0	8	0.0	mtarsal	0	2	0.0	mtarsal	0	2	0.0
phal prox	0	8	0.0	phal prox	5	8	0.6	phal prox	2	16	0.1	phal prox	0	4	0.0	phal prox	0	8	0.0
phal mid	1	8	0.1	phal mid	2	8	0.3	phal mid	0	16	0.0	phal mid	0	4	0.0	phal mid	0	8	0.0
phal dist	0	8	0.0	phal dist	2	8	0.3	phal dist	0	16	0.0	phal dist	0	4	0.0	phal dist	0	8	0.0
Total	**11**		**2.0**	**Total**	**39**		**10.8**	**Total**	**13**		**0.7**	**Total**	**3**		**0.2**	**Total**	**3**		**0.7**
M.N.I	**1**			**M.N.I**	**2**			**M.N.I**	**1**			**M.N.I**	**1**			**M.N.I**	**1**		

Table 7.10: Body part representation major taxa Site A

Bos **Fusion Stage**		**fused**	**unfused**
10 months	distal scapula	0	0
18 months	distal humerus	1	0
	proximal radius		
	proximal phalanx		
	middle phalanx		
2-2.5 years	distal tibia	1	0
	distal metacarpal		
	distal metatarsal		
3.5-4 years	calcaneus	1	0
	distal radius		
	proximal femur		
	proximal humerus		
	distal femur		
	proximal tibia		
Total		**3**	**0**
Sheep/Goat			
6-10 months	distal humerus	0	3
	proximal radius		
	acetabulum		
	distal scapula		
13-16 months	proximal phalanx	2	6
	middle phalanx		
1.5-2.25 years	distal tibia	0	3
	distal metacarpal		
	distal metatarsal		
2.5-3 years	calcaneus	0	4
	distal radius		
	proximal femur		
3-3.5 years	proximal humerus	0	0
	distal femur		
	proximal tibia		
Total		**2**	**16**
Boar			
1 year	distal humerus	0	0
	proximal radius		
	distal scapula		
	middle phalanx		
2-2.5 years	proximal phalanx	1	1
	distal tibia		
	distal metacarpal		
	distal metatarsal		
3-3.5 years	calcaneus	0	0
	distal radius		
	proximal femur		
	proximal humerus		
	distal femur		
	proximal tibia		
Total		**1**	**1**

Table 7.11: Numbers of fused and unfused cattle, sheep/goat, boar and deer bones from Site A (Silver 1969).

7.2.1 Wild Cattle *Bos primigenius*

No evidence for the wisent (*Bison bonasus*) was found at Site A based on the osteological criteria by which the aurochs and steppe wisent are separated (Balkwill 1997). The cattle sample is very small and the degree of fragmentation did not allow for any measurements to be taken, therefore log size index diagrams could not be constructed and measurement comparisons with other Anatolian sites could not be made. The cattle bones from Site A are very large in size compared to domestic cattle found in Edinburgh's faunal reference collection. In addition, a comparison was made with the Pinarbaşi cattle bones and those recovered from Can Hasan III[58]. A cattle tibia fragment from Pinarbaşi was identical in size and morphology to two samples from the Can Hasan III collection, which has been identified by Payne as a large bovid, probably *Bos* (French 1972). Eleven bones were recovered from Site A contexts ABJ and ABU. They represent 16% (NISP) of the major identifiable taxa from Site A.

7.2.1.1 Kill-off patterns

One tooth fragment could be assessed for dental wear (Grant 1982). The tooth fragment does not have any wear and is either from a M1, M2 or M3 fragment. Based on Grants (1982) drawings the fragment is from an individual between 6 months but not older than 2.5 years of age. Epiphyseal fusion ages (Table 7.11) also place bones older than 18 months, 2.25 and 3.5 years (Silver 1969). Sex determination requires metrical analysis that the study samples did not permit.

7.2.1.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.2.1.2.1 Fragmentation Pattern

The cattle bones from Site A are not highly fragmented as 64% are represented by bones with greater than 50% of the element present (Table 7.10 and Figure 7.2). Bones with less than 25% present comprise 18% of the assemblage. No bone

---

58 The comparison was made at the British Institute for Archaeology at Ankara using their faunal reference collection in June of 1997.

measurements could be taken owing to the bone's fragmentation patterns that were predominantly longitudinal breaks. The elements that were recovered complete, carpal, tarsal and sesamoid bones are not generally measured for comparative purposes (von den Driesch 1987). It must be noted that these elements are comparable in size to *Bos primigenius* bones housed in Ankara's reference collection

7.2.1.2.2 Body Part Representation

Body part representation based MAU counts (Table 7.11) indicates that 49% of the elements were from the upper hindlimb, represented by femur and tibia fragments, 45% from the feet, represented by metacarpal, carpal/tarsal and phalange fragments and 6% from the cranium in the form of skull and mandibular tooth fragments (Figure 7.3). Body part representation indicates that at least two individuals are present at the site, one under 2.5 years and one older than 3-3.5 years (Table 7.11).

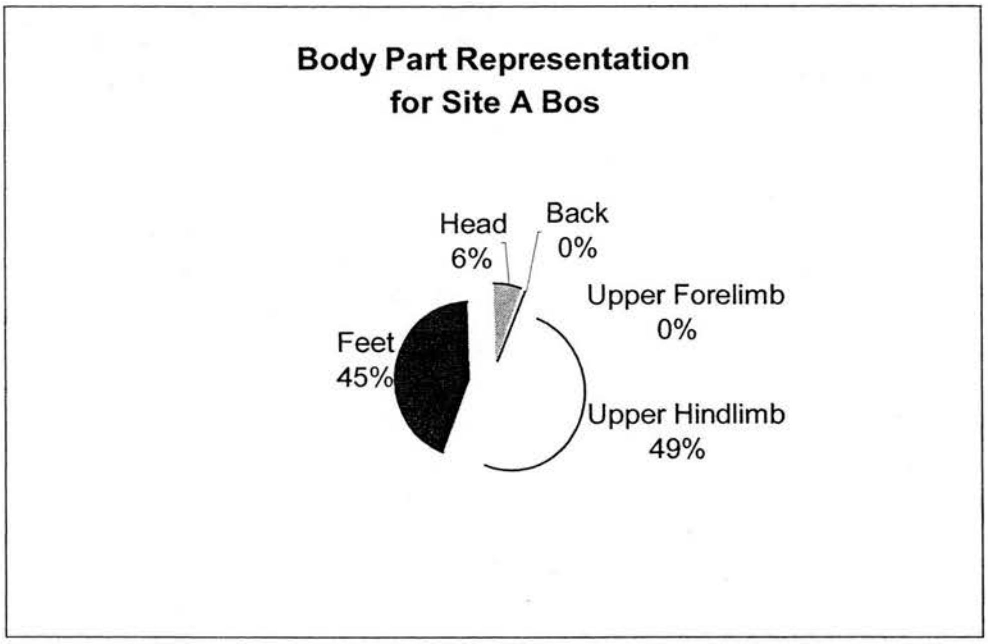


Figure 7.3: Wild cattle body part representation from Site B.

7.2.1.2.3 Butchery: Cut/Chop marks

The cattle long bones recovered have less than 25% of the element present. There is possible evidence of marrow extraction as longitudinal breaks are present on the tibia and metacarpal bones. Breaks associated with surface weathering also produce longitudinal breaks and cracks that are the result of sun drying (Lyman 1994: 357). Since the cattle bones show no sign of flaking on the outer surface and or initial stages of exfoliation, sun drying does not appear to have caused the longitudinal breaks. In addition, no fresh breaks were noted as a result of excavation. Fresh long bones crushed during marrow extraction leave a percussion area of impact on the bone that is associated with a subsequent split down the shaft, however, no percussion points were noted during analysis (Lyman 1994). In addition, one of the carpal bones is split/sliced in half which is unique given the date of the site and the tool kit available to the inhabitants. Two of the bones show signs of burning.

7.2.1.2.4 Cattle summary

Based on the above analysis, it appears that Site B was a primary butchery site for cattle. Of the 11 bones recovered, 7 are from the feet and 2 from the head, these bones are not usually transported away from a primary butchery location. In addition, very few meat bearing bones were recovered; indicating major meat portions of the cattle were either not brought to the site or transported away from the site for later consumption. Given the early ECA II date of the site and their relatively large size of the bones described above, it is highly unlikely that the cattle were domestic and therefore, the cattle bones from Site A are classified as representing wild aurochs *(Bos primigenius)* until a larger sample of material is available for analysis.

7.2.2 Equid *Equus hydruntinus* & *Equus* sp.

Horse bones represent 5% (NISP) of the major taxa assemblage. Three bones were recovered, two from context ABU and one from context ABJ. They are a maxillary M1 or M2 tooth, a mandibular M1 or M2 tooth and a complete carpal bone III.

7.2.2.1 Taxon Identification

Equus hydruntinus was identified on the basis of mandibular tooth's external buccal fold penetrating into the internal lingual fold (Davis 1980). It was given a classification of 4 according to the Meadows (1991) grading scheme. The maxillary tooth was too fragmentary for identification beyond *Equus* sp. However, the tooth was however larger than a comparative maxillary *Equus hyrduntinus* tooth, perhaps indicating a larger equine. Carpal bone III was found in context ABJ. Based on the overall small size of the bone, it is smaller than *Equus caballus* samples found in the comparison reference collection. It may either be derived from an onager or hydruntine. The bone has been classified as *Equus* sp. until further comparable material is recovered.

7.2.2.2 Kill off pattern

The mandibular tooth recovered from context ABU is estimated to be at least 9 years old on the basis of Meadow's (1991) code 3 of full wear in middle third of crown (Hillson 1987). The recovery of one tooth does not allow for a proper age profile to be reconstructed.

7.2.2.3 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.2.2.3.1 Fragmentation Pattern

Fragmentation of equid bones is difficult to assess given that only three bones were recovered. The carpal bone is complete and the teeth are almost complete (Table 7.9 and Figure 7.2).

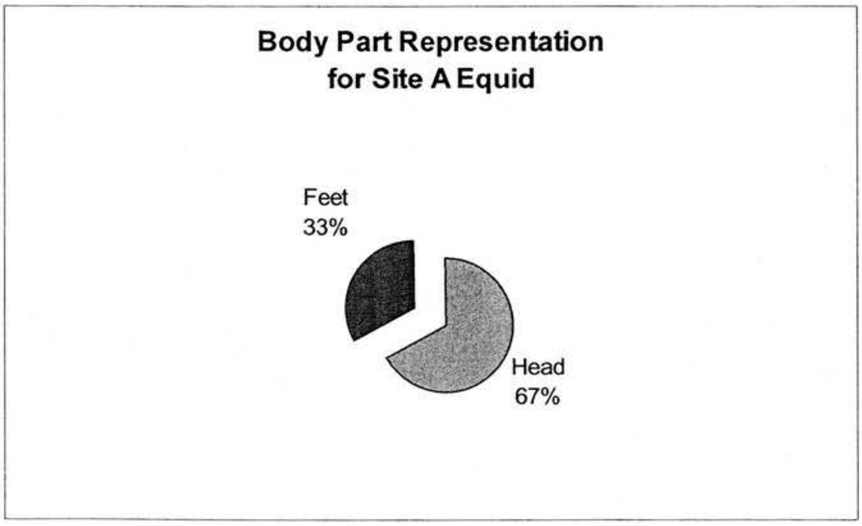


Figure 7.4: Equid body part representation from Site A.

7.2.2.3.2 Body Part Representation

Body part representation based on MAU counts indicates that 67% of the bones were from the cranium represented by mandibular and maxillary first or second molar fragments and 33% from the feet represented by carpal bone III (Figure 7.4). Body part representation indicates that there is a minimum of one individual.

7.2.2.3.3 Equid summary

The analysis of horse bones at Site A reveal that at least two species of equids inhabited the Anatolian Plateau during the occupation of Site A: a hydruntine and possible onager. There is no indication that the equids were used other than as a meat source.

7.2.3 Caprinae *Ovis* sp. and Sheep/Goat

Caprine remains dominate the major taxa assemblage. They represent 56% (NISP) of the bones. Twelve of the bones were identified as sheep while the remaining twenty-seven were classified as sheep/goat. However, no bones from the three contexts were identified as goat, indicating that the sheep/goat bones probably were just from sheep. Of the thirty-nine bones recovered; two were from context ABR, thirty-five from ABU and two from ABJ. The dominance of caprines suggests that the inhabitants of Site A were heavily reliant on these animals as staples for meat.

7.2.3.1 Wild versus Domestic

Methodological criteria used to determine the domestic status of sheep was bone size and cull patterns.

7.2.3.1.1 Measurements

Bone measurements were only taken from a sheep atlas bone (Table 7.12). The atlas measurement from Site A was compared with a standard sheep using Meadow's (1999) log size index method (Table 7.13). The sheep GLF measurement from Site A is smaller than the standard skeleton[59] GLF measurement. The sheep atlas GLF

[59] See Appendix 5 for 'standard' skeleton reference.

measurement from Site A was then compared to sheep atlas GLF measurements from Musular and Güvercinkayasi (Table 7.14). The Site A GLF atlas measurement is smaller than the Musular sheep GLF atlas measurement that Buitenhuis (forthcoming) interprets as a morphologically wild sheep but possibly managed by humans (Table 7.14). Site A's sheep atlas is comparable in size to Güvercinkayasi GLF atlas measurements that Buitenhuis (forthcoming) classifies as a domestic population of sheep (Table 7.14). The atlas log size index measurement from Site A was then compared to log size index measurements of sheep bones from proto-domestic sheep at Musular and Aşikli and domestic sheep from Yumuktepe, Tepecik and Güvercinkayasi (Buitenhuis forthcoming) all located in Anatolia (Figure 7.5). The sheep from Site A fall within a wild population size spectrum similar to those produced by Musular and Aşikli. It must be noted that Buitenhuis (forthcoming) believes the sheep from these two sites are in a managed relationship with the inhabitants however no morphological size reduction is evident on the bones. It appears that the one sheep bone measurement recorded from Site A is comparable in size to those from a domestic population but on a broader log size index comparison, the Site A atlas falls within a wild population percentile. Because the measurement analysis fails to meet minimum zooarchaeological requirements to conclude whether a sample is domestic, the sheep bones from Site A are interpreted as wild until more sheep bone measurement data is collected.

Bone	Atlas				
Measurement	BFcd	GL	GLF	H	GB
Data	60.5	55.7	48.7	44.4	68.9

Table 7.12: Measurements in mm of fused sheep bones from Pinarbaşi Site A.

Element	Dimension	Pinarbaşi Site A sheep bone measurement	standard skeleton	Log 10 Pinarbaşi *sheep*	Log 10 Standard skeleton	Log Difference Pinarbaşi - standard skeleton
Atlas	GLF	48.7	49.4	1.68752896	1.69372695	-0.00619799

Table 7.13: Log differences in sheep bones at Pinarbasi Site A compared with standard sheep (Buitenhuis forthcoming).

Atlas	Pinarbasi Site A	Musular	Güvercinkaya
	GLF	GLF	GLF
N	**1**	**6**	**4**
Min	**48.7**	**50.1**	**46.3**
Max	**48.7**	**57.0**	**50.8**
Mean	**48.7**	**54.5**	**47.9**
Data	48.7	50.1	46.3
		50.5	47.3
		56.0	47.3
		56.7	50.8
		56.8	
		57.0	

Table 7.14: Measurements in mm of sheep atlas GLF from Pinarbaşi Site A, Musular and Güvercinkaya (Buitenhuis forthcoming).

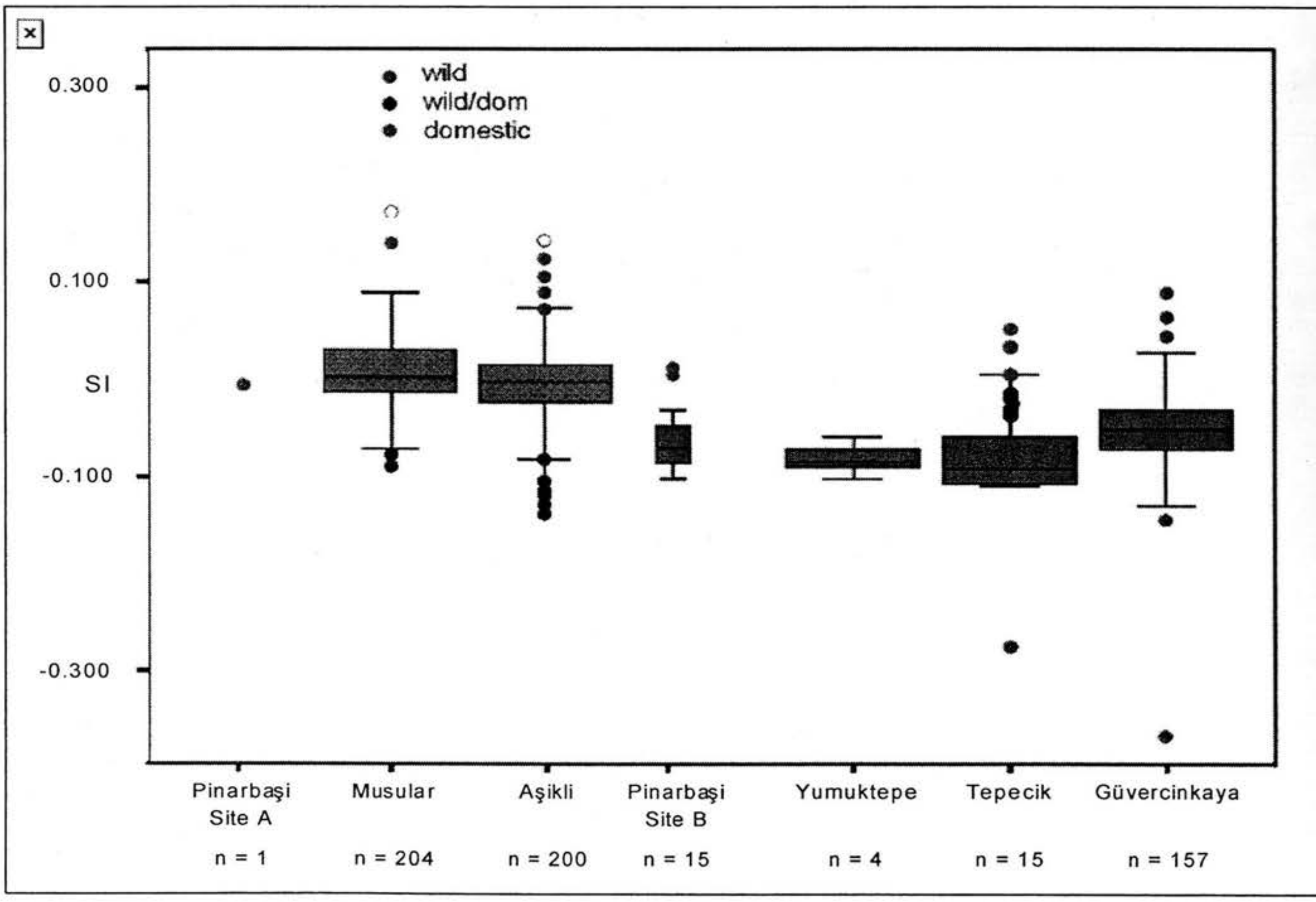


Figure 7.5: Boxplots of the variation of size indices (SI) for Ovis sp. compared to a standard individual from Pinarbaşi Site A (Table 7.14) and other Central Anatolian sites (Buitenhuis forthcoming).

7.2.3.1.2 Kill off pattern

All of the five isolated mandibular teeth roots were open indicating that the teeth were still in a growth process. In addition, the teeth fragments all had very high crowns again indicating young individuals, as the teeth were not heavily worn. One tooth could be aged to 2-3 years (Zeder 1991).

Sheep mortality analysis indicates that 89% of the bones come from animals killed before 2.5 years[60]. The less than 10 month age category also contains astragalus and calcaneus bones that are foetal in morphology. They are very porous and not yet fully developed.

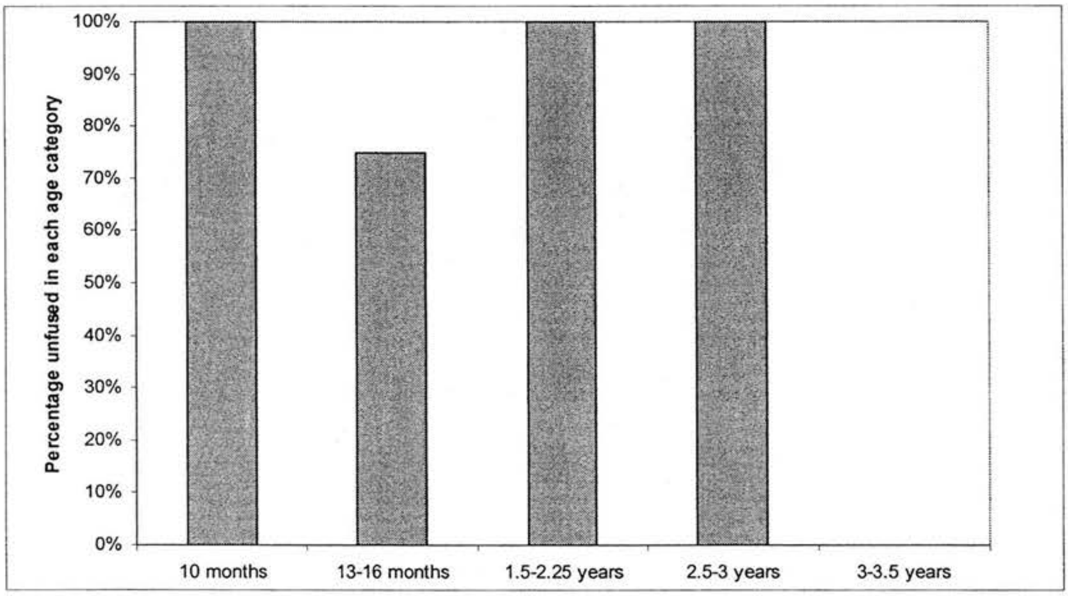


Figure 7.6: Sheep/goat mortality at Site A, based on bone fusion (data from Table 7.11).

The small sample size makes attempting to establish an age profile problematic. There is no evidence to suggest the killing of animals aged more than 16 months. The recovery of foetal bones indicates that a pregnant female was killed at the site. It is unlikely that a herder would kill a pregnant female for meat, as this would restrict the survivorship of the herd, versus a hunter which would have targeted a slow moving female as an easy opportunistic kill. However, it cannot be ruled out that

[60] Sheep mortality estimates are based on bone fusion stages taken from Silver (1969).

herders were not also opportunistic and would have eaten a pregnant sheep. Early management of wild sheep could have resulted in a sheep's death due to stress.

Attempts to sex the sheep remains based on ischium characteristics and horn cores were not performed due to their absence within the assemblage.

7.2.3.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.2.3.2.1 Fragmentation patterns

The caprine bones from Site A are not as highly fragmented as the other major taxa from the Site. In 62% of cases, 50% of the element survives (Table 7.9). The high percentage of complete and almost complete fragments (60%) is a result of large numbers of carpal, tarsal and phalanx bones being recovered.

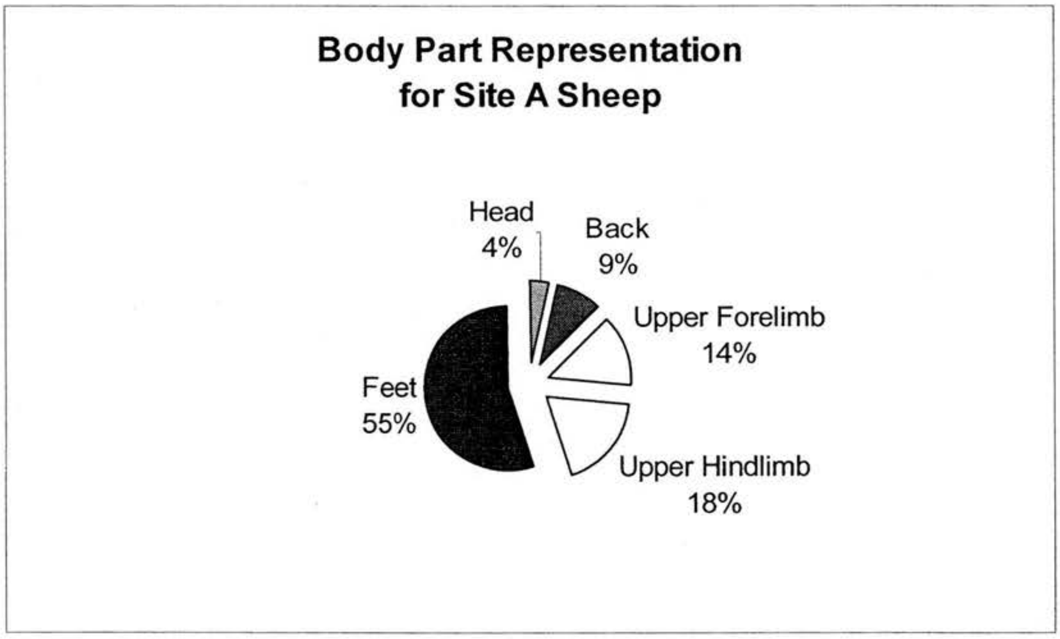


Figure 7.7: Sheep/goat body part representation from Site A.

7.2.3.2.2 Body part representation

All body part categories based on MAU counts are represented within the assemblage. Feet elements dominate at 55%, upper hindlimb 18%, upper forelimb 14%, back 9% and head 4% (Figure 7.7). Feet elements have been recorded primarily as complete elements. Unfused epiphyses could be reassembled during analysis. The bones recovered from the upper hind and forelimbs are from distal end fragments and are all unfused. The innominate fragments recovered are also unfused. Mandibular and maxillary teeth dominate the head elements. Five isolated mandibular teeth were recovered. All of the roots are open and they have very high crowns. No horn cores were recovered. Body part representation indicates that at least two and possibly three individuals are present at the site (Table 7.10).

7.2.3.2.3 Butchery: Cut & Chop marks

No cut marks are present on the bones. The bones generally appear to have been chopped during disarticulation. Metapodials were recovered split in the middle and based on the end splinters appear to have been chopped and the rest of the lower limb discarded into the context. This resulted in complete carpal, tarsal and phalanx elements being recovered.

7.2.3.2.4 Burnt bone

Only 15% of the bones recovered have evidence of burning, the majority being found within context ABU (Table 7.8). These bones were all from the feet and appear to have been discarded directly into the charcoal deposit.

7.2.3.2.5 Caprinae summary

Sheep body part representation indicates that butchery and discard of non-meat bearing bones occurred at the site. However, consumption cannot be confirmed. Based on the body part representation of the sheep, the inhabitants were using Site A as a primary butchery site where some of the animals were consumed. However, the majority of the main meat bearing bones are absent and were possibly transported off site. The fragment data will be analysed to address this issue to see if these elements are possibly represented within the bone classified as fragmented. The lack of processed long bones would indicate transport away from the site or deposition within other areas of the Site itself.

Based on the criteria outlined in Chapter 6 which are used to distinguish between a wild and domestic population, the assemblage possibly indicates management where culling was taking place as young animals prevail, their bone size is smaller than comparative wild material and caprines represent the majority of the assemblage. However, very few measurements could be taken that could be used as a primary source in determining domestication (Zeder 2000). In addition, the assemblage appears to be more reflective of a hunting strategy whereby a female nursing herd comprised of young individuals and pregnant females were killed. Until more data is collected no conclusions can be drawn regarding the domestic status of the sheep at Site A.

7.2.4 Red Deer *Cervus elaphus*

Red deer bones represent 4% (NISP) of the minor taxa. Three bones were recovered from two contexts ABU and ABJ.

7.2.4.1 Kill off pattern

Age data based on a fused scapula and a worn mandibular tooth indicates that at least one individual aged more than 8 years was killed (Egorov 1967). The mandibular P4 fragment is very worn. Based on normal wear patterns this would suggest an age greater than 8 years (Hillson 1992, Payne 1987)[61].

7.2.4.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.2.4.2.1 Fragmentation patterns

Fragmentation indicators are hard to asses due to only three bones being recovered. One of the bones was complete, the carpal bone and the tooth fragment was almost complete. The smallest bone recovered was that of the distal part of the scapula.

---

[61] The age estimate is based on red deer mandibles from the University of Edinburgh reference collection. There appears to be considerable variation in the wear of the P4 in these mandibles which is why and age of older than 8 was suggested. It must also be noted age estimates should be based on complete mandibles, however no other teeth were found

7.2.4.2.2 Body Part Representation

Body part representation based on MAU counts indicates that 72% were from the upper forelimb, 14% from the feet and from the cranium 14% (Figure 7.9). The three bones recovered were a distal scapula fragment, a mandibular tooth fragment (P4) and an accessory carpal bone. The range of body parts represented indicates that the deer was probably killed close to the site versus transported as butchered meat. Body part representation indicates one individual butchered at the site (Table 7.10).

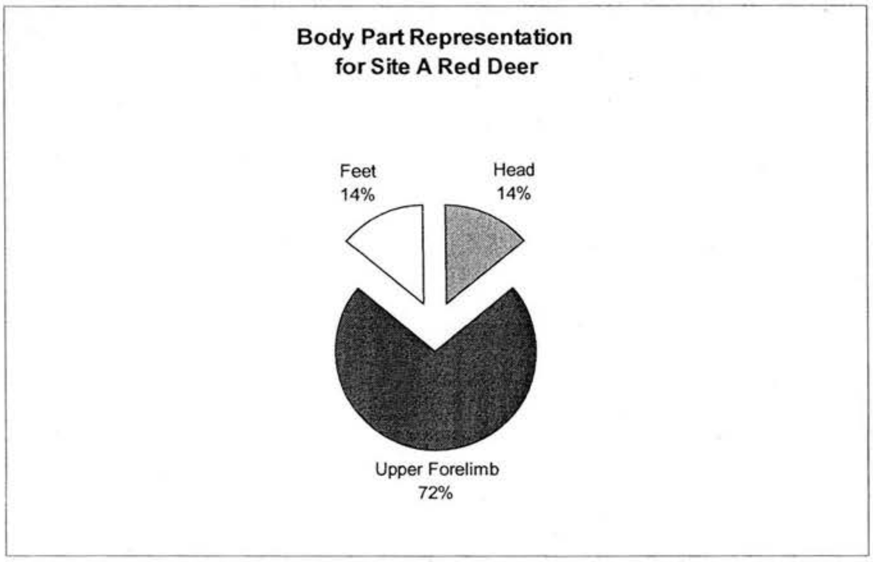


Figure 7.8: Red deer body part representation from Site A.

7.2.4.2.3 Butchery: Cut, Chop marks and Burnt bone

None of the bones have burn or cut marks. Less than 50% of the scapula was present, represented by the distal end.

7.2.4.2.4 Red Deer summary

The recovery of an individual greater than 8 years suggests an established herd of deer occupied the area around the site. The presence of deer within the assemblage, suggests that the environment around Site A must have been very rich in woodland and grasses in order to support both red deer and cattle that would have competed for common grazing resources (Uerpmann 1987).

7.2.5 Wild Boar *Sus scrofa*

Pig bones represent 19% (NISP) of the major identifiable taxa. Thirteen pig bones were recovered from Site A.

7.2.5.1 Kill off pattern

Based on an examination of pig teeth, animals younger than 10 months were killed. The dp4 fragment with no wear is aged at one month and the other unworn tooth fragments would be a maximum of 17 months in age (Silver 1969). Although there is an emphasis on young pigs, the kill-off was not restricted to piglets. There were also older animals, one just under 2.5 years as the proximal phalange epiphysis shows signs of beginning to fuse and an individual older than 2.5 years based on a fused metapodial.

7.2.5.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.2.5.2.1 Fragmentation patterns

None of the pig bones were recovered complete. The majority of the bones are represented by fragments sized between 25-75% present (Table 7.9). The fragmentation pattern must also take into account the very young age of the animals killed. The majority of the bones recovered have been aged as very young piglets, which means the bones would have been very porous, softer in composition and unfused when deposited into the context. Their preservation is therefore more susceptible to greater taphonomic forces which affect survival within the archaeological contexts.

7.2.5.2.2 Body Part Representation

Body part representation based on MAU counts indicates that 67% were from the cranium and 33% from the feet (Figure 7.10). The cranium bones are represented in mandibular and maxillary teeth fragments (Table 7.10). The three other bones recovered were one metacarpal and two proximal phalange fragments. Two of the deciduous teeth fragments and one of the phalange fragments were burnt.

Body part representation indicates that at least three individuals are present at the site, one ages less than 10 months on the basis of the teeth, one under 2.5 years and one older than 2.5 years. This is based on a fully fused proximal phalange and an unfused proximal phalange with no indication of fusing (Table 7.11). Three of the teeth fragments were from milk teeth. Two of the fragments were from tooth buds with no wear.

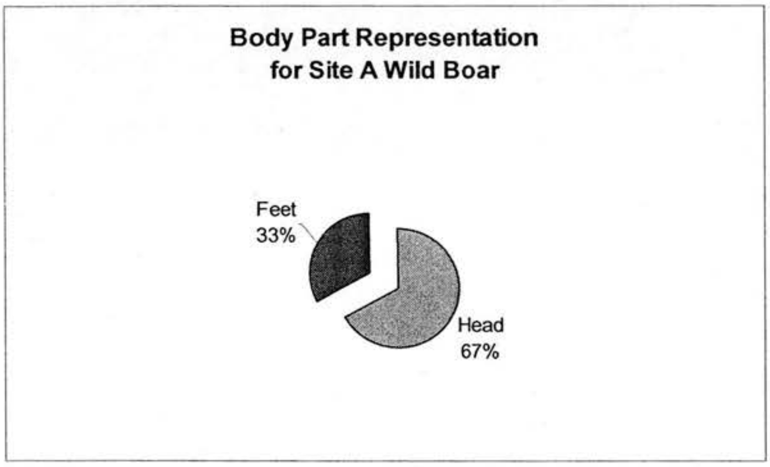


Figure 7.9: Wild boar body part representation from Site A.

7.2.5.2.3 Butchery: Cut, Chop marks and Burnt bone

Only three (23%) of the pig bones were burnt (Table 7.8). The bones were from cranium and feet elements that were found in context ABR and ABU.

7.2.5.2.4 Pig summary

The high percentage of pig within the assemblage raises the possibility of the taxon being domesticated. Any investigation of domestication is restricted and this is compounded even more when a sample size is very small. However, inferences can be extrapolated from the recovered material. The proportion of juvenile animals in the sample is extremely high (92%) and almost all of specimens died before the age of three years, indicating that the taxon was used predominantly for meat and for their primary products. Selective culling of domestic swine emphasises age ranges between 6 to 18 months of age (Zeder 2001). The age profile at Site A could, theoretically, fit a domestic profile. However, the location of the site must also be taken into consideration. The excavation of the site has not revealed any evidence of long-term structures with regard to settlement and houses. Pigs are not animals that can be easily driven to external seasonal sites. It is not outside the realm of possibility that piglets were transported to the site given the presence of domestic pigs at Hallan Çemi and Çayönü (Chapter 5). However, both these sites are large settlement sites and there is no cultural data from Site A to suggest it was anything more than a seasonal site. Piglets would have been easily hunted at Site A, as they would have inhabited the marsh area close to the site. Given the early date, the location of the site and the lack of semi permanent structures, the pig remains from Site A are probably representative of a wild boar population.

7.3 Representation of Minor Taxa at Site A

A wide range of minor taxa is represented in the faunal assemblage. The 93 bones identified as minor taxa weigh 65 grams (Table 7.15). Context ABU contains the largest NISP count at 54 which is 59% of the major taxa assemblage. To remove the effects soil volumes had on NISP, normalized weight-volume ratios were calculated (Table 7.15). In comparing these normalized values, context ABJ contains 1.5 times the weight of bone given 1 litre of soil than context ABR and 1.9 times the weight of bone given 1 litre of soil than context ABU (Table 7.16). Therefore in terms of the context's propensity to produce bone mass, context ABJ is the most prolific in real terms. Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 7.15). NISP normalized values corroborate those calculated by weight volume ratios as context ABJ remains the most prolific (0.17) in real terms.

NISP counts are presented in Table 7.14. Fox, bird and hare comprise the majority of the assemblage with the remainder of the taxa represented with similar percentages. A number of trends in the representation of the minor taxa are visible. As in the case of the major taxa, the proportions of all of the minor taxa dramatically increase from context ABR to ABU and then decrease again in ABJ (Figure 7.11). Again this may indicate an increased use of the site by humans for a specific period. Fox remains

		ABR				ABU				ABJ				Total			
Minor Taxa		**NISP**	%	**Weight (g)**	%	**NISP**	%	**Weight (g)**	%	**NISP**	%	**Weight (g)**	%	**NISP**	%	**Weight (g)**	%
fox	*Vulpes vulpes*	7	44%	8.4	51%	32	59%	8.8	34%	11	48%	5.5	24%	50	54%	22.7	35%
hare	*Lepus* sp.	3	19%	0.5	3%	4	7%	2.1	8%	3	13%	6.7	30%	10	11%	9.3	14%
bird	Aves	5	31%	7.35	45%	17	31%	14.9	58%	7	30%	10.4	46%	29	31%	32.7	50%
beaver	*Castor fiber*	1	6%	0.2	1%	-	-	-	-	-	-	-	-	1	1%	0.2	0.5%
fish	Pisces	-	-	-	-	1	2%	0.05	0%	2	9%	0.1	0%	3	3%	0.2	0.5%
Total		***16***		***16.45***		***54***		***25.8***		***23***		***22.7***		***93***		***64.95***	
Liters of soil processed per context				**140**				**280**				**132**				**552**	
NISP per soil volume (NISP/L)		0.11				**0.19**				**0.17**				**0.17**			
Bone weight per soil volume (g/L)				**0.12**				**0.09**				**0.17**				**0.12**	

Table 7.15: Minor Taxa NISP by context with weight of bone and litres of soil processed.

	ABR	ABU	ABJ
ABR	1.00	0.78	1.46
ABU	1.28	1.00	1.87
ABJ	0.68	0.54	1.00
Total	2.96	2.32	4.33

Table 7.16: Summary of relative weight/volume ratios for Minor Taxa Site A.

dominate all three contexts and also make up more than half of the minor taxa assemblage (54%). Hare and fish remain relatively constant in all three contexts.

The minor taxa contain three taxa that rely heavily on large water resources; these are water birds, beaver and fish. Birds were recovered from all three contexts and are comprised primarily of duck and other water taxa. A beaver bone was recovered from context ABR as were a small number of fish vertebrae from ABU and ABJ. The presence of these taxa within the assemblage indicates that the site was in close proximity to a large water resource that sustained diverse fauna. However, the small numbers of beaver and fish indicates that these taxa were not primary economic resources within the diet.

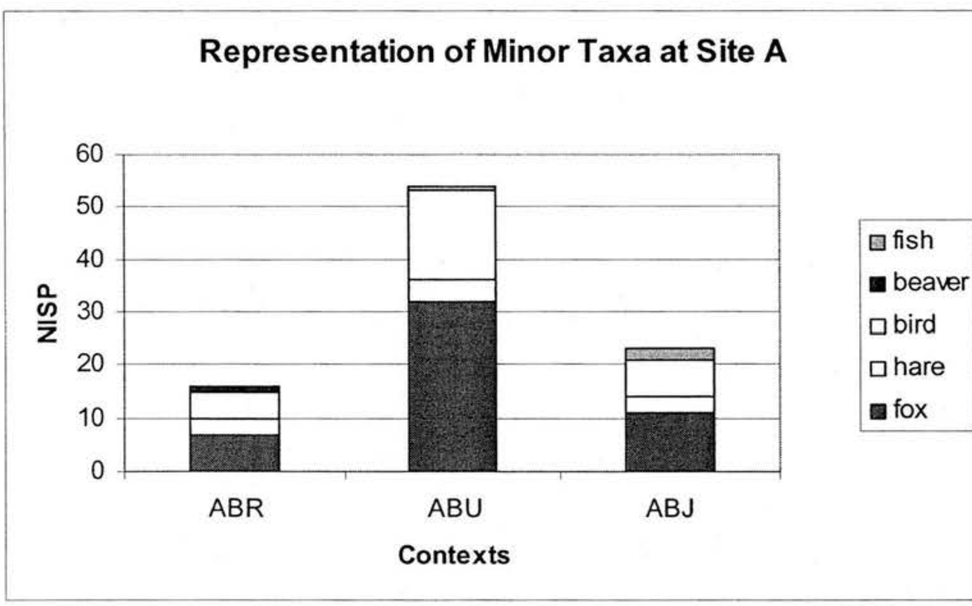


Figure 7.10: Body part representation minor taxa Site A.

The interpretation of the small mammal taxa is more complicated than the large and medium sized mammal material because many of the minor taxa may be hunted for resources such as fur and feathers rather than substantial amounts of meat. Therefore, a disappearance of minor taxa from the faunal spectrum may indicate that game had become over hunted within the vicinity of the site or possibly that cultural preferences had shifted away from wild economies to a more domestic stock. The minor taxa appear to remain constant throughout the 8^{th} millennium contexts indicating a continued rich environment surrounding Site A and a broad spectrum economic approach.

Fox				**Hare**				**Bird**			
Element	**NISP**	***Divided by:***	**M.A.U.**	**Element**	**NISP**	***Divided by:***	**M.A.U.**	**Element**	**NISP**	***Divided by:***	**M.A.U.**
Head				**Head**				**Head**			
cranium	8	14	0.6	cranium	0	14	0.0	cranium	0	10	0.0
mandible	0	2	0.0	mandible	0	2	0.0				
mand tooth	8	22	0.4	mand tooth	0	22	0.0				
max tooth	1	22	0.0	max tooth	0	22	0.0				
Back				**Back**				**Back**			
atlas	0	1	0.0	atlas	0	1	0.0	Atlas	0	1	0.0
axis	0	1	0.0	axis	0	1	0.0	Axis	0	1	0.0
rib	0	14	0.0	rib	0	14	0.0	coracoid	5	2	2.5
vert/cv	0	5	0.0	vert/cv	0	5	0.0				
vert/tv	0	14	0.0	vert/tv	0	14	0.0				
vert/lv	0	7	0.0	vert/lv	0	7	0.0				
vert/sv	0	4	0.0	vert/sv	0	4	0.0				
vert/cd	0	20	0.0	vert/cd	0	20	0.0				
Upper Forelimb				**Upper Forelimb**				**Upper Forelimb**			
scapula	1	2	0.5	scapula	0	2	0.0	scapula	3	2	1.5
humerus	2	2	1.0	humerus	1	2	0.5	humerus	5	2	2.5
radius	3	2	1.5	radius	0	2	0.0	radius	2	2	1.0
ulna	2	2	1.0	ulna	1	2	0.5	ulna	1	2	0.5
Upper Hindlimb				**Upper Hindlimb**				**Upper Hindlimb**			
innominate	0	2	0.0	innominate	0	2	0.0	innominate	0	2	0.0
femur	2	2	1.0	femur	0	2	0.0	femur	2	2	1.0
tibia	0	2	0.0	tibia	0	2	0.0	tibiotarsus	0	2	0.0
patella	0	2	0.0	patella	0	2	0.0				
Feet				**Feet**				**Feet**			
astrag	1	2	0.5	astrag	2	2	1.0	carpometacarpus	4	2	2.0
calc	0	2	0.0	calc	1	2	0.5	tarsometatarsus	3	2	1.5
capral/tarsal	4	26	0.2	capral/tarsal	1	26	0.0				
mcarpal	3	8	0.4	mcarpal	1	8	0.1				
mtarsal	2	8	0.3	mtarsal	0	8	0.0				
phal prox	6	16	0.4	phal prox	2	16	0.1	phal prox	2		
phal mid	3	16	0.2	phal mid	1	16	0.1	phal mid	1		
phal dist	4	16	0.3	phal dist	0	16	0.0	phal dist	0		
Total	**50**		**8.1**	**Total**	**10**		**2.9**	**Total**	**29**		
M.N.I.	**2 (3 radius)**			**M.N.I.**	**2 (2 right astragali)**			**M.N.I.**	**3 (2 carpometacarpus)**		

Table 7.17: Body part representation minor taxa Site A.

Minor Taxa	100%	76-99%	51-75%	26-50%	<25%
Vulpes vulpes	9	7	12	17	5
Lepus sp.	4	1	3	2	0
Aves	4	15	6	4	0
Castor fiber	1	0	0	0	0
Pisces	0	3	0	0	0

Table 7.18: Representation of minor taxa NISP counts percentage of bone present.

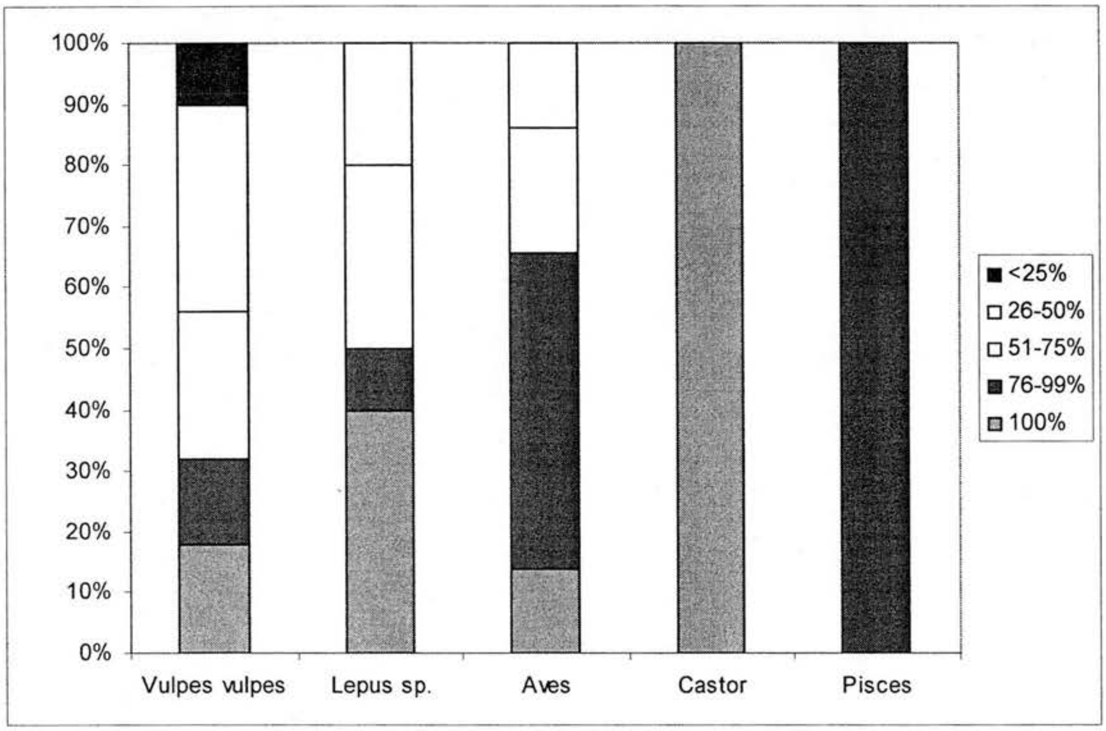


Figure 7.11: Percentage of minor taxa bones within each fragment size category Site B (data Table 7.18).

Genus		**Context**								
		ABR		**ABU**		**ABJ**		**Total**		
		NISP	**Burnt**	**NISP**	**Burnt**	**NISP**	**Burnt**	**NISP**	**Burnt**	**%**
fox	*Vulpes vulpes*	7	2	32	8	11	2	50	12	24%
hare	*Lepus* sp.	3	2	4	2	3	-	10	4	40%
Bird	Aves	5	-	17	1	7	-	29	1	3%
beaver	*Castor fiber*	1	-	-	-	-	-	1	-	-
Fish	Pisces	-	-	1	-	2	-	3	-	-
Total		**16**	**4**	**54**	**11**	**23**	**2**	**93**	**17**	**18%**

Table 7.19: Representation of burnt bone from minor taxa NISP counts by context Site A.

Genus		<2	%	2-5	%	5-10	%	>10	%	NISP
fox	*Vulpes vulpes*	31	62%	19	38%	-	-	-	-	50
hare	*Lepus* sp.	6	60%	4	40%	-	-	-	-	10
bird	Aves	10	34%	17	59%	2	7%	-	-	29
beaver	*Castor fiber*	-	-	1	100%	-	-	-	-	1
fish	Pisces	3	100%	-	-	-	-	-	-	3
Total		**50**	54%	**41**	44%	**2**	2%	**0**		**93**

Table 7.20: Representation of minor taxa NISP counts by element size (cm) category Site A

7.3.1 Red Fox *Vulpes vulpes*

Identification of red fox was made based on post-cranial morphological comparisons with reference material from the Museum of Scotland in Edinburgh. The red fox is one of the most widely distributed of all wild canids. It occurs naturally over much of the northern hemisphere, ranging throughout most of North America, Europe and Asia. Red foxes utilize a wide range of habitats including forest, tundra, prairie and agricultural land. Preferred habitats have a diversity of vegetation. The red fox is essentially an omnivore, eating rodents, lagomorphs, insects and fruit, which have all been recorded from the environment around Site A. Fox bones represent 48% (NISP) of the minor taxa. Fifty bones were recovered from Site A. Sixty percent of those bones being recovered from context ABU.

7.3.1.1 Kill off pattern

Almost all of the remains appear to be from adult individuals, with only 1 of the 50 fragments being unfused.

7.3.1.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.3.1.2.1 Fragmentation patterns

The upper forelimb and hindlimb bones are highly fragmented and show signs of chopping and burning, both representative of butchery and consumption practices (Rixson 1989). The feet area is represented by complete elements that were possibly discarded articulated once the animal was skinned during the butchery process.

7.3.1.2.2 Body Part Representation

Body part representation based on MAU counts indicates that 50% were from the upper forelimb, 26% from the feet, 12% from the upper hindlimb and 12 % from the head (Figure 7.17). Most body parts are represented, indicating that foxes were hunted and consumed at the Site. The feet are dominated by complete elements that were possibly discarded articulated once the animal was skinned during the butchery process. The cranium bones consist of skull, mandibular and maxillary teeth fragments. Tchernov (1994) states that the high frequency of fox cranial elements found at PPNA sites are a continuation of a Natufian tradition where canine teeth were used for adornment. However, none of the fox teeth show signs of modification and since they are still encased in the maxilla no modifications are evident.

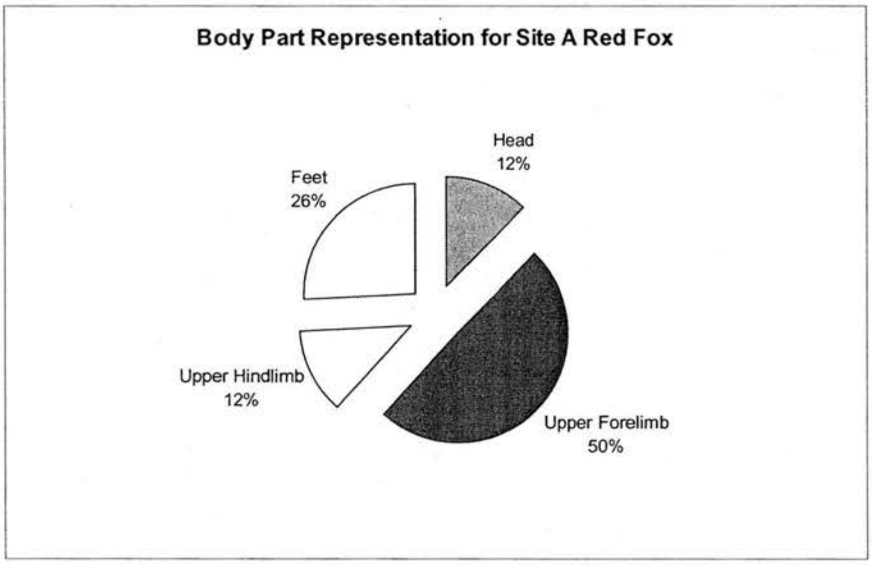


Figure 7.12: Body part representation of Site A fox

7.3.1.2.3 Butchery: Cut, Chop marks and Burnt bone

Twenty four percent of the fox bones were burnt (Table 7.19). The majority of the burnt bones were recovered from context ABU that also produced the majority of the fox bone.

7.3.1.2.4 Fox summary

The recovery of adult and juvenile fox bones indicates hunters were aware of fox denning locations as pups usually disperse between 6 to 10 months of age and rarely wander away from the den during this time (Henry 1997). Since some of the fox bones are burnt and all body parts are represented within the assemblage, the remains are interpreted as coming from consumption refuse providing important fur and meat sources.

7.3.2 Hare *Lepus* sp.

The hare is widespread throughout Europe, Scandinavia and Eurasia. Habitat preference is open land such as meadows, pastures, cultivated fields, sandy moors, and marshes. Pinarbaşi would have been an ideal site for hare populations. Hare bones represent 10% (NISP) of the minor taxa (Table 7.15). The number of hare bones remains relatively constant throughout the three phases of occupation in contrast to the other minor taxa that fluctuate.

7.3.2.1 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.3.2.1.1 Fragmentation patterns

Fifty percent of the bones had greater than 75% of the element present and 40% of these were complete. Complete bones were from feet elements that appear to have been discarded articulated.

7.3.2.1.2 Body Part Representation

Body part representation based on MAU counts indicates that 66% were from the feet and 34% from the upper forelimb (Figure 7.13). The majority of the feet elements are complete in relation to the upper forelimb bones, which are fragmented. Body part representation indicates that hare were butchered and consumed at the site.

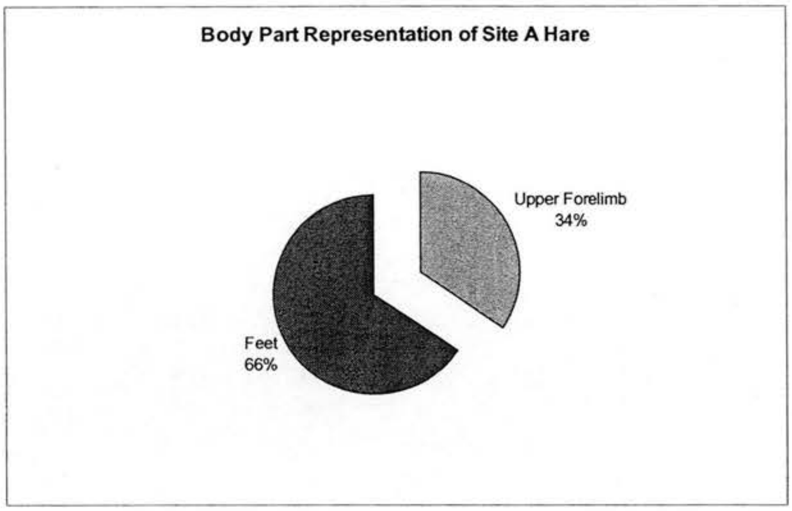


Figure 7.13: Body part representation of Site A hare

7.3.2.1.3 Butchery: Cut, Chop marks and Burnt bone

Forty percent of the bones are burnt (Table 7.19). These bones were primarily extremity bones that would have burnt easily during cooking/roasting or when they were discarded into the charcoal deposit after butchery.

7.3.2.1.4 Hare summary

Similar to fox bones, hare would have provided the inhabitants of Site A with an excellent source of meat and fur.

7.3.3 European Beaver *Castor fiber*

The European beaver was originally distributed throughout most of Europe and northern Asia. Beavers occupy wooded streams and rivers, and small ponds and lakes surrounded by trees. Beavers live in small family groups, usually consisting of 3-5 individuals. A family group will have a territory which averages 3.6 km. of river bank, but can be from 0.5-13 km., depending on the availability of food (Anderson 1984).

One beaver bone was recovered from context ABR. The bone was a complete fused middle phalange. Because only one bone was recovered it cannot be ruled out that the bone or pelt of the animal was transported to the site. However, the site today is located at a spring and Palaeoenvironmental data (Chapter 4) indicate that the area was a major water resource within prehistory. The presence of beaver at the site would confirm a rich water and woodland environment. Beaver damming practices have a major impact on water currents, bog expansion, marshes and woods. Beaver damming results in the expansion of wetlands, elevation of water tables and accumulation of organic material (Conroy *et al.* 1998: 107). In addition, beavers feed mainly on herbaceous terrestrial vegetation and aquatic vegetation such as water lilies indicating these resources would also have been present in the Site A environment. Beavers would have been used as an excellent source of meat, fur and by products such as castoreum oil[62].

ABU and ABJ did not produce any beaver (*Castor fiber*) remains. This may be a result of taphonomic processes or the exclusion of the species from the diet. It may also be due to the loss of the species from the area as a result of over hunting. Environmental changes resulting in a more arid environment may also have reduced the wetland around the site.

7.3.4 Bird Aves

As noted in the Methodology Chapter, the bird bone material has not been analysed by a bird bone specialist. This author's knowledge of bird bone material is very limited and no bird reference material was available in Ankara, Turkey. Identifications were made primarily with Cohen and Serjeantson's (1996) manual. Accurate identification of bird bones is therefore very tentative. The use of Cohen and Serjeantson's (1996) manual must be considered as a preliminary assessment only. The manual can only be used to show which families or species may be ruled out and suggest which groups of reference specimens need to be consulted or which bones need to be referred to a specialist (Cohen and Serjeantson 1996). The manual was primarily used to identify principal bones of the skeleton.

The recovery of bird bones at Site A was due to the application of systematic wet and dry sieving techniques in the recovery process. Avifaunal remains were identified

[62] Castoreum oil, fixes any added fragrance and releases it gradually when warmed by the body. Most commonly used today as an additive in cigarettes and perfumes. Castoreum also has been used in folk medicine to cure colic, arthritis and other body aches.

into family type categories (Cohen & Serjeanstson 1996). Bird bones are relatively well represented in the sample at 27%. 29 bird bones were recovered. The majority of the bones (59%) were recovered from context ABU. The bones indicate a very wide diversity of taxa including game birds (Phasianidae) such as grouse and partridge, water birds (Anatidae) such as duck and song birds (Passeriformes). In addition, the remains of a large bird of prey (Accipitridae) possibly a vulture were recovered (Table 7.21). Given the range of birds recovered, it is likely that they were hunted as much for their feathers as for their meat and a variety of techniques were used to capture them, including trapping, netting, digging and poisoning employed (Dobney 2003).

Skeletal Elements	***Undetermined***	***Anatidae (water birds)***	***Phasianidae (game birds)***	***Accipitridae (birds of prey)***	***Passeriformes (song birds)***	***Total***
coracoid	3	1			1	5
scapula	3					3
humerus	5		1			6
radius		1		1		2
ulna						1
carpometacarpus	1	1	1		1	4
femur	2					2
tarsometatarsus	2	1				3
phalanx 2	3					3
Total	**19**	**4**	**2**	**1**	**2**	**29**
M.A.U.	**3 (=5/2 humerus)**	**1**	**1**	**1**	**1**	

Table 7.21: Family categories of bird taxa present at Site A

7.3.4.1 Carcass Treatment: Fragmentation patterns, body part representation and butchery

7.3.4.1.1 Fragmentation patterns

No bones were recovered complete and identification was based on diagnostic ends.

7.3.4.1.2 Body Part Representation

All of the major body parts are represented indicating butchery and consumption at site.

7.3.4.1.3 Butchery: Cut, Chop marks and Burnt bone

Only one of the bones recovered was burnt (Table 7.19). The majority of the long bones were broken and only the proximal or distal ends recovered.

7.3.4.1.4 Aves summery

Bird remains can be used to interpret varying ecological environments close to the site due to their specific habitat demands. The presence of a water bird such as duck confirms the presence of a large water source at Site A. The presence of migratory species can be used as an indicator of occupation periods. Today, large numbers of ducks winter in the Central Plateau and southern coastlands region that Site A occupies (Porter 1971). The presence of raptors (birds of prey) in many late Epipalaeolithic and early Neolithic dated sites has traditionally been interpreted as reflecting either consumption refuse or more symbolic or religious activities (Dobney *et al.* 1999). However, Dobney *et al.* (1999) and Dobney (2003) have recently proposed a falconry hypothesis to explain the presence of large numbers of raptor bones recovered from early dated sites. Dobney (2003) writes that the large number of raptor bones found within faunal assemblages may represent a repertoire of hunting techniques employed by Stone Age hunters forced into a broad based subsistence strategy. An increase in hares, foxes and other birds within these faunal assemblages would have been facilitated with the use of trained birds of prey (Dobney 2003). Dobney (1999) states that experimentation, taming and management of raptors; either as a new hunting strategy and or for religious proposes could have acted as a prelude to the beginning of the experimentation with larger mammals that was also occurring during this period. Since only one radius bone identified as vulture type was recovered from Site A's assemblage no speculation on falconry at Pinarbaşi can be made at this time.

The wide spectrum of family group type birds recovered from the assemblage indicates a very diverse habitat around the site. The assemblage may contain both resident and migratory species, however, this will be confirmed when specialist analysis is performed on the material.

7.3.5 Fish Pisces

The small number of fish remains was surprising given the probable large local resource. 3 fish bones were recovered, 1 from ABU which had all of its soil material floated and 2 from ABJ which had soil dry sieved and floated. 1 fish bone was recovered from ABJ's float and the other from the dry sieve. Therefore, the recovery techniques employed appear to have had no impact on the lack of recovered fish remains. Their lack of importance within the inhabitants' diet appears to be by choice and not taphonomic or excavation recovery biases within the assemblage as flotation techniques recovered song bird type bones from Site A's deposits. The presence of fish within the assemblage does support the assumption that a substantial water resource was located near the site. No analysis was performed beyond identification of element.

7.4 Unidentifiable Bone Fragment Data

780 animal bones are classified as unidentifiable fragments which represent 83% of the total recovered animal bone assemblage. These have been sub-classified as 25 large mammal[63] bone fragments and 755 unidentifiable fragments (Table 7.22). Each bone was weighed and measured into a size category of either <2 cm, 2-5 cm, 5-10 cm or > 10 cm (Table 7.24). Very few fresh breaks appear to have occurred during excavation as the majority of the bones appear to have the same colour throughout. Excavation and storage breakage usually results in white or yellow coloured breakage points that are not consistent with discoloration that occurs naturally during the bones taphonomic history. The unidentifiable bone fragments from Site A were analysed within 10 months of their excavation and they appear to not have sustained damage during storage or subsequent handling by Museum staff in Karaman. Therefore all fragmentation occurred in prehistory.

The 780 (NISP) unidentifiable bone fragments weigh 1586 grams (Table 7.22). Context ABU contains the largest weight of bone (800 grams) but not as many fragments as context ABR. To remove the effects soil volumes had on NISP,

[63] Large mammal classification is based on the density size of the bone fragment. Assumption being that larger mammals produce a larger bone cavity density than smaller mammals.

normalized weight-volume ratios were calculated (Table 7.22). In comparing these normalized values, context ABJ contains 1.02 times the weight of bone given 1 litre of soil than context ABU and 1.03 times the weight of bone given 1 litre of soil than context ABJ (Table 7.23). Therefore in terms of the context's propensity to produce bone mass, context ABR is the most prolific in real terms. Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 7.22). NISP normalized values corroborate those calculated by weight volume ratios as context ABR is the most prolific (2.25) in real terms.

	ABR				**ABU**				**ABJ**				**Total**			
	NISP	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
Large Mammal	1	0.1%	43.2	11	17	6%	418.9	52	7	4%	102.6	27	25	3%	563.8	36
Not Identifiable	314	99%	366.8	89	262	94%	382.75	48	179	96%	272.7	73	755	97%	1022.4	64
Total	**315**		**410**		**279**		**800.9**		**186**		**375.3**		**780**		**1586.2**	
Liters of soil processed per context			**140**				**280**				**132**				**552**	
NISP per soil volume NISP/L	**2.25**				**1.0**				**1.41**				**1.41**			
Bone weight per soil volume g/L			**2.93**				**2.86**				**2.84**				**2.87**	

Table 7.22: Unidentifiable bone fragments NISP by context with weight of bone and litres of soil processed.

	ABR	**ABU**	**ABJ**
ABR	1.00	0.98	0.97
ABU	1.02	1.00	0.99
ABJ	1.03	1.01	1.00
Total	3.05	2.98	2.96

Table 7.23: Summary of relative weight/volume ratios for unidentifiable bone fragments Site A.

	<2	**%**	**2-5**	**%**	**5-10**	**%**	**>10**	**%**	**NISP**
Not Identifiable	81	11%	668	88%	6	1%	-	-	755
Large Mammal	-	-	-	-	24	96%	1	4%	25
Total	**81**		**668**		**30**		**1**		**780**

Table 7.24: Unidentifiable bone fragments by fragment size (cm) Site A.

	ABR		ABU		ABJ		Total		
	NISP	Burnt	NISP	Burnt	NISP	Burnt	NISP	Burnt	% Burnt
Large Mammal	1	-	17	-	7	-	25	-	-
Not Identifiable	314	233	262	80	179	21	755	334	**44%**
Total	**315**		**279**		**186**		**780**		

Table 7.25: Unidentifiable burnt bone by context Site A.

7.4.1 Large Mammal

25 large mammal bones were recovered from the three contexts, the majority coming from context ABU. These bones coincide with the identified horse and cattle bones from these contexts. It is assumed that the large mammal bones are derived from either horse or cattle. 96% of the bones were from fragments 5-10 cm in size (Table 7.24). The bones represent diaphysis shaft fragments from long bones created during the butchery process. They are primarily represented as end splinters and shaft splinters. None of the bones identified as large mammal fragments are burnt (Table 7.25).

Given the very small number of large mammal fragmented bone recovered, either the long bones were never transported to the site once the animal was killed or the larger mammals were butchered at Site A but the main meat bearing bones transported to another site for consumption.

7.4.2 Not Identifiable

755 bones were classified as not identifiable. These bones were from fragments that could not be attributed to a specific taxa or skeletal element. 44% of the not identifiable bone fragments are burnt (Table 7.25). The 314 fragments recovered from context ABR are primarily 2-5 cm in size and burnt (Table 7.24 and 7.25). These bones are primarily medium mammal sized which would represent the sheep/goat and deer identified within this context. The 262 fragments recovered from context ABU are also primarily 2-5 cm in size (Table 7.24). Sheep were the dominant taxa recovered from this context and then deer, therefore the majority of these highly fragmented bones most likely belong to the butchery of the long bones from either of these taxa for marrow and grease. Pigs were primarily represented by

juvenile in morphology but adult size. No cut marks were recorded on any of the not identifiable bones.

7.4.3 Unidentifiable bone fragment summary

The 755 not identifiable bone fragments are significant enough to account for the missing medium sized mammal body parts not identified within the major taxa analysis. The bones recovered from the upper hind and forelimbs of caprines, sheep and deer are primarily from end fragments which made their identification possible. The presence of 755 fragments which are primarily medium sized mammal shaft fragments indicates long bones were deposited into the site with almost half being burnt. Therefore, it appears that butchery and consumption of sheep/goat, deer and adult pigs occurred at Site A. However, only 25 not identifiable bone fragments are classified as large mammal size. This small number is not significant enough to account for the missing upper hind and forelimbs body parts for cattle and horse not identified during the major taxa analysis. Therefore it appears that cattle and horse were butchered at Site A based on the recovery of cranial and feet elements but based on the small number of large mammal bone fragments, long bone elements appear to be missing from the assemblage.

Since excavation of Site A is incomplete and such a small area was excavated, it is assumed that the area will continue to produce similar remains as identified and therefore bone fragments which would account for butchery, processing and consumption of taxa at the site may remain in the deposits unexcavated.

CHAPTER 8: PINARBAŞI SITE B FAUNAL DATA RESULTS

This chapter contains primary data of the faunal assemblage recovered from Site B at Pinarbaşi. The chapter is divided into four sections. The first section provides a general overview of the taxa recovered from the site. The following two sections analyse the major and minor fauna identified to taxa from the assemblage. Analysis of taphonomy, age profiles, sex ratios, body part representation and butchery practices were undertaken for each taxon. The fourth section analyses non-identifiable bone fragment data in order to better compare the representation of possible body part mass within the assemblage.

The small mammal and reptile bone are part of a separate analysis and therefore it was decided to confine this analysis to the major taxa found in the assemblage, such as; sheep, goat, cattle, pig, deer and equid and minor taxa such as fox, hare, felid, canid and bird.

8.1 GENERAL OVERVIEW

Pinarbaşi's Rock Shelter Site B produced animal bone material from twenty-nine contexts. Three contexts were dated; BAI 5725±65 BP, BAT 7145±70 BP and BBA 4550±70 BP. The twenty-nine contexts produced 63,306 animal bones for analysis. 2385 bones were identified to taxon and 60,921 bones were classified as not be identified to a specific taxon or a skeletal element. The 60,921 unidentifiable fragments represent 96% of the animal bone assemblage. These fragments have been subclassified as 60,208 unidentifiable fragments, 713 large mammal sized fragments and 457 medium mammal sized fragments. These will be more fully discussed in section 8.4. Table 8.1 summarises the 2385 identifiable taxa bones and Table 8.2 summarises each of the twenty-nine contexts which contained identifiable bone material.

The 2385 identifiable animal bones weighed 32,621 grams and were recovered from 5183 litres of dry sieved and floated soil material (Tables 8.1-8.4). Trench 1 had all but 66 litres of its soil floated and Trench 2 had primarily alternating samples floated and dry sieved (Table 8.3). Of the 32,621 grams of animal bone collected, 17,770.4 grams of bone were recovered from dry sieving, 14,606.4 grams of bone were recovered from floatation and 443.6 grams of bone were recovered from hand collection (Table 8.4). Table 8.5 lists by context the taxa identified, their bone weight and NISP values. Table 8.6 summarises the major, minor and bone fragments NISP and bone weight data.

Taxa		**NISP**	**%**
cattle	*Bos primigenius*	330	14%
	Bison bonasus	2	<1%
horse	*Equus* sp.	254	10%
	Equus hydruntinus	16	1%
	Equus hemionus	2	<1%
	Equus ferus	1	<1%
goat	*Capra* sp.	15	1%
sheep	*Ovis* sp.	1027	43%
sheep/goat		277	12%
deer	*Cervus elaphus*	39	2%
pig	*Sus scrofa*	14	1%
wolf/dog	*Canis* sp.	22	1%
fox	*Vulpes vulpes*	175	7%
carnivore		70	3%
hedgehog	*Erinaceus sp.*	2	<1%
wild cat	*Felis silvestris*	3	<1%
hare	*Lepus* sp.	47	2%
bird	Aves	64	3%
turtle	Testudo	25	1%
Total		**2385**	**100%**

Table 8.1: NISP counts from Site B all contexts.

Taxa		BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL	Total	%
wild cattle	*Bos primigenius*			15						1	1	3	1	25	66	12	7	52	73	5	6		7	2	13	24	2	5	1	11	330	14%
	Bison bonasus																													2	2	<1%
horse	*Equus* sp.			34								2	3	4	83	26	67	8	6	1		1	1		7		3	2		2	250	10%
	Equus hydruntinus			6											6		1	2									2				17	1%
	Equus hemionus			2											1																3	<1%
	Equus ferus			2																								1			3	<1%
goat	*Capra* sp.			1	1										1			5				1	1							5	15	1%
sheep	*Ovis* sp.			7		11			2	6	29	10	7	13	19	10	6	781	8	4	3	1	16	1	9	2	10	28	7	37	1027	43%
sheep/goat	sheep/goat			29	1	3	2	6			1	1		7	6	1	1	185	3				12		1	2		6		10	277	12%
deer	*Cervus elaphus*								3			1				1	1	27	2									1		3	39	2%
pig	*Sus scrofa*			4								1				1		6	1									1			14	1%
wolf/dog	*Canis* sp.										1		1			1		1				18									22	1%
fox	*Vulpes vulpes*		4	49				3			5		5	7	5	3	6	51	26	1				1	4	2	1			2	175	7%
carnivore	Carnivorae			3							1	7	6	5	3	2	2	24	3	1	1		1	2	2	2	1			4	70	3%
hedgehog	*Erinaceus* sp.																	2													2	<1%
cat	*Felis silvestris*														1			1										1			3	<1%
hare	*Lepus* sp.			1										1	2	2	1	31		2				2	3			2			47	2%
bird	Aves			3		2	2	2	2		1		1		2	1		14	2				6	4		5	2	5		10	64	3%
turtle	Testudo														10	3			12												25	1%
Total		**0**	**4**	**156**	**2**	**16**	**4**	**11**	**7**	**7**	**39**	**25**	**24**	**62**	**205**	**63**	**92**	**1190**	**136**	**14**	**10**	**21**	**44**	**12**	**39**	**37**	**21**	**52**	**8**	**84**	**2385**	**100%**
Bone weight (g)		**0**	**5.3**	**2348.6**	**29.3**	**100.8**	**44.6**	**22.8**	**152.2**	**83**	**275.3**	**1576.1**	**575.9**	**1224.4**	**4265.1**	**1222.5**	**1102.6**	**7571.2**	**2157.5**	**178.9**	**196.7**	**693.3**	**497.2**	**91**	**279.9**	**428.2**	**273.8**	**715.9**	**67**	**1580**	**27759.1**	
Liters of soil processed per context (L)		**66**	**16**	**340**	**?**	**?**	**?**	**60**	**40**	**36**	**80**	**76**	**100**	**266**	**393**	**309**	**225**	**1294**	**197**	**69**	**59**	**60**	**290**	**160**	**169**	**207**	**97**	**270**	**44**	**260**	**5183**	
NISP per soil volume (NISP/L)		**0**	**0.3**	**0.5**	**-**	**-**	**-**	**0.2**	**0.2**	**0.2**	**0.5**	**0.3**	**0.2**	**0.2**	**0.5**	**0.2**	**0.4**	**0.9**	**0.7**	**0.2**	**0.2**	**0.4**	**0.2**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.5**	
Bone weight per soil volume (g/L)		**0**	**0.3**	**6.9**	**-**	**-**	**-**	**0.4**	**3.8**	**2.3**	**3.4**	**20.7**	**5.8**	**4.6**	**10.8**	**4.0**	**4.9**	**5.9**	**11.0**	**2.6**	**3.3**	**11.6**	**1.7**	**0.6**	**1.7**	**2.1**	**2.8**	**2.7**	**1.5**	**6.1**	**5.4**	

Table 8.2: Identifiable animal bone NISP counts from all contexts.

Trench	Context	Type of sample	Volume of soil (L)
1	BAI	DS	66
1	BAJ	F	16
1	BAK	F	340
1	BAO	F	?
1	BAR	F	?
1	BAQ	F	?
1	BAT	F	60
1	BAU	F	40
1	BAV	F	36
1	BAW	F	80
1	BAX	F	76
1	BAZ	F	100
2	BBC	DS	170
2	BBC	F	96
2	BBD	DS	120
2	BBD	F	273
2	BBE	DS	160
2	BBE	F	149
2	BBG	DS	70
2	BBG	F	155
2	BBH	DS	1090
2	BBH	F	204
2	BBI	DS	40
2	BBI	F	157
2	BBJ	DS	30
2	BBJ	F	39
2	BBK	DS	20
2	BBK	F	39
2	BBL	DS	60
2	BCB	DS	290
2	BCC	DS	160
2	BCF	DS	120
2	BCF	F	49
2	BCG	DS	190
2	BCG	F	17
2	BCH	DS	80
2	BCH	F	17
2	BCI	DS	270
2	BCJ	DS	44
2	BCL	DS	260
	Total		**5183**

Table 8.3: Type of retrieval strategy employed in each context and the volume of litres of soil processed using that technique. DS refers to Dry Sieve and F to Float[64].

[64] The dry sieve and float volume figures were calculated by E. Jenkins and D. Carruthers from the labels attached to faunal bags as the excavator of the project, Dr. Trevor Watkins, no longer had this information on file.

Context	NISP	Volume of soil (L)	Sorting Technique				Bone Weight/ Vol (g/L)	NISP/Volume of soil (NISP/L)
			Dry Sieve Bone Weight (g)	Float Bone Weight (g)	Hand Collected Bone Weight (g)	Total Bone Weight (g)		
BAI	0	66			50.6	50.6	0.8	0.0
BAJ	4	16		15		15	0.9	0.3
BAK	156	340		2426.6		2426.6	7.1	0.5
BAO	2	?*			76.4	76.4	-	-
BAQ	16	?*			166.35	166.4	-	-
BAR	4	?*			81.9	81.9	-	-
BAT	11	60			68.3	68.3	1.1	0.2
BAU	7	40		178.4		178.4	4.5	0.2
BAV	7	36		87.8		87.8	2.4	0.2
BAW	39	80		290.7		290.7	3.6	0.5
BAX	25	76		1627.3		1627.3	21.4	0.3
BAZ	24	100		620.2		620.2	6.2	0.2
BBC	62	266	1217.1	282.1		1499.2	5.6	0.2
BBD	205	393	3233	1463.9		4696.9	11.9	0.5
BBE	63	309	554.5	1017.9		1571.7	5.1	0.2
BBG	92	225	252.7	1664.2		1916.9	8.5	0.4
BBH	1190	1294	6804	1575.9		8261.9	6.4	0.9
BBI	136	197	102.5	2611.9		2714.4	15.2	0.8
BBJ	14	69	214.1	96		310.1	4.5	0.2
BBK	10	59	32.7	181		213.7	3.6	0.2
BBL	21	60	699			699	11.7	0.4
BCB	44	290	491.25	98.7		509.6	1.8	0.2
BCC	12	160	152.2			152.2	0.9	0.1
BCF	39	169	274.45	223.1		497.3	2.9	0.2
BCG	37	207	530.3	11.3		541.6	2.6	0.2
BCH	21	97	300.4	134.6		435	4.6	0.2
BCI	52	270	1045.9			1045.9	3.9	0.2
BCJ	8	44	141.5			141.5	3.2	0.2
BCL	84	260	1724.75			1724.75	6.6	0.3
Total	**2385**	**5183**	**17770.4**	**14606.4**	**443.6**	**32621.0**	**6.3**	**0.5**

Table 8.4: Site B retrieval method by context with total bone weight recovered.
** Volume of soil sorted unknown.*

Context	Taxa	Total Weight (g)	Total Number of Elements
BAI	Not identifiable	50.6	1
BAI Total		**50.6**	**1**
BAJ	Not identifiable	9.7	24
	Vulpes vulpes	5.3	4
BAJ Total		**15**	**28**
BAK	Aves	8.3	3
	Bos primigenius	1157.8	15
	Capra sp.	18.9	1
	Carnivore	33.4	3
	Equid	884.3	44
	Large Mammal	41.4	64
	Lepus sp.	0.1	1
	Medium Mammal	1.4	8
	Not identifiable	35.2	373
	Ovis sp.	12.8	7
	Ovis/Capra	109	29
	Sus scrofa	2.5	4
	Vulpes vulpes	121.45	49
BAK Total		**2426.55**	**601**
BAO	*Capra* sp.	29.1	1
	Not identifiable	47.1	53
	Ovis/Capra	0.2	1
BAO Total		**76.4**	**55**
BAQ	Aves	8.6	2
	Not identifiable	65.6	94
	Ovis sp.	77.3	11
	Ovis/Capra	14.85	3
BAQ Total		**166.35**	**110**
BAR	Aves	43.4	2
	Large Mammal	1	1
	Not identifiable	36.3	54
	Ovis/Capra	1.2	2
BAR Total		**81.9**	**59**
BAT	Aves	1.8	2
	Not identifiable	45.5	107
	Ovis/Capra	6.9	6
	Vulpes vulpes	14.1	3
BAT Total		**68.3**	**118**
BAU	Aves	77.7	2
	Cervus elaphus	53.5	3
	Not identifiable	26.2	21
	Ovis sp.	21	2
BAU Total		**178.4**	**28**
BAV	*Bos primigenius*	70.2	1
	Not identifiable	4.8	16
	Ovis sp.	12.8	6
BAV Total		**87.8**	**23**
BAW	Aves	19.1	1
	Bos primigenius	43	1

	Canis sp.	19	1
	Carnivore	0.6	1
	Not identifiable	15.4	27
	Ovis sp.	136.4	29
	Ovis/Capra	4.5	1
	Vulpes vulpes	52.7	5
BAW Total		**290.7**	**66**
BAX	*Bos primigenius*	79.4	3
	Carnivore	1367.2	7
	Cervus elaphus	58.1	1
	Equid	21.1	2
	Large Mammal	0.9	2
	Not identifiable	50.3	53
	Ovis sp.	43	10
	Ovis/Capra	6.5	1
	Sus scrofa	0.8	1
BAX Total		**1627.3**	**80**
BAZ	Aves	5.6	1
	Bos primigenius	141.1	1
	Canis sp.	21.5	1
	Carnivore	261.1	6
	Equid	57.2	3
	Large Mammal	0.9	1
	Not identifiable	43.4	59
	Ovis sp.	82.8	7
	Vulpes vulpes	6.55	5
BAZ Total		**620.15**	**84**
BBC	*Bos primigenius*	642.4	25
	Carnivore	373.3	5
	Equid	124.5	4
	Large Mammal	103.9	34
	Lepus sp.	0.2	1
	Medium Mammal	9.3	4
	Not identifiable	161.6	5150
	Ovis sp.	16.8	13
	Ovis/Capra	52.5	7
	Vulpes vulpes	14.7	7
BBC Total		**1499.2**	**5250**
BBD	Aves	14.3	2
	Bos primigenius	2143.3	66
	Capra sp.	41.5	1
	Carnivore	23.9	3
	Equid	1845.4	90
	Felis sp.	57.1	1
	Large Mammal	143.3	248
	Lepus sp.	4.6	2
	Medium Mammal	53.4	9
	Not identifiable	235.1	13219
	Ovis sp.	59.65	19
	Ovis/Capra	22.1	6
	Testudo	48.5	10
	Vulpes vulpes	4.7	5
BBD Total		**4696.85**	**13681**
BBE	Aves	2.4	1
	Bos primigenius	584.3	12
	Canis sp.	17.3	1

	Carnivore	5.6	2
	Cervus elaphus	4.1	1
	Equid	503.5	26
	Large Mammal	25.5	75
	Lepus sp.	14.2	2
	Medium Mammal	18.6	5
	Not identifiable	305.1	8141
	Ovis sp.	24.85	10
	Ovis/Capra	1.9	1
	Sus scrofa	0.6	1
	Testudo	8.7	3
	Vulpes vulpes	55	3
BBE Total		**1571.65**	**8284**
BBG	*Bos primigenius*	120.3	7
	Carnivore	66.5	2
	Cervus elaphus	2.7	1
	Equid	840.2	68
	Large Mammal	25.8	28
	Lepus sp.	0.1	1
	Medium Mammal	91.8	8
	Not identifiable	696.7	8316
	Ovis sp.	60.7	6
	Ovis/Capra	1.5	1
	Vulpes vulpes	10.6	6
BBG Total		**1916.9**	**8444**
BBH	Aves	143.4	14
	Bos primigenius	2207.1	52
	Canis sp.	23.9	1
	Capra sp.	65.8	5
	Carnivore	397.2	24
	Cervus elaphus	423.6	27
	Equid	295.4	10
	Erinaceus sp.	106.7	2
	Felis silvestris	19.3	1
	Large Mammal	37.5	120
	Lepus sp.	170.15	31
	Medium Mammal	95.3	372
	Not identifiable	557.95	8290
	Ovis sp.	2537.7	781
	Ovis/Capra	943	185
	Sus scrofa	3.6	6
	Vulpes vulpes	234.3	51
BBH Total		**8261.9**	**9972**
BBI	Aves	6.9	2
	Bos primigenius	1814.7	73
	Carnivore	120.1	3
	Cervus elaphus	6.2	2
	Equid	130.3	6
	Large Mammal	113.6	24
	Medium Mammal	37.4	3
	Not identifiable	405.9	8270
	Ovis sp.	7.9	8
	Ovis/Capra	3.4	3
	Sus scrofa	0.3	1
	Testudo	5.7	12
	Vulpes vulpes	61.95	26

BBI Total		**2714.35**	**8433**
BBJ	*Bos primigenius*	10.9	5
	Carnivore	130.3	1
	Equid	1.2	1
	Large Mammal	33.7	9
	Lepus sp.	9	2
	Medium Mammal	0.3	5
	Not identifiable	97.2	1246
	Ovis sp.	27.4	4
	Vulpes vulpes	0.1	1
BBJ Total		**310.1**	**1274**
BBK	*Bos primigenius*	48.2	6
	Carnivore	88.4	1
	Large Mammal	7.2	2
	Not identifiable	9.8	1062
	Ovis sp.	60.1	3
BBK Total		**213.7**	**1074**
BBL	*Canis* sp.	684.2	18
	Capra	5.1	1
	Equid	3.7	1
	Not identifiable	5.7	29
	Ovis sp.	0.3	1
BBL Total		**699**	**50**
BCB	Aves	59.3	6
	Bos primigenius	276.3	7
	Capra sp.	21.3	1
	Carnivore	12.3	1
	Equus	9.2	1
	Medium Mammal	3.4	2
	Not identifiable	9	487
	Ovis sp.	54	16
	Ovis/Capra	64.8	12
BCB Total		**509.6**	**533**
BCC	Aves	8.4	4
	Bos primigenius	25.7	2
	Carnivore	4.1	2
	Lepus sp.	22.2	2
	Medium Mammal	7.9	3
	Not identifiable	53.3	90
	Ovis sp.	30.1	1
	Vulpes vulpes	0.5	1
BCC Total		**152.2**	**105**
BCF	*Bos primigenius*	34.3	13
	Carnivore	115.4	2
	Equid	109.6	7
	Large Mammal	3.9	46
	Lepus sp.	0.25	3
	Medium Mammal	11.1	1
	Not identifiable	202.2	1765
	Ovis sp.	14.3	9
	Ovis/Capra	0.5	1
	Vulpes vulpes	5.5	4
BCF Total		**497.05**	**1851**
BCG	Aves	370.3	5
	Bos primigenius	18.2	24

	Carnivore	27	2
	Medium Mammal	55.1	2
	Not identifiable	58.3	275
	Ovis sp.	1.1	2
	Ovis/Capra	5	2
	Vulpes vulpes	6.6	2
BCG Total		**541.6**	**314**
BCH	Aves	4.5	2
	Bos primigenius	92.8	2
	Carnivore	18.5	1
	Equid	143.5	5
	Large Mammal	3.6	19
	Medium Mammal	7	1
	Not identifiable	150.6	1428
	Ovis sp.	9.9	10
	Vulpes vulpes	4.6	1
BCH Total		**435**	**1469**
BCI	Aves	144.3	5
	Bos primigenius	106.6	5
	Cervus elaphus	11.9	1
	Equid	65	3
	Felis sp.	175	1
	Large Mammal	3.9	32
	Lepus sp.	9.25	2
	Medium Mammal	95.9	33
	Not identifiable	230.2	502
	Ovis sp.	184.9	28
	Ovis/Capra	18.6	6
	Sus	0.4	1
BCI Total		**1045.95**	**619**
BCJ	*Bos primigenius*	34.5	1
	Not identifiable	74.5	17
	Ovis	32.5	7
BCJ Total		**141.5**	**25**
BCL	Aves	253.4	10
	Bos primigenius	798.7	11
	Capra sp.	81	5
	Carnivore	224.7	4
	Cervus elaphus	38.6	3
	Equid	13.3	2
	Large Mammal	51	8
	Medium Mammal	4.8	1
	Not identifiable	88.95	582
	Ovis sp.	113.8	37
	Ovis/Capra	52.6	10
	Vulpes vulpes	3.9	2
BCL Total		**1724.75**	**675**
Total		**32621**	**63306**
Sum of Identifiable Taxa	**48887.1**	**27759**	**2385**
Sum of Not Identifiable Bones*		**4862**	**60921**

Table 8.5: Bone weight and NISP by context at Site B.
*(*Sum of Not Identifiable bones represents Large Mammal, Medium Mammal and Not Identifiable counts combined).*

Major Taxa		NISP	Bone weight (g)
cattle*		332	10449.8
horse**		273	5047.4
goat	*Capra sp.*	15	262.7
sheep	*Ovis sp.*	1027	3622.1
sheep/goat	sheep/goat	277	1309.1
pig	*Sus scrofa*	14	8.2
deer	*Cervus elaphus*	39	598.7
Total Major Taxa		**1977**	**21298.0**
Minor Taxa			
wolf/dog	*Canis sp.*	22	765.9
fox	*Vulpes vulpes*	175	602.55
carnivore	carnivore	70	3269.6
hedgehog	*Erinaceus sp.*	2	106.7
cat	*Felis silvestris*	3	251.4
hare	*Lepus* sp.	47	230.1
bird	Aves	64	1171.7
turtle	Testudo	25	62.9
Total Minor Taxa		**408**	**6460.8**
Unidentifiable Bone Fragments			
Large Mammal		713	597.1
Medium Mammal		457	492.7
Not identifiable		59751	3772.2
Total Unidentifiable Bone Fragments		**60921**	**4862**
Grand Total		**63306**	**32621**

Table 8.6: Major, Minor and Unidentifiable Bone Fragments NISP and bone weight at Site B.
*(*Sum of Bos primigenius and Bison bonasus. ** Sum of all Equids).*

The range of mammalian taxa found at Site B is very broad given the size of area excavated to date. Sheep, goat, two species of wild cattle, three species of wild equids, red deer, wild boar, wolf, fox, wild cat and hedgehog were recovered. Non-mammalian taxa include bird, frog, and tortoise[65]. Due to the implementation of flotation at the site, bird and microfauna remains were recovered from every sample processed. Tortoise remains were limited to carapace fragments. Of particular note is the absence of fish from the assemblage considering the location of the site at a spring and environmental indications of large fresh water lakes being common during the occupation period.

Of the mammalian fauna, sheep and goat remains dominate the assemblage at 56% with the majority being comprised of sheep (Table 8.1). Their presence is relatively continuous throughout all of the contexts along with cattle, horse, fox and bird.

[65] This report will touch only briefly on the microfauna as a detailed study by Emma Jenkins, PhD student Cambridge University Oxford is pending.

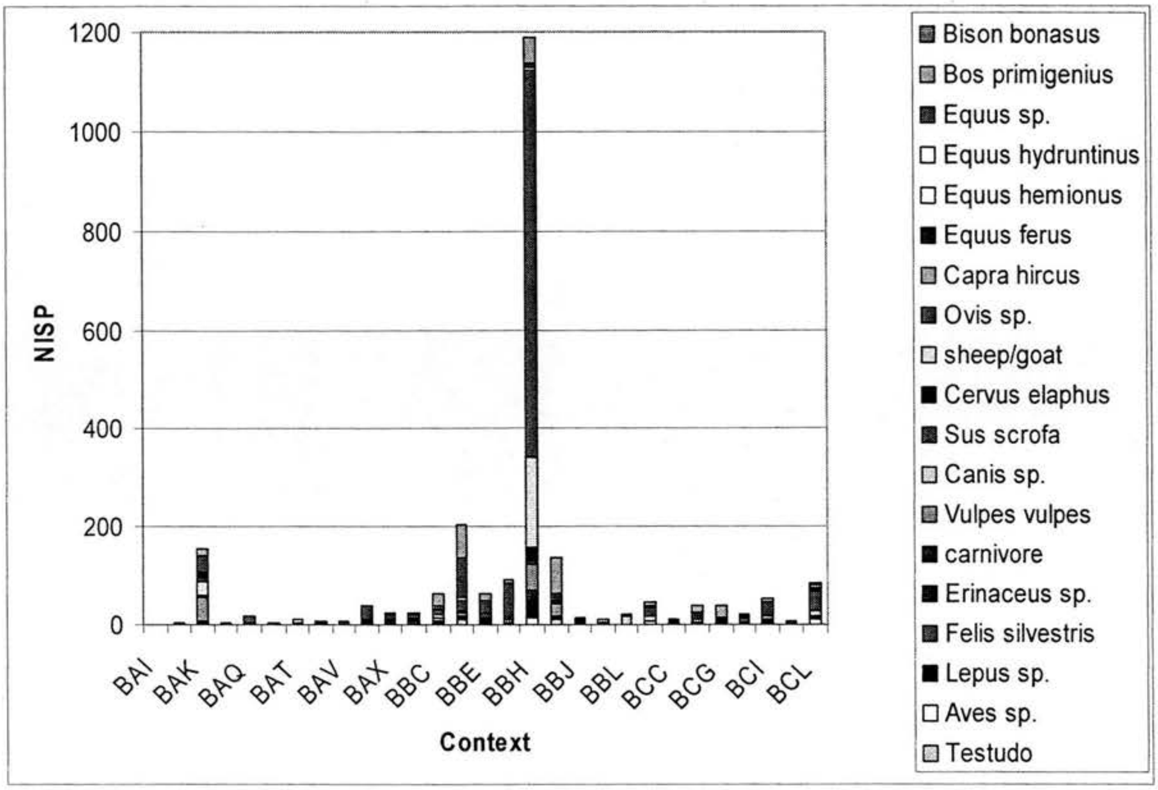


Figure 8.1: NISP of Site B fauna by context.

Human activity at the site increases with regard to the butchery of animals in contexts BAK, BBD, BBH, and BBI with a broad range of taxa being consumed within these contexts (Table 8.2 & Figure 8.1). Figure 8.1 displays taxa NISP by context to visually display the increase in taxa numbers within these four contexts relative to the other contexts. Context BBH contained the highest NISP count of identified taxa. However, when taxonomic richness is assessed, Table 8.7 shows that context BBE, BAK, BCI, BCC and BBD all have higher taxonomic richness than BBH.

Context	Total # of Different Taxa (S)	Total # of Bones NISP (N)	Species Richness (d=S-1/ln(N))
BAI	0	0	0.00
BAJ	1	4	0.00
BAK	14	159	2.37
BAO	2	2	1.44
BAQ	4	18	1.04
BAR	2	4	0.72
BAT	4	11	0.83
BAU	3	7	1.03
BAV	2	7	0.51
BAW	7	39	1.64
BAX	7	25	1.86
BAZ	7	24	1.89
BBC	8	64	1.68
BBD	13	205	2.26
BBE	13	65	2.87
BBG	9	92	1.77
BBH	16	1181	2.12
BBI	10	136	1.81
BBJ	6	14	1.89
BBK	3	10	0.87
BBL	4	21	0.99
BCB	8	44	1.59
BCC	7	12	2.01
BCF	8	39	1.64
BCG	6	37	1.38
BCH	7	21	1.97
BCI	10	52	2.28
BCJ	2	8	0.48
BCL	9	84	1.81
Total		**2385**	

Table 8.7: Taxonomic richness of each context at Site B.

The large number of animal bone material recovered from context BBH may therefore be attributed to the 1294 litres of soil processed from within this context (Table 8.3). To remove the effects of soil volumes, normalised weight-volume ratios were calculated (Table 8.8). Normalised weight-volume ratios are calculated by dividing the total bone weight from the context by the number of litres of soil processed in that context. A normalised weight-volume ratio total for each context was also calculated, statistically the total is meaningless, however it is meant to convey the relative intensities of one context related to the others in terms of its propensity to produce bone mass (Table 8.8). By comparing the normalized values, contexts BAX, BBD and BBL contain more bone weight given 1 litre of soil than all the other contexts (Table 8.8). Therefore in terms of the context's propensity to produce bone mass, context BAX, BBD and BBL are the most prolific in real terms.

Context	BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL
BAI	1.0	1.2	9.3	0.0	0.0	0.0	1.5	5.8	3.2	4.7	27.9	8.1	7.4	15.6	6.6	11.1	8.3	19.8	5.9	4.7	15.2	2.3	1.2	3.8	3.4	6.0	5.1	4.2	8.7
BAJ	0.8	1.0	7.6	0.0	0.0	0.0	1.2	4.8	2.6	3.9	22.8	6.6	6.0	12.7	5.4	9.1	6.8	16.2	4.8	3.9	12.4	1.9	1.0	3.1	2.8	4.9	4.1	3.4	7.1
BAK	0.1	0.1	1.0	0.0	0.0	0.0	0.2	0.6	0.3	0.5	3.0	0.9	0.8	1.7	0.7	1.2	0.9	2.1	0.6	0.5	1.6	0.2	0.1	0.4	0.4	0.6	0.5	0.5	0.9
BAO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAQ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAT	0.7	0.8	6.3	0.0	0.0	0.0	1.0	3.9	2.1	3.2	18.8	5.4	5.0	10.5	4.5	7.5	5.6	13.3	3.9	3.2	10.2	1.5	0.8	2.6	2.3	4.1	3.4	2.8	5.8
BAU	0.2	0.2	1.6	0.0	0.0	0.0	0.3	1.0	0.5	0.8	4.8	1.4	1.3	2.7	1.1	1.9	1.4	3.4	1.0	0.8	2.6	0.4	0.2	0.7	0.6	1.0	0.9	0.7	1.5
BAV	0.3	0.4	2.9	0.0	0.0	0.0	0.5	1.8	1.0	1.5	8.8	2.5	2.3	4.9	2.1	3.5	2.6	6.2	1.8	1.5	4.8	0.7	0.4	1.2	1.1	1.9	1.6	1.3	2.7
BAW	0.2	0.3	2.0	0.0	0.0	0.0	0.3	1.2	0.7	1.0	5.9	1.7	1.6	3.3	1.4	2.3	1.8	4.2	1.2	1.0	3.2	0.5	0.3	0.8	0.7	1.3	1.1	0.9	1.8
BAX	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.2	0.1	0.2	1.0	0.3	0.3	0.6	0.2	0.4	0.3	0.7	0.2	0.2	0.5	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.3
BAZ	0.1	0.2	1.2	0.0	0.0	0.0	0.2	0.7	0.4	0.6	3.5	1.0	0.9	1.9	0.8	1.4	1.0	2.4	0.7	0.6	1.9	0.3	0.2	0.5	0.4	0.7	0.6	0.5	1.1
BBC	0.1	0.2	1.3	0.0	0.0	0.0	0.2	0.8	0.4	0.6	3.8	1.1	1.0	2.1	0.9	1.5	1.1	2.7	0.8	0.6	2.1	0.3	0.2	0.5	0.5	0.8	0.7	0.6	1.2
BBD	0.1	0.1	0.6	0.0	0.0	0.0	0.1	0.4	0.2	0.3	1.8	0.5	0.5	1.0	0.4	0.7	0.5	1.3	0.4	0.3	1.0	0.1	0.1	0.2	0.2	0.4	0.3	0.3	0.6
BBE	0.2	0.2	1.4	0.0	0.0	0.0	0.2	0.9	0.5	0.7	4.2	1.2	1.1	2.3	1.0	1.7	1.3	3.0	0.9	0.7	2.3	0.3	0.2	0.6	0.5	0.9	0.8	0.6	1.3
BBG	0.1	0.1	0.8	0.0	0.0	0.0	0.1	0.5	0.3	0.4	2.5	0.7	0.7	1.4	0.6	1.0	0.7	1.8	0.5	0.4	1.4	0.2	0.1	0.3	0.3	0.5	0.5	0.4	0.8
BBH	0.1	0.1	1.1	0.0	0.0	0.0	0.2	0.7	0.4	0.6	3.4	1.0	0.9	1.9	0.8	1.3	1.0	2.4	0.7	0.6	1.8	0.3	0.1	0.5	0.4	0.7	0.6	0.5	1.0
BBI	0.1	0.1	0.5	0.0	0.0	0.0	0.1	0.3	0.2	0.2	1.4	0.4	0.4	0.8	0.3	0.6	0.4	1.0	0.3	0.2	0.8	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.4
BBJ	0.2	0.2	1.6	0.0	0.0	0.0	0.3	1.0	0.5	0.8	4.8	1.4	1.3	2.7	1.1	1.9	1.4	3.4	1.0	0.8	2.6	0.4	0.2	0.7	0.6	1.0	0.9	0.7	1.5
BBK	0.2	0.3	2.0	0.0	0.0	0.0	0.3	1.2	0.7	1.0	5.9	1.7	1.6	3.3	1.4	2.4	1.8	4.2	1.2	1.0	3.2	0.5	0.3	0.8	0.7	1.3	1.1	0.9	1.8
BBL	0.1	0.1	0.6	0.0	0.0	0.0	0.1	0.4	0.2	0.3	1.8	0.5	0.5	1.0	0.4	0.7	0.5	1.3	0.4	0.3	1.0	0.2	0.1	0.3	0.2	0.4	0.3	0.3	0.6
BCB	0.4	0.5	4.1	0.0	0.0	0.0	0.6	2.5	1.4	2.1	12.2	3.5	3.2	6.8	2.9	4.8	3.6	8.6	2.6	2.1	6.6	1.0	0.5	1.7	1.5	2.6	2.2	1.8	3.8
BCC	0.8	1.0	7.5	0.0	0.0	0.0	1.2	4.7	2.6	3.8	22.5	6.5	5.9	12.6	5.3	9.0	6.7	15.9	4.7	3.8	12.2	1.8	1.0	3.1	2.8	4.9	4.1	3.4	7.0
BCF	0.3	0.3	2.4	0.0	0.0	0.0	0.4	1.5	0.8	1.2	7.3	2.1	1.9	4.1	1.7	2.9	2.2	5.2	1.5	1.2	4.0	0.6	0.3	1.0	0.9	1.6	1.3	1.1	2.3
BCG	0.3	0.4	2.7	0.0	0.0	0.0	0.4	1.7	0.9	1.4	8.2	2.4	2.2	4.6	1.9	3.3	2.4	5.8	1.7	1.4	4.5	0.7	0.4	1.1	1.0	1.8	1.5	1.2	2.5
BCH	0.2	0.2	1.5	0.0	0.0	0.0	0.2	1.0	0.5	0.8	4.6	1.3	1.2	2.6	1.1	1.8	1.4	3.3	1.0	0.8	2.5	0.4	0.2	0.6	0.6	1.0	0.8	0.7	1.4
BCI	0.2	0.2	1.8	0.0	0.0	0.0	0.3	1.2	0.6	0.9	5.5	1.6	1.5	3.1	1.3	2.2	1.6	3.9	1.2	0.9	3.0	0.5	0.2	0.8	0.7	1.2	1.0	0.8	1.7
BCJ	0.2	0.3	2.2	0.0	0.0	0.0	0.4	1.4	0.8	1.1	6.7	1.9	1.8	3.7	1.6	2.6	2.0	4.7	1.4	1.1	3.6	0.5	0.3	0.9	0.8	1.4	1.2	1.0	2.1
BCL	0.1	0.1	1.1	0.0	0.0	0.0	0.2	0.7	0.4	0.5	3.2	0.9	0.8	1.8	0.8	1.3	1.0	2.3	0.7	0.5	1.8	0.3	0.1	0.4	0.4	0.7	0.6	0.5	1.0
Total	7.0	8.6	65.4	0.0	0.0	0.0	10.4	40.9	22.4	33.3	196.3	56.9	51.7	109.6	46.6	78.1	58.5	139.0	41.2	33.2	106.8	16.1	8.7	27.0	24.0	42.4	35.5	29.5	60.8

Table 8.8: Identifiable animal bone context summary of relative weight/volume ratios for Site B.

Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 8.2). Contexts BBH and BBI's normalized NISP values are proportionately larger than the other contests. Context BBH is the most prolific (0.9) in real terms (Table 8.2). Calculations of NISP, total weight and volume data indicate that the increase in species frequency within context BBH is subject to methods of calculating species frequencies and or recovery procedures. However, normalized NISP-volume ratios do indicate context BBH has a substantially larger bone presence than all other contexts.

The high number of animal bone material recovered from context BBH is directly attributed to the 1294 litres of soil processed from this context. However, regardless of the quantity of soil processed in context BBH to produce such a large number of bone material, the context is a significant feature within Site B's architectural remains. The context is classified as containing material primarily from a fire installation area that is bonded to the rock face with a possible walled feature (Chapter 6 Figure 6.6), however very little of the animal bone recovered is burnt and appears to have been placed or dumped quite quickly. The animal bone material recovered from this context is in excellent condition. Articulated elements could be easily reconstructed, suggesting the bones were rapidly buried. The material seems to represent one or two discrete butchering events by humans at the site. Context BBH will therefore be highlighted throughout the analysis of Site B's faunal data.

As with Site A, the taxa have been divided into major and minor classifications for the purpose of analysis. The major taxa (major food animals) include sheep/goat[66], cattle, horse, pig and deer. Fox, hare, bird, dog/wolf, cat and hedgehog represent minor taxa.

---

[66] Sheep and sheep/goat NISP numbers were combined in order to better represent the data.

8.2 REPRESENTATION OF MAJOR TAXA AT SITE B

The major food animals consist of cattle, sheep, goat, horse, boar and deer. NISP counts are presented in Table 8.9. Sheep and goat dominate the assemblage at 68% followed by cattle, horse and pig. Context BBH contains the largest NISP count (1066) which is 54% of the major taxa assemblage (Table 8.9). To remove the effects soil volumes had on NISP, normalized weight-volume ratios were calculated (Table 8.10). In comparing these normalized values, context BBD, BBI, BAK then BBH contain the most animal bone given 1 litre of soil than the other contexts (Table 8.10). Therefore in terms of the context's propensity to produce bone mass, context BBH is the fourth most prolific in real terms. Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 8.9). NISP normalized values indicate context BBH (0.8) then BBD (0.5) and BBI (0.5) are the most prolific in real terms. Based on the above calculations, context BBH remains one of the most prolific contexts in real terms with regard to the major taxa recovered at Site B.

A number of trends in the representation of the six major taxa at Site B are visible. The NISP proportions of all of the species remains relatively constant throughout all of the contextual sequence, however there is a heightened presence of all major taxa within a few key contexts, the highest proportion being found in contexts BAK, BBD and BBH (Table 8.9 & Figure 8.2). The most notable increase occurs in context BBH. Of particular note is the increase in cattle, sheep/goat and deer bones but a drop in horse. The overall proportion of pig and deer remain relatively small, possibly indicating that they were much less common at Site B than the other taxa. Each major taxa identified will now be reviewed in more detail.

Major Taxa		BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL	Total	%
wild cattle	*Bos primigenius*			15						1	1	3	1	25	66	12	7	52	73	5	6		7	2	13	24	2	5	1	11	330	17%
	Bison bonasus																													2	2	<1%
horse	*Equus* sp.			34								2	3	4	83	26	67	8	6	1		1	1		7		3	2		2	250	13%
	Equus hydruntinus			6											6		1	2									2				17	1%
	Equus hemionus			2											1																3	<1%
	Equus ferus			2																								1			3	<1%
goat	*Capra* sp.			1	1										1			5				1	1							5	15	1%
sheep	*Ovis aries.*			7		11			2	6	29	10	7	13	19	10	6	781	8	4	3	1	16	1	9	2	10	28	7	37	1027	52%
sheep/goat	sheep/goat			29	1	3	2	6			1	1		7	6	1	1	185	3				12		1	2		6		10	277	14%
pig	*Sus scrofa*			4								1				1		6	1									1			14	1%
deer	*Cervus elaphus*								3			1				1	1	27	2									1		3	39	2%
Total		**0**	**0**	**100**	**2**	**14**	**2**	**6**	**5**	**7**	**31**	**18**	**11**	**49**	**182**	**51**	**83**	**1066**	**93**	**10**	**9**	**3**	**37**	**3**	**30**	**28**	**17**	**44**	**8**	**68**	**1977**	**100%**
Bone weight (g)		**0**	**0**	**2185.3**	**29.3**	**92.2**	**1.2**	**6.9**	**74.5**	**83**	**183.9**	**208.9**	**281.1**	**836.2**	**4112**	**1119.3**	**1025.4**	**6476.2**	**1962.8**	**39.5**	**108.3**	**9.1**	**425.6**	**55.8**	**158.7**	**24.3**	**246.2**	**387.4**	**67**	**1098**	**21298**	
Liters of soil processed per context (L)		**66**	**16**	**340**	**?**	**?**	**?**	**60**	**40**	**36**	**80**	**76**	**100**	**266**	**393**	**309**	**225**	**1294**	**197**	**69**	**59**	**60**	**290**	**160**	**169**	**207**	**97**	**270**	**44**	**260**	**5183**	
NISP per soil volume (NISP/L)		**0**	**0**	**0.3**	**-**	**-**	**-**	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.1**	**0.2**	**0.5**	**0.3**	**0.4**	**0.8**	**0.5**	**0.1**	**0.2**	**0.1**	**0.1**	**0**	**0.2**	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**	**0.4**	
Bone weight per soil volume (g/L)		**0**	**0**	**6.4**	**-**	**-**	**-**	**0.1**	**1.9**	**2.3**	**2.3**	**2.7**	**2.8**	**3.1**	**10.5**	**3.6**	**4.6**	**5.0**	**10**	**.6**	**1.8**	**0.2**	**1.5**	**0.3**	**0.9**	**0.1**	**2.5**	**1.4**	**1.5**	**4.2**	**4.1**	

Table 8.9: Relative frequency of major taxa NISP counts by context at Site B.

Context	BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL
BAI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAK	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.4	0.4	0.5	1.6	0.6	0.7	0.8	1.6	0.1	0.3	0.0	0.2	0.1	0.1	0.0	0.4	0.2	0.2	0.7
BAO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAQ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAT	0.0	0.0	55.9	0.0	0.0	0.0	1.0	16.2	20.0	20.0	23.9	24.4	27.3	91.0	31.5	39.6	43.5	86.6	5.0	16.0	1.3	12.8	3.0	8.2	1.0	22.1	12.5	13.2	36.7
BAU	0.0	0.0	3.5	0.0	0.0	0.0	0.1	1.0	1.2	1.2	1.5	1.5	1.7	5.6	1.9	2.4	2.7	5.3	0.3	1.0	0.1	0.8	0.2	0.5	0.1	1.4	0.8	0.8	2.3
BAV	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.8	1.0	1.0	1.2	1.2	1.4	4.5	1.6	2.0	2.2	4.3	0.2	0.8	0.1	0.6	0.2	0.4	0.1	1.1	0.6	0.7	1.8
BAW	0.0	0.0	2.8	0.0	0.0	0.0	0.1	0.8	1.0	1.0	1.2	1.2	1.4	4.6	1.6	2.0	2.2	4.3	0.2	0.8	0.1	0.6	0.2	0.4	0.1	1.1	0.6	0.7	1.8
BAX	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.7	0.8	0.8	1.0	1.0	1.1	3.8	1.3	1.7	1.8	3.6	0.2	0.7	0.1	0.5	0.1	0.3	0.0	0.9	0.5	0.6	1.5
BAZ	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.7	0.8	0.8	1.0	1.0	1.1	3.7	1.3	1.6	1.8	3.5	0.2	0.7	0.1	0.5	0.1	0.3	0.0	0.9	0.5	0.5	1.5
BBC	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.9	0.9	1.0	3.3	1.2	1.4	1.6	3.2	0.2	0.6	0.0	0.5	0.1	0.3	0.0	0.8	0.5	0.5	1.3
BBD	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.3	0.3	0.3	1.0	0.3	0.4	0.5	1.0	0.1	0.2	0.0	0.1	0.0	0.1	0.0	0.2	0.1	0.1	0.4
BBE	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.5	0.6	0.6	0.8	0.8	0.9	2.9	1.0	1.3	1.4	2.8	0.2	0.5	0.0	0.4	0.1	0.3	0.0	0.7	0.4	0.4	1.2
BBG	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.6	0.6	0.7	2.3	0.8	1.0	1.1	2.2	0.1	0.4	0.0	0.3	0.1	0.2	0.0	0.6	0.3	0.3	0.9
BBH	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.6	2.1	0.7	0.9	1.0	2.0	0.1	0.4	0.0	0.3	0.1	0.2	0.0	0.5	0.3	0.3	0.8
BBI	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.3	0.3	0.3	1.1	0.4	0.5	0.5	1.0	0.1	0.2	0.0	0.1	0.0	0.1	0.0	0.3	0.1	0.2	0.4
BBJ	0.0	0.0	11.2	0.0	0.0	0.0	0.2	3.3	4.0	4.0	4.8	4.9	5.5	18.3	6.3	8.0	8.7	17.4	1.0	3.2	0.3	2.6	0.6	1.6	0.2	4.4	2.5	2.7	7.4
BBK	0.0	0.0	3.5	0.0	0.0	0.0	0.1	1.0	1.3	1.3	1.5	1.5	1.7	5.7	2.0	2.5	2.7	5.4	0.3	1.0	0.1	0.8	0.2	0.5	0.1	1.4	0.8	0.8	2.3
BBL	0.0	0.0	42.4	0.0	0.0	0.0	0.8	12.3	15.2	15.2	18.1	18.5	20.7	69.0	23.9	30.0	33.0	65.7	3.8	12.1	1.0	9.7	2.3	6.2	0.8	16.7	9.5	10.0	27.8
BCB	0.0	0.0	4.4	0.0	0.0	0.0	0.1	1.3	1.6	1.6	1.9	1.9	2.1	7.1	2.5	3.1	3.4	6.8	0.4	1.3	0.1	1.0	0.2	0.6	0.1	1.7	1.0	1.0	2.9
BCC	0.0	0.0	18.4	0.0	0.0	0.0	0.3	5.3	6.6	6.6	7.9	8.1	9.0	30.0	10.4	13.1	14.4	28.6	1.6	5.3	0.4	4.2	1.0	2.7	0.3	7.3	4.1	4.4	12.1
BCF	0.0	0.0	6.8	0.0	0.0	0.0	0.1	2.0	2.5	2.4	2.9	3.0	3.3	11.1	3.9	4.9	5.3	10.6	0.6	2.0	0.2	1.6	0.4	1.0	0.1	2.7	1.5	1.6	4.5
BCG	0.0	0.0	54.8	0.0	0.0	0.0	1.0	15.9	19.6	19.6	23.4	23.9	26.8	89.1	30.9	38.8	42.6	84.9	4.9	15.6	1.3	12.5	3.0	8.0	1.0	21.6	12.2	13.0	36.0
BCH	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.7	0.9	0.9	1.1	1.1	1.2	4.1	1.4	1.8	2.0	3.9	0.2	0.7	0.1	0.6	0.1	0.4	0.0	1.0	0.6	0.6	1.7
BCI	0.0	0.0	4.5	0.0	0.0	0.0	0.1	1.3	1.6	1.6	1.9	2.0	2.2	7.3	2.5	3.2	3.5	6.9	0.4	1.3	0.1	1.0	0.2	0.7	0.1	1.8	1.0	1.1	2.9
BCJ	0.0	0.0	4.2	0.0	0.0	0.0	0.1	1.2	1.5	1.5	1.8	1.8	2.1	6.9	2.4	3.0	3.3	6.5	0.4	1.2	0.1	1.0	0.2	0.6	0.1	1.7	0.9	1.0	2.8
BCL	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.7	0.7	0.7	2.5	0.9	1.1	1.2	2.4	0.1	0.4	0.0	0.3	0.1	0.2	0.0	0.6	0.3	0.4	1.0
Total	**0.0**	**0.0**	**232.6**	**0.0**	**0.0**	**0.0**	**4.2**	**67.4**	**83.4**	**83.2**	**99.5**	**101.7**	**113.8**	**378.6**	**131.1**	**164.9**	**181.1**	**360.6**	**20.7**	**66.4**	**5.5**	**53.1**	**12.6**	**34.0**	**4.2**	**91.8**	**51.9**	**55.1**	**152.8**

Table 8.10: Major taxa context summary of relative weight/volume ratios for Site B.

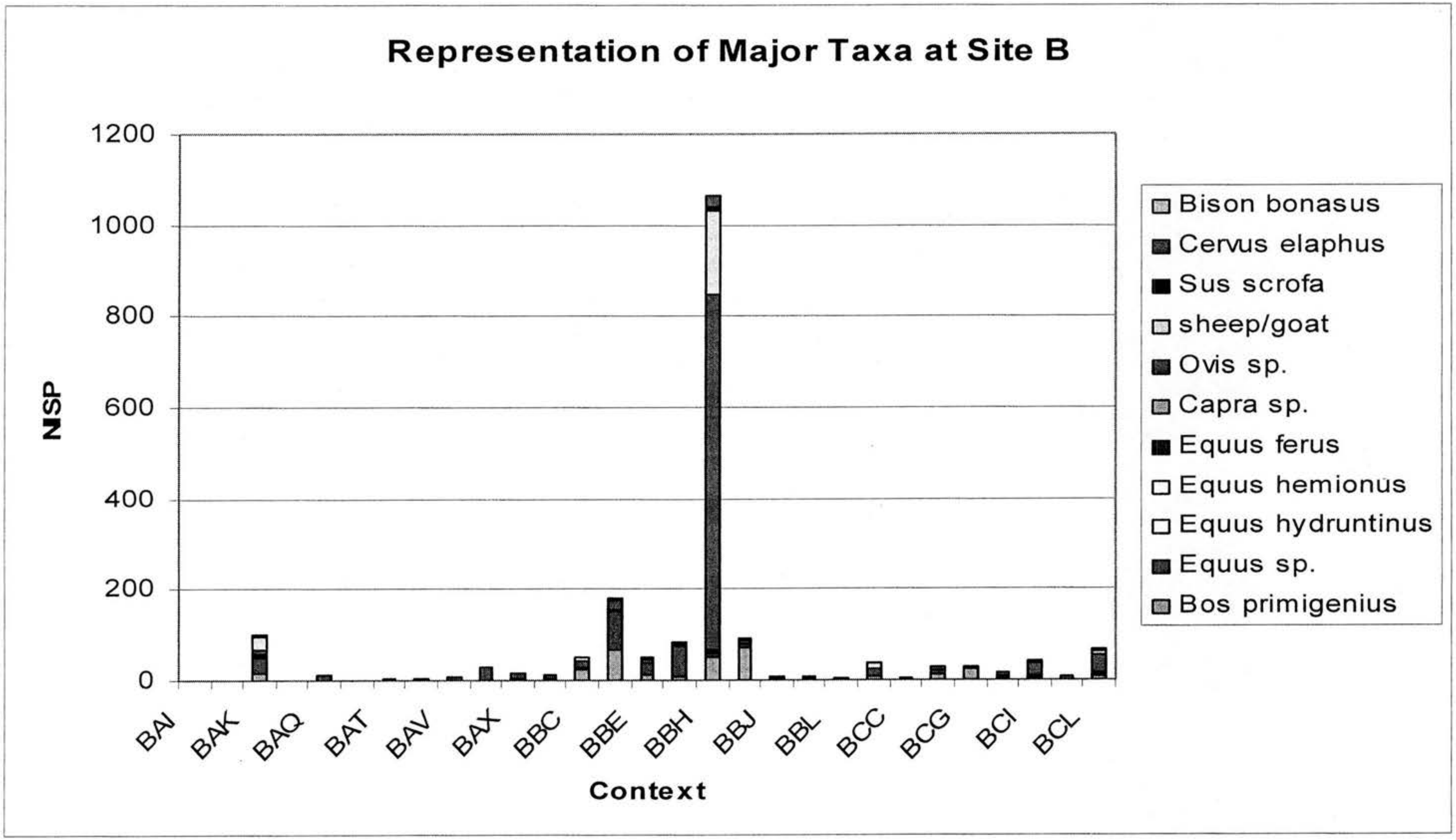


Figure 8.2: Representation of major taxa at Site B

Major Taxa	100%	76-99%	51-75%	25-50%	<25%
Bos primigenius	9	3	12	40	35
Bison bonasus	2	0	0	0	0
Equidae	12	30	21	7	29
Ovis sp.	29	20	11	20	19
Capra sp.	31	24	23	22	0
sheep/goat	6	4	29	25	36
Cervus elaphus	5	8	22	40	25
Sus scrofa	21	14	7	36	21

Table 8.11: Major taxa fragmentation patterns Site B.

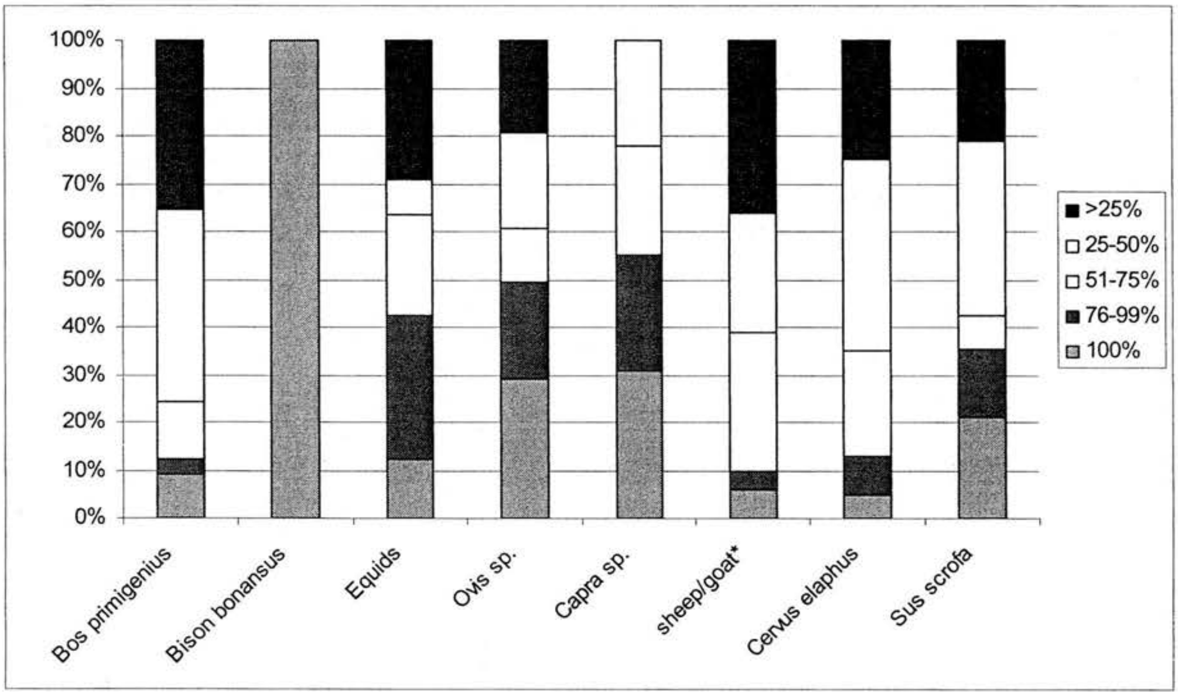


Figure 8.3: Major taxa fragmentation patterns Site B (Data Table 8.11).

Element	*Bos primigenius*	Equids	*Ovis* sp.	Ovis/Capra	*Vulpes vulpes*
mandible	1				1
vertebrae		1			
rib	1			1	
metacarpal			1		
carpal	1				
metatarsal	1	2			
calcaneus/tarsal	1			2	
sesamoid	1				
phalanx 2		1			
phalanx 3			1		
Total cut marks	**6**	**4**	**2**	**3**	**1**
Total bones	330	273	1027	277	175
% bones with cut marks	**2%**	**1%**	**0.19%**	**1%**	**1%**

Table 8.12: Representation of major taxa with cut marks Site B.

Taxa	Burnt	Total bones	% Burnt bones
Bos primigenius	9	330	3%
Bison bonasus	0	2	0%
Equids	10	273	4%
Ovis sp.	15	1027	1%
Capra sp.	4	15	27%
sheep/goat*	8	277	3%
Cervus elaphus	2	39	5%
Sus scrofa	0	14	0%

Table 8.13: Representation of major taxa burnt bones Site B.

Major Taxa		**NISP**	**%NISP**	**DZ**	**% DZ**
wild cattle	*Bos primigenius*	330	16%	68	9%
	Bison bonasus	2	1%	1	0.8%
horse	*Equus* sp.	250	13%	83*	11%
	Equus hydruntinus	17	1%		
	Equus hemionus	3	.5%		
	Equus ferus	3	.5%		
goat	*Capra* sp.	15	1%		
sheep	*Ovis* sp.	1027	52%		
sheep/goat	sheep/goat	277	14%	603**	77%
pig	*Sus scrofa*	14	1%	4	1%
deer	*Cervus elaphus*	39	2%	24	3%
Total		**1977**		**783**	

* 83 DZ refers to the total Equus

** 603 DZ refers to the total *Capra* sp., *Ovis sp.*. and sheep/goat.

Table 8.14: Major taxa NISP and DZ Site B.

Bos				Sheep &	Goat			Equid				Pig				Red Deer			
Element	Raw Data	Divided by:	M.A.U.	Element	Raw Data	Divided by:	M.A.U.	Element	Raw Data	Divided by:	M.A.U.	Element	Raw Data	Divided by:	M.A.U.	Element	NISP	Divided by:	M.A.U.
Head				Head				Head				Head				Head			
horncore	0	2	0.0	horncore	0	2	0.0	horncore	0	0	0.0	horncore	0	0	0.00	horncore	0	2	0.0
cranium	8	14	0.6	cranium	94	14	6.7	cranium	22	14	1.6	cranium	1	14	0.07	cranium	2	14	0.1
mandible	10	2	5.0	mandible	23	2	11.5	mandible	0	2	0.0	mandible	0	2	0.00	mandible	1	2	0.5
mand tooth	185	20	9.3	mand tooth	88	20	4.4	mand tooth	23	20	1.2	mand tooth	4	22	0.18	mand tooth	3	20	0.2
max tooth	11	12	0.9	max tooth	139	12	11.6	max tooth	94	20	4.7	max tooth	3	22	0.14	max tooth	0	12	0.0
Back				Back				Back				Back				Back			
atlas	0	1	0.0	atlas	2	1	2.0	atlas	0	1	0.0	atlas	0	1	0.00	atlas	0	1	0.0
axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.00	axis	0	1	0.0
rib	5	13	0.4	rib	63	13	4.8	rib	2	18	0.1	rib	0	14	0.00	rib	0	13	0.0
vert/cv	8	5	1.6	vert/cv	46	5	9.2	vert/cv	0	5	0.0	vert/cv	0	5	0.00	vert/cv	0	5	0.0
vert/tv	0	13	0.0	vert/tv	15	13	1.2	vert/tv	5	18	0.3	vert/tv	0	14	0.00	vert/tv	2	13	0.2
vert/lv	0	6	0.0	vert/lv	1	7	0.1	vert/lv	0	6	0.0	vert/lv	0	7	0.00	vert/lv	0	7	0.0
vert/sv	0	5	0.0	vert/sv	0	4	0.0	vert/sv	0	5	0.0	vert/sv	0	4	0.00	vert/sv	0	4	0.0
vert/cd	0	18	0.0	vert/cd	0	7	0.0	vert/cd	0	13	0.0	vert/cd	0	20	0.00	vert/cd	0	7	0.0
Upper Forelimb				Upper Forelimb				Upper Forelimb				Upper Forelimb				Upper Forelimb			
scapula	1	2	0.5	scapula	16	2	8.0	scapula	0	2	0.0	scapula	1	2	0.50	scapula	1	2	0.5
humerus	4	2	2.0	humerus	26	2	13.0	humerus	1	2	0.5	humerus	0	2	0.00	humerus	2	2	1.0
radius	4	2	2.0	radius	42	2	21.0	radius	2	2	1.0	radius	0	2	0.00	radius	2	2	1.0
ulna	2	2	1.0	ulna	21	2	10.5	ulna	1	2	0.5	ulna	2	2	1.00	ulna	0	2	0.0
Upper Hindlimb				Upper Hindlimb				Upper Hindlimb				Upper Hindlimb				Upper Hindlimb			
innominate	3	2	1.5	innominate	17	2	8.5	innominate	1	2	0.5	innominate	0	2	0.00	innominate	2	2	1.0
femur	1	2	0.5	femur	31	2	15.5	femur	1	2	0.5	femur	0	2	0.00	femur	3	2	1.5
tibia	3	2	1.5	tibia	35	2	17.5	tibia	8	2	4.0	tibia	0	2	0.00	tibia	6	2	3.0
patella	1	2	0.5	patella	3	2	1.5	patella	0	2	0.0	patella	0	2	0.00	patella	0	2	0.0
Feet				Feet				Feet				Feet				Feet			
astrag	0	2	0.0	astrag	14	2	7.0	astrag	5	2	2.5	astrag	0	2	0.00	astrag	0	2	0.0
calc	6	2	3.0	calc	24	2	12.0	calc	2	2	1.0	calc	0	2	0.00	calc	1	2	0.5
capral/tarsal	30	18	1.7	capral/tarsal	158	18	8.8	capral/tarsal	36	22	1.6	capral/tarsal	1	26	0.04	capral/tarsal	1	18	0.1
mcarpal	9	2	4.5	mcarpal	120	2	60.0	mcarpal	14	2	7.0	mcarpal	0	8	0.00	mcarpal	6	2	3.0
mtarsal	21	2	10.5	mtarsal	81	2	40.5	mtarsal	9	2	4.5	mtarsal	0	8	0.00	mtarsal	5	2	2.5
phal prox	10	8	1.3	phal prox	129	8	16.1	phal prox	29	4	7.3	phal prox	0	16	0.00	phal prox	2	8	0.3
phal mid	9	8	1.1	phal mid	80	8	10.0	phal mid	13	4	3.3	phal mid	2	16	0.13	phal mid	0	8	0.0
phal dist	1	8	0.1	phal dist	51	8	6.4	phal dist	5	4	1.3	phal dist	0	16	0.00	phal dist	0	8	0.0
Total	332		49.4	Total	1319		307.8	Total	273		43.2	Total	14		2.05	Total	39		0.7
M.N.I.	10.5			M.N.I.	60			M.N.I.	7			M.N.I.	1			M.N.I.	3		

Table 8.15a: Body part representation of major taxa Site B

	Major Taxa	Body Part					
		Back	Cranium	Feet	Upper Forelimb	Upper Hindlimb	Total
wild cattle	*Bos primigenius*	13	214	84	11	8	330
	Bison bonasus			2			2
horse	*Equus* sp.	7	116	113	4	10	250
	Equus hydruntinus		17				17
	Equus hemionus		3				3
	Equus ferus		3				3
goat	*Capra* sp.		3	6	2	4	15
sheep	*Ovis sp.*	86	268	529	84	60	1027
sheep/goat		41	73	122	21	20	277
pig/wild boar	*Sus scrofa*		8	3	3		14
deer	*Cervus elaphus*	2	6	15	6	10	39
	Total	**149**	**711**	**874**	**131**	**112**	**1977**

Table 8.15b: Body part representation of major taxa Site B.

8.2.1.1 Wild Cattle: *Bos primigenius* & *Bison bonasus*

Two distinct species of cattle were recovered from the site; aurochs *(Bos primigenius)* and bison (*Bison bonasus*). The distinction between *Bos primigenius* and *Bison bonasus* is one of the most difficult to make due to their similar body size and skeletal morphology (Uerpmann 1987). However, the characteristics outlined by Balkwill and Cumbaa (1992) were applied. Two bones of *Bison bonasus* have been identified within the assemblage. Uerpmann (1987) contends that the distinction between the remains of *Bos* and *Bison* requires considerable experience and is often impossible with fragmented bones. Given the high degree of fragmentation of bone from Pinarbaşi it was a surprise to find a 2 calcaneus bones in context BCL that was cattle size but not *Bos*. The identification of the calcaneus bones as bison was based on three characteristics associated with the sustentaculum. The face of the sustentaculum is scooped out in the Pinarbaşi samples and the margin of the sustentaculum is rounded forming a continuous curve and the sustentaculum is angled down (Balkwill and Cumbaa 1992). All of these characteristics are considered bison versus cattle characteristics (Balkwill and Cumbaa 1992). The cattle sustentaculums face is flattened and the margin of the sustentaculum forms a right angle and the sustentaculum projects almost perpendicularly (Balkwill and Cumbaa 1992: 239). When the Pinarbaşi calcaneus bones were compared with the material recovered from Çan Hasan III[67], the elements are identical. Payne classified the Çan

[67] Can Hasan III material stored in the British Institute for Archaeology, Ankara.

Hasan III calcaneus as a large *Bos* but was uncertain as to species. A possible *Bison bonasus* bone was also recovered from Çatalhöyük (East) during the 1998 season[68]. Based on these findings, there appear to have been two distinct species of cattle in Central Anatolia during the ECA III.

Cattle bones represent 17% (NISP) of the major identifiable taxa from Site B[69]. The relative proportion of cattle bones within the assemblage remains constant through all contexts; however there is a heightened presence within a few key contexts, the highest proportion being found between contexts BBC and BBI (71%).

8.2.1.2 Wild versus Domestic

Methodological procedures used to evaluate evidence of domestication were based on cattle size and slaughter patterns. Slaughter or kill-off patterns are calculated from data on tooth development and wear and epiphyseal fusion ages. Only those measurements attributed to *Bos primigenius* were used.

8.2.1.2.1 Cattle Size

Very few measurements could be taken from the cattle bones (Table 8.16). The cattle measurements were compared with those taken by Grigson (1986) (Table 8.17). The results indicate that the metatarsal is very close in size to those of the female aurochs from Denmark. The 2nd phalange, however, is much larger in size. This may represent a male aurochsen (Table 8.17).

	Phalanx 2				Metatarsal
	Bp	**GL**	**SD**	**Bd**	**Bd**
Data	37.1	46.9	31.3	31.4	60.4

Table 8.16: Measurements in mm of fused cattle bones from Pinarbaşi Site B.

[68] Martin *et al.* (1998) http://catal.arch.cam.ac.uk/catal/Archive_rep98/a_tab1.html.

[69] Wild cattle refer to the combination of *Bos primigenius* and *Bison bonasus* bones.

Element (Measurement)	Pinarbaşi Site B cattle bone measurement	Bos primigenius Standard skeleton	Log 10 Pinarbaşi cattle	Log 10 *Bos primigenius*	Log Difference Pinarbaşi - *Bos primigenius*
Metatarsal (Bd)	60.4	68	1.781036	1.83	-0.048963
Phalanx 2 (GL)	46.9	35	1.671172	1.544068	0.127104

*Table 8.17: Log differences in cattle bones at Site B, compared with the wild Bos primigenius**
**Measurements of wild Bos taken from Grigson (1989:Table 1).*

The 2 cattle bone measurements from Site B were then compared to other cattle bone measurements from 6 other Anatolian sites (Table 8.18 and 8.19). The comparison employs the log size-index method developed by Meadow (1983). The two size-index measurements of cattle bones from Site B are plotted separately on Figure 8.4 and not joined into a range as Buitenhuis (forthcoming) has done with the other cattle measurement data because Site B's measurements are derived from breadth and length measurements and Meadow (1999) warns against having both measurements plotted together in the same index scale. When the 2 measurements from Site B area compared with the 486 size index measurements from Musular, 522 from Cayönü, 296 from Aşikli, 6 from Yumuktepe, 11 from Tepecik and 35 from Güvercinkayasi (Figure 8.4) (Öksüz 2000; Buitenhuis forthcoming), both measurements compare well with the wild cattle from Aşikli, Cayönü and Musular[70]. Data from sites outside the study area (Cayönü, Yumuktepe and Güvercinkayasi) were included in the comparison because it allowed for a broader comparison to be made and both Yumuktepe and Güvercinkayasi have measurements from domestic cattle in which Site B's measurements could be compared versus using smaller aurochs measurements from Europe (Degerbøl, 1970). It must also be noted that a cut-off point between wild and domestic measurements was made in Figure 8.4 by shading a domestic side a light red. The cut-off was established based on the cattle measurements from Tepecik and Güvercinkayasi, which were mainly identified as domestic (Buitenhuis forthcoming). The Pinarbaşi cattle bone measurement from the 2nd phalange appears to be one of the largest measurements recorded in the region compared to the approximately 14 2nd phalange bones from Musular and 11 from

[70] The measurement data from these sites includes all body parts that were measurable according to von den Driesch (1976).

Aşikli (Table 8.19) (Buitenhuis forthcoming). The large discrepancy is size between the 2nd phalange from Pinarbaşi and those from other Anatolian sites raised the possibility that the 2nd phalange from Pinarbaşi identified as cattle was instead bison because bison bones are often observed as being far more robust than cattle (Balkwill and Cumbaa 1992). The characteristics outlined by Balkwill and Cumbaa (1992: 171) that distinguish a cattle and bison 2nd phalange were then compared. The tendon imprint on the Pinarbaşi 2nd phalange was not deep and the angle of dorsal margin appears dish shaped both characteristics of cattle versus bison (Balkwill and Cumbaa 1992: 171). Therefore, the Pinarbaşi 2nd phalange is from a very large cattle bone and not a bison.

The metatarsal breadth measurement from Site B is close to the size range that Buitenhuis (forthcoming) has marked as representing a domestic population (Table 8.18). Because all the comparative sites from Central Anatolia are from eastern sources, a size variation may exist regionally with the cattle. A size variation rule is based on the observation by Bergmann that the size of homoeothermic animals tends to increase along a temperature gradient from warm to cold temperatures (Peters *et al.* 1999). The explanation is that larger animals tend to produce more heat and lose less which is a clear advantage in cooler climates. Environmental analysis outlined in Chapter 4 indicates that Anatolia experienced dramatic climactic fluctuations at the beginning of the Holocene but there was an overall development of warmer and wetter conditions. Steppe and desert-steppe vegetation covered the central plateau including the Konya basin and eastern Anatolia including the Van Basin (Yakar 1994). Therefore, size variation appears not to be due to temperature gradients as there appears to have been a consistent vegetation cover and temperatures during the study period in the region. The metatarsal breadth measurement from Site B is comparable in size to other breadth measurements recorded at Aşikli and Musular that Buitenhuis (forthcoming) characterised as morphologically wild. It must be noted that no measurement data has yet been published from Çatalhöyük and Can Hasan and in order to make Site B's measurements regionally comparative data from these sites is needed. When the 2 cattle measurements from Site B are compared to the other Neolithic cattle from Anatolia they appear to be morphologically wild.

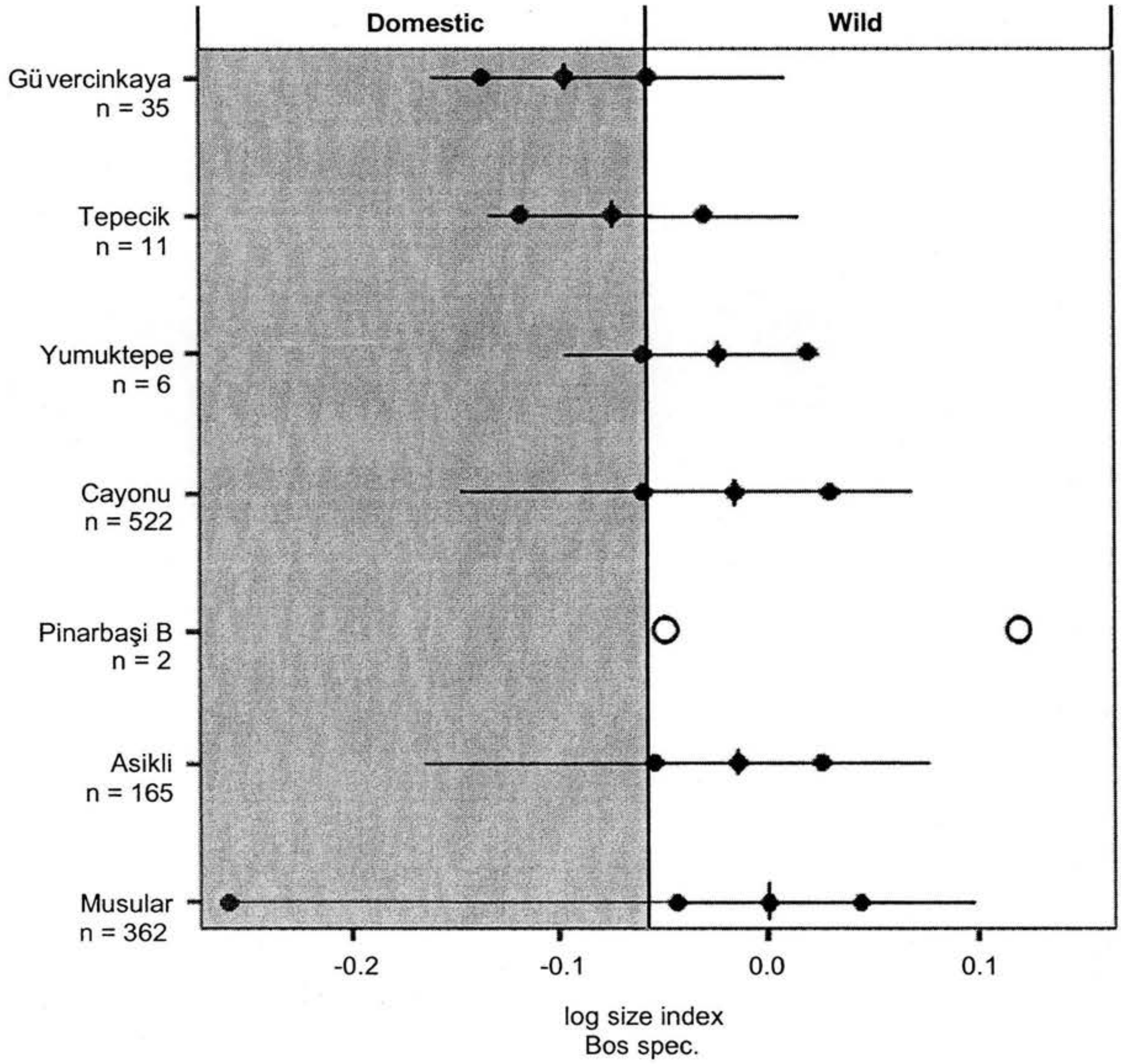


Figure 8.4: Boxplots of the variation of size indices (SI) for Bos sp. compared to a standard individual from Pinarbaşi Site B (Table 8.12) and other Central Anatolian sites[71].

Metatarsal	Pinarbaşi Site B Bd	Aşikli Bd	Musular Bd	Güvercinkaya Bd	Yumuktepe Bd
N	**1**	**8**	**46**	**3**	**1**
Min	**60.4**	**74.7**	**59.5**	**62.8**	**79.9**
Max	**60.4**	**56.4**	**82.6**	**64.1**	**79.9**
Mean	**60.4**	**67.9**	**70.1**	**59.2**	**79.9**
Data	60.4	74.7	59.5	62.8	79.9
		72.5	59.7	50.8	
		72.7	59.8	64.1	
		74.3	60.2		
		66.5	61.3		
		62.5	61.3		
		63.3	61.7		
		56.4	61.9		
			62.4		
			62.6		
			62.8		
			63.0		
			63.4		
			65.0		
			69.6		
			64.5		
			64.8		
			68.3		
			69.3		
			69.5		
			70.4		
			72.2		
			72.3		
			72.9		
			73.4		
			74.2		
			74.2		
			74.3		
			74.8		
			76.1		
			80.0		
			69.9		
			70.5		
			71.3		
			74.0		
			74.0		
			74.1		
			74.4		
			74.4		
			74.7		
			76.4		
			77.3		
			77.8		
			78.4		

[71] Thanks to H. Buitenhuis (forthcoming) for providing me with comparative data from Central Anatolia.

			78.6		
			78.8		
			82.6		

Table 8.18: Pinarbaşi Site B cattle Metatarsal Bd measurements in mm compared to other Anatolian sites (Buitenhuis forthcoming).

Phalanx 2	**Pinarbasi Site B**		**Asikli**		**Musular**	
	GL	**Bp**	**GL**	**Bp**	**GL**	**Bp**
N	**1**	**1**	**11**	**11**	**14**	**13**
Min	**46.9**	**37.1**	**48.0**	**31.5**	**43.6**	**31.8**
Max	**46.9**	**37.1**	**50.0**	**36.5**	**99.3**	**90.2**
Mean	**46.9**	**37.1**	**49.4**	**34.1**	**53.9**	**39.7**
Data	46.9	37.1	48.0	31.5	43.6	31.8
			49.2	34.1	47.7	32.0
			49.9	34.5	48.0	31.4
			48.4	33.2	48.0	32.7
			49.3	33.5	48.5	31.8
			48.3	32.7	48.9	34.4
			51.7	36.7	49.3	34.1
			46.1	32.3	50.6	34.7
			50.3	36.1	50.7	36.4
			51.8	33.5	51.2	33.3
			50.0	36.5	51.7	36.2
					54.4	
					63.3	56.7
					99.3	90.2

Table 8.19: Pinarbaşi Site B cattle Phalanx 2 GL and Bp measurements in mm compared to other Anatolian sites (Buitenhuis forthcoming).

8.2.1.3 Kill-off patterns

Mandibular tooth eruption and wear data show a broad kill-off range in animal ages up until young adulthood (Figure 8.5). Fewer than 50% of the 15 mandibular teeth with determined wear patterns were from animals killed before two years of age. The remaining 50% were from animals no older than young adult (Grant 1982). Epiphyseal fusion data of cattle bones (Figure 8.6 and Table 8.20) also show a similar kill-off pattern, with animals ranging in age from under 10 months to at least four years of age (Silver 1969). The kill-off of a broad range in cattle at Site B corresponds with a hunting strategy for meat.

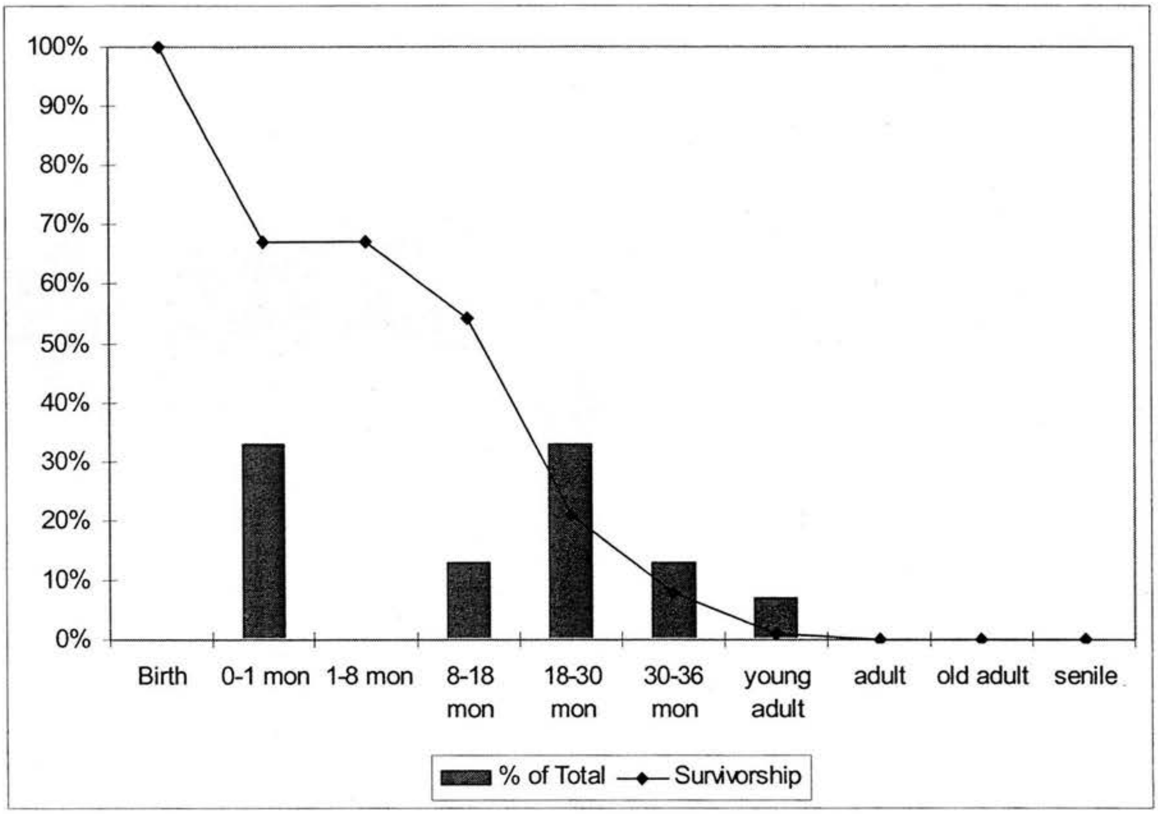


Figure 8.5: Bos kill-off at Site B (n-15) [based on mandibular tooth eruption and wear stages Grant 1982].

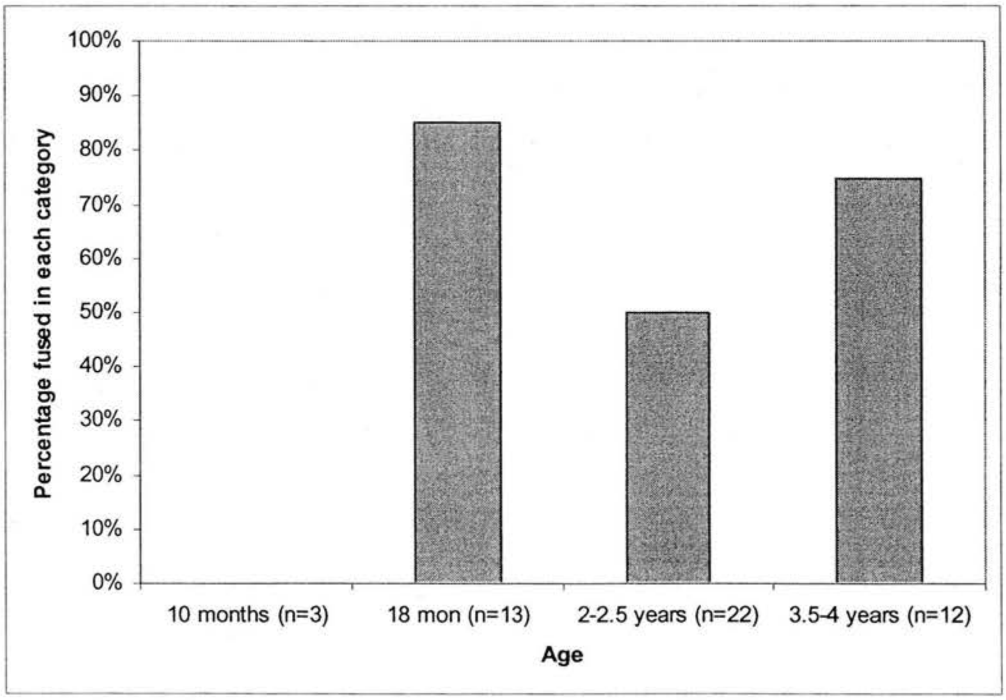


Figure 8.6: Cattle mortality at Site B, based on bone fusion data (Data from Table 8.20).

Bos			
Fusion Stage		**fused**	**unfused**
10 months	acetabulum	0	3
	distal scapula		
18 months	distal humerus	11	2
	proximal radius		
	proximal phalanx		
	middle phalanx		
2-2.5 years	distal tibia	11	11
	distal metacarpal		
	distal metatarsal		
3.5-4 years	calcaneus	9	3
	distal radius		
	proximal femur		
	proximal humerus		
	distal femur		
	proximal tibia		
	ulna		
Total		**31**	**19**

Table 8.20: Numbers of fused and unfused cattle bones from Site B (Silver 1969).

8.2.1.4 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.2.1.4.1 Fragmentation Pattern

The degree of cattle bone fragmentation can be used to infer how humans used the remains at the site. For example, taxa used primarily as meat-providers might be expected to show a higher degree of fragmentation than taxa such as fox, birds and wolves that were used for products such as pelts and feathers. The cattle bones from Site B are highly fragmented with 75% of them represented by bones with less than 50% present (Figure 8.3 and Table 8.11). Bones with less than 25% present comprise 35% of the assemblage. The elements that were recovered complete (9%) are carpal, tarsal and sesamoid bones (von den Driesch 1987). There is evidence of marrow extraction as longitudinal breaks down the tibia and metacarpals were recorded.

8.2.1.4.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.7 and Table 8.15b) indicates that 45% of the elements were from the feet, represented by metacarpal, carpal/tarsal and phalange fragments, 32% from the head in the form of skull and mandibular teeth, 11% from the upper forelimb, 8% from the upper hindlimbs and 4% from the back. Body part representation indicates that at least ten individuals are present at the site based on the recovery of metatarsal bones (Table 8.15a).

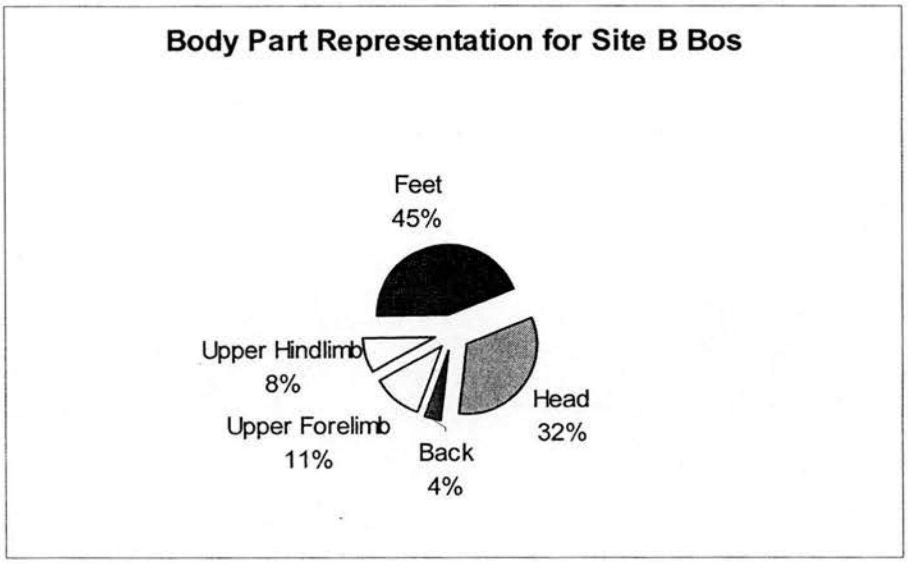


Figure 8.7: Wild cattle body part representation from Site B (Data from table 8.15b).

Based on the percentages of body parts present, it appears that the cattle carcasses were processed and dismembered at Site B. The discard of feet and cranial elements indicates primary butchery with the meat bearing elements being transported off site. A possible explanation for the relative absence of upper limb bones is that they were too fragmented to be identifiable. To confirm this hypothesis, the non identifiable to taxa fragments data will be analysed in Section 8.4 to see if long bones, large mammal size are represented within the assemblage.

8.2.1.4.3 Butchery: Cut/Chop marks

There are two sources of evidence for butchery: cut marks and breaks associated with chopping. Table 8.12 lists the frequency and location of cut marks recorded on cattle bones. Only 2% of the total wild cattle bones had evidence of cut marks. Cut marks were found primarily on feet bones (calcaneus, carpal, metatarsal, sesamoid). In addition to smaller cut marks, the carpal and sesamoid bones have also been sliced through the centre. Splitting and chopping of long bone shafts were the most common type of butchery evidence recorded.

8.2.1.4.4 Burnt bone

Analysing the cattle bones for evidence of burning is used to infer processing activities dealing with consumption. Evidence of burning on the bones indicates that they were roasted at the site during the cooking process. Nine of the wild cattle bones show signs of burning which represents less than 3% of the total number of burnt bones (Table 8.13). With very few of these elements showing signs of burning, it suggests that they were discarded in the initial butchery of the animal. There is also evidence that very little consumption of cattle took place on site as main meat bearing bones are missing.

8.2.1.5 Context BBH

Three contexts produced almost 60% of the total wild cattle remains recovered from Site B, these are BBD, BBH and BBI (Table 8.9 and Table 8.21). Context BBH represent 17% of the total cattle bones recovered.

	BBD	BBH	BBI	Total	% of total wild cattle bones
wild cattle	66	52	73	191	58%

Table 8.21: Wild cattle NISP numbers for context BBD, BBH and BBI.

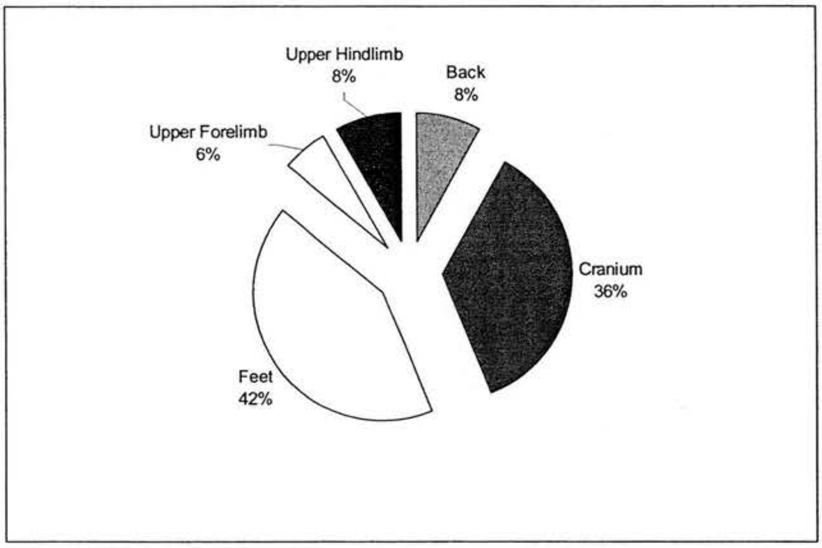


Figure 8.8: Wild cattle body part representation within context BBH (Data from Table 8.15b).

Context BBH produced primarily the same body part composition (Figure 8.8) as those found overall at the site (Figure 8.7). Within context BBH, the primary goal of the butchery process was the initial butchery and the discard of waste material. Two of the bones from this context possibly articulate; a distal phalanx 1 fragment and proximal phalanx 2 fragment. Both of these elements show signs of light burning or may have been a result of the ash layer, which covered the top of context BBH.

Those measurements that were taken indicate the presence of very large animals, suggesting that they were wild rather than from a domestic stock.

8.2.1.5.1 Cattle summary

Two distinct species of cattle were recovered from Site B, the aurochs *(Bos primigenius)* and bison (*Bison bonasus)*. Measurement and kill-off pattern data from *Bos primigenius* indicate the cattle were wild. Body part representation indicates a relative absence of upper limb bones. Their absence from the identifiable taxa either means they were not present in the assemblage or they could be represented within the fragmented bone data. The fragments data will be analysed in Section 8.4 to see if long bones, large mammal size are represented within the assemblage.

8.2.2 Caprinae *Ovis sp.* and *Capra* sp.

Two distinct caprines[72] have been identified: *Ovis* sp. *and Capra* sp. As ws the case with cattle and bison, the distinction between sheep and goat is one of the most difficult to make due to their similar body size and skeletal morphology (Uerpmann 1987). Fifteen bones of goat have been identified in the assemblage. Making the distinction between sheep and goat bones is often impossible when the bones are highly fragmented and key distinguishing markers are missing (Boessneck 1969). These bones have therefore been placed into a general sheep/goat category.

Six metacarpals produced measurements for comparison with Boessneck's (1969) indices and they all produced index values >63 indicating that they were from sheep (Table 8.22).

A	B	a/b
10.5	14.1	0.74
9.3	13.7	0.68
9.5	15	0.63
14	19.1	0.73
11.3	15.2	0.74
10.2	15.5	0.66
13.3	NA	NA

Table 8.22: Sheep metacarpal measurements (Boessneck 1969).

Caprines represent 67% (NISP) of the major taxa from Site B (Table 8.9). The proportion of sheep and goat fluctuates throughout the contextual sequence from 10 and under to 40 sheep and goat bones per context. However there is a heightened

[72] Caprines refer to the combination of sheep, goat and sheep/goat bones.

presence within context BBH that produced 74% of the total sheep and goat assemblage (Table 8.9).

8.2.2.1 Wild versus Domestic

One of the primary research aims of the faunal analysis is to determine whether the caprines are from a wild or a domestic population. Determining if sheep and goat are domestic is particularly difficult during the early Neolithic in Central Anatolia due to both taxa's wild progenitors being naturally distributed within the region. Methodological criteria used to determine the status of the caprines was based on osteometrics and cull patterns. Measurement comparisons occurred with only those bones that could be confidently identified to species.

8.2.2.1.1 Goat Size

Goat bones produced only one measurement from a tibia. Table 8.23 compares the size of the measured goat tibia, using the log size index method (Meadow 1991), with goat measurements from other Anatolian sites (Buitenhuis forthcoming) (Table 8.24). It must be noted here that the measurement data from the other Anatolian sites appears to be from every element that was measurable from the assemblage and the standard goat measurements used are from a Cilician Taurus Mountain goat (Appendix 1). From the box plots presented in Figure 8.9, it is clear the Site B measurement falls within a wild population similar to those at Musular and Tepecik (Table 8.24). It must be stressed that this result is based on only one measurable bone. However given the very large size of the element, it appears that the goat from Site B was wild.

Element	Dimension	Pinarbaşi Site B goat bone measurement	standard skeleton	Log 10 Pinarbaşi goat	Log 10 standard skeleton	Log Difference Pinarbaşi-standard skeleton
Tibia	Bd	26.4	22.2	1.4216	1.3463	0.0752

Table 8.23: Log differences in goat bones at Pinarbaşi Site B compared with standard goat (Buitenhuis forthcoming).

Tibia	Pinarbaşi Site B Bd	Musular Bd	Tepecik
N	**1**	**8**	**1**
Min	**26.4**	**26.4**	**25.6**
Max	**26.4**	**32.4**	**25.6**
Mean	**26.4**	**30.0**	**25.6**
Data	26.4	26.4	25.6
		28.1	
		29.7	
		30.0	
		30.4	
		31.0	
		32.3	
		32.4	

Table 8.24: Pinarbaşi Site B goat Tibia Bd measurements in mm compared to other Anatolian sites (Buitenhuis forthcoming).

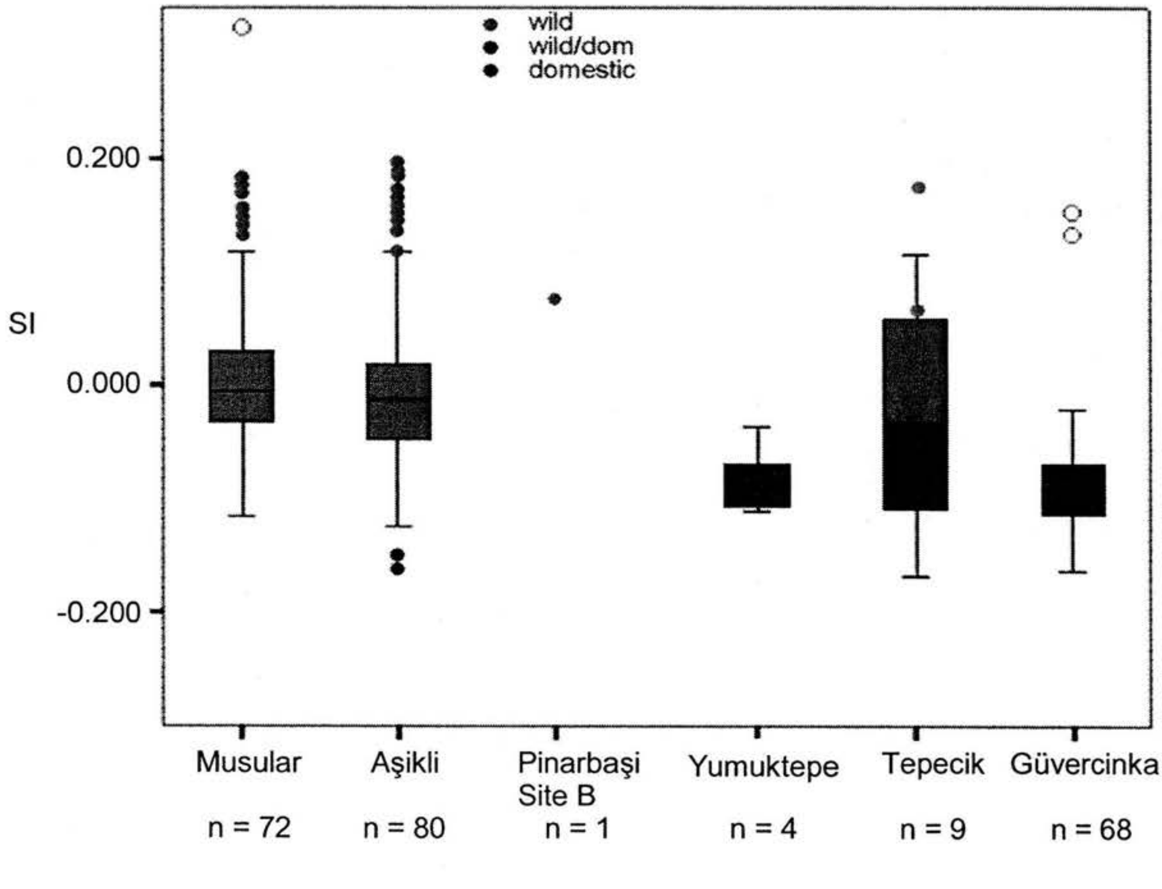


Figure 8.9: Boxplots of the variation of size indices (SI) for Capra sp. from Pinarbaşi Site B (Table 8.24) and other Central Anatolian sites (Buitenhuis forthcoming).

8.2.2.1.2 Sheep Size

Table 8.25 displays the measurements, ranges and averages of sheep bones from Site B. Sheep measurement data from Site B was compared with a standard sheep using Meadow's (1983) log size index method (Table 8.26). Only greatest length measurements were used to create Pinarbaşi Site B's index log. These results were

Bone	Atlas					Humerus	Radius	Calcaneus		Astragalus				Metatarsal			Proximal Phalange				Middle Phalange				Distal Phalange
Measurement	BFcd	GL	GLF	H	GB	Bd	Bd	GL	GB	Dm	Glm	GLl	Dl	Bd	SD	Bp	Dp	Bp	GL	Bd	GL	Bp	SD	Bd	Ld
Range	60.3	55.5	48.9	44.2	68.7	31.6	28.2-28.8	57.9-69.6	19.5-20.4	13.6-17.9	25-27.2	27-29.2	14-16.4	22.7-30.6	11.9-12.5	18.1-19.9	17.2	10.7-11.3	36-37.6	10.3-11.2	21	10.2-15	7.8-10.6	8.3-11.9	17.5-25.8
Mean	60.3	55.5	48.9	44.2	68.7	31.6	28.5	61.8	20.0	16.2	26.3	28.0	15.3	24.0	12.2	19.0	17.2	11.0	36.8	10.8	21.0	11.8	8.6	9.4	20.5
Data	60.3	55.5	48.9	44.2	68.7	31.6	28.8	57.9	19.5	13.6	25	27	14		12.5		17.2				21		9.6	9.3	17.5
							28.2	69.6		17.2	27	28	15.4	30.6				11.3	37.6	11.2		10.2	7.9	8.6	18
								57.9	20.4	16	26	27.8	15.3	25.8	11.9			10.7	36	10.3		11.9	8.8	9.3	21.3
										17.9	27.2	29.2	16.4	23.6								11.8	8.4	9.6	20.4
														22.7								11.3	7.8	8.9	20.1
														22.9								11.7	7.8	8.3	19.9
																18.1						11.2	7.9	9.3	19.6
																19.9						15	10.6	11.9	19.4
														18.1								11.5		9.2	17.5
																									20.6
																									21.8
																									20.2
																									25.8
																									24
																									22.1

Table 8.25: Measurements (in mm) of fused sheep bones from Site B.

then compared with those from other Anatolian sites (Table 8.27a-g; Figure 8.10 and 8.11). Site B sheep atlas and radius bones are comparable in size to those at Guvercinkaya, (Table 8.27a and b). Site B sheep astragalus bones are comparable in size to those found at Guvercinkaya, Tepecik and Yumuktepe (Table 8.27c). Site B sheep calcaneus bones are primarily in the size range as those from Guvercinkaya, however, one GL measurement (69.9) falls within those recorded at Musular (Table 8.27d). Site B sheep metatarsal measurements are similar in size to those recorded at Tepecik (Table 8.27d). Site B sheep phalanx 1 and 2 measurements are consistently smaller than those from Musular (Table 8.27e and f).

From the box plots presented in Figure 8.10, it is clear that the sheep from Site B are smaller than those from Pinarbaşi Site A, Aşikli and Musular and equal in size to domestic sheep and goats from later sites such as Yumuktepe, Tepecik and Güvercinkayasi. Figure 8.11 also corroborates this interpretation based on astragali measurements from different Anatolian sites. The astragali greatest length measurements from Pinarbaşi Site B (Table 8.27) are all less than 30 mm in length which are smaller those taken from Aşikli which Buitenhuis (1997) classifies as the norm for wild population measurements in Anatolia. Pinarbaşi Site B sheep measurement data suggest a domestic population was present at the site.

8.2.2.2 Kill off Patterns

Mandibular tooth eruption and wear and epiphyseal bone fusion techniques were applied to the sheep/goat bones in order to establish kill-off patterns. 41 sheep/goat mandibular teeth out of 98 mandibular teeth recovered could be aged using Payne's (1973) wear stage technique. All of the 41 ageable teeth recovered were loose which will affect the results as the best results are obtained by performing age determinations on mandibles with more than two associated cheek teeth (Zeder 1991). Each ageable tooth was classified into a specific age category according to those outlined by Payne (1973) based on their specific wear pattern (Figure 8.28). By plotting the survivorship curve created by the 41 individual teeth, the data reflect a kill-off pattern of a meat-based economy (Figure 8.12). The survivorship curve reflects a high kill-off of young animals within the first and third years, with a smaller population of mature animals killed between 3-10 years. According to Payne (1973) this model reflects a meat-based economy whereby young males are killed when they reach the optimum point in weight-gain (18-30 months).

Element	Dimension	Pinarbaşi Site B sheep bone measurement	standard skeleton	Log 10 Pinarbaşi *sheep*	Log 10 standard skeleton	Log Difference Pinarbaşi - standard skeleton
Atlas	GLF	48.9	49.4	1.689308859	1.69372695	-0.00441809
Radius	Bd	28.8	35.3	1.459392488	1.54777471	-0.088382218
		28.2	35.3	1.450249108	1.54777471	-0.097525597
Astragalus	GL	27	32.9	1.431363764	1.5171959	-0.085832134
		28	32.9	1.447158031	1.5171959	-0.070037867
		27.8	32.9	1.444044796	1.5171959	-0.073151102
		29.2	32.9	1.465382851	1.5171959	-0.051813047
Calcaneus	GL	57.9	68.2	1.762678564	1.83378437	-0.071105811
		69.6	68.2	1.84260924	1.83378437	0.008824865
		57.9	68.2	1.762678564	1.83378437	-0.071105811
Metatarsal	Bp	18.1	23	1.257678575	1.36172784	-0.104049261
		19.9	23	1.298853076	1.36172784	-0.06287476
Phalanx 1	GL	37.6	40.4	1.575187845	1.60638137	-0.03119352
		36	40.4	1.556302501	1.60638137	-0.050078864
Phalanx 2	GL	21	24.7	1.322219295	1.39269695	-0.070477659

Table 8.26: Log differences in sheep bones at Site B compared with standard sheep (Buitenhuis forthcoming).

Atlas	Pinarbaşi Site B GLF	Musular GLF	Guvercinkaya GLF
N	**1**	**6**	**4**
Min	**48.9**	**50.1**	**46.3**
Max	**48.9**	**57.0**	**50.8**
Mean	**48.9**	**54.5**	**47.9**
Data	48.9	50.1	46.3
		50.5	47.3
		56.0	47.3
		56.7	50.8
		56.8	
		57.0	

Table 8.27a: Pinarbaşi Site B sheep atlas measurements compared to other Anatolian sites (Buitenhuis forthcoming).

Radius	Pinarbaşi Site B Bd	Musular Bd	Guvercinkaya Bd
N	**2**	**6**	**7**
Min	**28.2**	**27.5**	**23.2**
Max	**28.8**	**32.6**	**30.8**
Mean	**28.5**	**30.8**	**28.7**
Data	28.8	27.5	29.4
	28.2	30.4	28.6
		30.9	29.3
		31.3	29.4
		32.0	29.9
		32.6	30.8
			23.2

Table 8.27b: Pinarbaşi Site B sheep radius measurements compared to other Anatolian sites (Buitenhuis forthcoming).

Astragalus	Pinarbaşi Site B GLl	Musular GLl	Guvercinkaya GLl	Tepecik GLl	Yumuktepe GLl
N	**4**	**21**	**21**	**1**	**1**
Min	**27**	**27.0**	**26.7**	**26.0**	**27.9**
Max	**29.2**	**34.0**	**32.3**	**26.0**	**27.9**
Mean	**28.0**	**31.3**	**28.7**	**26.0**	**27.9**
Data	27	27.0	26.7	26.0	27.9
	28	28.0	27.2		
	27.8	29.0	27.3		
	29.2	29.5	27.6		
		30.0	27.8		
		30.0	27.8		
		30.7	27.9		
		31.0	28.0		
		31.0	28.1		
		31.0	28.2		
		32.0	28.3		
		32.0	28.4		
		32.0	29.1		
		32.4	29.1		
		33.0	29.2		
		33.0	29.5		
		33.0	29.8		
		33.0	30.0		
		33.0	30.1		
		33.3	30.8		
		34.0	32.3		

Table 8.27c: Pinarbaşi Site B sheep astragalus measurements compared to other Anatolian sites (Buitenhuis forthcoming).

Calcaneus	Pinarbaşi Site B GL	Musular GL	Guvercinkaya GL
N	**3**	**11**	**6**
Min	**57.9**	**58.8**	**55.1**
Max	**69.6**	**73.0**	**62.1**
Mean	**61.8**	**66.5**	**59.1**
Data	57.9	58.8	55.1
	69.6	60.2	58.4
	57.9	65.0	59.2
		65.1	59.8
		67.0	60.2
		67.1	62.1
		67.5	
		68.0	
		68.0	
		72.0	
		73.0	

Table 8.27d: Pinarbaşi Site B sheep calcaneus measurements compared to other Anatolian sites (Buitenhuis forthcoming).

Metatarsal	Pinarbaşi Site B Bp	Musular Bp	Guvercinkaya Bp	Tepecik Bp
N	**2**	**2**	**2**	**1**
Min	**18.1**	**19.4**	**21.4**	**18.2**
Max	**19.9**	**22.6**	**22.0**	**18.2**
Mean	**19.0**	**21.0**	**21.7**	**18.2**
Data	18.1	19.4	21.4	18.2
	19.9	22.6	22.0	

Table 8.27e: Pinarbaşi Site B sheep metatarsal measurements compared to other Anatolian sites (Buitenhuis forthcoming).

Phalanx 1	Pinarbaşi Site B Glpe	Musular Glpe	Yumuktepe Glpe
N	**2**	**5**	**1**
Min	**36**	**39.8**	**39.0**
Max	**37.6**	**48.6**	**39.0**
Mean	**36.8**	**44.8**	**39.0**
Data	37.6	39.8	39.0
	36	42.4	
		44.6	
		48.6	
		48.6	

Table 8.27f: Pinarbaşi Site B sheep phalanx 1 measurements compared to other Anatolian sites (Buitenhuis forthcoming).

Phalanx 2	Pinarbaşi Site B Glpe	Musular Glpe
N	**1**	**7**
Min	**21**	**23.0**
Max	**21**	**27.9**
Mean	**21.0**	**25.0**
Data	21	23.0
		23.8
		25.7
		26.7
		23.4
		24.8
		27.9

Table 8.27g: Pinarbaşi Site B sheep phalanx 2 measurements compared to other Anatolian sites (Buitenhuis forthcoming).

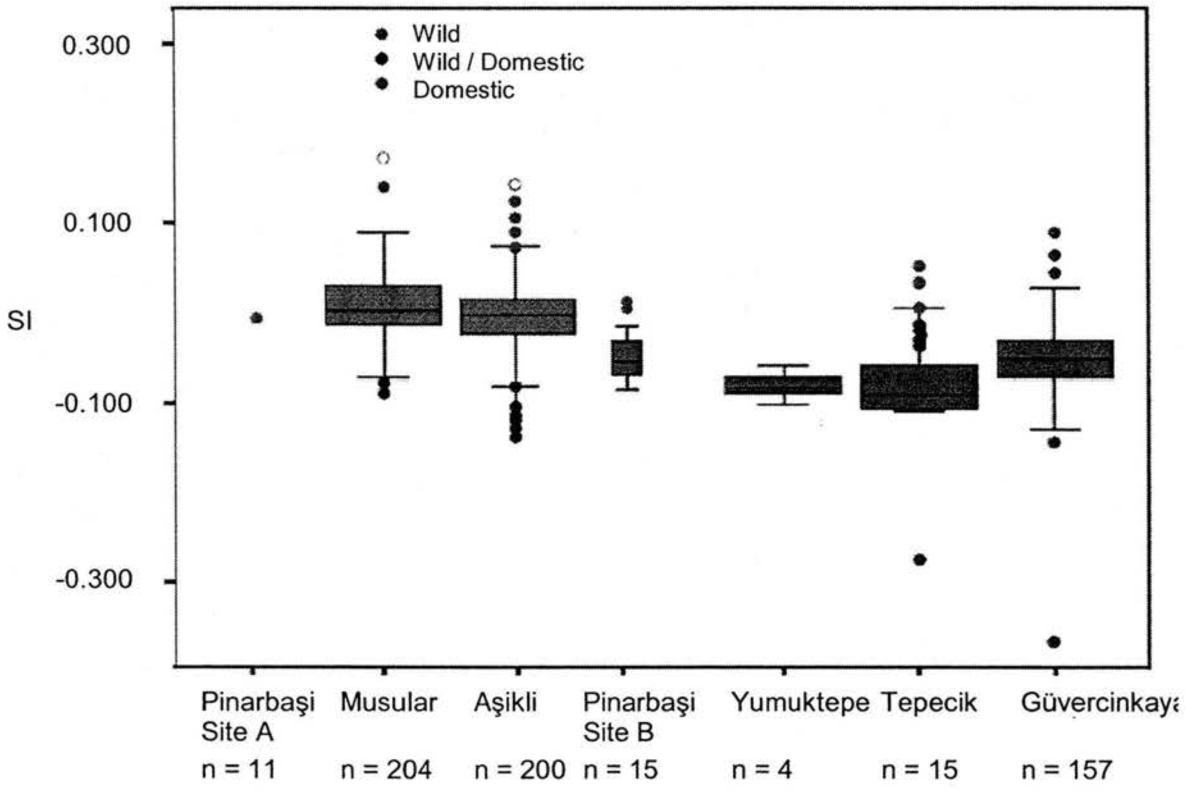


Figure 8.10: Boxplots of the variation of size indices (SI) for Ovis sp. from Pinarbaşi Site B and other Central Anatolian sites.

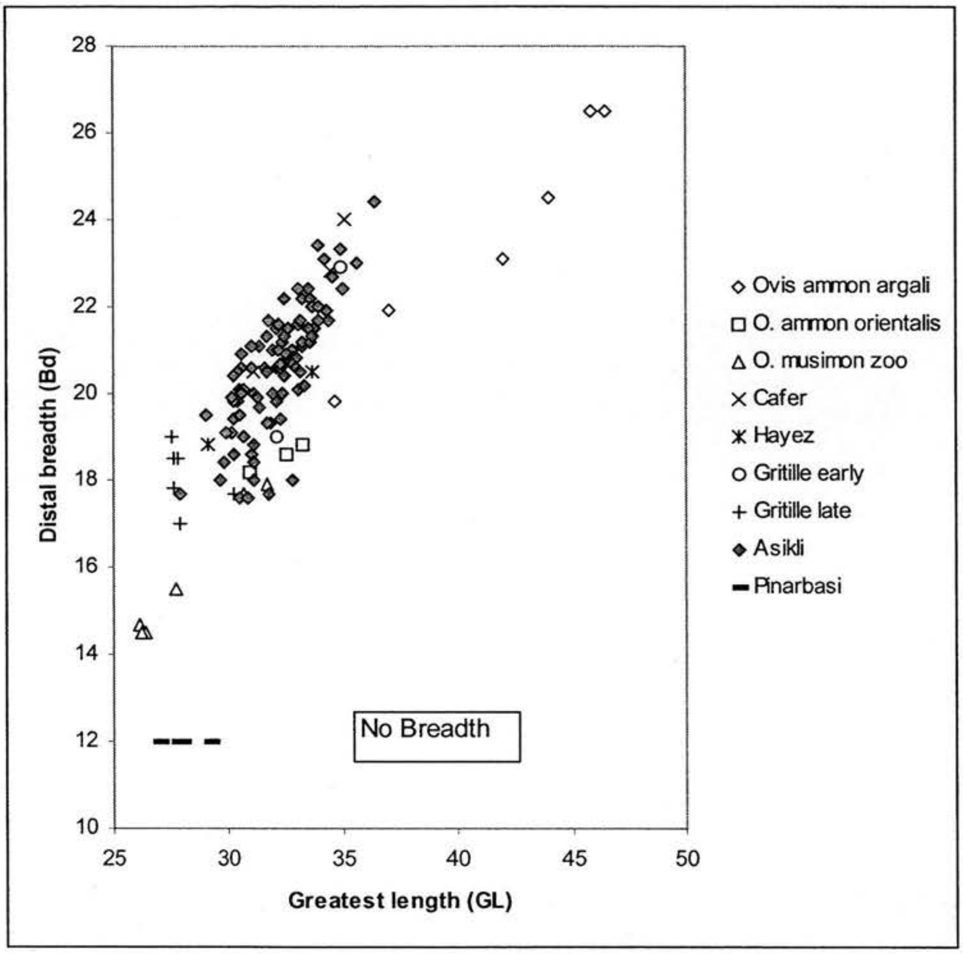


Figure 8.11: Scatter diagram measurements of astragali from different Anatolian sites (Buitenhuis 1997).

No. of teeth	Age (in years)	% of Total	Survivorship
0	Birth	0%	100%
9	0-1	22%	78%
14	1-2	34%	44%
8	2-3	20%	24%
4	3-4	10%	14%
2	4-6	5%	9%
3	6-8	7%	2%
1	8-10+	2%	0%

Table 8.28: Sheep/goat teeth classified into age categories according to Payne (1973).

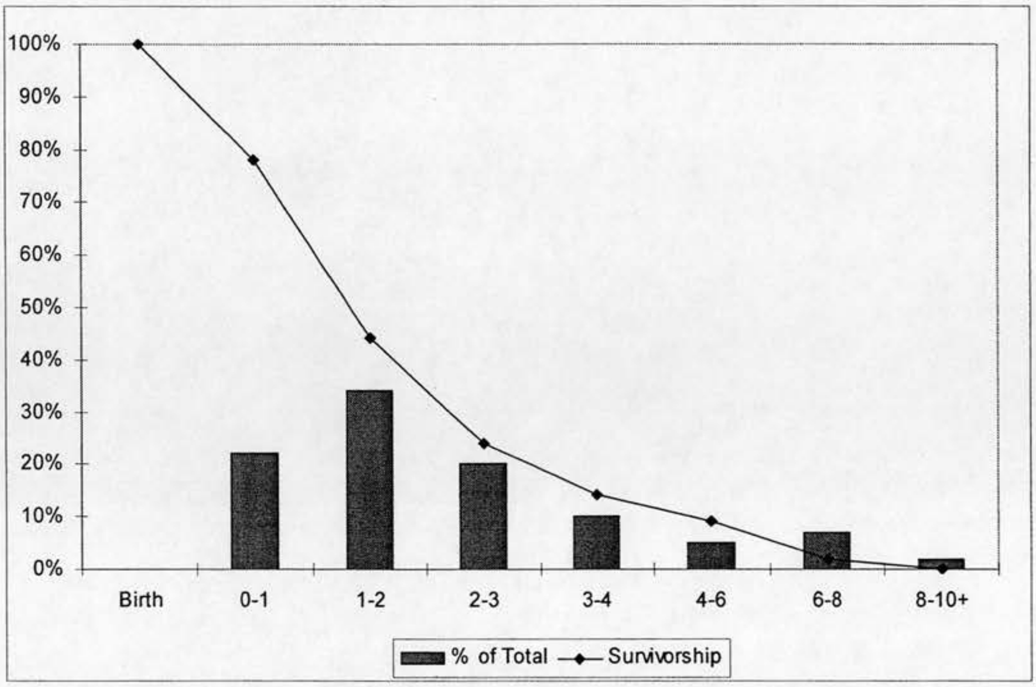


Figure 8.12: Sheep/goat kill-off at Site B based on data from Table 8.28).

Epiphyseal fusion of sheep and goat bones reveal a very similar kill-off pattern established during the teeth analysis. 514 bones were ageable based on bone fusion stages (Table 8.29). Over 81% of the animals died before three years of age (Table 8.29 and Figure 8.13). Both these kill-off patterns correspond with a strategy optimising for meat within a herded sheep and goat population.

Sheep/Goat Fushion Stage		fused	unfused
10 months	distal humerus	33	31
	proximal radius		
	acetabulum		
	distal scapula		
13-16 months	proximal phalanx	44	90
	middle phalanx		
1.5-2.25 years	distal tibia	77	134
	distal metacarpal		
	distal metatarsal		
2.5-3 years	calcaneus	26	49
	distal radius		
	proximal femur		
	ulna		
3-3.5 years	proximal humerus	9	21
	distal femur		
	proximal tibia		
Total		189	325

Table 8.29: Numbers of fused and unfused sheep bones from Site B (Silver 1969).

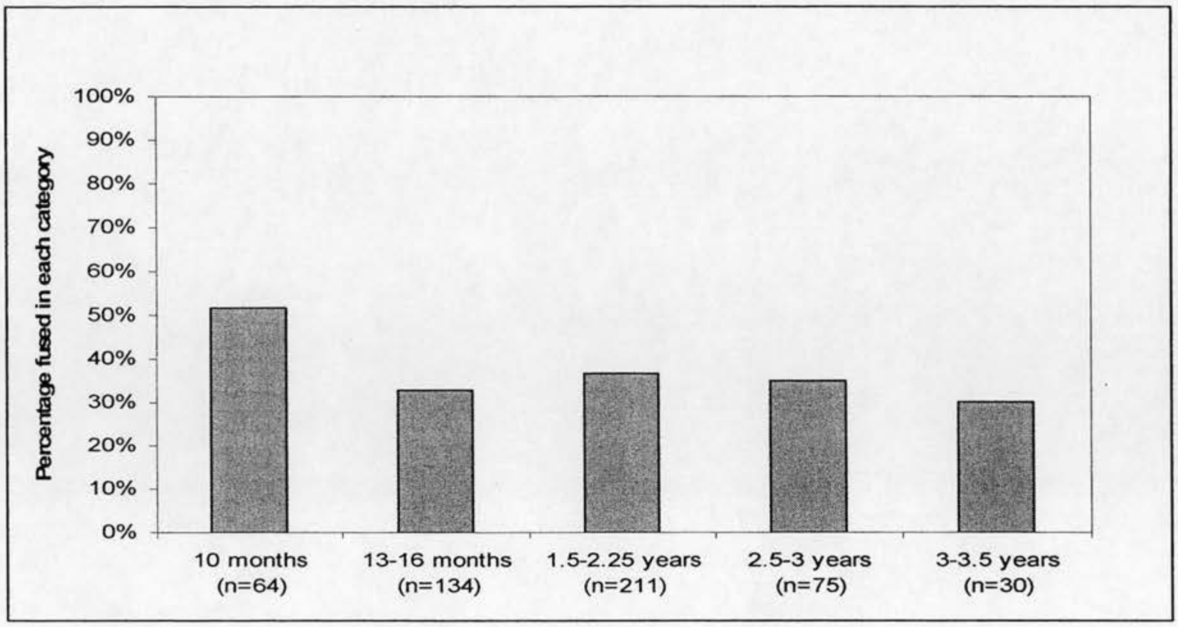


Figure 8.13: Sheep/Goat mortality at Site B, based on bone fusion (data from Table 8.29).

Attempts to sex the caprine remains based on ischium characteristics was not performed due to the fragmentary nature of the bones. Morphological and metrical differences based on horn cores were not performed due to their absence within the assemblage.

8.2.2.3 Herd composition

The analysis of a herd composition can lead to two interpretations depending on the status of the animals. Site B produced 1027 bones identified as sheep and 15 as goat. The ratio of sheep to goat was 69:1 (Table 8.30). If the caprines are wild, the ratio suggests that sheep dominated the region and hunters only occasionally killed goat. This datum itself is important as it reveals that the environment around Site B was sufficiently temperate and wet to provide a more suitable habitat for sheep rather than goats (Redding 1984). However both taxa were sustainable within an assumed hunting distance.

# of sheep	# of goats	sheep/goat ratio
1027	15	69:1

Table 8.30: Sheep/goat herd composition at Site B.

A herd composition comprising 75% sheep is said by Redding (1984) to reflect a herding strategy optimising for energy/protein[73]. Ideally, Redding (1984) states that herd security will be maintained if a sheep/goat ratio between 1.7:1 and 1:1 is achieved. Site B does not fall within this ratio and is clearly represented by a herd dominated by sheep[74]. Again this may be a result of the sheep dominating the environment around Site B and early herders working within this context. It does, however, subject these early herders to fluctuations in annual yields as the dominance of sheep reduces herd security if epizootic or parasite infection broke out (Redding 1984).

8.2.2.4 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.2.2.4.1 Fragmentation patterns

The sheep and goat bones from Site B are not as highly fragmented as the other major taxa from the site. 49% of the sheep bones have fragments sizes greater than 75% of the element present. Goat bones have 55% of the bones classified as greater than 75% of the element present. The high percentage of complete and almost complete fragments is a result of large numbers of carpal, tarsal and phalanx bones being recovered. Bones with less than 25% present comprise 19% of the sheep assemblage. Sheep/goat have less than 10% of the bones with greater than 75% of the element present (Table 8.11 and Figure 8.3).

8.2.2.4.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.3 & Table 8.15b) indicates that 52% of the elements were from the feet, represented by metacarpal, carpal, tarsal and phalange elements, 11% from the head in the form of skull and teeth, 17% from the upper forelimb, 14% from the upper hindlimbs and 6% from the back. Body part representation indicates that at least 60 individuals are present at the site based on the recovery of metacarpal bones (Table 8.15a).

---

[73] Redding's (1984) model is based on sheep and goat behaviour, physiology, ecology, production and reproduction.

[74] It must be noted that Redding's (1984) work does have flaws as the majority of his research was based on very small sample sizes, in particular Late Uruk at Farakhabad had only 17 total distinguishable sheep and goat bones.

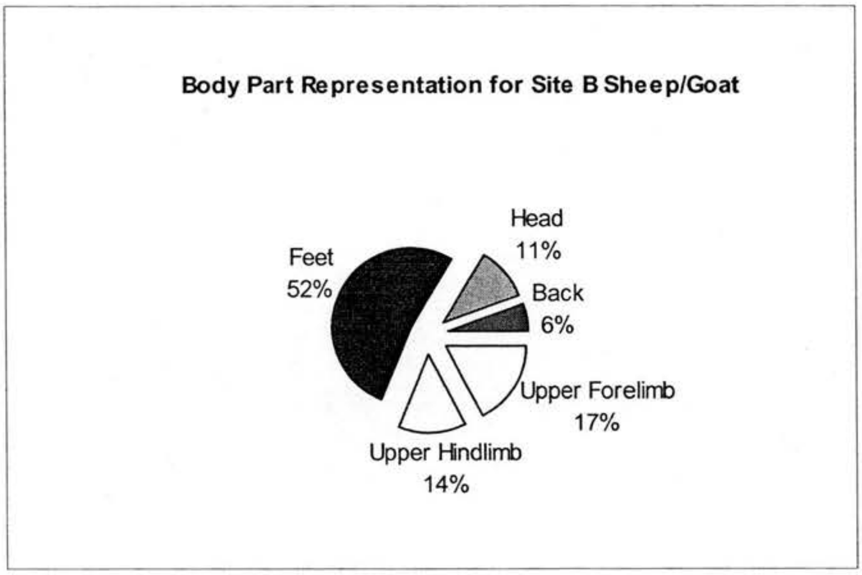


Figure 8.14: Sheep and goat body part representation from Site B (Data from Table 8.15b).

Based on the percentages of body parts present, it appears that sheep and goat carcasses were processed for meat and dismembered at Site B. The discard of feet and cranial elements indicates primary butchery occurred at the site. However, the small number of meat bearing elements suggests that they were possibly being transported offsite. To confirm this hypothesis, the non identifiable to taxa fragments data will be analysed in Section 8.4 to see if long bones, caprine size (medium mammal) are represented within the assemblage.

8.2.2.4.3 Butchery: Cut & Chop marks

The sheep and goat bones had very little evidence of cut marks associated with butchery as only 5 bones had evidence of cut marks (Table 8.12). The cut marks were found primarily on feet elements (calcaneus, metacarpal, phalanx 3). The dominant form of butchery appears to have been chopping. Chopping across the shaft was the most common type of butchery, resulting in 11% of the sheep, 23% of the goat and 29% of sheep/goat elements falling within the 50-75% size range (Table 8.11).

8.2.2.4.4 Burnt bone

Evidence of burning on the bones infers that they were roasted at the site as part of a cooking process. 1% of the sheep, 27% of the goat and 3% of the sheep/goat bones show signs of burning which represents less than 2% of the total number of sheep and goat bones combined being burnt (Table 8.13). With very few of these elements showing signs of burning, it indicates that these elements were discarded in the initial butchery of the animal and left at the site.

8.2.2.5 Context BBH

This deposit has been initially categorized as a fire installation against the rock face. However, based on the identification of an unusually large number of deciduous molars from lambs, it appears that this context is mixed with levels containing possibly penning deposits. Lambs shed deciduous teeth between 18-24 months (Silver 1969). The deciduous teeth recovered from this deposit have a broad range of wear stages from no wear at all to heavily worn. This indicates that lambs and pregnant females were kept close to the rock face for extended periods of time. In addition, a broad range of neonatal elements[75] and one semi articulated skeleton of a neonatal lamb was recovered from this context, indicating that a pregnant female aborted just before term. Pregnant females are known to abort foetuses during situations of stress; an unfamiliar penning situation of overcrowding would possibly cause this to happen[76]. In addition, deciduous teeth and neonatal bones were recovered from contexts BAQ and BAX which were above context BBH and directly in front of the rock face indicating the area has been consistently used throughout prehistory as a penning site.

Body part representation data indicates that 70% of the sheep and goat assemblage is comprised of feet elements, primarily those of unfused phalanges (Figure 8.15b). The assemblage is comprised of chopped distal metacarpal and metatarsals and complete phalange elements. The majority of the elements seem to re-articulate, however definite matches were difficult or impossible to make based on the majority of the elements being unfused (67%). All elements were within the age ranges of less than 13-16 months. The context clearly represents butchery of young sheep and goat with disarticulation happening at the lower metacarpal and metatarsals and then the complete articulated foot discarded into the context.

---

[75] Elements include astragalus, atlas, calcaneus, unfused metacarpal and metatarsals, middle and distal phalanges, scapula, humerus.

[76] Personal research performed on the northern tip of the Isle of Skye, Scotland. Fenton family farm.

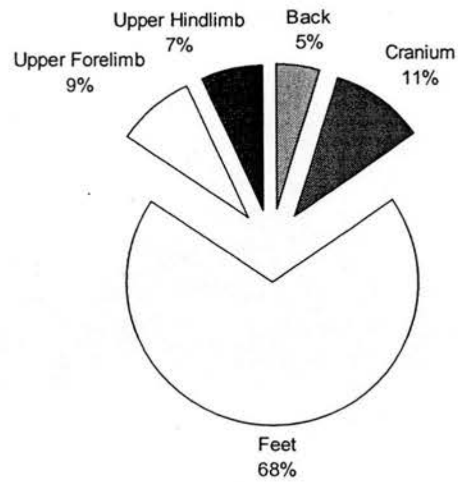


Figure 8.15: Body part representation of sheep and goat from Site B context BBH (Data from Table 8.15b).

8.2.2.5.1 Caprine summary

Sheep and goat represent 67% (NISP) of the major taxa from Site B. Sheep measurement data indicates they were domestic; however, the goat bones produced a measurement that indicates they were still wild. The caprine kill-off pattern established by bone fusion and teeth analysis reflects a high kill-off of young animals within the first and third years, with a smaller population of mature animals killed between 3-10 years. According to Payne (1973) this model reflects a meat-based economy. Body part representation based on MAU counts indicates that all body parts are represented at the site however there is a small proportion of long bones present. Analysis of the fragments data will be used to determine if caprine long bones are present within the assemblage but heavily processed into fragments which made their identification difficult.

8.2.3 Equid *Equus hydruntinus, Equus hemionus, Equus ferus.*

Three distinct wild equids have been identified within contexts at Site B: *Equus hydruntinus, Equus hemionus and Equus ferus.* The distinction between the remains of the three equids is often impossible to make when the bones are highly fragmented, therefore many bones have been placed into a general *Equus sp.* category. Those elements which could be distinguished to species were primarily isolated mandibular and maxillary teeth which were identified using the dental characteristics outlined by Payne (1980). The use of long bone size indices was not possible as complete long bones were not recovered. However, the general characteristics outlined by Davis (1980), e.g., that onager bones are slightly smaller and thinner than those of the wild horse, were noted.

Equids represent 14% (NISP) of the major taxa from Site B. The proportion of equids fluctuates throughout the contextual sequence from 1 to 7 bones being recovered per context. However, there is a heightened presence within context BAK, BBD, BBE and BBG. Of note is the fall in numbers of equids in context BBH. Context BBD and BBG produced the largest number of horse bones. Horse represented 44% of the total bones recovered from context BAK, 50% of the bones from context BBD, 51% of the bones from context BBE and 82% of the bones from context BBG. All three species are represented in context BAK and only the hydruntine and hemione from contexts BBD and BBG.

8.2.3.1 Species identification based on dental enamel patterning.

The majority of equid teeth recovered were in excellent condition, showing enamel patterns that aided in the identification of the three species present. Twenty-nine equid teeth were recovered from Site B (Table 8.31). Five of the teeth (Ref: 1304, 124, 125, 888, 2407) were too fragmented to be positively identified to species and have been recorded as *Equus* sp. The remaining twenty-four teeth were analysed using Payne's (1991) dental enamelling patterning technique (Table 8.31). Three of the teeth have been identified as *E. ferus* (Ref: 116, 1989 and 122). One tooth (Ref: 1292) could not be conclusively identified as either *E. hydruntinus or E. hemionus*, however, it is not *ferus* because of the size of the protocone. Three teeth have been identified as *E. hemionus* (Ref: 119, 123, 889). The remaining seventeen teeth (Ref:121, 130, 126, 120, 117, 118, 2168, 2169, 810, 809, 808, 2183, 1533, 1532, 2330, 2331, 2332) have been identified as *E. hydruntinus*.

The majority of the teeth found at Site B were isolated teeth. However, four teeth groupings could be identified from context BAK, two maxillary teeth from *Equus ferus* (Ref. 116 & 122) from context BAK, three maxillary *Equus hydruntinus* teeth (Ref. 118, 120 & 121) from context BAK, two mandibular *Equus hydruntinus* teeth (Ref. 126 and 130) and three maxillary *Equus hydruntinus* teeth (Ref. 2330, 2331 & 2332) from context BBD.

Year	Context	Context No.	Ref. No.		Tooth	Description
94	BAK	18	116	*Equus ferus*	Maxillary P3	The protocone is very elongated posterially so that its posterior half is much longer than the anterior. It is elongated posteriorally and flat based. The caballine fold is present which means the species is either *caballus* or *asinus*. Because of the shape of protocone, the tooth has been identified as *caballus*. Goes with 122
94	BAK	18	122	*Equus ferus*	Maxillary P2	The protocone is very elongated posterially so that its posterior half is much longer than the anterior. The caballine fold is present. Goes with 116
94	BAK	18	121	*Equus hydruntinus*	Maxillary P 3/4 or M1/2	It has a larger posterior than anterior protocone and it is relatively flat based. Goes with 118 & 120
94	BAK	18	119	*Equus hemionus*	Mandibular P4	Not *caballus* because of v-shape of internal fold. Curvature of external walls of proto and hypoconids are flat. No penetration of external buccal fold.
94	BAK	18	123	*Equus hemionus*	MandibularM1 or M2	Shape of internal fold is v-shaped. The external buccal fold does not penetrate towards the internal lingual fold.
94	BAK	18	130	*Equus hydruntinus*	Mandibular dP2	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. Goes with 126 which has been conclusively identified as *Equus hydruntinus*.
94	BAK	18	126	*Equus hydruntinus*	Mandibular dP3	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. There is complete penetration of the external buccal fold towards the internal lingual fold. Goes with 130.
94	BAK	18	124	*Equus* sp	Maxillary M1 or M2	A portion of the protocone is missing but it is small and based on the remaining part it forms a triangular shape. Caballine fold is absent. Not enough tooth to make positive identification.
94	BAK	18	120	*Equus hydruntinus*	Maxillary M2	It has a larger posterior than anterior protocone and it is relatively flat based. Goes with 121 & 118.
94	BAK	18	117	*Equus hydruntinus*	Maxillary P2-M2	The protocone is much smaller anterioraly than posteriorally.
94	BAK	18	118	*Equus hydruntinus*	Maxillary M3	It has a larger posterior than anterior protocone and it is relatively flat based. Therefore, it is either *caballus* or *hydruntinus*. But goes with 121 & 120, therefore *hydruntinus*.
95	BCI	1030	1989	*Equus ferus*	Maxillary P3-M2?	The protocone is very elongated posteriorally and therefore the posterior half is much longer than the anterior. The caballine fold is present.
95	BBE		1304	*Equus* sp.	Mandibular P2	There is no penetration of the external buccal fold towards the internal lingual fold. Not enough tooth, therefore no positive identification can be made.
95	BBD	1007	889	*Equus hemionus*	Mandibular M1 or M2	The curvature of the external walls of the proto and hypoconids are relatively round and there is no penetration of the external buccal fold. However, not enough tooth present to distinguish between *asinus* and *hemionus*.
95	BBD	1007	888	*Equus* sp.	Maxillary P2	It is not like *caballus* because it is too small. It does not have caballine fold. Protocone is missing for complete identification. Not enough tooth, therefore no positive identification can be made.
95	BAK	18	125	*Equus* sp.	Maxillary P2	Curvature of the external walls are rounded. Not enough tooth, therefore no positive identification can be made.
95	BCH	1019	2168	*Equus hydruntinus*	Mandibular M1 or M2	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. There is complete penetration of the external buccal fold towards the internal lingual fold.
95	BCH	1019	2169	*Equus hydruntinus*	Mandibular M3	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. There is complete penetration of the external buccal fold towards the internal lingual fold.
95	BBD	1009	810	*Equus hydruntinus*	Mandibular P2	Curvature of the external walls of the proto and hypoconids are rounded.
95	BBD	1009	809	*Equus hydruntinus*	Mandibular M3	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. There is complete penetration of the external buccal fold towards the internal lingual fold.
95	BBD	1009	808	*Equus hydruntinus*	Mandibular M3	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. There is complete penetration of the external buccal fold towards the internal lingual fold.
95	BBG	1031	2183	*Equus hydruntinus*	Maxillary P3-M2	The protocone is very small and triangular in shape. The anterior half is much smaller than the posterior. The lingual wall is relatively straight. There is no caballine fold.
94	BAK	34	2407	*Equus* sp.	Maxillary M2	Not enough tooth, therefore no positive identification can be made.
95	BBH	1028	1533	*Equus hydruntinus*	Mandibular M3	The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round. There is complete penetration of the external buccal fold towards the internal lingual fold
95	BBE	1010	1292	*Equus. hydruntinus* or *hemionus*	Maxillary P3-M2?	Not *caballus* because of the size of the protocone. Therefore either *hydruntinus* or hemionus. Not enough tooth, therefore no positive identification can be made.
95	BBH	1028	1532	*Equus. hydruntinus*	Mandibular dP3 or dP4	Identification based on external buccal fold. The fold penetrates and touches the internal lingual fold. The internal fold is v-shaped. The curvature of the external walls of the protoconid and hypoconid are quite round.
95	BBD	1041	2330	*Equus hydruntinus*	Maxillary P4	Goes with 2331 and 2332
95	BBD	1041	2331	*Equus hydruntinus*	Maxillary P3	The protocone is very small and triangular in shape. The anterior half is much smaller than the posterior. The lingual wall is relatively straight. There is no caballine fold. Goes with 2330 and 2332
95	BBD	1041	2332	*Equus hydruntinus*	Maxillary P2	Goes with 2331 and 2330

Table 8.31: Equid tooth Identifications from Site B.

Identification of place in jaw for loose teeth was based on Davis's (1980: 292-293) method for locating horse teeth in a dental sequence. Furthermore, Payne's (1991) description, whereby the overall shape of the occlusal surface combines with the angle of the occlusal surface in relation to the crown and roots was also applied (Payne 1991: 270) (Table 8.33). Height and medial distal diameter measurements were also taken (Payne 1991) (Table 8.32).

Ref	Species	Tooth	Height	Medial
810	*Equus hydruntinus*	Mandibular Tooth	H=30.2	mdd=27.9
889	*Equus asinus/hemionus*	Mandibular Tooth	H=55.1	mdd=25.7
1532	*Equus hydruntinus*	Mandibular Tooth	H=23	mdd=29.4
2169	*Equus hydruntinus*	Mandibular Tooth		mdd=29.8
119	*Equus asinus/hemionus*	Mandibular Tooth		mdd=28.4
123	*Equus asinus/hemionus*	Mandibular Tooth	H=70.55	mdd=26.3
126	*Equus hydruntinus*	Mandibular Tooth	H=24.1	mdd=28.5
116	*Equus ferus*	Maxillary Tooth	H=67.1	mdd=27.8
122	*Equus ferus*	Maxillary Tooth	H=53.6	mdd=33
124	*Equus* sp.	Maxillary Tooth	H=31.9	mdd=22.9
888	*Equus* sp.	Maxillary Tooth	H=21.5	mdd=22.6
1292	*Equus* sp.	Maxillary Tooth		mdd=30.3
2183	*Equus hydruntinus*	Maxillary Tooth		mdd=22.9
2330	*Equus hydruntinus*	Maxillary Tooth	H=57.3	mdd=26.6
2331	*Equus hydruntinus*	Maxillary Tooth	H=55.7	mdd=26.9

Table 8.32: Equus teeth measurements Site B (according to Payne 1991).

8.2.3.2 Equid Size

Table 8.34 records all measurements, ranges and averages of equid bones from Site B. Because three different species have been identified through teeth analysis this data is also reflected within the element measurements data as a broad data range is evident within each element.

8.2.3.3 Kill off Patterns

Tooth eruption and wear data (Payne 1991[77]) show a kill-off range highlighting adults (Table 8.33). 36% of the teeth were classified as wear stage 2 with teeth still in upper third of crown, 36% were classified as wear stage 3 with teeth still in middle

[77] The boundaries between the wear stages are not sharply drawn and the classification is considered very subjective (Payne 1991).

Maxillary Tooth Ref.	Man/Max	Wear Stage	Be	Bapf	OL	Mandibular LP	Lnd	LF	OL	B3	B4	Bei	Morphology
2722	Maxillary	3			21.8	8.9							c fold: 0
2725	Mandibular	3					11.2	6	20.9	12.6	11.5	0.05	pli: 0, pty: 0, buccal: 4
2723	Maxillary	3				21.8							
3530	Maxillary	3	21.1	0.04	20	6.5							CF:0
2626	Maxillary	2	22.6	0.02	23.1								CF:tr
1532	Mandibular	3					14.8	11	28.9	12.2	11	0.01	pli: 0, pty: 0, buccal: 4
889	Mandibular	4						11	25.2				pli: 0, pty: tr, buccal: 1
119	Mandibular	4					14.9	14	28.2	13.8	15	6.4	pli: ++, pty: ++, buccal: 1
123	Mandibular	2					13.6	10.2	26.1	14	12.4	2.9	pli: ++, pty: ++, buccal: 2
116	Maxillary	2	22.8	1.5	26.7	11.2							cab: ++
2223	Maxillary	2		1.2	25.8								C: 0
2168	Mandibular	2					11.3			9.7	9.5		pli: 0, pty: 0, buccal: 4
120	Maxillary	4		0.03	21.5								cab: 0
121	Maxillary	4											cab: 0
1292	Mandibular												cab: ++
126	Mandibular							12.1					pli: 0, pty: +

Table 8.33: Equid teeth measurements Site B (based on Payne 1991).

third of crown and 29% were classified as wear stage 4 with full wear in lower third of crown, which indicates adult individuals.

Epiphyseal fusion data of equid bones (Figure 8.16 and Table 8.35) display a kill-off pattern comprised largely of adults. Animals ranging in age from 13 months to at least four years of age were hunted and butchered at the site (Silver 1969). In order to establish a size index for the Central Anatolian equids, measurements were taken and are listed in Table.

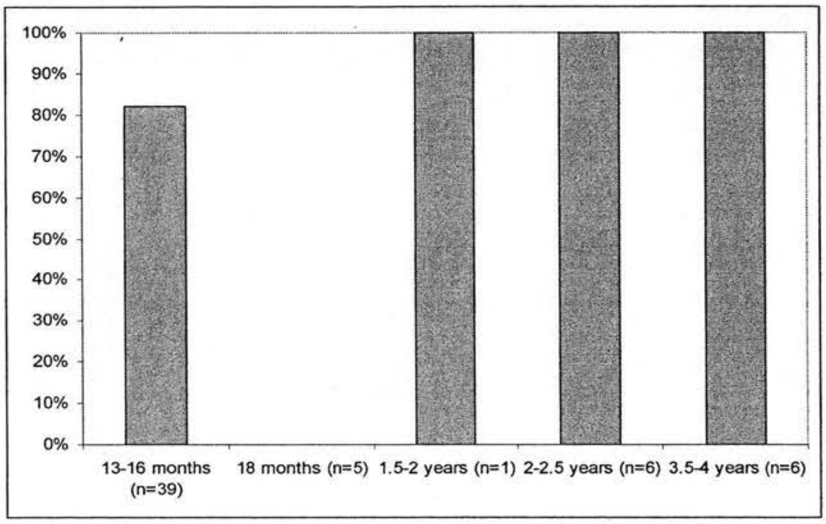


Figure 8.16: Equid mortality at Site B, based on bone fusion (data from Table 8.35).

Equid Fusion Stage		fused	unfused
13-16 months	middle phalanx	32	7
	proximal phalanx		
18 months	distal humerus	0	5
	Proximal radius		
	distal metacarpal		
	distal metatarsal		
1.5-2 years	innominate	1	0
2-2.5 years	distal tibia	6	0
3.5-4 years	calcaneus	6	0
	distal radius		
	Proximal femur		
	Proximal humerus		
	distal femur		
	Proximal tibia		
	Ulna		
	Proximal tibia		
Total		**45**	**12**

Table 8.35: Number of fused and unfused equid bones from Site B (Silver 1969).

8.2.3.4 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.2.3.4.1 Fragmentation patterns

The equid bones from Site B are fragmented to the same degree as the other major taxa from the site. In 42% of cases more than 75% of the element is preserved (Figure 8.3 and Table 8.11). Carpals, tarsals, sesamoids, phalanges and teeth constitute these bones. Bones with less than 25% present comprise 29% of the assemblage. These bones are primarily the ends of long bones and feet bone fragments.

8.2.3.4.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.17 and Table 8.15b) indicates that 65% of the elements were from the feet, represented by metacarpal, carpal, tarsal and phalanx elements, 17% from the head in the form of teeth, 5% from the upper forelimb, 12% from the upper hindlimbs and 1% from the back. Body part representation indicates that at least 7 individuals are present at the site based on the recovery of metatcarpal bones (Table 8.15a).

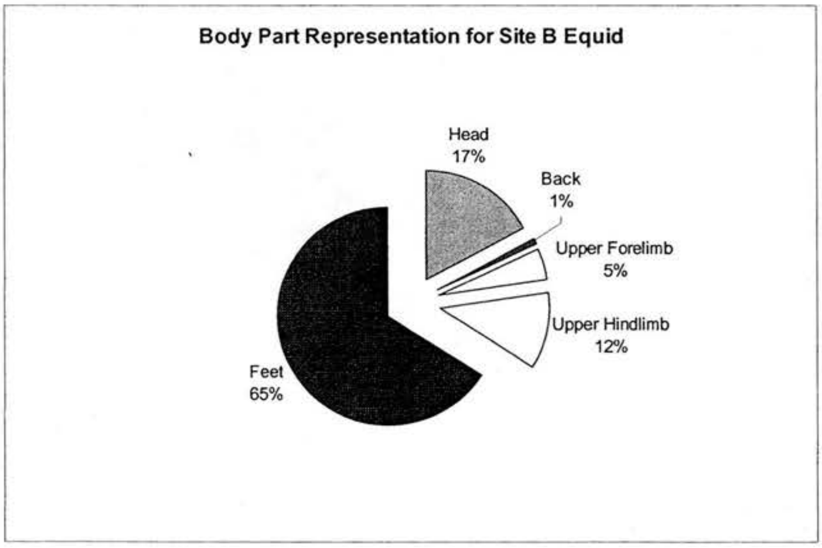


Figure 8.17: Equid body part representation from Site B (Data from Table 8.15b).

Based on the percentages of body parts present, it appears the equids were processed for meat and dismembered at Site B. As with the other major taxa, feet and cranial elements dominate the body part distribution. Meat bearing elements are missing and not represented within the fragments data (Section 8.4).

8.2.3.4.3 Butchery: Cut & Chop marks

Only 4 bones (1%) had evidence of cut marks (Table 8.12). Cut marks were found on the one vertebra fragment recovered, metacarpal and phalanx elements. As with the other major taxa, chopping appears to have been the major form of butchery.

8.2.3.4.4 Burnt bone

Four percent of the equid bones show signs of burning (Table 8.13). The equid bones appear to have been discarded in a similar fashion to the other major taxa at Site B.

8.2.3.4.5 Equid summary

Three distinct wild equids have been identified at Site B: *Equus hydruntinus, Equus hemionus and Equus ferus.* Body parts representation indicates the equids were killed and dismembered at Site B. As with the other major taxa, feet and cranial elements dominate the body part distribution. Meat bearing elements such as long bones are underrepresented. Analysis of the fragments data will be used to determine if long bones categorised as large mammal sized fragments are present within the fragments assemblage but too heavily processed which made their identification difficult.

8.2.4 Pig *Sus scrofa*

Pig represents 1% (NISP) of the major taxa from Site B. Pig bones were only found in six of the twenty nine contexts that produced animal bones. Contexts BAK and BBH produced the majority of the bones recovered with the remainder only having one element identified in each context. The heightened presence within contexts BAK and BBH is similar to the pattern of recovery for the other major taxa. Context BAK produced piglet upper forelimb and feet elements while context BBH produced primarily piglet teeth.

8.2.4.1 Wild versus Domestic

One of the primary research aims of the faunal analysis is to determine which, if any of the taxa were domestic. The latest archaeological data places the pig as the first known domesticate in south-eastern Anatolian sites; Çayönü and Hallan Çemi (Rosenberg and Redding 1998; Hongo and Meadow 2000) (Chapter 3). Given the presence of domestic pig in south-eastern Anatolia during the PPNA, it is therefore important to detect if the diffusion of domestic pig into central Anatolia occurred by the late Neolithic. Determining if the pig remains at Site B are domestic is particularly difficult due to the taxa's wild progenitors being naturally distributed within the region. Methodological criteria used to determine the domestic status are measurement comparisons and cull patterns.

8.2.4.1.1 Pig Size

Postcranial bone measurements of each element are usually taken according to those outlined by von den Driesch (1976). Only four postcranial pig bones were recovered from Site B's faunal sample. These include an unfused distal end fragment of a scapula, an unfused middle phalange fragment, a distal end phalange fragment and a complete adult sesamoid bone. Measurements are not usually taken on unfused bones as the final adult size of the bone has not been reached (von den Driesch 1976) and there is no comparative measurement material for pig sesamoid bones. Therefore no measurements were taken from the 4 postcranial bones. The 10 cranial bones were comprised of teeth fragments. The majority had no wear and were fragments from unerrupted permanent premolars or molars that had no root base; therefore, they were also unmeasurable. When trying to detect a size reduction from wild to domestic, pig lower third molar occlusal length and greatest breadth measurements are taken. These measurements are then plotted and compared. The area of overlap between wild and domestic pig is considered to be between 36 and 40 mm (Flannery 1983; Stampfli 1983). Since no measurements were taken from the Pinarbaşi material no comparisons could be made.

8.2.4.1.2 Kill off Patterns

Four mandibular and maxillary teeth were recovered. All of the teeth (p3, p4, M1, M3) have no sign of wear and have been classified as "wear stage A" according to Grant (1982). M1 begins to erupt between four and six months indicating an age of death within the first three months (Silver 1969). Therefore, tooth eruption and wear data show a kill-off range highlighting piglets. Since the teeth are all unworn and have open root bases, they were probably originally in a jaw that did not survive depositional processes. Measuring unworn and unerrupted teeth won't elucidate any data regarding the piglets general size and possible domestic status.

Epiphyseal fusion data display a kill-off pattern comprised also of very young individuals (Table 8.36). Three bones could be aged, a scapula, an ulna and a middle phalange. Both the scapula and middle phalange fuse at 1 year. The ulna olecranon fuses between 3 and 3.5 years, however the ulna recovered is very small and under developed, again indicating a very young individual (Silver 1969).

8.2.4.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.2.4.2.1 Fragmentation patterns

The pig bones from Site B are just as highly fragmented as the other major taxa from the site. In 35% of cases more than 75% of the element has survived. These are represented primarily by teeth (Figure 8.3 and Table 8.11).

Pig Fusion Stage		fused	unfused
1 year	distal humerus proximal radius distal scapula middle phalanx	0	2
2-2.5 years	proximal phalanx distal tibia distal metacarpal distal metatarsal Ulna	1	0
3-3.5 years	calcaneus distal radius proximal femur proximal humerus distal femur proximal tibia	0	0
Total		**1**	**2**

Table 8.36: Number of fused and unfused pig bones at Site B (Silver 1969).

8.2.4.2.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.18 & Table 8.15b) indicates that 73% of the elements were from the upper forelimb (ulna and scapula), 19% from the head (teeth) and 8% from the feet (phalanx). Body part representation indicates that at least 1 individual was consumed at Site B (Table 8.15a).

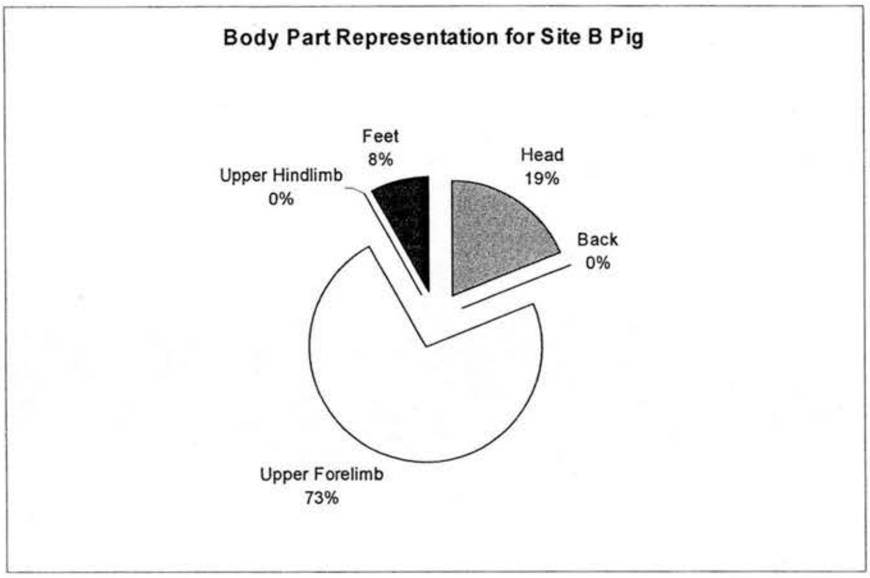


Figure 8.18: Pig body part representation from Site B (Data from Table 8.15b).

Based on the percentages of body parts present, it appears the piglets were processed for meat and dismembered and possibly consumed at Site B due to the recovery of upper forelimb elements.

8.2.4.2.3 Butchery: Cut, Chop and burn marks

None of the piglet bones show any signs of cut marks or burning. This is probably a result of their low overall recovery and preservation.

8.2.4.2.4 Pig summary

A very small number of pig bones were recovered from the site which makes the determination of their wild versus domestic status difficult. Tooth age, size, wear evidence and bone fusion indicate primarily piglets were butchered at the site. A high proportion of piglets and juveniles within an assemblage indicate possible domestication. However, the majority of the piglet bones are from individuals around 3 months of age. A domestic model would not favour slaughtering patterns killing off very young animals which have not reached optimal meat returns. The age patterns alone are inconclusive; however, other lines of evidence combine with it to suggest that given the location of the site in a habitat favourable to wild boars and the lack of permanent domestic structures, the pig remains are unlikely to be derived from a domestic population. The transport of piglets around 3 months of age to a seasonal site where they are then butchered does not appear feasible within a herding strategy. However, given the presence of domestic sheep/goats at the site which appear to have been butchered and consumed at the site, a more permanent occupation of the site may have occurred, which would corroborate the possibility of domestic swine at the site. This evidence is speculative and there is not enough data to suggest that the piglets were domesticated. Until more pig bones are recovered from Site B, they have been classified as a wild population, *Sus scrofa*.

8.2.5 Red Deer *Cervus elaphus*

Of the three possible deer species inhabiting the region around Site B, only red deer bones have been recovered. Red deer represent 2% (NISP) of the major taxa from Site B. Context BBH produced the majority of the deer bones (74%) with the remainder only having one to three elements identified in each context. The heightened presence within context BBH is similar to the pattern of recovery for the other major taxa.

8.2.5.1 Kill off Patterns

Tooth eruption and wear data could not be applied as only incisor and very small maxillary teeth fragments were recovered. Epiphyseal fusion data (Figure 8.19 and Table 8.37) based on the recovery of sixteen ageable bones display a kill-off pattern comprised of a broad range of individuals.

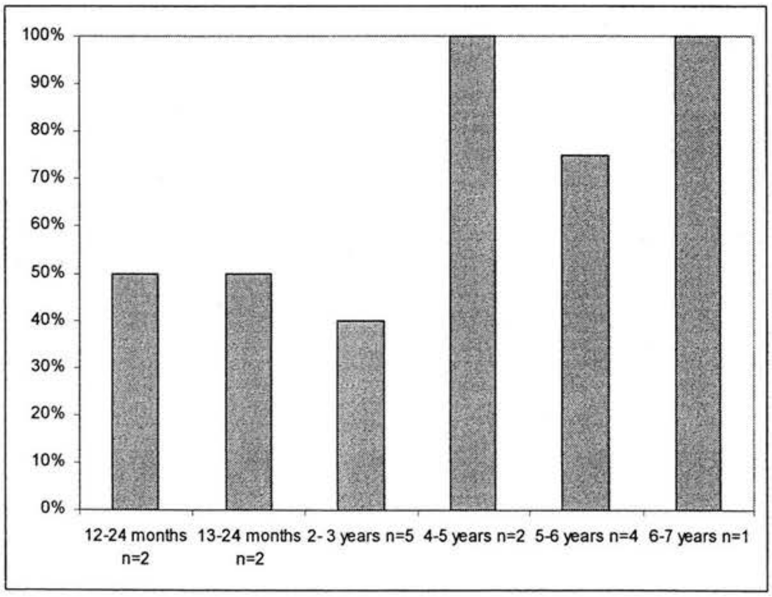


Figure 8.19: Red deer mortality at Site B, based on fused bone (Data from Table 8.37).

8.2.5.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.2.5.2.1 Fragmentation patterns

The red deer bones from Site B have a very high fragmentation rate. In 65% of cases less than 50% of the element has survived (Figure 8.3 and Table 8.11). The remainder have less than 25% of the element present.

Deer Fusion Stage		fused	unfused
12-24 months	acetabulum	1	1
13-24 months	proximal phalanx middle phalanx	1	1
2- 3 years	distal tibia distal humerus distal metacarpal distal metatarsal	2	3
4-5 years	distal radius proximal femur ulna	2	0
5-6 years	proximal humerus distal femur proximal tibia calcaneus	3	1
6-7 years	ilium ischium	1	0
Total		**10**	**6**

Table 8.37: Numbers of fused and unfused red deer bones from Site B (Silver 1969).

8.2.5.2.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.20 and Table 8.15b) indicates that all of the body part categories are represented within the sample. 42% of the elements were from the feet, 36% from the upper hindlimb, 16% from the upper forelimb, 5% from the head and 1% from the back. Body part representation indicates that at least 3 individuals were consumed at Site B (Table 8.15a).

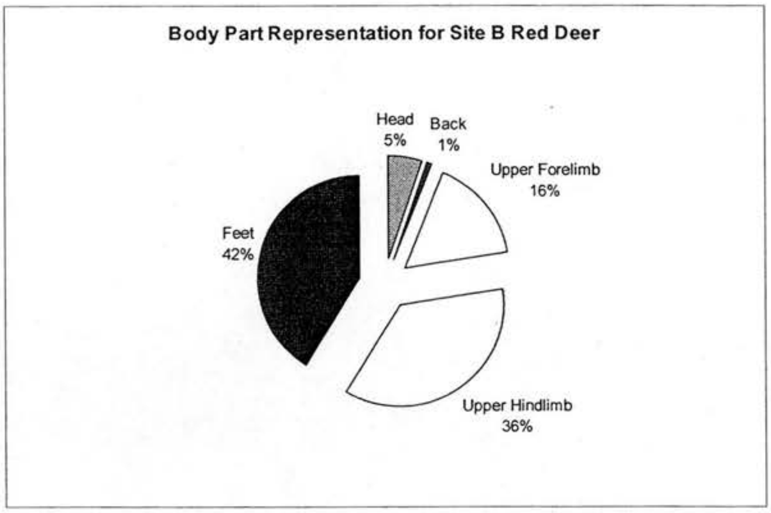


Figure 8.20: Red deer body part representation from Site B (Data from Table 8.15b).

8.2.5.2.3 Butchery: Cut, Chop and burn marks

None of the red deer bones have cut marks. Two bones have been burnt: a tibia and metatarsal fragment (Table 8.13).

Red deer bones are unique within the assemblage. Based on the percentages of body parts present, it appears the red deer were hunted, butchered and possibly consumed at Site B due to the recovery of all skeletal elements, especially long bones (Figure 8.20).

8.2.5.2.4 Red Deer summary

Red deer represent 2% (NISP) of the major taxa from Site B. All of the body parts are present which indicates red deer occupied the environment around Site B versus the transport of deer meet to the site from another area.

8.3 REPRESENTATION OF MINOR TAXA AT SITE B

The minor taxa consist of wolf or dog, fox, hare, bird, wild cat, hedgehog and turtle. NISP counts are presented in Table 8.38. Two aspects of the proportions of minor taxa in the results stand out. It appears that the representation of minor taxa within the assemblage mirrors that of the major taxa recovered. Minor taxa are consistently present at the site in small numbers; however, similar peaks in the proportions of minor taxa are visible within contexts BAK, BBD and BBH (Figure 8.21). Secondly, it appears that there is no decline in the proportion of minor taxa throughout the

Minor Taxa		BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL	Total	%
wolf/dog	*Canis* sp.										1		1			1		1				18									22	5%
fox	*Vulpes vulpes*		4	49				3			5		5	7	5	3	6	51	26	1				1	4	2	1			2	175	43%
carnivore	carnivore			3							1	7	6	5	3	2	2	24	3	1	1		1	2	2	2	1			4	70	17%
hedgehog	*Erinaceus* sp.																	2													2	0.5%
cat	*Felis silvestris.*														1			1										1			3	1%
hare	*Lepus* sp.			1										1	2	2	1	31		2				2	3			2			47	12%
bird	Aves			3		2	2	2	2		1		1		2	1		14	2				6	4		5	2	5		10	64	16%
turtle	Testudo														10	3			12												25	6%
Total		0	4	56	0	2	2	5	2	0	8	7	13	13	23	12	9	124	43	4	1	18	7	9	9	9	4	8	0	16	408	100%
Bone weight (g)		0	5.3	163.3	0	8.6	43.4	15.9	77.7	0	91.4	1367.2	294.8	388.2	153.1	103.2	77.2	1095	194.7	139.4	88.4	684.2	71.6	35.2	121.2	403.9	27.6	328.6	0	482	6461	
Liters of soil processed per context (L)		66	16	340	?	?	?	60	40	36	80	76	100	266	393	309	225	1294	197	69	59	60	290	160	169	207	97	270	44	260	5183	
NISP per soil volume (NISP/L)		0	0.3	0.2	-	-	-	0.1	0.1	0	0.1	0.1	0.1	<0	0.1	<0	<0	0.1	0.2	0.1	<0	0.3	<0	0.1	<0	<0	<0	<0	<0	0.1	0.1	
Bone weight per soil volume (g/L)		0	0.3	0.5	-	-	-	0.3	1.9	0	1.1	18	2.9	1.5	0.4	0.3	0.3	0.8	1.0	2.0	1.5	11.4	0.2	0.2	0.7	2.0	0.3	1.2	0	1.9	1.2	

Table 8.38: Representation of minor taxa by context Site B.

Context	BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL
BAI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAJ	0.0	1.0	1.4	0.0	0.0	0.0	0.8	5.9	0.0	3.4	54.3	8.9	4.4	1.2	1.0	1.0	2.6	3.0	6.1	4.5	34.4	0.7	0.7	2.2	5.9	0.9	3.7	0.0	5.6
BAK	0.0	0.7	1.0	0.0	0.0	0.0	0.6	4.0	0.0	2.4	37.5	6.1	3.0	0.8	0.7	0.7	1.8	2.1	4.2	3.1	23.7	0.5	0.5	1.5	4.1	0.6	2.5	0.0	3.9
BAO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAQ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAT	0.0	1.3	1.8	0.0	0.0	0.0	1.0	7.3	0.0	4.3	67.9	11.1	5.5	1.5	1.3	1.3	3.2	3.7	7.6	5.7	43.0	0.9	0.8	2.7	7.4	1.1	4.6	0.0	7.0
BAU	0.0	0.2	0.2	0.0	0.0	0.0	0.1	1.0	0.0	0.6	9.3	1.5	0.8	0.2	0.2	0.2	0.4	0.5	1.0	0.8	5.9	0.1	0.1	0.4	1.0	0.1	0.6	0.0	1.0
BAV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAW	0.0	0.3	0.4	0.0	0.0	0.0	0.2	1.7	0.0	1.0	15.7	2.6	1.3	0.3	0.3	0.3	0.7	0.9	1.8	1.3	10.0	0.2	0.2	0.6	1.7	0.2	1.1	0.0	1.6
BAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.6	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1
BAZ	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.7	0.0	0.4	6.1	1.0	0.5	0.1	0.1	0.1	0.3	0.3	0.7	0.5	3.9	0.1	0.1	0.2	0.7	0.1	0.4	0.0	0.6
BBC	0.0	0.2	0.3	0.0	0.0	0.0	0.2	1.3	0.0	0.8	12.3	2.0	1.0	0.3	0.2	0.2	0.6	0.7	1.4	1.0	7.8	0.2	0.2	0.5	1.3	0.2	0.8	0.0	1.3
BBD	0.0	0.9	1.2	0.0	0.0	0.0	0.7	5.0	0.0	2.9	46.2	7.6	3.7	1.0	0.9	0.9	2.2	2.5	5.2	3.8	29.3	0.6	0.6	1.8	5.0	0.7	3.1	0.0	4.8
BBE	0.0	1.0	1.4	0.0	0.0	0.0	0.8	5.8	0.0	3.4	53.9	8.8	4.4	1.2	1.0	1.0	2.5	3.0	6.0	4.5	34.1	0.7	0.7	2.1	5.8	0.9	3.6	0.0	5.6
BBG	0.0	1.0	1.4	0.0	0.0	0.0	0.8	5.7	0.0	3.3	52.4	8.6	4.3	1.1	1.0	1.0	2.5	2.9	5.9	4.4	33.2	0.7	0.6	2.1	5.7	0.8	3.5	0.0	5.4
BBH	0.0	0.4	0.6	0.0	0.0	0.0	0.3	2.3	0.0	1.4	21.3	3.5	1.7	0.5	0.4	0.4	1.0	1.2	2.4	1.8	13.5	0.3	0.3	0.8	2.3	0.3	1.4	0.0	2.2
BBI	0.0	0.3	0.5	0.0	0.0	0.0	0.3	2.0	0.0	1.2	18.2	3.0	1.5	0.4	0.3	0.3	0.9	1.0	2.0	1.5	11.5	0.2	0.2	0.7	2.0	0.3	1.2	0.0	1.9
BBJ	0.0	0.2	0.2	0.0	0.0	0.0	0.1	1.0	0.0	0.6	8.9	1.5	0.7	0.2	0.2	0.2	0.4	0.5	1.0	0.7	5.6	0.1	0.1	0.4	1.0	0.1	0.6	0.0	0.9
BBK	0.0	0.2	0.3	0.0	0.0	0.0	0.2	1.3	0.0	0.8	12.0	2.0	1.0	0.3	0.2	0.2	0.6	0.7	1.3	1.0	7.6	0.2	0.1	0.5	1.3	0.2	0.8	0.0	1.2
BBL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	1.6	0.3	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.1	1.0	0.0	0.0	0.1	0.2	0.0	0.1	0.0	0.2
BCB	0.0	1.3	1.9	0.0	0.0	0.0	1.1	7.9	0.0	4.6	72.9	11.9	5.9	1.6	1.4	1.4	3.4	4.0	8.2	6.1	46.2	1.0	0.9	2.9	7.9	1.2	4.9	0.0	7.5
BCC	0.0	1.5	2.2	0.0	0.0	0.0	1.2	8.8	0.0	5.2	81.8	13.4	6.6	1.8	1.5	1.6	3.8	4.5	9.2	6.8	51.8	1.1	1.0	3.3	8.9	1.3	5.5	0.0	8.4
BCF	0.0	0.5	0.7	0.0	0.0	0.0	0.4	2.7	0.0	1.6	25.1	4.1	2.0	0.5	0.5	0.5	1.2	1.4	2.8	2.1	15.9	0.3	0.3	1.0	2.7	0.4	1.7	0.0	2.6
BCG	0.0	0.2	0.2	0.0	0.0	0.0	0.1	1.0	0.0	0.6	9.2	1.5	0.7	0.2	0.2	0.2	0.4	0.5	1.0	0.8	5.8	0.1	0.1	0.4	1.0	0.1	0.6	0.0	1.0
BCH	0.0	1.2	1.7	0.0	0.0	0.0	0.9	6.8	0.0	4.0	63.2	10.4	5.1	1.4	1.2	1.2	3.0	3.5	7.1	5.3	40.1	0.9	0.8	2.5	6.9	1.0	4.3	0.0	6.5
BCI	0.0	0.3	0.4	0.0	0.0	0.0	0.2	1.6	0.0	0.9	14.8	2.4	1.2	0.3	0.3	0.3	0.7	0.8	1.7	1.2	9.4	0.2	0.2	0.6	1.6	0.2	1.0	0.0	1.5
BCJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BCL	0.0	0.2	0.3	0.0	0.0	0.0	0.1	1.0	0.0	0.6	9.7	1.6	0.8	0.2	0.2	0.2	0.5	0.5	1.1	0.8	6.2	0.1	0.1	0.4	1.1	0.2	0.7	0.0	1.0
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Table 8.39: Minor taxa context summary of relative weight/volume ratios for Site B.

Minor Taxa		**NISP**	**%NISP**	**DZ**	**% DZ**
wolf/dog	*Canis* sp.	22	5%	13	6%
fox	*Vulpes vulpes*	175	43%	75	36%
carnivore	carnivore	70	17%	23	11%
hedgehog	*Erinaceus* sp.	2	0%	2	1%
cat	*Felis silvestris.*	3	1%	3	1%
hare	*Lepus* sp.	47	12%	39	19%
bird	Aves	64	16%	51	25%
turtle	Testudo	25	6%	0	0%
Total		**408**		**206**	

Table 8.40: Representation of minor taxa NISP and DZ counts Site B

Minor Taxa	Burnt Bone	Total bones	% burnt bones
Vulpes vulpes	14	175	8%
Lepus capensis	1	47	2%
Aves	2	64	3%
Carnivore	1	70	1%

Table 8.41: Representation of minor taxa burnt bones Site B.

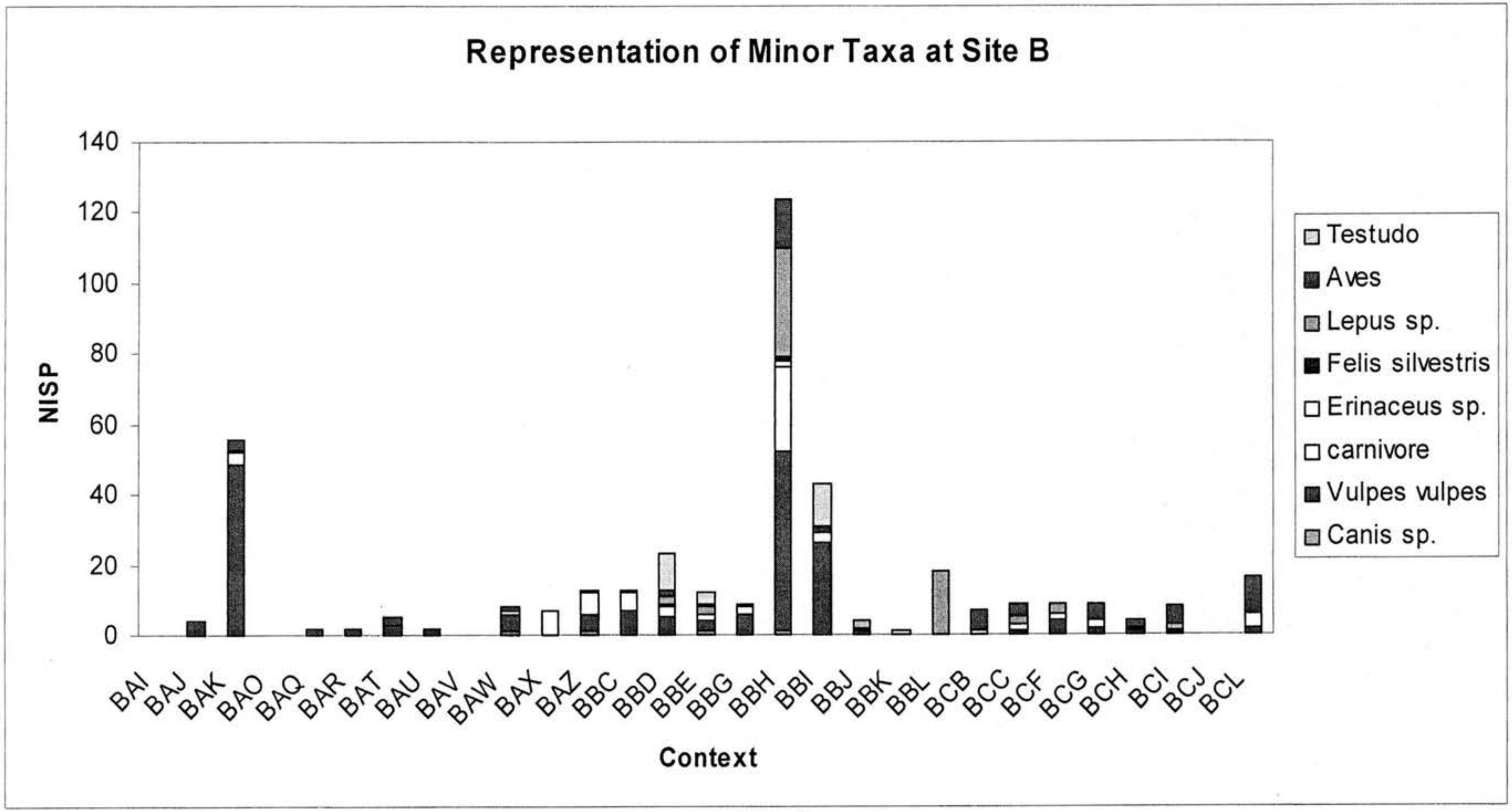


Figure 8.21: NISP of minor taxa by context at Site B

Element	NISP	Divided by:	M.A.U.	Element	NISP	Divided by:	M.A.U.	Element	NISP	Divided by:	M.A.U.	Element	NISP	Divided by:	M.A.U.	Element	NISP	Divided by:	M.A.U.
Head				Head				Head				Head				Head			
cranium	3	14	0.2	cranium	2	14	0.1	cranium	0	10	0.0	cranium	0	14	0.0	cranium	0	14	0.0
mandible	14	2	7.0	mandible	0	2	0.0					mandible	0	2	0.0	mandible	0	2	0.0
mand tooth	51	22	2.3	mand tooth	2	22	0.1					mand tooth	1	22	0.0	mand tooth	0	22	0.0
max tooth	10	22	0.5	max tooth	0	22	0.0					max tooth	0	22	0.0	max tooth	0	22	0.0
Back				Back				Back				Back				Back			
atlas	0	1	0.0	atlas	1	1	1.0	atlas	0	1	0.0	atlas	0	1	0.0	atlas	0	1	0.0
axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0	axis	0	1	0.0
rib	0	14	0.0	rib	0	14	0.0	coracoid	12	2	6.0	rib	0	14	0.0	rib	0	14	0.0
vert/cv	0	5	0.0	vert/cv	0	5	0.0					vert/cv	0	5	0.0	vert/cv	0	5	0.0
vert/tv	2	14	0.1	vert/tv	0	14	0.0					vert/tv	0	14	0.0	vert/tv	0	14	0.0
vert/lv	0	7	0.0	vert/lv	0	7	0.0					vert/lv	0	7	0.0	vert/lv	0	7	0.0
vert/sv	1	4	0.3	vert/sv	0	4	0.0					vert/sv	0	4	0.0	vert/sv	0	4	0.0
vert/cd	0	20	0.0	vert/cd	0	20	0.0					vert/cd	0	20	0.0	vert/cd	0	20	0.0
Upper Forelimb				Upper Forelimb				Upper Forelimb				Upper Forelimb				Upper Forelimb			
scapula	2	2	1.0	scapula	0	2	0.0	scapula	1	2	0.5	scapula	0	2	0.0	scapula	0	2	0.0
humerus	4	2	2.0	humerus	1	2	0.5	humerus	13	2	6.0	humerus	0	2	0.0	humerus	0	2	0.0
radius	7	2	3.5	radius	1	2	0.5	radius	6	2	3.0	radius	1	2	0.5	radius	0	2	0.0
ulna	8	2	4.0	ulna	1	2	0.5	ulna	5	2	2.5	ulna	0	2	0.0	ulna	0	2	0.0
Upper Hindlimb				Upper Hindlimb				Upper Hindlimb				Upper Hindlimb				Upper Hindlimb			
innominate	2	2	1.0	innominate	0	2	0.0	innominate	0	2	0.0	innominate	0	2	0.0	innominate	0	2	0.0
femur	6	2	3.0	femur	2	2	1.0	femur	5	2	2.5	femur	1	2	0.5	femur	1	2	0.5
tibia	1	2	0.5	tibia	3	2	1.5	tibiotarsus	4	2	2.0	tibia	2	2	1.0	tibia	0	2	0.0
patella	1	2	0.5	patella	0	2	0.0					patella	0	2	0.0	patella	0	2	0.0
Feet				Feet				Feet				Feet				Feet			
astrag	0	2	0.0	astrag	1	2	0.5	carpometacarpus	8	2	4.0	astrag	0	2	0.0	astrag	0	2	0.0
calc	2	2	1.0	calc	0	2	0.0	tarsometatarsus	3	2	1.5	calc	0	2	0.0	calc	2	2	1.0
capral/tarsal	5	26	0.2	capral/tarsal	2	26	0.1					capral/tarsal	6	26	0.2	capral/tarsal	0	26	0.0
mcarpal	20	8	2.5	mcarpal	7	8	0.9					mcarpal	4	8	0.5	mcarpal	0	8	0.0
mtarsal	17	8	2.1	mtarsal	10	8	1.3					mtarsal	4	8	0.5	mtarsal	0	8	0.0
phal prox	8	16	0.5	phal prox	8	16	0.5	phal prox	1			phal prox	0	16	0.0	phal prox	0	16	0.0
phal mid	10	16	0.6	phal mid	5	16	0.3	phal mid	1			phal mid	2	16	0.1	phal mid	0	16	0.0
phal dist	1	16	0.1	phal dist	1	16	0.1					phal dist	1	16	0.1	phal dist	0	16	0.0
Total	175		32.9	Total	47		8.8	Total	64		28	Total	22		3.5	Total	2		1.5
M.N.I.	7			M.N.I.	1			M.N.I.	6			M.N.I.	1			M.N.I.	1		

Table 8.42: Body part representation of minor taxa Site B

Minor Taxa	Body Part						
	Back	Cranium	Feet	Long Bone	Upper Forelimb	Upper Hindlimb	Total
Canis sp.		1	17		1	3	22
Vulpes vulpes	3	78	63		21	10	175
Carnivore	24	11	24		4	7	70
Erinaceus sp.					2		2
Felis silvestris			2			1	3
Lepus sp.	1	4	34		3	5	47
Aves	12		13	5	25	9	64
Testudo	25						25
Total	**65**	**94**	**153**	**5**	**56**	**35**	**408**

Table 8.43: Body part representation of Site B minor taxa.

Minor Taxa	100%	76-99%	51-75%	26-50%	<25%
Canid sp.	23	14	45	9	9
Vulpes vulpes	14	19	21	29	17
Carnivore	0	6	22	30	12
Lepus sp.	51	17	21	4	6
Aves	16	8	19	17	41
Felis silvestris	67	33	0	0	0
Erinicus sp.	0	100	0	0	0
Testudo	0	0	0	0	100

Table 8.44: Percentage of minor taxa bones within each fragment size category Site B.

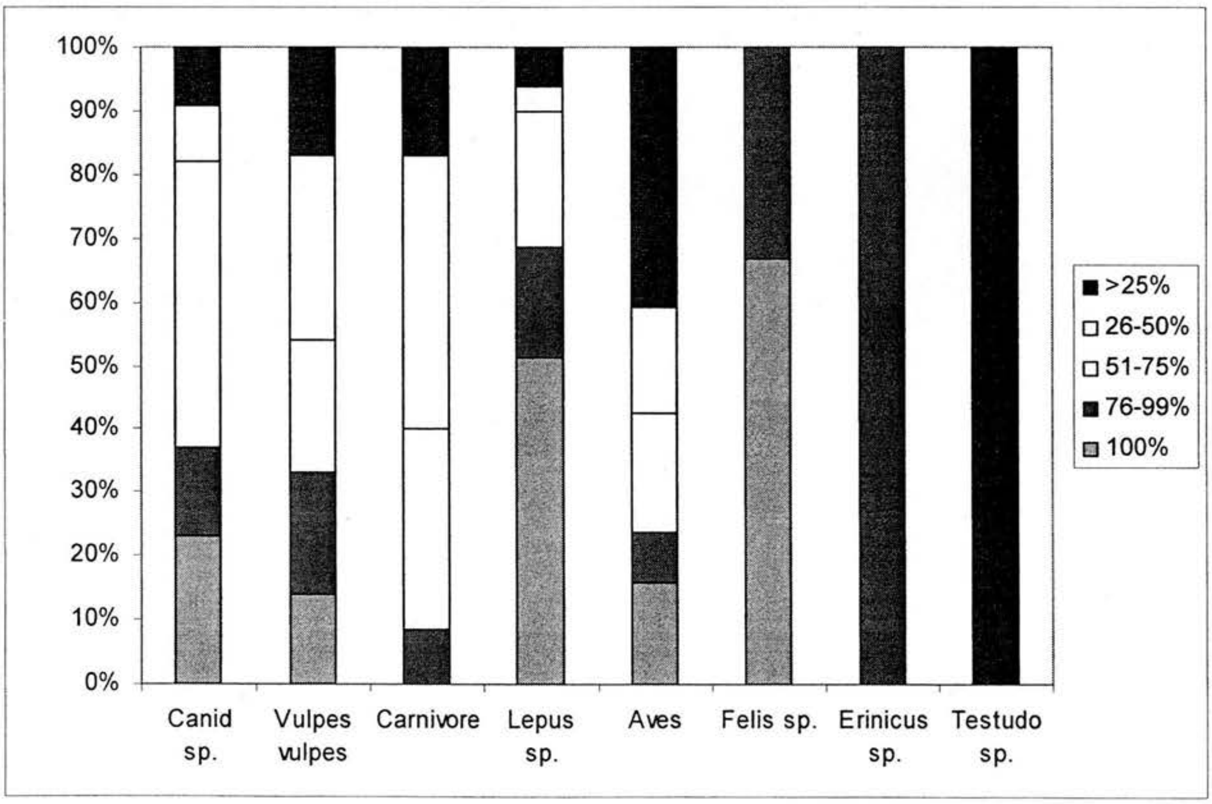


Figure 8.22: Percentage of minor taxa bones within each fragment size category Site B (Data from Table 8.44).

contextual sequence. Minor taxa were not abandoned in favour of primary major taxa, they continued to be frequent throughout the assemblage.

To remove the effects soil volumes had on minor taxa NISP counts, normalized weight-volume ratios were calculated (Table 8.39). In comparing these normalized values, context BBL, BAZ then BBJ contain the most animal bone given 1 litre of soil than the other contexts (Table 8.39). Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 8.38). NISP normalized values indicate context BBL (0.3) then BAJ (0.3) are the most prolific in real terms (Table 8.38). Based on the above calculations, context BBL is the most prolific context in real terms with regard to the minor taxa recovered at Site B. Each minor taxa identified will now be reviewed in more detail.

8.3.1 Dog *Canis* sp.

The dog bones recovered from Site B can either be from a wolf (*Canis lupus*) or domestic dog (*Canis familiaris*). The bones recovered from Site B are large and equal in size to comparative wolf specimens housed in Scotland, suggesting that the bones are from *Canis lupus*. In addition to size reduction, differences in the cranial and mandibular morphology may also be used to distinguish the domestic dog from the wolf (Clutton-Brock 1999). However, these two techniques were not applied to the material because cranium and teeth bones were not recovered. The canid bones were returned to Karaman before any measurements could be taken and due to the unfinished nature of the excavation later attempts to measure material was complicated by political issues. No definitive species identification will be made until measurement data is collected and more material is recovered. Therefore, *Canis sp.* has been used to classify the dog remains from Site B.

22 canid bones were recovered from Site B. Context BBL contained the majority (18 bones) of the canid remains (Table 8.38). The remains were all found in close proximity and probably represent the front and hind paws (metacarpal, metatarsal, tarsal and phalanx) of a single individual. The bones are from an adult and appear to articulate. There is no evidence of burning, which indicates that the canid was possibly used for its pelt rather than as a meat source.

8.3.1.1 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.3.1.1.1 Fragmentation patterns

The canid bones are not overly processed indicating that once the paws were detached from the body they were discarded immediately into context BBL. In 82% of cases with more than 50% of the bone has survived (Figure 8.22 and Table 8.44).

8.3.1.1.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.23 and Table 8.42) indicates that upper hindlimb (44%) and feet (41%) elements dominate the assemblage. Upper forelimb (14%) and head (1%) elements are also present in small quantities. Body part representation indicates that at least one individual is present in context BBL and up to four others in the other contexts (Table 8.42).

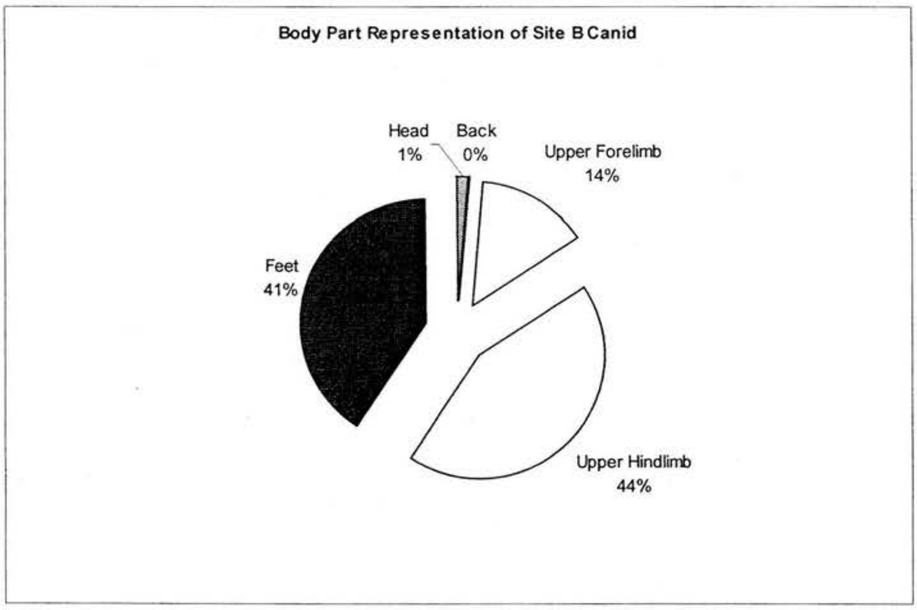


Figure 8.23: Dog body part representation from Site B (Data from Table 8.32).

8.3.1.1.3 Butchery: Cut, Chop and burn marks

No burn or cut marks were recorded on the canid bones.

8.3.1.1.4 *Canid* sp. summary

It appears that canids were present in the environment and are represented by singular bones being recovered from four contexts at Site B. Context BBL captures a singular butchering event where the paws and lower limbs of a large canid were severed from the body and discarded immediately into the contextual sequence.

8.3.2 Red Fox *Vulpes vulpes*

Identification of red fox was made based on post-cranial element morphological comparisons with reference material from Museum of Scotland in Edinburgh. Teeth measurement comparison is usually performed on complete mandibular tooth rows. Since no complete tooth rows were recovered, identification was limited to reference material comparisons.

Red fox represents 43% (possibly 60% if Carnivore remains are included) and was the most common of the minor taxa at Site B. The high number of fox remains likely reflects the animals' abundance around the site. Red fox can live in almost all climatic belts and landscapes and would have thrived within the environment around Site B. The presence of other minor taxa such as birds, turtles and hedgehogs would have been the fox's major prey.

8.3.2.1 Kill off Patterns

It appears that only adult foxes were hunted and killed at the site. All bones recovered are fused.

8.3.2.2 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.3.2.2.1 Fragmentation patterns

The red fox bones are not overly processed during butchery, which possibly indicates that the carcasses were discarded once the pelts were removed (Figure 8.22 and Table 8.44). Bone fragment sizes indicate 54% of the bones with greater than 50% of the bone present.

8.3.2.2.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.24 & Table 8.42) indicates that all of the body part categories are represented within the sample. 21% of the elements were from the feet, 15% from the upper hindlimb, 33% from the upper forelimb, 30% from the head and 1% from the back. Body part representation indicates that at least seven individuals were consumed at Site B (Table 8.42).

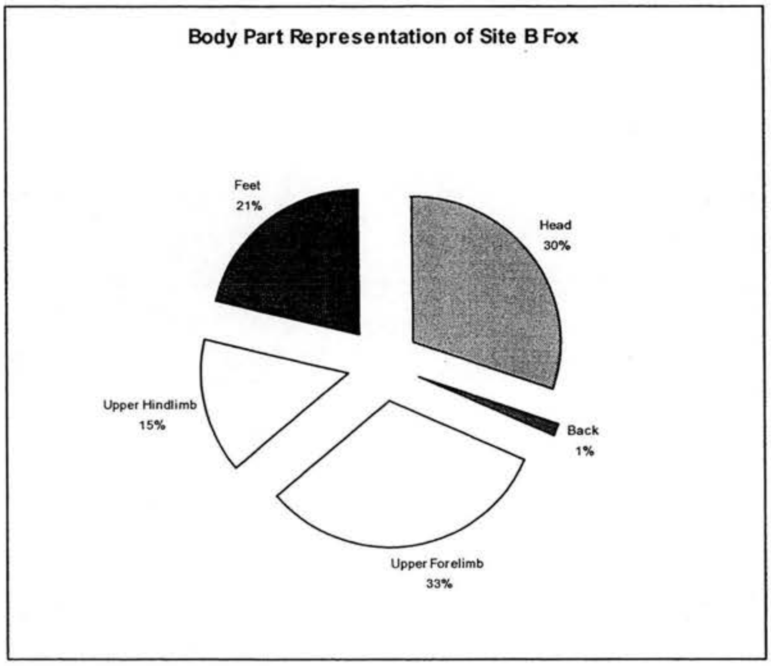


Figure 8.24: Red fox body part representation from Site B (Data from Table 8.32).

8.3.2.2.3 Butchery: Cut, Chop and burn marks

One of the red fox bones had evidence of a cut mark. Fourteen bones (8%) have evidence of burning.

8.3.2.2.4 Fox summary

All body parts are present at the site and it appears the red fox were hunted and butchered at Site B. Primary products would have been the meat, pelt and adornment elements.

8.3.3 Carnivore

Seventy bones were identified as carnivore. These bones were too highly fragmented to identify to a specific taxa, however, their morphology suggested a carnivore type. Only two similar size carnivores were recovered from the faunal collection, fox and wild cat. Wild cat was only recovered from one context and therefore the majority of the carnivore remains are probably those of fox.

8.3.4 Cat *Felis silvestris*

The three felid bones recovered have been identified as wild cat, *Felis silvestris*. Cat remains were recovered from three contexts, BBD, BBH and BCI. The presence of cat within the assemblage confirms a wooded area close to the site, as cats prefer forest and woodland environments (Clutton-Brock 1999).

8.3.4.1 Carcass Treatment: Fragmentation patterns, body part representation and butchery

The bones recovered were two complete calcanei and a femur fragment (Figure 8.25). The bones have no evidence of burning or cut marks.

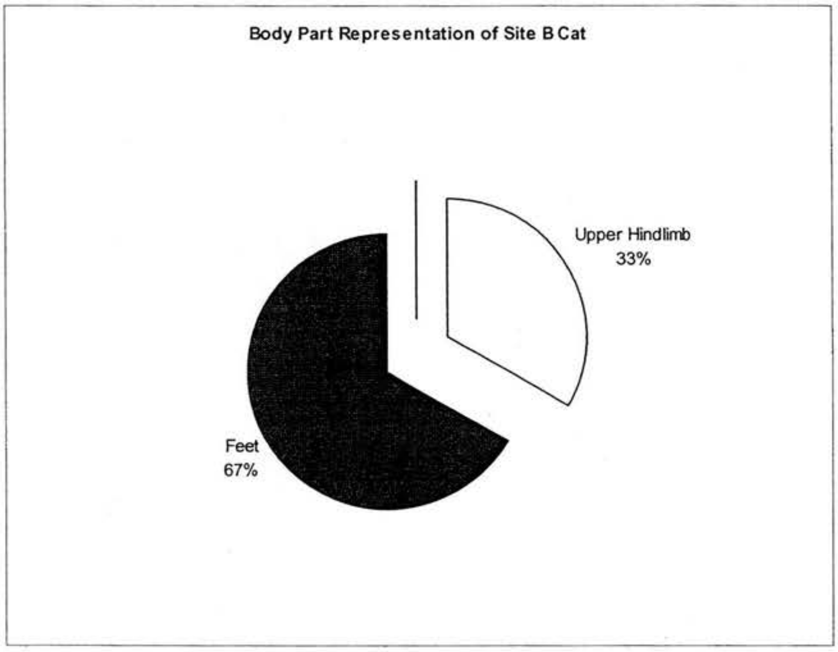


Figure 8.25 Felid body part representation from Site B (Data from Table 8.32).

8.3.4.1.1 Cat summary

Cat remains are considered a rare find within early prehistoric human occupation sites (Tchernov 1994). However, later sites list felids as common taxa within assemblages. This is due in part to felids being very tolerant to human habitation sites and even drawn to sites with high rodent populations including hedgehogs (Tchernov 1994). Wild cat would have provided pelt, meat and bones that could have been fashioned for tools.

8.3.5 Hare *Lepus* sp.

Hare bones represent 12% of the total minor taxa. The majority of the hare remains were recovered from context BBH (66%) and are represented by feet elements.

8.3.5.1 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.3.5.1.1 Fragmentation patterns

As in the case of red fox, the hare bones are not overly processed indicating that again the carcasses were discarded once the pelts were removed (Figure 8.22 and Table 8.44). Bone fragment sizes indicate 68% of the bones with greater than 76% of the bone present.

8.3.5.1.2 Body Part Representation

Body part representation based on MAU counts (Figure 8.26 and Table 8.42) indicates that all of the body part categories are represented within the sample. 41% of the elements were from the feet, 28% for the upper hindlimb, 17% from the upper forelimb, 3% from the head and 11% from the back. Body part representation indicates that at least one and up to 10 hares was consumed at Site B (Table 8.42).

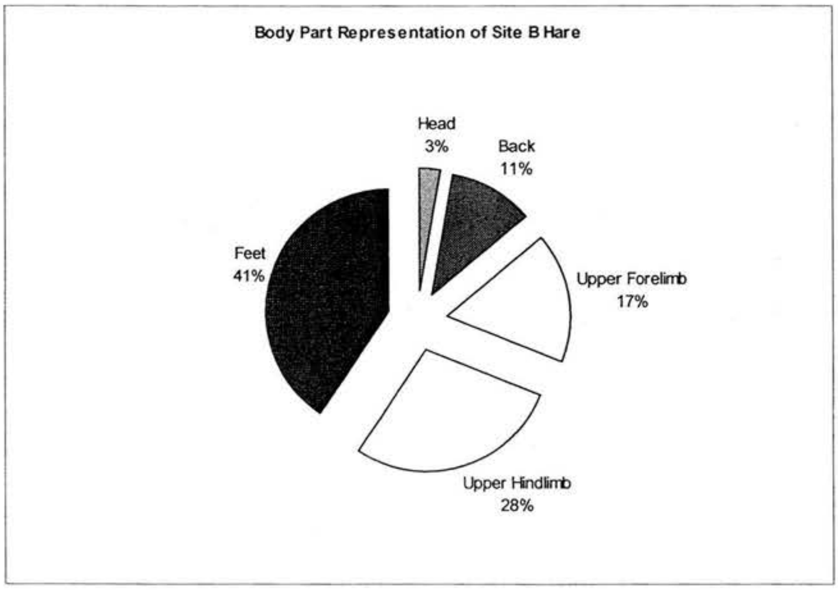


Figure 8.26: Hare body part representation from Site B (Data from Table 8.32).

8.3.5.1.3 Butchery: Cut, Chop and burn marks

One of the hare bones had evidence of burning and no cut marks were recorded (Table 8.41). The primary form of butchery appears to have occurred by chopping feet and long bones from the axial skeleton.

8.3.5.1.4 Hare summary

Again a typical pattern appears to be evident with hare and other minor taxa, all body parts are present with little or no cut marks or evidence of burning. The hare were likely hunted and butchered at Site B for their pelt and meat.

8.3.6 Turtle Testudo

The identification of tortoise within the assemblage was based on the recovery of carapace fragments. Twenty-five shell fragments were recovered from contexts BBD, BBE and BBI (Table 8.38). Within each context, the shell pieces were recovered from the same area and the pieces are believed to come from a single turtle. Two of the recovered shell fragments showed signs of burning suggesting the carapace could have been used as roasting vessels. Today in the region the Greek Tortoise (*Testudo graeca*) and the big Agama (*Agama stellio*) are both very common.

8.3.7 Hedgehog *Erinaceus* sp.

Two hedgehog bones were recovered in context BBH. Both radius and ulna bones are unfused. Hedgehogs prefer deciduous forests, woodland edges, and agricultural area. They eat primarily insects including beetles, worms, caterpillars, slugs and almost anything they can catch, but little plant material. They will take eggs and chicks of ground-nesting birds though rarely in large numbers[78].

8.3.8 Birds Aves

As noted in Chapter 7's analysis of bird bone and in the Methodology Chapter, the bird bone material from Site B remained unanalysed by a bird bone specialist and it was during my time in Ankara that an attempt was made to look at this material. Again, this author's knowledge of bird bone material is very limited and no bird reference material was available in Ankara, Turkey. Identifications were made

[78] Source, The Mammalian Society, http://www.mammal.org.uk/hedgehog.htm.

primarily with Cohen and Serjeantson's (1996) manual and therefore they must be considered as preliminary until a specialist studies the material. The manual was used to identify family group types only and principal bones of the skeleton.

Before Site B's bird bones are discussed, a summary of the type of birds which inhabit the Konya Basin today will be reviewed in order to emphasize the extent to which aviafauna species occupy the Basin. In 1998 a survey project sponsored by the United Nations (UN) was conducted to determine the range of bird species that inhabit the central parts of Anatolia, specifically the Konya Basin region (Unknown, 1998). The survey centred around Beysehir Lake which is approximately 90 km from Site B. The bird species identified during this survey can be used to draw analogies to what avian species would have existed around the extensive marshland and lake that once surrounded Site B in prehistory.

The following is an excerpt from the UN survey teams report[79].

> In the wetlands surrounding the Lake Beysehir ten different species of ardeids (heron-birds), among which Little Bittern (*Ixobrychus minutus*) and Squacco Heron (*Ardeola ralloides*) were the most common ones. Four species of rallids (rail-birds) were observed, as well as two species of grebes, seven species of ducks, five species of both terns and gulls, and eight species of reedbed passerines, among which the most common species were Great Reed Warbler (*Acrocephalus arundinaceus*), Reed Warbler (*Acrocephalus scirpaceus*), Balkan Yellow Wagtail (*Motacilla flava feldegg*), and Reed Bunting (*Emberiza schoeniclus*). Marsh Harriers (*Circus aëruginosus*) were breeding in all the sufficiently large reedbeds, and besides, also Black Kite (*Milvus migrans*) and Collared Pratincole (*Glareola pratincola*) were observed. Egrets (*Egretta garzetta*), Glossy Ibis (*Plegadis falcinellus*), a pair of White Storks, a Hobby (*Falco subbuteo*) - yes, it was on ground, too - and a flock of dozens of Hooded Crows (*Corvus corone cornix*). On one single island a pair of both Lesser Spotted Eagles (*Aquila pomarina*) and Short-toed Eagles (*Circaëtus gallicus*) were found!
>
> The most abundant duck species of the lake was Ruddy Shelduck (*Tadorna ferruginea*), which bred in rock holes. The other species of ducks were found mainly in the wetlands; in the order of abundance Mallard (*Anas platyrhynchos*), Gadwall (*Anas strepera*), Garganey (*Anas querquedula*), Red-crested Pochard (*Netta rufina*), Ferruginous Duck (*Aythya nyroca*), and Common Pochard (*Aythya ferina*).
>
> Many species of sandpipers, stints, and plovers were observed. Hundreds of Hooded Crows and Jackdaws (*Corvus monedula*), an immature White-tailed Fish-eagle (*Haliaëetus albicilla*), which was later also seen in the northern part of the lake. On one island there was a breeding colony of Rooks (*Corvus frugilegus*).
>
> On an island 32 individuals of Little Bitterns were counted, and three probably breeding pairs of Spur-winged Lapwings (*Hoplopterus spinosus*), and in addition, two pairs of Northern Lapwings (*Vanellus vanellus*), dozens of waders resting on their migration, about twenty Turtle Doves (*Streptopelia turtur*), several species of different passerines, a small species of *Porzana* crake, and even a Nightjar (*Caprimulgus europaeus*), Dalmatian Pelicans (*Pelecanus crispus*) and Pygmy Cormorants (*Phalacrocorax pygmaeus*).
>
> (Unknown, 1999)

Keeping in mind the above summary of the range of species present today in the study are, the avifaunal remains from Site B will now be presented. Avifaunal

[79] The English translation can be found at http://www.crosswinds.net/~birdtrips/Anatolia98.html.

remains represent 16% of the total minor taxa (Table 8.38). They were recovered from almost every context and as in the case of the other taxa, spiked in numbers in context BBH. Bird bone also dominated context BCL, which was the last context, excavated in the sequence. 5 different family type categories were identified based on the type of bones recovered. These are Pelecaniformes which include cormorants and pelicans; Ciconiiformes which include herons and storks; Anseriformes which include waterfowl such as duck geese and swans; Galliformes which include fowl and game birds, such as partridge and grouse (Table 8.45). The Site B bird bone list appears to mirror those outlined during the 1998 survey of Lake Beysehir.

Skeletal Elements	*Undi.*	*Pelecanus crispus*	*Pelecaniformes (cormorants and pelicans)*	*Ciconiiformes (herons and storks)*	*Anseriformes (water fowl mallard and goose)*	*Galliformes (game birds)*	Total
coracoid	4				4	4	12
scapula						1	1
humerus	11				2		13
radius	4				1	1	6
ulna	2			1	2		5
carpometacarpus	3		2		2	1	8
femur	3			2			5
tibiotarsus	1		1			2	4
tarsometatarsus		1			2		3
phalanx 1					1		1
phalanx 2					1		1
long bone	4				1		5
Total	**32**	**1**	**3**	**3**	**16**	**9**	**64**

Table 8.45: Family categories of bird taxa present at Site B.

Of particular note is the identification of a Dalmatian Pelican (*Pelecanus crispus)* which was identified[80] based on size and morphological characteristics from a right proximal tarsometatarsus. Based on modern distributions, 3 species were initially considered for identification. These were the Great White Pelican (*Pelecanus onocrotalus*), the Dalmatian Pelican (*Pelecanus crispus*) and Pink-Backed Pelican (*Pelecanus rufescens*). Meaurement comparisons were made with 6 specimens of *P. onocratalus*, 1 from *P. crispus* and 1 from *P. rufescens*[81]. Measurements comparisons (Table 8.46) ruled out *P. rufescens* as it is a much smaller pelican than

[80] Identification was made by Joanne H. Cooper in April 1997 at the Natural History Museum, Hertfordshire as this one bird bone was brought back to the UK.

[81] All specimens are housed in the National History Museum, Hertfordshire, England.

either *P. onocratalus* and *P. crispus. P. onocratalus* and *P. crispus* overlap in size, although *P. crispus* has an overall larger body size.

Specimen	Sex: M/F	Tarsometatarsus		
		Gb	Gw	RI
Site B X	?	24.9	28.6	17.75
P. crispus (ref 1896.2.7.1)	?	26.55	32.75	19.85
P. onocrotalus (ref 1903.3.6.2)	M	29.05	32.8	27.8
P. onocrotalus (ref 1903.3.6.2)	?	24.3	30.0	25.5
P. onocrotalus (ref 1903.3.6.2)	F	24.4	29.3	26.5
P. onocrotalus (ref 1903.3.6.2)	F	24.8	28.8	23.5
P. onocrotalus (ref 1903.3.6.2)	F	25.1	28.5	27.3
P. onocrotalus (ref 1903.3.6.2)	M	28.3	32.45	27.6
P. rufescens (ref: 1865.5.3.12)	?	20.2	25.6	17.0

Table 8.46: Measurements of the tarsometatarsus from Site B sample, the Great White Pelican (Pelecanus onocrotalus), the Dalmatian Pelican (Pelecanus crispus) and Pink-Backed Pelican (Pelecanus rufescens).

Morphological features of the tarsometatarsus were then compared with each of the reference samples. The three most distinguishing tarsometatarsus features were found in the hypotarsus, lateral contyla and proximal foramen (pers com Cooper 1997). Each will be summarised:

Hypotarsus: The nature of the medial ridge is the most obvious difference between species. Viewed laterally, the ridge is proportionately short in *P. crispus* and long in *P. onocrotalus*. When viewed proximally the ridge projects further in *P. crispus*. Site B's tarsometatarsus bone had a hypotatsus that was short and projected further than the *P. onocrotalus* specimens.

Lateral cotyla: Viewed proximally, the lateral cotyla in *P. onocrotalus* is proportionately smaller comared to the medial contyla. In *P. crispus,* the cotyla are more equal in size. Site B's tarsometatarsus bone had a lateral cotyla that was more equal in size.

Proximal foramen: Viewed cranially, the shaft around the foramen in *P. onocrotalus* appears inflated, lacking a recession on the lateral side. In *P. crispus* the proximal foramen appears recessed on the lateral side with a slight crest developed down the medial side. Site B's tarsometatarsus bone had a proximal foramen that appears recessed on the lateral side and has a slight crest developed down the medial side.

Based on the above outlined measurement data and morphological features, Site B's tarsometatarsus has been identified as *P. crispus*. *P. crispus's* habitat preference includes rivers, lakes, deltas and estuaries. It nests on islands or in dense aquatic vegetation. It feeds off of carp, perch and pike with an estimated daily requirement of c. 1200g of food (del Hoya *et al.* 1992). Today *P. crispus* is migratory in northern regions. It arrives in the Danube Delta in late March early April and leaves September early November. Its current wintering grounds include Pakistan. It will regularly fly up to 100 km from a colony to feed (del Hoya *et al.* 1992). In 1996 while this author was working at Çatalhöyük, hundreds of *P. crispus* appeared close to the site over a two week period in mid September. The colony stayed in the area until one morning, the entire colony migrated out of the area. If *P. crispus* migrated through Central Anatolia in late March early April and then again in September early November to more southern climates, the occupation of the site again appears too supported a late March early April time period as the caprine data indicates.

8.3.8.1 Carcass Treatment: Fragmentation patterns, body part representation and butchery

8.3.8.1.1 Fragmentation patterns

The bird taxa bones are highly fragmented, 58% of the bones recovered have less than 50% of the bone present. It must be noted that the sieving and flotation techniques applied played a part in fragmenting very delicate avifaunal remains. However, 16% of the bones were recovered complete. These bones were represented by coracoid and phalanx elements (Table 8.42).

8.3.8.1.2 Body Part Representation

All body parts except skull bones are represented indicating butchery and consumption at site (Figure 8.27). The lack of head bones may be a result of initial butchery as the head is usually removed along with all the feathers and the intestines. The lack of bird cranial elements is a common feature of many faunal assemblages and has been interpreted as a result of preservation and fragmentation.

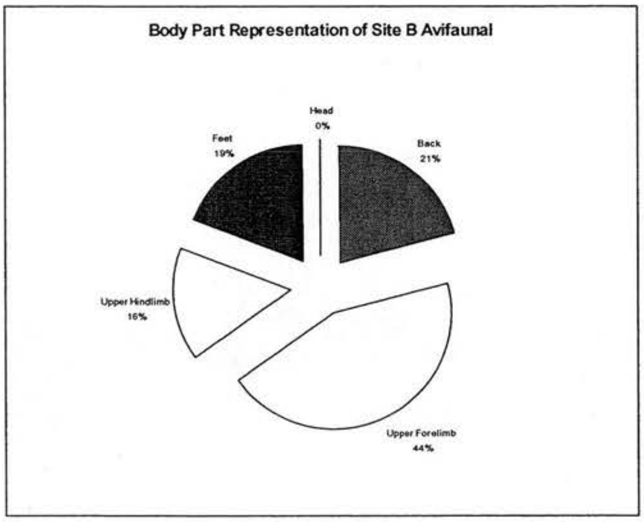


Figure 8.27: Avifaunal body part representation from Site B (Data from Table 8.45).

8.3.8.1.3 Butchery

Only two of the bones recovered were burnt and no cut marks were recorded (Table 8.41). The majority of the long bones were broken and only the proximal or distal ends recovered.

8.3.8.1.4 Bird summary

The wide spectrum of bird taxa recovered from the occupation of Site A to Site B indicates continuation of very diverse ecological environments around the site. The presence of water birds such as duck and *P. crispus* indicates a very large water source that continues to be present at the site. This brief habitat and food summary of *P. crispus,* in addition to the other avifaunal taxa identified, indicates that the environment around Pinarbaşi was dense with aquatic vegetation. This is required to sustain pelican populations that would always consist of a minimum of 4 birds[82].

8.4 UNIDENTIFIABLE BONE FRAGMENT DATA

60,921 bone fragments which could not be classified a specific taxa were identified. These have been sub classified as 713 large mammal bones[83], 457 medium mammal

---

[82] Source, Birding Wild Birds http://birding.about.com/library/weekly/aa062600e.htm

[83] Large mammal classification is based on the density size of the bone fragment. Assumption being that larger mammals produce a larger bone cavity density than smaller mammals. Taxa within this category are cattle and equids.

bones[84] and 59751 not identifiable bone fragments (Table 8.47). Each bone was measured into a size category of either <2 cm, 2-5 cm, 5-10 cm or > 10 cm (Table 8.48) and it was noted if the bone was burnt (Table 8.49). Again, context BBH contains the largest NISP count (8782) which is 14% of the not identifiable bone fragment assemblage (Table 8.47). To remove the effects soil volumes had on NISP counts, normalized weight-volume ratios were calculated (Table 8.50). In comparing these normalized values, contexts BBG, BBI, BAJ then BCJ contain the most bone fragments given 1 litre of soil than the other contexts (Table 8.50). Normalized NISP-volume ratios were also calculated by dividing the total NISP for each context by the number of litres of soil processed in that context (Table 8.47). NISP normalized values indicate context BBI (42.1) BBG (37.1) and BBD (34.3) are the most prolific in real terms (Table 8.47). Based on the above calculations, context BBI is the most prolific context in real terms with regard to the unidentifiable bone fragments recovered at Site B.

The recovery of such a large number of unidentifiable bone fragments which represents approximately 96% of the total bone assemblage is quite unique within a Neolithic dated site. Human butchery with regard to marrow extraction would create a large number of unidentifiable bone fragments within an assemblage. However, given the large number of bone fragments within the rock shelter complex, doubt has been raised as to the extent of human processing of the material.

The possibility of post-burial or post-depositional destruction and movement of the fragmented bone material must be considered since Site B is located within a rock outcrop and the archaeological contexts from which the bone assemblage is located is susceptible to spatial modifications that affect the distribution of faunal remains. Klein and Cruz-Uribe (1984: 70) state that post-burial destruction of bone occurs when bone has been compacted into the ground by very slow sedimentation. The hardness or compactness of the stratum on which the bones lay becomes a key factor. If bones lay on hard substrates or were subject to pre-burial trampling the bone

[84] Medium mammal classification is based on the density size of the bone fragment. Assumption being that medium mammals produce an average size bone cavity density. Taxa within this category are caprines, pig and deer.

	BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL	Total
Large Mammal			64			1					2	1	34	248	75	28	120	24	9	2				46		19	32		8	713
Medium Mammal			8										4	9	5	8	372	3	5			2	3	1	2	1	33		1	457
Not Identifiable	1	24	373	53	94	54	107	21	16	27	53	59	5150	13219	8141	8316	8290	8270	1246	1062	29	487	90	1765	275	1428	502	17	582	59751
Total	**1**	**24**	**445**	**53**	**94**	**55**	**107**	**21**	**16**	**27**	**55**	**60**	**5188**	**13476**	**8221**	**8352**	**8782**	**8297**	**1260**	**1064**	**29**	**489**	**93**	**1812**	**277**	**1448**	**567**	**17**	**591**	**60921**
Bone weight (g)	**50.6**	**9.7**	**78**	**47.1**	**65.6**	**37.3**	**45.5**	**26.2**	**4.8**	**15.4**	**51.2**	**44.3**	**274.8**	**431.8**	**349.2**	**814.3**	**690.8**	**556.9**	**131.2**	**17**	**5.7**	**12.4**	**61.2**	**217.2**	**113.4**	**161.2**	**330**	**74.5**	**144.8**	**4862**
Liters of soil processed per context (L)	**66**	**16**	**340**	**?**	**?**	**?**	**60**	**40**	**36**	**80**	**76**	**100**	**266**	**393**	**309**	**225**	**1294**	**197**	**69**	**59**	**60**	**290**	**160**	**169**	**207**	**97**	**270**	**44**	**260**	**5183**
NISP per soil volume (NISP/L)	**<0.0**	**1.5**	**1.3**	**-**	**-**	**-**	**1.8**	**0.5**	**0.4**	**0.3**	**0.7**	**0.6**	**19.5**	**34.3**	**26.6**	**37.1**	**6.8**	**42.1**	**18.3**	**18.0**	**0.5**	**1.7**	**0.6**	**10.7**	**1.3**	**14.9**	**2.1**	**0.4**	**2.3**	**11.8**
Bone weight per soil volume (g/L)	**0.8**	**0.6**	**0.2**	**-**	**-**	**-**	**0.8**	**0.7**	**0.1**	**0.2**	**0.7**	**0.4**	**1.0**	**1.1**	**1.1**	**3.6**	**0.5**	**2.8**	**1.9**	**0.3**	**0.1**	**<0.0**	**0.4**	**1.3**	**0.5**	**1.7**	**1.2**	**1.7**	**0.6**	**0.9**

Table 8.47: Unidentifiable bone fragments by context Site B.

	<2	**2-5**	**5-10**	**>10**	**Total**
Large Mammal	21	435	185	72	713
Medium Mammal	50	262	144	1	457
Not Identifiable	19047	33541	7153	10	59751
Grand Total	**19118**	**34238**	**7482**	**83**	**60921**

Table 8.48: Unidentifiable bone fragments by fragment size category Site B.

	Burnt	**Total Bone Fragments**	**% of Total**
Large Mammal	3	713	<1%
Medium Mammal	1	457	<1%
Not Identifiable	4246	59751	7%
Total	**4250**	**60921**	

Table 8.49: Unidentifiable burnt bone fragments Site B.

Context	BAI	BAJ	BAK	BAO	BAQ	BAR	BAT	BAU	BAV	BAW	BAX	BAZ	BBC	BBD	BBE	BBG	BBH	BBI	BBJ	BBK	BBL	BCB	BCC	BCF	BCG	BCH	BCI	BCJ	BCL
BAI	1.0	0.8	0.3	0.0	0.0	0.0	1.0	0.9	0.2	0.3	0.9	0.6	1.3	1.4	1.5	4.7	0.7	3.7	2.5	0.4	0.1	0.1	0.5	1.7	0.7	2.2	1.6	2.2	0.7
BAJ	1.3	1.0	0.4	0.0	0.0	0.0	1.3	1.1	0.2	0.3	1.1	0.7	1.7	1.8	1.9	6.0	0.9	4.7	3.1	0.5	0.2	0.1	0.6	2.1	0.9	2.7	2.0	2.8	0.9
BAK	3.3	2.6	1.0	0.0	0.0	0.0	3.3	2.9	0.6	0.8	2.9	1.9	4.5	4.8	4.9	15.8	2.3	12.3	8.3	1.3	0.4	0.2	1.7	5.6	2.4	7.2	5.3	7.4	2.4
BAO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAQ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAT	1.0	0.8	0.3	0.0	0.0	0.0	1.0	0.9	0.2	0.3	0.9	0.6	1.4	1.4	1.5	4.8	0.7	3.7	2.5	0.4	0.1	0.1	0.5	1.7	0.7	2.2	1.6	2.2	0.7
BAU	1.2	0.9	0.4	0.0	0.0	0.0	1.2	1.0	0.2	0.3	1.0	0.7	1.6	1.7	1.7	5.5	0.8	4.3	2.9	0.4	0.1	0.1	0.6	2.0	0.8	2.5	1.9	2.6	0.9
BAV	5.8	4.5	1.7	0.0	0.0	0.0	5.7	4.9	1.0	1.4	5.1	3.3	7.7	8.2	8.5	27.1	4.0	21.2	14.3	2.2	0.7	0.3	2.9	9.6	4.1	12.5	9.2	12.7	4.2
BAW	4.0	3.1	1.2	0.0	0.0	0.0	3.9	3.4	0.7	1.0	3.5	2.3	5.4	5.7	5.9	18.8	2.8	14.7	9.9	1.5	0.5	0.2	2.0	6.7	2.8	8.6	6.3	8.8	2.9
BAX	1.1	0.9	0.3	0.0	0.0	0.0	1.1	1.0	0.2	0.3	1.0	0.7	1.5	1.6	1.7	5.4	0.8	4.2	2.8	0.4	0.1	0.1	0.6	1.9	0.8	2.5	1.8	2.5	0.8
BAZ	1.7	1.4	0.5	0.0	0.0	0.0	1.7	1.5	0.3	0.4	1.5	1.0	2.3	2.5	2.6	8.2	1.2	6.4	4.3	0.7	0.2	0.1	0.9	2.9	1.2	3.8	2.8	3.8	1.3
BBC	0.7	0.6	0.2	0.0	0.0	0.0	0.7	0.6	0.1	0.2	0.7	0.4	1.0	1.1	1.1	3.5	0.5	2.7	1.8	0.3	0.1	0.0	0.4	1.2	0.5	1.6	1.2	1.6	0.5
BBD	0.7	0.6	0.2	0.0	0.0	0.0	0.7	0.6	0.1	0.2	0.6	0.4	0.9	1.0	1.0	3.3	0.5	2.6	1.7	0.3	0.1	0.0	0.3	1.2	0.5	1.5	1.1	1.5	0.5
BBE	0.7	0.5	0.2	0.0	0.0	0.0	0.7	0.6	0.1	0.2	0.6	0.4	0.9	1.0	1.0	3.2	0.5	2.5	1.7	0.3	0.1	0.0	0.3	1.1	0.5	1.5	1.1	1.5	0.5
BBG	0.2	0.2	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.1	0.2	0.1	0.3	0.3	0.3	1.0	0.1	0.8	0.5	0.1	0.0	0.0	0.1	0.4	0.2	0.5	0.3	0.5	0.2
BBH	1.4	1.1	0.4	0.0	0.0	0.0	1.4	1.2	0.2	0.4	1.3	0.8	1.9	2.1	2.1	6.8	1.0	5.3	3.6	0.5	0.2	0.1	0.7	2.4	1.0	3.1	2.3	3.2	1.0
BBI	0.3	0.2	0.1	0.0	0.0	0.0	0.3	0.2	0.0	0.1	0.2	0.2	0.4	0.4	0.4	1.3	0.2	1.0	0.7	0.1	0.0	0.0	0.1	0.5	0.2	0.6	0.4	0.6	0.2
BBJ	0.4	0.3	0.1	0.0	0.0	0.0	0.4	0.3	0.1	0.1	0.4	0.2	0.5	0.6	0.6	1.9	0.3	1.5	1.0	0.2	0.0	0.0	0.2	0.7	0.3	0.9	0.6	0.9	0.3
BBK	2.7	2.1	0.8	0.0	0.0	0.0	2.6	2.3	0.5	0.7	2.3	1.5	3.6	3.8	3.9	12.6	1.9	9.8	6.6	1.0	0.3	0.1	1.3	4.5	1.9	5.8	4.2	5.9	1.9
BBL	8.1	6.4	2.4	0.0	0.0	0.0	8.0	6.9	1.4	2.0	7.1	4.7	10.9	11.6	11.9	38.1	5.6	29.8	20.0	3.0	1.0	0.5	4.0	13.5	5.8	17.5	12.9	17.8	5.9
BCB	17.9	14.2	5.4	0.0	0.0	0.0	17.7	15.3	3.1	4.5	15.8	10.4	24.2	25.7	26.4	84.6	12.5	66.1	44.5	6.7	2.2	1.0	8.9	30.1	12.8	38.9	28.6	39.6	13.0
BCC	2.0	1.6	0.6	0.0	0.0	0.0	2.0	1.7	0.3	0.5	1.8	1.2	2.7	2.9	3.0	9.5	1.4	7.4	5.0	0.8	0.2	0.1	1.0	3.4	1.4	4.3	3.2	4.4	1.5
BCF	0.6	0.5	0.2	0.0	0.0	0.0	0.6	0.5	0.1	0.1	0.5	0.3	0.8	0.9	0.9	2.8	0.4	2.2	1.5	0.2	0.1	0.0	0.3	1.0	0.4	1.3	1.0	1.3	0.4
BCG	1.4	1.1	0.4	0.0	0.0	0.0	1.4	1.2	0.2	0.4	1.2	0.8	1.9	2.0	2.1	6.6	1.0	5.2	3.5	0.5	0.2	0.1	0.7	2.3	1.0	3.0	2.2	3.1	1.0
BCH	0.5	0.4	0.1	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.4	0.3	0.6	0.7	0.7	2.2	0.3	1.7	1.1	0.2	0.1	0.0	0.2	0.8	0.3	1.0	0.7	1.0	0.3
BCI	0.6	0.5	0.2	0.0	0.0	0.0	0.6	0.5	0.1	0.2	0.6	0.4	0.8	0.9	0.9	3.0	0.4	2.3	1.6	0.2	0.1	0.0	0.3	1.1	0.4	1.4	1.0	1.4	0.5
BCJ	0.5	0.4	0.1	0.0	0.0	0.0	0.4	0.4	0.1	0.1	0.4	0.3	0.6	0.6	0.7	2.1	0.3	1.7	1.1	0.2	0.1	0.0	0.2	0.8	0.3	1.0	0.7	1.0	0.3
BCL	1.4	1.1	0.4	0.0	0.0	0.0	1.4	1.2	0.2	0.3	1.2	0.8	1.9	2.0	2.0	6.5	1.0	5.1	3.4	0.5	0.2	0.1	0.7	2.3	1.0	3.0	2.2	3.0	1.0
Total	60.4	47.8	18.1	0.0	0.0	0.0	59.8	51.6	10.5	15.2	53.1	34.9	81.4	86.6	89.0	285.2	42.1	222.7	149.8	22.7	7.5	3.4	30.1	101.3	43.2	130.9	96.3	133.4	43.9

Table 8.50: Unidentifiable bone fragments context summary of relative weight/volume ratios for Site B.

material recovered from an assemblage will be more likely crushed and heavily fragmented. This process will result in an abundance of isolated teeth, a plethora of small dense bones such as carpals, tarsals, sesamoids and phalanges. If these traits are present within an assemblage, Klein and Cruz-Uribe (1984: 71) state the bone assemblage 'has probably suffered greatly from post-depositional destruction'.

Site B, Trenches 1 and 2 are positioned directly in front of the rock outcrop. The stratum from which the animal bone material lay was noted to be very hard and heavily compacted during excavation. Large pieces of rock face were present within the excavated stratum that have been interpreted as fracturing away from the rock face during continual phases of the assemblages post-depositional taphonomic history. In addition, the largest context excavated (BBH) appear to have been subject to pre-burial trampling as this context has been interpreted as a penning deposit. Assuming that all skeletal elements were originally present within the assemblage, it appears that some elements incurred post-depositional digenetic fracturing (Lyman 1994: 425). Digenetic bone fracturing results from sediment overburden which produces conjoining bone fragments lying adjacent to one another within archaeological contexts. There was no indication that the large number of bone fragments could be refitted together from Site B and therefore their presence within the assemblage was not primarily created by post-depositional forces. Large numbers of complete small dense bones such as carpals, tarsals, sesamoids and phalanges were recovered from the same contexts as the unidentifiable bone fragments. A large number of the phalange bones were unfused and their proximal epiphyses remained articulated. Post-depositional breakage is therefore not the primary cause of such a high degree of fragmented bone being recovered from Site B's contexts.

Klein and Cruz-Uribe (1984:71) suggest a site with post-depositionally destroyed bones will display a high NISP:MAU ratio per skeletal part. Drawing from the results presented in the major and minor taxa sections, the ratios for the total assemblage is 24.6 (2199 NISP: 89.5 MAU). Table 8.51 displays the NISP:MAU ratios from Site B's identifiable taxa assemblage. A high ratio of NISP:MNI in combination with relatively high abundance of small dense bones and isolated teeth within an assemblage are interpreted as indicative of post depositional destruction which caused fragmentation within the assemblage (Lyman 1994: 428). Site B has a high abundance of small dense bones and isolated teeth. Table 8.51 displays larger

NISP:MAU ratios within the head and feet categories throughout the 7 taxa listed from Site B. However, the overall NISP:MAU ratio (24.6) from Site B's identifiable taxa assemblage is not as large as would be expected from a site subject to post-depositional destruction. Lyman (1994: 427) notes a 97.7 NISP: MAU ratio as large in his analysis at Lower Magdalenian El Juyo Cave. It is therefore possible that the bones were subject to very little post-depositional forces but were deposited into the assemblage in this very fragmented state by humans.

Element	Bos	Sheep/ Goat	Equid	Pig	Deer	Fox	Hare
Head							
horncore	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cranium	0.6	6.7	1.6	0.1	0.1	0.2	0.1
mandible	5.0	11.5	0.0	0.0	0.5	7.0	0.0
mand tooth	9.3	4.4	1.2	0.2	0.2	2.3	0.1
max tooth	0.9	11.6	4.7	0.1	0.0	0.5	0.0
Back							
atlas	0.0	2.0	0.0	0.0	0.0	0.0	1.0
axis	0.0	0.0	0.0	0.0	0.0	0.0	0.0
rib	0.4	4.8	0.1	0.0	0.0	0.0	0.0
vert/cv	1.6	9.2	0.0	0.0	0.0	0.0	0.0
vert/tv	0.0	1.2	0.3	0.0	0.2	0.1	0.0
vert/lv	0.0	0.1	0.0	0.0	0.0	0.0	0.0
vert/sv	0.0	0.0	0.0	0.0	0.0	0.3	0.0
vert/cd	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upper Forelimb							
scapula	0.5	8.0	0.0	0.5	0.5	1.0	0.0
humerus	2.0	13.0	0.5	0.0	1.0	2.0	0.5
radius	2.0	21.0	1.0	0.0	1.0	3.5	0.5
ulna	1.0	10.5	0.5	1.0	0.0	4.0	0.5
Upper Hindlimb							
innominate	1.5	8.5	0.5	0.0	1.0	1.0	0.0
femur	0.5	15.5	0.5	0.0	1.5	3.0	1.0
tibia	1.5	17.5	4.0	0.0	3.0	0.5	1.5
patella	0.5	1.5	0.0	0.0	0.0	0.5	0.0
Feet							
astrag	0.0	7.0	2.5	0.0	0.0	0.0	0.5
calc	3.0	12.0	1.0	0.0	0.5	1.0	0.0
capral/tarsal	1.7	8.8	1.6	0.0	0.1	0.2	0.1
mcarpal	4.5	60.0	7.0	0.0	3.0	2.5	0.9
mtarsal	10.5	40.5	4.5	0.0	2.5	2.1	1.3
phal prox	1.3	16.1	7.3	0.0	0.3	0.5	0.5
phal mid	1.1	10.0	3.3	0.1	0.0	0.6	0.3
phal dist	0.1	6.4	1.3	0.0	0.0	0.1	0.1
M.N.I.	10.5	60	7	1	3	7	1.5

Table 8.51: Ratios of NISP:MAU per skeletal part (Data from Tables 8.15 and 8.42)[85].

[85] Dog, cat and bird data were excluded as they were probably used primarily for their pelts and feathers versus meat. Bird remains were excluded as skeletal parts were not comparable.

Lyman (1994: 426) suggests that fragmentation of bones can result in their 'analytical absence' from an assemblage. As a skeletal element is broken into smaller pieces, the probability of identification in a set of fragments decreases as fragment size decreases and anatomical bone landmarks become less visible (Lyman 1994). Therefore, elements may be present within an assemblage but if fragments size is very small, they will not be identifiable. The large number of Not Identifiable (60,921) and Large (713) and Medium Sized Mammal Bone Fragments (457) are substantial enough to account for the missing cattle, horse, sheep/goat, deer and adult pig body parts identified as missing during the major taxa analysis. It must be noted that the Not Identifiable bone fragments are probably primarily the product of Medium Sized Mammal bones. Caution was taken during my analysis of the material as this was my first major assemblage and my adviser warned me that if I could not identify a bone to species then it should just be classified as Not Identifiable. It wasn't until I spent a season with Dr. Martin and Dr. Russell at Çatalhöyük that I learned how to distinguish bone density and establish fragment size categories. Hence the large number of Not Identifiable bones and the small numbers of Large and Medium sized mammal bones. Each will now be reviewed in more detail.

8.4.1 Large Mammal

Seven hundred and thirteen large mammal sized bones that could not be identified to specific taxa were recovered from the site (Table 8.47). The proportions of fragmented large mammal bones follow the same pattern as major taxa with a heightened presence within certain contexts, i.e., BAK, BBD, BBG and BBH and BBI. These bones coincide with the identified cattle and horse bones from these contexts. It is therefore assumed that the large mammal bones are from either of these taxa since no other large mammals were identified at the site. 61% of the bones were from fragments sized 2-5 cm (Table 8.48). The bones primarily represent shaft fragments from long bones.

8.4.2 Medium Mammal

Four hundred and fifty seven medium mammal sized bones that could not be identified to specific taxa were recovered from the site (Table 8.47). The proportions of fragmented medium mammal bone coincide with the four identified major medium sized taxa within the identified contexts (i.e., caprines, pig and deer). The small number of medium mammal bones is not substantial enough to account for the butchering and processing of the medium sized mammals found at the site. This indicates that the long bones are not present onsite in fragmented numbers and therefore must have been transported offsite with the majority of meat. However, this low number may actually be a result of the majority of unidentifiable bone being classified as Not Identifiable.

8.4.3 Not Identifiable

Fifty nine thousand seven hundred and fifty one bones were classified as Not Identifiable (Table 8.47). 90% of the bones were recovered from eight contexts (BBC, BBD, BBE, BBG, BBH, BBI, BBJ and BBK). Context BBD produced 22% of the total fragmented bone. 88% of the bones are from fragments less than 5 cm in size, indicating heavily processed carcasses (Table 8.48). Only 7% of the bones have evidence of burning and it appeared during excavation that these bones were closest to the ash layers found between the contexts (Table 8.49).

8.4.4 Unidentifiable Bone Fragments Summary

As outlined above, the methodology used to distinguish between large and medium sized mammal bone fragments was only applied to approximately 8,000 unidentifiable bone fragments, which produced the 713 large mammal fragments and 457 medium mammal bone fragments, hence the large number of Not Identifiable bones within the assemble. However, prior to the application of the bone density differentiation technique very little large mammal bones were observed from within the fragments assemble and it was out of similarity that the majority of the bones were classified as unidentifiable fragments. Therefore, although there is no statistical evidence to support a low number of large mammal bone fragments, based on the time spent handling and sorting the 60,921 bone fragments, they were primarily from medium sized mammals and not large mammals.

The presence of such a large number of heavily processed bones within the eight key contexts of the site is substantial enough to account for the missing long bones not identified to taxon in the medium sized mammal taxa but not the large mammal taxa. It appears that primarily medium sized mammal (sheep/goat, pig, deer) carcasses were processed for meat, marrow and grease at Site B. Large mammals (cattle and horse) were butchered at Site B but very little of the meat was consumed on site, with the majority of the meat being transported to another location.

CHAPTER 9: SYNTHESIS OF FAUNAL MATERIAL FROM CENTRAL ANATOLIA

The purpose of this chapter is to synthesise all animal related subsistence practices in Central Anatolia by reviewing the faunal data presented in Chapter 5 and the new results from the analysis of faunal material from Pinarbaşi Sites A and B presented in Chapters 7 and 8. The first two sections of this chapter synthesize the faunal result from Pinarbaşi Site A and B. Overall trends will be assessed and the major research questions outlined in Chapter 1 reviewed. The third section will compare the two periods to see if there is any indication of species change with regard to environmental conditions and human cultural preferences over time. Results from Pinarbaşi Sites A and B will then be placed within the broader archaeological background of Central Anatolia and how Pinarbaşi' sites relate to the broader understanding of economic exploitation taking place within Central Anatolia compared to the other key sites discussed in Chapter 5.

9.1 PINARBAŞI SITE A

Caution must be stressed regarding quantitative results of Pinarbaşi Site A's faunal assemblage beyond species identification. Criticism can be made on the relevance of interpretations drawn in light of the size of the identified assemblage. The results therefore presented below are being interpreted more as the potential of the assemblage in addressing the major research questions if and when excavations at the site continue.

9.1.1 Summary of the Representation of the Major Taxa from Site A

Drawing from the data generated in Chapter 7, it is possible to summarise the main trends in the representation of the six major taxa at Site A. Sheep were the dominant taxon, making up almost 60% of the total bones. The caprine assemblage was likely made up entirely of sheep as there were no bones identified as goat. Based on zooarchaeological criteria by which domestication is detected; only sheep bones could be assessed. The Site A sheep bone measurement when compared to a standard sheep was smaller in size. The Site A sheep bone measurement was similar in size to measurements from domestic sheep in Anatolia. However when a log size index analysis was performed the sheep bone measurement fell within the range interpreted as wild. Based on these results the sheep from Site A are interpreted as wild as methodological procedure used to detect domestication were not statistically sound given the sample size available. However, the sheep bones from Site A do highlight the potential of the site for addressing the possibility of domestication existing at this site if a larger sample is recovered and more measurable bones recorded.

The cattle and pig remains have also been interpreted as wild because no reliable quantitative methods could be applied to test for domestication. Cattle, horse and pig combined represent fewer than 40% of the major taxa bones recovered. Cattle bones were recovered from two contexts, and one of the bones appears sliced in half which is unique given the date of the site and the tool kit available to the inhabitants. Equid bones were only recovered from one context and sheep and pig were recovered from all three contexts. Pig outnumbered sheep remains in the first context. Body part representation of the major taxa indicates similar treatment with regards to butchery and bone discard at the site. Feet dominate at 54% followed by the cranium at 31%, which is represented primarily by teeth fragments, followed by back and upper hind and forelimb bones at 5% each. The presence of deer within the assemblage indicates that the environments around Site A must have been more wooded in the 8^{th} millennium. Red deer compete with cattle for grazing areas and therefore the environment around the site must have been very rich.

The majority of the assemblage was recovered from context ABU. The context has been classified as a pit. The discard of the bones into a single pit area is believed to represent a single economic event occurring during the butchery process. All of the bones appear to have been treated similarly regarding discard. Primary deposition occurred as many of the sheep bones articulate and delicate sheep neonatal bones and piglet teeth that would not have survived prolonged surface exposure or trampling were recovered.

9.1.2 Summary of the Representation of the Minor Taxa from Site A

Drawing upon the data generated in Chapter 7, it is possible to summarize the main trends in the representation of the minor taxa at Site A. The majority of the assemblage was recovered from context ABU. The most common taxa were fox, hare and bird. Combined, they represent 96% of the minor taxa. These three taxa were also heavily burnt and all body parts were represented in the assemblage indicating that they were hunted, killed and consumed at the site. This is in contrast to the majority of the major taxa that had very little of its bones burnt.

The presence of beaver, aquatic bird species and fish indicates a substantial water resource located close to the site. It must also be noted that reptile and small mammal remains were uncovered within the deposit; however, no analysis was performed as they are part of doctoral study presently being conducted by another researcher[86].

9.1.3 Summary of Unidentifiable Bone Fragment Data from Site A

The number of unidentifiable bone recovered is 780 fragments which represent 83% of the total animal bone assemblage. This fragmentation ratio is not unique in Epipalaeolithic and Early Neolithic sites where assemblages often have less identifiable bone than fragments (Buitenhuis 1997). The majority of the fragments (88%) were 2-5 cm in size, indicating that some elements, probably long bones, were heavily processed at the site. The overall quantity of fragmented bone recovered is significant enough to account for elements not identified in the major and minor taxa, specifically long bones. Therefore these elements are interpreted as being present at the Site and it appears that primary butchery and domestic refuse are represented in the assemblage.

9.1.4 Summary of the Representation of the Faunal Material from Site A

Drawing from the results presented above, the main research questions for Site A will be addressed.

9.1.4.1 Does the data reflect environmental conditions?

The main method used for detecting environmental conditions through faunal analysis is species diversity. Sheep are better adapted to wetter environmental conditions and require more water and better pasture land than goats. It has been noted by Redding (1984) that herd composition at a site can reflect certain environmental conditions such as aridity and availability of pastureland based on herd composition ratio research. The goal of Redding's research was to develop models that could predict ideal herd compositions in terms of the proportion of sheep

---

[86] Emma L. Jenkins, An analysis of the microfauna from the prehistoric sites, Catalhoyuk and Pinarbaşi, Konya Plain, central Turkey. Cambridge University.

and goats in order for herders to extract maximum yields. Redding (1984) noted that herd composition fluctuates when environments become hotter and drier and sheep productivity decreases in relation to that of goats. If environmental conditions become colder and wetter goat productivity decreases relative to that of sheep. The environment around Pinarbaşi would have provided sheep with wetter environmental conditions and large amounts of pastureland that included steppic and dwarf brush vegetation that sheep preferred to eat (Uerpmann 1987)

Since sheep are present as opposed to goats at Site A's assemblage, it is inferred that the environment on the Konya Plain during the 8th millennium was quite lush with regards to grasses. The presence of cattle at Site A indicates ample water in the region during the 8th millennium as cattle require water at least twice a day. The presence of aquatic birds indicates that bodies of freshwater were also abundant during this period. This is also supported by the presence of beaver within the assemblage, which would have had a positive impact on the amount of wetland around site. This, in turn, would have affected other species dependent on large water sources.

It has been theorised by Horwitz (1993) that sites with high frequencies of wild species are situated in rich environments where humans had no need to alter their subsistence base to herding and could continue to hunt. In contrast, a site with high frequencies of domesticates implies environmental constraints where humans were forced to develop caprine herding in order to remain in the region. Based on the diverse range of species recovered from Site A, the environment surrounding the site must have been rich in order to sustain such a large resource base. Therefore, according to the Horwitz (1993) model, one would expect Site A to reveal a wide variety of wild species with no indication of herding. Since all of Site A's taxa have been classified as wild, it appears that Horowitz's (1993) model is correct. However, there is an indication that the sheep from the site could possibly be morphologically smaller in size. Whether this is a result of regional variation in size or the result of a proto-domestic/domestic relationship with humans is unanswerable given the present data. It will be interesting to see if Horowitz's (1993) model remains applicable if domestic sheep are recovered during future excavations.

9.1.4.2 Taxonomic diversity or specialisation?

Selectivity of taxa within an assemblage aims to detect if the inhabitants were practicing opportunistic hunting or herding. Drawing from the results presented in Chapter 7, the inhabitants of Site A were therefore primarily hunting a broad spectrum of mammal and bird species. Fox, sheep and then bird were the most frequent. It appears that sheep were beginning to play a more dominant role within the diet and it is speculated that they were possibly domestic. Due to the small sample size and small number of measurable bones, no definitive conclusions can be drawn as to the domestic status of cattle and pig.

9.1.4.3 Carcass Treatment

The analysis of body part representation, butchery marks, cooking and processing techniques provides insight into how the inhabitants processed the carcasses of the animals they hunted. Body part representation of the major taxa indicates that these animals were killed close to the site or transported to the site from a nearby killing location. The major taxa have feet and head elements dominating the assemblage with other major body parts at times absent, specifically axial elements. In contrast, minor taxa have a more overall complete representation of all body parts indicating butchery and consumption on site.

Butchery evidence in the form of cut marks were few. Breaks associated with chopping and marrow extraction are the primary processing technique performed. Bones were split longitudinally and then further reduced. Long bones did not survive intact and are only identifiable as end, end splinters, and shaft splinter fragments. The majority of the major and minor taxa bones were no larger than 5 cm in size. Burning was only recorded on 16% of the main taxa and 18% of the minor taxa. Just over 23% of the pig bones were burnt, the majority of burn evidence being present on piglet bones. Fox and hare bones were also heavily burnt.

Body part representation suggests initial onsite butchery. However, many body parts appear to be missing. The question remains: are they missing because they were too fragmented to be identified or are they missing because they were transported elsewhere? Analysis of the unidentifiable fragments suggests the former for medium sized taxa such a sheep, pig and deer but the latter for large taxa such as cattle and horse. The 780 non-identifiable fragments were primarily from medium sized taxa.

No large mammal bone fragments were identified within the assemblage. Therefore the medium sized mammals, sheep, pig and deer body parts are present in butchery waste and domestic refuse. However, since no large mammal sized fragments were recovered, the body parts identified as absent during the major taxa analysis also appear to be absent from the fragments data. Therefore, some food processing and consumption did take place on site, specifically with the sheep, pig, deer and minor taxa, but the majority of the meat bearing bones from the cattle and horse were either disposed of separately at a different site location, not brought back to the site at all or transported off site. If the bones were transported off site, this implies that Site A may have been a seasonal site versus a year long settlement.

9.1.4.4 Seasonality

A small site is often interpreted as being occupied temporarily for seasonally available resource versus a larger site with substantial architectural remain and storage pits that is interpreted as a base camp or permanent year round village. Site A so far has very little architectural remain compared to sites such as Aşikli and Can Hasan. Therefore, it appears that Site A based on its size is probably a seasonally occupied site. Faunal remains can be used to indicate at what time of the year a particular resource was exploited and by extension when a site was occupied (Davis 1995). Occupation of Site A can be inferred from animal bone data derived from fusion data, tooth eruption and animal life cycle behaviour (Davis 1995).

Within context ABU, sheep astragalus and calcaneus bones that were very porous and not yet fully developed indicate a foetal individual. The rutting season of wild sheep is during October and November with young being born in April and May (Geist 1971). Based on the foetal morphology of these bones, human activity would have been taking place at the site in late February to late March in order to butcher a pregnant female sheep. Context ABR, ABU and ABJ had pig teeth which appear unworn and with no roots or wear which are dated to approximately one month. Sows generally give birth approximately three months (110 - 115 days) after the rut which takes place between November and January indicating a March to May occupation. The presence of juvenile fox bones in context ABU indicates an late fall early winter occupation as fox bones begin to fuse between 6 to 10 months of age (Henry 1997). As with all seasonality analysis, evidence of occupation between February and May and then again in the early fall and late winter, based on age at death does not mean that occupation did not occur the rest of the year. It only means that the animal bones recovered indicate activity only during these two periods.

9.1.4.5 Summary of the Representation of the Faunal Material from Site A

Analysis during the early ECA II occupation phase was concentrated towards determining whether the inhabitants of the site practiced animal domestication in addition to large-scale hunting. Based on the data presented above, the site appears to contain primary butchery waste and domestic refuse from wild taxa. The dominance of sheep within the assemblage and their small size suggests the possibility of a proto-domestic/domestic relationship was emerging in Central Anatolia, however this assumption is not fully supported by the present data. Analysis of the faunal material from Pinarbaşi's ECA II occupation levels reveal a broad species based assemblage that includes sheep, wild cattle, horse, boar, fox, hare, tortoise, fish and fowl. The small sample size made it impossible to draw conclusions whether an economic transition from hunting and gathering to one dependent on domesticates was occurring.

9.2 PINARBAŞI SITE B

9.2.1 Summary of the Representation of the Major Taxa from Site B

Drawing upon the results presented in Chapter 8, it is possible to summarise the main trends in the representation of the major taxa at Site B. The most common major taxon at Site B was caprines. Although the caprine assemblage was made up almost entirely of sheep, goats are also present in small numbers. Combined, they represented almost 70% of the major taxa at the site. It appears from the size of the goats that they were wild. The large number of sheep bones recovered their small size and the discovery of possible penning deposits within context BBH indicates that they were the only major taxa to be domesticated.

The cattle bones were highly fragmented and therefore determining if they were from a domesticated population could not be reliably established. Only two cattle bones could be measured and compared with cattle bone measurements from other Anatolian sites (Buitenhuis forthcoming). The cattle bones from Site B were similar in size to comparative wild specimens from Aşikli and Musular and larger than those from Guvercinkaya which is firmly established as a domestic population (Buitenhuis forthcoming). The few teeth which could be assessed for dental wear indicate animals no older than young adult were present. Epiphyseal fusion data yielded similar results as individuals ranging in age from 10 months to 4 years of age were present. Based on the relatively broad range of cattle ages and their large size, the cattle bones appear to be from wild individuals. When the distribution of the cranium elements is reviewed, horn core and cranium elements are underrepresented. Although 196 tooth fragments were identified, very few cranium and no horncore fragments were recovered. The number of cranium remains is usually quite large in settlement material however apart from teeth they are absent from Site B. It appears that cattle cranial elements have been treated differently from postcranial elements at Pinarbaşi Site B.

The analysis of the pig remains also failed to identify the presence of domesticates with any degree of certainty. The proportion of juvenile animals in the sample is extremely high and only one specimen was from an animal older than 2.5 years. The data suggests a natural population structure of wild pigs versus selective culling of domesticates. In addition, substantial architectural remains have not been recovered which indicates the site was probably a seasonal camp and the movement of pigs to such locations unlikely (Zeder 1994). Based on these results, the pig remains most probably consist entirely of wild easily hunted *Sus scrofa* piglets. However, the presence of domestic pig populations at Hallam Çemi (Redding and Rosenberg 1998) and the establishment of feral swine populations around some ancient settlements could have conceivably occurred at Pinarbaşi Site B given the early use of free-ranging husbandry practices in the region (Buitenhuis 1997; Redding and Rosenberg 1998). Therefore, until further pig material is recovered, the classification of the pig assemblage as wild is tentative.

The dominance of caprines within the assemblage is not reflected by a decline in representation of other major taxa at the site. In contrast, it appears that each taxon at times were targeted for subsistence during specific occupation periods at the site. For example, context BBD has a dominance of cattle and horse. Horses again dominate context BAK and BBG and cattle context BBI. In addition context BBH produced the majority of pig and deer remains from the site.

All of the major taxa were killed and butchered at the site based on the dominance of feet and lower limb elements that are initially discarded during primary butchery.

Evidence of long bone and other body parts for medium sized mammals (caprines, pig and deer) are also present within the very large number of unidentifiable bone fragments recovered. Large mammal (cattle and horse) long bones are however missing from the assemblage. It is proposed that these elements were either deposited elsewhere on site or transported off site to another location.

9.2.2 Summary of the Representation of Minor Taxa from Site B

Drawing upon the results presented in Chapter 8, it is possible to summarise the main trends in the representation of the minor taxa at Site B. The most common minor taxon at Site B was fox, followed by bird, hare, tortoise, canid, felid and hedgehog. The representation of the minor taxa followed the same pattern as the major taxa over time. The proportions of all of the minor taxa remains relatively constant throughout all of the contextual sequence, however, there is a heightened presence of all minor taxa within contexts BAK, BBD and BBH. There is no evidence of a decline in representation of minor taxa at the site in favour of selective herding. The majority of the minor taxa were hunted and butchered at the site. The treatment of the minor taxa carcasses differs from those of the major taxa with almost all body parts being represented indicating consumption at the site. However, very few of the minor taxa bones were recorded as being burnt. It is therefore possible that these taxa were hunted for products other than meat. Pelts, feathers and shells would have provided the inhabitants of the site with useful products and tools.

9.2.3 Summary of Unidentifiable Bone Fragment Data from Site B

The unidentifiable bone fragment data is comprised of over 60,000 fragments whereby 88% measure less than 5 cm in size. Some of these fragments appear to have been susceptible to post-depositional diagenetic fracturing (Lyman 1994: 425). However, based on NISP:MAU ratio's and the lack of conjoining fragment, post-depositional breakage was not the primary cause of such a large number of unidentifiable bone fragments. Lyman (1994) writes that dense bone survives longer during a sites post-depositional taphonomic history and regardless of how often a bone is fractured by post depositional processes, bone density is usually preserved and detectible (Lyman 1994). Since I performed the bone density differentiation technique on a very small number of unidentifiable bone fragments only 713 large mammal bones were identified confidently from the assemblage. Although there is no statistical evidence to support a low number of large mammal bone fragments, based on the time spent handling and sorting the 60,921 bone fragments, they were primarily from medium sized mammals and not large mammals. The unidentifiable bone fragments assemblage, 60,208 bones, is primarily comprised of medium sized mammals (caprines, pig and deer) since these taxa dominate the assemblage. It can therefore be concluded that these taxa were killed and butchered at the site and the majority of their skeletal elements deposited within the assemblage. The 713 large mammal bone size fragments, represented by 17.5 MNI cattle and equids, were killed and butchered at the site but the majority of their skeletal elements are not present within the assemblage.

9.2.4 Summary of the Representation of the Faunal Material from Site B

Drawing from the results presented above, the main research questions for Site B will be addressed.

9.2.4.1 Does the data reflect environmental conditions?

The main method used for detecting environmental conditions through faunal analysis is species diversity. Sheep dominate Site B's assemblage and therefore since they prefer wetter environmental conditions and better pasture land than goats we can infer that the environment around the site was comparable. In addition, cattle and horse would have required open grasslands and light forest cover, and since they are present these conditions can be inferred. It appears that the environmental conditions on the Konya Plain during the 6th millennium continued to contain extensive grasslands, light forest cover and wetlands.

9.2.4.2 Taxonomic diversity or specialisation?

The faunal material from Site B can be summarised as one dominated by caprines however, there is also a continuation of a broader spectrum of opportunistic hunting. In contrast to other Neolithic sites, where domesticates dominate the assemblage, Site B displays a pattern where hunting was continued long into the Neolithic. The location of Pinarbaşi may be a key factor to the continuation of a hunting tradition. Site B occupied an environment that was rich in water and grasses that could support a diverse regional fauna. The movement of pastoralists into the site seasonally, with their sheep and goats, enabled them to take advantage of the local wild fauna.

Therefore, allowing large scale herding in addition to hunting to co-exist, resulting in a broad spectrum of taxa being recovered at Site B.

The broad list of identified bird families not only reflects the diversity of habitats available to these species around the site and the site itself, but also infers aspects of the continued knowledge base of hunting retained by Neolithic pastoralists. To hunt such a wide variety of species requires extensive knowledge of behavioural characteristics of their prey, in addition to different techniques and tools, in order to be successful at their task.

9.2.4.3 Carcass Treatment

All of the taxa were killed and butchered at the site based on the dominance of feet and lower limb elements that are discarded during primary butchery. It appears that caprine, deer and pig skeletons were consumed and deposited within the Site's assemblage. It appears that some meat and bone by-products were consumed due to the substantial number of fragmented bone recovered, this includes marrow and grease extraction from diaphysis and articulating ends. However, the consumption of large mammals cannot be proven. Based on cattle and horse overall bone mass, the quantity of unidentifiable to species large mammal bone fragments recovered is quite small for the size of area excavated at Site B. There is also evidence in the body part representation data that not all animals killed at the site were consumed locally. By dividing limb segments into meat bearing (scapula, humerus, radius, ulna, innominate, femur, patella, tibia and fibula) and non-meat bearing (metapodials, podials, and phalanges) elements, the expected percentages if entire animals were being brought back to the site are 37% meat bearing and 63% non-meat bearing bones (Rosenberg *et al.* 1998). At Site B, the percentages of meat bearing bones is only 6% for cattle and 5% for horse compared with non-meat bearing elements of 26% and 41% respectively (Table 9.1). The percentage of meat bearing elements is significantly lower than the expected frequency of 37% for these elements. This implies that cattle and horses were butchered at the site but meat bearing elements were transported off site. In contrast, the percentage of meat bearing bones for sheep/goat is 14%, pig 21%, deer 41%, fox 18 and hare 17% are reasonable close to the expected percentage. Some deer appear to have been killed and butchered close to the site with almost all of the expected meat bearing and non-meat bearing elements present. However there is a higher than expected percentage of meat bearing elements present which implies that meat bearing bones of deer were preferentially brought back to the site.

	Standard	Bos	Sheep/ Goat	Equid	Pig	Deer	Fox	Hare
Meat bearing	37%	6%	14%	5%	21%	41%	18%	17%
Non-Meat bearing	63%	26%	50%	41%	21%	38%	36%	72%

Table 9.1: Percentages of meat bearing limbs versus non-meat bearing limbs from Site B taxa.

Therefore, based on these data, it is proposed that Site B was an initial kill, butchery and consumptions site for almost all taxa except cattle and horse whose consumption cannot be corroborated. It is proposed that meat bearing elements from these taxa were transported off site and possibly supplied to another settlement location or possibly a larger urban centre.

9.2.4.4 Indication of seasonality

Seasonal activities can be determined by reviewing the age of the animals at their time of death. Mammal reproductive cycles can be extrapolated from Site B faunal material. The rutting season for wild goats and sheep is primarily during October and November. The young are born in March/April. Foetal sheep/goat bones were recovered, a metapodial III or IV diaphysis fragment along with other very porous bone in context BBH, BAQ and BAX. The diaphysis of metapodials III and IV fuse at birth (Silver 1969). As this metapodial III or IV shaft is unfused an occupation in March and early April is suggested for the site. An unfused sheep/goat acetabulum was also recovered placing the age less than 6-10 months old (Silver 1969). The bone shows signs of starting to fuse, which suggests a fall and early winter occupation at the site. Sheep and goat, first and second phalanges were also just beginning to fuse supporting a March/April presence at the site. In addition, the majority of phalanx elements recovered from context BBH are unfused or just beginning to fuse. These elements fuse within age ranges of 13-16 months (Silver 1969). Again, suggesting a spring/summer occupation of the site. The cull of these animals also indicates a reduction in the flock just after the arrival of new lambs. It remains unclear if these animals were primarily male, however based on herding strategies (Binford 1981) it would be logical to cull male caprines, which at 13-16 months would have attained a maximum meat capacity and leave grazing resources to the next generation within the flock. Based on the age of the animal bone, a March/April and November/December periods of occupation occurred at Site B.

The identification of *P. crispus* who migrates through central Anatolia in late March early April and then again in late September early November, supports the caprine data presented above for occupation in March/April and November/December periods. An unfused fox calcareous bone also supports a winter occupation as this bone would have fused before one year and the bone appeared to be from a juvenile. Based on the data presented above, the site appears to be a caprine herder's site where occupation was detected in the spring and early winter.

9.3 Synthesis Of Pinarbaşi Site A and B Faunal Material

Site A is typical of a late ECA I/Early ECA II site as it is located in the open, yet still close to a major rock shelter (Bar-Yosef 1995). Architectural remains indicate that the site was used for prolonged periods as a seasonal settlement. There is the possibility of it being a permanent village, however due to the limited excavation conducted to date this remains only speculative. The major taxa from Site A represent less than 50% of the total assemblage indicating "broad spectrum" subsistence (Figure 9.1). The broad spectrum of Site A's assemblage is characteristic of PPNA sites in the Levant (Chapter 3). Levantine broad spectrum assemblages are interpreted as a response to diminishing large game resources around settlement sites where hunting pressure on large mammal populations diminished their resources. This interpretation supports the possibility of Site A being an early settled permanent village. However, the lack of a more extensive cultural material requires a cautious classification of Pinarbaşi Site A as a seasonal campsite where resource stress would not have been applicable. The broad spectrum of Site A's assemblage is therefore interpreted as opportunistic hunting at the various environments that surrounded the strategic location of the site[87]. However, caution must also be extended to the date and security of each context excavated. Radiocarbon dates were only performed on charcoal remains and the presence of a cattle carpal bone which appears to be sliced in half is a unique find given the date of the site and the tool kit available to the inhabitants.

---

[87] Pinarbaşi is located in an ecotone where lake, marsh and plains taxa would have been easily accessible.

All of the taxa recovered are interpreted as being wild. However, the status of the sheep remain inconclusive as there is morphometric data suggesting a smaller sized sheep was present at the site compared to other sheep recovered from Central Anatolia. A proto-domestic/domestic relationship existing before 8500 cal BC in Central Anatolia is not inconceivable as it would mark the transition from a small hunting site to the larger sedentary occupation of Aşikli a century later. Based on the cultural material recovered, it is hypothesized that Site A represents seasonal activities of a small group of mobile hunters who may have also been making the transition to a pastoral economy.

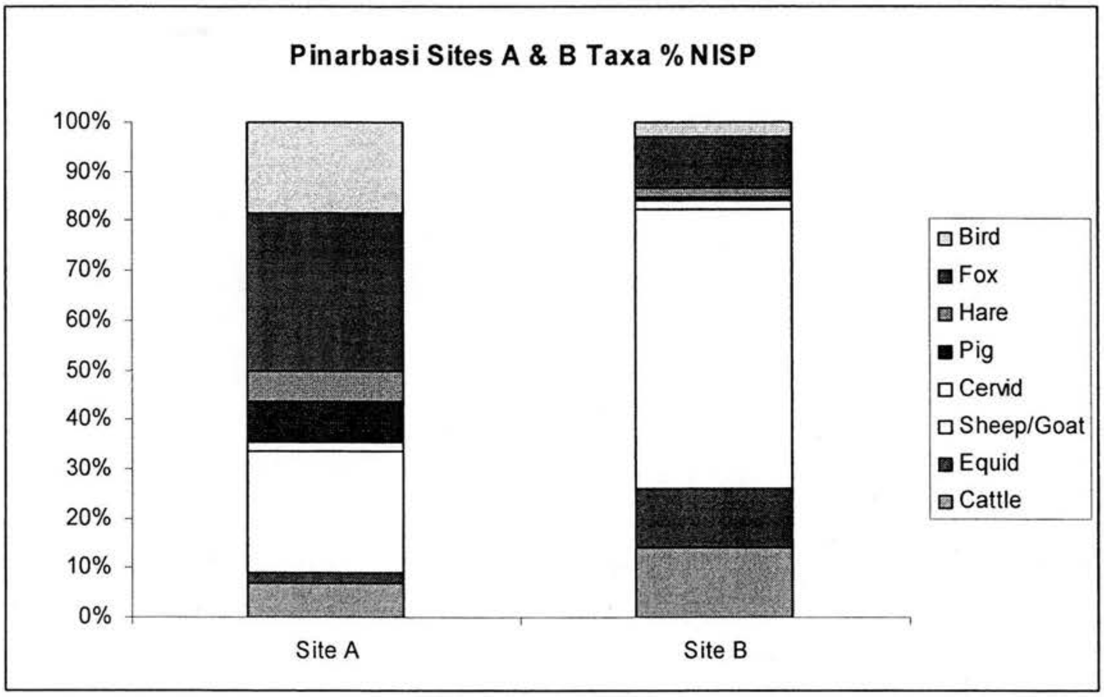


Figure 9.1: The relative proportions of selected taxa from Pinarbaşi A and B, expressed as %NISP.

Pinarbaşi Site B is interpreted as a caprine herding site where occupation can be confirmed in March/April and November/December. There is little evidence of cutting or gnawing marks on the bone assemblage and the assemblage is dominated by isolated teeth and dense bones such as carpals, tarsals, sesamoids and phalanges. The high number of unidentifiable bone fragments primarily from medium sized mammals suggests that all skeletal elements were originally present during initial deposition and their analytical absence is due in part to post-depositional destruction but primarily from intensive human butchery and processing of the bone. This fragmentation pattern indicates complete skeletons of medium sized animals were brought to the site, killed, butchered and then consumed.

We certainly can suppose that people with experience in sheep and goat domestication were able to try domesticating aurochs and boars. The data from both these taxa indicate a dominance of young individuals within the assemblage. Whether they represent a hunted or managed/herded population is still possible. The presence of other similarly dated Anatolian sites where both these taxa are either managed or fully domestic sets the precedent.

There is inferred evidence of structures existing within context BBH due to the recovery of shed deciduous molars from lambs that would indicate a penning wall existed at one time. In addition, deposits with stone uprights that have been interpreted as tent foundations have been recorded (Baird 2002). The seasonal occupation of the site is further supported by the recovery of large herbivores and carnivores such as cattle, horse, deer and foxes which appear to have been hunted at particular times, rather than scattered throughout the sequence. Wild taxa appear to have been targeted for meat when domestic sheep and goat yields were not at their highest return, this could therefore mean a possibly more permanent occupation of the site where differentially available resources were acquired throughout the year. Site B displays a dominance of caprines in addition to the continuation of hunting indicating wild taxa were not abandoned in favour of domesticates (Figure 9.1). On the contrary, they appear to be as important within the diet of both periods of occupation. The continued presence of small game animals such as fox, hare and bird within a 6th millennium assemblage at Site B is unique within Neolithic faunal assemblages. The relative abundance of small game dramatically decreases prior to and during the early stages of the transition to agriculture (Munroe 2002). Munroes' (2002) research reveals a decrease and at times elimination of low-ranking game within caprine herders' diets throughout the Zagros foothills of Iran and Iraq. Whether this is a result of settlement type, i.e. urban centres versus the excavation of smaller herding camps has not been addressed. It does however appear that at Site B, despite caprine domestication, small game animals continue to play a large role within the herders' diet. This attests to the rich environment that must have been mixed with grasses, shrubs and dwarf brush vegetation to have sustained large herds of cattle, three species of horse, deer and caprines in Central Anatolia from the 8th to the 6th millennium.

9.4 SUBSISTENCE IN CENTRAL ANATOLIA FROM THE 9TH TO THE 6TH MILLENNIUM BC

This section summarised the faunal evidence from Central Anatolian Neolithic sites from the 9th to the 6th millennium cal BC in light of the new evidence presented from Pinarbaşi Site A and B and the re-examination of data presented in Chapter 5

The early ECA II site of Pinarbaşi A has produced a diverse fauna, reflecting broad spectrum opportunistic hunting by small scale local hunter-gatherers. The taxa present include wild/domestic sheep, auroch, red deer, equids, wild boar, wildfowl and beaver. The small size of the sheep within the assemblage, in addition to mud brick architecture, suggests a behavioural shift from hunting to possibility a proto-domestic/domestic relationship with sheep emerging along with a more sedentary lifestyle in Central Anatolia during the latter part of ECA I and early ECA II period.

The range of faunal species from the ECA II site of Aşıklı Höyük is very similar to those from Pınarbaşı Site A. Buitenhuis' (1997) breakdown of taxa through the phases of Aşıklı Höyük demonstrates a clear dominance of caprines at over 70% throughout the sequence. The other taxa represented are cattle, equid, pig/boar and hare, each present in relatively low proportions, and cervids which are relatively rare however increase in number in the latter contexts. The equids and deer represent wild fauna, while Buitenhuis reports that the domestication status of cattle and pigs is as yet uncertain (1997:659). The sheep and goat have been interpreted as proto-domestic where Buitenhuis (1997) believes wild herds of sheep and goats were managed in such a way that no biological change affecting size of the taxa had occurred. The dominance of caprines (70%) within the assemblage, their culled status and the large number of peri-natal bones combine to provide evidence that supports domestication of these taxa. Furthermore, the inter-site relationship that existed between Aşikli Höyük and Musular indicates a sophisticated network of food procurement, processing and consumption operating in early Neolithic Central Anatolia (Martin *et al.* 2002). The comparison between Aşıklı Höyük and Pınarbaşı Site A on the basis of range of species appears to be very similar.

The large sedentary ECA II site of Canhasan III in the Karaman Plain is described as having cattle, boar/pig, sheep, goat, equids and cervids, but no quantified data are yet available although Payne (1972)[88] states that the main meat source was cattle. Until fuller publication, the status of the sheep, goat, cattle and pigs remains unknown.

The ECA II site of Suberde is contemporary with Canhasan III, and situated at the border of the Konya Plain and the Taurus Mountains. Sheep and goat dominate the assemblage, and have been classified as wild. Payne (1972) however argues that the sheep cull profile which shows all the animals to have been culled between 3 months and 3 years is strongly suggestive of herd management/domestication practices.[89] Morphometric data are not available. Boar/pig is interpreted as being wild on the basis of size, and cattle are seen as hunted, following Perkins and Daly's (1968) controversial argument of a 'schlepp effect'. The original interpretation of the site as a hunting village has now been questioned and there are reasons to believe that the sheep are under human control, if not fully domestic.

Faunal material from Çatalhöyük (East) suggests the site was established with domestic sheep and goat livestock. Data suggests that mixed farming, livestock, hunting, trapping, collecting and gathering were all practiced by the inhabitants. Wild cattle represent less than 20 %, equids 15 %, and cervids, boar/pig and hare making up relatively small proportions. Sheep and goats make up roughly 80 % of the earlier deposits and 65 % of the later deposits (Martin *et al* 2002).

The late ECA III site of Erbaba, produced a faunal assemblage dominated by sheep and goats and it is suggested they were used for secondary products (Bordaz and Bordaz 1983), but there are no data presented to substantiate this claim. Cattle were found to increase between the lower and upper levels, and are interpreted as domestic, although this should be treated with caution since no supporting morphometric data was provided. A reanalysis of the earliest levels by Makarewicz (1999) concurred that sheep and goats remains were most abundant, and that cattle, boar/pig and a suite of other taxa were present in much lower numbers. Makarewicz (1999) also suggests that cattle, sheep and goats were domestic on size grounds, but sample sizes of metrics for cattle and goats are too small to produce conclusive

[88] Whether this was calculated from quantification of relative proportions (e.g. NISP, MNI) or potential meat weights is not stated.

[89] The same age pattern was interpreted by Perkins and Daly (1968) as resulting from 'drive hunting', in which the old and young would have been already taken by predators.

results, and no metrical data for cattle are presented to support the claim. The status of the remains of boar/pig is uncertain (Martin *et al.* 2002).

The late ECA III site of Pinarbaşi B's fauna data closely resembles that of Çatalhöyük (East) and has been interpreted as representative of a seasonal caprine herding site where hunting also took place. In addition, the pattern of targeting particular wild taxa at Site B is mirrored at Çatalhöyük (East) as there is similar evidence to suggest wild animals were hunted when domestic meat returns were not at their highest (Martin *et al.* 2002: 211). However, unique to Site B's assemblage is the continued presence of wild goats. The one goat measurement that was taken is very large and clearly from a wild individual. Çatalhöyük (East) goat measurements have so far all fallen with a clearly domestic size range and no sizes comparable to the one recovered from Site B have been found (Martin *pers com.*[90]) The presence of wild goats at Site B is unique within the assumed domestic 'package' as goat domestication preceded sheep and in every other Neolithic site when sheep are identified as domestic so are goats. It appears from Site B's assemblage that sheep were domesticated in Central Anatolia but goats continue to remain wild possibly introduced from eastern sources. Sheep and goat remains are more dominant (65%) at Site B than they were at Pınarbaşı A. Morphometric analysis shows sheep at Site B to be of small size, similar to those believed to be domesticates. Cull patterns also show an emphasis on young animals, and in addition there are possible penning deposits.

Cattle compared to the remains at contemporary Çatalhöyük where horncores are an important part of the material, they are strikingly missing in the Pinarbasi material.

In short, all evidence convincingly points towards Pinarbasi B as a site occupied by sheep herds, with hunting and other activities taking place.

9.5 SUMMARY

Contrary to Gopher (1995), it appears that Neolithic settlements within Central Anatolia continue hunting traditions within their economy while practicing animal

---

[90] Louise Martin and I talked about the goat bone measurements from Çatalhöyük at the 5th International Conference of Archaeozoology of Southwest Asia held in London August 30-September 1, 2002. Louise said at that time that my measurement was very large compared to all the goat bone measurements from Çatalhöyük.

husbandry late into the Neolithic. This may be a direct representation of the abundance of taxa in Central Anatolia versus that of the Levant where Central Anatolian populations were not forced into restrictive domestic stock. Horwitz's (1993) geographic and environmental site classification model (Chapter 4) also does not appear to apply to Central Anatolia sites. The environmental reconstruction presented in Chapter 4 along with the faunal results summarised above contradicts Horwitz and Gopher's research in addition to environmental change models outlined in Chapter 3. Central Anatolian sites are found in mixed environments that at times could be highly unfavourable due to extensive seasonal flooding. This may be a reason for the continued co-existence of hunting and herding activities taking place throughout the Neolithic in Central Anatolia. In addition, fish, shellfish and waterfowl did not play any significant role in the diet of the villagers regardless of abundance. It appears that the adoption of a herding strategy and the continuation of selective hunting practices were external from environmental conditions and more of an internal change within the society or cultural invention (Chapter 3).

In sum, it appears that a similar taxa spectrum and subsistence was practiced by the main settlement sites in Central Anatolia (Table 9.1) and while the presence of the full suite of domesticates may not be particularly surprising at this date, there is still no overwhelming zooarchaeological data to convincingly demonstrate that domesticated cattle were present in Central Anatolia during the ECA III.

Pınarbaşı Site A	Aşikli Höyük	Can Hasan III	Suberde	Musular	Çatalhöyük East	Erbaba	Pınarbaşı Site B
Lagomorpha	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**	**Lagomorpha**
Lepus capensis	*Lepus capensis*		*Lepus capensis*	*Lepus capensis*	*Lepus capensis*	*Lepus capensis*	*Lepus capensis*
Carnivora	**Carnivora**	**Carnivora**	**Carnivora**	**Carnivora**	**Carnivora**	**Carnivora**	**Carnivora**
Carnivora sp.Undet.							
			Ursus arctos		*Ursus arctos*		
			Meles meles	*Meles meles*	*Meles meles*		
			Martes sp.				
Vulpes vulpes	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*	*Vulpes vulpes*
							Canis sp.
	Canis lupus	*Canis lupus*		*Canis lupus*	*Canis lupus*		
		Canis familiaris		*Canis familiaris*	*Canis familiaris*		
			Canis aureus				
			Felis silvestris		*Felis silvestris*		*Felis silvestris*
Artiodactyla	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**	**Artiodactyla**
Sus scrofa	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*	*Sus scrofa*
				Bos sp.			
Bos primigenius	*Bos primigenius*		*Bos primigenius*	*Bos primigenius*	*Bos primigenius*	*Bos primigenius*	*Bos primigenius*
					Bison bonansus		*Bison bonansus*
		Capra sp.			*Capra* sp.	*Capra* sp.	*Capra* sp.
	Capra aegagrus	*Capra aegagrus*	*Capra aegagrus*	*Capra aegagrus*			
					Gazella gazella		
Ovis sp.		*Ovis* sp.			*Ovis* sp.		
						Ovis aries	*Ovis aries*
	Ovis orientalis		*Ovis orientalis*	*Ovis orientalis*			
	Capreolus capreolus	*Capreolus capreolus*	*Capreolus capreolus*		*Capreolus capreolus*		
	Cervus elaphus	*Cervus elaphus*	*Cervus elaphus*	*Cervus elaphus*	*Cervus elaphus*		*Cervus elaphus*
	Dama dama		*Dama dama*	*Dama dama*	*Dama dama*		
Perissodactyla	**Perissodactyla**	**Perissodactyla**	**Perissodactyla**	**Perissodactyla**	**Perissodactyla**	**Perissodactyla**	**Perissodactyla**
Equus sp.			*Equus* sp(hemionus?)				*Equus* sp.
Equus hydruntinus	*Equus hydruntinus*			*Equus hydruntinus*	*Equus hydruntinus*		*Equus hydruntinus*
	Equus hemionus	*Equus hemionus*			*Equus hemionus*	*Equus hemionus*	*Equus hemionus*
				Equus caballus	*Equus caballus*		*Equus caballus*

Table 9.2: Representation of taxa from Central Anatolian Sites.

CHAPTER 10: DISCUSSION AND CONCLUSIONS

This chapter discusses the results from the analysis of Pinarbaşi Site A and B's faunal material and the significance of the sites with regard to the interpretation of subsistence practices during the Central Anatolian Neolithic. The major conclusions of the study, as they relate to the five key research questions outlined in Chapter 1, will be discussed. The reanalysis of Central Anatolian faunal assemblages has also yielded important conclusions with regard to subsistence practices for the region as a whole and these too will be discussed.

10.1 ARCHAEOLOGICAL IMPORTANCE OF PINARBAŞI

The excavations at Pinarbaşi have resulted in substantial knowledge pertaining to the settlement and development of agricultural communities within Central Anatolia during the early Neolithic. Based on the two seasons of excavation, the sites at Pinarbaşi have produced a prehistoric sequence from the Early Central Anatolian II stage and a late Early Central Anatolian III stage (Table 10.1). There remains the potential of an Early Central Anatolian I sequence from both sites and also a continuous sequence from unexcavated deposits that would create the longest continuous prehistoric sequence in Central Anatolia. Excavations did not hit virgin soil and therefore unexcavated deposits remain at the site in addition to four other rock shelters with ECA II and III cultural material present.

The analysis of Pinarbaşi A's faunal data has also expanded the definition of the late ECA I and ECA II subsistence stages. Pinarbaşi A provides the earliest evidence for subsistence practices of small scale local hunter-gatherers in Central Anatolia during these two periods. This is in contrast to excavations at Aşikli Höyük, dated just a century later whose assemblage contains 75-85% sheep and goat. This implies that the inhabitants of Aşikli invested the majority of their time into the management of wild caprines and rarely hunted other taxa. In less than a hundred years within ECA II there is now this dichotomy between hunting and management that is taking place within a defined region of Central Anatolia. If future data confirms the presence of domestic sheep at Pinarbaşi Site A, there would now be a direct link between Pinarbaşi A and Aşikli of small scale caprine management to large scale caprine management within less than a century.

CANeW Terminology	Time Span	Central Anatolian Sites	Traditional (Levantine) Terminology
ECA I	Younger Dryas - c. 9000 cal BC	**Possible Pinarbaşi A**	Late or Epi Palaeolithic
ECA II	c. 9000 - late 8th mill. cal BC	**Pinarbaşi A,** Aşikli, Musular, Suberde, Canhasan III	Aceramic Neolithic
ECA III A&B	Late 8th mill. - 6000 cal BC	Çatalhöyük (East), **Pinarbaşi B,** Erbaba	Neolithic (Early & Late)
ECA IV	6000 - 5500 cal BC	Köşk Höyük, Tepecik-Ciftlik, Çatalhöyük (West), Can hasan I	Early Chalcolithic
ECA V	5500 - 4000 cal BC	Güvercinkayasi	Middle Chalcolithic

Table 10.1: CANeW terminology and Levantine terminology.

Pinarbaşi faunal and cultural materials also elucidate the processes of increasing sedentism and the early development of sedentary societies within Central Anatolia from the earliest Neolithic. In addition, Pinarbaşi's faunal data challenges the domestication model that states the earliest development of life in permanent village communities and the adoption of herding took place in the Fertile Crescent core area which includes the Jordan valley, Israel and Syria. It appears from Site A's faunal data that the possible development of settlement and herding practices was not restricted to the core area and then disseminated outwards only after 7,500 BC (Buitenhuis 1994). Based on Site A's faunal data, human settlement and domestication practices took place over a much wider region and in much more diverse environments than the eastern Mediterranean zone. Central Anatolia should therefore not be considered as a marginal zone, but as part of a broader formation region of agricultural communities.

Faunal data from Pinarbaşi also enabled an inter site analysis to be performed from Central Anatolia's Konya Plain. An inter-site comparison between Pinarbaşi and Çatalhöyük's (East) faunal material revealed that Pinarbaşi Site B was occupied seasonally by caprine herders who also hunted local large herbivores and transported the majority of their large mammal meat off site to a larger settlement, possibly Çatalhöyük's (East). Regardless of the site, it appears that a pastoral movement of people was taking place and a larger network of relatedness existed between sites in Central Anatolia.

The rigorous sampling and collection procedures employed at Pinarbaşi make the recovered material comparable to Çatalhöyük (East) and Aşikli Höyük's material now being recovered during their continued excavations. The rigorous collection and sampling procedures employed at all three of these sites have now established a standard of sampling practices that future excavations in the region must employ in order to continue to be comparable to these sites.

10.2 CONCLUSIONS OF KEY RESEARCH QUESTIONS

Each of the key research questions outlined in Chapter 1 will be reviewed and discussed in relation to the results obtained from the analysis of animal bones from Pinarbaşi Site A and B.

i) Is Pinarbaşi Site A's faunal assemblage characteristic of an Early Central Anatolian II site?

The analysis of Pinarbaşi Site A's faunal assemblage revealed subsistence practices characteristic of a hunting based strategy. The faunal remains from Site A contain a broad spectrum of taxa which is characteristic of an ECA II settlement. Major taxa represent less than 50% of the total taxa recovered. Other taxa include fox, beaver, rodents, fish and birds. All taxa from the site were killed near the site indicating a primary butchery location. In addition, no specialised activities are evident in the treatment of the carcasses as all appear to have been processed to maximize meat returns. The sheep are considered to be wild due to the small sample recovered resulting in insufficient data to statistically prove domestication. It must, however, be noted that the sheep are morphologically quite small in size compared to the range in size expected for a wild sheep population. In addition, 89% of the sheep bones came from individuals killed before 2.5 years and foetal bones were recovered. Whether this represents hunting of pregnant female herds or a proto-domestic relationship with sheep during the transition from hunting to herding still remains unanswered. The data does, however, reveal the potential for these questions to be addressed and possibly answered if excavation at the site continues.

ii) Is Pinarbaşi Site B's faunal assemblage characteristic of an Early Central Anatolian III site?

The analysis of Pinarbaşi Site B's faunal assemblage revealed subsistence practices characteristic of a herd based economy and an ECA III site. Sheep and goat remains dominate the major taxa (65%). In addition, larger mammalian taxa represent the majority of the assemblage which contrasts with Site A. The specialization of subsistence practices towards herded caprines and the hunting of large wild mammals is interpreted as those activities taking place at a herded campsite where hunting of larger wild taxa occurred during seasonal occupation. The lack of substantial quantities of meat bearing elements from the large mammals indicates transportation off site and corroborates the interpretation of the site as seasonal and also hints at a relationship with a larger village settlement, possibly Çatalhöyük (East). In addition, it appears that Pinarbaşi Site B's faunal assemblage is quite unique amongst other Neolithic assemblages as the continued presence of small game animals such as fox, hare and bird occur within the assemblage.

iii) What kind of sites is Pinarbaşi Site A and B?

The analysis of the faunal material from Site A indicates a small scale local hunter gather campsite, occupied in the spring and winter months. Semi permanent occupation is hinted at due to the presence of mudbrick, and the quantities of the faunal material could indicate a behavioural shift from a hunting based economy to nomadic herding. However, due to the small data sample, this remains conjecture until more data is recovered.

With regards to the possible need for seasonal pasturing away from Çatalhöyük (East), seasonality evidence from Pinarbaşi Site B indicates that the site was used repeatedly throughout the year. The faunal activities also suggest scheduled hunting of large herbivore taxa which would have possibly migrated to the water source around Site B. Whether site B is a seasonal pasturing site associated with Çatalhöyük remains unclear, but given Site B's close proximity to Çatalhöyük and the resources at Site B, it is possible.

iv) Is there evidence to suggest that hunter-gatherers adopted herding independently in Central Anatolia during the early Holocene?

The term "hunting and herding" within the title reflects the diversity in behaviour that was taking place within the Pinarbaşi time frame in Central Anatolia. Examination of the faunal data from Pinarbaşi Site A indicates that hunting and broad spectrum subsistence was practiced at the site and the possibility of early caprine herding cannot be ruled out. Microlith tools suggests the occupants were indigenous to the region, and based on the identification of mud brick foundations, there is the possibility of a larger more permanent settlement at the 8500 cal BC date. Whether the settlers are indigenous to the region or are part of a migration of peoples and ideas remains unanswered with the present data. What is evident from the Pinarbaşi Site A and B data is that the subsistence strategies of hunter-gatherers were not abandoned in the process towards domestication. It is now clear that communities within the Anatolian Plateau devised subsistence strategies that combined past traditions but were also modified according to the needs of the region and a sedentary lifestyle.

v) Did climate affect settlement in Central Anatolia during the end of the Pleistocene and the beginning of the Holocene?

The impact of climatic change at the end of the Pleistocene and beginning of the Holocene on Central Anatolian appears to not have been a deterrent to settlement pattern in the region. On the contrary, even though the region is characterised as an arid plain with less than 300mm of annual precipitation, settlement occurred (Kuzucuoğlu 2002). The reconstruction of the area directly around Pinarbaşi with considerable quantities of standing water bodies and marshy areas, in addition to open grasslands with a light woodland cover, provided an ideal habitat for future domestic species and wild game to exist (Chapter 4). Evidence of ECA I occupation is attested to in the archaeological record and secure stratigraphic deposits with cultural material will be substantiated with future excavations. Environmental change appears to affect the region more after 6500 cal BC when extensive flooding of the Black Sea region possibly affected Central Anatolia (Ryan & Pitman 1998) settlement during the late Neolithic versus early agricultural sites.

The study of the animal bone from Pinarbaşi site A and B, supplements this picture of ecological diversity and has indicated that during the early Neolithic (8th millennium BC) forest and wetland habitats were probably more extensive than in later periods. The bone assemblages retrieved from Site A and B contained the remains of sheep, goat, auroch, bison, red deer, 3 species of horse, wild boar, wildfowl, hare, fox and beaver. Each large herbivore has specific habitat preferences. Aurochs (*Bos primigenius*) favoured a light forest or forest steppe environment. The bison (*Bison bonasus*) favour higher terrain covered with dense forests. The bezoar goat (*Capra aegagrus*) prefers high mountains but could also survive in a medium range treeless steppe environment. The wild sheep (*Ovis ammon*) prefer mountains, hills or high plateau area. Their diet consists of grass-legume mixtures of grass/clover and grass/alfalfa. The red deer (*Cervus elaphus*) prefer a largely deciduous or mixed forest with rich undergrowth. The wild boar (*Sus scrofa*) prefers wet environments such as swamps, lake shores and river banks that have vegetation cover of trees, bushes and reeds. Equines (Equus *hemionus, Equus hydruntinus* and *Equus caballus*) prefer a dry environment such as grassy steppe (Yakar 1994). These habitat preferences, in conjunction with the findings of charcoal analysis (Chapter 4) seem to confirm the existence, throughout the Neolithic, of a very diverse ecological setting comprising riparian and marsh vegetation, open woodland-steppe, oak woodland formations and treeless steppe directly around the sites at Pinarbaşi (Asouti 2002).

10.3 SUBSISTENCE PRACTICES IN THE CENTRAL ANATOLIAN NEOLITHIC

The faunal material from Pinarbaşi Site A, Aşikli Höyük, Can Hasan III, Suberde, Musular, Çatalhöyük (East), Erbaba and Pinarbaşi Site B were used to extrapolate cultural data in order to reassess the established subsistence pattern which characterised the region as an area of cattle domestication, where sheep and goat were domesticated much later.

Pinarbaşi Site A provides the earliest evidence for subsistence practices of small scale local hunter-gatherers in Central Anatolia. Based on the data gathered, it is hypothesized that initial proto-domestic management was beginning to taking place with local sheep populations. If future excavations are conducted at Site A and animal bone data gathered from these excavations corroborates this hypothesis, it will mean that in less than a century, the dependence on caprines for subsistence can be traced from Pinarbaşi Site A to Aşikli. The full-scale herding of morphologically domestic caprines is evident from the earliest levels at Çatalhöyük (East) which coincides with the end of occupation at Aşikli. Tentative evidence for selective culling of wild cattle appears at Aşikli and after Level VII in the Çatalhöyük (East) sequence.

The new data also suggests a much more sophisticated relationship existing between sites in Central Anatolia. It appears that a broader intersite relationship existed between major village settlements and outer lying small sites regarding subsistence practices. Aşikli and Musular's relationship is that of a central village site that had smaller processing areas, such as Musular, around the village that butchered the large number of herbivore taxa required to sustain the main settlement site. This same relationship appears at Çatalhöyük (East) and the off-site location called KOPAL. The KOPAL site appears to have different preparation, consumption and discard patterns from the main onsite area of Çatalhöyük (East), suggesting that a sophisticated butchering regime also existed here. A broader inter-site relationship is also proposed between Çatalhöyük (East) and Pinarbaşi Site B. Palaeoenvironemtnal research suggests that large-scale spring flooding surrounded Çatalhöyük (East) which would have necessitated seasonal pasturing at distances from the site (Martin *et al.* 2002). Pinarbaşi Site B, which is contemporaneous with the latter part of the Çatalhöyük (East) sequence and only 25km away, would possibly have provided such a location. Given Pinarbaşi Site B's water resources and open grasslands and the evidence of architectural remains used for short term habitation, the site possibly represents a seasonal pasturing location for Çatalhöyük. Faunal data from Pinarbaşi Site B corroborates the hypothesis of seasonal occupation with specialised hunting and herding activities occurring at the site, in addition to the transport of large meat bearing elements offsite. Çatalhöyük (East) could possibly have been this external recipient of large quantities of meat.

Drawing from the faunal material presented above, Central Anatolia subsistence strategies of hunter-gatherers were not abandoned in the process towards domestication. It is clear that communities devised subsistence strategies that combined past traditions modified according to the needs of a sedentary lifestyle. Central Anatolia can be characterised as an area where sheep and goat were the first domesticates. Cattle remain biologically wild, however their presence within the cultural fabric of the Central Anatolian populations clearly distinguishes the species from all others.

10.4 CONCLUSION

The term "hunting and herding" in the title reflects the diversity in behaviour that was taking place at Central Anatolian sites from the mid 9th to the late 6th millennium cal BC. The initial evidence suggests that during the mid 9th millennium cal BC there were communities that relied primarily on hunted resources. Faunal data from Central Anatolian sites reveal that subsistence strategies of hunter-gatherers were not abandoned in the process towards domestication during the incipient stage of agriculture. Early Neolithic communities within Central Anatolian devised subsistence strategies that combined hunting traditions in addition to pastoralism in order to fulfil the needs of a sedentary lifestyle well into the late Neolithic. The conclusions drawn from previous zooarchaeological publications (Westley 1970; Mellaart 1967, 1975; Perkins 1969) are now refuted and Central Anatolia can be included as a region developing within the Neolithic transition, not as an external anomaly.

What does the case study at Pinarbaşi and the reanalysis of subsistence in Central Anatolia tell us about the transition to agriculture in this region? The impact of the Neolithic Revolution was not nearly as uniform as is sometimes portrayed. The faunal evidence suggests that the transition to agriculture in Central Anatolia was not a result of environmental strain or a technological revolution that created an economy based solely on domestic resources. Data suggests that mixed farming, livestock, hunting, trapping, collecting and gathering were all practiced resulting in the mixing of old and new strategies.

10.5 DIRECTIONS FOR FUTURE RESEARCH

Future research on the animal bone from Pinarbaşi's two sites include carbon and nitrogen isotope analysis, a more detailed study of the caprine age and sexing data based on new research by Hesse (1984) and Zeder (2002) and a more detailed study of the avifaunal remains. Each will be reviewed briefly.

10.5.1 Carbon and nitrogen isotope analysis

Research by Pearson *et al.* (2002) has established ratios of stable carbon ($d^{13}C$) and nitrogen ($d^{15}N$) isotopes of caprine bone collagen from Çatalhöyük (East) and Aşikli Höyük caprines. This analysis has allowed for examination of plant exploitation and herbivory preference by caprines in Central Anatolia. Results indicate that domestic caprines from Çatalhöyük (East) consumed highly variable types of plants, suggesting individual herding practices may have occurred at the site. In contrast, the wild but controlled caprines from Aşikli Höyük were herded as a single population, or at least consumed very similar foods to each other, and were all confined to the same or similar environments (Pearson *et al.* 2002). Based on the interpretation of Pinarbaşi Site B as a herding site occupied seasonally and possibly connected to a broader network of sites within Central Anatolia, Pearson (pers. comm.) will broaden her study of caprines within Central Anatolia to include bones from Pinarbaşi Site A and B. The aim is to obtain isotopic signatures from the Pinarbaşi caprines that can be compared with Çatalhöyük (East) and Aşikli Höyük caprines to see if the Pinarbaşi caprines match either of the two larger sites. Isotopic analysis will therefore be used to infer herding practices employed by the occupants at Pinarbaşi Site A and B.

10.5.2 Caprines

When this study was begun, unfused elements were not measured. A reanalysis of unfused caprine bones would include the measurement of this material. The measurement of unfused sheep and goat bones from Ganj Dareh in Iraq by Hesse (1984) and Zeder and Hesse (2000) were plotted for each skeletal part separately without the use of any scaling technique. The research demonstrated the differences between the kill-off of sheep and goat by sex and age. Due to the large number of unfused material at Pinarbaşi, the site is ideal for this type of analysis.

10.5.3 Aves

Recovery of such a large number of bird bones at Pinarbaşi is the result of systematic wet and dry-sieving recovery procedures employed during excavation. The bird bones are presently in a preliminary stage of identification. A detailed study of the bird bones with regard to species identification is pending. Given the large number of bird bones recovered and the wide range of species indicated in the preliminary analysis, a more detailed study would aid in seasonality analysis and the reconstruction of local environmental conditions.

BIBLIOGRAPHY

Unknown.
1998 Charting the Birds of Central Anatolia" which appeared in the Finnish publication *Linnut*. http://www.crosswinds.net/~birdtrips/Anatolia98.html Trip Report: Anatolia (Turkey), May 20 - June 2, 1998

Anderson, K.
1998 Animal Domestication in Geographic Perspective. In *Society and Animals, Journal of Human-Animal Studies.* Vol. 6 No. 2, 33-45.

Asouti, E.
2002 Woodland Vegetation and fuel exploitation at the prehistoric campsite of Pinarbasi, south-central Anatolia, Turkey: evidence from the wood charcoal macro-remains. *Journal of Archaeological Science.*
(forthcoming) Report on the wood charcoal macro-remains from Çatalhöyük.

Asouti, E.and A. Fairbain
2002 Subsistence economy in Central Anatolia during the Neolithic: the archaeobotanical evidence. In F. Gérard and L. Thissen (eds.), *The Neolithic of Central Anatolia.* Istanbul, EGE Yayinlari, 181-192.

Asouti, E. and J. Hather
2001 Charcoal analysis and the reconstruction of ancient woodland vegetation in the Konya Basin, south-central Anatolia, Turkey: results from the Neolithic site of Çatalhöyük East. *Vegetation History and Archaeobotany* **10**, 23-32.

Baird, D.
1996 The Konya Plain Survey: aims and methods. In I. Hodder (ed.). *On the surface: Çatalhöyük 1993-1995.* Cambridge and London: McDonald Institute for Archaeological Research & British Institute of Archaeology at Ankara, 41-46.

Balkan-Atli, N.
1993 *La Néolithisation de l'Anatolie.* Paris: de Boccard.

Balkwill, D. and S. Cumbaa
1992 *A Guide to the Identification of Postcranial Bones of Bos taurus and Bison bison.* Ottawa Canadian Museum of Nature.

Bar-Yosef, O.
1981 The "Pre-Pottery Neolithic" in the Southern Levant. In J. Cauvin and P. Sanlaville (eds.), *Préhistoire du Levant*, 551-569.
1989 The PPNA in the Levant: an overview. *Paléorient* 15, 57-63.
1995 Earliest food producers in the Pre Pottery Neolithic (8000-5500 BP). In T. Levy (ed.). *The archaeology of Society in the Holy Land.*
1998 The Natufian Culture in the Levant. *Evolutionary Anthropology*, 159-177.

1995 The Origins of Agriculture in the Near East. In Douglas Price and Anne Brigitte (eds.), *Last Hunters First Farmers*. Santa Fe: School of American Research Press, 39-94.

2000 The context of animal domestication in southwestern Asia. In A. Coyke, H. Buitenhuis and F. Poplin (eds.) *Archaeozoology of the New East IVA*. M. Mashkour,. ARC – Publicatie 32, Netherlands, 185-195.

Bauer, I. E., McMorrow, J., Yalden, D.W.

1994 The Historic Ranges of Three Equid Species in North-East Africa: A Quantitative Comparison of Environmental Tolerances. *Journal of Biogeography* 21, 169-182.

Becker, C.

1991 The analysis of mammalian bones from Basta, a Prepottery Neolithic site in Jordan: problems and potential. *Paléorient* 17(1), 59-75.

Bender, B.

1978 Gatherer-hunter to farmer: a social perspective, *World Archaeology 10*, 204-22.

Benecke N.

1993 The exploitation of *Sus scrofa* (Linné, 1758) on the Crimean Peninsula and in southern Scandinavia in the Early and Middle Holocene. Two regions, two strategies. *In : Exploitation des animaux sauvages à travers le temps.* Juan-les-Pins : APDCA. 233-246.

Binford, L.

1968 Post-Pleistocene adaptations. In R. Binford and S. R. Binford (eds.), *New Perspectives in Archaeology*. Chicago: Aldine, 313-341.

1981 *Bones: ancient men and modern myths*. New York: Academic Press.

Blumler, M.

1991 Ecology, evolutionary theory and agricultural origins. In D. J. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*. London: UCL Press, 25-50.

Boessneck, J.

1969 Osteological differences between sheep (*Ovis aries* Linné) and goat (*Capra hircus* Linné). In E. Brothwell and E. Higgs (eds.), *Science in archaeology: a survey of progress and research*. London: Thames and Hudson, 331-358.

Boessneck, J. and von den Driesch, A.

1978 The significance of measuring animal bones from archaeological sites. In: Meadow, R. H. and Zeder, M. A. (eds.), Approaches to faunal analysis in the Middle East, pp. 25-39. Peabody Museum Bulletin 2, Harvard University, Cambridge, Mass.

Bökönyi, S.

1969 Archaeological problems and methods of recognising animal domestication. In P.J Ucko & G.W. Dimbleby (eds.). *The Domestication and Exploitation of Plants and Animals*. London: Duckworth, 219-229.

1970 A new method for the determination of the number of individuals in animal bone material. *American Journal of Archaeology* 74, 291-292.
1972 Zoological evidence for seasonal or permanent occupation of prehistoric settlements. In. P.J. Ucko, R. Tringham and G.W. Dimbleby (eds.), *Man, Settleent and Urbanism*. London, Duckworth, 121-126.
1976 Development of early stock rearing in the Near East. *Nature* 264, 19-23.
1984 Horse. In I.L. Mason (ed.), *Evolution of domesticated animals*. London: Longman, 162-173.
1986 *The equids of Umm Dababghiyah, Iraq*. Reichert: Wiesbaden.
1989 Definitions of animal domestication. In J. Clutton-Brock (ed.). *The Walking Larder: patterns of domestication, pastoralism, and predation*. Unwin Hyman: London, 22-27.

Bordaz, J.
1969 The Suberde excavations, south-western Turkey: an interim report. Tūrk Arkeologi Dergesi XVIII(2): 43-71.
1973 Current research in the Neolithic of south-central Turkey: Suberde, Erbaba and their chronological implications. American Journal of Archaeology 7(3):282:288.

Bordaz, J. and L. Bordaz
1983 Erbaba: the 1977 and 1978 seasons in perspective. *Tūrk Arkeologi Dergesi* 26, 85-93.

Boessneck, J. & A. von den Driesch.
1978 The significance of measuring animal bones from archaeological sites. In R. H. Meadow & M. A. Zeder (eds), *Approaches to faunal analysis in the Middle East*. Cambridge: Harvard University, 25-39.

Bottema, S.
1987 Chronology and Climactic Phases in the Near East from 16,000 to 10,000 BP. In Aurenche, O. Evin, J.and Hours, F. (eds.), *Chronologies in the Near East*. BAR S379, 295-305.

Bouissou, M-F, A. Boissy, P. Le Neidre and I. Veissier
2000 The Social behaviour of cattle. In L. J. Keeling and H.W. Gonyou (eds). *Social behaviour in Farm Animals*. CAB International.

Braidwood, L. S. and R. J. Braidwood
1960 Prelude to the appearance of village farming communities in south-eastern Asia. *Ancient Anatolia. Aspects of change and cultural development. Essays in honor of Machteld J. Mellink*. University of Wisconsin Press: Wisconsin, 3-11.

Buitenhuis, H.
1994 Note on the Archaeozoological Research around the Sea of Marmara. *Anatolica*, XX: 141-145.
1996 Archaeozoology of the Holocene in Anatolia: A Review. In Demirci, I., Özer, A. and Summers, G. (eds), *Archaeometry 94, The Proceedings of the 29th International Symposium on Archaeometry*: Ankara: Tübïtak Publications, 411-421.

1997 Aşıklı Höyük: a 'protodomestic" site. *Anthropozoologica* 25, 655-662.
(forthcoming) Musular: the first results of the analysis of the faunal remains, a field report.

Çambal, H.
1995 Archaeology in Turkey: a conspectus of recent evidence on the prehistoy and early historic periods. In *Archaeometry. International Symposium on Archaeometry*. Ankara 9-14 May 1994, 339-450.

Cauvin, J.
1987 Chronologie Relative et Absolue dans le Neolithique du Levant Nort ed l'Anatolie entre 10,000 et 8,000 BP. In O. Aurenche (ed.), *Chronologies in the Near East, Relative Chronologies and Absolute Chronology.* 315-342
2000 *The birth of the gods and the origins of agriculture*. Translated by Watkins. Cambridge: Cambridge University Press

Cauvin, J.and M.C.Cauvin
1984 Origines de l'agriculture au Levant:facteurs biologiques et socio-culturels. In T. C. Young Jr., P. E. L. Smith and P. Mortensen (eds.), *The Hilly Flanks and Beyond*. Chicago: University of Chicago Press, 43-55.

Cavalli-Sforza, L. L.
1996 The spread of agriculture and nomadic pastoralism: insights from genetics, linguistics and archaeology. In D. J. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*. London: UCL Press, 51-69.

Chaplin, R. E.
1971 *The study of animal bones from archaeological sites*. New York: Seminar Press.

Childe, V. G.
1928 *The most ancient East: the oriental prelude to European prehistory*. Kegan Paul, Trench, Trubner: London.
1952 *New light on the most ancient east*. 4th edition. London.
1958 *Man makes himself. Man's progress through the ages*. The new American Library: A Mentor Book. USA.

Clutton-Brock, J.
1979 The mammalian remains from the Jericho Tell. *Proceeding of the prehistoric Society* 45, 135-158.
1989 *The walking larder: Patterns of domestication, pastoralism and predation.* London: Unwin Hyman.
1999 *A Natural history of domesticated mammals*. Cambridge: University Press.

Cohen, N. H.
1977 *The food crisis in prehistory*. New Haven: Yale University Press.

Cohen H. R. and O. Erol
1969 Aspects of the palaeogeography of Central Anatolia. In *Journal of the Royal Geographic Society* 135, 388-389.

Cunningham, E.P.
1996 *History, Genetics and the Provisioning of Mankind New Light on Prehistory New genetic techniques enable us to rewrite the history of domestication.* The Boyle Medal Lecture at the Royal Dublin Society. http://www.imsgrp.com/ips/boyle/index.htm

Daly, P.
1969 Approaches to faunal analysis in archaeology. *American Antiquity* 34, 146-53.

Davis, S.
1977 Size variation of the fox, Vulpes vulpes in the palaeoarctic region today, and in Israel during the late Quaternary. *Journal of Zoology* 182, 343-351.
1980 Late Pleistocene and Holocene equid remains from Isreal. *Zoological Journal of the Linnean Society* 70, 289-312.
1992 Indentifiaction, classification and zooarchaeology. *Circaea* 9(1), 35-47.
1995 *The archaeology of animals.* London: B. T. Batsford Ltd (originally published 1987).

Degerbøl, M.
8888 Prehistoric cattle in Denmark and adjacent areas. In Mourant, A.E. and F. E. Zeuner (eds.), *Man and Cattle.* Royal Anthropological, 69-79.

Degerbøl, M.and J. Fredskild
1970 The auroc (*Bos primigenius*) and Neolithic domesticated cattle (*Bos Taurus domesticus Linn*) in Denmark. Kenbaze Danske Videnskabernes Kelskabo Biologica Skiripta 17, 1-77.

Deniz, E. and S. Payne
1982 Eruption and wear in the mandibular dentition as a guide to ageing Turkish angora goats. In B. Wilson, C. Grigson, and S. Payne (eds.), *Ageing and sexing animal bones from archaeological sites.* Oxford: British Archaeological Reports British Series 109, 155-205.

Dobney, K.
2003 Firstscience.com Early Falconry. Friday 17th January 2003. http://www.firstscience.com/site/articles/dobney.asp

Dobney, K. and K. Rielly
1988 A method for recording archaeological animal bones: the use of diagnostic zones. In *Circaea.* Volume 5, 79-96.

Dobney, K., M. Beech and D. Jaques
1999 Hunting the broad spectrum revolution: the characterisation of early Neolithic animal exploitation at Qermez Dere, Northern Mesopotamia. In. J. C. Driver (ed.), Zooarchaeology of the Pleistocene/Holocene Boundary: Proceedings of a symposium Held at the 8th Congress of the International Council for Archaeozoology. BAR International Series 800, 47-57.

von den Driesch A.
1976 A Guide to the Measurements of Animal Bones from Archaeological Sites. Cambridge, MA: Peabody Museum Bulletin 1.

von den Driesch, A. and U. Wodtke,
1997 The fauna of 'Ain Ghazal, a major PPN and Early PN settlement in Central Jordan. In H. Gebel and G. Rollefson (eds.), *The prehistory of Jordan, II. Perspectives from 1997*. Berlin: ex oriente, 511–556.

Ducos, P
1988 *Archaeozoologie quantitative – Les valeurs numériques immediates à Çatalhöyük*. Les Cahiers du Quaternaire, Nol 12.
1989 Defining domestication: a clarification. In J. Clutton-Brock and U. Hyman (eds.), *The Walking Larder: patterns of domestication, pastoralism, and predation*: London, 28-30

Egorov, O. V.
1967 *Wild Ungulates of Yakutia*. Israel Program for Scientific Translations, Jerusalem.

Eisenmann, V.
1986 Comparative osteology of modern and fossil horses, half-asses and asses. In R. H. Meadow and H.-P. Uerpmann (eds.), *Equids in the Ancient World*. Wiesbaden: Dr. Ludwig Reichert Verlag, 67-117.

Erinç S.
1978 Changes in the physical environment in Turkey since the last glacial. in *The environmental history of the Near and Middle East since the last ice age*. London: Academic Press, 87-110.

Erol O.
1987 The quaternary histroy of the lake basins of central and southern Anatolia. In *The environmental history of the Near and Middle East since the last ice age*. London: Academic Press, 111-139.

Esin, U.
1998a Hunted animals at Aşıklı and the environment. In P. Anreiter, L. Bartosiewicz, E. Jerem and W. Meid (eds.). *Man and the animal world: studies in archaeozoology, archaeology, anthropology and palaeolinguistics – in memorium Sándor Bökönyi*. Budapest: Archaeolingua, 215–226
1998b The Aceramic Site of Aşikli and its ecological conditions based on its floral and faunal remains. *TÜBA-AR* (1): 95-103.

Fisher, N. and R. Matthews
2001 The social behaviour of sheep. In L. J. Keeling and H. W. Gonyou (eds.), *Social Behaviour in Farm animals*. New Zealand: CAB International.

Flannery, K. V.
1969 Origins and ecological effects of early domestication in Iran and the Near East. In P.J Ucko & G.W. Dimbleby (eds.). *The Domestication and Exploitation of Plants and Animals*. London: Duckworth, 219-229.
1983 Early pig domestication in the fertile crescent: a retrospective look. In, T. C. Young Jr. (ed.), *The Hilly Flanks and Beyond: Essays on the Prehistory of South-western Asia*. Studies in Ancient Oriental Civilization, vol. 36. Chicago: The Oriental Institute of the University of Chicago, 163-188.

Frame, S., N. Russell and L. Martin
1999 Animal Bone Report in *Çatalhöyük 1999 Archive Report*. http://catal.arch.cam.ac.uk/catal/Archive.

French, D.
1970 Notes on the site distribution of the Çumra Area. *Anatolian Studies* 20, 139-148.

French, D. *et al.*
1972 Excavations at Can Hasan III, 1969-1970. In E. Higgs (ed.) *Papers in Economic Prehistory*. Cambridge: Cambridge University Press, 180-190.

Galton, F.
1883 *Inquiry into human faculty and its development*. London: Macmillan.

Garrard, A. *et al.*
1996 The emergence of crop cultivation and caprine herding in the 'Marginal Zone' of the southern Levant. In D. Harris (ed.), *The origins and spread of agriculture and pastoralism in Eurasia*. London: UCL Press, 204-226.

Garrod, A.
1999 Charting the emergence of cereal and pulse domestication in Southwest Asia. *Environmental Archaeology 4*, p.67-86.

Gilbert, S. G.
1987 *Pictoral Anatomy of the Cat*. Seattle: University of Washington Press.

Gilbert, A. S. and Singer, B. H.
1982 Reassessing zooarchaeological quantification. *World Archaeology* 14, 21-40.

Gopher, A.
1995 Early Pottery-Bearing groups in Israel – The Pottery Neolithic Period. In Thomas E. Levy (ed.), *The Archaeology of Society in the Holy Land*. Leicester University Press, London, 203-225.

Goring-Morris, N.
1995 Complex Hunter/Gatherers at the end of the Palaeolithic (20,000-10,000 BP). In Thomas E. Levy (ed.), *The Archaeology of Society in the Holy Land*. Leicester University Press, London, 225-280.

Grant, A.
1978 Variation in dental attrition in mammals and its relevance to age estimation. In D. R. Brothwell, K. D. Thomas, and J. Clutton-Brock (eds.), *Research problems in zooarchaeology*. London: University of London, 103-6.
1982 *The use of tooth wear as a guide to the age of domestic animals*. British Archaeological Reports, British Series 109, Oxford.

Grayson, F. K.
1984 *Quantitative Zooarchaeology: topics in the analysis or archaeological faunas*. Orlando, Florida: Academic Press.

Grigson, C.
1969 The uses and limitations of differences in absolute size in the distinction between the bones of aurochs (*Bos Primigenius*) and domestic cattle (*Bos taurus*). In Peter J. Ucklo and G. W. Dimbleby (eds.), *In the Domestication and exploitation of plants and animals*. London: Duckworth, 277-294.
1989 Size and sex: evidence for the domestication of cattle in the Near East. In A. Milles, D. Williams, and N. Gardner (eds.), *The Beginnings of Agriculture*. Oxford: British Archaeological Reports 496, 77-109.
1995 Cattle-keepers of the Northern Negev: Animal remains from the Chalcolithic site of Grar. In *Grar: A Chalcolithic site in the Northern Negev*, Isaac Gilead (ed.). Beersheva: Ben-Gurion University of the Negev Press, 77-481.

Harris, D.
1996 Domesticatory relationships of people, plants and animals. In R. Ellen & F. Katsuyoshi (eds.), *Redefining nature: Ecology, culture and domestication* . Oxford: Berg, 437-466.

Hare, B, M. Brown, C. Williamson, and M. Tomasello
2002 The Domestication of Social Cognition in Dogs. *Science* 298: 1634-1636.

Hecker, H.
1982 Domestication Revisited: Its Implications for Faunal Analysis. *Journal of Field Archaeology*, 9 (1982), 217-236.
1984 Oasis-Propinquity Theory. In J. Clutton Brock and C. Grigson (eds.), *Animals in Archaeology: Early Herders and their flocks*. Oxford: British Archaeological Reports 202, 309-307.

Helmer, D. Roitel V. Saña M. and G. Willcox
1989 Interprétations environnementales des données archéozoologiques et archéobotaniques en Syrie du Nord de 16000 BP à 7000 BP, et les débuts de la domestication des plantes et des animaux. In (M. Fortin & P. Aurenche, Eds.) Espace naturel, espace habité en Syrie du Nord (10e-2e millénaires av. J-C.). Lyon & Québec: Maison de l'Orient Méditerranéen, Canadian Society for Mesopotamian Studies, 9-33.

Hesse, B.
1982 Slaughter patterns and domestication: the beginning of pastoralism in western Iran. *Man* (N.S.) 17, 403-17.

1984 These are out Goats: the Origins of Herding in West Central Iran. In Clutton-Brock J. & C. Grigson (eds), *Animals and Archaeology 3. Early Herders and their Flocks*. Oxford: Brit. Arch. Rep., Int. Series 202, 243-264.

Hillman, G.
1996 Late Pleistocene Changes in wild plant foods available to hunter-gatherers of the Northern Fertile Crescent: possible preludes to cereal cultivation. In Harris, D. R. (ed.) The Origins and spread of Agriculture and Pastoralism in Eurasia. London: University College, 159-203.

Hillson, S.
1992 *Mammal bones and teeth: an introductory guide to methods of identification*. London: University College London, Institute of Archaeology.

Henry, D. and P. Turnbull
1985 Archaeology and faunal evidence from Natufian and Timnian Sites in southern Jordan. BASOR, 45-64.

Hodder, I.
1990 The domestication of Europe. Oxford: Blackwell.
1996 *On the surface: Çatalhöyük 1993-1995*. Cambridge and London: McDonald Institute for Archaeological Research & British Institute of Archaeology at Ankara. BIAA Monograph No. 22. Short Run Press: Exeter.

Hole, F.
1989 A two-part, two –stage model of domestication. In J. Clutton-Brock (ed.), *The Walking Larder: patterns of domestication, pastoralism, and predation*. London: Unwin Hyman, 22-27.

Hongo, H. and R. Meadow
1998 Pig exploitation at Neolithic Çayönü Tepesi (southeastern Anatolia). In S. Nelson (ed.), *Ancestors for the pigs: pigs in prehistory*. Pennsylvania: MASCA Research papers in Science and Archaeology, 77-98.
2000 Faunal remains from the Prepottery Neolithic levels at Çayönü, Southeastern Turkey: a preliminary report focussing on pigs (*Sus* sp.). In Mashkour, M. *et al.* (eds), *Archaeozoology of the Near East IVA: Proceedings from the fourth international symposium on the archaezoology of southwestern Asia and adjacent areas*. Groningen: ARC Publicatie 32, 121-140.

Hongo, H., R. Meadow, B. Öksuz, and G. Ilgizdi
2002 The process of ungulate domestication in prepottery Neolithic Çayönü, southeastern Turkey. In Mashkour, M. *et al.* (eds), *Archaeozoology of the Near East V: Proceedings from the fifth international symposium on the archaezoology of southwestern Asia and adjacent areas*. Groningen: ARC Publicatie 62, 153-165.

Horwitz, L. K.
1989 A reassessment of caprovine domesticatin in the Levantine Neolithic: old questions, new answers. In I. Hershkovitz (ed.), *People and culture in change*. Oxford: British Archaeological Reports, International Series 508 i, 153-181.

Horwitz, L. K. and P. Ducos
1998 An investigation into the origins of domestic sheep in the Southern Levan. In, H. Buitenhuis, L. Artosiewicz and A. M. Choyke (eds.), Archaeozoology of the Near East III. Proceedings of the third international symposium on the archaeozoology of Southwestern Asia and adjacent areas, Groningen, ARC – Publication 18: 80-94.

Horwitz, L. K. *et al.*
1993 Animal domestication in the southern Levant. *Paléorient* 25(2), 63-80.

del Hoyo, J. and A. Elliott and J. Sorgatal
1992 Handbook of the birds of the world. Volume 2. Lynx Edition: Barcelona.

Ingold, T.
1996 Growing plants and raising animals: an anthropological perspective on domestication. In, D. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*. Washington, D.C.: Smithsonian Institution Press, 12-24.

Jarmen, M. R. and P. F. Wilkinson
1972. Criteria of animal domestication. In E. S. Higgs (ed.), *Papers in economic prehistory*. Cambridge: Cambridge University Press, 83-96.

Kenyon, K. M.
1957 *Digging up Jericho*. London: Ernest Benn.

Klein, R. G. and K. Cruz-Uribe
1984 *The analysis of animal bones from archaeological sites*. Chicago: University of Chicago Press.

Köhler-Rollefson *et al.*
1988 The faunal from Neolithic 'Ain Ghazal. In Garrard A. and Gebel, H.-G. (eds.), *The prehistory of Jordan: the state of research in 1986*. BAR International Series 369(ii): Oxford, 423-430.

Kuzucuoğlu, C.
2002 The environmental frame in Central Anatolia from the 9th to the 6th millennia cal BC. In F. Gérard and L. Thissen (eds.), *The Neolithic of Central Anatolia*. Istanbul: Yayinlari, 33-58.

Legge, A.
1996 The beginnings of caprine domestication in southwest Asia. In D. J. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*. London: UCL Press, 238-262.

Levy, T. (ed.)
1995 *The Archaeology of Society in the Holy Land*. New York: Facts on File, Inc.

Lyman, R. L.
1994 *Vertebrate Taphonomy*. Cambridge: Cambridge University Press.

Makarewicz, C.
1999 The faunal remains of Neolithic Erbaba: processes of domestication and the herding economy. Unpublished BA Thesis, Department of Anthropology, Brandeis University.

Mathews, R.
2001 (Oral Presentation). Central Anatolian Neolithic e-Workshop notes.

Meadow, R.H.,
1983 The vertebrate faunal remqains from Hasanlu Period X at Hajji Firuz. Appendix G. In: M.M. Voigt (ed.), *Hajji Firuz Tepe, Iran: The Neolithic settlement*. Hasanlu Excavation Reports, vol. I. Philadelphia: The University Museum, 369-422.
1984 Animal domestication in the Middle East: a view from the eastern margin. In J. Clutton-Brock and C. Grigson, (eds.), *Animals and Archaeology 3: Early herders and their flocks*, Oxford: British Archaeological Reports International Series 202, 309-37.
1989 Osteological evidence for the process of animal domestication. In J. Clutton-Brock (ed.), *The Walking Larder*. London: Unwin Hyman, 80-87.

Martin, L.
1994 Hunting and herding in a semi-arid region: an archaeozoological and ethnological analysis of the faunal remains from the Epipalaeolithic and Neolithic of the eastern Jordanian steppe. Unpublished PhD thesis: University of Sheffield.

Martin, L., N. Russell and D. Carruthers
2002 Animal remains for the Central Anatolian Neolithic. In F. Gérard and L. Thissen (eds.), *The Neolithic of Central Anatolia*. Istanbul, EGE Yayinlari, 193-216.

Mayer, J. and J. Novak and I. Brisbin Jr.
1998 Evolution of molar size as a basis for distinguishing wild board from domestic swine: employing the present to decipher the past. In, S. Nelson (ed.), *Ancestors for the pigs: pigs in prehistory*. Pennsylvania: MASCA Research papers in Science and Archaeology, 39-53.

McClenachan, L. *et. al.*(eds.)
2001 *The Ecotone Magazine*. Journal of Environmental Studies, University of Oregon. Winter edition.

Mellart, J.
1967 *Çatal Höyük: A Neolithic Town in Anatolia*, London: Thames and Hudson.
1975 *The Neolithic of the Near East*. London: Thames and Hudson.

Moore, A.M.T.
1982 Agricultural origins in the Near East: a model for the 1980's. *World Archaeology* (14), 224-236.

Moore, A.M.T. and G.C. Hillman
1992 The Pleistocene to Holocene transition and human economy in southwest Asia: the impact of the Younger Dryas. *American Antiquity* (57), 482-494.

Morlan, R.
2002 Archaeological Radiocarbon Dating Database, Canadian Museum of Civilisation.
http://www.canadianarchaeology.com/radiocarbon/card/assoc.htm

Munroe, N.
2002 *Small Game Animals as indirect indicators of herd animals: domestication in Southwest Asia.* Paper given at the Fifth International Conference of Archaeozoology of Soutwest Asia. August 30-Setember 1. Institute of Archaeology, University College London: London.

Murray, N.
1990 Settlement and sedentism in the late Epipalaeolithic and early Neolithic of the Levant: A Palaeolithic revolution?.Unpublished BA Thesis, Department of Archaeology, University of Edinburgh.

Nelson, S.
1998 Introduction: pigs in prehistory. In S. Nelson (ed.), *Ancestors for the pigs: pigs in prehistory.* Pennsylvania: MASCA Research papers in Science and Archaeology, 77-98.

Noodle, B.
1985 Flesh on the bones. Productivity of animals I the past: speculations based on historical data and the performance of primitive livestock in Third World countries. Unpublished paper presented at 5th International conference of the International Council for Archaeozoology, Bordeaux, France, 25-30 August.

Öksüz, B.
2000 Analysis of the cattle bones of the Prepottery Neolithic settlement of Çayönü. In Mashkour, M. *et al.* (eds), *Archaeozoology of the Near East IVA: Proceedings from the fourth internations symposium on the archaezoology of southwestern Asia and adjacent areas.* Groningen: ARC Publicatie 32, 121-140.

Özbaşaran, M. and H. Buitenhuis
2002 Proposal for a regional terminology for Central Anatolia. In F. Gérard and L. Thissen (eds.), *The Neolithic of Central Anatolia.* Istanbul, EGE Yayinlari, 67-78.

Özdoğan, M.
1998 Anatolia from the Last Glacial Maximum to the Holocene Climatic Optimum: cultural formations and the impact of the environmental setting. *Paléorient*, 23, 249-62.

Payne, S.
1972a On the interpretation of bone samples from archaeological sites. In E. S. Higgs (ed.), *Papers in economic prehistory*. Cambridge: Cambridge University Press, 65-81.
1972b Can Hasan III, the Anatolian Aceramic and the Greek Neolithic. In E. S. Higgs (ed.), *Papers in economic prehistory*. Cambridge: Cambridge University Press, 191-194.
1973 Kill-off patterns in sheep and goats: the mandibles from Aşvan Kale. *Anatolian Studies,* 23, 281-303.
1985a Morphological distinctions between the mandibular teeth of young sheep, Ovis, and goats, Capra. *Journal of Archaeological Science* 12, 139-47.
1985b Animal bones from Aşikli Höyük. *Anatolian Studies* 35, 109-122.
1991 Early Holocene Equids from Tall-i-Mushki (Iran and Can Hasan III (Turkey). In R. Meadow and Hans-Peter Uerpmann (eds.) *Equids in the Ancient World.* Germany: Wiesbaden, Volume II.

Payne, S. and G. Bull
1988 Components of variation in measurements of pig bones and teeth, and the use of measurements to distinguish wild from domestic pig remains. *ArchœoZoologia* II, 27-65.

Pearson, J., M.P. Richards and R.E.M. Hedges.
2002 *Isotopic evidence for herding strategy and plant exploitation in the Neolithic of the Near East.* Paper presented at the 9th International Council of Archaeozoology at the University of Durham, 23rh-28th August.

Perkins, D.
1969 Fauna of Çatal Hüyük: vidence for early cattle domestication in Anatolia. *Science* 164, 177-179.
1973 A critique on the methods of quantifying faunal remains from archaeological sites. In J. Matolcsi (ed.). *Domestikationsforschung und Geschichte der Haustiere*. Budapest: Akadémiai Kiadó, 367-369.

Perkins, D. and P. Daly
1968 A hunters' village in Neolithic Turkey. *Scientific American* 219, 96-106.

Peters, J., D. Helmer, A. von den Driesch, and M. Saña Segui
1999 Early animal husbandry in the northern Levant. *Paléorient* 25(2), 27-47.

Reed, C. A.
1963 Osteoarchaeology. In D. Brothwell and E. S. Higgs (eds.), *Science in archaeology*. New York: Basic Books, 204-216.

Redding, R.
1984 Theoretical Determinants of a Herder's Decisions: Modelling Variation in the Sheep/Goat Ratio. In J. Clutton-Brock and C. Grigson (eds), *Animals and Archaeology 3: Early Herders and their Flocks.* Oxford: British Archaeological Reports, International Series 202, 223-241.
1988 Decision making in subsistence herding of sheep and goats in the Middle East. Unpublished PhD thesis. University of Michigan.

Redding, R. and M. Rosenberg
1998 Ancestral pigs: a new (Guinea) model for pig domestication in the Middle East. In S. Nelson (ed.), *Ancestors for the pigs: pigs in prehistory*. Pennsylvania: MASCA Research papers in Science and Archaeology, 65-76.

Reitz, E. J. and Elizabeth S. Wing
1999 *Zooarchaeology*. Cambridge: Cambridge University Press.

Rindos, D.
1984 *The Origins of Agriculture: an evolutionary perspective*. New York: University Press.

Rixson, D.
1989 Butchery evidence on animal bones. *Circaea*. Volume 6, 49-62.

Roberts, N.
1982 A note on the geomorphological environment of Catalhoyuk, Turkey. *Journal of Archaeological Science* 9, 341-348.

Roberts, N., P. Boyer and P. Romola.
1996 Preliminary results of geoarchaeological investigations at Çatalhöyük. In I. Hodder (ed), *On the surface: Çatalhöyük 1993-1995*. McDonald, Cambridge University Institute for Archaeological, 19-40.

Roberts, N., Black S., Boyer P., Eastwood W. J., Griffiths H. I., Lamb H. F., Leng M. J., Parish R., Reed M. J., Twigg D., & Yiğitbaşioğlu H.
1999 Chronology and stratigraphy of late Quaternary sediments in the Konya Basin, Turkey: results from the KOPAL project. *Quaternary Science Reviews* 18, 611-630.

Roberts, N., Reed J. M., Leng M. J., Kuzucuoğlu C., Fontugne M., Bertaux J., Woldring H., Bottema S., Black S., Hunt E., and Karabıyıkoğlu M.
2001 The tempo of Holocene climatic change in Eastern Mediterranean region: new high-resolution crater-lake sediment data from central Turkey. *The Holocene* 11(6), 721-736.

Rosenberg, M., R. Nesbitt, R. Redding and B. Peasnall
1998 Hallem Çemi pig husbandry and post Pleistocene adaptions along the Taurus-Zagros arch (Turkey). *Paléorient* 24(I), 25-41.

Rosenberg, M. and R. Redding
1998 Early pig husbandry in southwestern Asia and its implications for modelling the origins of food production. In S. Nelson (ed.), *Ancestors for the pigs: pigs in prehistory*. Pennsylvania: MASCA Research papers in Science and Archaeology, 55-64.

Russell, N. and L. Martin
2000 Neolithic Çatalhöyük: preliminary zooarchaeological results from the renewed excavations. In: M. Mashkour *et al.* (eds.), *Archaeozoology of the Near East* IV. Groningen: Arc Publicatie 32, 164-170.

Ryan, W. and W. Pitman
1988 *Noah's flood: The New Scientific Discoveries about the Event that Changed History*, New York: Simon & Schuster.

Savolainen, P., Y. Zhang, J. Luo, J. Lundeberg and T. Leitner
2002 Genetic Evidence for an East Asian Origin of Domestic Dogs in *Science* November 22; 298: 1610-1613.

Serpell, J.
1989 Pet-keeping and animal domestication: a reappraisal. In J. Clutton-Brock (ed.), The Walking Larder. London: Unwin Hyman, 10-19.

Sherratt, A.G.
1982 Mobile resources: settlement and exchange in early agricultural Europe. In, C. Renfrew and S. Shennan (eds.), *Ranking, Resource and exchange: Aspects of the Archaeology of Early European Society*. Cambridge: Cambridge University Press, 13-26.
1997 Climatic cycles and behavioural revolutions: the emergence of modern humans and the beginning of farming. *Antiquity*, 71: 271-287.

Shipman, P., G. Foster and M. Schoeninger
1984 Burnt bones and teeth: an experimental study of colour, morphology, crystal structure and shrinkage. *Journal of Archaeological Science* 11, 307-325.

Silver, I.
1969 The ageing of domestic animals. In D. R. Brothwell and E. S. Higgs (eds.), *Science in archaeology: a survey of progress and research*. New York: Praeger Publishing, 283-302.

Smith, P. and P Halstead
1989 The animal bone from medieval and postmedieval Doncaster. In P. Buckland, J.R. Magilton and C. Hayfield (eds.), *The Archaeology of Doncaster, 2. The Medieval and Later Town, Part II.* Oxford: British Archaeological Reports British Series 202(ii): 432-46.

Stampfli, H. R.
1983 The fauna of Jarmo with notes on animal bones from Matarrah, the 'Amug, and Karim Shahir. In L. S. Braidwood, R. J. Braidwood, B. Howe, C. A. Reed and P. J. Watson (eds.), Prehistoric Archaeology along the Zagros Flanks. Oriental Institute Publications 105. Chicago: The Oriental Institute of the University of Chicago, 431-483.

Stehlin, H. G. and P.I. Graziosi
1935 Picerche sugli Asinidi fossili d'Euripa. *Memorires de la societe Paleontologique Suisse*, 56: 1-73.

Tchernov, E.
1994 *An Early Neolithic Village in the Jordan Valley Part II: the fauna of Netiv Hagdud.* Cambridge: Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.

Thomas, H.
1993 *A Handbook of Archaeology: Cultures and Sites Volume I:1. Studies in Mediterranean Archaeology*. Paul Astroms Forlag, Jonsered.

Todd, I.
1976 *Çatal Höyük in perspective*. California: Cummings Publishing.

Turnbull
1983 The faunal remains from M'lalaat. In R. Braidwood et. Al (eds.), *Prehistoric Archaeology along the Zagros Flanks*. University of Chicago Oriental Institute Publication 105: Chicago, 693-695.

Trigger, B.
1992 *A History of Archaeological Thought*. Cambridge University Press.

Troy, C. *et al*
2001 Genetic evidence for the Near Eastern origin of domestic cattle. In. *Nature* Vol 410, 1088-1091.

Trut, L. N.
1999 Early Canid Domestication: The Farm Fox Experiment. *American Scientist*, Volume 87 March-April. Pp 160-169.

Uerpmann, H. P.
1973 Animal bone finds and economic archaeology: a critical study of 'osteoarchaeological' method. *World Archaeology* 4, 307-322.
1979 Size index method developed by Uerpmann (1979) and used by him for the study of the equids at Shams ed-Din Tannira, a Halafian site in Syria. He used the cumulative frequency of various bindices to compare the sized of the bones with those of the very large sample from Mureybet (c. 8000) where the equids were undoubtedly wild onagers or donkeys.
1987 *The ancient distribution of ungulate mammals in the Middle East*. Wiesbaden: Dr. Ludwig Reichert Verlag.
1989 Animal exploitation and the phasing of the transition from the Palaeolithic to the Neolithic. In J. Clutton-Brock (ed.), *The walking larder*. London: Unsin Hyman Ltd, 91-96.
1999 *Research on the prehistoric range of wild horses in Bulgaria*. http://archweb.nbu.bg/wildhorse.htm

Vigne, J.-D.
2001 Large mammals of early Aceramic Neolithic Cyprus: preliminary results from Pakekklisha Shillourokambos. In, Stuart Swiney (ed.), *The Earliest prehistory of Cyprus from colonization to exploitation*. Cyprus American Archaeological Research Institute Monograph Series, Volume 2. Boston: American Schools of Oriental Research, 55-60.

Voigt, M.
1978 Subsistence economy of the sixth millennium village in the Ushnu-Solduz Valley. In L. L. Levine and T. C. Young (eds) *Mountains and Lowlands: Essays in the Archaeology of Greater Mesopotamia*. Malibu: Bibliotheca Mesopotamica, 307-346.

Wasse, A.
2000 *The development of goat and sheep herding during the Levantine Neolithic.* Unpublished PhD thesis, Univeristy of London.

Watkins, T.
1990 The origins of house and home? World Archaeology 21, 336-47.
1996 Excavations at Pinarbaşi: the early stages. In I. Hodder (ed.). *On the surface: Çatalhöyük 1993-1995.* Cambridge and London: McDonald Institute for Archaeological Research & British Institute of Archaeology at Ankara, 47-57.
1998 Pinarbaşi, Karaman Province: Investigation the beginnings of settlement in Central Anatolia. In R. Mathews (ed), *Ancient Anatolia: fifty years work in the British Institute of Archaeology at Ankara.* Short Run Press: Exeter, 27-34.

Watson, J.
1979 The estimation of the relative frequencies of mammalian species. *Journal of Archaeological Science* 6, 127-137.

Westley, B.
1970 The Mammalian fauna. In J. Mellart (ed.), *Excavations at Hacilar.* Edinburgh: Edinburgh University Press, 245-247.

Whitcher S.
2000 *Animals, Environment, and Society: a zooarchaeological approach to the Late Chalcolithic – Early Bronze I transition in the southern Levant.* Unpublished PhD thesis. Edinburgh University.

Wilson, P.
1988 *The domestication of the human species.* New Haven: Yale University Press.

Yakar, J.
1991 *Prehistoric Anatolia, The Neolithic Transition and the Early Chalcolithic Period.* Tel Aviv University, Tel Aviv.

Zeder. M.
1991 *Feeding cities: specialized animal economy in the ancient Near East.* Washington, DC: Smithsonian Institution Press.
1994 Pigs in Palestine: The role of pigs in the Near Eastern subsistence from the vantage point of the southern Levant. In J. D. Seger and K. Mattingly (eds.). *Retrieving the Past: Essays on the Archaelogical research and methodology in honor of Gus Van Beek.* Cobb Institute of Archaeology.
1998 Pigs and emergent complexity in the ancient Near East. In S. Nelson (ed.), *Ancestors for the pigs: pigs in prehistory.* Pennsylvania: MASCA Research papers in Science and Archaeology, 65-76.

Zeder, M. and B. Hesse
1999 The initial domestication of goats (*Capra hircus*) in the Zagros Mountains 10,000 years ago. *Science* (287), 2254-2257.

Zeuner, F.
1963 *A history of domesticated animals.* London: Hutchinson.

APPENDIX 1: MEASUREMENTS OF 'STANDARD' ANIMALS

Measurements (in mm) of 'standard' animals used in the log-size index analysis of the different species[A1-1] and the type of measurements taken from all Central Anatolian Sites used in the comparison.

Element	Bos primigenius ♀	Ovis orientalis ♀	Capra aegagrus ♀
	1	2	3
scapula – SLC		21.4	21.8
humerus - Bd	97.0		
humerus – BT		32.3	38.7
radius – Bp	100.0	35.3	40.6
radius - Bd		33.2	30.9
metacarpus – Bp	74.0	26.9	29.8
metacarpus – Bd	73.0	27.2	32.9
phalanx I ant – GLpe		43.5	45.6
phalanx I ant – Bp	39.0		
phalanx II ant – GL		24.7	
phalanx II ant – Bp	36.0		
pelvis – LA		31.9	34.1
femur – Bp		49.4	51.0
femur – Bd		44.4	45.0
tibia – Bp		46.5	53.2
tibia – Bd	78.0	28.7	22.2
astragalus – GLl	83.0	32.9	32.5
calcaneus – GL	165.0	68.2	71.2
metatarsus – Bp	62.0	23.2	24.6
metatarsus – Bd	68.0	27.8	29.0
phalanx I post – GLpe		44.5	45.2
phalanx I post – Bp	35.5		
phalanx II post – GL		24.7	26.0
phalanx I post – Bp	34.0		
atlas – GLF		49.4	61.3
axis – BFcr		44.0	58.0

1: Female *Bos primigenius* from Ullerlev, Denmark published in Öksüz, 2000

2: Female Ovis orientalis from the Cilician Taurus, National Museum of Natural History, London #1876.8.7.4, measured by H. Buitenhuis

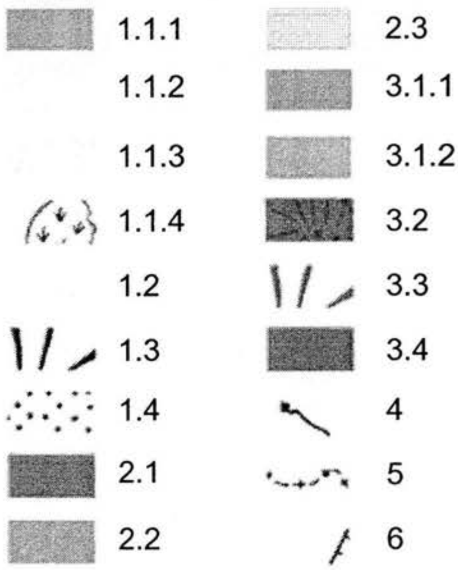
3: Female Capra aegagrus from the Cilician Taurus, National Museum of Natural History, London #76.8.7.11, measured by H. Buitenhuis

Measurement descriptions according to Von Den Driesch, 1976.

[A1-1] Data provided by Buitenhuis (forthcoming).

APPENDIX 2: LEGEND TO THE GEOMORPHOLOGICAL MAP OF CENTRAL ANATOLIA

The following legend is taken from Kuzucuoğlu's (2002: 51) research on the environmental frame in Central Anatolia.



Wetlands

1.1.1 **Freshwater perennial lakes** are located in karstic areas.

1.1.2 **Salt water wetlands**. They occupy the centre of evaporation plains where there may be perennial lakes or seasonal sebkhas.

1.1.3 **Shallow seasonal lakes** surrounded by marches.

1.1.4 **Freshwater marshes** are located on the apex of alluvial fans or in the vicinity of springs.

Plains

1.2 **Lake bottom**: They are impermeable and nutrient-poor, they are stepp-covered and often used as range lands. They become salty in times of heavy evaporation, and waterlogged in times of heavy rainfall. Not suitable for crops.

1.3 **Alluvial fans**: They are rearly Holocene in age and were built during two main episodes. They are composed of silts, sands and gravels and are easy to plough ard are good for crops because they have high organic matter.

1.4 **Quaternary depressions**: They are filled with sand and gravely material of fluviatile origin. Their origins are either volcano-tectonic or karstic. Easy to plough, their productivity depends mainly on their organic matter and mineral content.

Highlands

2. Sedentary highlands

2.1 **Taurus range**: These Mountains act as topographic and climatic barriers and also as water reservoirs. They are covered with forests.

2.2 **Eroded rolling and / or flattened old limestone residual mounds**: They outcrop from the Neogene limestone cover. Until recently, the slopes were covered with clear forests.

2.3 **Extensive karstic soft-limestone Neogene lacustrine plateaus**: Their relative altitudes are low (+50-200m) and their topography is flat. Because of their karstic characteristics, they are dry, stepp-covered range lands.

3. Volcanic highlands

3.1 Old volcanic complexes (Mio-Pliocene and Pliocene).

3.1.1. Ignimbritic plateaus of Cappadocia.

3.1.2 Complex volcanic massifs associated with old volcanoes.

3.2 Middle and upper Pleistocene stratovolcanoes.

3.3 Upper Pleistocen 'neés ardentes' deposits.

3.4 The Acigol eruptive complex, composed of a middle Pleistocene caldera associated with younger scoria cones and rhyolitic domes and maars.

4. Streams.

5. Watershed line of the endoreic plateaus of Central Anatolia.

6. Plio-Pleistocene fault line scarps.

APPENDIX 3: EARLY CENTRAL ANATOLIAN I SITES

There are presently 3 sites classified as ECA I in Central Anatolia. All have been recorded during surveys and identified based on surface artefact scatters.

The following is a summary of the sites classified as ECA I from the TAY database (http://tayproject.org). The data includes the site name, type of site, investigation method, province, district and region.

1. **Macunçay**

   Artifact Scatter - Survey

   Ankara - Merkez - Central Anatolia

2. **Dervisin Hani**

   Artifact Scatter – Survey

   Konya - Merkez - Central Anatolia

1. **Kizil I**
   Artifact Scatter - Survey
   Konya - Merkez - Central Anatolia

APPENDIX 4: EARLY CENTRAL ANATOLIAN II SITES

There are presently 23 sites classified as ECA II in Central Anatolia. 17 have been recorded in a survey and 6 have been excavated. Of these, 2 are artefact scatters, 6 are open air sites, 7 are mounds and 2 are ateliers.

The following is a summary of the sites classified as ECA II from the TAY database (http://tayproject.org). The data includes the site name, type of site, investigation method, province, district and region.

1. **Aciyer**

   Open-air Site - Survey

   Aksaray - - Central Anatolia

2. **Asikli Höyük**

   Mound - Excavation

   Aksaray - Gülagaç - Central Anatolia

3. **Bunus**

   Atelier -

   Aksaray - Merkez - Central Anatolia

4. **Can Hasan III**

   Mound - Excavation

   Karaman - Merkez - Central Anatolia

5. **Damsa**

   Atelier -

   Nevsehir - Ürgüp - Central Anatolia

6. **Dededag**

   Artifact Scatter - Survey

   Kayseri - Yahyali - Central Anatolia

7. **Ekinlik**

   Atelier - Survey

   Nigde - Çiftlik - Central Anatolia

8. **Güllüce**

   Artifact Scatter - Survey

   Nigde - Merkez - Central Anatolia

9. **Hacibeyli**

Mound - Survey

Kayseri - Yesilhisar - Central Anatolia

10. **Hantepe**

Atelier - Survey

Aksaray - Gülagaç - Central Anatolia

11. **Ilbiz**

Atelier - Survey

Nigde - Çiftlik - Central Anatolia

12. **Ininönü**

Open-air Site - Survey

Aksaray - Merkez - Central Anatolia

13. **Kaletepe**

Atelier - Excavation

Nigde - Çiftlik - Central Anatolia

14. **Keçiçayiri**

Mound - Survey

Eskisehir - Seyitgazi - Central Anatolia

15. **Musular**

Open-air Site - Excavation

Aksaray - Gülagaç - Central Anatolia

16. **Nenezi Dag**

Atelier - Survey

Aksaray - Merkez - Central Anatolia

17. **Pinarbasi A**

Open-air Site - Excavation

Karaman - Merkez - Central Anatolia

18. **Selime/Yaprak Hisar**

Atelier - Survey

Aksaray - Merkez - Central Anatolia

19. **Sirçan Tepe**

Mound - Survey

Aksaray - - Central Anatolia

20. **Suberde/Görüklük Tepe**

Mound - Excavation

Konya - Seydisehir - Central Anatolia

21. **Tepecik-Çiftlik**

    Mound - Survey

    Nigde - Çiftlik - Central Anatolia

22. **Toparin Pinar**

    Open-air Site - Survey

    Kayseri - Develi - Central Anatolia

23. **Yellibelen**

    Open-air Site - Survey

    Aksaray - Gülagaç - Central Anatolia

APPENDIX 5: EARLY CENTRAL ANATOLIAN III-V SITES

There are presently 40 sites classified as ECA III-V in Central Anatolia. 23 have been recorded in a survey and 8 have been excavated. Of these, 2 are classified as rock shelters, 2 as artefact scatters, 3 as open air sites, 31 as mounds and 2 as ateliers.

The following is a summary of the sites classified as ECA III from the TAY database (http://tayproject.org). The data includes the site name, type of site, investigation method, province, district and region.

1. **Alan Höyük**
   Mound - Survey
   Konya - Beysehir - Central Anatolia
2. **Avla Dag**
   Open-air Site - Survey
   Nevsehir - Ürgüp - Central Anatolia
3. **Ayvaz Höyük II**
   Open-air Site - Survey
   Ankara - Haymana - Central Anatolia
4. **Baharlar**
   Mound - Survey
   Denizli - Tavas - Central Anatolia
5. **Balikavi**
   Open-air Site - Survey
   Konya - Bozkir - Central Anatolia
6. **Bektemür Höyük**
   Mound - Survey
   Konya - Beysehir - Central Anatolia
7. **Beysehir Höyük C**
   Mound - Survey
   Konya - Beysehir - Central Anatolia
8. **Büyük Deliller Tepe**
   Atelier - Survey
   Aksaray - Gülagaç - Central Anatolia

9. **Can Hasan I**

Mound - Excavation

Karaman - Merkez - Central Anatolia

10. **Çatalhöyük (East)**

Mound - Excavation

Konya - Çumra - Central Anatolia

11. **Çem Çem**

Mound - Survey

Konya - Beysehir - Central Anatolia

12. **Çoban Ali Höyük**

Mound - Survey

Konya - Karapinar - Central Anatolia

13. **Degirmenözü**

Mound - Survey

Aksaray - Ortaköy - Central Anatolia

14. **Demircihöyük**

Mound - Excavation

Eskisehir - Çukurhisar - Central Anatolia

15. **Gölyolu**

Mound - Survey

Konya - Aksehir - Central Anatolia

16. **Hacihamza**

Mound - Survey

Kütahya - Altintas - Central Anatolia

17. **Hanvakfi Eski II**

Mound - Survey

Konya - Seydisehir - Central Anatolia

18. **Hassanlar**

Mound - Survey

Nevsehir - Kozakli - Central Anatolia

19. **Igdeli Çesme**

Mound - Survey

Nevsehir - Merkez - Central Anatolia

20. **Ilicapinar**

Mound - Survey

Konya - Cihanbeyli - Central Anatolia

21. **Kalkanli Höyük**

Mound - Survey

Eskisehir - - Central Anatolia

22. **Kasakli Höyük**

Mound - Survey

Konya - Beysehir - Central Anatolia

23. **Kayaardi Tepesi**

Artifact Scatter - Survey

Nigde - Merkez - Central Anatolia

24. **Kerhane Höyük**

Mound - Survey

Konya - Merkez - Central Anatolia

25. **Keyren Höyük**

Mound - Excavation

Karaman - Kazimkarabekir - Central Anatolia

26. **Kizilviran**

Mound - Survey

Konya - Merkez - Central Anatolia

27. **Kocahöyük II**

Mound - Survey

Karaman - Merkez - Central Anatolia

28. **Kösk Höyük**

Mound - Excavation

Nigde - Bor - Central Anatolia

29. **Kumluktepe**

Mound - Survey

Kayseri - Incesu - Central Anatolia

30. **Küçük Hüseyin Tepesi II**

Mound - Survey

Konya - Kulu - Central Anatolia

31. **Nigde - Tepebaglari**

Mound - Excavation

Nigde - Merkez - Central Anatolia

32. **Nigde Vilayet**

Artifact Scatter - Survey

Nigde - Merkez - Central Anatolia

33. **Ortakaraviran-North**

Mound - Survey

Konya - - Central Anatolia

34. **Pinarbasi B**

Rock shelter - Excavation

Karaman - Merkez - Central Anatolia

35. **Pinarbasi-Bor**

Mound - Excavation

Nigde - Bor - Central Anatolia

36. **Reis Tümegi**

Mound - Survey

Konya - Çumra - Central Anatolia

37. **Sapmaz Köy**

Mound - Survey

Aksaray - Merkez - Central Anatolia

38. **Türbe Tepesi II**

Atelier -

Aksaray - Gülagaç - Central Anatolia

39. **Yelbeyli/Kaleönü**

Rock Shelter - Survey

Konya - Bozkir - Central Anatolia

40. **Yörükmezari**

Mound - Survey

Konya - Aksehir - Central Anatolia

APPENDIX 6: PINARBAŞI SITE A FAUNAL DATA

Pinarbasi Site A: Basic Faunal Data

Context	Genus	Count on Elements	Element	Body Part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
ABJ	Aves	1	Humerus	Upper Forelimb	Distal end fragment		R				2-5	0.6
ABJ	Aves	1	Carpo-Metacarpus	Feet	Proximal Fragment		L				2-5	0.3
ABJ	Aves	1	Phalange	Feet	Almost Complete II			Fused			2-5	0.2
ABJ	Aves	1	Humerus	Upper Forelimb	Proximal Fragment						2-5	1.7
ABJ	Aves	1	Bone	Long Bone	Fragments						2-5	7.2
ABJ	Aves	1	Scapula	Upper Forelimb	Fragment						<2	0.05
ABJ	Aves	1	Scapula	Upper Forelimb	Fragment						<2	0.05
ABJ	Aves	1	Tarso-Metatarsus	Feet	Fragment		NA	NA			2-5	0.3
ABJ	Bos	1	Mandibular Tooth	Cranium	Fragment			No wear on			2-5	8.5
ABJ	Bos	1	Cranium	Cranium	Maxillary Fragment						2-5	18.3
ABJ	Bos	1	Sesamoid Bone	Feet	Almost Complete		NA	Adult	Burnt		2-5	1.7
ABJ	Bos	1	Femur	Upper Hindlimb	Proximal Caput			Fused			5-10	54.4
ABJ	Carnivore	1	Tooth	Cranium	Incisor, complete		L				2-5	0.8
ABJ	Cervid	1	Mandibular Tooth	Cranium	P4 Fragment		L	Very Worn			<2	2.6
ABJ	Equus	1	Carpal Bone	Feet	Complete III		L		A lot		2-5	12.5
ABJ	Large Mammal	1	Bone	Long Bone	Diaphysis Fragment		NA	NA			>10	43.2
ABJ	Large Mammal	4	Bone	Long Bone	Fragments						5-10	44
ABJ	Large Mammal	2	Bone	Long Bone	Fragments						5-10	37.6
ABJ	Large Mammal	1	Bone	Long Bone	Fragment						5-10	21
ABJ	Lepus	1	Middle Phalange	Feet	Complete		L				2-5	3.1
ABJ	Lepus	1	Phalange	Feet	Distal end fragment		R				2-5	2.8
ABJ	Lepus	1	Proximal	Feet	Proximal end fragment		R				2-5	0.8
ABJ	Not identifiable	1	Bone		Not identifiable				Worked			
ABJ	Not identifiable	1	Tooth		Fragment				Burnt		<2	0.05
ABJ	Not identifiable	2	Teeth		Fragments						2-5	2.3
ABJ	Not identifiable	1	Bone		Fragments						<2	81.2
ABJ	Not identifiable	1	Bone		Fragments						<2	0.6
ABJ	Not identifiable	1	Bone		Fragments				Burnt		2-5	27
ABJ	Not identifiable	71	Bone		Fragments						2-5	54.1
ABJ	Not identifiable	1	Tooth		Root fragment			Roots closed			2-5	0.5
ABJ	Not identifiable	4	Teeth		Fragments						<2	1.4
ABJ	Not identifiable	1	Bone		Fragments						<2	5.3
ABJ	Not identifiable	14	Bone		Fragments						2-5	31
ABJ	Not identifiable	1	Bone		Fragments						<2	18.5
ABJ	Not identifiable	61	Bone		Fragments						2-5	44.1
ABJ	Not identifiable	19	Bone		Fragments				Burnt		2-5	6.6
ABJ	Ovis	1	Astragalus	Feet	Complete		L				2-5	10.5
ABJ	Ovis	1	Proximal	Feet	Proximal epiphysis,			Unfused			<2	1.1
ABJ	Pisces	1	Vertebrae		Fragments						<2	0.05
ABJ	Pisces	1	Vertebrae		Fragment						<2	0.05
ABJ	Reptile	1	Vertebrae									

Pinarbasi Site A: Basic Faunal Data

Context	Genus	Count on Elements	Element	Body Part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
ABJ	Small	1	Mandible	Cranium	Fragment		NA	NA	Burnt		2-5	0.5
ABJ	Sus	1	Maxillary Tooth	Cranium	m1 or m2 complete		R	Little wear			2-5	10.8
ABJ	Sus	1	Tooth	Cranium	Deciduous tooth bud			Foetal			<2	0.05
ABJ	Sus	1	Mandibular Tooth	Cranium	Fragment						2-5	1.4
ABJ	Sus	1	Tooth	Cranium	Deciduous tooth bud			Foetal			<2	0.05
ABJ	Sus	1	Proximal	Feet	Proximal epiphysis,			Unfused			<2	0.9
ABJ	Vulpes	1	Cranium	Cranium	Maxilla with p4						<2	0.1
ABJ	Vulpes	1	Cranium	Cranium	Maxilla with m2		R	Adult	Burnt		<2	0.1
ABJ	Vulpes	1	Cranium	Cranium	Maxilla with p2		R	Unfused			2-5	2
ABJ	Vulpes	1	Cranium	Cranium	Canine						<2	0.05
ABJ	Vulpes	1	Cranium	Cranium	Premaxilla		L	Unfused			<2	0.3
ABJ	Vulpes	1	Distal Phalange	Feet	Complete		L				<2	0.2
ABJ	Vulpes	1	Ulna	Upper Forelimb	Diaphysis fragment		R				<2	0.05
ABJ	Vulpes	1	Metacarpal	Upper Forelimb	Proximal end fragment III		R	Proximal end			2-5	1.6
ABJ	Vulpes	1	Metacarpal	Upper Forelimb	Proximal end fragment		L	Unfused	Burnt		<2	0.3
ABR	Arvicola	1	Mandible	Cranium	With m1 & m2		R				<2	0.05
ABR	Arvicola	1	Mandible	Cranium	With m1 & m2		R				<2	0.05
ABR	Arvicola	1	Maxillary Tooth	Cranium	m2 complete		L				<2	0.05
ABR	Aves	1	Coracoid	Back	Complete		L				2-5	0.1
ABR	Aves	1	Phalange	Feet	Digit II fragment						<2	0.1
ABR	Aves	17	Bone	Long Bone	Fragments		NA	NA			2-5	2.8
ABR	Aves	1	Scapula	Upper Forelimb	Proximal end fragment		L				<2	0.05
ABR	Aves	1	Radius	Upper Forelimb	Proximal end fragment						2-5	0.6
ABR	Aves	1	Humerus	Upper Forelimb	Diaphysis Fragment		NA	NA			5-10	3.7
ABR	Carnivore	1	Mandible	Cranium	Ramus fragment		L				2-5	0.2
ABR	Carnivore	1	Tooth	Cranium	Fragment of dp2/dp3 or		L				2-5	1.4
ABR	Carnivore	1	Metapodial	Feet	Distal end fragment		R		Burnt		2-5	0.6
ABR	Carnivore	1	Metacarpal	Feet	Proximal end fragment III		L	NA			2-5	0.8
ABR	Carnivore	1	Phalange	Feet	Distal end fragment						2-5	1.1
ABR	Carnivore	1	Phalange	Feet	Distal end fragment		L			Burnt	2-5	3.5
ABR	Castor	1	Middle Phalange	Feet	Complete			Fused			<2	0.2
ABR	Lepus	1	Tarsal Bone	Feet	Complete						<2	0.4
ABR	Lepus	1	Metacarpal	Feet	Proxial end fragment				Burnt		<2	0.05
ABR	Lepus	1	Humerus	Upper Forelimb	Distal end fragment		L	Fused	Burnt		<2	0.05
ABR	Not identifiable	1	Bone		Fragments						<2	86.6
ABR	Not identifiable	233	Bone		Fragments				Burnt		2-5	63.4
ABR	Not identifiable	73	Bone		Fragments						2-5	100
ABR	Not identifiable	1	Tooth		Fragments						2-5	3.8
ABR	Not identifiable	6	Bone		Fragments						5-10	113
ABR	Ovis/Capra	1	Maxillary Tooth	Cranium	m1 or m2 Fragment		R	Permanent			2-5	1.7
ABR	Ovis/Capra	1	Ulna	Upper Forelimb	Distal end fragment		L	Fused	Burnt		<2	0.4

Pinarbasi Site A: Basic Faunal Data

Context	Genus	Count on Elements	Element	Body Part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
ABR	Reptile	1	Vertebrae		Fragment				Burnt		<2	0.1
ABR	Reptile	1	Vertebrae									
ABR	Reptile	1	Vertebrae									
ABR	Reptile	1	Vertebrae								<2	9.5
ABR	Rodent	1	Mandible		Space for m1 & m2		R		Root		<2	0.1
ABR	Sus	1	Mandibular Tooth	Cranium	dp2, Almost Complete		L	Deciduous	Burnt		<2	0.2
ABR	Sus	1	Maxillary Tooth	Cranium	dp4 or m1 broken		R	Heavily worn			2-5	1.8
ABR	Sus	1	Mandibular Tooth	Cranium	Incisor		R	Deciduous			2-5	0.5
ABR	Vulpes	1	Scapula	Back	Distal end fragment						2-5	0.8
ABU	Arvicola	1	Mandible	Cranium	Complete, with I, m1,m2,		R				<2	0.3
ABU	Aves	1	Coracoid	Back	Proximal end		L				2-5	0.6
ABU	Aves	1	Carpo-Metacarpus	Feet	Proximal end		L				2-5	0.3
ABU	Aves	1	Carpo-Metacarpus	Feet	Fragment		R				2-5	0.05
ABU	Aves	1	Tarso-Metatarsus	Feet	Distal end		L				2-5	0.1
ABU	Aves	1	Tarso-Metatarsus	Feet	Distal end		L				<2	0.05
ABU	Aves	1	Humerus	Upper Forelimb	Proximal end		L				5-10	4.6
ABU	Aves	1	Humerus	Upper Forelimb	Proximal end		L				2-5	1.8
ABU	Aves	1	Coracoid	Back	Fragment		L				<2	0.1
ABU	Aves	1	Phalange	Feet	Complete II		L	Fused			2-5	0.3
ABU	Aves	1	Ulna	Upper Forelimb	Distal end		R				2-5	0.2
ABU	Aves	1	Coracoid	Back	Fragment		L				<2	0.05
ABU	Aves	1	Humerus	Upper Forelimb	Distal end		R				2-5	0.2
ABU	Aves	1	Femur	Upper Hindlimb	Distal end fragment		R	Fused	Burnt		<2	0.05
ABU	Aves	1	Femur	Upper Hindlimb	Distal end fragment		L	Fused			<2	0.2
ABU	Aves	1	Coracoid	Back	Fragment						2-5	0.1
ABU	Aves	1	Radius	Upper Forelimb	Distal end fragment		L				2-5	0.1
ABU	Aves	1	Bone	Long Bone	Fragments						2-5	6.1
ABU	Aves	1	Carpo-Metacarpus	Feet	Fragment							
ABU	Bos	1	Sesamoid Bone	Feet	Complete Proximal bone		NA				2-5	7
ABU	Bos	1	Tarsal Bone	Feet	Complete lateral		L				2-5	18.6
ABU	Bos	1	Carpal Bone	Feet	Intermediate Carpal		L				2-5	29.9
ABU	Bos	1	Carpal Bone	Feet	Fragment II & III		R	Adult?	Sliced		2-5	18.8
ABU	Bos	1	Middle Phalange	Feet	Proximal end fragment		NA	Fused	Burnt		2-5	1.8
ABU	Bos	1	Metacarpal	Feet	Proximal end fragment		L	Adult			2-5	8.7
ABU	Bos	1	Tibia	Upper Hindlimb	Distal end fragment		R	Distal end	split		>10	191.6
ABU	Carnivore	1	Tooth	Cranium	Canine fragment		L				2-5	0.6
ABU	Carnivore	1	Cranium	Cranium	Zygomatic Process						<2	0.05
ABU	Carnivore	1	Tooth	Cranium	Molar				Burnt		<2	0.1
ABU	Carnivore	1	Humerus	Upper Forelimb	Proximal diaphysis end		R	Juvenile			<2	0.1
ABU	Carnivore	1	Femur	Upper Hindlimb	Proximal end and			fused			<2	0.05
ABU	Cervid	1	Scapula	Back	Distal end fragment		L	Fused			5-10	11.7

Pinarbasi Site A: Basic Faunal Data

Context	Genus	Count on Elements	Element	Body Part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
ABU	Cervid	1	Carpal Bone	Feet	Accessary Carpal Bone		R				2-5	1.8
ABU	Equus	1	Mandibular Tooth	Cranium	Fragment M1 or M2		R	High crowned			5-10	26.6
ABU	Equus	1	Maxillary Tooth	Cranium	Fragment		R	High crowned			5-10	20.4
ABU	Homo	1	Tooth		Deciduous fragment						<2	0.2
ABU	Homo	1	Distal Phalange		Complete							
ABU	Large Mammal	17	Bone	Long Bone	Fragments						5-10	418.9
ABU	Lepus	1	Astragalus	Feet	Complete		R				<2	0.6
ABU	Lepus	1	Astragalus	Feet	Complete		R				<2	0.5
ABU	Lepus	1	Calcaneus	Feet	Proximal end		R	Fused	Burnt		2-5	0.7
ABU	Lepus	1	Ulna	Upper Forelimb	Proximal end		L		Burnt		<2	0.3
ABU	Not identifiable	1	Bone		Fragment of ischium		R	Unfused			2-5	12.4
ABU	Not Identifiable	93	Teeth		Fragments						2-5	51.5
ABU	Not Identifiable	1	Bone		Fragment						<2	4.4
ABU	Not Identifiable	1	Bone		Fragment						<2	129.4
ABU	Not Identifiable	78	Bone		Fragments						2-5	122.8
ABU	Not Identifiable	15	Bone		Fragments				Burnt		2-5	26.5
ABU	Not Identifiable	64	Bone		Fragments				Burnt		<2	11.5
ABU	Not Identifiable	1	Bone		Fragment						<2	19.5
ABU	Not identifiable	1	Bone		Fragment				Burnt		<2	1.2
ABU	Not identifiable	1	Bone		Complete						<2	0.05
ABU	Not identifiable	1	Bone		Fragment						<2	0.5
ABU	Not identifiable	1	Rib		Fragments						2-5	2
ABU	Not identifiable	4	Vertebrae		Fragments						2-5	1
ABU	Ovis	1	Atlas	Cranium	Almost complete	Female ?	NA	Fused			5-10	61.6
ABU	Ovis	1	Mandibular Tooth	Cranium	P4: comlete		L	High Crown:			2-5	1.8
ABU	Ovis	1	Middle Phalange	Feet	Distal end			Distal end			<2	1.5
ABU	Ovis	1	Metatarsal	Feet	Distal epiphysis			Distal end			<2	0.9
ABU	Ovis	1	Carpal Bone	Feet	Complete II & III		R				<2	1.2
ABU	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone		L				2-5	1.6
ABU	Ovis	1	Metatarsal	Feet	Distal epiphysis			Distal end			<2	2.3
ABU	Ovis	1	Carpal Bone	Feet	Accessary Carpal Bone		R		Larger		<2	0.8
ABU	Ovis	1	Middle Phalange	Feet	Proximal end			Unfused	Burnt		<2	0.1
ABU	Ovis	1	Radius	Upper Forelimb	Distal diaphysis fragment		L	Unfused	Very		2-5	0.9
ABU	Ovis/Capra	1	Innominate	Back	Ilium Fragment		R	Unfused			2-5	0.8
ABU	Ovis/Capra	1	Innominate	Back	Ilium Fragment		L	Unfused			2-5	0.7
ABU	Ovis/Capra	1	Innominate	Back	Pubis Fragment		R	Unfused			2-5	0.5
ABU	Ovis/Capra	1	Mandibular Tooth	Cranium	Fragment, P3		R	Roots closed			<2	0.7
ABU	Ovis/Capra	1	Mandibular Tooth	Cranium	Fragment, P2		R	Roots closed			<2	0.4
ABU	Ovis/Capra	1	Mandibular Tooth	Cranium	Fragment, P3		R	Roots closed			<2	0.4
ABU	Ovis/Capra	1	Mandibular Tooth	Cranium	Fragment, P2		R	Roots closed				
ABU	Ovis/Capra	1	Proximal	Feet	Epiphysis complete			Unfused			<2	0.6

Pinarbasi Site A: Basic Faunal Data

Context	Genus	Count on Elements	Element	Body Part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
ABU	Ovis/Capra	1	Proximal	Feet	Epiphysis complete			Unfused			<2	0.3
ABU	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment						<2	0.7
ABU	Ovis/Capra	1	Astragalus	Feet	Complete		R	Foetal	Porous		<2	0.6
ABU	Ovis/Capra	1	Astragalus	Feet	Complete		R	Foetal	Porous		<2	0.5
ABU	Ovis/Capra	1	Calcaneus	Feet	Complete		R	Foetal	Porous		<2	0.4
ABU	Ovis/Capra	1	Calcaneus	Feet	Fragment of proximal		L	Foetal	Porous		<2	0.3
ABU	Ovis/Capra	1	Proximal	Feet	Complete			Unfused			<2	0.5
ABU	Ovis/Capra	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone						<2	0.05
ABU	Ovis/Capra	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone						<2	0.05
ABU	Ovis/Capra	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone				Burnt		<2	0.05
ABU	Ovis/Capra	1	Sesamoid Bone	Feet	Complete Distal Bone				Burnt		<2	0.2
ABU	Ovis/Capra	1	Distal Phalange	Feet	Fragment						<2	0.05
ABU	Ovis/Capra	1	Distal Phalange	Feet	Complete Digit II or IV				Burnt		<2	0.05
ABU	Ovis/Capra	1	Calcaneus	Feet	Proximal end complete		R	Unfused				
ABU	Ovis/Capra	1	Phalange	Feet	Distal end		L	Fused	Burnt		<2	0.3
ABU	Ovis/Capra	1	Ulna	Upper Forelimb	Distal epiphysis		R	Unfused			<2	0.2
ABU	Ovis/Capra	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		L	Unfused	Very		<2	0.5
ABU	Pisces	1	Vertebrae		Fragment						<2	0.05
ABU	Rodent	1	Mandible		Fragment		L				<2	0.05
ABU	Small Mammal	1	Radius	Upper Forelimb	Proximal end fragment		L	Fused	Burnt		<2	0.05
ABU	Sus	1	Tooth	Cranium	Permanent Lower p2		R	Roots open			<2	0.2
ABU	Sus	1	Tooth	Cranium	Fragment			Roots open	Burnt		<2	0.2
ABU	Sus	1	Tooth	Cranium	Fragment						<2	0.1
ABU	Sus	1	Metapodial	Feet	Distal end III OR IV			Fused			<2	2
ABU	Sus	1	Proximal	Feet	Distal end of Digit II or IV				Burnt		2-5	0.9
ABU	Vulpes	1	Cranium	Cranium	Parietal		NA	Unfused			<2	0.1
ABU	Vulpes	1	Cranium	Cranium	Parietal		NA	Fused			2-5	0.4
ABU	Vulpes	1	Cranium	Cranium	Zygomatic Process		NA	Adult			2-5	0.2
ABU	Vulpes	1	Mandible	Cranium	Fragment Condyle				Burnt		<2	0.1
ABU	Vulpes	1	Mandibular Tooth	Cranium	M1 fragment						<2	0.05
ABU	Vulpes	1	Tarsal Bone	Feet	Complete IV						<2	0.05
ABU	Vulpes	1	Carpal Bone	Feet	Radial Carpal Bone						<2	0.05
ABU	Vulpes	1	Tarsal Bone	Feet	Complete Central Bone						<2	0.05
ABU	Vulpes	1	Astragalus	Feet	Complete		L				<2	0.05
ABU	Vulpes	1	Carpal Bone	Feet	Almost complete II		R				<2	1.3
ABU	Vulpes	1	Metatarsal	Feet	Proximal end IV		R	Fused			2-5	0.3
ABU	Vulpes	1	Middle Phalange	Feet	Complete		L	NA			<2	0.4
ABU	Vulpes	1	Middle Phalange	Feet	Complete		NA	Adult			<2	0.1
ABU	Vulpes	1	Middle Phalange	Feet	Proximal end		R	Pourus bone			2-5	0.3
ABU	Vulpes	1	Proximal	Feet	Proximal end						2-5	1.7
ABU	Vulpes	1	Proximal	Feet	Proximal end		R				<2	0.7

Pinarbasi Site A: Basic Faunal Data

Context	Genus	Count on Elements	Element	Body Part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
ABU	Vulpes	1	Proximal	Feet	Proximal end		NA	NA			<2	0.05
ABU	Vulpes	1	Proximal	Feet	Distal end		NA	NA			<2	0.05
ABU	Vulpes	1	Distal Phalange	Feet	Complete		NA	Adult	Burnt		<2	0.1
ABU	Vulpes	1	Distal Phalange	Feet	Complete						2-5	0.2
ABU	Vulpes	1	Distal Phalange	Feet	Fragment						<2	0.05
ABU	Vulpes	1	Humerus	Upper Forelimb	Proximal epiphysis				Burnt		<2	0.05
ABU	Vulpes	1	Radius	Upper Forelimb	Proximal end		R				<2	0.4
ABU	Vulpes	1	Ulna	Upper Forelimb	Distal epiphysis				Slight		<2	0.1
ABU	Vulpes	1	Radius	Upper Forelimb	Proximal end complete		R	Fused	Burnt		<2	0.1
ABU	Vulpes	1	Femur	Upper Hindlimb	Distal epiphysis		L				2-5	0.9

Appendix 7: Pınarbaşı Site B Faunal Data

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAI	Not identifiable	1	Bone	Bone	Fragment				Burnt		2-5	2.5
BAJ	Not identifiable	1	Bone	Bone	Fragment						<2	1.2
BAJ	Not identifiable	1	Bone	Bone	Fragment				Burnt		<2	2
BAJ	Not identifiable	1	Bone	Bone	Fragment						<2	2.3
BAJ	Not identifiable	13	Bone	Bone	Fragments						2-5	2
BAJ	Not identifiable	7	Bone	Bone	Fragments				Burnt		2-5	1.9
BAJ	Not identifiable	1	Bone	Bone	Fragment				Burnt		<2	0.3
BAJ	Vulpes	1	Mandible	Cranium	Fragment				Burnt		2-5	0.1
BAJ	Vulpes	1	Middle Phalange	Feet	Complete				Burnt		<2	3
BAJ	Vulpes	1	Sesamoid Bone	Feet	Complete Distal Bone		NA		Burnt		<2	0.6
BAJ	Vulpes	1	Ulna	Upper Forelimb	Proximal End Fragment		R				<2	1.6
BAK	Aves	1	Coracoid	Back	Fragment		L				2-5	4.9
BAK	Aves	1	Coracoid	Back	Fragment						<2	2.7
BAK	Aves	1	Humerus	Upper Forelimb	Proximal end fragment		L				2-5	0.7
BAK	Bos	1	Carpal Bone	Feet	Complete IV			Fused			2-5	8.2
BAK	Bos	1	Mandibular Tooth	Cranium	M3 Almost Complete		R	No wear on distal crown			5-10	0.3
BAK	Bos	1	Mandibular Tooth	Cranium	P2 complete		R	Roots open			2-5	
BAK	Bos	1	Mandibular Tooth	Cranium	P3 fragment		L				2-5	35.9
BAK	Bos	1	Mandibular Tooth	Cranium	Fragment		R				2-5	21.6
BAK	Bos	1	Metatarsal	Feet	Epiphysis Complete digit III		L	Unfused			2-5	5.2
BAK	Bos	1	Metatarsal	Feet	Distal epiphysis fragment		NA	Fused			2-5	36.4
BAK	Bos	1	Metatarsal	Feet	Distal end: goes with 150			Fused				48.8
BAK	Bos	1	Metatarsal	Feet	Diaphysis Fragment		L				2-5	26.4
BAK	Bos	1	Middle Phalange	Feet	Proximal end fragment		NA	Fused			2-5	103.1
BAK	Bos	1	Proximal Phalange	Feet	Almost complete		NA	Fused			5-10	237.1
BAK	Bos	1	Proximal Phalange	Feet	Distal Fragment: not bos		L				2-5	61.8
BAK	Bos	1	Proximal Phalange	Feet	Fragment: goes with 144			Fused			2-5	35
BAK	Bos	1	Sesamoid Bone	Feet	Complete Proximal bone		NA				<2	500
BAK	Bos	1	Sesamoid Bone	Feet	Complete		L				2-5	38
BAK	Capra	1	Metatarsal	Feet	Epiphysis Complete III			Unfused			<2	18.9
BAK	Carnivore	1	Cranium	Cranium	Tympanic Bulla Fragment		L				<2	28.1
BAK	Carnivore	1	Cranium	Cranium	Tympanic Bulla Fragment				distinguish if		<2	2
BAK	Carnivore	1	Cranium	Cranium	Zygomatic Process Fragment		L	Fused	Burnt	sample 23	2-5	3.3
BAK	Equus	1	Astragalus	Feet	Fragment		R					1.1
BAK	Equus	1	Carpal Bone	Feet	Fragment Radial Carpal Bone		R	Unfused	Burnt		2-5	17.5
BAK	Equus	1	Carpal Bone	Feet	Fragment III		R				2-5	40.1
BAK	Equus	1	Carpal Bone	Feet	Accessary Carpal Bone Complete		L				2-5	16.3
BAK	Equus	1	Carpal Bone	Feet	Fragment Intermediate Bone		R		Burnt		2-5	190.7
BAK	Equus	1	Cranium	Cranium	Occipital condyle & bisioccipital fragment			Fused			2-5	103.9
BAK	Equus	1	Cranium	Cranium	Maxilla & Palate		R	Unfused			5-10	1.9
BAK	Equus	1	Cranium	Cranium	Fragment		R	Fused				18.8
BAK	Equus	1	Distal Phalange	Feet	Almost Complete		L	Fused			2-5	48.8
BAK	Equus	1	Mandibular Tooth	Cranium	P4 Complete		R	Medium Wear			5-10	99.9
BAK	Equus	1	Mandibular Tooth	Cranium	M1 or M2 Complete		L	Roots Open High Crown			5-10	2.2
BAK	Equus	1	Mandibular Tooth	Cranium	dP3 Almost complete		R		Goes with 130		2-5	9.4
BAK	Equus	1	Mandibular Tooth	Cranium	dP2 Fragment		R				2-5	16
BAK	Equus	1	Maxillary Tooth	Cranium	M1 Complete		L	Roots Open High Crown	Goes with 122		5-10	3
BAK	Equus	1	Maxillary Tooth	Cranium	Fragment of a P2-M4?		L	Roots Closing High Crown			5-10	16.1
BAK	Equus	1	Maxillary Tooth	Cranium	M3 Complete		L	Roots Open High Crown			5-10	47.2
BAK	Equus	1	Maxillary Tooth	Cranium	M2 Almost complete		L				5-10	2
BAK	Equus	1	Maxillary Tooth	Cranium	M1 Almost Complete		L				5-10	6.9

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAK	Equus	1	Maxillary Tooth	Cranium	P2 Complete. Goes with 116		L	Roots Open High Crown			5-10	8.4
BAK	Equus	1	Maxillary Tooth	Cranium	M1 or M2 Almost complete		R	Roots Just closing			2-5	1.7
BAK	Equus	1	Maxillary Tooth	Cranium	P2 Fragment						2-5	3
BAK	Equus	1	Metacarpal	Feet	Proximal end & diaphysis fragment		NA	Adult			5-10	1.5
BAK	Equus	1	Metapodial	Feet	Proximal end fragment		L	Fused			2-5	4
BAK	Equus	1	Metatarsal	Feet	Proximal end fragment II		L	Unfused			2-5	14.7
BAK	Equus	1	Metatarsal	Feet	Proximal end fragment IV		L			caudal side	2-5	26.5
BAK	Equus	1	Middle Phalange	Feet	Complete		R	Fused			2-5	6.4
BAK	Equus	1	Middle Phalange	Feet	Complete		R	Fused			2-5	20.7
BAK	Equus	1	Middle Phalange	Feet	Proximal end complete		NA	Unfused			2-5	12.4
BAK	Equus	1	Proximal Phalange	Feet	Almost Complete		R	Fused			2-5	33.2
BAK	Equus	1	Proximal Phalange	Feet	Proximal Fragment		L	Fused			2-5	9.3
BAK	Equus	12	Teeth	Cranium	Fragments		NA	NA			2-5	30.5
BAK	Equus	1	Tooth	Cranium	Fragment						2-5	68.7
BAK	Equus	1	Ulna	Upper Forelimb	Proximal end fragment		R		Identification:		5-10	1.5
BAK	Large Mammal	1	Bone	Bone	Proximal end fragment			Fused			2-5	4.2
BAK	Large Mammal	1	Bone	Bone	Fragment							27.1
BAK	Large Mammal	1	Bone	Bone	Fragment				Burnt		5-10	6
BAK	Large Mammal	1	Mandible	Cranium	Fragment		NA	NA	possible working			1.9
BAK	Large Mammal	7	Rib	Back	Fragments		NA	NA			2-5	0.9
BAK	Large Mammal	52	Teeth	Cranium	Fragments						5-10	1
BAK	Large Mammal	1	Vertebrae	Back	Lumbar body fragment		NA	NA			2-5	0.3
BAK	Lepus	1	Metatarsal	Feet	Proximal end fragment		R				2-5	0.1
BAK	Medium Mammal	8	Vertebrae	Back	Caudal fragment		NA	NA			2-5	1.4
BAK	Not identifiable	15	Bone	Bone	Fragments						5-10	1.4
BAK	Not identifiable	290	Bone	Bone	Fragments						2-5	2.2
BAK	Not identifiable	1	Bone	Bone	Fragments						<2	1.3
BAK	Not identifiable	30	Bone	Bone	Fragments				Burnt		2-5	0.6
BAK	Not identifiable	1	Bone	Bone	Fragments				Burnt		<2	0.2
BAK	Not identifiable	1	Bone	Bone	Fragments						<2	0.7
BAK	Not identifiable	1	Cranium	Cranium	Fragments						2-5	0.5
BAK	Not identifiable	29	Rib	Back	Fragments						2-5	0.1
BAK	Not identifiable	1	Rib	Back	Fragment						5-10	23.1
BAK	Not identifiable	1	Tooth	Cranium	Root fragment						<2	1.5
BAK	Not identifiable	1	Tooth	Cranium	Fragments						<2	1.5
BAK	Not identifiable	1	Vertebrae	Back	Fragments						2-5	0.1
BAK	Not identifiable	1	Vertebrae	Back	Fragments						<2	2
BAK	Ovis	1	Mandible	Cranium	Fragment with i1-c		R					4.9
BAK	Ovis	1	Mandibular Tooth	Cranium	P4		L	High crown: roots open			2-5	6.3
BAK	Ovis	1	Maxillary Tooth	Cranium	P3 or P4 complete		R	Roots open			2-5	0.2
BAK	Ovis	1	Metacarpal	Feet	Proximal end fragment		L		shaft		>10	0.6
BAK	Ovis	1	Proximal Phalange	Feet	Proximal end fragment			Unfused			2-5	0.4
BAK	Ovis	1	Radius	Upper Forelimb	Distal end fragment		L	Unfused			5-10	0.2
BAK	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L				2-5	0.2
BAK	Ovis/Capra	1	Bone	Upper Forelimb	Diaphysis fragment		NA	NA			2-5	3.1
BAK	Ovis/Capra	1	Carpal Bone	Feet	Complete II & III		L					1.7
BAK	Ovis/Capra	1	Cranium	Cranium	Occipital condyle		R					3
BAK	Ovis/Capra	1	Femur	Upper Hindlimb	Proximal end fragment		L	Fused	herbivore		2-5	5.2
BAK	Ovis/Capra	1	Femur	Upper Hindlimb	Distal End Fragment		L	Fused			2-5	0.5
BAK	Ovis/Capra	1	Femur	Upper Hindlimb	Distal epiphysis		L	Adult			5-10	2.2
BAK	Ovis/Capra	1	Humerus	Upper Forelimb	Diaphysis fragment		R	Proximal & Distal end Unfused	bone		2-5	2.8

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAK	Ovis/Capra	1	Mandibular Tooth	Cranium	dP2 or P2 complete			Roots open			<2	0.1
BAK	Ovis/Capra	1	Metacarpal	Feet	Fragment			Fused	Burnt		2-5	44.4
BAK	Ovis/Capra	1	Metacarpal	Feet	Distal end fragment			Unfused			2-5	8
BAK	Ovis/Capra	1	Metatarsal	Feet	Distal end fragment			Unfused			5-10	10.4
BAK	Ovis/Capra	1	Middle Phalange	Feet	Digit IIIComplete						2-5	12.2
BAK	Ovis/Capra	1	Proximal Phalange	Feet	Complete: sheep, articulation unlike deer			Unfused	identification		2-5	0.2
BAK	Ovis/Capra	1	Scapula	Upper Forelimb	Proximal end fragment		R	Unfused			2-5	1.5
BAK	Ovis/Capra	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L			Mark	2-5	1.2
BAK	Ovis/Capra	1	Tarsal Bone	Feet	Complete I & II		L			dorsal side	<2	4.3
BAK	Ovis/Capra	11	Teeth	Cranium	Fragments		NA	NA			2-5	0.2
BAK	Ovis/Capra	1	Tibia	Upper Hindlimb	Diaphysis fragment		L	Unfused	bone		2-5	0.2
BAK	Ovis/Capra	1	Tooth	Cranium	Fragment		R				2-5	7.8
BAK	Reptile	1	Bone	Bone								0.6
BAK	Reptile	1	Bone	Bone	possible tooth row							0.05
BAK	Rodent	1	Mandible	Cranium	Teeth present, fragment: reptile?		R				<2	0.2
BAK	Rodent	1	Tooth	Cranium	Incisor Fragment						<2	0.8
BAK	Rodent	1	Tooth	Cranium	Fragment with root						<2	2.9
BAK	Sus	1	Middle Phalange	Feet	Fragment			Unfused			2-5	0.1
BAK	Sus	1	Scapula	Upper Forelimb	Fragment		R	Unfused			>10	0.1
BAK	Sus	1	Ulna	Upper Forelimb	Proximal end fragment: goes with 157		L	Unfused to Radius			>10	1.1
BAK	Sus	1	Ulna	Upper Forelimb	Proximal end fragment: goes with 149		L	Unfused to Radius	149			1.2
BAK	Vulpes	1	Cranium	Cranium	Zygomatic						<2	22.4
BAK	Vulpes	1	Cranium	Cranium	Zygomatic		L		epiphysis missing		>10	15.5
BAK	Vulpes	1	Humerus	Upper Forelimb	Complete: Proximal epiphysis missing		L	Neonatal	holes in condyle		<2	0.05
BAK	Vulpes	1	Mandible	Cranium	Fragment		R		missing		2-5	1.6
BAK	Vulpes	1	Mandible	Cranium	Fragment Ramus		R		Burnt		5-10	0.3
BAK	Vulpes	1	Mandible	Cranium	Fragment		R	Unfused	bone. Goes with		<2	0.4
BAK	Vulpes	1	Mandible	Cranium	Fragment		L		missing		2-5	0.2
BAK	Vulpes	1	Mandible	Cranium	Fragment		L				2-5	0.2
BAK	Vulpes	1	Mandible	Cranium	Fragment, no teeth		R		316, total length		2-5	3
BAK	Vulpes	1	Mandible	Cranium	Fragment		R		316		2-5	1.2
BAK	Vulpes	1	Mandible	Cranium	Ramus fragment with m2 & m3 no teeth		R		315		2-5	3.8
BAK	Vulpes	1	Mandibular Tooth	Cranium	Canine		R		missing		2-5	3.8
BAK	Vulpes	1	Mandibular Tooth	Cranium	P2 complete		L				<2	1.5
BAK	Vulpes	1	Mandibular Tooth	Cranium	M2 complete						<2	0.1
BAK	Vulpes	1	Mandibular Tooth	Cranium	M2 complete						<2	0.2
BAK	Vulpes	1	Mandibular Tooth	Cranium	P3, complete						5-10	6.9
BAK	Vulpes	1	Mandibular Tooth	Cranium	P3 or P4, complete						<2	0.7
BAK	Vulpes	1	Mandibular Tooth	Cranium	M1, roots broken						<2	0.3
BAK	Vulpes	1	Mandibular Tooth	Cranium	I3, complete		R?	Adult			2-5	0.2
BAK	Vulpes	1	Mandibular Tooth	Cranium	I1, complete		R	Adult			<2	0.1
BAK	Vulpes	1	Mandibular Tooth	Cranium	M1, fragment		NA	Adult			2-5	0.1
BAK	Vulpes	1	Mandibular Tooth	Cranium	P2, in two pieces, roots broken		L	Unfused		distal side	2-5	0.6
BAK	Vulpes	1	Mandibular Tooth	Cranium	M1, fragment		L	Unfused			<2	0.6
BAK	Vulpes	1	Mandibular Tooth	Cranium	M1, fragment		L	Adult			2-5	
BAK	Vulpes	1	Mandibular Tooth	Cranium	M2, compete		R	Adult			2-5	4.2
BAK	Vulpes	1	Mandibular Tooth	Cranium	M1, complete		R	Adult			2-5	4.5
BAK	Vulpes	1	Mandibular Tooth	Cranium	P4, complete		R	Adult			5-10	
BAK	Vulpes	1	Mandibular Tooth	Cranium	P3, complete		L?	Adult			2-5	
BAK	Vulpes	1	Mandibular Tooth	Cranium	P2, complete		L	Unfused			<2	0.2
BAK	Vulpes	1	Maxillary Tooth	Cranium	M2, complete		L	Adult			5-10	7.3

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAK	Vulpes	1	Metacarpal	Feet	Complete IV		R				<2	15
BAK	Vulpes	1	Metapodial	Feet	Distal end fragment		R		Burnt		<2	0.8
BAK	Vulpes	1	Metatarsal	Feet	II Complete: broken in two pieces		L				<2	1.8
BAK	Vulpes	1	Metatarsal	Feet	Proximal Fragment V		L		Burnt		2-5	0.1
BAK	Vulpes	1	Proximal Phalange	Feet	Complete				Burnt		<2	5.5
BAK	Vulpes	1	Proximal Phalange	Feet	Complete						<2	1.3
BAK	Vulpes	1	Proximal Phalange	Feet	Complete						<2	0.1
BAK	Vulpes	1	Radius	Upper Forelimb	Proximal end fragment		R				2-5	0.2
BAK	Vulpes	1	Sacrum	Back	Two segments		L				5-10	1.2
BAK	Vulpes	1	Tibia	Upper Hindlimb	Proximal end		R	Proximal end unfused	Burnt		2-5	1.4
BAK	Vulpes	1	Tooth	Cranium	Fragment						<2	0.9
BAK	Vulpes	1	Tooth	Cranium	Fragment		R		down centre		<2	0.8
BAK	Vulpes	1	Tooth	Cranium	Incisor, Complete						<2	4
BAK	Vulpes	1	Ulna	Upper Forelimb	Proximal end fragment		L	Permanent teeth			5-10	0.3
BAK	Vulpes	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment						<2	1.7
BAK	Vulpes	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment				Burnt		<2	1.9
BAK	Vulpes	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment						<2	2.1
BAK	Vulpes	1	Ulna	Upper Forelimb	Proximal end fragment		L	Permanent teeth			5-10	0.6
BAK	Vulpes	1	Ulna	Upper Forelimb	Distal end, fragment						<2	1.8
BAO	Capra	1	Ulna	Upper Forelimb	Proximal End Fragment		R		Burnt: White		2-5	29.1
BAO	Not identifiable	5	Bone	Bone	Fragments						<2	13.6
BAO	Not identifiable	34	Bone	Bone	Fragments				Burnt		<2	1.8
BAO	Not identifiable	5	Bone	Bone	Fragments				Burnt		<2	0.4
BAO	Not identifiable	1	Rib	Back	Fragment						2-5	27.2
BAO	Not identifiable	8	Vertebrae	Back	Fragments				Burnt		<2	4.1
BAO	Ovis/Capra	1	Innominate	Upper Hindlimb	Ischium Fragment		L	Unfused				0.2
BAQ	Aves	1	Humerus	Upper Forelimb	Distal End Fragment		R				<2	0.2
BAQ	Aves	1	Tibio-Tarsus	Upper Hindlimb	Proximal End Fragment		L				<2	8.4
BAQ	Not identifiable	15	Bone	Bone	Fragments				Burnt		<2	0.6
BAQ	Not identifiable	1	Bone	Bone	Fragments						<2	7
BAQ	Not identifiable	60	Bone	Bone	Fragments						2-5	2.7
BAQ	Not identifiable	9	Rib	Back	Fragments						2-5	44.3
BAQ	Not identifiable	8	Teeth	Cranium	Fragments						<2	3.6
BAQ	Not identifiable	1	Vertebrae	Back	Fragments						2-5	7.4
BAQ	Ovis	1	Mandible	Cranium	Fragment		R	Neonatal	Goes with 455		2-5	16.2
BAQ	Ovis	1	Mandible	Cranium	Fragment with ramus		R	Neonatal	Goes with 454		2-5	13.5
BAQ	Ovis	1	Mandibular Tooth	Cranium	p4		L	Juvenile	Roots open		2-5	2.4
BAQ	Ovis	1	Mandibular Tooth	Cranium	dp4		R	Neonatal	Roots open		2-5	1.8
BAQ	Ovis	1	Mandibular Tooth	Cranium	dp4		L	Neonatal	Roots open		2-5	2.7
BAQ	Ovis	1	Maxillary Tooth	Cranium	m3		R		Roots open		2-5	0.7
BAQ	Ovis	1	Maxillary Tooth	Cranium	Incisor 1		R	Juvenile	wear		2-5	0.6
BAQ	Ovis	1	Maxillary Tooth	Cranium	Incisor 2		R	Juvenile	wear		2-5	17.4
BAQ	Ovis	1	Maxillary Tooth	Cranium	Incisor 1		L	Juvenile	wear		2-5	19.3
BAQ	Ovis	1	Maxillary Tooth	Cranium	Incisor 3		R	Juvenile	wear		2-5	1.9
BAQ	Ovis	1	Maxillary Tooth	Cranium	dp3 or dp4		R	Neonatal	Roots open		2-5	0.8
BAQ	Ovis/Capra	1	Carpal Bone	Feet	Complete Unlar Bone		R				<2	6.6
BAQ	Ovis/Capra	1	Humerus	Upper Forelimb	Diaphysis fragment		R				2-5	5.9
BAQ	Ovis/Capra	1	Radius	Upper Forelimb	Almost Complete		R				<2	1.7
BAQ	Rodent	1	Cranium	Cranium	Maxilla, Frontal & Zygomatic						2-5	0.05
BAQ	Rodent	1	Humerus	Upper Forelimb	Distal end fragment		L				<2	0.6
BAR	Aves	1	Coracoid	Back	Complete		L				2-5	3.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAR	Aves	1	Phalange	Feet	Proximal End Fragment		L				<2	40.3
BAR	Large Mammal	1	Bone	Bone	Fragment						>10	1
BAR	Not identifiable	14	Bone	Bone	Fragments				Burnt		<2	0.5
BAR	Not identifiable	1	Bone	Bone	Fragments						<2	0.2
BAR	Not identifiable	26	Bone	Bone	Fragments						2-5	0.3
BAR	Not identifiable	3	Bone	Bone	Fragments						5-10	1.3
BAR	Not identifiable	4	Rib	Back	Fragments						2-5	20.4
BAR	Not identifiable	1	Tooth	Cranium	Root Fragment						<2	9.5
BAR	Not identifiable	1	Tooth	Cranium	Fragment						<2	0
BAR	Not identifiable	4	Vertebrae	Back	Fragments						<2	4.1
BAR	Ovis/Capra	1	Maxillary Tooth	Cranium	p3 or p4		L				2-5	0.9
BAR	Ovis/Capra	1	Phalange	Feet	Fragment						2-5	0.3
BAT	Aves	1	Bone	Long Bone	Fragment		NA	NA			2-5	1.1
BAT	Aves	1	Femur	Upper Hindlimb	Distal end fragment		R				<2	0.7
BAT	Homo	1	Proximal Phalange	Feet	Distal end fragment				Burnt		2-5	3.1
BAT	Not identifiable	1	Bone	Bone	Fragments						<2	1
BAT	Not identifiable	9	Bone	Bone	Fragments						5-10	2.8
BAT	Not identifiable	55	Bone	Bone	Fragments						2-5	0.8
BAT	Not identifiable	15	Bone	Bone	Fragments				Burnt		2-5	20.9
BAT	Not identifiable	5	Rib	Back	Fragments						2-5	15.5
BAT	Not identifiable	20	Teeth	Cranium	Fragments						2-5	3.1
BAT	Not identifiable	2	Vertebrae	Back	Fragments						2-5	1.4
BAT	Ovis/Capra	1	Mandibular Tooth	Cranium	dp2 or p2 complete			Roots open			<2	0.2
BAT	Ovis/Capra	1	Mandibular Tooth	Cranium	Incisor complete						2-5	1.4
BAT	Ovis/Capra	1	Maxillary Tooth	Cranium	m1/2 Fragment		L				<2	0.7
BAT	Ovis/Capra	1	Metatarsal	Feet	Proxmal end fragment		R				2-5	0.8
BAT	Ovis/Capra	1	Middle Phalange	Feet	Proximal epiphysis			Unfused				1.9
BAT	Ovis/Capra	1	Tarsal Bone	Feet	Almost complete lateral malleolus		R				<2	1.9
BAT	Reptile	1	Bone	Bone	Fragment							0.3
BAT	Vulpes	1	Innominate	Upper Hindlimb	Fragment of acetabulum		R	Roots closed			<2	0.4
BAT	Vulpes	1	Mandibular Tooth	Cranium	p2 or p3 Fragment		L	Roots closed			2-5	10.6
BAT	Vulpes	1	Metacarpal	Feet	Proximal end fragment of III		R					3.1
BAU	Aves	1	Carpo-Metacarpus	Feet	Proximal end & diaphysis fragment		L	NA			<2	62.6
BAU	Aves	1	Humerus	Upper Forelimb	Proximal end fragment		L	NA			<2	15.1
BAU	Cervid	1	Carpal Bone	Feet	Almost complete Ulnar Bone		R	Adult			<2	20.6
BAU	Cervid	1	Radius	Upper Forelimb	Distal epiphysis fragment		L	Unfused			<2	23
BAU	Cervid	1	Tooth	Cranium	Fragment		NA	NA			<2	9.9
BAU	Not identifiable	12	Bone	Bone	Fragments		NA	NA			<2	0.7
BAU	Not identifiable	1	Rib	Back	Fragments		NA	NA			2-5	17.4
BAU	Not identifiable	8	Teeth	Cranium	Fragments		NA	NA			2-5	8.1
BAU	Ovis	1	Sesamoid Bone	Feet	Complete		NA	NA			<2	10.8
BAU	Ovis	1	Sesamoid Bone	Feet	Complete		NA	NA	Burnt		<2	10.2
BAV	Bos	1	Sesamoid Bone	Feet	Complete Proximal bone		NA	Adult			<2	70.2
BAV	Not identifiable	1	Bone	Bone	Fragments		NA	NA			<2	4.1
BAV	Not identifiable	15	Bone	Bone	Fragments		NA	NA			2-5	0.7
BAV	Ovis	1	Carpal Bone	Feet	Almost complete		R	Adult		off	<2	0.3
BAV	Ovis	1	Carpal Bone	Feet	Almost complete Accessory Bone		NA	Adult			<2	5.5
BAV	Ovis	1	Proximal Phalange	Feet	Distal end & diaphysis fragment		NA	Adult			2-5	0.1
BAV	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused	Burnt		<2	0.7
BAV	Ovis	1	Sesamoid Bone	Feet	Almost complete		NA	NA			<2	2.3
BAV	Ovis	1	Tarsal Bone	Feet	Complete II or III		R	Adult			<2	3.9

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAW	Aves	1	Carpo-Metacarpus	Feet	Diaphysis fragment		NA	NA			<2	19.1
BAW	Bos	1	Tooth	Cranium	Fragments		NA	NA			2-5	43
BAW	Canis	1	Distal Phalange	Feet	Complete		R	Roots closed			<2	19
BAW	Carnivore	1	Proximal Phalange	Feet	Distal end & diaphysis fragment		R	Roots closed			<2	0.6
BAW	Not identifiable	1	Bone	Bone	Fragments		NA	NA			<2	0.6
BAW	Not identifiable	1	Patella	Upper Hindlimb	Complete		NA	Lamb?			<2	6.2
BAW	Not identifiable	1	Scapula	Upper Forelimb	Distal end fragment		R	NA			2-5	3.8
BAW	Not identifiable	24	Teeth	Cranium	Fragments		NA	NA			2-5	4.8
BAW	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		R	Adult			<2	9.8
BAW	Ovis	1	Carpal Bone	Feet	Almost Complete Radial Carpal Bone		L	Adult			<2	3.6
BAW	Ovis	1	Carpal Bone	Feet	Fragment II & III		NA	Adult			2-5	3.5
BAW	Ovis	1	Distal Phalange	Feet	Complete		NA	Adult			2-5	0.4
BAW	Ovis	1	Humerus	Upper Forelimb	Diaphysis complete		L	Unfused			5-10	
BAW	Ovis	1	Humerus	Upper Forelimb	Proximal end fragment		L	Adult			2-5	13.3
BAW	Ovis	1	Maxillary Tooth	Cranium	P2 Complete		R	Adult			2-5	2.4
BAW	Ovis	1	Maxillary Tooth	Cranium	P2 Complete		L	Adult			<2	0.6
BAW	Ovis	1	Maxillary Tooth	Cranium	P4 Complete		R	Adult			<2	0.5
BAW	Ovis	1	Maxillary Tooth	Cranium	P4 Complete		L	Adult			2-5	0.6
BAW	Ovis	1	Maxillary Tooth	Cranium	P3 Complete		L	Adult			2-5	7.8
BAW	Ovis	1	Maxillary Tooth	Cranium	M1		L	Adult			2-5	41.3
BAW	Ovis	1	Maxillary Tooth	Cranium	M2		L	Adult			2-5	0.7
BAW	Ovis	1	Maxillary Tooth	Cranium	M3		L	Adult			2-5	1.4
BAW	Ovis	1	Maxillary Tooth	Cranium	M2		R	Adult			2-5	2
BAW	Ovis	1	Maxillary Tooth	Cranium	M1 Complete		R	Adult			2-5	5.4
BAW	Ovis	1	Metatarsal	Feet	Diaphysis complete		L	Unfused			2-5	8.1
BAW	Ovis	1	Metatarsal	Feet	Diaphysis complete		R	Unfused			5-10	5.2
BAW	Ovis	1	Middle Phalange	Feet	Proximal end & diaphysis fragment		NA	Adult			<2	0.3
BAW	Ovis	1	Middle Phalange	Feet	Distal end & diaphysis fragment		NA	Adult	Burnt		2-5	0.1
BAW	Ovis	1	Middle Phalange	Feet	Complete		L	Unfused			2-5	0.4
BAW	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Adult			2-5	0.3
BAW	Ovis	1	Proximal Phalange	Feet	Diaphysis fragment		NA	Adult	Burnt		<2	0.2
BAW	Ovis	1	Radius	Upper Forelimb	Distal end & diaphysis fragment		L	Adult			2-5	1.3
BAW	Ovis	1	Scapula	Upper Forelimb	Distal end fragment		R	Adult			5-10	9.7
BAW	Ovis	1	Sesamoid Bone	Feet	Fragment Distal Bone		NA	Adult			<2	0.5
BAW	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Adult			<2	2.9
BAW	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Adult			2-5	12.3
BAW	Ovis	1	Tarsal Bone	Feet	Complete I		R?	Adult			<2	1.8
BAW	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	4.5
BAW	Small Mammal	1	Mandible	Cranium	Fragment		NA	NA	Burnt		<2	4.1
BAW	Small Mammal	16	Rib	Back	Fragments		NA	NA			<2	4.7
BAW	Small Mammal	1	Vertebrae	Back	Fragments		NA	NA			2-5	1.2
BAW	Vulpes	1	Mandibular Tooth	Cranium	M1 fragment		R	Roots closed			<2	2.4
BAW	Vulpes	1	Mandibular Tooth	Cranium	M1 fragment		L				<2	37.2
BAW	Vulpes	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Roots closed			<2	0.8
BAW	Vulpes	1	Tooth	Cranium	Fragment Canine		R	Roots closed			<2	1.2
BAW	Vulpes	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment		R	Roots closed			<2	1.1
BAX	Bos	1	Carpal Bone	Feet	Almost Complete II & III		L	Adult			2-5	7.1
BAX	Bos	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Adult			5-10	7.7
BAX	Bos	1	Sesamoid Bone	Feet	Almost Complete		NA	Adult	Burnt	flat surface	<2	64.6
BAX	Carnivore	1	Innominate	Upper Hindlimb	Pubis fragment		L				<2	401.5
BAX	Carnivore	1	Innominate	Upper Hindlimb	Ischium fragment		L				<2	220.7

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAX	Carnivore	1	Metapodial	Feet	Distal epiphysis complete						<2	77.4
BAX	Carnivore	1	Metapodial	Feet	Distal end & diaphysis fragment						<2	272.9
BAX	Carnivore	1	Metatarsal	Feet	Proximal end & diaphysis fragment III		L	Roots closed			<2	95.4
BAX	Carnivore	1	Middle Phalange	Feet	Complete		L	Roots closed			<2	297.7
BAX	Carnivore	1	Rib	Back	Almost Complete		L	Roots closed			<2	1.6
BAX	Cervid	1	Humerus	Upper Forelimb	Diaphysis complete		R	Unfused	unfused		5-10	58.1
BAX	Equus	1	Maxillary Tooth	Cranium	M2 fragment		L	Adult			2-5	11.3
BAX	Equus	1	Tarsal Bone	Feet	Almost Complete Central Bone		L	Adult			2-5	9.8
BAX	Homo	1	Distal Phalange	Feet	Complete		NA	NA			<2	39.6
BAX	Large Mammal	1	Tooth	Cranium	Incisor fragment		NA	Adult			2-5	0.5
BAX	Large Mammal	1	Vertebrae	Back	Articulation fragment Cervical Vertebrae		NA	Adult	Burnt		5-10	0.4
BAX	Not identifiable	4	Bone	Bone	Fragments		NA	NA			2-5	2
BAX	Not identifiable	25	Bone	Bone	Fragments		NA	NA			<2	7.9
BAX	Not identifiable	5	Bone	Bone	Fragments		NA	Neonatal			<2	6.3
BAX	Not identifiable	1	Humerus	Upper Forelimb	Proximal epiphysis		L	Neonatal	Burnt		<2	22.9
BAX	Not identifiable	16	Teeth	Cranium	Fragments		NA				<2	5.8
BAX	Not identifiable	1	Vertebrae	Back	Epiphysis complete		NA	Unfused			2-5	1.8
BAX	Not identifiable	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	NA			2-5	3.6
BAX	Ovis	1	Calcaneus	Feet	Complete		R	Adult			5-10	
BAX	Ovis	1	Carpal Bone	Feet	Complete IV		L	Adult			<2	1.2
BAX	Ovis	1	Carpal Bone	Feet	Almost Complete Ulnar Carpal Bone		R	Adult			<2	6.3
BAX	Ovis	1	Innominate	Upper Hindlimb	Ilium		R	Neonatal			2-5	4.5
BAX	Ovis	1	Innominate	Upper Hindlimb	Ischium fragment		R	Neonatal			2-5	10.3
BAX	Ovis	1	Mandibular Tooth	Cranium	Almost Complete		L	Adult ?			2-5	1
BAX	Ovis	1	Maxillary Tooth	Cranium	P2		R	No wear	unerrupted		<2	17.5
BAX	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Fused			2-5	0.8
BAX	Ovis	1	Sesamoid Bone	Feet	Complete		NA	NA			<2	1.3
BAX	Ovis	1	Ulna	Upper Forelimb	Proximal diaphysis fragment		R				2-5	0.1
BAX	Ovis/Capra	1	Metapodial	Feet	Distal epiphysis		L	Adult	Burnt		2-5	6.5
BAX	Sus	1	Cranium	Cranium	Petrous part of petromastoid		L?	Unfused			2-5	0.8
BAZ	Aves	1	Carpo-Metacarpus	Feet	Proximal end fragment		NA	Adult ?	Burnt		<2	5.6
BAZ	Bos	1	Tooth	Cranium	Fragment		NA	NA			2-5	141.1
BAZ	Canis	1	Middle Phalange	Feet	Complete		R				<2	21.5
BAZ	Carnivore	1	Cranium	Cranium	Parietal fragment		L				2-5	0.3
BAZ	Carnivore	1	Metapodial	Feet	Distal end & diaphysis fragment		L	Roots closed			<2	5.9
BAZ	Carnivore	1	Middle Phalange	Feet	Complete		R	Roots closed			<2	41.6
BAZ	Carnivore	1	Proximal Phalange	Feet	Almost complete		L				2-5	0.5
BAZ	Carnivore	1	Sesamoid Bone	Feet	Complete						<2	131.5
BAZ	Carnivore	1	Sesamoid Bone	Feet	Almost complete		R	Proximal end fused			<2	81.3
BAZ	Equus	1	Phalange	Feet	Distal end fragment I or II		NA	NA			<2	3.1
BAZ	Equus	1	Sesamoid Bone	Feet	Fragment		NA	Adult	Burnt		<2	4.6
BAZ	Equus	1	Sesamoid Bone	Feet	Fragment		NA	Adult	Burnt		<2	49.5
BAZ	Large Mammal	1	Bone	Bone	Diaphysis fragment		NA	Adult			>10	0.9
BAZ	Not identifiable	1	Bone	Bone	Fragments		NA				2-5	3.8
BAZ	Not identifiable	25	Bone	Bone	Fragments		NA	NA			<2	31.7
BAZ	Not identifiable	5	Rib	Back	Fragments		NA	NA			2-5	5.4
BAZ	Not identifiable	27	Teeth	Cranium	Fragmsnts		NA	NA			2-5	2.3
BAZ	Not identifiable	1	Tooth	Cranium	Fragments		NA				<2	0.2
BAZ	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Adult			<2	2.2
BAZ	Ovis	1	Mandibular Tooth	Cranium	Incisor complete		L	Adult			2-5	0.5
BAZ	Ovis	1	Maxillary Tooth	Cranium	P3 almost complete		L	Adult	root: chronic		<2	21.4

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BAZ	Ovis	1	Metacarpal	Feet	Distal end & diaphysis fragment		L	Fused	Burnt		5-10	0.5
BAZ	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis fragment		NA	Unfused			<2	1.2
BAZ	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	48.9
BAZ	Ovis	1	Sesamoid Bone	Feet	Complete		NA	NA			<2	8.1
BAZ	Vulpes	1	Femur	Upper Hindlimb	Distal epiphysis		L				<2	0.2
BAZ	Vulpes	1	Femur	Upper Hindlimb	Proximal greater trochanter		L	Unfused			2-5	0.1
BAZ	Vulpes	1	Mandibular Tooth	Cranium	P4 or M1 fragment		L	Roots closed			<2	0.05
BAZ	Vulpes	1	Maxilla	Cranium	Complete		R				<2	0.3
BAZ	Vulpes	1	Metatarsal	Feet	Complete V		R	Fused			<2	5.9
BBC		68				?	NA					21.1
BBC	Bos	1	Calcaneus	Feet		?	L	Adult			2-5	6.7
BBC	Bos	1	Carpal Bone	Feet	Almost complete Radial Bone		L	Neonatal	pourus bone		2-5	25.5
BBC	Bos	1	Carpal Bone	Feet	Assessory Bone Complete		L	Adult			2-5	12.3
BBC	Bos	1	Carpal Bone	Feet	Complete IV		L	Fused	sleeker than our		2-5	177.4
BBC	Bos	1	Cranium	Cranium	Occipital condyle fragment		R	Fused	Very Large		5-10	34.3
BBC	Bos	1	Mandibular Tooth	Cranium	M3		R	Unerupted			2-5	
BBC	Bos	1	Maxillary Tooth	Cranium	M1-M3 Unerrupted		NA	Roots Open	No wear		2-5	126.8
BBC	Bos	1	Maxillary Tooth	Cranium	P2 complete		L	Adult			2-5	10.8
BBC	Bos	1	Maxillary Tooth	Cranium	M1, M2 or M3 unerrupted		R	Unerrupted			2-5	1.8
BBC	Bos	1	Metatarsal	Feet		?	NA	Adult			2-5	6.5
BBC	Bos	1	Metatarsal	Feet		?	R				2-5	5.3
BBC	Bos	1	Middle Phalange	Feet		?	NA	Fused			2-5	38
BBC	Bos	1	Proximal Phalange	Feet	Distal end fragment		NA	Adult size			2-5	5.1
BBC	Bos	1	Sesamoid Bone	Feet	Complete						2-5	51.7
BBC	Bos	7	Teeth	Cranium	Fragment	?	NA				<2	46.1
BBC	Bos	1	Tooth	Cranium	Fragment		NA	No wear			2-5	7.1
BBC	Bos	1	Tooth	Cranium	Incisior fagment		NA	Adult			2-5	11.4
BBC	Bos	1	Vertebrae	Back	Body Fragment Thoracic Vertebrae		NA	Adult			2-5	68.3
BBC	Bos	1	Vertebrae	Back	Body Fragment Thoracic Vertebrae		NA	Adult			2-5	7.3
BBC	Carnivore	1	Humerus	Upper Forelimb	Diaphysis fragment		L	Unfused Pourus bone			2-5	70.5
BBC	Carnivore	3	Rib	Back	Fragment	?	NA				<2	11.7
BBC	Carnivore	1	Ulna	Upper Forelimb	Distal epiphysis fragment		L	NA			2-5	291.1
BBC	Equus	1	Humerus	Upper Forelimb	Proximal epiphysis fragment		L	Fused			5-10	84.4
BBC	Equus	1	Tarsal Bone	Feet		?	NA	Adult			2-5	5
BBC	Equus	1	Tooth	Cranium	Fragment	?	NA				2-5	4.4
BBC	Equus	1	Vertebrae	Back	Body Fragment Thoracic Vertebrae		NA	Fused			2-5	30.7
BBC	Large Mammal	1	Bone	Bone	Fragment		NA	NA			5-10	5.6
BBC	Large Mammal	1	Bone	Bone	Fragment		NA	NA			>10	12.5
BBC	Large Mammal	1	Bone	Bone	Fragments		NA	NA			5-10	7
BBC	Large Mammal	1	Carpal Bone	Feet	Accessory carpal bone fragment	?	NA				<2	1.9
BBC	Large Mammal	25	Cranium	Cranium	Fragments		NA	Unfused			2-5	
BBC	Large Mammal	1	Phalange	Feet	Distal end fragment		NA	NA			2-5	0.2
BBC	Large Mammal	1	Vertebrae	Back	Body fragment		NA	Fused	slice right through		2-5	21.6
BBC	Large Mammal	1	Vertebrae	Back	Fragment		NA	Unfused			2-5	25.9
BBC	Large Mammal	1	Vertebrae	Back	Epiphysis		NA	Unfused			2-5	28.7
BBC	Large Mammal	1	Vertebrae	Back	Complete epiphysis	?	NA	Unfused			2-5	0.5
BBC	Lepus	1	Metatarsal	Feet	Complete II		R				5-10	0.2
BBC	Medium Mammal	1	Cranium	Cranium	Fragment	?	NA	Fused			2-5	1.1
BBC	Medium Mammal	1	Rib	Back	Fragment	?	R				2-5	5.2
BBC	Medium Mammal	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	Fused			2-5	1.2
BBC	Medium Mammal	1	Vertebrae	Back		?	NA	Unfused			<2	1.8

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBC	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.4
BBC	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	0.7
BBC	Not identifiable	260	Bone	Bone	Fragments		NA	NA			2-5	4.1
BBC	Not identifiable	28	Bone	Bone	Fragments				Burnt		2-5	7.5
BBC	Not identifiable	3	Bone	Bone	Fragments				Burnt		5-10	2.9
BBC	Not identifiable	18	Bone	Bone	Fragments						5-10	0.9
BBC	Not identifiable	31	Bone	Bone	Fragments				Burnt		<2	3.8
BBC	Not identifiable	480	Bone	Bone	Fragments						<2	2
BBC	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.9
BBC	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.4
BBC	Not identifiable	505	Bone	Bone	Fragments		NA	NA			<2	15.6
BBC	Not identifiable	28	Bone	Bone	Fragments		NA	NA	Burnt		2-5	0.1
BBC	Not identifiable	15	Bone	Bone	Fragments		NA	NA	Burnt		<2	3.9
BBC	Not identifiable	143	Bone	Bone	Fragments		NA	NA			2-5	0.1
BBC	Not identifiable	20	Bone	Bone	Fragments		NA	NA			5-10	2
BBC	Not Identifiable	32	Bone	Bone	Fragment	?	NA					21.7
BBC	Not Identifiable	13	Bone	Bone	Fragment	?	NA					37.6
BBC	Not Identifiable	182	Bone	Bone	Fragment	?	NA					14.4
BBC	Not Identifiable	140	Bone	Bone	Fragment	?	NA					17.1
BBC	Not Identifiable	180	Bone	Bone	Fragment	?	NA					0.9
BBC	Not Identifiable	105	Bone	Bone	Fragment	?	NA					7.4
BBC	Not Identifiable	10	Bone	Bone	Fragment	?	NA					0.1
BBC	Not Identifiable	3	Bone	Bone	Fragment	?	NA					0.1
BBC	Not Identifiable	92	Bone	Bone	Fragment	?	NA					0.2
BBC	Not Identifiable	84	Bone	Bone	Fragment	?	NA					0.3
BBC	Not Identifiable	90	Bone	Bone	Fragment	?	NA					0.5
BBC	Not Identifiable	42	Bone	Bone	Fragment	?	NA					0.5
BBC	Not Identifiable	15	Bone	Bone	Fragment	?	NA					0.5
BBC	Not Identifiable	357	Bone	Bone	Fragment	?	NA					0.3
BBC	Not Identifiable	610	Bone	Bone	Fragment	?	NA					0.4
BBC	Not Identifiable	415	Bone	Bone	Fragment	?	NA					0.4
BBC	Not Identifiable	26	Bone	Bone	Fragment	?	NA					0.4
BBC	Not Identifiable	20	Bone	Bone	Fragment	?	NA					0.3
BBC	Not Identifiable	495	Bone	Bone	Fragment	?	NA					0.4
BBC	Not Identifiable	230	Bone	Bone	Fragment	?	NA					0.4
BBC	Not Identifiable	16	Bone	Bone	Fragment	?	NA				<2	0.6
BBC	Not Identifiable	17	Bone	Bone	Fragment	?	NA					1.1
BBC	Not Identifiable	285	Bone	Bone	Fragment	?	NA					1.5
BBC	Not Identifiable	10	Bone	Bone	Fragments	?	NA				<2	1.5
BBC	Not identifiable	1	Cranium	Cranium	Fragment		NA	NA			2-5	0.7
BBC	Not identifiable	19	Cranium	Cranium	Fragments						2-5	1.6
BBC	Not identifiable	1	Cranium	Cranium	Fragments		NA	NA			2-5	1.6
BBC	Not identifiable	6	Rib	Back	Fragments						2-5	0.3
BBC	Not identifiable	21	Teeth	Cranium	Fragments		NA	NA			2-5	1.1
BBC	Not Identifiable	26	Teeth	Cranium	Fragment	?	NA				<2	0.9
BBC	Not Identifiable	7	Teeth	Cranium	Fragment	?	NA				<2	0.6
BBC	Not Identifiable	6	Teeth	Cranium	Fragment	?	NA				<2	0.3
BBC	Not identifiable	51	Tooth	Cranium	Fragments						2-5	0.1
BBC	Not identifiable	8	Vertebrae	Back	Fragments						2-5	0.5
BBC	Ovis	1	Distal Phalange	Feet	Proximal end fragment			Fused			2-5	0.6
BBC	Ovis	1	Innominate	Upper Hindlimb	Pubis fragment	?	R	Adult			2-5	1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBC	Ovis	1	Mandibular Tooth	Cranium	M3 complete		L	Adult			2-5	0.7
BBC	Ovis	1	Mandibular Tooth	Cranium	M2 complete		L	Adult			2-5	0.5
BBC	Ovis	1	Mandibular Tooth	Cranium	M1		L	Juvenile			<2	0.9
BBC	Ovis	1	Mandibular Tooth	Cranium	P4 complete		L	Adult			2-5	0.7
BBC	Ovis	1	Maxillary Tooth	Cranium	P2 or P3 almost complete		L	Adult			2-5	3.6
BBC	Ovis	1	Metacarpal	Feet		?	NA	Unfused	a=14 b=19.1 =			0.6
BBC	Ovis	1	Proximal Phalange	Feet	Proximal end fragment			Unfused	Goes with 719		<2	0.9
BBC	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete			Unfused	Goes with 718			0.7
BBC	Ovis	1	Radius	Upper Forelimb		?	L	Unfused	unfused		5-10	0.4
BBC	Ovis	1	Tibia	Upper Hindlimb		?	R				5-10	6.1
BBC	Ovis	1	Ulna	Upper Forelimb	Proximal end fragment		R	Adult	adult		2-5	0.1
BBC	Ovis/Capra	1	Mandibular Tooth	Cranium	M2 Fragment		L	Adult			<2	3.1
BBC	Ovis/Capra	1	Mandibular Tooth	Cranium	Incisor Almost Complete			Roots broken			<2	3.1
BBC	Ovis/Capra	1	Mandibular Tooth	Cranium	Incisor Complete			Roots Closed			<2	2.5
BBC	Ovis/Capra	1	Mandibular Tooth	Cranium	Incisor Complete			Roots Closed			<2	3.3
BBC	Ovis/Capra	1	Metapodial	Feet	Distal epiphysis fragment			Unfused			<2	1.5
BBC	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete			Unfused			<2	29.1
BBC	Ovis/Capra	1	Metapodial	Feet	Diaphysis Fragment III or IV		NA	Unfused	NeoNAtal		2-5	9.9
BBC	Rodent	1	Cranium	Cranium	Maxillary Fragment		R	NA			<2	0.1
BBC	Rodent	1	Innominate	Upper Hindlimb	Almost complete		L	Fused			<2	0.05
BBC	Vulpes	1	Cranium	Cranium	Premaxilla fragment: place for I 1-3		R ?	NA			<2	
BBC	Vulpes	1	Humerus	Upper Forelimb		?	L	Adult			<2	0.9
BBC	Vulpes	1	Mandibular Tooth	Cranium	P2 or P3	?	R	Adult			<2	4.9
BBC	Vulpes	1	Mandibular Tooth	Cranium	P2 complete	?	R	Adult			<2	1.9
BBC	Vulpes	1	Mandibular Tooth	Cranium	Fragment	?	NA	Adult			<2	0.6
BBC	Vulpes	1	Metacarpal	Feet	Complete IV		NA	Fused			<2	0.7
BBC	Vulpes	1	Middle Phalange	Feet	Complete		R	Unfused	Burnt		2-5	5.7
BBD	Aves	1	Carpo-Metacarpus	Feet		?	L	Fused	Stork		>10	9.8
BBD	Aves	1	Tarso-Metatarsus	Feet	Proximal end & diaphysis fragment		R	Adult			2-5	4.5
BBD	Bos	1	Calcaneus	Feet	Proximal end fragment		R	Fused	Burnt		5-10	1.7
BBD	Bos	1	Calcaneus	Feet	Proximal end fragment		L	Adult			5-10	9.9
BBD	Bos	1	Carpal Bone	Feet	Almost Complete II & III		R	Adult			2-5	18.1
BBD	Bos	1	Carpal Bone	Feet	Complete IV		L	Adult			2-5	1.5
BBD	Bos	1	Carpal Bone	Feet	Complete Ulnar Bone		L	Adult	but much bigger		2-5	207.7
BBD	Bos	1	Carpal Bone	Feet	Accessory Carpal Bone	?	R	Adult		through the	2-5	35
BBD	Bos	1	Carpal Bone	Feet	Ulnar Carpal Bone	?	L	Adult			2-5	14.4
BBD	Bos	1	Carpal Bone	Feet		?	R	Adult			2-5	84.3
BBD	Bos	1	Cranium	Cranium	Occipital Condyle fragment		R	Fused			2-5	8.4
BBD	Bos	1	Cranium	Cranium	Petrous		R	Adult			2-5	163.1
BBD	Bos	1	Distal Phalange	Feet	Complete		NA	Fused			5-10	55.1
BBD	Bos	1	Humerus	Upper Forelimb	Diaphysis	?	L	Adult			2-5	3.7
BBD	Bos	1	Humerus	Upper Forelimb		?	R				5-10	10.1
BBD	Bos	1	Innominate	Upper Hindlimb	Ilium fragment		R	Unfused			5-10	2.8
BBD	Bos	1	Mandible	Cranium	Ramus Fragment		R	Adult			2-5	66.9
BBD	Bos	1	Mandible	Cranium	Fragment		L	Adult			2-5	95.2
BBD	Bos	1	Mandible	Cranium	Ramus Fragment		R	Adult			5-10	11.9
BBD	Bos	1	Mandible	Cranium	With P2 fragment	?	L	Adult			5-10	32.2
BBD	Bos	1	Mandibular Tooth	Cranium	M3 Complete		R	Adult	Compared to our		2-5	
BBD	Bos	1	Mandibular Tooth	Cranium	M2 Fragment		R	No Wear				
BBD	Bos	1	Mandibular Tooth	Cranium	Canine tooth?		R	Adult			2-5	
BBD	Bos	1	Mandibular Tooth	Cranium	P4-M3? Fragment	?	L	Adult			5-10	

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBD	Bos	1	Mandibular Tooth	Cranium	M3 Almost complete	?	R	Adult			5-10	245.1
BBD	Bos	1	Mandibular Tooth	Cranium	Incisor 2	?	L				2-5	7.5
BBD	Bos	1	Mandibular Tooth	Cranium	Incisor 3 Fragment	?	L				2-5	13.7
BBD	Bos	1	Maxilla	Cranium	Fragment		R	Fused			5-10	5.6
BBD	Bos	1	Maxillary Tooth	Cranium	P4 Complete		R	Adult	domestic 6yr old		2-5	11.6
BBD	Bos	1	Maxillary Tooth	Cranium	dP3 Complete		R	Adult			5-10	45.3
BBD	Bos	2	Maxillary Tooth	Cranium	Fragments	?	NA	Adult			2-5	141.3
BBD	Bos	1	Metatarsal	Feet		?	L				5-10	16.6
BBD	Bos	1	Middle Phalange	Feet	Complete			Fused	Burnt		2-5	61.1
BBD	Bos	1	Middle Phalange	Feet		?	NA				2-5	101.4
BBD	Bos	1	Patella	Upper Hindlimb	Distal end fragment		R	Adult			2-5	72.4
BBD	Bos	1	Proximal Phalange	Feet		?	NA	Adult			2-5	25.7
BBD	Bos	1	Sesamoid Bone	Feet	Almost complete	?	NA	Adult			2-5	4.9
BBD	Bos	6	Teeth	Cranium	Fragments	?	NA	Adult			2-5	19
BBD	Bos	6	Teeth	Cranium	Fragment	?	NA				2-5	7.3
BBD	Bos	5	Teeth	Cranium	Fragments	?	NA				<2	2.6
BBD	Bos	5	Teeth	Cranium	Fragment	?	NA				<2	44.7
BBD	Bos	1	Tibia	Upper Hindlimb		?	R	Adult			5-10	2.6
BBD	Bos	1	Tooth	Cranium	Fragment		NA	no wear			2-5	15.6
BBD	Bos	1	Tooth	Cranium	Fragment		NA	Adult			2-5	141.6
BBD	Bos	1	Tooth	Cranium	Fragment		NA	Adult ?			2-5	58.2
BBD	Bos	1	Tooth	Cranium	M1 or M2 Complete		NA	No wear/roots open			5-10	151.7
BBD	Bos	1	Tooth	Cranium	Fragment		NA	NA			2-5	17.5
BBD	Bos	1	Vertebrae	Back	Caudal articulation fragment Cervical Vertebrae		NA	Adult			2-5	105.1
BBD	Bos	1	Vertebrae	Back	Fragment Cervical Vertebrae		NA	Adult			5-10	3.2
BBD	Capra	1	Cranium	Cranium		?	L	Adult			5-10	41.5
BBD	Carnivore	1	Innominate	Upper Hindlimb	Ischium Complete Small Carnivore	?	R	Unfused			2-5	1.1
BBD	Carnivore	1	Metapodial	Feet		?	NA				<2	10.5
BBD	Carnivore	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		L	Adult			2-5	12.3
BBD	Equus	1	Astragalus	Feet	Almost Complete		R	Fused	Burnt		2-5	0.2
BBD	Equus	1	Astragalus	Feet	Fragment		R	Fused			2-5	62
BBD	Equus	1	Calcaneus	Feet	Distal End Fragment		L	Adult size			5-10	5.9
BBD	Equus	1	Calcaneus	Feet		?	L	Adult			2-5	
BBD	Equus	1	Carpal Bone	Feet	Accessary Carpal Bone Complete		L	Adult			2-5	12.4
BBD	Equus	1	Carpal Bone	Feet	Almost Complete IV		R	Adult (small)			<2	2.3
BBD	Equus	1	Carpal Bone	Feet	Complete II		R	Adult (small)			2-5	26.3
BBD	Equus	1	Carpal Bone	Feet	Complete II & III		R	Adult	to our bos, but		2-5	300.3
BBD	Equus	1	Cranium	Cranium	Zygomatic Process Fragment		NA	NA			2-5	168
BBD	Equus	1	Cranium	Cranium	Occipital Condyle fragment		R	Adult (fused)			2-5	16.6
BBD	Equus	1	Distal Phalange	Feet	Complete		R	Fused			5-10	15.4
BBD	Equus	1	Distal Phalange	Feet	Almost Complete		R	Fused			2-5	2.8
BBD	Equus	1	Distal Phalange	Feet	Almost complete		NA	Adult			5-10	8
BBD	Equus	1	Mandibular Tooth	Cranium	M3 Almost complete		R	Juvenile			5-10	3.1
BBD	Equus	1	Mandibular Tooth	Cranium	M3		L	Juvenile	fold		5-10	13.2
BBD	Equus	1	Mandibular Tooth	Cranium	P2 Complete		R	Adult: 'Roots Closed			5-10	11.6
BBD	Equus	1	Mandibular Tooth	Cranium	M1 or M2 Almost complete		L	Adult			5-10	30.1
BBD	Equus	2	Mandibular Tooth	Cranium	Fragment	?	NA				5-10	22.6
BBD	Equus	1	Mandibular Tooth	Cranium	I1	?	R				2-5	61.7
BBD	Equus	1	Maxillary Tooth	Cranium	P2 Almost Complete		R	Adult			2-5	0.2
BBD	Equus	1	Maxillary Tooth	Cranium	P4 Complete		L	Adult			5-10	29.4
BBD	Equus	1	Maxillary Tooth	Cranium	P3 Complete		L	Adult			5-10	7.3

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBD	Equus	1	Maxillary Tooth	Cranium	P2 Almost Complete		L	Adult			5-10	22.5
BBD	Equus	5	Maxillary Tooth	Cranium	Fragments	?	NA	Adult			5-10	1.2
BBD	Equus	2	Maxillary Tooth	Cranium	Fragments	?	NA	Adult			5-10	16.2
BBD	Equus	1	Metacarpal	Feet	Proximal end & diaphysis fragment		L				>10	2
BBD	Equus	1	Metacarpal	Feet	Proximal end fragment II		L	Fused			2-5	27.1
BBD	Equus	1	Metapodial	Feet	Distal end fragment		R	Fused			2-5	7
BBD	Equus	1	Metapodial	Feet	Distal end & diaphysis fragment		NA	Fused			5-10	26.9
BBD	Equus	1	Metapodial	Feet	Distal end fragment		NA	Fused			2-5	1.8
BBD	Equus	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	********			>10	3.4
BBD	Equus	1	Metatarsal	Feet	Distal end fragment		L	Fused			5-10	8.1
BBD	Equus	1	Metatarsal	Feet	Proximal end fragment II		R	Fused			2-5	3.6
BBD	Equus	1	Middle Phalange	Feet	Complete		R	Fused			2-5	55.3
BBD	Equus	1	Middle Phalange	Feet	Complete		L	Fused			2-5	24.7
BBD	Equus	1	Middle Phalange	Feet	Complete		L	Fused			2-5	2.7
BBD	Equus	1	Middle Phalange	Feet	Fragment		NA	Adult			2-5	17.4
BBD	Equus	1	Middle Phalange	Feet		?	NA	Unfused			2-5	6
BBD	Equus	1	Phalange	Feet	Fragment	?	NA	Unfused			<2	6.8
BBD	Equus	1	Proximal Phalange	Feet	Fragment		NA	Fused	has been split		5-10	25.1
BBD	Equus	1	Proximal Phalange	Feet	Proximal end fragment		NA	Fused			5-10	12.7
BBD	Equus	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	7.2
BBD	Equus	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			5-10	30.2
BBD	Equus	1	Proximal Phalange	Feet	Diaphysis fragment		NA	Unfused	fragment: split		5-10	18.4
BBD	Equus	1	Proximal Phalange	Feet	Proximal end fragment		NA	Fused			2-5	36.8
BBD	Equus	1	Proximal Phalange	Feet	Distal end fragment		NA	Fused	fragment: cut		2-5	6.2
BBD	Equus	1	Proximal Phalange	Feet	Proximal end fragment		NA	Fused			2-5	6.6
BBD	Equus	1	Proximal Phalange	Feet	Complete	?	NA	Fused	BFp=38.5,		5-10	26.1
BBD	Equus	1	Proximal Phalange	Feet	Epiphysis	?	NA	Unfused			2-5	6.4
BBD	Equus	1	Radius	Upper Forelimb	Distal end fragment		R	Fused			5-10	32.1
BBD	Equus	1	Radius	Upper Forelimb	Diaphysis fragment		NA	Adult			>10	9.3
BBD	Equus	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone Complete		NA	Fused			2-5	1.1
BBD	Equus	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone Complete		NA	Fused			2-5	4.1
BBD	Equus	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone Complete		NA	Adult				0.5
BBD	Equus	1	Sesamoid Bone	Feet	Almost Complete	?	NA	Adult			2-5	0.4
BBD	Equus	1	Tarsal Bone	Feet	Almost Complete III		L	Fused			2-5	16.8
BBD	Equus	1	Tarsal Bone	Feet	Fragment III		R	Fused			2-5	1.7
BBD	Equus	1	Tarsal Bone	Feet	Complete IV		R	Adult			2-5	9.2
BBD	Equus	1	Tarsal Bone	Feet	Complete IV		L	Adult			2-5	15
BBD	Equus	1	Tarsal Bone	Feet	Complete I & II		R	Adult			2-5	4.1
BBD	Equus	1	Tarsal Bone	Feet	Complete IV		R	Adult	Burnt		2-5	1.5
BBD	Equus	2	Teeth	Cranium	Fragments	?	NA				2-5	189.5
BBD	Equus	12	Teeth	Cranium	Fragment	?	NA				2-5	18.7
BBD	Equus	1	Tibia	Upper Hindlimb	Proximal end fragment		L	Fused			5-10	132.8
BBD	Equus	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		L	Adult size			5-10	2.1
BBD	Equus	1	Tibia	Upper Hindlimb		?	R	Fused			2-5	9.4
BBD	Equus	1	Tibia	Upper Hindlimb		?	R	Adult			5-10	0.1
BBD	Equus	1	Tooth	Cranium	Fragments		NA	Adult			2-5	41.8
BBD	Equus	1	Tooth	Cranium	Fragment		NA	Unfused	Burnt		2-5	118.2
BBD	Equus	1	Vertebrae	Back	Fragments Thoracic Vertebrae		NA	Adult			2-5	5.8
BBD	Equus	1	Vertebrae	Back	Fragment Lumbar		NA	Fused			2-5	9.2
BBD	Equus	1	Vertebrae	Back	Lumbar Vertebrae Almost Complete	?	NA	Adult			5-10	14.2
BBD	Felis	1	Femur	Upper Hindlimb	Proximal end fragment		R	Fused			5-10	57.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBD	Large Mammal	1				?	NA					0.6
BBD	Large Mammal	1	Bone	Bone	Fragment		NA	NA				1.1
BBD	Large Mammal	1	Bone	Bone	Diaphysis fragment			Adult size			>10	0.3
BBD	Large Mammal	1	Bone	Bone	Diaphysis fragment		NA				5-10	5.7
BBD	Large Mammal	1	Bone	Bone	Fragment		NA	NA				2.2
BBD	Large Mammal	1	Bone	Bone	Fragment		NA	NA				0.3
BBD	Large Mammal	1	Bone	Bone	Fragment		NA	NA				4.4
BBD	Large Mammal	1	Bone	Bone	Fragment		NA	NA				5.2
BBD	Large Mammal	1	Bone	Bone	Fragment		NA	NA				2.8
BBD	Large Mammal	59	Bone	Bone	Fragments	?	NA				>10	1.9
BBD	Large Mammal	1	Bone	Bone	Fragment	?	NA				>10	5.8
BBD	Large Mammal	3	Bone	Bone	Fragment	?	NA				2-5	2.6
BBD	Large Mammal	11	Bone	Bone	Fragment	?	NA				5-10	0.2
BBD	Large Mammal	14	Bone	Bone	Fragment	?	NA				5-10	0.9
BBD	Large Mammal	1	Calcaneus	Feet	Proximal end fragment		R	Unfused	Burnt		2-5	5.9
BBD	Large Mammal	1	Cranium	Cranium	Fragment		NA	Adult			5-10	0.5
BBD	Large Mammal	2	Cranium	Cranium	Fragment	?	NA				2-5	0.7
BBD	Large Mammal	7	Cranium	Cranium	Fragments	?	NA				2-5	1.1
BBD	Large Mammal	6	Long Bone	Long Bone	Fragments	?	NA				5-10	5.9
BBD	Large Mammal	1	Long Bone	Long Bone	Diaphysis fragment	?	NA				5-10	13
BBD	Large Mammal	1	Long Bone	Long Bone	Fragment	?	NA				5-10	1.8
BBD	Large Mammal	1	Mandible	Cranium	Fragment		NA	NA			5-10	51.1
BBD	Large Mammal	3	Mandible	Cranium	Fragments	?	NA				2-5	1
BBD	Large Mammal	1	Mandible	Cranium	Fragment	?	NA				2-5	3
BBD	Large Mammal	1	Metapodial	Feet	Diaphysis fragment	?	NA				2-5	0.4
BBD	Large Mammal	1	Phalange	Feet		?	NA				2-5	0.5
BBD	Large Mammal	1	Rib	Back	Fragment		NA	NA			>10	0.9
BBD	Large Mammal	6	Rib	Back	Fragments	?	NA				5-10	0.4
BBD	Large Mammal	3	Rib	Back	Fragments	?	NA				5-10	0.8
BBD	Large Mammal	1	Scapula	Upper Forelimb		?	NA				5-10	0.5
BBD	Large Mammal	51	Teeth	Cranium	Fragments	?	NA				2-5	0.5
BBD	Large Mammal	26	Teeth	Cranium	Fragments	?	NA				2-5	0.3
BBD	Large Mammal	16	Teeth	Cranium	Fragments	?	NA				2-5	0.5
BBD	Large Mammal	9	Teeth	Cranium	Fragment	?	NA				2-5	0.4
BBD	Large Mammal	1	Tooth	Cranium	Incisor fragment	?	NA				2-5	0.4
BBD	Large Mammal	1	Tooth	Cranium	Incisor Fragment	?	NA				2-5	0.1
BBD	Large Mammal	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae							1.1
BBD	Large Mammal	1	Vertebrae	Back	Body fragment lumbar vertebrae		NA	Unfused/Juvenile			2-5	2
BBD	Large Mammal	1	Vertebrae	Back	Epiphysis fragment from Body		NA	Unfused			2-5	13.8
BBD	Large Mammal	1	Vertebrae	Back	Fragment		NA	Unfused				0.4
BBD	Large Mammal	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	Juvenile/Adult			5-10	1
BBD	Large Mammal	1	Vertebrae	Back	Fragment	?	NA	Adult			2-5	1.1
BBD	Large Mammal	4	Vertebrae	Back	Fragment	?	NA				2-5	0.2
BBD	Lepus	1	Femur	Upper Hindlimb		?	R				2-5	0.1
BBD	Lepus	1	Tibia	Upper Hindlimb		?	L				<2	4.5
BBD	Medium Mammal	3	Cranium	Cranium	Fragment	?	NA				2-5	0.6
BBD	Medium Mammal	1	Rib	Back	Fragment	?	NA				2-5	25.6
BBD	Medium Mammal	2	Rib	Back	Fragments	?	NA				2-5	21
BBD	Medium Mammal	1	Rib	Back	Fragment	?	NA	Unfused			<2	1.8
BBD	Medium Mammal	1	Vertebrae	Back	Fragment	?	NA	Unfused			2-5	2.5
BBD	Medium Mammal	1	Vertebrae	Back	Thoracic Fragment	?	NA				2-5	1.9

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBD	Not identifiable	26	Bone	Bone	Fragments		NA	NA			2-5	0.1
BBD	Not identifiable	1	Bone	Bone	Diaphysis Fragment		NA	Adult			5-10	0.1
BBD	Not identifiable	10	Bone	Bone	Fragments		NA	Adult			5-10	0.5
BBD	Not identifiable	2	Bone	Bone	Fragments		NA	Adult			>10	1.4
BBD	Not identifiable	4	Bone	Bone	Fragments		NA	NA			5-10	0.5
BBD	Not identifiable	2	Bone	Bone	Fragments		NA	NA			2-5	0.6
BBD	Not identifiable	3	Bone	Bone	Fragments		NA	NA	Burnt		<2	0.2
BBD	Not Identifiable	625	Bone	Bone	Fragment	?	NA					0.1
BBD	Not Identifiable	192	Bone	Bone	Fragments	?	NA		Burnt			0.1
BBD	Not Identifiable	301	Bone	Bone	Fragments	?	NA				5-10	0.6
BBD	Not Identifiable	31	Bone	Bone	Fragments	?	NA				5-10	0.7
BBD	Not Identifiable	750	Bone	Bone	Fragment	?	NA				2-5	0.4
BBD	Not Identifiable	72	Bone	Bone	Fragment	?	NA				2-5	0.4
BBD	Not Identifiable	4	Bone	Bone	Fragment	?	NA					0.4
BBD	Not Identifiable	22	Bone	Bone	Fragment	?	NA					0.2
BBD	Not Identifiable	174	Bone	Bone	Fragment	?	NA					0.4
BBD	Not Identifiable	277	Bone	Bone	Fragment	?	NA					0.3
BBD	Not Identifiable	195	Bone	Bone	Fragment	?	NA					0.3
BBD	Not Identifiable	268	Bone	Bone	Fragment	?	NA					0.3
BBD	Not Identifiable	25	Bone	Bone	Fragment	?	NA					0.3
BBD	Not Identifiable	9	Bone	Bone	Fragment	?	NA					0.8
BBD	Not Identifiable	295	Bone	Bone	Fragment	?	NA					0.6
BBD	Not Identifiable	178	Bone	Bone	Fragment	?	NA					1
BBD	Not Identifiable	16	Bone	Bone	Fragment	?	NA					0.6
BBD	Not Identifiable	81	Bone	Bone	Fragment	?	NA					0.2
BBD	Not Identifiable	6	Bone	Bone	Fragment	?	NA					0.3
BBD	Not Identifiable	35	Bone	Bone	Fragment	?	NA					0.2
BBD	Not Identifiable	170	Bone	Bone	Fragment	?	NA					0.5
BBD	Not Identifiable	948	Bone	Bone	Fragment	?	NA					0.5
BBD	Not Identifiable	575	Bone	Bone	Fragment	?	NA					0.2
BBD	Not Identifiable	105	Bone	Bone	Fragment	?	NA					1.2
BBD	Not Identifiable	170	Bone	Bone	Fragment	?	NA					0.6
BBD	Not Identifiable	4	Bone	Bone	Fragment	?	NA					0.4
BBD	Not Identifiable	375	Bone	Bone	Fragment	?	NA					0.1
BBD	Not Identifiable	45	Bone	Bone	Fragment	?	NA					1.8
BBD	Not Identifiable	48	Bone	Bone	Fragment	?	NA					0.1
BBD	Not Identifiable	340	Bone	Bone	Fragment	?	NA					6.3
BBD	Not Identifiable	27	Bone	Bone	Fragment	?	NA					6.8
BBD	Not Identifiable	67	Bone	Bone	Fragment	?	NA					0.1
BBD	Not Identifiable	127	Bone	Bone	Fragment	?	NA					3.9
BBD	Not Identifiable	692	Bone	Bone	Fragment	?	NA					7.7
BBD	Not Identifiable	460	Bone	Bone	Fragment	?	NA					3.1
BBD	Not Identifiable	55	Bone	Bone	Fragment	?	NA					4
BBD	Not Identifiable	39	Bone	Bone	Fragment	?	NA					0.1
BBD	Not Identifiable	13	Bone	Bone	Fragment	?	NA					0.5
BBD	Not Identifiable	285	Bone	Bone	Fragment	?	NA					0.8
BBD	Not Identifiable	90	Bone	Bone	Fragment	?	NA					12.6
BBD	Not Identifiable	45	Bone	Bone	Fragment	?	NA					0.4
BBD	Not Identifiable	160	Bone	Bone	Fragment	?	NA					1.2
BBD	Not Identifiable	10	Bone	Bone	Fragments	?	NA				2-5	7.9
BBD	Not Identifiable	15	Bone	Bone	Fragment	?	NA					0.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBD	Not Identifiable	2	Bone	Bone	Fragment	?	NA					0.1
BBD	Not Identifiable	9	Bone	Bone	Fragment	?	NA					5.1
BBD	Not Identifiable	131	Bone	Bone	Fragment	?	NA					0.8
BBD	Not Identifiable	216	Bone	Bone	Fragment	?	NA					1
BBD	Not Identifiable	11	Bone	Bone	Fragment	?	NA					1.1
BBD	Not Identifiable	231	Bone	Bone	Fragment	?	NA					0.7
BBD	Not Identifiable	154	Bone	Bone	Fragment	?	NA					0.9
BBD	Not Identifiable	174	Bone	Bone	Fragment	?	NA					1
BBD	Not Identifiable	7	Bone	Bone	Fragment	?	NA					2.6
BBD	Not Identifiable	52	Bone	Bone	Fragment	?	NA					2.9
BBD	Not Identifiable	465	Bone	Bone	Fragment	?	NA					2.9
BBD	Not Identifiable	185	Bone	Bone	Fragment	?	NA					0.6
BBD	Not Identifiable	186	Bone	Bone	Fragment	?	NA					1.1
BBD	Not Identifiable	75	Bone	Bone	Fragment	?	NA					0.8
BBD	Not Identifiable	12	Bone	Bone	Fragment	?	NA				<2	0.9
BBD	Not Identifiable	28	Bone	Bone	Fragment	?	NA				<2	1.1
BBD	Not Identifiable	32	Bone	Bone	Fragment	?	NA					0.3
BBD	Not Identifiable	5	Bone	Bone	Fragment	?	NA					0.6
BBD	Not Identifiable	95	Bone	Bone	Fragment	?	NA					0.4
BBD	Not Identifiable	373	Bone	Bone	Fargment	?	NA					1.2
BBD	Not Identifiable	69	Bone	Bone	Fragment	?	NA					4.3
BBD	Not Identifiable	250	Bone	Bone	Fragment	?	NA					1.7
BBD	Not Identifiable	63	Bone	Bone	Fragment	?	NA					2.8
BBD	Not Identifiable	20	Bone	Bone	Fragment	?	NA					10
BBD	Not Identifiable	245	Bone	Bone	Fragment	?	NA					0.6
BBD	Not Identifiable	380	Bone	Bone	Fragment	?	NA					0.7
BBD	Not Identifiable	135	Bone	Bone	Fragment	?	NA					1.3
BBD	Not Identifiable	275	Bone	Bone	Fragment	?	NA					1
BBD	Not Identifiable	108	Bone	Bone	Fragment	?	NA				2-5	0.1
BBD	Not Identifiable	1	Bone	Bone	Fragment	?	NA				5-10	51.8
BBD	Not Identifiable	36	Bone	Bone	Fragment	?	NA				2-5	0.3
BBD	Not Identifiable	274	Bone	Bone	Fragment	?	NA				<2	3
BBD	Not Identifiable	158	Bone	Bone	Fragment	?	NA				2-5	0.5
BBD	Not Identifiable	185	Bone	Bone	Fragment	?	NA				<2	0.7
BBD	Not Identifiable	14	Bone	Bone	Fragment	?	NA				2-5	33.7
BBD	Not Identifiable	16	Bone	Bone	Fragment	?	NA				<2	0.2
BBD	Not identifiable	1	Cranium	Cranium	Fragment		NA	NA			2-5	1.4
BBD	Not identifiable	1	Rib	Back	Fragment		NA	NA			5-10	0.4
BBD	Not identifiable	18	Teeth	Cranium	Fragments		NA	NA			2-5	2.8
BBD	Not Identifiable	9	Teeth	Cranium	Fragments	?	NA				<2	0.6
BBD	Not Identifiable	10	Teeth	Cranium	Fragment	?	NA				<2	3
BBD	Not Identifiable	4	Teeth	Cranium	Fragment	?	NA				<2	2.9
BBD	Not Identifiable	6	Teeth	Cranium	Fragment	?	NA				<2	3.3
BBD	Not Identifiable	24	Teeth	Cranium	Fragment	?	NA				<2	3.5
BBD	Not Identifiable	3	Teeth	Cranium	Fragment	?	NA				<2	3.4
BBD	Not identifiable	1	Tibia	Upper Hindlimb	Diaphysis fragment		NA	Adult			5-10	1.4
BBD	Not identifiable	1	Vertebrae	Back	Body Fragment		NA	Fused			2-5	1.1
BBD	Ovis	1	Carpal Bone	Feet	Ulnar bone	?	R				<2	0.7
BBD	Ovis	1	Cranium	Cranium	Jugular foreman Complete		L				<2	13.6
BBD	Ovis	1	Cranium	Cranium		?	L	Adult	of horn core.		2-5	0.05
BBD	Ovis	1	Cranium	Cranium		?	NA	Fused			2-5	0.1

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBD	Ovis	1	Cranium	Cranium		?	NA	Adult			2-5	0.1
BBD	Ovis	1	Distal Phalange	Feet		?	NA	Fused		cut marks	2-5	1.8
BBD	Ovis	1	Humerus	Upper Forelimb		?	NA	Unfused	Lamb		2-5	1.1
BBD	Ovis	1	Innominate	Upper Hindlimb	Ilium fragment	?	R	Adult			2-5	28.8
BBD	Ovis	1	Mandibular Tooth	Cranium	Fragment of M2 or M3		R	Adult	domestics		2-5	0.6
BBD	Ovis	1	Mandibular Tooth	Cranium	Fragment	?	R				2-5	1
BBD	Ovis	1	Mandibular Tooth	Cranium	Fragment	?	R				2-5	1.4
BBD	Ovis	1	Metacarpal	Feet	Distal end & diaphysis fragment		R	Fused				0.6
BBD	Ovis	1	Metapodial	Feet		?	NA	Adult			<2	0.1
BBD	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	1.2
BBD	Ovis	1	Proximal Phalange	Feet		?	NA	Fused			2-5	1.3
BBD	Ovis	1	Proximal Phalange	Feet		?	NA	Fused			<2	0.6
BBD	Ovis	1	Rib	Back	Proximal end	?	R				<2	0.3
BBD	Ovis	1	Rib	Back	Fragment	?	R	Adult			<2	0.5
BBD	Ovis	1	Tibia	Upper Hindlimb		?	R	Juvenile			2-5	5.8
BBD	Ovis/Capra	1	Humerus	Upper Forelimb	Diaphysis fragment						2-5	1.5
BBD	Ovis/Capra	1	Metapodial	Feet	Distal epiphysis end, almost complete		NA	Broken			2-5	7.4
BBD	Ovis/Capra	1	Metapodial	Feet		?	NA				<2	3.2
BBD	Ovis/Capra	1	Metatarsal	Feet		?	NA	Fused			2-5	7.9
BBD	Ovis/Capra	1	Radius	Upper Forelimb		?	L	Adult	Bp=37		2-5	1.2
BBD	Ovis/Capra	1	Sesamoid Bone	Feet		?	NA				<2	0.9
BBD	Small Mammal	1	Femur	Upper Hindlimb	Distal diaphysis fragment		R	Neonatal Unfused			2-5	2.4
BBD	Small Mammal	1	Humerus	Upper Forelimb	Distal diaphysis fragment		L	Neonatal Unfused			2-5	9.7
BBD	Small Mammal	1	Humerus	Upper Forelimb	Diaphysis fragment		NA	Neonatal Unfused				0.4
BBD	Testudo	4	Shell	Back	Fragments	?	NA				2-5	25.2
BBD	Testudo	2	Shell	Back	Fragment	?	NA				2-5	7.1
BBD	Testudo	1	Shell	Back	Fragment	?	NA				2-5	6.8
BBD	Testudo	2	Shell	Back	Fragment	?	NA				<2	8.8
BBD	Testudo	1	Shell	Back	Fragment	?	NA				2-5	0.6
BBD	Vulpes	1	Mandibular Tooth	Cranium	M2	?	R	Adult			<2	2
BBD	Vulpes	1	Metapodial	Feet	Distal end fragment		L	NA			5-10	0.2
BBD	Vulpes	1	Middle Phalange	Feet	Complete		R	Adult			2-5	1.9
BBD	Vulpes	1	Radius	Upper Forelimb		?	R	Fused			5-10	0.2
BBD	Vulpes	1	Radius	Upper Forelimb		?	R	Adult			2-5	0.4
BBE	Aves	1	Coracoid	Back	Fragment		L	Adult			2-5	2.4
BBE	Bos	1	Mandible	Cranium		?	NA	Adult			5-10	24.7
BBE	Bos	1	Mandibular Tooth	Cranium	dp4 almost complete	?	R				2-5	62.1
BBE	Bos	1	Maxillary Tooth	Cranium	Fragment	?	R	Adult			2-5	29.5
BBE	Bos	1	Metatarsal	Feet		?	R				2-5	149.2
BBE	Bos	1	Middle Phalange	Feet	Distal end fragment		NA	NA			2-5	5.8
BBE	Bos	1	Middle Phalange	Feet	Distal end fragment		NA	NA			2-5	11.2
BBE	Bos	1	Middle Phalange	Feet	Diaphysis fragment		NA	NA			2-5	105.8
BBE	Bos	1	Middle Phalange	Feet		?	NA	Adult			2-5	7.9
BBE	Bos	1	Proximal Phalange	Feet		?	NA	Adult			2-5	25.2
BBE	Bos	1	Tarsal Bone	Feet		?	R	Adult			2-5	26
BBE	Bos	1	Vertebrae	Back	Body epiphysis fragment		NA	Unfused			2-5	35.6
BBE	Bos	1	Vertebrae	Back	Cervical	?	NA	Adult			2-5	101.3
BBE	Canis	1	Mandible	Cranium	Ramus fragment: small carnivore		R	NA			<2	17.3
BBE	Carnivore	1	Metapodial	Feet	Distal end & diaphysis fragment		R	Adult			<2	5
BBE	Carnivore	1	Phalange	Feet	Proximal end fragment		R	NA			<2	0.6
BBE	Cervid	1	Tooth	Cranium	Complete incisor or Canine		L	Adult			2-5	4.1

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBE	Equus	1	Cranium	Cranium	Jugular foreman Complete			Adult			2-5	25.5
BBE	Equus	1	Distal Phalange	Feet	Proximal end fragment		NA	Fused			2-5	108.6
BBE	Equus	1	Mandibular Tooth	Cranium	P2 fragment		L	Adult very worn			5-10	2.3
BBE	Equus	2	Mandibular Tooth	Cranium	Fragments	?	NA				2-5	7.9
BBE	Equus	1	Mandibular Tooth	Cranium	Fragment	?	R				2-5	28.7
BBE	Equus	1	Mandibular Tooth	Cranium	P2	?	R				2-5	4.4
BBE	Equus	1	Maxillary Tooth	Cranium	P3-M2		R	Adult			2-5	9.5
BBE	Equus	1	Maxillary Tooth	Cranium	Fragment		NA	Adult?			2-5	6.5
BBE	Equus	1	Maxillary Tooth	Cranium	I3 Complete		R	Adult			2-5	9.1
BBE	Equus	1	Metacarpal	Feet		?	R	Fused			2-5	3.5
BBE	Equus	1	Metapodial	Feet	Diaphysis fragment						5-10	7.3
BBE	Equus	1	Metapodial	Feet	Diaphysis fragment						5-10	8.6
BBE	Equus	1	Middle Phalange	Feet	Complete		NA	Adult			2-5	69.7
BBE	Equus	1	Middle Phalange	Feet	Fragment		NA	Fused		mark	2-5	9.4
BBE	Equus	1	Phalange	Feet		?	L	Fused	Dp=27.7,		5-10	5.3
BBE	Equus	1	Proximal Phalange	Feet	Proximal epihysis fragment		NA	Unfused			2-5	15.5
BBE	Equus	1	Proximal Phalange	Feet	Distal end & diaphysis fragment		NA	Adult			2-5	11.1
BBE	Equus	4	Teeth	Cranium	Fragments	?	NA				2-5	39.4
BBE	Equus	1	Tooth	Cranium	Fragments		NA	Adult			5-10	107.5
BBE	Equus	1	Tooth	Cranium	Fragment		NA	NA			2-5	14.9
BBE	Equus	1	Tooth	Cranium	Fragments		NA	NA			2-5	0.6
BBE	Equus	1	Vertebrae	Back	Fragment Cervical Vertebrae		NA	Adult		?	5-10	8.2
BBE	Large Mammal	1	Bone	Bone	Fragment		NA	Adult			>10	0.3
BBE	Large Mammal	1	Bone	Bone	Fragment		NA	Adult			5-10	0.8
BBE	Large Mammal	1	Bone	Bone	Fragments		NA	NA			2-5	0.7
BBE	Large Mammal	5	Bone	Bone	Fragment	?	NA				5-10	0.2
BBE	Large Mammal	1	Cranium	Cranium	Fragment	?	NA				2-5	0.4
BBE	Large Mammal	1	Innominate	Upper Hindlimb	Ischium fragment		R	NA			2-5	1.5
BBE	Large Mammal	1	Long Bone	Long Bone	Fragment	?	NA				5-10	7.9
BBE	Large Mammal	1	Mandible	Cranium		?	L	Adult			>10	4.6
BBE	Large Mammal	1	Mandible	Cranium	Fragment	?	NA				5-10	5.4
BBE	Large Mammal	1	Metapodial	Feet	Distal end fragment		NA	NA			2-5	
BBE	Large Mammal	15	Teeth	Cranium	Fragments	?	NA				<2	0.8
BBE	Large Mammal	42	Teeth	Cranium	Fragments	?	NA				2-5	0.7
BBE	Large Mammal	2	Thoracic Vertebrae	Back		?	NA				2-5	1.2
BBE	Large Mammal	1	Tooth	Cranium	Incisor Fragment	?	NA				2-5	0.1
BBE	Large Mammal	1	Vertebrae	Back	Caudal Vertebrae	?	NA				2-5	0.9
BBE	Lepus	1	Middle Phalange	Feet		?	NA	Fused			<2	8.1
BBE	Lepus	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	6.1
BBE	Medium Mammal	3	Cranium	Cranium	Fragment	?	NA				2-5	15
BBE	Medium Mammal	1	Mandibular Tooth	Cranium	Incisor	?	R	Adult			2-5	1.4
BBE	Medium Mammal	1	Rib	Back		?	NA				2-5	2.2
BBE	Not identifiable	1	Bone	Bone	Fragments		NA	NA			2-5	0.1
BBE	Not identifiable	1	Bone	Bone	Fragment		NA	NA				2.4
BBE	Not identifiable	1	Bone	Bone	Fragments		NA	NA			2-5	6.8
BBE	Not identifiable	1	Bone	Bone	Fragment		NA	NA			>10	0.1
BBE	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.7
BBE	Not identifiable	1	Bone	Bone	Fragment		NA	NA				0.7
BBE	Not identifiable	1	Bone	Bone	Fragments		NA	NA			5-10	0.6
BBE	Not identifiable	117	Bone	Bone	Fragments		NA	NA			2-5	1.2
BBE	Not identifiable	22	Bone	Bone	Fragments		NA	NA			2-5	1.7

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBE	Not identifiable	21	Bone	Bone	Fragments		NA	NA			<2	0.3
BBE	Not identifiable	7	Bone	Bone	Fragments		NA	NA			5-10	0.05
BBE	Not identifiable	521	Bone	Bone	Fragments		NA	NA			<2	8.1
BBE	Not identifiable	1	Bone	Bone	Fragment		NA	NA			5-10	0.05
BBE	Not Identifiable	17	Bone	Bone	Fragments	?	NA					0.2
BBE	Not Identifiable	20	Bone	Bone	Fragments	?	NA		Burnt			2.3
BBE	Not Identifiable	340	Bone	Bone	Fragments	?	NA					2.4
BBE	Not Identifiable	136	Bone	Bone	Fragments	?	NA		Burnt			2
BBE	Not Identifiable	178	Bone	Bone	Fragments	?	NA		Burnt			0.2
BBE	Not Identifiable	259	Bone	Bone	Fragments	?	NA					0.3
BBE	Not Identifiable	51	Bone	Bone	Fragments	?	NA					24
BBE	Not Identifiable	12	Bone	Bone	Fragments	?	NA		Burnt			0.2
BBE	Not Identifiable	268	Bone	Bone	Fragments	?	NA					11.9
BBE	Not Identifiable	112	Bone	Bone	Fragments	?	NA		Burnt			13.7
BBE	Not Identifiable	186	Bone	Bone	Fragments	?	NA					0.3
BBE	Not Identifiable	105	Bone	Bone	Fragmenta	?	NA		Burnt			0.7
BBE	Not Identifiable	9	Bone	Bone	Fragment	?	NA					1.1
BBE	Not Identifiable	179	Bone	Bone	Fragment	?	NA					
BBE	Not Identifiable	71	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	195	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	58	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	21	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	8	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	351	Bone	Bone	Fragment	?	NA					0.2
BBE	Not Identifiable	97	Bone	Bone	Fragment	?	NA					1.8
BBE	Not Identifiable	120	Bone	Bone	Fragment	?	NA					0.3
BBE	Not Identifiable	359	Bone	Bone	Fragment	?	NA					9.8
BBE	Not Identifiable	21	Bone	Bone	Fragment	?	NA					5.8
BBE	Not Identifiable	3	Bone	Bone	Fragment	?	NA					0.9
BBE	Not Identifiable	79	Bone	Bone	Fragment	?	NA					3.1
BBE	Not Identifiable	112	Bone	Bone	Fragment	?	NA					2
BBE	Not Identifiable	95	Bone	Bone	Fragment	?	NA					0.7
BBE	Not Identifiable	69	Bone	Bone	Fragment	?	NA					0.7
BBE	Not Identifiable	70	Bone	Bone	Fragment	?	NA				2-5	0.9
BBE	Not Identifiable	4	Bone	Bone	Fragment	?	NA				2-5	0.2
BBE	Not Identifiable	203	Bone	Bone	Fragment	?	NA				2-5	4.1
BBE	Not Identifiable	580	Bone	Bone	Fragment	?	NA				2-5	0.4
BBE	Not Identifiable	220	Bone	Bone	Fragment	?	NA				<2	3.9
BBE	Not Identifiable	408	Bone	Bone	Fragment	?	NA				<2	1.1
BBE	Not Identifiable	9	Bone	Bone	Fragment	?	NA					0.8
BBE	Not Identifiable	75	Bone	Bone	Fragment	?	NA					0.6
BBE	Not Identifiable	177	Bone	Bone	Fragment	?	NA					3.4
BBE	Not Identifiable	551	Bone	Bone	Fragment	?	NA					0.3
BBE	Not Identifiable	405	Bone	Bone	Fragment	?	NA					31.5
BBE	Not Identifiable	155	Bone	Bone	Fragment	?	NA					30.5
BBE	Not Identifiable	20	Bone	Bone	Fragment	?	NA					6
BBE	Not Identifiable	99	Bone	Bone	Fragment	?	NA					0.3
BBE	Not Identifiable	213	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	65	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	150	Bone	Bone	Fragment	?	NA					0.1
BBE	Not Identifiable	5	Bone	Bone	Fragment	?	NA				>10	2.5

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBE	Not Identifiable	11	Bone	Bone	Fragment	?	NA				5-10	6.8
BBE	Not Identifiable	150	Bone	Bone	Fragment	?	NA				5-10	1
BBE	Not Identifiable	8	Bone	Bone	Fragment	?	NA				5-10	0.1
BBE	Not Identifiable	270	Bone	Bone	Fragment	?	NA				5-10	1.6
BBE	Not identifiable	6	Cranium	Cranium	Fragments		NA	NA			2-5	2.8
BBE	Not Identifiable	1	Cranium	Cranium	Fragment	?	NA				2-5	6.6
BBE	Not Identifiable	1	Long Bone	Long Bone	Fragment	?	NA				5-10	52
BBE	Not Identifiable	1	Rib	Back	Fragment	?	NA				2-5	0.4
BBE	Not identifiable	34	Teeth	Cranium	Fragments		NA	NA			2-5	7.2
BBE	Not Identifiable	10	Teeth	Cranium	Fragment	?	NA				<2	6.4
BBE	Not Identifiable	11	Teeth	Cranium	Fragment	?	NA				2-5	4.4
BBE	Not identifiable	1	Tooth	Cranium	Incisor Fragment		NA	NA			2-5	13.1
BBE	Not identifiable	1	Vertebrae	Back	Epiphysis fragment		NA	Unfused			2-5	8
BBE	Ovis	1	Atlas	Back		?	NA	Adult			5-10	2.1
BBE	Ovis	1	Calcaneus	Feet	Complete		R	Neonatal			2-5	12.5
BBE	Ovis	1	Cranium	Cranium	Ear drum fragment	?	R	Adult	adult size		<2	0.05
BBE	Ovis	1	Femur	Upper Hindlimb	Proximal epiphysis & diaphysis fragment		R	Fused			2-5	0.4
BBE	Ovis	1	Mandibular Tooth	Cranium	Fragment	?	NA				<2	2.9
BBE	Ovis	1	Middle Phalange	Feet		?	NA	Unfused			<2	0.5
BBE	Ovis	1	Middle Phalange	Feet	Complete Neonatal Unfused	?	NA	Neonatal			<2	0.5
BBE	Ovis	1	Middle Phalange	Feet		?	NA	Fused			<2	0.4
BBE	Ovis	1	Tibia	Upper Hindlimb		?	L	Unfused			2-5	5.4
BBE	Ovis	1	Ulna	Upper Forelimb		?	L	Adult			2-5	0.1
BBE	Ovis/Capra	1	Mandibular Tooth	Cranium	Incisor	?	NA	Adult			2-5	1.9
BBE	Rattus	1	Femur	Upper Hindlimb		?	NA	Unfused	Rattus Rattus		<2	0.7
BBE	Rodent	1	Tooth	Cranium								0.05
BBE	Small Mammal	1	Humerus	Upper Forelimb		?	NA				<2	3.1
BBE	Small Mammal	1	Rib	Back	Fragments	?	NA				<2	5
BBE	Small Mammal	1	Vertebrae	Back	Fragments	?	NA				2-5	2.9
BBE	Sus	1	Maxillary Tooth	Cranium	dc Complete		R	Roots Open			<2	0.6
BBE	Testudo	1	Shell	Back	Fragment	?	NA				2-5	1.1
BBE	Testudo	1	Shell	Back	Fragment	?	NA				<2	6.7
BBE	Testudo	1	Shell	Back	Fragment	?	NA				2-5	0.9
BBE	Vulpes	1	Mandibular Tooth	Cranium	M3 complete		R	Adult			2-5	6.7
BBE	Vulpes	1	Mandibular Tooth	Cranium	M2 fragment		R	Adult			2-5	6.2
BBE	Vulpes	1	Maxillary Tooth	Cranium	M1 fragment		NA	Adult			2-5	42.1
BBG	Bos	1	Calcaneus	Feet	Epiphysis complete	?	L	Unfused			2-5	8
BBG	Bos	1	Mandibular Tooth	Cranium	P2 Fragment	?	L	Unworn			2-5	59.7
BBG	Bos	1	Metapodial	Feet		?	NA		Burnt		2-5	25.9
BBG	Bos	1	Sesamoid Bone	Feet		?	NA	Juvenile	Very pourus bone		<2	7.8
BBG	Bos	2	Teeth	Cranium	Fragment	?	NA	Unworn			2-5	11.8
BBG	Bos	1	Tooth	Cranium	Fragment	?	NA				2-5	7.1
BBG	Carnivore	1	Mandible	Cranium		?	NA		small carnivore		2-5	
BBG	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		NA	Adult?			2-5	66.5
BBG	Cervid	1	Tibia	Upper Hindlimb	Distal end & diaphysis fragment		R	Adult	Burnt		2-5	2.7
BBG	Equus	1	Astragalus	Feet	Fragment		R	Adult			2-5	1.2
BBG	Equus	1	Astragalus	Feet		?	R				2-5	32.7
BBG	Equus	1	Carpal Bone	Feet	Accessory Carpal Bone Fragment	?	NA	Adult			2-5	103.9
BBG	Equus	1	Cranium	Cranium	Petrous part of petromastoid		R	Adult			2-5	8.7
BBG	Equus	1	Cranium	Cranium	Petrous part of petromastoid		R	Adult			2-5	7.8
BBG	Equus	1	Cranium	Cranium	Petrous part of petromastoid		L	Adult			2-5	10.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBG	Equus	8	Cranium	Cranium	Fragments	?	NA		drum		2-5	5.6
BBG	Equus	5	Cranium	Cranium	Fragments	?	NA	Adult			2-5	2.5
BBG	Equus	1	Mandibular Tooth	Cranium	M3	?	L				2-5	9.9
BBG	Equus	1	Mandibular Tooth	Cranium	Second Premolar	?	R				2-5	44.3
BBG	Equus	1	Mandibular Tooth	Cranium	P2	?	L				2-5	1.6
BBG	Equus	1	Maxillary Tooth	Cranium	P3-M2 ? Complete		R	Adult			2-5	25
BBG	Equus	1	Maxillary Tooth	Cranium	M1 or M2. Almost complete	?	NA				2-5	24.5
BBG	Equus	1	Maxillary Tooth	Cranium	Fragment	?	NA				2-5	7.4
BBG	Equus	1	Maxillary Tooth	Cranium	Fragment M1?	?	L		Lowercrown		2-5	3.5
BBG	Equus	1	Maxillary Tooth	Cranium	Fragment	?	L				2-5	26.4
BBG	Equus	1	Maxillary Tooth	Cranium	M1 or M2 Complete	?	NA				2-5	37
BBG	Equus	1	Metacarpal	Feet		?	NA	Fused			2-5	46.9
BBG	Equus	1	Metapodial	Feet	Fragment	?	NA				2-5	16.3
BBG	Equus	1	Metatarsal	Feet	II Proximal End Fragment	?	NA	Fused			2-5	2.2
BBG	Equus	1	Middle Phalange	Feet		?	NA	Fused	GL=39.4,		2-5	156
BBG	Equus	1	Proximal Phalange	Feet	Fragment	?	NA		Goes with 2618		2-5	2.9
BBG	Equus	1	Proximal Phalange	Feet		?	NA	Fused	Burnt		2-5	24.2
BBG	Equus	1	Proximal Phalange	Feet		?	NA				<2	37.9
BBG	Equus	1	Rib	Back		?	L	Adult			2-5	4
BBG	Equus	1	Sesamoid Bone	Feet	Almost Complete	?	NA	Adult			2-5	9.4
BBG	Equus	1	Sesamoid Bone	Feet	Fragment	?	NA	Adult			2-5	4.3
BBG	Equus	1	Sesamoid Bone	Feet	Fragment	?	NA	Adult			2-5	52.1
BBG	Equus	1	Tarsal Bone	Feet		?	R				2-5	12.1
BBG	Equus	1	Tarsal Bone	Feet		?	R	Adult			2-5	6.6
BBG	Equus	1	Tarsal Bone	Feet	Fragment	?	R	Adult			2-5	5.6
BBG	Equus	1	Tarsal Bone	Feet	Fragment	?	R	Adult			2-5	0.8
BBG	Equus	1	Tarsal Bone	Feet	Fragment	?	L	Adult			2-5	0.6
BBG	Equus	1	Tarsal Bone	Feet	Fragment	?	R	Adult			2-5	6.4
BBG	Equus	19	Teeth	Cranium	Fragments	?	NA				2-5	30.4
BBG	Equus	1	Tibia	Upper Hindlimb		?	L				5-10	3.9
BBG	Equus	1	Tibia	Upper Hindlimb		?	L		but smaller than		2-5	41.5
BBG	Equus	1	Tibia	Upper Hindlimb		?	L	Fused			2-5	22
BBG	Equus	1	Tooth	Cranium	Incisor Fragment	?	NA	Adult			2-5	1.9
BBG	Large Mammal	6	Bone	Bone	Fragments	?	NA				5-10	0.4
BBG	Large Mammal	1	Cranium	Cranium	Fragment		NA	Adult			2-5	0.5
BBG	Large Mammal	1	Cranium	Cranium	Fragment		NA	Adult			2-5	0.9
BBG	Large Mammal	10	Cranium	Cranium	Fragments	?	NA				2-5	1
BBG	Large Mammal	1	Long Bone	Long Bone	Fragment	?	NA				5-10	17.7
BBG	Large Mammal	6	Mandible	Cranium	Fragments	?	NA				2-5	1.7
BBG	Large Mammal	1	Mandible	Cranium	Fragment	?	NA				2-5	2.1
BBG	Large Mammal	1	Rib	Back	Fragment	?	NA				2-5	1.4
BBG	Large Ungulate	1	Rib	Back		?	NA	Adult			2-5	0.1
BBG	Lepus	1	Metacarpal	Feet		?	R	Adult			<2	0.1
BBG	Medium Mammal	3	Rib	Back	Fragments		NA	NA			<2	14.5
BBG	Medium Mammal	2	Rib	Back	Fragment		NA	NA			2-5	3.5
BBG	Medium Mammal	1	Rib	Back		?	NA				2-5	5.4
BBG	Medium Mammal	1	Sesamoid Bone	Feet		?	NA				<2	61.2
BBG	Medium Mammal	1	Vertebrae	Back	Thoracic spine fragment	?	NA	Adult			2-5	7.2
BBG	Not identifiable	8	Bone	Bone	Fragment		NA	NA			5-10	9.5
BBG	Not identifiable	111	Bone	Bone	Fragment		NA	NA	Burnt		2-5	
BBG	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.1

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBG	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	0.8
BBG	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	0.2
BBG	Not identifiable	9	Bone	Bone	Fragment		NA	NA			5-10	0.8
BBG	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	0.4
BBG	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	0.6
BBG	Not identifiable	11	Bone	Bone	Fragment		NA	NA	Burnt		2-5	0.1
BBG	Not identifiable	102	Bone	Bone	Fragment		NA	NA				20.2
BBG	Not Identifiable	16	Bone	Bone	Fragments	?	NA				2-5	0.4
BBG	Not Identifiable	16	Bone	Bone	Fragments	?	NA				2-5	2.2
BBG	Not Identifiable	90	Bone	Bone	Fragments	?	NA		Burnt		2-5	9.5
BBG	Not Identifiable	105	Bone	Bone	Fragments	?	NA				2-5	4.8
BBG	Not Identifiable	90	Bone	Bone	Fragments	?	NA				2-5	3.4
BBG	Not Identifiable	220	Bone	Bone	Fragments	?	NA		Burnt		<2	3.3
BBG	Not Identifiable	22	Bone	Bone	Fragments	?	NA					3.4
BBG	Not Identifiable	15	Bone	Bone	Fragments	?	NA		Burnt			3.6
BBG	Not Identifiable	426	Bone	Bone	Fragments	?	NA					2.2
BBG	Not Identifiable	178	Bone	Bone	Fragments	?	NA		Burnt			4.5
BBG	Not Identifiable	198	Bone	Bone	Fragments	?	NA					3.8
BBG	Not Identifiable	121	Bone	Bone	Fragments	?	NA		Burnt			1.1
BBG	Not Identifiable	85	Bone	Bone	Fragments	?	NA		Burnt			4.2
BBG	Not Identifiable	741	Bone	Bone	Fragments	?	NA					22
BBG	Not Identifiable	276	Bone	Bone	Fragments	?	NA					0.7
BBG	Not Identifiable	57	Bone	Bone	Fragments	?	NA		Burnt			4.1
BBG	Not Identifiable	235	Bone	Bone	Fragments	?	NA					1.6
BBG	Not Identifiable	12	Bone	Bone	Fragments	?	NA		Burnt			2.4
BBG	Not Identifiable	1930	Bone	Bone	Fragments	?	NA					9.3
BBG	Not Identifiable	266	Bone	Bone	Fragments	?	NA		Burnt			0.4
BBG	Not Identifiable	44	Bone	Bone	Fragments	?	NA				2-5	0.3
BBG	Not Identifiable	1420	Bone	Bone	Fragments	?	NA					0.8
BBG	Not Identifiable	140	Bone	Bone	Fragments	?	NA					63.2
BBG	Not Identifiable	10	Bone	Bone	Fragments	?	NA				2-5	16.2
BBG	Not Identifiable	7	Bone	Bone	Fragment	?	NA					12.5
BBG	Not Identifiable	10	Bone	Bone	Fragment	?	NA					16.3
BBG	Not Identifiable	169	Bone	Bone	Fragment	?	NA					7.8
BBG	Not Identifiable	175	Bone	Bone	Fragment	?	NA					9.1
BBG	Not Identifiable	67	Bone	Bone	Fragment	?	NA					24.7
BBG	Not Identifiable	75	Bone	Bone	Fragment	?	NA					6.9
BBG	Not Identifiable	7	Bone	Bone	Fragment	?	NA				2-5	8
BBG	Not Identifiable	15	Bone	Bone	Fragment	?	NA				<2	7.1
BBG	Not Identifiable	20	Bone	Bone	Fragment	?	NA					19.4
BBG	Not Identifiable	18	Bone	Bone	Fragment	?	NA					20.5
BBG	Not Identifiable	215	Bone	Bone	Fragment	?	NA					59.9
BBG	Not Identifiable	180	Bone	Bone	Fragment	?	NA					120.5
BBG	Not Identifiable	93	Bone	Bone	Fragment	?	NA					10.7
BBG	Not Identifiable	120	Bone	Bone	Fragment	?	NA					24.1
BBG	Not identifiable	1	Cranium	Cranium	Fragment		NA	NA			5-10	11
BBG	Not identifiable	1	Cranium	Cranium	Fragment		NA	NA			2-5	1.7
BBG	Not Identifiable	4	Long Bone	Long Bone	Fragments	?	NA		part of the equus		5-10	49.8
BBG	Not Identifiable	5	Long Bone	Long Bone	Fragment	?	NA		Burnt		2-5	24.2
BBG	Not Identifiable	94	Long Bone	Long Bone	Fragments	?	NA				2-5	28.2
BBG	Not Identifiable	1	Long Bone	Long Bone	Fragment	?	NA				2-5	12.9

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBG	Not identifiable	11	Teeth	Cranium	Fragment		NA	NA			<2	7.3
BBG	Not Identifiable	61	Teeth	Cranium	Fragments	?	NA				<2	1.9
BBG	Not identifiable	1	Tooth	Cranium	Fragment		NA	NA			<2	3.3
BBG	Not Identifiable	7	Vertebrae	Back	Fragments	?	NA				<2	8.8
BBG	Ovis	1	Mandibular Tooth	Cranium	P3	?	R				2-5	3.3
BBG	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Adult			2-5	40.9
BBG	Ovis	1	Proximal Phalange	Feet		?	NA				2-5	1.2
BBG	Ovis	1	Rib	Back		?	R				2-5	1
BBG	Ovis	1	Vertebrae	Back	Complete Thoracic Vertebrae		NA	Unfused			2-5	1.1
BBG	Ovis	1	Vertebrae	Back	Almost Complete Lumbar Vertebrae		NA	NA			2-5	13.2
BBG	Ovis/Capra	1	Proximal Phalange	Feet		?	NA	Fused			2-5	1.5
BBG	Small Mammal	2	Rib	Back		?	NA				2-5	19.6
BBG	Vulpes	1	Metacarpal	Feet	V	?	R	Adult			2-5	2.4
BBG	Vulpes	1	Metapodial	Feet		?	NA	Adult			2-5	0.3
BBG	Vulpes	1	Metapodial	Feet		?	NA	Fused			<2	1.4
BBG	Vulpes	1	Metatarsal	Feet		?	R	Fused			2-5	4.8
BBG	Vulpes	1	Proximal Phalange	Feet		?	NA				<2	0.5
BBG	Vulpes	1	Proximal Phalange	Feet		?	NA	Fused			2-5	1.2
BBH	Aves	1	Carpo-Metacarpus	Feet	Almost Complete		L	Fused			2-5	0.3
BBH	Aves	1	Coracoid	Back	Almost Complete		L	Adult			2-5	3.7
BBH	Aves	1	Coracoid	Back	Almost Complete		L	Adult			<2	3.8
BBH	Aves	1	Coracoid	Back	Fragment		NA	Adult			2-5	3.5
BBH	Aves	1	Femur	Upper Hindlimb	Proximal end & diaphysis fragment		R	Fused			2-5	0.8
BBH	Aves	1	Humerus	Upper Forelimb	Proximal end & Diaphysis fragment		R	Fused			2-5	10.7
BBH	Aves	1	Humerus	Upper Forelimb	Complete		R	Fused			2-5	4.4
BBH	Aves	1	Humerus	Upper Forelimb	Proximal end fragment		L	Adult			<2	6.7
BBH	Aves	1	Humerus	Upper Forelimb	Distal end fragment		L	Adult			<2	14.7
BBH	Aves	1	Humerus	Upper Forelimb	Distal end fragment		L	Adult			<2	
BBH	Aves	1	Radius	Upper Forelimb	Proximal end & Diaphysis fragment		R	Unfused			2-5	72.2
BBH	Aves	1	Radius	Upper Forelimb	Almost Complete		L	Adult			2-5	1.3
BBH	Aves	1	Ulna	Upper Forelimb	Distal end & diaphysis fragment		L	Fused			2-5	0.2
BBH	Aves	1	Ulna	Upper Forelimb	Complete		R	Fused			2-5	21.1
BBH	Bos	1	Calcaneus	Feet		?	R				5-10	0.4
BBH	Bos	1	Carpal Bone	Feet	Complete IV		L	Juvenile	pourus bone		2-5	8.9
BBH	Bos	1	Carpal Bone	Feet	Complete II & III		L	Juvenile			2-5	95.6
BBH	Bos	1	Cranium	Cranium	Fragment with horn core	?	NA	Adult			2-5	90.2
BBH	Bos	1	Cranium	Cranium	Zygomatic Process	?	R	Adult			5-10	56.8
BBH	Bos	1	Epistropheus	Cranium	Dorsal fragment		NA	Juvenile			5-10	45.6
BBH	Bos	1	Innominate	Upper Hindlimb	Ilium fragment						5-10	3.5
BBH	Bos	1	Innominate	Upper Hindlimb	Ilium fragment		L	Unfused			2-5	75.3
BBH	Bos	1	Mandible	Cranium	Fragment place for M3		R	Adult		ramus	5-10	61.2
BBH	Bos	1	Mandible	Cranium	Ramus Fragment		L	Adult			5-10	46.1
BBH	Bos	1	Mandible	Cranium	Condyle fragment		L	Juvenile			2-5	4.4
BBH	Bos	1	Mandibular Tooth	Cranium	I1		L	Adult			2-5	21.7
BBH	Bos	1	Mandibular Tooth	Cranium	M2 complete		L	Adult			5-10	14.3
BBH	Bos	1	Mandibular Tooth	Cranium	M3		R	No wear: unerupted			5-10	157.5
BBH	Bos	1	Mandibular Tooth	Cranium	Canine		L	roots open			2-5	22
BBH	Bos	1	Mandibular Tooth	Cranium	Incisor		L	Adult			2-5	25.4
BBH	Bos	1	Mandibular Tooth	Cranium	Incisor Fragment	?	NA				2-5	6.2
BBH	Bos	1	Mandibular Tooth	Cranium	dp4	?	L	Juvenile	L,M,N in wear		2-5	1.1
BBH	Bos	1	Maxillary Tooth	Cranium	fragment		NA	Adult			2-5	134.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Bos	1	Metacarpal	Feet	Complete		NA	Unfused			2-5	105.3
BBH	Bos	1	Metacarpal	Feet	Complete		NA	Unfused			2-5	24.2
BBH	Bos	1	Metacarpal	Feet	Distal Diaphysis Fragment		NA	Unfused			5-10	105.8
BBH	Bos	1	Metacarpal	Feet	Distal Diaphysis Fragment		R	Unfused			2-5	29.2
BBH	Bos	1	Metacarpal	Feet	Proximal end & diaphysis fragment		L	Adult			2-5	2
BBH	Bos	1	Metapodial	Feet		?	NA	Unfused			2-5	35.8
BBH	Bos	1	Metatarsal	Feet	Distal epiphysis fragment		NA	Fused			2-5	88.2
BBH	Bos	1	Metatarsal	Feet	Complete		NA	Unfused			2-5	49.7
BBH	Bos	1	Metatarsal	Feet	Complete		NA	Unfused			2-5	6.9
BBH	Bos	1	Metatarsal	Feet	Complete		NA	Unfused			2-5	3.1
BBH	Bos	1	Metatarsal	Feet	Complete		NA	Unfused			2-5	2.8
BBH	Bos	1	Metatarsal	Feet	Distal Diaphysis Fragment		NA	Unfused			5-10	5.8
BBH	Bos	1	Middle Phalange	Feet	Complete		NA	Adult	Burnt	Manus	2-5	48.2
BBH	Bos	1	Proximal Phalange	Feet	Distal end fragment		NA	Adult			2-5	4.7
BBH	Bos	1	Proximal Phalange	Feet	Distal end fragment		NA	Juvenile	Burnt		2-5	44.8
BBH	Bos	1	Radius	Upper Forelimb	Proximal Diaphysis Fragment		L	Unfused			2-5	28.5
BBH	Bos	1	Radius	Upper Forelimb		?	L	Adult			5-10	50.1
BBH	Bos	1	Rib	Back		?	R		Very large rib		5-10	5.7
BBH	Bos	1	Rib	Back		?	L		large bone	marks	5-10	130.1
BBH	Bos	1	Rib	Back	Fragment	?	R		large bone		5-10	34
BBH	Bos	1	Sesamoid Bone	Feet	Complete Proximal bone		NA	Adult	Huge!		2-5	161.2
BBH	Bos	1	Tarsal Bone	Feet	Centraquartal Bone		L	Just fused Juvenile			2-5	5
BBH	Bos	1	Tarsal Bone	Feet	Complete II & III		L	Juvenile			2-5	4.4
BBH	Bos	3	Teeth	Cranium	Fragment	?	NA				2-5	96.9
BBH	Bos	1	Tibia	Upper Hindlimb	Distal diaphysis fragment			Unfused			2-5	104.6
BBH	Bos	1	Tibia	Upper Hindlimb	J>50	?	L	Unfused			2-5	6.7
BBH	Bos	1	Tooth	Cranium	Fragment		NA	No wear, not errupted			2-5	20.8
BBH	Bos	1	Tooth	Cranium	Incisor fragment		NA				2-5	26.9
BBH	Bos	1	Tooth	Cranium	Fragment	?	NA				<2	47.3
BBH	Bos	1	Ulna	Upper Forelimb	Proximal diaphysis fragment		R	Unfused			2-5	55.8
BBH	Bos	1	Vertebrae	Back	Articulation fragment lumbar vertebrae		NA	Fused			2-5	2.2
BBH	Canis	1	Femur	Upper Hindlimb	Distal epiphysis complete		L	Unfused			2-5	23.9
BBH	Capra	1	Carpal Bone	Feet	Complete II & III		L	Adult			2-5	35.3
BBH	Capra	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Adult			2-5	1.6
BBH	Capra	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		L	Unfused			2-5	6.4
BBH	Capra	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		L	Unfused			2-5	4.4
BBH	Capra	1	Tibia	Upper Hindlimb	Distal epiphysis complete		L	Unfused			2-5	18.1
BBH	Carnivore	1	Cranium	Cranium	Typanic Bulla Fragment		NA	NA			2-5	
BBH	Carnivore	1	Cranium	Cranium	InterNAl Auditory Meatus		L	Adult			2-5	
BBH	Carnivore	1	Distal Phalange	Feet	Complete		NA	Adult ?	size as our dog		<2	1.7
BBH	Carnivore	1	Mandible	Cranium	Fragment	?	NA				2-5	39.5
BBH	Carnivore	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	0.4
BBH	Carnivore	1	Proximal Phalange	Feet	Complete		L	Adult			5-10	0.3
BBH	Carnivore	1	Proximal Phalange	Feet	Complete			Fused			2-5	0.1
BBH	Carnivore	5	Rib	Back	Fragments		NA	Fused			<2	21.3
BBH	Carnivore	1	Rib	Back		?	L	Unfused			2-5	64.3
BBH	Carnivore	1	Sesamoid Bone	Feet		?	NA				<2	18.9
BBH	Carnivore	1	Sternum	Back	Complete		NA	Adult			<2	30.8
BBH	Carnivore	1	Tarsal Bone	Feet	Complete III		L	Adult			2-5	95.3
BBH	Carnivore	1	Vertebrae	Back	Fragments Thoracic Vertebrae		L	Adult			5-10	10.6
BBH	Carnivore	1	Vertebrae	Back	Fragments Thoracic Vertebrae		L	Adult			5-10	77.4

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Carnivore	1	Vertebrae	Back	Almost Complete Lumbar Vertebrae		L	Adult			5-10	5.6
BBH	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		L	Adult			<2	0.6
BBH	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		L	Adult			2-5	4.1
BBH	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		NA	Adult			<2	14
BBH	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		R	Adult			2-5	12.3
BBH	Cervid	1	Femur	Upper Hindlimb	Distal Diaphysis Fragment		L	Unfused			2-5	25.3
BBH	Cervid	1	Calcaneus	Feet	Complete		R	Fused			5-10	14.7
BBH	Cervid	1	Femur	Upper Hindlimb	Caput & Tuberculum Minus		L	Fused			2-5	1.7
BBH	Cervid	1	Femur	Upper Hindlimb	Tuberculum Majus		L	Fused			2-5	1.9
BBH	Cervid	1	Humerus	Upper Forelimb	Epiphysis complete		R	Unfused			2-5	27.4
BBH	Cervid	1	Innominate	Upper Hindlimb	Ilium fragment		L	Adult ?			5-10	33.6
BBH	Cervid	1	Innominate	Upper Hindlimb	Pubis fragment		R	Just fusing			5-10	42.7
BBH	Cervid	1	Mandible	Cranium	Ramus Fragment		R	Juvenile			2-5	2.2
BBH	Cervid	1	Metacarpal	Feet	Diaphysis fragment		R	Fused			>10	8.1
BBH	Cervid	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R	Fused			2-5	30.3
BBH	Cervid	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R	Fused			5-10	16.6
BBH	Cervid	1	Metapodial	Feet	Diaphysis Fragment		NA	NA			5-10	25.1
BBH	Cervid	1	Metapodial	Feet	Diaphysis Fragment		NA	NA			5-10	4.2
BBH	Cervid	1	Metapodial	Feet	Diaphysis Fragment		NA	NA			5-10	4.3
BBH	Cervid	1	Metatarsal	Feet	Diaphysus Fragment		L	NA			>10	19.9
BBH	Cervid	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	1.8
BBH	Cervid	1	Metatarsal	Feet	Distal diaphysis fragment		L	Unfused	Burnt		5-10	20.5
BBH	Cervid	1	Metatarsal	Feet	Proximal end Fragment		L	Adult			2-5	40
BBH	Cervid	1	Metatarsal	Feet		?	R	Fused			2-5	16.1
BBH	Cervid	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	6.2
BBH	Cervid	1	Tibia	Upper Hindlimb	Distal Diaphysis Fragment		L	Unfused			5-10	8.1
BBH	Cervid	1	Tibia	Upper Hindlimb	Distal Diaphysis Fragment		L	Unfused			5-10	27.5
BBH	Cervid	1	Tibia	Upper Hindlimb	Proximal end & diaphysis fragment		L	Unfused			2-5	20.2
BBH	Cervid	1	Tibia	Upper Hindlimb	Diaphysis fragment		L ?	Adult			>10	12.9
BBH	Cervid	1	Tibia	Upper Hindlimb	Proximal end & diaphysis fragment		R	Adult			2-5	7.1
BBH	Cervid	1	Vertebrae	Back	Complete Thoracic Vertebrae		NA	Unfused			5-10	2.1
BBH	Cervid	1	Vertebrae	Back	Almost Complete Thoracic Vertebrae		NA	Just Fused			2-5	3.1
BBH	Equus	1	Mandibular Tooth	Cranium	dP3 or dp4 Complete		L	Adult			2-5	5.6
BBH	Equus	1	Mandibular Tooth	Cranium	M3 Complete		L	Adult			2-5	9.2
BBH	Equus	1	Middle Phalange	Feet	Complete		NA	Adult	Gnaw Marks		2-5	50.2
BBH	Equus	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	11.5
BBH	Equus	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	7
BBH	Equus	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	28.3
BBH	Equus	1	Proximal Phalange	Feet	Almost Complete	?	L	Fused	Dp=27.4,		5-10	20.6
BBH	Equus	1	Sesamoid Bone	Feet	Proximal Sesamoid Bone Complete		NA	Adult			2-5	29.2
BBH	Equus	1	Tarsal Bone	Feet	Complete III		R	Unfused			2-5	37.6
BBH	Equus	1	Tibia	Upper Hindlimb	Proximal Diaphysis Fragment		L	Adult			2-5	96.2
BBH	Erinaceus	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		L	Unfused	Hedgehog		2-5	9.6
BBH	Erinaceus	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment		L	Unfused	Hedgehog		2-5	97.1
BBH	Felis	1	Calcaneus	Feet	Complete		L	Unfused			2-5	19.3
BBH	Homo	1	Bone	Bone	Fragment		NA	NA				36.6
BBH	Homo	1	Bone	Bone	Fragment		NA	NA				38.1
BBH	Homo	1	Tooth	Cranium	Molar		NA	Adult			<2	7.3
BBH	Homo	1	Unknown		Proximal Diaphysis Fragment		?	?			2-5	18.3
BBH	Homo	1	Unknown		Proximal Diaphysis Fragment		?	?			2-5	17.6
BBH	Large Mammal	4	Bone	Bone	Fragments		NA	NA			<2	0.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Large Mammal	2	Bone	Bone	Fragment	?	NA				2-5	0.6
BBH	Large Mammal	41	Cranium	Cranium	Fragments		NA	NA			2-5	9.2
BBH	Large Mammal	1	Cranium	Cranium	Hypoglossal CaNAl		L	Juvenile			2-5	0.9
BBH	Large Mammal	3	Long Bone	Long Bone	Fragment	?	NA				2-5	21
BBH	Large Mammal	2	Long Bone	Long Bone	Fragment	?	NA				5-10	1
BBH	Large Mammal	1	Mandible	Cranium	Fragment		NA	Adult			5-10	0.8
BBH	Large Mammal	1	Radius	Upper Forelimb	Diaphysis fragment		NA	Adult			5-10	0.3
BBH	Large Mammal	58	Rib	Back	Fragments		NA	NA			2-5	1
BBH	Large Mammal	1	Rib	Back	Fragments		NA	Adult			5-10	
BBH	Large Mammal	1	Rib	Back	Fragment		NA	NA			>10	
BBH	Large Mammal	1	Rib	Back	Fragment	?	NA				5-10	1
BBH	Large Mammal	1	Rib	Back	Fragment	?	NA	Adult			5-10	1.1
BBH	Large Mammal	1	Thoracic Vertebrae	Back		?	NA	Adult			5-10	0.1
BBH	Large Mammal	1	Thoracic Vertebrae	Back	Fragment	?	NA	Adult			5-10	0.2
BBH	Large Mammal	1	Tooth	Cranium	Fragment	?	NA				2-5	0.1
BBH	Lepus	1	Astragalus	Feet		?	R	Adult			<2	0.1
BBH	Lepus	1	Atlas	Back	Complete		NA	Fused			2-5	5.2
BBH	Lepus	1	Cranium	Cranium	Exoocipital		R	Adult			2-5	0.1
BBH	Lepus	1	Cranium	Cranium	Typanic Bulla		R	Adult			2-5	
BBH	Lepus	1	Distal Phalange	Feet	Complete		NA	Fused			<2	0.3
BBH	Lepus	1	Humerus	Upper Forelimb	Proximal end & diaphysis fragment		L	Fused			<2	0.3
BBH	Lepus	1	Maxilla	Cranium	Complete		L	Fused			2-5	0.2
BBH	Lepus	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R		In to be id box	!!!!!!!!!!!!!!	2-5	0.1
BBH	Lepus	1	Metacarpal	Feet	Proximal end & diaphysis fragment						2-5	0.2
BBH	Lepus	1	Metacarpal	Feet	II	?	L	Unfused			2-5	0.1
BBH	Lepus	1	Metacarpal	Feet	IV	?	L	Fused			<2	0.1
BBH	Lepus	1	Metapodial	Feet	Distal end & diaphysis fragment				the brown hare		2-5	0.1
BBH	Lepus	1	Metatarsal	Feet	Proximal end & diaphysis fragment						2-5	0.05
BBH	Lepus	1	Metatarsal	Feet	Complete						5-10	1.7
BBH	Lepus	1	Metatarsal	Feet	Complete						5-10	26.1
BBH	Lepus	1	Metatarsal	Feet	Complete						5-10	17.1
BBH	Lepus	1	Metatarsal	Feet	Distal end & diaphysis fragment						2-5	0
BBH	Lepus	1	Metatarsal	Feet	Distal end & diaphysis fragment						2-5	35.8
BBH	Lepus	1	Middle Phalange	Feet	Complete		NA	Fused			<2	0.5
BBH	Lepus	1	Middle Phalange	Feet	Complete		NA	Fused			<2	2.4
BBH	Lepus	1	Middle Phalange	Feet	Complete		NA	Fused			<2	0.7
BBH	Lepus	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	3.4
BBH	Lepus	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	1.9
BBH	Lepus	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	
BBH	Lepus	1	Proximal Phalange	Feet	Complete		NA	Fused			<2	33.1
BBH	Lepus	1	Proximal Phalange	Feet		?	L	Fused			2-5	0.1
BBH	Lepus	1	Radius	Upper Forelimb		?	R	Fused			<2	15
BBH	Lepus	1	Tibia	Upper Hindlimb	Distal End Fragment		L	Fused	Burnt		2-5	10.8
BBH	Lepus	1	Tibia	Upper Hindlimb		?	R	Adult			<2	8.8
BBH	Lepus	1	Tooth	Cranium	Complete						<2	2.6
BBH	Lepus	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment		R	Unfused			2-5	3.3
BBH	Medium Mammal	1	Calcaneus	Feet	Distal end fragment		R	NA			2-5	5.6
BBH	Medium Mammal	52	Cranium	Cranium	Fragments		NA	Majority Unfused			2-5	3.2
BBH	Medium Mammal	31	Cranium	Cranium	Fragments	?	NA				<2	3.7
BBH	Medium Mammal	3	Cranium	Cranium	Fragment	?	NA				<2	19.6
BBH	Medium Mammal	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			5-10	0.7

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Medium Mammal	110	Rib	Back	Fragments		NA	NA			2-5	7.4
BBH	Medium Mammal	132	Rib	Back	Fragments		L	Adult			5-10	6.1
BBH	Medium Mammal	9	Rib	Back	Fragments		NA	Unfused			5-10	0.1
BBH	Medium Mammal	8	Rib	Back	Fragment	?	NA				2-5	3
BBH	Medium Mammal	6	Rib	Back	Fragment	?	NA				2-5	28.2
BBH	Medium Mammal	2	Rib	Back	Fragment	?	NA				<2	1.7
BBH	Medium Mammal	1	Rib	Back	Fragment	?	NA				<2	0.2
BBH	Medium Mammal	1	Vertebrae	Back	Body fragment		NA	Fused			5-10	3.2
BBH	Medium Mammal	10	Vertebrae	Back	Fragments Thoracic Vertebrae		NA	Just Fused			2-5	5.9
BBH	Medium Mammal	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	Adult			2-5	1.5
BBH	Medium Mammal	1	Vertebrae	Back	Body Fragment	?	NA	Unfused			<2	2.8
BBH	Medium Mammal	2	Vertebrae	Back	Fragment	?	NA				2-5	0.5
BBH	Medium Mammal	1	Vertebrae	Back	Fragment	?	NA				<2	1.9
BBH	Not identifiable	2	Bone	Bone	Fragments		NA	NA	Burnt		5-10	14.6
BBH	Not identifiable	22	Bone	Bone	Fragments		NA	NA			5-10	2.4
BBH	Not identifiable	51	Bone	Bone	Fragments		NA	NA	Burnt		2-5	0.5
BBH	Not identifiable	332	Bone	Bone	Fragments		NA	NA			2-5	
BBH	Not identifiable	1	Bone	Bone	Fragments		NA	NA			<2	
BBH	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.05
BBH	Not identifiable	1	Bone	Bone	Fragment		NA	NA				3.3
BBH	Not identifiable	4	Bone	Bone	Fragments		NA	NA			5-10	4.3
BBH	Not identifiable	904	Bone	Bone	Fragments		NA	NA			<2	0.1
BBH	Not identifiable	21	Bone	Bone	Fragments		NA	NA			5-10	2.9
BBH	Not identifiable	53	Bone	Bone	Fragments		NA	NA	Burnt		2-5	2.9
BBH	Not identifiable	384	Bone	Bone	Fragments		NA	NA			2-5	2.6
BBH	Not identifiable	17	Bone	Bone	Fragments		NA	Unfused			2-5	1.8
BBH	Not identifiable	12	Bone	Bone	Fragments		NA	NA			2-5	0.8
BBH	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	0.6
BBH	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	0.8
BBH	Not identifiable	431	Bone	Bone	Fragments		NA	NA			2-5	0.1
BBH	Not identifiable	38	Bone	Bone	Fragments		NA	NA	Burnt		2-5	13.1
BBH	Not identifiable	32	Bone	Bone	Fragments		NA	NA			5-10	3.2
BBH	Not identifiable	1	Bone	Bone	Epiphysis complete		NA	Unfused			2-5	13.3
BBH	Not Identifiable	1	Bone	Bone	Distal diaphysis fragment		NA	Unfused			2-5	10.1
BBH	Not Identifiable	1	Bone	Bone	Distal diaphysis fragment		NA	Unfused			2-5	20.9
BBH	Not Identifiable	1	Bone	Bone	Distal diaphysis fragment		NA	Unfused			2-5	20.3
BBH	Not Identifiable	1	Bone	Bone	Distal diaphysis fragment		NA	Unfused			<2	2.3
BBH	Not Identifiable	1	Bone	Bone	Distal diaphysis fragment		NA	NA			2-5	25.4
BBH	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.1
BBH	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	21.1
BBH	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	14.6
BBH	Not identifiable	60	Bone	Bone	Fragment		NA	NA	Burnt		<2	0.8
BBH	Not identifiable	260	Bone	Bone	Fragment		NA	NA			<2	40.9
BBH	Not identifiable	161	Bone	Bone	Fragment		NA	NA			2-5	4
BBH	Not identifiable	62	Bone	Bone	Fragment		NA	NA	Burnt		2-5	20.6
BBH	Not identifiable	9	Bone	Bone	Fragment		NA	NA	Burnt		5-10	8.3
BBH	Not identifiable	2	Bone	Bone	Fragment		NA	NA			5-10	5.6
BBH	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			5-10	2
BBH	Not Identifiable	22	Bone	Bone	Fragments		NA	NA			5-10	2.8
BBH	Not Identifiable	25	Bone	Bone	Fragments		NA	NA	Burnt		2-5	9.7
BBH	Not Identifiable	30	Bone	Bone	Fragments		NA	NA	Burnt		<2	1.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Not Identifiable	454	Bone	Bone	Fragments		NA	NA			2-5	1.2
BBH	Not Identifiable	8	Bone	Bone	Fragments	?	NA		Burnt			1
BBH	Not Identifiable	72	Bone	Bone	Fragments	?	NA					0.7
BBH	Not Identifiable	44	Bone	Bone	Fragments	?	NA		Burnt			3.3
BBH	Not Identifiable	455	Bone	Bone	Fragments	?	NA					2.3
BBH	Not Identifiable	315	Bone	Bone	Fragments	?	NA					7.4
BBH	Not Identifiable	35	Bone	Bone	Fragments	?	NA		Burnt			3.7
BBH	Not Identifiable	16	Bone	Bone	Fragments	?	NA				<2	4.1
BBH	Not Identifiable	12	Bone	Bone	Fragment	?	NA					2.1
BBH	Not Identifiable	3	Bone	Bone	Fragment	?	NA					0.8
BBH	Not Identifiable	49	Bone	Bone	Fragment	?	NA					1.8
BBH	Not Identifiable	210	Bone	Bone	Fragment	?	NA					0.3
BBH	Not Identifiable	37	Bone	Bone	Fragment	?	NA					3.8
BBH	Not Identifiable	92	Bone	Bone	Fragment	?	NA					4.8
BBH	Not Identifiable	35	Bone	Bone	Fragment	?	NA					0.1
BBH	Not Identifiable	28	Bone	Bone	Fragment	?	NA					0.1
BBH	Not Identifiable	67	Bone	Bone	Fragment	?	NA					2.4
BBH	Not Identifiable	114	Bone	Bone	Fragment	?	NA					7.6
BBH	Not Identifiable	59	Bone	Bone	Fragment	?	NA					18.8
BBH	Not Identifiable	80	Bone	Bone	Fragment	?	NA					4.5
BBH	Not Identifiable	90	Bone	Bone	Fragment	?	NA					3
BBH	Not Identifiable	18	Bone	Bone	Fragment	?	NA					2.8
BBH	Not Identifiable	208	Bone	Bone	Fragment	?	NA					0.4
BBH	Not Identifiable	335	Bone	Bone	Fragment	?	NA					0.3
BBH	Not Identifiable	130	Bone	Bone	Fragment	?	NA					1.3
BBH	Not Identifiable	73	Bone	Bone	Fragment	?	NA					0.1
BBH	Not Identifiable	6	Bone	Bone	Fragment	?	NA					2.2
BBH	Not Identifiable	37	Bone	Bone	Fragment	?	NA					8.2
BBH	Not Identifiable	76	Bone	Bone	Fragment	?	NA					3.3
BBH	Not Identifiable	145	Bone	Bone	Fragment	?	NA					5.9
BBH	Not Identifiable	129	Bone	Bone	Fragment	?	NA					0.7
BBH	Not Identifiable	145	Bone	Bone	Fragment	?	NA					60.1
BBH	Not Identifiable	16	Bone	Bone	Fragment	?	NA					1.8
BBH	Not Identifiable	5	Bone	Bone	Fragment	?	NA					2.9
BBH	Not Identifiable	95	Bone	Bone	Fragment	?	NA					1.8
BBH	Not Identifiable	225	Bone	Bone	Fragment	?	NA					1.9
BBH	Not Identifiable	13	Bone	Bone	Fragment	?	NA					0.1
BBH	Not Identifiable	5	Bone	Bone	Fragment	?	NA					3.3
BBH	Not Identifiable	9	Bone	Bone	Fragment	?	NA					0.5
BBH	Not Identifiable	115	Bone	Bone	Fragment	?	NA					0.2
BBH	Not Identifiable	145	Bone	Bone	Fragment	?	NA					0.2
BBH	Not Identifiable	65	Bone	Bone	Fragment	?	NA					3
BBH	Not Identifiable	80	Bone	Bone	Fragment	?	NA					0.05
BBH	Not Identifiable	10	Bone	Bone	Fragment	?	NA					0.05
BBH	Not Identifiable	15	Bone	Bone	Fragment	?	NA					0.6
BBH	Not Identifiable	75	Bone	Bone	Fragment	?	NA					0.8
BBH	Not Identifiable	158	Bone	Bone	Fragment	?	NA					0.2
BBH	Not Identifiable	2	Bone	Bone	Fragment	?	NA				2-5	1.2
BBH	Not Identifiable	4	Bone	Bone	Fragment	?	NA				2-5	0.1
BBH	Not Identifiable	21	Bone	Bone	Fragment	?	NA				<2	5.1
BBH	Not Identifiable	10	Bone	Bone	Fragment	?	NA				<2	0.4

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Not Identifiable	55	Bone	Bone	Fragment	?	NA					0.6
BBH	Not Identifiable	115	Bone	Bone	Fragment	?	NA					1
BBH	Not Identifiable	11	Bone	Bone	Fragment	?	NA				<2	0.4
BBH	Not Identifiable	9	Bone	Bone	Fragment	?	NA				<2	0.2
BBH	Not identifiable	7	Cranium	Cranium	Fragments		NA	Unfused			2-5	13.5
BBH	Not identifiable	45	Cranium	Cranium	Fragments		NA	NA			2-5	0.1
BBH	Not Identifiable	1	Cranium	Cranium	Prosthion fragment		R	Adult			2-5	0.6
BBH	Not Identifiable	1	Cranium	Cranium	Fragments		NA	NA			2-5	8.9
BBH	Not identifiable	4	Cranium	Cranium	Fragments		NA	NA			2-5	13.6
BBH	Not Identifiable	108	Cranium	Cranium	Fragments		NA	NA			2-5	8.5
BBH	Not Identifiable	1	Mandible	Cranium	Fragment		NA	NA			2-5	15.3
BBH	Not Identifiable	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	0.2
BBH	Not identifiable	60	Rib	Back	Fragments		NA	NA			2-5	0.6
BBH	Not identifiable	1	Sesamoid Bone	Feet	Pourus fragment		NA	Neonatal			2-5	3.8
BBH	Not identifiable	32	Teeth	Cranium	Fragments		NA	NA			2-5	1.7
BBH	Not identifiable	24	Teeth	Cranium	Fragments		NA	NA			2-5	0.9
BBH	Not Identifiable	31	Teeth	Cranium	Fragments		NA	NA			2-5	1
BBH	Not identifiable	34	Teeth	Cranium	Fragment		NA	Unfused			2-5	1.1
BBH	Not Identifiable	27	Teeth	Cranium	Fragments	?	NA				2-5	0.7
BBH	Not Identifiable	9	Teeth	Cranium	Fragment	?	NA				<2	0.4
BBH	Not Identifiable	4	Teeth	Cranium	Fragment	?	NA				<2	0.3
BBH	Not identifiable	26	Vertebrae	Back	Fragments		NA	Majority are Unfused			2-5	1.3
BBH	Not identifiable	1	Vertebrae	Back	Fragments		NA	NA			2-5	10.4
BBH	Not identifiable	6	Vertebrae	Back	Fragments Lumbar Vertebrae		NA	NA			2-5	5.8
BBH	Not identifiable	22	Vertebrae	Back	Fragments		NA	Juvenile			2-5	0.3
BBH	Not identifiable	33	Vertebrae	Back	Fragments		NA	Juvenile			2-5	0.5
BBH	Not identifiable	27	Vertebrae	Back	Fragments		NA	NA			2-5	4.2
BBH	Not identifiable	1	Vertebrae	Back	Fragments		NA	NA			2-5	0.7
BBH	Ovis	1	Astragalus	Feet	Complete		R	Juvenile	pourus bone		2-5	7.4
BBH	Ovis	1	Astragalus	Feet	Complete		R	Juvenile			2-5	4.9
BBH	Ovis	1	Astragalus	Feet	Complete		L	Juvenile			2-5	2.3
BBH	Ovis	1	Astragalus	Feet	Complete		R	Juvenile			2-5	0.7
BBH	Ovis	1	Astragalus	Feet	Complete		R	Adult			2-5	1.7
BBH	Ovis	1	Astragalus	Feet	Complete		R	Adult			2-5	0.1
BBH	Ovis	1	Astragalus	Feet	Complete		R	Adult			2-5	2.9
BBH	Ovis	1	Astragalus	Feet	Complete		R	Adult			2-5	4.7
BBH	Ovis	1	Astragalus	Feet	Complete		R	Adult			2-5	4.6
BBH	Ovis	1	Astragalus	Feet	Complete		L	Adult			2-5	24.3
BBH	Ovis	1	Tibia	Long Bone	Fragment		NA	NA			2-5	0.05
BBH	Ovis	1	Calcaneus	Feet	Complete		L	Unfused			2-5	0
BBH	Ovis	1	Calcaneus	Feet	Complete		R	Fused	sleek compared		5-10	0.1
BBH	Ovis	1	Calcaneus	Feet	Complete		R	Fused	sleek compared		5-10	21.4
BBH	Ovis	1	Calcaneus	Feet	Distal end fragment		L	Fused			2-5	1.8
BBH	Ovis	1	Calcaneus	Feet	Articulation Fragment		L	Adult			<2	
BBH	Ovis	1	Calcaneus	Feet	Complete		L	Adult			5-10	12.1
BBH	Ovis	1	Calcaneus	Feet	Complete		R	Unfused			5-10	7.8
BBH	Ovis	1	Calcaneus	Feet	Proxiimal epiphysis complete		L	Unfused			<2	0.1
BBH	Ovis	1	Calcaneus	Feet	Complete		L	Unfused			5-10	0.6
BBH	Ovis	1	Calcaneus	Feet	Complete		R	Fused			5-10	4.7
BBH	Ovis	1	Calcaneus	Feet	Complete		R	Unfused			2-5	4.5
BBH	Ovis	1	Calcaneus	Feet	Complete		L	Unfused			2-5	12.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Calcaneus	Feet	Complete		L	Unfused			5-10	12.6
BBH	Ovis	1	Calcaneus	Feet	Complete		R	Unfused			2-5	3.2
BBH	Ovis	1	Calcaneus	Feet	Epiphysis complete		L	Unfused			<2	15.6
BBH	Ovis	1	Calcaneus	Feet	Epiphysis complete		R	Unfused			<2	2.9
BBH	Ovis	1	Calcaneus	Feet	Epiphysis complete		R	Unfused			<2	3.3
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Adult			2-5	0.7
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Juvenile			2-5	1.2
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		L	Fused			2-5	3.8
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		L	Fused			2-5	5.6
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		L	Fused			2-5	1.9
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		R	Fused				0.7
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		L	Adult			<2	1.4
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		L	Adult			<2	0.6
BBH	Ovis	1	Carpal Bone	Feet	Complete IV		L	Adult			<2	0.5
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		R	Adult			<2	0.6
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		L	Adult			<2	0.7
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		L	Adult			<2	0.6
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		L	Adult			<2	1
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		L	Adult			<2	1
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III & Metacarpal fragment		L	Unfused to carpal bone			2-5	0.8
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		L	Fused				0.4
BBH	Ovis	1	Carpal Bone	Feet	Complete IV		L	Fused				1.4
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		L	Adult			2-5	0.3
BBH	Ovis	1	Carpal Bone	Feet	Complete IV		L	Adult			2-5	1.8
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		L	Adult			2-5	0.3
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		R	Adult			2-5	1.1
BBH	Ovis	1	Carpal Bone	Feet	Complete IV		R	Adult			<2	0.9
BBH	Ovis	1	Carpal Bone	Feet	Accessary Carpal Bone Complete		R	Adult			<2	0.3
BBH	Ovis	1	Carpal Bone	Feet	Complete IV		R	Adult			<2	3.5
BBH	Ovis	1	Carpal Bone	Feet	Complete IV		R	Adult			<2	0.6
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III		L	Adult			<2	0.6
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Adult			<2	7
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Adult			<2	1.6
BBH	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Adult			<2	2.4
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		L	Adult			<2	2.6
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		R	Adult			<2	5.1
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		R	Adult			<2	1.2
BBH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		R	Adult			<2	1.2
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		L	Adult			<2	0.8
BBH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		R	Adult			<2	0.5
BBH	Ovis	1	Carpal Bone	Feet	Accessary Carpal Bone Complete		R	Adult			<2	0.5
BBH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		R	Adult			<2	3
BBH	Ovis	1	Carpal Bone	Feet	III	?	NA	Unfused	because III and		<2	0.1
BBH	Ovis	1	Carpal Bone	Feet		?	NA	Juvenile	lamb like		<2	0.3
BBH	Ovis	1	Carpal Bone	Feet		?	NA	Juvenile	Lamb		<2	10.7
BBH	Ovis	1	Carpal Bone	Feet		?	NA	Juvenile			<2	1.8
BBH	Ovis	1	Carpal Bone	Feet	Radial carpal bone	?	R	Adult			<2	0.9
BBH	Ovis	1	Carpal Bone	Feet		?	R	Adult			<2	0.1
BBH	Ovis	1	Cranium	Cranium	Occipital condyle		L	Juvenile			2-5	0.8
BBH	Ovis	1	Cranium	Cranium	Occipital condyle		R	Juvenile			2-5	0.2
BBH	Ovis	1	Cranium	Cranium	Occipital condyle		R	Juvenile			2-5	0.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Cranium	Cranium	Occipital condyle		L	Juvenile			2-5	0.3
BBH	Ovis	1	Cranium	Cranium	Zygomatic Process		R	Unfused			2-5	0.1
BBH	Ovis	1	Cranium	Cranium	Basioccipital		NA	Unfused			2-5	0.1
BBH	Ovis	1	Cranium	Cranium	Basioccipital		NA	Unfused			2-5	18.8
BBH	Ovis	4	Cranium	Cranium	Zygomatic Processes		NA	Unfused			2-5	27
BBH	Ovis	1	Cranium	Cranium	ExterNAl acoustic meatus		R	Unfused			2-5	19.4
BBH	Ovis	1	Cranium	Cranium	Temporal Bone Fragment		L	Unfused			2-5	4.2
BBH	Ovis	1	Cranium	Cranium	Hypoglossal CaNAl		R	NA			2-5	0.2
BBH	Ovis	1	Cranium	Cranium	InterNAl Auditory Meatus		L	Unfused			2-5	4.1
BBH	Ovis	1	Cranium	Cranium	Occypital Condyle		L	Unfused			2-5	0.6
BBH	Ovis	1	Cranium	Cranium	Zygomatic Arch Fragment		R	Unfused			2-5	1.2
BBH	Ovis	1	Cranium	Cranium	Zygomatic Arch Fragment		L	Unfused			2-5	0.1
BBH	Ovis	1	Cranium	Cranium	Zygomatic Arch Fragment		L	Unfused			5-10	11.6
BBH	Ovis	1	Cranium	Cranium	Interparreatal		NA	Unfused			2-5	25.4
BBH	Ovis	1	Cranium	Cranium	Hypoglossal CaNAl		L	Adult			2-5	5.6
BBH	Ovis	1	Cranium	Cranium	Hypoglossal CaNAl		R	Adult			2-5	9.3
BBH	Ovis	1	Cranium	Cranium	Occipital condyle		R	Lamb			2-5	8.9
BBH	Ovis	1	Cranium	Cranium	Occipital condyle		L	Fused			2-5	0.3
BBH	Ovis	1	Cranium	Cranium	Petrous part of petromastoid		R	Fused			2-5	0.4
BBH	Ovis	1	Cranium	Cranium	Petrous part of petromastoid		R	Fused			2-5	1.5
BBH	Ovis	1	Cranium	Cranium	Petrous part of petromastoid		L	Fused			2-5	5.3
BBH	Ovis	1	Cranium	Cranium	Basisphenoid & temporal bone		R	Fused			2-5	4.6
BBH	Ovis	1	Cranium	Cranium	Basisphenoid bone		NA	NA			2-5	4.3
BBH	Ovis	1	Cranium	Cranium	Zygomatic Arch		L	Unfused			2-5	0.1
BBH	Ovis	1	Cranium	Cranium	Zygomatic Arch		R	Unfused			2-5	3.9
BBH	Ovis	1	Cranium	Cranium	Prosthion		R	Unfused			2-5	0.6
BBH	Ovis	1	Cranium	Cranium	Petrous part of petromastoid, complete		L	Adult			2-5	0.4
BBH	Ovis	10	Cranium	Cranium	Fragments	?	NA	Juvenile			<2	0.5
BBH	Ovis	1	Cranium	Cranium	Zygomatic process	?	L	Adult			2-5	0.2
BBH	Ovis	1	Cranium	Cranium	Eardrum	?	R	Adult			2-5	0.1
BBH	Ovis	1	Cranium	Cranium	Maxilla	?	R	Adult			2-5	0.4
BBH	Ovis	1	Distal Phalange	Feet	Almost Complete		NA	Fused			<2	1.6
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Almost Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Almost Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	2.1
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	1.2
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.9
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	1.1
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.5
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Fused			2-5	0.8
BBH	Ovis	1	Distal Phalange	Feet	Fragment		NA	Fused	Burnt		2-5	0.6
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Unfused			<2	0.2
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Unfused			<2	0.5
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Adult			2-5	0.7
BBH	Ovis	1	Distal Phalange	Feet	Almost Complete		NA	Adult			2-5	0.5

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Adult			2-5	0.6
BBH	Ovis	1	Distal Phalange	Feet	Almost Complete		NA	Adult			<2	1.3
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	1.4
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Unfused			<2	1
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Unfused			<2	0.7
BBH	Ovis	1	Distal Phalange	Feet	Complete		NA	Adult			2-5	0.5
BBH	Ovis	1	Distal Phalange	Feet	Fragment		NA	Adult			2-5	1.2
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Fused			2-5	1.2
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Fused			2-5	0.4
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Fused			2-5	0.1
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Fused			<2	0.3
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Fused			2-5	0.7
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Fused			<2	0.6
BBH	Ovis	1	Distal Phalange	Feet		?	NA	Adult			<2	1.9
BBH	Ovis	1	Epistropheus	Cranium	Cranial fragment			Juvenile			5-10	1.1
BBH	Ovis	1	Femur	Upper Hindlimb	Proximal diaphysis fragment		L	Unfused			2-5	0.3
BBH	Ovis	1	Femur	Upper Hindlimb	Caput Complete		R	Fused			2-5	0.3
BBH	Ovis	1	Femur	Upper Hindlimb	Trochanter Majus		R	Fused			2-5	0.1
BBH	Ovis	1	Femur	Upper Hindlimb	Distal Diaphysis Fragment		L	Unfused			2-5	0.1
BBH	Ovis	1	Femur	Upper Hindlimb	Proximal diaphysis fragment		R	Unfused			2-5	0.3
BBH	Ovis	1	Femur	Upper Hindlimb	Proximal diaphysis fragment		R	Unfused			2-5	3.8
BBH	Ovis	1	Femur	Upper Hindlimb	Proximal diaphysis fragment		R	Unfused			2-5	0.2
BBH	Ovis	1	Femur	Upper Hindlimb	Caput complete		R	Unfused			2-5	13.2
BBH	Ovis	1	Femur	Upper Hindlimb	Caput complete		R	Unfused			2-5	0.8
BBH	Ovis	1	Femur	Upper Hindlimb	Trochanter Majus		R	Unfused			2-5	16.8
BBH	Ovis	1	Femur	Upper Hindlimb	Trochanter Majus		R	Unfused			2-5	0.4
BBH	Ovis	1	Femur	Upper Hindlimb	Trochanter Majus		L	Unfused			2-5	0.8
BBH	Ovis	1	Femur	Upper Hindlimb	Trochanter Majus		R	Unfused			2-5	0.2
BBH	Ovis	1	Femur	Upper Hindlimb	Distal epiphysis complete		L	Unfused			2-5	0.3
BBH	Ovis	1	Femur	Upper Hindlimb	Proximal diaphysis fragment		R	Unfused			2-5	0.1
BBH	Ovis	1	Femur	Upper Hindlimb	Distal diaphysis fragment		R	Unfused			2-5	0.2
BBH	Ovis	1	Humerus	Upper Forelimb	Distal end & diaphysis fragment		L	Fused			2-5	5.2
BBH	Ovis	1	Humerus	Upper Forelimb	Proximal end & diaphysis fragment		R	Fused	attached with soil		5-10	2.5
BBH	Ovis	1	Humerus	Upper Forelimb	Greater tubercle fragment		L	Unfused			2-5	0.3
BBH	Ovis	1	Humerus	Upper Forelimb	Distal Diaphysis Fragment		R	Unfused			2-5	3.6
BBH	Ovis	1	Humerus	Upper Forelimb	Proximal diaphysis fragment		L	Unfused			2-5	0.3
BBH	Ovis	1	Humerus	Upper Forelimb	Diaphysus Fragment		R	fused mean?			2-5	0.2
BBH	Ovis	1	Humerus	Upper Forelimb	Caput complete		L	Unfused			2-5	0.9
BBH	Ovis	1	Humerus	Upper Forelimb	Proximal diaphysis fragment		L	Unfused			2-5	0.1
BBH	Ovis	1	Humerus	Upper Forelimb		?	L	Unfused	lamb		<2	3
BBH	Ovis	1	Humerus	Upper Forelimb		?	L	Fused			2-5	0.1
BBH	Ovis	1	Innominate	Upper Hindlimb	Ischium fragment		R	Fused			5-10	65.8
BBH	Ovis	1	Innominate	Upper Hindlimb	Pubis fragment		L	Pubis unfused			2-5	44.4
BBH	Ovis	1	Innominate	Upper Hindlimb	Ischium fragment		L	Fused			5-10	5.7
BBH	Ovis	1	Innominate	Upper Hindlimb	Ilium		R	NA			5-10	4.4
BBH	Ovis	1	Innominate	Upper Hindlimb	Pubis fragment		R	Juvenile			2-5	5.3
BBH	Ovis	1	Innominate	Upper Hindlimb	Pubis fragment		L	Fused	different than our		2-5	1.8
BBH	Ovis	1	Innominate	Upper Hindlimb	Pubis fragment		R	Fused			2-5	2.3
BBH	Ovis	1	Innominate	Upper Hindlimb	Ilium fragment		R	NA			2-5	0.3
BBH	Ovis	1	Innominate	Upper Hindlimb	Ilium fragment		L	Fused			5-10	25.1
BBH	Ovis	1	Lumbar Vertebrae	Back		?	NA	Unfused			2-5	4.6

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Mandible	Cranium	Ramus fragment		L	Juvenile			2-5	8
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		L	Lamb			2-5	3.6
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		L	Juvenile			<2	0
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		R	Lamb			5-10	5.6
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		R	NA			5-10	0.4
BBH	Ovis	1	Mandible	Cranium	Ramus fragment		R	Juvenile			5-10	1
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		R	Juvenile			5-10	1
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		R	Juvenile			5-10	1.2
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		L	Juvenile			2-5	0.4
BBH	Ovis	1	Mandible	Cranium	Ramus Fragment		L	Juvenile			<2	0.1
BBH	Ovis	1	Mandible	Cranium	Place for I3		R	Adult			2-5	9.2
BBH	Ovis	1	Mandible	Cranium	dP3 No Wear	?	NA	Neonatal	No Wear		<2	13.8
BBH	Ovis	1	Mandibular Tooth	Cranium	dp4, M1 just errupted (little wear)		R				5-10	1.4
BBH	Ovis	1	Mandibular Tooth	Cranium	dp4		L	Juvenile			2-5	6.8
BBH	Ovis	1	Mandibular Tooth	Cranium	dp3		R	Juvenile			<2	4.2
BBH	Ovis	1	Mandibular Tooth	Cranium	dp3		R	Juvenile			<2	2.2
BBH	Ovis	1	Mandibular Tooth	Cranium	M2 or M3		L	Juvenile:roots open			2-5	5.5
BBH	Ovis	1	Mandibular Tooth	Cranium	M2 complete		R	Roots open			2-5	3.4
BBH	Ovis	1	Mandibular Tooth	Cranium	P2		R	Adult			2-5	1.4
BBH	Ovis	1	Mandibular Tooth	Cranium	P4		R	Adult			2-5	1.5
BBH	Ovis	1	Mandibular Tooth	Cranium	M1 or M2 Complete		R	Adult			2-5	0.8
BBH	Ovis	1	Mandibular Tooth	Cranium	P4		R	Adult			2-5	0.7
BBH	Ovis	1	Mandibular Tooth	Cranium	dP2 & places for dP3 & dP4		R	Lamb			2-5	0.5
BBH	Ovis	1	Mandibular Tooth	Cranium	M3		L	2-3 years			2-5	0.8
BBH	Ovis	1	Mandibular Tooth	Cranium	M3		L	Adult			2-5	1
BBH	Ovis	1	Mandibular Tooth	Cranium	M2		L	Adult			2-5	0.7
BBH	Ovis	1	Mandibular Tooth	Cranium	M2		L	Adult			2-5	4.6
BBH	Ovis	1	Mandibular Tooth	Cranium	M2		L				2-5	4.3
BBH	Ovis	1	Mandibular Tooth	Cranium	M2 fragment		L				2-5	2.2
BBH	Ovis	1	Mandibular Tooth	Cranium	dP4 complete		L	2-6 mon 16			2-5	4.8
BBH	Ovis	1	Mandibular Tooth	Cranium	dP4		L	2-6 mon 23			2-5	2.6
BBH	Ovis	1	Mandibular Tooth	Cranium	dP3		L	Lamb			<2	1.5
BBH	Ovis	1	Mandibular Tooth	Cranium	dP4 fragment		R	Lamb			<2	1.4
BBH	Ovis	1	Mandibular Tooth	Cranium	P2 fragment		R	Adult			<2	2.6
BBH	Ovis	1	Mandibular Tooth	Cranium	dp3		R	Juvenile			<2	1.7
BBH	Ovis	1	Mandibular Tooth	Cranium	dp2		L	No wear			<2	0.8
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor		R	Adult			2-5	1
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor		R	Adult			2-5	0.5
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor		R	Adult			<2	0.9
BBH	Ovis	1	Mandibular Tooth	Cranium	M1		R	Adult			<2	0.9
BBH	Ovis	1	Mandibular Tooth	Cranium	dP4 Complete		R	Lamb			<2	2
BBH	Ovis	1	Mandibular Tooth	Cranium	Dp2	?	L				<2	2.3
BBH	Ovis	1	Mandibular Tooth	Cranium	D1	?	NA	Juvenile			<2	6.5
BBH	Ovis	1	Mandibular Tooth	Cranium	D1	?	NA	Juvenile			<2	1.2
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor	?	NA	Unworn			<2	0.4
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor	?	NA	Unworn			<2	4.2
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor	?	L	Worn			2-5	3.8
BBH	Ovis	1	Mandibular Tooth	Cranium	Fragment	?	L				<2	1
BBH	Ovis	1	Mandibular Tooth	Cranium	Incisor fragment	?	NA				<2	0.6
BBH	Ovis	1	Mandibular Tooth	Cranium	Canine complete	?	L	Adult			2-5	2.4
BBH	Ovis	1	Maxilla	Cranium	dP2, dP3 (2), dP4 (2), M1 (1)		R/L	8-18 months			2-5	38.1

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Maxilla	Cranium	M1		L	8-18 months			2-5	22.5
BBH	Ovis	1	Maxilla	Cranium	Maxillary fragment with p2 errupting		R	Unfused			2-5	94
BBH	Ovis	1	Maxilla	Cranium	P2-P4 Both Sides		R/L	Unfused			5-10	26.9
BBH	Ovis	1	Maxilla	Cranium	P2-P4		R	Unfused			2-5	2
BBH	Ovis	1	Maxilla	Cranium	P2-P4		R	Unfused			5-10	9.5
BBH	Ovis	1	Maxilla	Cranium	P2 Roots of Ps & P4		R	Unfused			2-5	1.1
BBH	Ovis	1	Maxilla	Cranium	P2 & P3		L	Adult			2-5	0.7
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2		R	Juvenile			<2	1.2
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2		R	Juvenile			<2	0.8
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2		L	Juvenile			<2	
BBH	Ovis	1	Maxillary Tooth	Cranium	dp3		L	Juvenile			<2	0.4
BBH	Ovis	1	Maxillary Tooth	Cranium	dp4		L	Juvenile			<2	1.4
BBH	Ovis	1	Maxillary Tooth	Cranium	dp3 or dp4		L	Juvenile			<2	1.1
BBH	Ovis	1	Maxillary Tooth	Cranium	p2 or p3		L	Adult			<2	0.9
BBH	Ovis	1	Maxillary Tooth	Cranium	M1		L	Juvenile: roots open			2-5	0.4
BBH	Ovis	1	Maxillary Tooth	Cranium	p4		L	Juvenile: roots open			2-5	0.05
BBH	Ovis	1	Maxillary Tooth	Cranium	M1		R	Juvenile: roots open			2-5	6.6
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		R	Juvenile:roots open	8-18 months		2-5	0.5
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		L	Juvenile:roots open	8-18 months		2-5	28.6
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		L	Juvenile:roots open	8-18 months		2-5	3.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 complete		R	18-30 months			2-5	19.6
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 or M3		R	Roots just closing			2-5	16.7
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 complete		R	roots just closing			2-5	19.8
BBH	Ovis	1	Maxillary Tooth	Cranium	P2 or P3		R	Adult			2-5	10.1
BBH	Ovis	1	Maxillary Tooth	Cranium	P3 or P4		R	Adult			2-5	6.9
BBH	Ovis	1	Maxillary Tooth	Cranium	dp4		R	Juvenile			2-5	0.8
BBH	Ovis	1	Maxillary Tooth	Cranium	dp3		R	Juvenile			2-5	6.7
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2		R	Juvenile			2-5	9
BBH	Ovis	1	Maxillary Tooth	Cranium	M1 or M1		L	Adult			2-5	3.8
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 or M3 Fragment		R	Adult			2-5	1.8
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 or M3 Complete		R	1-8 mon			2-5	26.5
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 or M3 Complete		L	1-8 mon			2-5	10.3
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 or M3 Complete		R	1-8 mon			2-5	0.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		R	Adult 9A			2-5	0.6
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		L	4A-5A			2-5	0.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M1 or M2		L	Adult 8A			2-5	0.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		R	Adult 9A			2-5	12.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M2		R	Adult 9A			2-5	14.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M3		L	6G-8G			2-5	17.2
BBH	Ovis	1	Maxillary Tooth	Cranium	M1		R	11A			2-5	0.1
BBH	Ovis	1	Maxillary Tooth	Cranium	P3		R	Adult			2-5	0.1
BBH	Ovis	1	Maxillary Tooth	Cranium	P3		R	Adult			2-5	0.1
BBH	Ovis	1	Maxillary Tooth	Cranium	M1 or M2		L	No wear			2-5	0.8
BBH	Ovis	1	Maxillary Tooth	Cranium	P3		R	Adult			2-5	1.4
BBH	Ovis	1	Maxillary Tooth	Cranium	P3		R	Adult heavy wear			2-5	1
BBH	Ovis	1	Maxillary Tooth	Cranium	P2		L	Unerrupted			<2	0.2
BBH	Ovis	1	Maxillary Tooth	Cranium	P2		L	Adult			<2	0.3
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2		R	Lamb			<2	1.1
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2		L	Lamb			<2	0.6
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 fragment		L	Adult			2-5	0.8
BBH	Ovis	1	Maxillary Tooth	Cranium	M2 or M3 fragment		R	Adult			2-5	0.3

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Maxillary Tooth	Cranium	M3 fragment		L	Adult			2-5	0.7
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2	?	R	Juvenile			2-5	0.9
BBH	Ovis	1	Maxillary Tooth	Cranium	dp2	?	L	Juvenile			2-5	0.6
BBH	Ovis	1	Maxillary Tooth	Cranium	P3 or P4	?	R	Juvenile			<2	1.2
BBH	Ovis	1	Metacarpal	Feet	Distal end & diaphysis fragment		L	Fused			5-10	0.7
BBH	Ovis	1	Metacarpal	Feet	Distal end & diaphysis fragment		L	Fused			5-10	0.5
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		L	Juvenile			5-10	1
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment III & IV		R	Adult			5-10	0.3
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R	Adult			2-5	0.1
BBH	Ovis	1	Metacarpal	Feet	Diaphysis fragment		L	NA			5-10	0.1
BBH	Ovis	1	Metacarpal	Feet	Diaphysis fragment		R	Lamb just fusing			5-10	0.1
BBH	Ovis	1	Metacarpal	Feet	Diaphysis fragment		R	Lamb just fusing			2-5	0.5
BBH	Ovis	1	Metacarpal	Feet	Diaphysis fragments		R	Neonatal			2-5	0.5
BBH	Ovis	1	Metacarpal	Feet	Complete		NA	Unfused	because born		<2	0.6
BBH	Ovis	1	Metacarpal	Feet	Distal Diaphysis Fragment		NA	Fused			2-5	0.3
BBH	Ovis	1	Metacarpal	Feet	Distal Diaphysis Fragment		R?	Fused			5-10	0.1
BBH	Ovis	1	Metacarpal	Feet	Distal Diaphysis Fragment		NA	Unfused			2-5	0.1
BBH	Ovis	1	Metacarpal	Feet	Distal Diaphysis Fragment		NA	Unfused			2-5	0.1
BBH	Ovis	1	Metacarpal	Feet	Distal Diaphysis Fragment		NA	Unfused			2-5	0.1
BBH	Ovis	1	Metacarpal	Feet	Distal Diaphysis Fragment		L	Unfused			<2	1.1
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	0.4
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		NA	Unfused	because born		<2	0.3
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		NA	Unfused	because born		<2	0.2
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		NA	Unfused	because born		<2	0.3
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		NA	Unfused	because born		<2	0.1
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		NA	Unfused	because born		<2	1.3
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		NA	Unfused	because born		<2	1
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R	Fused			<2	1
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	1.1
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R	Fused			<2	0.3
BBH	Ovis	1	Metacarpal	Feet	Distal epiphysis complete III OR IV		R	Unfused	because born		2-5	0.4
BBH	Ovis	1	Metacarpal	Feet	Diaphysis fragment		NA	Neonatal			2-5	0.3
BBH	Ovis	1	Metacarpal	Feet	Diaphysis fragment III OR IV		L	Unfused	because born		2-5	0.5
BBH	Ovis	1	Metacarpal	Feet	Distal diaphysis fragment		NA	NA			2-5	0.5
BBH	Ovis	1	Metacarpal	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	0.1
BBH	Ovis	1	Metacarpal	Feet		?	NA	Unfused			5-10	0.1
BBH	Ovis	1	Metacarpal	Feet	Epiphysis metapodial complete	?	NA	Unfused	a=10.5 b=14.1		2-5	0.2
BBH	Ovis	1	Metacarpal	Feet	Epiphysis	?	NA	Unfused	a=9.3 b=13.7		2-5	0.2
BBH	Ovis	1	Metacarpal	Feet	Diaphysis Fragment	?	NA	Unfused			5-10	0.1
BBH	Ovis	1	Metacarpal	Feet	Epiphysis are fused together but unfused to diaphysis	?	L	Unfused	a=9.5 b=15.0		2-5	0.1
BBH	Ovis	1	Metacarpal	Feet	Diphysis fragment	?	NA	Unfused			2-5	0.2
BBH	Ovis	1	Metacarpal	Feet		?	NA	Fused			5-10	0.2
BBH	Ovis	1	Metacarpal	Feet		?	L	Fused	= 74		2-5	0.3
BBH	Ovis	1	Metapodial	Feet	Distal epiphysis fragment		NA	NA	Burnt		<2	0.1
BBH	Ovis	1	Metapodial	Feet	Distal epiphysis Complete		NA	Neonatal			<2	0.1
BBH	Ovis	1	Metapodial	Feet	Fragment		NA	Unfused			<2	1.7
BBH	Ovis	1	Metapodial	Feet	Fragment		NA	Unfused			<2	0.1
BBH	Ovis	1	Metapodial	Feet	Fragment		NA	Unfused			<2	0.2
BBH	Ovis	1	Metapodial	Feet	Fragment		NA	Unfused			<2	0.1
BBH	Ovis	1	Metapodial	Feet	Distal Diaphysis Fragment		NA	Unfused			<2	16.4
BBH	Ovis	1	Metapodial	Feet	Epiphysis III or IV Complete		NA	Unfused			<2	1.5

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Metapodial	Feet	Diaphysis fragment III or IV		NA	Unfused			2-5	0.2
BBH	Ovis	1	Metapodial	Feet	Diaphysis fragment III or IV		NA	Unfused			2-5	0.3
BBH	Ovis	1	Metapodial	Feet	Diaphysis fragment III or IV		NA	Unfused			2-5	1.7
BBH	Ovis	1	Metapodial	Feet	Distal epiphysis fragment III or IV		NA	Unfused			<2	0.05
BBH	Ovis	1	Metapodial	Feet	Distal diaphysis fragment		NA	NA			<2	0.2
BBH	Ovis	1	Metapodial	Feet		?	NA	Fused			2-5	1.5
BBH	Ovis	1	Metapodial	Feet		?	NA	Fused			2-5	2.4
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	0.5
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	1.3
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	0.1
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	31.5
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	0.2
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	0.2
BBH	Ovis	1	Metapodial	Feet		?	NA	Unfused			<2	0.5
BBH	Ovis	1	Metapodial	Feet	Fragment	?	NA	Fused			2-5	2.1
BBH	Ovis	1	Metatarsal	Feet	Distal end & diaphysis fragment		NA	Fused			5-10	17
BBH	Ovis	1	Metatarsal	Feet	Distal end & diaphysis fragment		R	Fused			5-10	0.8
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Juvenile			2-5	4.1
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Adult			<2	0.05
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Adult			<2	0.05
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Adult			2-5	0.1
BBH	Ovis	1	Metatarsal	Feet	Distal end & diaphysis fragment	M	R	Fused			5-10	2
BBH	Ovis	1	Metatarsal	Feet	Distal end & diaphysis fragment	M	L	Fused			2-5	1
BBH	Ovis	1	Metatarsal	Feet	Proximal end fragment		R	Fused			2-5	0.1
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			5-10	0.1
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Foetal			2-5	1.1
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis fragment		NA	Unfused			<2	0.6
BBH	Ovis	1	Metatarsal	Feet	Complete		NA	Unfused			<2	0.6
BBH	Ovis	1	Metatarsal	Feet	Complete		NA	Unfused			<2	0.2
BBH	Ovis	1	Metatarsal	Feet	Complete		NA	Unfused			<2	10.3
BBH	Ovis	1	Metatarsal	Feet	Complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Metatarsal	Feet	Complete		NA	Unfused			<2	
BBH	Ovis	1	Metatarsal	Feet	Almost Complete		NA	Unfused			<2	8.8
BBH	Ovis	1	Metatarsal	Feet	Complete		NA	Unfused			<2	17
BBH	Ovis	1	Metatarsal	Feet	Distal Diaphysis Fragment		NA	Unfused			2-5	36.4
BBH	Ovis	1	Metatarsal	Feet	Distal Diaphysis Fragment		NA	Unfused			2-5	18.3
BBH	Ovis	1	Metatarsal	Feet	Distal Diaphysis Complete		R	Neonatal			5-10	25.4
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis		NA	Unfused			2-5	7.8
BBH	Ovis	1	Metatarsal	Feet	Distal end & diaphysis fragment		R	Fused			5-10	7.1
BBH	Ovis	1	Metatarsal	Feet	Distal end & diaphysis fragment		L	Fused			2-5	5.5
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	8.5
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			2-5	38.8
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	2.1
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			2-5	1.7
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	1
BBH	Ovis	1	Metatarsal	Feet	Distal Diaphysis Fragment		NA	Unfused			2-5	0.3
BBH	Ovis	1	Metatarsal	Feet	Distal Diaphysis Fragment		L	Unfused			2-5	3.5
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	3.4
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis complete		NA	Unfused			<2	27.9
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis complete		NA	Unfused			<2	0.2
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis complete		NA	Unfused			<2	8.8

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			5-10	4.7
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			5-10	1.5
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			5-10	1.1
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			5-10	1.8
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			5-10	0.2
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	0.2
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			2-5	2.2
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	4.2
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	0.3
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	1.5
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			2-5	0.2
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Fused			2-5	3.1
BBH	Ovis	1	Metatarsal	Feet	Diaphysis fragment		R	Fused			2-5	14.6
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis complete		NA	Unfused			<2	3.7
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis complete		L	Unfused			<2	4.3
BBH	Ovis	1	Metatarsal	Feet	Distal diaphysis fragment		L	Unfused			2-5	35.2
BBH	Ovis	1	Metatarsal	Feet	Distal diaphysis fragment		L	Unfused			5-10	0.4
BBH	Ovis	1	Metatarsal	Feet	Diaphysis fragment		L	Neonatal			2-5	0.2
BBH	Ovis	1	Metatarsal	Feet	Distal epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Adult			5-10	0.2
BBH	Ovis	1	Metatarsal	Feet	Proximal End Fragment		NA	NA			5-10	0.2
BBH	Ovis	1	Metatarsal	Feet		?	NA	Fused			<2	0.1
BBH	Ovis	1	Metatarsal	Feet		?	NA				2-5	0.8
BBH	Ovis	1	Metatarsal	Feet		?	R	Adult			5-10	0.8
BBH	Ovis	1	Metatarsal	Feet		?	R	Adult			2-5	0.5
BBH	Ovis	1	Metatarsal	Feet		?	L	Fused			2-5	1.8
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused	goes with 1147		<2	2
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Adult			2-5	1.4
BBH	Ovis	1	Middle Phalange	Feet	Almost complete		NA	Fused	of the bone		2-5	1.7
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis		NA	Unfused			<2	0.7
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	1.5
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	2.6
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.7
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	1.5
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	NA			<2	1.2
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	0.5
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	0.7
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0.9
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0.4
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0.4
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0.1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0.1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0.2
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.2
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.6
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Middle Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.3

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.2
BBH	Ovis	1	Middle Phalange	Feet	Diaphysis Fragment		NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Diaphysis Fragment		NA	Unfused			<2	0.3
BBH	Ovis	1	Middle Phalange	Feet	Diaphysis Fragment		NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Neonatal			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	2.6
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.8
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	0.8
BBH	Ovis	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	1.9
BBH	Ovis	1	Middle Phalange	Feet	Fragment		NA	Fused			2-5	1.3
BBH	Ovis	1	Middle Phalange	Feet	Fragment		NA	NA			<2	1.3
BBH	Ovis	1	Middle Phalange	Feet	Fragment		NA	NA			<2	0.9
BBH	Ovis	1	Middle Phalange	Feet	Fragment		NA	NA			<2	1.2
BBH	Ovis	1	Middle Phalange	Feet		?	NA	Unfused			2-5	0.3
BBH	Ovis	1	Middle Phalange	Feet	Almost Complete	?	NA	Unfused			2-5	0.1
BBH	Ovis	1	Middle Phalange	Feet		?	NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet		?	NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Epiphysis complete	?	NA	Unfused			<2	0.2
BBH	Ovis	1	Middle Phalange	Feet	Epiphysis complete	?	NA	Unfused			<2	0.2
BBH	Ovis	1	Middle Phalange	Feet	Epiphysis complete	?	NA	Unfused			<2	0.1
BBH	Ovis	1	Middle Phalange	Feet	Epiphysis complete	?	NA	Unfused			<2	0.2
BBH	Ovis	1	Middle Phalange	Feet		?	NA	Fused			2-5	1.1
BBH	Ovis	1	Middle Phalange	Feet	Complete	?	NA	Unfused			<2	1.1
BBH	Ovis	1	Middle Phalange	Feet	complete epiphysis	?	NA	Unfused	Lamb		<2	1.1
BBH	Ovis	1	Middle Phalange	Feet		?	NA	Unfused			<2	0.8
BBH	Ovis	1	Middle Phalange	Feet		?	NA				<2	0.8
BBH	Ovis	1	Middle Phalange	Feet		?	NA	Unfused			<2	0.8
BBH	Ovis	1	Patella	Upper Hindlimb	Complete		L	Juvenile			2-5	0.2
BBH	Ovis	1	Phalange	Feet	Distal end fragment		NA	NA			<2	0.3
BBH	Ovis	1	Phalange	Feet	Diaphysis fragment		NA	NA			<2	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	0.7
BBH	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	0.6
BBH	Ovis	1	Proximal Phalange	Feet	Proximal end fragment		NA	Unfused			<2	2.3
BBH	Ovis	1	Proximal Phalange	Feet	Almost complete		NA	Unfused			2-5	2.3
BBH	Ovis	1	Proximal Phalange	Feet	Almost complete		NA	NA			2-5	0.9
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.6
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.4
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.5
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	12.9
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.5
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	2.8
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.1

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.3
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	1.3
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.2
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	4.4
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	4.8
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	NA			2-5	2.8
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.2
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	NA			<2	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	NA			<2	0.2
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	4.9
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.2
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			2-5	0.3
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			<2	0.7
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			<2	1.1
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	Unfused			<2	1.1
BBH	Ovis	1	Proximal Phalange	Feet	Diaphysis Fragment		NA	NA			<2	0.6
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	9.6
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	1
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	3.3
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	0.8
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	1.5
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	0.7
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	0.4
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	1.3
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	1.7
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	40.2
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	40.3
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	10
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	2.3
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	0.9
BBH	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Neonatal Unfused			<2	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	NA			2-5	1
BBH	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	4.8
BBH	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	13
BBH	Ovis	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	0.2
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	8.2
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	0.5
BBH	Ovis	1	Proximal Phalange	Feet	Almost Complete		NA	Unfused			2-5	2.8
BBH	Ovis	1	Proximal Phalange	Feet	Almost Complete		NA	Unfused			2-5	3.8
BBH	Ovis	1	Proximal Phalange	Feet	Distal end fragment		NA	Unfused			2-5	3.2
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	NA			2-5	0.8
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	2
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	1.7
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	3.4
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	1.4
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	2.3
BBH	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	1.6
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			2-5	0.8
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			2-5	0.6
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			2-5	4

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			2-5	2.3
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			2-5	1.2
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			2-5	2.5
BBH	Ovis	1	Proximal Phalange	Feet	Epiphysis	?	NA	Unfused			<2	2.7
BBH	Ovis	1	Proximal Phalange	Feet	Epiphysis	?	NA	Unfused			<2	1.7
BBH	Ovis	1	Proximal Phalange	Feet	Epiphysis	?	NA	Unfused			<2	2.1
BBH	Ovis	1	Proximal Phalange	Feet	Epiphysis complete	?	NA	Unfused			<2	0.6
BBH	Ovis	1	Proximal Phalange	Feet		?	NA				<2	1.9
BBH	Ovis	1	Proximal Phalange	Feet		?	NA				<2	0.1
BBH	Ovis	1	Proximal Phalange	Feet	Epiphysis	?	NA	Unfused			<2	4.7
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Fused			<2	0
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused	Lamb		<2	0.7
BBH	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused			<2	1.3
BBH	Ovis	1	Radius	Upper Forelimb	Distal epiphysis complete		L	Unfused			2-5	0.1
BBH	Ovis	1	Radius	Upper Forelimb	Distal end & diaphysis fragment		R	Fused			2-5	2.6
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		L	Adult			2-5	0.1
BBH	Ovis	1	Radius	Upper Forelimb	Diaphysis fragment		L	Unfused			2-5	0.9
BBH	Ovis	1	Radius	Upper Forelimb	Distal epiphysis Complete		L	Unfused			2-5	0.4
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Fused			2-5	0.1
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		L	Fused			2-5	6.2
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Fused			2-5	22.6
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Fused			2-5	0.9
BBH	Ovis	1	Radius	Upper Forelimb	Distal Diaphysis Fragment		NA	Unfused			2-5	0.2
BBH	Ovis	1	Radius	Upper Forelimb	Distal Diaphysis Fragment		L	Unfused			2-5	0.5
BBH	Ovis	1	Radius	Upper Forelimb	Distal Diaphysis Fragment		R	Unfused			2-5	12.6
BBH	Ovis	1	Radius	Upper Forelimb	Distal diaphysis fragment		L	Unfused			5-10	26.7
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		L	Fused			2-5	8.4
BBH	Ovis	1	Radius	Upper Forelimb	Distal epiphysis complete		R	Unfused			2-5	0.7
BBH	Ovis	1	Radius	Upper Forelimb	Diaphysis fragment		L	Adult			5-10	9.5
BBH	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		L	Adult			5-10	4
BBH	Ovis	1	Radius	Upper Forelimb		?	L	Unfused			2-5	5.7
BBH	Ovis	1	Radius	Upper Forelimb		?	L	Fused			2-5	2.7
BBH	Ovis	1	Radius	Upper Forelimb		?	L	Fused			2-5	0.2
BBH	Ovis	1	Radius	Upper Forelimb		?	R	Fused			2-5	0.1
BBH	Ovis	1	Radius	Upper Forelimb	epiphysys	?	R	Unfused	Lamb		<2	0.9
BBH	Ovis	1	Radius	Upper Forelimb		?	R	Fused			5-10	0.7
BBH	Ovis	19	Rib	Back	Fragments	?	NA				2-5	0.8
BBH	Ovis	1	Rib	Back	Proximal articualtion	?	NA	Unfused			<2	3.3
BBH	Ovis	1	Rib	Back	Proximal articulation	?	NA	Unfused			<2	3.7
BBH	Ovis	1	Rib	Back	Proximal articulation	?	NA	Unfused			<2	2.7
BBH	Ovis	1	Rib	Back	Proximal articulation	?	NA	Unfused			<2	5.1
BBH	Ovis	1	Rib	Back	Proximal articulation	?	NA	Unfused			<2	1
BBH	Ovis	1	Rib	Back		?	NA	Unfused			<2	1.2
BBH	Ovis	1	Rib	Back		?	NA	Fused			5-10	0.6
BBH	Ovis	1	Rib	Back	Epiphysis	?	NA	Unfused	Lamb		<2	0.3
BBH	Ovis	1	Scapula	Upper Forelimb	Distal end fragment		R	Adult			5-10	0.1
BBH	Ovis	1	Scapula	Upper Forelimb	Distal end fragment		L	Adult			2-5	0.4
BBH	Ovis	1	Scapula	Upper Forelimb	Distal end fragment		R	Unfused			2-5	50.4
BBH	Ovis	1	Scapula	Upper Forelimb	Proximal end fragment		R	Adult ?			2-5	25.1
BBH	Ovis	1	Scapula	Upper Forelimb	Fragment		R	Neonatal			2-5	14.7
BBH	Ovis	1	Scapula	Upper Forelimb	Tuber of scapula is unfused	?	NA	Unfused			2-5	4.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Scapula	Upper Forelimb		?	R	Fused			>10	4.4
BBH	Ovis	1	Scapula	Upper Forelimb	Blade Fragment	?	R				2-5	76.2
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	NA			<2	0.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	NA			<2	0.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	1.1
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.2
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	4
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	7.4
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	6.7
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	3.6
BBH	Ovis	1	Sesamoid Bone	Feet	Complete Distal Bone		NA	Juvenile			<2	5
BBH	Ovis	1	Sesamoid Bone	Feet	Complete Distal Bone		NA	Juvenile			<2	0.3
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			2-5	1.2
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			2-5	0.6
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			2-5	13.7
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			2-5	5.6
BBH	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			2-5	4.3
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	0.8
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	0.7
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	0.2
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA				<2	0.3
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	6
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	1.5
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	1.3
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	0.3
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA	Fused			<2	0.3
BBH	Ovis	1	Sesamoid Bone	Feet		?	NA		Lamb		<2	3.1
BBH	Ovis	1	Sternum	Back	Complete		NA	Unfused			2-5	0.3
BBH	Ovis	1	Sternum	Back	Complete		NA	Unfused			2-5	12.2
BBH	Ovis	3	Sternum	Back	Fragments	?	NA				<2	0.2
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Fused			2-5	22
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Fused			2-5	12.5
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Juvenile			<2	2.4
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Juvenile			<2	0.7
BBH	Ovis	1	Tarsal Bone	Feet	Complete lateral Malleolus		L	Juvenile			<2	14.3
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		R	Fused				5
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Unfused	Goes with 1207			3.1
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Unfused	Goes with 1206			15.5
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Fused			2-5	12
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Fused			2-5	2.1
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Fused			2-5	0.6
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Fused			2-5	0.5
BBH	Ovis	1	Tarsal Bone	Feet	Complete lateral Malleolus		L	Adult			2-5	0.4
BBH	Ovis	1	Tarsal Bone	Feet	Fragment Centraquartal Bone		L	Adult			2-5	2
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		R	Adult			<2	16.8
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		R	Adult			<2	1.5
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Adult			<2	3

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Tarsal Bone	Feet	Complete I		R	Adult			<2	1.6
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Adult			<2	0.2
BBH	Ovis	1	Tarsal Bone	Feet	Fragment Centraquartal Bone		L	Fused			2-5	1.1
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Adult			2-5	0.4
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Adult			2-5	0.7
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Adult			2-5	1.3
BBH	Ovis	1	Tarsal Bone	Feet	Fragment Centraquartal Bone		L	Adult			2-5	0.4
BBH	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Adult			2-5	0.1
BBH	Ovis	1	Tarsal Bone	Feet	Fragment Centraquartal Bone		L	Adult			2-5	1.6
BBH	Ovis	1	Tarsal Bone	Feet	Complete lateral Malleolus		R	Adult			<2	56.5
BBH	Ovis	1	Tarsal Bone	Feet	Fragment Centraquartal Bone		L	Adult			<2	2.1
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		R	Adult			<2	7.8
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Adult			<2	0.5
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Adult			<2	3.1
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		R	Adult			<2	4.8
BBH	Ovis	1	Tarsal Bone	Feet	Complete I & II		L	Adult			<2	0.1
BBH	Ovis	1	Tarsal Bone	Feet	Complete I		R	Adult			<2	0.1
BBH	Ovis	1	Tarsal Bone	Feet	Complete	?	R	Adult			2-5	1.2
BBH	Ovis	1	Tarsal Bone	Feet		?	L	Adult			2-5	0.1
BBH	Ovis	1	Tarsal Bone	Feet		?	NA	Juvenile	Lamb		<2	0.3
BBH	Ovis	1	Tarsal Bone	Feet		?	NA	Juvenile			<2	1.6
BBH	Ovis	1	Tarsal Bone	Feet		?	R	Fused			2-5	0.1
BBH	Ovis	1	Tarsal Bone	Feet		?	L	Fused			2-5	0.05
BBH	Ovis	1	Tarsal Bone	Feet		?	L	Adult			2-5	0.7
BBH	Ovis	15	Teeth	Cranium	Fragments		NA	NA			2-5	0.6
BBH	Ovis	4	Teeth	Cranium	Fragments	?	NA				<2	0.1
BBH	Ovis	1	Thoracic Vertebrae	Back		?	NA				2-5	4.7
BBH	Ovis	1	Tibia	Upper Hindlimb	Proximal epiphysis		L	Unfused			2-5	
BBH	Ovis	1	Tibia	Upper Hindlimb	Proximal end & diaphysis fragment		R	Fused			5-10	3.8
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal end & diapysis fragment		L	Fused			2-5	0.2
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal epiphysis complete		R	Unfused			2-5	0.7
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal end & diapysis fragment		L	Unfused			2-5	1.7
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		R	Fused			2-5	1.1
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		R	Unfused			2-5	2.2
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		R	Unfused			2-5	0.1
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		R	Unfused			<2	7.9
BBH	Ovis	1	Tibia	Upper Hindlimb	Proximal end & diaphysis fragment		R	Adult	Burnt		2-5	0.1
BBH	Ovis	1	Tibia	Upper Hindlimb	Distal end fragment		R	Fused			2-5	4.9
BBH	Ovis	1	Tibia	Upper Hindlimb	Proximal epiphysis fragment		L	Unfused			2-5	2.9
BBH	Ovis	1	Tibia	Upper Hindlimb		?	L	Unfused	Lamb		5-10	0.1
BBH	Ovis	1	Tibia	Upper Hindlimb		?	R				2-5	0.1
BBH	Ovis	1	Tooth	Cranium	Incisor		NA	Roots closed			2-5	0.2
BBH	Ovis	1	Tooth	Cranium	Incisor		NA	Roots closed			2-5	0.2
BBH	Ovis	1	Tooth	Cranium	Incisor		NA	Roots closed			2-5	0.2
BBH	Ovis	1	Tooth	Cranium	Incisor		NA	Roots closed			2-5	0.2
BBH	Ovis	1	Tooth	Cranium	Incisor		NA	Adult			2-5	0.1
BBH	Ovis	1	Ulna	Upper Forelimb	Distal epiphysis fragment		R	NA			<2	0.1
BBH	Ovis	1	Ulna	Upper Forelimb	Distal epiphysis fragment		L	NA			<2	0.1
BBH	Ovis	1	Ulna	Upper Forelimb	Proximal diaphysis fragment		L	Unfused proximal end			5-10	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment		L	Unfused			2-5	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment		L	Unfused			5-10	0.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis	1	Ulna	Upper Forelimb	Proximal end & diaphysis fragment		R	Fused			5-10	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Proximal diaphysis fragment		L	NA			5-10	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Distal epiphysis Complete		R	Unfused			<2	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Distal epiphysis Complete		L	Unfused			<2	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Epiphysis Complete		L	Unfused			2-5	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Proximal end & epiphysis		L	Unfused			2-5	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	Ephysis complete		R	Unfused			2-5	0.2
BBH	Ovis	1	Ulna	Upper Forelimb	J>50	?	R	Juvenile			<2	7.3
BBH	Ovis	1	Ulna	Upper Forelimb		?	R	Adult			<2	2.1
BBH	Ovis	1	Vertebrae	Back	Almost Complete Lumbar Vertebrae		NA	Unfused			2-5	2.9
BBH	Ovis	1	Vertebrae	Back	Fragment Lumbar		NA	Just Fused			2-5	0.4
BBH	Ovis	1	Vertebrae	Back	Complete Thoracic Vertebrae		NA	Fused			2-5	0.7
BBH	Ovis	1	Vertebrae	Back	Fragment Lumbar		NA	Just Fused			2-5	2.3
BBH	Ovis	1	Vertebrae	Back	Almost Complete Thoracic Vertebrae		NA	Body Unfused			2-5	2.5
BBH	Ovis	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	NA			2-5	0.4
BBH	Ovis	1	Vertebrae	Back	Almost Complete Lumbar Vertebrae		NA	Unfused			2-5	1.1
BBH	Ovis	1	Vertebrae	Back	Almost Complete Cervical Vertebrae		NA	Unfused			2-5	11.2
BBH	Ovis	24	Vertebrae	Back	Fragments	?	NA	Unfused			<2	0.1
BBH	Ovis	5	Vertebrae	Back	Caudal	?	NA				<2	0.2
BBH	Ovis/Capra	1	Astragalus	Feet		?	L	Unfused	Lamb		<2	0.1
BBH	Ovis/Capra	1	Atlas	Back		?	R	Unfused	Lamb		<2	0.3
BBH	Ovis/Capra	1	Calcaneus	Feet		?	R	Unfused	Lamb		2-5	0.1
BBH	Ovis/Capra	1	Cranium	Cranium	Pre Maxilla Fragment		L	NA			2-5	6
BBH	Ovis/Capra	7	Cranium	Cranium	Zygomatic Process	?	NA	Adult			2-5	8.2
BBH	Ovis/Capra	1	Cranium	Cranium		?	R				2-5	2.7
BBH	Ovis/Capra	1	Cranium	Cranium	Occipital condyle	?	L	Unfused			<2	6.4
BBH	Ovis/Capra	1	Cranium	Cranium	Ear Drum	?	R				2-5	1.6
BBH	Ovis/Capra	1	Cranium	Cranium	Frontal	?	L				2-5	1.5
BBH	Ovis/Capra	1	Cranium	Cranium	Horn Core Fragment	?	L	Juvenile			2-5	8.5
BBH	Ovis/Capra	1	Cranium	Cranium	Occipital Condyle	?	L	Unfused	Lamb		<2	1.4
BBH	Ovis/Capra	1	Cranium	Cranium	Basioccipital	?	NA	Unfused			<2	3.3
BBH	Ovis/Capra	1	Cranium	Cranium	Basi occipital	?	NA	Unfused			2-5	3.2
BBH	Ovis/Capra	1	Cranium	Cranium	Inner ear part	?	R				2-5	0.9
BBH	Ovis/Capra	1	Cranium	Cranium	Inner ear part	?	L				2-5	11.2
BBH	Ovis/Capra	2	Cranium	Cranium	Fragments of a young lamb	?	NA	Unfused	Lamb		2-5	2.1
BBH	Ovis/Capra	1	Cranium	Cranium	Basi occipital	?	NA	Unfused	Lamb		2-5	2.6
BBH	Ovis/Capra	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	2.3
BBH	Ovis/Capra	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	1.5
BBH	Ovis/Capra	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	0.4
BBH	Ovis/Capra	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	0.4
BBH	Ovis/Capra	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	0.3
BBH	Ovis/Capra	1	Distal Phalange	Feet	Complete		NA	Juvenile			<2	
BBH	Ovis/Capra	1	Distal Phalange	Feet	Almost Complete		NA	Juvenile			<2	
BBH	Ovis/Capra	1	Distal Phalange	Feet	Almost Complete		NA	Juvenile			<2	
BBH	Ovis/Capra	1	Distal Phalange	Feet	Almost Complete		NA	Juvenile			<2	2.4
BBH	Ovis/Capra	1	Distal Phalange	Feet	Almost Complete		NA	NA			<2	2.2
BBH	Ovis/Capra	1	Femur	Upper Hindlimb	Capit & diaphysis fragment		L	Fused			2-5	1
BBH	Ovis/Capra	1	Femur	Upper Hindlimb	Capit		R	Unfused			2-5	0.4
BBH	Ovis/Capra	1	Femur	Upper Hindlimb	Proximal diaphysis fragment		L	Unfused			2-5	0.4
BBH	Ovis/Capra	1	Femur	Upper Hindlimb	Distal Diaphysis fragment		R	Unfused			5-10	0.2
BBH	Ovis/Capra	1	Femur	Upper Hindlimb	Epiphysis complete	?	L	Unfused	Lamb		<2	0.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis/Capra	1	Femur	Upper Hindlimb		?	L	Unfused	Lamb		<2	1.8
BBH	Ovis/Capra	1	Femur	Upper Hindlimb		?	L	Unfused	Lamb		2-5	2.2
BBH	Ovis/Capra	1	Humerus	Upper Forelimb	Proximal end & diaphysis fragment		R	Adult ?			2-5	1.4
BBH	Ovis/Capra	1	Humerus	Upper Forelimb	Distal Diaphysis Fragment		L	Unfused			2-5	2.1
BBH	Ovis/Capra	1	Humerus	Upper Forelimb	Distal epiphysis Complete		R	Unfused			2-5	0.5
BBH	Ovis/Capra	1	Humerus	Upper Forelimb		?	L	Unfused	Lamb		2-5	0.8
BBH	Ovis/Capra	1	Humerus	Upper Forelimb		?	L	Unfused			2-5	0.6
BBH	Ovis/Capra	1	Innominate	Upper Hindlimb	Ischium	?	L	Unfused			2-5	0.2
BBH	Ovis/Capra	1	Mandible	Cranium	dp2 and dp3 present	?	R	Juvenile			5-10	0.1
BBH	Ovis/Capra	1	Mandible	Cranium	I2 and P2 just errupting	?	L	Juvenile			5-10	1.6
BBH	Ovis/Capra	1	Mandibular Tooth	Cranium	Complete		R	Payne C			2-5	0.2
BBH	Ovis/Capra	1	Mandibular Tooth	Cranium	dP4 fragment	?	L	Juvenile			<2	0.4
BBH	Ovis/Capra	1	Mandibular Tooth	Cranium	M1 or M2	?	R	Juvenile	see printout for		2-5	0.3
BBH	Ovis/Capra	1	Mandibular Tooth	Cranium	dp3 Complete	?	L	Unworn	on printout		2-5	3.5
BBH	Ovis/Capra	1	Mandibular Tooth	Cranium	Incisor	?	L				<2	0.3
BBH	Ovis/Capra	1	Maxilla	Cranium	Pre maxilla	?	R	Adult			2-5	1.1
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	M2	?	L	Adult			2-5	5.1
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	M1	?	R	Adult	& 2692		2-5	0.1
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	M2	?	R	Adult	& 2690		2-5	0.2
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	P2 or P3	?	R	Adult			2-5	0.5
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	M1	?	L	Adult			2-5	36.9
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	P3	?	L	Adult			2-5	58.3
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	P3 or P4 fragment	?	L	Adult			2-5	12.4
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	P3	?	R	Adult			2-5	1.4
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	M2 or M3 just errupting no wear	?	R	Unworn			2-5	13.5
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	M3 Complete	?	L		height=37.2		2-5	4.2
BBH	Ovis/Capra	1	Maxillary Tooth	Cranium	dp3 complete	?	L	Juvenile	Lamb-Juvenile		<2	9.5
BBH	Ovis/Capra	1	Metacarpal	Feet	Diaphysis fragment		L	Unfused			2-5	2.8
BBH	Ovis/Capra	1	Metacarpal	Feet	Distal diaphysis fragment III OR IV		NA	Unfused			2-5	0.4
BBH	Ovis/Capra	1	Metacarpal	Feet	Distal diaphysis fragment		L	Unfused			<2	10
BBH	Ovis/Capra	1	Metacarpal	Feet	Distal diaphysis fragment		NA	Unfused			2-5	5.7
BBH	Ovis/Capra	1	Metacarpal	Feet	Distal epiphysis fragment		NA	NA	Burnt		<2	2.5
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	21.5
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	3.5
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	3.7
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	1
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	0.3
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	7.8
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	0.1
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	3.4
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	4.2
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused	Burnt		<2	27.7
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	23.4
BBH	Ovis/Capra	1	Metapodial	Feet	Epiphysis complete		NA	Unfused			<2	4.2
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	0.6
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	2
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	41.6
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	5.9
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	20.9
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	5.8
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	19.7

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	1.8
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			<2	5.6
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			<2	12.4
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	11.3
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			2-5	3.2
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			5-10	1.1
BBH	Ovis/Capra	1	Metapodial	Feet	Distal diaphysis fragment		NA	Unfused			5-10	23.7
BBH	Ovis/Capra	1	Metapodial	Feet		?	NA	Unfused			2-5	1
BBH	Ovis/Capra	1	Metapodial	Feet	Diaphysis fragment	?	NA				2-5	1.5
BBH	Ovis/Capra	1	Metatarsal	Feet	Proximal end & diaphysis fragment		R	Fused			2-5	1
BBH	Ovis/Capra	1	Metatarsal	Feet	Distal diaphysis fragment		NA	NA			2-5	3.5
BBH	Ovis/Capra	1	Metatarsal	Feet	Distal diaphysis fragment		R	Unfused			5-10	0.8
BBH	Ovis/Capra	1	Metatarsal	Feet		?	R	Adult			5-10	1.5
BBH	Ovis/Capra	1	Metatarsal	Feet		?	L	Fused			2-5	13.4
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	11.4
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	2
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	5
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Fused			2-5	0
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	2.2
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	34.6
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	2.2
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	9.6
BBH	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	23.1
BBH	Ovis/Capra	1	Middle Phalange	Feet	Epiphysis complete		NA	Unfused			<2	5.3
BBH	Ovis/Capra	1	Middle Phalange	Feet	Epiphysis complete		NA	Unfused			<2	2.8
BBH	Ovis/Capra	1	Middle Phalange	Feet	Epiphysis complete		NA	Unfused			<2	3.1
BBH	Ovis/Capra	1	Phalange	Feet	Distal End Fragment		NA	NA	Exostosis present		<2	2.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	1.1
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	3.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	22
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	38.6
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Almost Complete		NA	NA			2-5	63.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	NA			2-5	17.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Almost Complete		NA	NA			2-5	32.3
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Almost Complete		NA	NA			<2	0.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Almost Complete		NA	NA			<2	17.3
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	2.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Fused			2-5	1.9
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Fused			2-5	2.9
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Epiphysis complete		NA	Unfused			<2	12.1
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Epiphysis complete		NA	Unfused			<2	8.2
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Epiphysis complete		NA	Unfused			<2	4.5
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Epiphysis complete		NA	Unfused			<2	3.3
BBH	Ovis/Capra	1	Proximal Phalange	Feet	Epiphysis complete		NA	Unfused			<2	1.9
BBH	Ovis/Capra	1	Proximal Phalange	Feet		?	NA				2-5	2.5
BBH	Ovis/Capra	1	Radius	Upper Forelimb	Distal End Fragment		R	Unfused			2-5	9.5
BBH	Ovis/Capra	1	Radius	Upper Forelimb		?	L	Fused			2-5	2.5
BBH	Ovis/Capra	1	Radius	Upper Forelimb		?	R	Unfused			2-5	7.4
BBH	Ovis/Capra	3	Rib	Back	Proximal end	?	L	Adult			2-5	0.3
BBH	Ovis/Capra	8	Rib	Back		?	R	Adult			2-5	0.4
BBH	Ovis/Capra	7	Rib	Back	Fragments	?	NA				2-5	3.3

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Ovis/Capra	4	Rib	Back	Fragment	?	NA				2-5	9
BBH	Ovis/Capra	7	Rib	Back	Fragment	?	NA				2-5	3.3
BBH	Ovis/Capra	1	Rib	Back	Fragment	?	NA				<2	1.1
BBH	Ovis/Capra	1	Scapula	Upper Forelimb		?	L	Unfused			2-5	2.6
BBH	Ovis/Capra	1	Scapula	Upper Forelimb		?	L				2-5	2
BBH	Ovis/Capra	1	Sternum	Back	Fragment	?	NA	Adult			2-5	4.5
BBH	Ovis/Capra	1	Tarsal Bone	Feet	Articulates with astragalus	?	R	Adult			2-5	1.8
BBH	Ovis/Capra	1	Tarsal Bone	Feet	Aarticulates with astragalus	?	L	Adult			2-5	7.1
BBH	Ovis/Capra	1	Thoracic Vertebrae	Back		?	NA				2-5	3.5
BBH	Ovis/Capra	1	Tibia	Upper Hindlimb		?	R	Unfused			2-5	0.9
BBH	Ovis/Capra	1	Tibia	Upper Hindlimb		?	R	Unfused			2-5	4.4
BBH	Ovis/Capra	1	Tibia	Upper Hindlimb	Epiphysis Complete	?	L	Unfused			2-5	3.3
BBH	Ovis/Capra	1	Tibia	Upper Hindlimb		?	R	Adult			5-10	1.5
BBH	Ovis/Capra	1	Vertebrae	Back		?	NA					3.8
BBH	Ovis/Capra	6	Vertebrae	Back	Fragments	?	NA				2-5	1.3
BBH	Rodent	1	Maxilla	Cranium	Complete		R/L	Fused			<2	0.05
BBH	Small Carnivore	1	Distal Phalange	Feet	Complete		NA	Adult			<2	0.5
BBH	Small Mammal	3	Rib	Back	Fragment	?	NA				2-5	5.7
BBH	Small Mammal	3	Rib	Back		?	NA				<2	12
BBH	Small Mammal	3	Thoracic Vertebrae	Back	Fragment	?	NA				<2	4.8
BBH	Small Mammal	1	Thoracic Vertebrae	Back		?	NA				2-5	1.1
BBH	Small Mammal	4	Vertebrae	Back	Fragment	?	NA				2-5	0.4
BBH	Small Mammal	1	Vertebrae	Back	Caudal Vertebrae	?	NA				<2	2.4
BBH	Sus	1	Mandibular Tooth	Cranium	M3 Complete		R	Unerrupted			2-5	2.2
BBH	Sus	1	Mandibular Tooth	Cranium	P3		R	Unerrupted			<2	1
BBH	Sus	1	Maxillary Tooth	Cranium	P4 or M1 fragment		NA	No wear			<2	0.1
BBH	Sus	1	Phalange	Feet	Distal end fragment		NA	NA			2-5	0.1
BBH	Sus	1	Tooth	Cranium	Fragment		NA	No wear			<2	0.1
BBH	Sus	1	Tooth	Cranium	Fragment		NA	No wear			<2	0.1
BBH	Vulpes	1	Carpal Bone	Feet	Radial Carpal Bone Complete		NA	Adult			<2	0.05
BBH	Vulpes	1	Distal Phalange	Feet	Complete		NA	Adult			2-5	3.9
BBH	Vulpes	1	Femur	Upper Hindlimb	Distal epiphysis fragment		NA	Adult			2-5	0.05
BBH	Vulpes	1	Femur	Upper Hindlimb	Distal diaphysis fragment		R	Unfused			<2	3.2
BBH	Vulpes	1	Humerus	Upper Forelimb	Distal end & diapysis fragment		L	NA			5-10	1.4
BBH	Vulpes	1	Humerus	Upper Forelimb		?	NA	Unfused			<2	2.4
BBH	Vulpes	1	Innominate	Upper Hindlimb	Ilium fragment		L	Fused			5-10	0.2
BBH	Vulpes	1	Mandible	Cranium	Almost Complete: no teeth		NA	Fused			<2	3.1
BBH	Vulpes	1	Mandible	Cranium	Fragment		NA	Fused			<2	2.5
BBH	Vulpes	1	Mandibular Tooth	Cranium	Canine		NA	Unfused			2-5	0.2
BBH	Vulpes	1	Mandibular Tooth	Cranium	dp2		NA	Fused			2-5	0.4
BBH	Vulpes	1	Mandibular Tooth	Cranium	Canine		NA	Fused			<2	10.1
BBH	Vulpes	1	Mandibular Tooth	Cranium	M1 almost complete		NA	NA			<2	13.4
BBH	Vulpes	1	Mandibular Tooth	Cranium	M1 Fragment		NA	Adult			<2	1
BBH	Vulpes	1	Mandibular Tooth	Cranium	M1 Fragment		NA	Adult			<2	10.2
BBH	Vulpes	1	Maxilla	Cranium	M2-P3		NA	Adult			<2	5.4
BBH	Vulpes	1	Maxillary Tooth	Cranium	Canine		NA	Adult	Burnt		2-5	
BBH	Vulpes	1	Maxillary Tooth	Cranium	M1 Almost Complete		L	Adult			>10	5.7
BBH	Vulpes	1	Maxillary Tooth	Cranium	I3 Complete		R	Adult			2-5	1.7
BBH	Vulpes	1	Maxillary Tooth	Cranium	dP2 ?		NA	Adult			2-5	
BBH	Vulpes	1	Maxillary Tooth	Cranium	Fragment		NA	Adult			2-5	4.1
BBH	Vulpes	1	Maxillary Tooth	Cranium	M2 complete	?	L	Adult			<2	3.3

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBH	Vulpes	1	Metacarpal	Feet	Complete II		R	Adult			5-10	0.9
BBH	Vulpes	1	Metacarpal	Feet	Complete II		NA	Adult			<2	7.5
BBH	Vulpes	1	Metacarpal	Feet		?	NA	Unfused			2-5	10.1
BBH	Vulpes	1	Metapodial	Feet		?	NA	Fused			<2	1.6
BBH	Vulpes	1	Metapodial	Feet	Distal epiphysis complete	?	NA	Unfused			<2	1
BBH	Vulpes	1	Metatarsal	Feet	Complete V		NA	Adult			<2	1.7
BBH	Vulpes	1	Metatarsal	Feet	Complete IV		R	Adult			5-10	19.7
BBH	Vulpes	1	Metatarsal	Feet	Complete V		R	Adult			5-10	1
BBH	Vulpes	1	Metatarsal	Feet	Complete V		NA	Adult			<2	0.2
BBH	Vulpes	1	Metatarsal	Feet	Proximal end & diaphysis fragment IV		R	Adult			5-10	1.6
BBH	Vulpes	1	Metatarsal	Feet	Distal end & diapysis fragment II or IV		R				2-5	0.2
BBH	Vulpes	1	Metatarsal	Feet	Distal end & diapysis fragment II or IV		L	Fused	Just fused		5-10	25.8
BBH	Vulpes	1	Metatarsal	Feet	Proximal end & diaphysis fragment IV		R	Adult			2-5	14.8
BBH	Vulpes	1	Metatarsal	Feet	Proximal end & diaphysis fragment V		L	Fused			2-5	5.9
BBH	Vulpes	1	Metatarsal	Feet	Distal end & diapysis fragment		L	Adult			5-10	4.4
BBH	Vulpes	1	Metatarsal	Feet	Proximal end & diaphysis fragment II		R	Adult			2-5	39.3
BBH	Vulpes	1	Middle Phalange	Feet	Complete		NA	Fused	Burnt		2-5	4.3
BBH	Vulpes	1	Middle Phalange	Feet	Complete		NA	Unfused			2-5	3.9
BBH	Vulpes	1	Middle Phalange	Feet	Complete		R	Adult			<2	3
BBH	Vulpes	1	Middle Phalange	Feet		?	NA	Fused			<2	1
BBH	Vulpes	1	Middle Phalange	Feet		?	NA	Adult			<2	5.1
BBH	Vulpes	1	Patella	Upper Hindlimb	Fragment	?	R	Adult			<2	0.6
BBH	Vulpes	1	Phalange	Feet	Distal end fragment		R	NA	Burnt		2-5	0
BBH	Vulpes	1	Scapula	Upper Forelimb	Proximal end and blade fragment		L	NA			2-5	2.1
BBH	Vulpes	1	Scapula	Upper Forelimb	Distal end & diaphysis fragment		R	Adult			<2	1.4
BBH	Vulpes	1	Tarsal Bone	Feet	Complete Talus		NA	Adult			<2	0.1
BBH	Vulpes	1	Tarsal Bone	Feet		?	NA	Adult			<2	2.1
BBH	Vulpes	1	Tarsal Bone	Feet		?	NA	Adult			<2	0.3
BBH	Vulpes	1	Vertebrae	Back	Fragment Lumbar		L	Adult			2-5	2.4
BBI	Aves	1	Coracoid	Back	Fragment		L	Adult			2-5	0.9
BBI	Aves	1	Tibia	Upper Hindlimb		?	NA				<2	6
BBI	Bos	1	Carpal Bone	Feet	Radial Carpal Bone	?	R	Adult	bigger than the		2-5	1.8
BBI	Bos	1	Carpal Bone	Feet	Intermediate carpal bone	?	R	Adult	large bone		5-10	1.5
BBI	Bos	1	Carpal Bone	Feet	Radial carpal bone	?	L	Adult			5-10	128.2
BBI	Bos	1	Femur	Upper Hindlimb		?	R	Adult			>10	3
BBI	Bos	1	Humerus	Upper Forelimb		?	R	Adult			5-10	1.4
BBI	Bos	1	Humerus	Upper Forelimb	Diaphysis fragment	?	NA	Adult			>10	24.7
BBI	Bos	1	Mandibular Tooth	Cranium	M3 Fragment	?	R				>10	456.9
BBI	Bos	1	Mandibular Tooth	Cranium	Canine	?	NA				>10	199.7
BBI	Bos	1	Mandibular Tooth	Cranium	Incisor	?	R	Adult			2-5	276.7
BBI	Bos	1	Mandibular Tooth	Cranium	Incisor	?	R	Adult			2-5	51.8
BBI	Bos	1	Mandibular Tooth	Cranium	Incisor	?	L	Adult			2-5	134
BBI	Bos	1	Mandibular Tooth	Cranium	P3	?	R	Adult			2-5	23.6
BBI	Bos	1	Mandibular Tooth	Cranium	Fragment	?	NA	Unworn			2-5	8.9
BBI	Bos	1	Mandibular Tooth	Cranium	Incisor	?	NA	Unworn			<2	29.6
BBI	Bos	1	Mandibular Tooth	Cranium	P2	?	R	Unworn			2-5	50.8
BBI	Bos	1	Mandibular Tooth	Cranium	dInsicor	?	NA	Juvenile			2-5	56.8
BBI	Bos	1	Mandibular Tooth	Cranium	dI complete	?	R	Juvenile			2-5	7.6
BBI	Bos	1	Metacarpal	Feet	Proximal end & diaphysis fragment		R	Adult			2-5	8.4
BBI	Bos	1	Metatarsal	Feet	Distal epiphysis & diaphysis fragment		NA	Adult			5-10	54.3
BBI	Bos	1	Metatarsal	Feet		?	R				5-10	4.7

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBI	Bos	1	Metatarsal	Feet		?	L	Adult	Bd= 60.4	centre		18.6
BBI	Bos	1	Radius	Upper Forelimb		?	R	Fused			>10	5.4
BBI	Bos	1	Radius	Upper Forelimb		?	R	Fused			5-10	
BBI	Bos	1	Rib	Back		?	NA	Adult			5-10	5.4
BBI	Bos	1	Sesamoid Bone	Feet	Complete element	?	NA	Adult	Very large		2-5	18.9
BBI	Bos	1	Sesamoid Bone	Feet	Fragment	?	NA	Adult	This is adult size		<2	91.9
BBI	Bos	1	Tarsal Bone	Feet	II	?	R				2-5	18.3
BBI	Bos	2	Teeth	Cranium	Fragments		NA	Adult ?			2-5	28.3
BBI	Bos	11	Teeth	Cranium	Fragments	?	NA				2-5	3.7
BBI	Bos	9	Teeth	Cranium	Fragment	?	NA				2-5	13.8
BBI	Bos	23	Teeth	Cranium	Fragment	?	NA				2-5	48.8
BBI	Bos	1	Ulna	Upper Forelimb		?	L	Adult			2-5	37.2
BBI	Carnivore	1	Femur	Upper Hindlimb	Caput fragment	?	NA	Fused	small carnivore		2-5	18
BBI	Carnivore	1	Proximal Phalange	Feet		?	NA				2-5	6.8
BBI	Carnivore	1	Tibia	Upper Hindlimb		?	R		small carnivore		2-5	95.3
BBI	Cervid	1	Tooth	Cranium	Incisor	?	NA				2-5	4.4
BBI	Cervid	1	Cranium	Cranium	Antler fragment	?	NA				5-10	1.8
BBI	Equus	1	Innominate	Upper Hindlimb	Fragment	?	L	Adult	Burnt		2-5	12.5
BBI	Equus	1	Metacarpal	Feet	Metacarpal IV Proximal End	?	R	Adult			2-5	9.8
BBI	Equus	1	Metatarsal	Feet		?	R	Fused	Bd= 37.4	centre		21.7
BBI	Equus	1	Metatarsal	Feet	IV Proximal end	?	R				2-5	7.4
BBI	Equus	1	Proximal Phalange	Feet		?	NA	Adult			5-10	73.7
BBI	Equus	1	Rib	Back	Proximal end fragment	?	R	Adult			2-5	5.2
BBI	Large Mammal	8	Long Bone	Long Bone	Fragment	?	NA				5-10	22.5
BBI	Large Mammal	1	Bone	Bone	Long Bone Fragment	?	NA				>10	77.8
BBI	Large Mammal	15	Long Bone	Long Bone	Fragment	?	NA				5-10	13.3
BBI	Medium Mammal	1	Cranium	Cranium	Zygomatic Process Fragment	?	R				2-5	2.9
BBI	Medium Mammal	1	Rib	Back		?	NA				>10	0.2
BBI	Medium Mammal	1	Rib	Back		?	NA				2-5	34.3
BBI	Not Identifiable	103	Atlas	Back	Fragment	?	NA		Burnt		5-10	1.2
BBI	Not identifiable	150	Bone	Bone	Fragments		NA	NA	Burnt		<2	0.9
BBI	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	1.5
BBI	Not identifiable	94	Bone	Bone	Fragments		NA	NA	Burnt		2-5	1.4
BBI	Not identifiable	6	Bone	Bone	Fragments		NA	NA				0.1
BBI	Not identifiable	5	Bone	Bone	Fragments		NA	NA	Burnt		5-10	0.5
BBI	Not identifiable	2	Bone	Bone	Fragments		NA	NA			5-10	0.2
BBI	Not Identifiable	65	Bone	Bone	Fragments	?	NA					0.6
BBI	Not Identifiable	908	Bone	Bone	Fragment	?	NA				5-10	2.9
BBI	Not Identifiable	286	Bone	Bone	Fragments	?	NA					0.2
BBI	Not Identifiable	39	Bone	Bone	Fragments	?	NA		Burnt			0.2
BBI	Not Identifiable	19	Bone	Bone	Fragments	?	NA		Burnt			8.9
BBI	Not Identifiable	148	Bone	Bone	Fragments	?	NA					8.8
BBI	Not Identifiable	401	Bone	Bone	Fragments	?	NA					3.9
BBI	Not Identifiable	401	Bone	Bone	Fragments	?	NA		Burnt			1.1
BBI	Not Identifiable	40	Bone	Bone	Fragments	?	NA		Burnt			1.2
BBI	Not Identifiable	355	Bone	Bone	Fragments	?	NA					1.4
BBI	Not Identifiable	84	Bone	Bone	Fragments	?	NA					0.1
BBI	Not Identifiable	8	Bone	Bone	Fragments	?	NA		Burnt			0.1
BBI	Not Identifiable	13	Bone	Bone	Fragments	?	NA					0.1
BBI	Not Identifiable	6	Bone	Bone	Fragments	?	NA		Burnt			0.2
BBI	Not Identifiable	24	Bone	Bone	Fragments	?	NA				2-5	0.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBI	Not Identifiable	4	Bone	Bone	Fragments	?	NA				2-5	0.1
BBI	Not Identifiable	6	Bone	Bone	Fragments	?	NA				2-5	11.7
BBI	Not Identifiable	14	Bone	Bone	Fragments	?	NA				2-5	
BBI	Not Identifiable	300	Bone	Bone	Fragments	?	NA					3.6
BBI	Not Identifiable	74	Bone	Bone	Fragments	?	NA		Burnt			9.2
BBI	Not Identifiable	55	Bone	Bone	Fragments	?	NA		Burnt			39.2
BBI	Not Identifiable	235	Bone	Bone	Fragments	?	NA					2.3
BBI	Not Identifiable	78	Bone	Bone	Fragment	?	NA					3.2
BBI	Not Identifiable	5	Bone	Bone	Fragment	?	NA					21.9
BBI	Not Identifiable	339	Bone	Bone	Fragment	?	NA					20.2
BBI	Not Identifiable	31	Bone	Bone	Fragment	?	NA					18.8
BBI	Not Identifiable	115	Bone	Bone	Fragment	?	NA					36.4
BBI	Not Identifiable	425	Bone	Bone	Fragment	?	NA					8.5
BBI	Not Identifiable	8	Bone	Bone	Fragment	?	NA					4.6
BBI	Not Identifiable	29	Bone	Bone	Fragment	?	NA					3.8
BBI	Not Identifiable	107	Bone	Bone	Fragment	?	NA					0.3
BBI	Not Identifiable	355	Bone	Bone	Fragment	?	NA					0.4
BBI	Not Identifiable	40	Bone	Bone	Fragment	?	NA					0.1
BBI	Not Identifiable	230	Bone	Bone	Fragment	?	NA					14.1
BBI	Not Identifiable	16	Bone	Bone	Fragment	?	NA					20.4
BBI	Not Identifiable	4	Bone	Bone	Fragment	?	NA					2
BBI	Not Identifiable	46	Bone	Bone	Fragment	?	NA					9.9
BBI	Not Identifiable	245	Bone	Bone	Fragment	?	NA					13.7
BBI	Not Identifiable	39	Bone	Bone	Fragment	?	NA					0.8
BBI	Not Identifiable	155	Bone	Bone	Fragment	?	NA					0.7
BBI	Not Identifiable	20	Bone	Bone	Fragment	?	NA					0.6
BBI	Not Identifiable	57	Bone	Bone	Fragment	?	NA					0.4
BBI	Not Identifiable	94	Bone	Bone	Fragment	?	NA					0.6
BBI	Not Identifiable	455	Bone	Bone	Fragment	?	NA					8.5
BBI	Not Identifiable	37	Bone	Bone	Fragment	?	NA					15.6
BBI	Not Identifiable	230	Bone	Bone	Fragment	?	NA					14.4
BBI	Not Identifiable	16	Bone	Bone	Fragment	?	NA					26.7
BBI	Not Identifiable	4	Bone	Bone	Fragment	?	NA					0.8
BBI	Not Identifiable	72	Bone	Bone	Fragment	?	NA					1.2
BBI	Not Identifiable	310	Bone	Bone	Fragment	?	NA					25.9
BBI	Not Identifiable	54	Bone	Bone	Fragment	?	NA					16.8
BBI	Not Identifiable	710	Bone	Bone	Fragment	?	NA					1.2
BBI	Not Identifiable	5	Bone	Bone	Fragment	?	NA				2-5	0.6
BBI	Not Identifiable	5	Bone	Bone	Fragment	?	NA				<2	0.8
BBI	Not Identifiable	10	Bone	Bone	Fragment	?	NA				<2	4.6
BBI	Not Identifiable	19	Teeth	Cranium	Fragments	?	NA				<2	0.4
BBI	Not Identifiable	26	Teeth	Cranium	Fragments	?	NA				2-5	0.3
BBI	Not Identifiable	10	Teeth	Cranium	Fragments	?	NA				<2	0.8
BBI	Not Identifiable	22	Teeth	Cranium	Fragments	?	NA				<2	3.7
BBI	Not Identifiable	1	Tooth	Cranium	Fragments		NA	NA			<2	0.5
BBI	Ovis	1	Calcaneus	Feet		?	L	Unfused	Lamb		2-5	0.3
BBI	Ovis	1	Carpal Bone	Feet	Central quartal bone	?	R	Adult			<2	0.1
BBI	Ovis	1	Carpal Bone	Feet		?	L	Adult			<2	1.4
BBI	Ovis	1	Maxillary Tooth	Cranium	P4 Complete		R	Adult			2-5	1.3
BBI	Ovis	1	Metacarpal	Feet		?	NA	Fused	= 65		2-5	0.7
BBI	Ovis	1	Metapodial	Feet		?	NA				<2	0.7

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBI	Ovis		1 Metatarsal	Feet		?	L	Adult	18.1	Burnt	5-10	0.8
BBI	Ovis		1 Radius	Upper Forelimb		?	R	Adult			5-10	2.6
BBI	Ovis/Capra		1 Humerus	Upper Forelimb		?	R		juvenile		2-5	0.2
BBI	Ovis/Capra		1 Proximal Phalange	Feet		?	NA	Fused			2-5	2.4
BBI	Ovis/Capra		1 Rib	Back	Fragment	?	R	Adult		marks	2-5	0.8
BBI	Sus		1 Maxillary Tooth	Cranium	M2 or M3 unworn	?	NA		roots and it is		2-5	0.3
BBI	Testudo		1 Shell	Back	Shell	?	NA		bit goes with the		<2	1.8
BBI	Testudo		1 Shell	Back	Shell Fragment	?	NA				2-5	1.6
BBI	Testudo		8 Shell	Back	Shell Fragments	?	NA		form a turtle		>10	0.6
BBI	Testudo		2 Shell	Back	Fragment	?	NA				2-5	1.7
BBI	Vulpes		1 Calcaneus	Feet		?	NA	Fused			2-5	1.9
BBI	Vulpes		1 Femur	Upper Hindlimb		?	R	Fused			2-5	0.05
BBI	Vulpes		1 Femur	Upper Hindlimb		?	L	Fused			<2	0.7
BBI	Vulpes		1 Mandible	Cranium	P2-P4 teeth present	?	R	Adult			2-5	0.1
BBI	Vulpes		1 Mandible	Cranium	Almost Complete	?	L	Adult	in fragments and		>10	0.2
BBI	Vulpes		1 Mandibular Tooth	Cranium	M3	?	R	Adult			<2	3.6
BBI	Vulpes		1 Mandibular Tooth	Cranium	Incisor	?	NA	Adult			<2	1.4
BBI	Vulpes		1 Mandibular Tooth	Cranium	Incisor	?	NA	Adult			<2	7
BBI	Vulpes		1 Mandibular Tooth	Cranium	P2 or P3 Fragment	?	R	Adult			<2	1.7
BBI	Vulpes		1 Mandibular Tooth	Cranium	M2 Fragment	?	L	Adult			<2	0.3
BBI	Vulpes		1 Mandibular Tooth	Cranium	Canine	?	R	Adult			<2	10.5
BBI	Vulpes		1 Mandibular Tooth	Cranium	P4 Fragment	?	L	Adult			<2	5.6
BBI	Vulpes		6 Mandibular Tooth	Cranium	Fragments	?	NA		fragments from		<2	7.8
BBI	Vulpes		1 Metacarpal	Feet	Metacarpal I	?	NA				<2	0.3
BBI	Vulpes		1 Metacarpal	Feet	Fragment	?	NA	Adult			<2	1.8
BBI	Vulpes		1 Metapodial	Feet	II	?	NA	Unfused			<2	6.3
BBI	Vulpes		1 Metapodial	Feet		?	NA	Fused			<2	3.1
BBI	Vulpes		1 Metapodial	Feet		?	NA	Fused			<2	3.1
BBI	Vulpes		1 Proximal Phalange	Feet		?	NA	Fused			<2	2.2
BBI	Vulpes		1 Radius	Upper Forelimb		?	L	Adult			2-5	0.1
BBI	Vulpes		1 Vertebrae	Back	Lumbar vertebrae almost complete	?	NA				2-5	4.2
BBJ	Bos		3 Teeth	Cranium	Fragment	?	NA				<2	3.7
BBJ	Bos		1 Tooth	Cranium	Fragment	?	NA				2-5	2.2
BBJ	Bos		1 Tooth	Cranium	Fragment	?	NA				2-5	5
BBJ	Carnivore		1 Femur	Upper Hindlimb	Distal epiphysis fragment		R	Adult			<2	130.3
BBJ	Equus		1 Proximal Phalange	Feet	Epiphysis complete	?	NA	Unfused			2-5	1.2
BBJ	Large Mammal		1 Long Bone	Long Bone	Fragment	?	NA				5-10	28.4
BBJ	Large Ungulate		8 Teeth	Cranium	Fragment	?	NA				2-5	5.3
BBJ	Lepus		1 Proximal Phalange	Feet	Proximal end & diaphysis fragment		NA	Adult			2-5	0.5
BBJ	Lepus		1 Proximal Phalange	Feet		?	NA	Adult			2-5	8.5
BBJ	Medium Mammal		5 Vertebrae	Back	Fragments		NA	NA			2-5	0.3
BBJ	Not identifiable		61 Bone	Bone	Fragments		NA	NA	Burnt		2-5	16.1
BBJ	Not identifiable		1 Bone	Bone	Fragment		NA	NA			2-5	16.9
BBJ	Not identifiable		1 Bone	Bone	Fragment		NA	NA	Burnt		<2	15.3
BBJ	Not identifiable		1 Bone	Bone	Fragment		NA	NA			<2	1.6
BBJ	Not identifiable		1 Bone	Bone	Fragment		NA	NA			5-10	0.4
BBJ	Not Identifiable		7 Bone	Bone	Fragment	?	NA					0.3
BBJ	Not Identifiable		2 Bone	Bone	Fragment	?	NA					2.8
BBJ	Not Identifiable		130 Bone	Bone	Fragment	?	NA					4.7
BBJ	Not Identifiable		135 Bone	Bone	Fragment	?	NA					1.1
BBJ	Not Identifiable		140 Bone	Bone	Fragment	?	NA					1.4

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBJ	Not Identifiable	85	Bone	Bone	Fragment	?	NA					2.4
BBJ	Not Identifiable	17	Bone	Bone	Fragment	?	NA					0.5
BBJ	Not Identifiable	20	Bone	Bone	Fragment	?	NA					1.9
BBJ	Not Identifiable	220	Bone	Bone	Fragment	?	NA					8.5
BBJ	Not Identifiable	240	Bone	Bone	Fragment	?	NA					6
BBJ	Not Identifiable	95	Bone	Bone	Fragment	?	NA					5.5
BBJ	Not Identifiable	75	Bone	Bone	Fragment	?	NA					3.9
BBJ	Not Identifiable	12	Bone	Bone	Fragment	?	NA				<2	2.7
BBJ	Not identifiable	3	Teeth	Cranium	Fragments		NA	NA			<2	5.2
BBJ	Ovis	1	Metatarsal	Feet	Proximal diaphysis fragment		L ?	Unfused			2-5	0.4
BBJ	Ovis	1	Proximal Phalange	Feet	Fragment		NA	Unfused			2-5	26.8
BBJ	Ovis	1	Tibia	Upper Hindlimb	Proximal epiphysis		R	Unfused			2-5	0.1
BBJ	Ovis	1	Tooth	Cranium	Incisor		L	Adult			2-5	0.1
BBJ	Vulpes	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Adult			<2	0.1
BBK	Bos	1	Mandible	Cranium	Body & symphysis fragment		L	Adult			5-10	7.5
BBK	Bos	1	Mandible	Cranium	With Canine complete		R	No wear			2-5	13.8
BBK	Bos	3	Teeth	Cranium	Fragment	?	NA				<2	21.2
BBK	Bos	1	Tooth	Cranium	M1 or M2 Complete		L	No wear			5-10	5.7
BBK	Carnivore	1	Middle Phalange	Feet		?	NA	Fused			<2	88.4
BBK	Large Mammal	2	Long Bone	Long Bone	Fragment	?	NA				5-10	7.2
BBK	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	2
BBK	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	1.2
BBK	Not identifiable	50	Bone	Bone	Fragments		NA	NA	Burnt		2-5	1.1
BBK	Not identifiable	4	Bone	Bone	Fragments		NA	NA			2-5	0.5
BBK	Not identifiable	2	Bone	Bone	Fragments		NA	NA			5-10	0.2
BBK	Not Identifiable	11	Bone	Bone	Fragment	?	NA					0.3
BBK	Not Identifiable	4	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	41	Bone	Bone	Fragment	?	NA					0.2
BBK	Not Identifiable	135	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	42	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	135	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	6	Bone	Bone	Fragment	?	NA					1.6
BBK	Not Identifiable	17	Bone	Bone	Fragment	?	NA					0.2
BBK	Not Identifiable	89	Bone	Bone	Fragment	?	NA					0.2
BBK	Not Identifiable	155	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	125	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	230	Bone	Bone	Fragment	?	NA					0.1
BBK	Not Identifiable	3	Bone	Bone	Fragment	?	NA				2-5	0.1
BBK	Not Identifiable	4	Bone	Bone	Fragment	?	NA				<2	0.8
BBK	Not identifiable	7	Teeth	Cranium	Fragments		NA	NA			2-5	0.7
BBK	Ovis	1	Humerus	Upper Forelimb	Epiphysis Complete	?	L	Unfused	Neonatal		<2	45.9
BBK	Ovis	1	Mandibular Tooth	Cranium	Incisor Fragment	?	L				<2	1.1
BBK	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused	Neonatal		<2	13.1
BBK	Small Mammal	1	Rib	Back		?	R	Unfused			2-5	2.3
BBK	Small Mammal	1	Rib	Back	Fragment	?	NA				<2	1.4
BBK	Small Mammal	1	Scapula	Upper Forelimb		?	R				2-5	17.6
BBL	Canis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		R	Unfused			5-10	16.3
BBL	Canis	1	Carpal Bone	Feet	Complete III		R	Adult			>10	
BBL	Canis	1	Fibula	Upper Hindlimb	Distal end & diaphysis fragment		NA	Fused			2-5	20.8
BBL	Canis	1	Metacarpal	Feet	Complete III		L	Fused			2-5	3.2
BBL	Canis	1	Metacarpal	Feet	Complete IV		R	Adult			<2	9.8

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BBL	Canis	1	Metacarpal	Feet	Complete V		R	Adult			<2	21.6
BBL	Canis	1	Metapodial	Feet	Distal end & diaphysis fragment		L	Adult			<2	18.8
BBL	Canis	1	Metatarsal	Feet	Complete V		L	Fused			5-10	67.8
BBL	Canis	1	Metatarsal	Feet	Complete IV		L	Fused			2-5	30.1
BBL	Canis	1	Metatarsal	Feet	Complete III		R	Fused			5-10	6.2
BBL	Canis	1	Metatarsal	Feet	Complete II		L	Fused			2-5	3.4
BBL	Canis	1	Middle Phalange	Feet	Complete		R	Fused			5-10	135
BBL	Canis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		L	Adult			2-5	7.6
BBL	Canis	1	Tarsal Bone	Feet	Complete Central Bone		L	Adult			<2	1.9
BBL	Canis	1	Tarsal Bone	Feet	Complete IV		R	Adult			2-5	40.5
BBL	Canis	1	Tarsal Bone	Feet	Complete Talus		NA	Unfused			2-5	13.3
BBL	Canis	1	Tarsal Bone	Feet	Complete III		L	Adult			<2	240
BBL	Canis	1	Tibia	Upper Hindlimb	Distal end & diaphysis fragment		R	Adult			<2	47.9
BBL	Capra	1	Cranium	Cranium			L	Adult	Burnt		2-5	5.1
BBL	Equus	1	Femur	Upper Hindlimb	Caput & diaphysis fragment		L	Adult	Burnt		5-10	3.7
BBL	Not identifiable	4	Bone	Bone	Fragments		NA	NA			2-5	0.2
BBL	Not identifiable	20	Bone	Bone	Fragments		NA	NA	Burnt		2-5	0.1
BBL	Not identifiable	4	Bone	Bone	Fragments		NA	NA			5-10	0.6
BBL	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	4.8
BBL	Ovis	1	Cranium	Cranium	Zygomatic Arch fragment		R	Adult			2-5	0.3
BCB	Aves	1	Carpo-Metacarpus	Feet	Almost Complete		R	Adult			2-5	2.1
BCB	Aves	1	Coracoid	Back	Complete		R	Juvenile	size comparison		2-5	1.6
BCB	Aves	1	Femur	Upper Hindlimb	Proximal end & diaphysis fragment		L	Adult size			<2	35.8
BCB	Aves	1	Humerus	Upper Forelimb	Distal end & diaphysis fragment		L	Adult			<2	6.3
BCB	Aves	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Adult	size comparison		2-5	
BCB	Aves	1	Tarso-Metatarsus	Feet	Distal end & diaphysis fragment		NA				<2	13.5
BCB	Bos	1	Mandibular Tooth	Cranium	dP2 Complete		L	Juvenile			<2	10.6
BCB	Bos	1	Maxillary Tooth	Cranium	P2 Complete		L	Adult	Burnt		2-5	14.1
BCB	Bos	1	Metatarsal	Feet	Diaphysis Fragment	?	NA				2-5	85.4
BCB	Bos	1	Metatarsal	Feet		?	NA				2-5	4.3
BCB	Bos	1	Proximal Phalange	Feet	Distal end & diaphysis fragment		NA	Adult			2-5	5.1
BCB	Bos	1	Tooth	Cranium	M2 or M3 fragment		NA	Juvenile (not wear)	with roots		2-5	9.7
BCB	Bos	1	Tooth	Cranium	M2 or M3 fragment		NA	Juvenile (not wear)	with roots		2-5	147.1
BCB	Capra	1	Tibia	Upper Hindlimb	Distal end & diaphysis fragment		R	Adult	Burnt		2-5	21.3
BCB	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Fragment		R	Adult			<2	12.3
BCB	Equus	1	Proximal Phalange	Feet	Distal end & diaphysis fragment		NA	Adult			2-5	9.2
BCB	Homo	1	Distal Phalange	Feet		?	NA	Fused	Exostosis exists		2-5	1.3
BCB	Homo	1	Metapodial	Feet	Complete		NA	Adult			2-5	66.8
BCB	Homo	1	Middle Phalange	Feet		?	NA	Fused	Exostosis exists		2-5	7
BCB	Medium Mammal	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	NA			2-5	1.8
BCB	Medium Mammal	1	Vertebrae	Back	Fragments Thoracic Vertebrae		NA	NA	Burnt		<2	1.6
BCB	Not identifiable	86	Bone	Bone	Fragments		NA	NA			<2	0.2
BCB	Not identifiable	17	Bone	Bone	Fragments		NA	NA	Burnt		2-5	2.8
BCB	Not identifiable	59	Bone	Bone	Fragments		NA	NA			2-5	0.7
BCB	Not identifiable	4	Bone	Bone	Fragments		NA	NA			5-10	0.1
BCB	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	0.8
BCB	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	0.2
BCB	Not identifiable	81	Bone	Bone	Fragments		NA	NA	Burnt		2-5	1
BCB	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.3
BCB	Not identifiable	7	Bone	Bone	Fragments		NA	NA			5-10	0.3
BCB	Not Identifiable	170	Bone	Bone	Fragment	?	NA					0.5

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCB	Not Identifiable	37	Bone	Bone	Fragment	?	NA					0.1
BCB	Not identifiable	13	Rib	Back	Fragments		NA	NA			2-5	1.3
BCB	Not Identifiable	10	Teeth	Cranium	Fragments	?	NA				2-5	0.7
BCB	Ovis	1	Innominate	Upper Hindlimb	Ilium fragment		L	Neonatal	lamb ilium		2-5	4.7
BCB	Ovis	1	Innominate	Upper Hindlimb	Ischium fragment		L	Neonatal			2-5	4.4
BCB	Ovis	1	Mandibular Tooth	Cranium	M3 Almost Complete		R	Adult			2-5	2.8
BCB	Ovis	1	Maxillary Tooth	Cranium	M1 or M2 Complete		L	Adult	Burnt		2-5	1
BCB	Ovis	1	Maxillary Tooth	Cranium	M1 Complete		R	Adult	Burnt		<2	1
BCB	Ovis	1	Maxillary Tooth	Cranium	P3 Complete		L	Adult			2-5	0.9
BCB	Ovis	1	Metacarpal	Feet	Distal end & diaphysis fragment III OR IV		NA	Fused			2-5	1.2
BCB	Ovis	1	Middle Phalange	Feet	Complete		R	Adult			2-5	0.2
BCB	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			2-5	4.1
BCB	Ovis	1	Proximal Phalange	Feet	Complete		NA	Unfused			<2	2.3
BCB	Ovis	1	Proximal Phalange	Feet	Proximal epiphysis complete		NA	Unfused			<2	1.6
BCB	Ovis	1	Radius	Upper Forelimb	Proximal end & diaphysis fragment		R	Adult : Fused			2-5	13.3
BCB	Ovis	1	Radius	Upper Forelimb	Proximal diaphysis fragment		R	Neonatal			<2	16
BCB	Ovis	1	Ulna	Upper Forelimb	Diaphysis fragment		R	Juvenile			2-5	0.1
BCB	Ovis	2	Vertebrae	Back	Fragments		NA	Neonatal	Bone may be		<2	0.4
BCB	Ovis/Capra	1	Astragalus	Feet	Complete		L	Neonatal	Burnt		2-5	0.5
BCB	Ovis/Capra	1	Calcaneus	Feet	Almost Complete		R	Neonatal	lamb calcaneus		2-5	8.6
BCB	Ovis/Capra	1	Distal Phalange	Feet	Proximal end fragment		NA	Adult	Burnt		<2	1.7
BCB	Ovis/Capra	1	Mandible	Cranium	Fragment		L	NA			5-10	2
BCB	Ovis/Capra	1	Mandibular Tooth	Cranium	dP2 or P2 almost complete		L	Juvenile	missing		<2	3.3
BCB	Ovis/Capra	1	Mandibular Tooth	Cranium	Fragment		NA	Adult			2-5	1.1
BCB	Ovis/Capra	1	Metapodial	Feet	Diaphysis fragment III or IV		NA	Unfused			2-5	29.7
BCB	Ovis/Capra	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Adult			2-5	8.5
BCB	Ovis/Capra	1	Proximal Phalange	Feet	Complete		NA	Unfused			<2	2.3
BCB	Ovis/Capra	1	Scapula	Upper Forelimb	Distal end fragment		R	Unfused			2-5	0.4
BCB	Ovis/Capra	1	Scapula	Upper Forelimb	Distal end fragment		R	Unfused			2-5	5.3
BCB	Ovis/Capra	1	Tibia	Upper Hindlimb	Diaphysis fragment		L	Neonatal	goat, thinner than		5-10	1.4
BCB	Reptile	1	Vertebrae	Back	Complete		NA	NA			<2	5.2
BCB	Reptile	1	Vertebrae	Back	Fragment		NA	NA			<2	0.05
BCB	Small Mammal	1	Innominate	Upper Hindlimb	Ilium	?	R				2-5	37.9
BCB	Small Mammal	3	Rib	Back	Fragment	?	NA				2-5	0.6
BCB	Small Mammal	1	Scapula	Upper Forelimb		?	L				2-5	3.1
BCC	Aves	1	Coracoid	Back	Proximal end fragment		L	Juvenile	adult book		<2	4.5
BCC	Aves	1	Coracoid	Back	Proximal end fragment		R	Juvenile	adult book		<2	0.7
BCC	Aves	1	Femur	Upper Hindlimb	Distal end fragment		L	Adult			<2	1.7
BCC	Aves	1	Scapula	Upper Forelimb	Proximal end fragment		R	NA			2-5	1.5
BCC	Bos	1	Mandibular Tooth	Cranium	P2 Almost Complete		L	Adult	adult mandible		<2	24.2
BCC	Bos	1	Tooth	Cranium	Fragments		NA	Juvenile	tooth		2-5	1.5
BCC	Homo	1	Tibia	Upper Hindlimb	Distal epiphysis		L	Adult			2-5	31.3
BCC	Lepus	1	Metatarsal	Feet	Proximal end fragment of IV		R	Adult	compared to ours		2-5	
BCC	Lepus	1	Tarsal Bone	Feet	Complete III		R	Adult	and dog check		<2	22.2
BCC	Medium Mammal	1	Rib	Back	Fragment		NA	NA			2-5	5.2
BCC	Medium Mammal	1	Rib	Back	Fragment		NA	NA			<2	0.9
BCC	Medium Mammal	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		NA	NA			<2	1.8
BCC	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.6
BCC	Not Identifiable	8	Bone	Bone	Fragments		NA	NA	Burnt		<2	42.6
BCC	Not Identifiable	35	Bone	Bone	Fragments		NA	NA			<2	1.6
BCC	Not Identifiable	5	Bone	Bone	Fragments		NA	NA	Burnt		2-5	4.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCC	Not Identifiable		32 Bone	Bone	Fragments		NA	NA			2-5	1.4
BCC	Not Identifiable		1 Metapodial	Feet	Diaphysis Fragment		NA	Adult	centre		5-10	0.8
BCC	Not Identifiable		7 Teeth	Cranium	Fragments		NA	NA			<2	0.6
BCC	Not Identifiable		1 Tibia	Upper Hindlimb	Diaphysis fragment		NA	Neonatal	Gnaw marks		2-5	1.5
BCC	Ovis		1 Radius	Upper Forelimb	Distal diaphysis fragment		L	Lamb: unfused			2-5	30.1
BCC	Reptile		1 Vertebrae	Back	Fragment		NA	NA			<2	0.3
BCC	Reptile		1 Vertebrae	Back	Fragment		NA	NA			<2	3.8
BCC	Small Carnivore		1 Humerus	Upper Forelimb	Proximal end & diaphysis fragment		R	Adult			2-5	2.1
BCC	Vulpes		1 Calcaneus	Feet	Proximal end fragment		R	Fused			2-5	0.5
BCF			2			?	NA				2-5	0
BCF	Bos		1 Maxillary Tooth	Cranium	P3 fragment		R	Adult			2-5	3.3
BCF	Bos		12 Teeth	Cranium	Fragment	?	NA				2-5	31
BCF	Carnivore		1 Maxillary Tooth	Cranium	Canine root fragment			Fused			2-5	105.7
BCF	Carnivore		1 Tooth	Cranium	Fragment			Fused			5-10	9.7
BCF	Equus		1 Metatarsal	Feet	Proximal end & diaphysis fragment II		L	Fused			2-5	22.5
BCF	Equus		1 Middle Phalange	Feet	Fragments		NA	Adult			2-5	0.7
BCF	Equus		1 Proximal Phalange	Feet	Distal end fragment		NA	Adult size			2-5	6.4
BCF	Equus		1 Tarsal Bone	Feet	Fragment III		R	Adult			2-5	14.4
BCF	Equus		1 Tooth	Cranium	Fragment		NA	NA			2-5	7.3
BCF	Equus		1 Tooth	Cranium	Fragment		NA	NA			2-5	18.5
BCF	Equus		1 Tooth	Cranium	Incisor Fragment		R	Adult			2-5	39.8
BCF	Large Mammal		10 Teeth	Cranium	Fragments		NA	NA			2-5	0.6
BCF	Large Mammal		24 Teeth	Cranium	Fragments		NA	NA			2-5	0.9
BCF	Large Mammal		2 Teeth	Cranium	Fragment	?	NA				2-5	0.9
BCF	Large Mammal		8 Teeth	Cranium	Fragment	?	NA				2-5	0.3
BCF	Large Mammal		1 Vertebrae	Back	Body fragment		NA	Fused			2-5	0.6
BCF	Large Mammal		1 Vertebrae	Back	Caudal Vertebrae	?	NA				2-5	0.6
BCF	Lepus		1 Carpal Bone	Feet		?	NA	Adult			<2	0.1
BCF	Lepus		1 Metacarpal	Feet	Complete IV			Fused			2-5	0.1
BCF	Lepus		1 Metatarsal	Feet	II	?	L	Fused			2-5	0.05
BCF	Medium Mammal		1 Rib	Back	Proximal Articulation	?	NA	Unfused			<2	11.1
BCF	Not Identifiable		23 Atlas	Back	Fragment	?	NA					1.3
BCF	Not Identifiable		50 Bone	Bone	Fragments		NA	NA			<2	1.3
BCF	Not Identifiable		8 Bone	Bone	Fragments		NA	NA			2-5	13.7
BCF	Not Identifiable		2 Bone	Bone	Fragments		NA	NA			5-10	8.6
BCF	Not Identifiable		1 Bone	Bone	Fragment		NA	NA	Burnt		<2	0.1
BCF	Not Identifiable		1 Bone	Bone	Fragment		NA	NA			<2	0.8
BCF	Not Identifiable		74 Bone	Bone	Fragments		NA	NA	Burnt		2-5	1
BCF	Not Identifiable		1 Bone	Bone	Fragment		NA	NA			2-5	1
BCF	Not Identifiable		2 Bone	Bone	Fragments		NA	NA			5-10	0.1
BCF	Not Identifiable		2 Bone	Bone	Fragments		NA	NA			5-10	0.1
BCF	Not Identifiable		10 Bone	Bone	Fragments		NA	NA			2-5	0.1
BCF	Not Identifiable		5 Bone	Bone	Fragment	?	NA					0.1
BCF	Not Identifiable		62 Bone	Bone	Fragment	?	NA					0.1
BCF	Not Identifiable		55 Bone	Bone	Fragment	?	NA					0.1
BCF	Not Identifiable		38 Bone	Bone	Fragment	?	NA					0.1
BCF	Not Identifiable		29 Bone	Bone	Fragment	?	NA				<2	1.1
BCF	Not Identifiable		132 Bone	Bone	Fragment	?	NA				<2	0.4
BCF	Not Identifiable		41 Bone	Bone	Fragment	?	NA				2-5	0.3
BCF	Not Identifiable		4 Bone	Bone	Fragment	?	NA					7.8
BCF	Not Identifiable		22 Bone	Bone	Fragment	?	NA					0.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCF	Not Identifiable	75	Bone	Bone	Fragment	?	NA					3.8
BCF	Not Identifiable	280	Bone	Bone	Fragment	?	NA					0.6
BCF	Not Identifiable	24	Bone	Bone	Fragment	?	NA					0.2
BCF	Not Identifiable	175	Bone	Bone	Fragment	?	NA					22.3
BCF	Not Identifiable	5	Bone	Bone	Fragment	?	NA				2-5	0.1
BCF	Not Identifiable	6	Bone	Bone	Fragment	?	NA					37.9
BCF	Not Identifiable	30	Bone	Bone	Fragment	?	NA					3.1
BCF	Not Identifiable	48	Bone	Bone	Fragment	?	NA					22.9
BCF	Not Identifiable	12	Bone	Bone	Fragment	?	NA				<2	17.1
BCF	Not Identifiable	21	Bone	Bone	Fragment	?	NA				<2	17.8
BCF	Not Identifiable	15	Bone	Bone	Fragment	?	NA				<2	11.1
BCF	Not Identifiable	275	Bone	Bone	Fragment	?	NA					11
BCF	Not Identifiable	29	Bone	Bone	Fragment	?	NA					7.2
BCF	Not Identifiable	185	Bone	Bone	Fragment	?	NA					0.2
BCF	Not Identifiable	4	Teeth	Cranium	Fragments		NA	NA			2-5	4.8
BCF	Not Identifiable	17	Teeth	Cranium	Fragments	?	NA				<2	3
BCF	Not Identifiable	2	Vertebrae	Back	Fragments	?	NA				<2	0.9
BCF	Ovis	1	Cranium	Cranium	Hypoglossal caNAl complete		R	Adult			2-5	1
BCF	Ovis	1	Distal Phalange	Feet	Almost Complete		NA	Juvenile size			<2	3.1
BCF	Ovis	1	Mandible	Cranium	Ramus fragment		R	Adult			2-5	3
BCF	Ovis	1	Mandibular Tooth	Cranium	Incisor fragment	?	NA	Adult			<2	1.1
BCF	Ovis	1	Maxillary Tooth	Cranium	P3 or P4		L	Adult			<2	2.7
BCF	Ovis	1	Metatarsal	Feet		?	R	Adult			2-5	0.1
BCF	Ovis	1	Patella	Upper Hindlimb		?	L	Adult			<2	0
BCF	Ovis	1	Proximal Phalange	Feet		?	NA	Unfused	Neonatal		<2	0.5
BCF	Ovis	1	Ulna	Upper Forelimb	J>50	?	R	Fused			<2	2.8
BCF	Ovis/Capra	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.5
BCF	Reptile	1	Epistropheus	Cranium	Complete		NA	Adult			<2	0.2
BCF	Reptile	1	Vertebrae	Back	Complete		NA	Adult			<2	0.05
BCF	Small Mammal	1	Ulna	Upper Forelimb		?	L				<2	0.3
BCF	Vulpes	1	Mandible	Cranium		?	L	Adult			<2	0.5
BCF	Vulpes	1	Middle Phalange	Feet		?	NA	Fused			<2	4.4
BCF	Vulpes	1	Radius	Upper Forelimb		?	R				2-5	0.4
BCF	Vulpes	1	Radius	Upper Forelimb		?	NA	Fused			<2	0.2
BCG	Aves	1	Bone	Long Bone	Fragment		NA	NA			<2	23.8
BCG	Aves	1	Femur	Upper Hindlimb	Distal diaphysis fragment		NA	Unfused			2-5	2.1
BCG	Aves	1	Humerus	Upper Forelimb	Complete		R	Adult			<2	77.9
BCG	Aves	1	Humerus	Upper Forelimb	Distal end & diaphysis fragment		R	Adult			2-5	224.1
BCG	Aves	1	Tarso-Metatarsus	Feet	Complete		R	Adult			2-5	42.4
BCG	Bos	1	Mandibular Tooth	Cranium	M3 Almost complete		R	Adult			5-10	14.7
BCG	Bos	23	Teeth	Cranium	Fragments		NA	NA			2-5	3.5
BCG	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		R	Fused			5-10	25.8
BCG	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		R	Adult			<2	1.2
BCG	Medium Mammal	1	Cranium	Cranium	Fragment		NA	Unfused			2-5	0.7
BCG	Medium Mammal	1	Rib	Back	Fragment		NA	NA			5-10	54.4
BCG	Not Identifiable	69			Fragment	?	NA					0.5
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	0.5
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			<2	4.4
BCG	Not Identifiable	55	Bone	Bone	Fragments		NA	NA	Burnt		2-5	0.2
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	2.7
BCG	Not Identifiable	3	Bone	Bone	Fragments		NA	NA	Burnt		5-10	1.9

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCG	Not Identifiable	3	Bone	Bone	Fragments		NA	NA			5-10	3.8
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			5-10	4.8
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		2-5	1.1
BCG	Not Identifiable	28	Bone	Bone	Fragments		NA	NA			2-5	3.4
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			<2	10.5
BCG	Not Identifiable	24	Bone	Bone	Fragments		NA	NA			5-10	1.1
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	0.6
BCG	Not Identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		2-5	5.2
BCG	Not Identifiable	5	Bone	Bone	Fragments		NA	NA			<2	3.1
BCG	Not Identifiable	8	Bone	Bone	Fragment	?	NA					5.8
BCG	Not Identifiable	5	Bone	Bone	Fragment	?	NA					3.1
BCG	Not Identifiable	21	Bone	Bone	Fragment	?	NA					0.6
BCG	Not Identifiable	26	Bone	Bone	Fragment	?	NA					0.6
BCG	Not Identifiable	15	Bone	Bone	Fragment	?	NA					0.6
BCG	Not Identifiable	1	Bone	Bone	Fragment	?	NA				2-5	0.1
BCG	Not Identifiable	3	Teeth	Cranium	Fragments		NA	NA			<2	3.2
BCG	Not Identifiable	1	Tooth	Cranium	Fragment		NA	NA			2-5	0.5
BCG	Ovis	1	Femur	Upper Hindlimb	Proximal end & diaphysis fragment		L	Fused	Burnt		2-5	0.2
BCG	Ovis	1	Mandibular Tooth	Cranium	Incisor fragment		L	Adult			<2	0.9
BCG	Ovis/Capra	1	Proximal Phalange	Feet	Proximal end fragment		NA	Fused	Burnt		<2	4.1
BCG	Ovis/Capra	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		R	Unfused			2-5	0.9
BCG	Vulpes	1	Metatarsal	Feet	Complete II		L	Fused			5-10	6.5
BCG	Vulpes	1	Proximal Phalange	Feet	Complete		L	Fused			2-5	0.1
BCH	Aves	1	Carpo-Metacarpus	Feet	Proximal end fragment		L					4.5
BCH	Aves	1	Radius	Upper Forelimb	Distal end fragment		R	Adult			<2	
BCH	Bos	1	Mandibular Tooth	Cranium	M1 or M2 complete		L	Roots open	Very Large		5-10	49.7
BCH	Bos	1	Mandibular Tooth	Cranium	P3	?	L	Adult			2-5	43.1
BCH	Carnivore	1	Distal Phalange	Feet		?	NA	Fused			<2	18.5
BCH	Equus	1	Mandibular Tooth	Cranium	M1 or M2 Fragment		L	Adult			5-10	42.8
BCH	Equus	1	Mandibular Tooth	Cranium	M3 Almost Complete		L	Adult			2-5	25.6
BCH	Equus	1	Maxillary Tooth	Cranium	I3 ? Complete		R	Roots closed			2-5	33.5
BCH	Equus	1	Maxillary Tooth	Cranium	Fragment	?	L	Adult			2-5	33.4
BCH	Equus	1	Sesamoid Bone	Feet	Almost Complete		NA	Juvenile			2-5	8.2
BCH	Homo	1	Unknown									11.4
BCH	Large Mammal	11	Bone	Bone	Fragment	?	NA				2-5	0.2
BCH	Large Mammal	1	Long Bone	Long Bone	Fragment	?	NA				>10	2.6
BCH	Large Mammal	7	Teeth	Cranium	Fragment	?	NA				2-5	0.8
BCH	Medium Mammal	1	Radius	Upper Forelimb	Diaphysis Fragment		NA	NA			2-5	7
BCH	Not Identifiable	76	Bone	Bone	Fragments		NA	NA			<2	45.6
BCH	Not Identifiable	31	Bone	Bone	Fragments		NA	NA			2-5	47.9
BCH	Not Identifiable	172	Bone	Bone	Fragments		NA	NA			2-5	14.1
BCH	Not Identifiable	13	Bone	Bone	Fragment	?	NA					10.7
BCH	Not Identifiable	27	Bone	Bone	Fragment	?	NA					0.3
BCH	Not Identifiable	128	Bone	Bone	Fragment	?	NA					0.2
BCH	Not Identifiable	710	Bone	Bone	Fragment	?	NA					18.1
BCH	Not Identifiable	35	Bone	Bone	Fragment	?	NA					1.3
BCH	Not Identifiable	230	Bone	Bone	Fragment	?	NA					10.8
BCH	Not Identifiable	6	Cranium	Cranium	Fragments		NA	NA			2-5	1.6
BCH	Ovis	1	Carpal Bone	Feet	Complete Intermediate Bone		R	Juvenile: still pousus bone			<2	0.1
BCH	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		R	Juvenile; still pourus bone			<2	0.1
BCH	Ovis	1	Carpal Bone	Feet	Complete IV		R	Juvenile: still pourus bone			<2	3.8

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCH	Ovis	1	Carpal Bone	Feet	Complete II & III		R	Juvenile: still pousus bone			<2	0.3
BCH	Ovis	1	Carpal Bone	Feet	Ulnar Carpal Bone Complete		R	Juvenile: still pourus bone			<2	3.6
BCH	Ovis	1	Humerus	Upper Forelimb	Distal end fragment		L	Adult			2-5	0.1
BCH	Ovis	1	Maxillary Tooth	Cranium	P3 Complete		R	Adult			2-5	0.1
BCH	Ovis	1	Metacarpal	Feet		?	NA	Fused	measurement		2-5	1.4
BCH	Ovis	1	Metatarsal	Feet	Proximal end & diaphysis fragment		L	Adult			5-10	0.2
BCH	Ovis	1	Proximal Phalange	Feet	Distal end & diaphysis fragment		NA	Juvenile			2-5	0.2
BCH	Vulpes	1	Middle Phalange	Feet		?	NA	Fused			2-5	4.6
BCI	Aves	1	Bone	Long Bone	Fragment		NA	NA			2-5	
BCI	Aves	1	Radius	Upper Forelimb	Fragment						2-5	0.3
BCI	Aves	1	Ulna	Upper Forelimb	Complete		R	Adult			<2	85.5
BCI	Aves	1	Ulna	Upper Forelimb	Complete		L	Adult			<2	58.5
BCI	Aves	1	Long Bone	Long Bone			NA					
BCI	Bos	1	Mandibular Tooth	Cranium	M2 Fragment		L	Adult			5-10	0.8
BCI	Bos	1	Mandibular Tooth	Cranium	Fragment		L?	No Wear			5-10	2.7
BCI	Bos	1	Mandibular Tooth	Cranium	Fragment		NA	NA			5-10	10.4
BCI	Bos	1	Mandibular Tooth	Cranium	Fragment		NA	NA			5-10	92.7
BCI	Bos	1	Proximal Phalange	Feet	Proximal Epiphysis		NA	Unfused	Burnt		2-5	
BCI	Cervid	1	Proximal Phalange	Feet	Almost Complete		NA	Adult			2-5	11.9
BCI	Equus	1	Maxillary Tooth	Cranium	P3-M2 Fragment ?		R	Adult			2-5	30.1
BCI	Equus	1	Maxillary Tooth	Cranium	Fragment		NA	Adult			2-5	30.2
BCI	Equus	1	Tooth	Cranium	Fragment		NA	NA			2-5	4.7
BCI	Felis	1	Calcaneus	Feet	Complete		NA	Unfused			2-5	175
BCI	Large Mammal	1	Cranium	Cranium	Petrous part of petrosmastoid Complete		R	Adult			2-5	0.6
BCI	Large Mammal	1	Cranium	Cranium	Petrous part of petrosmastoid Complete		L	Adult			2-5	1.3
BCI	Large Mammal	28	Teeth	Cranium	Fragment		NA	NA			5-10	0.7
BCI	Large Mammal	1	Tooth	Cranium	Fragment		NA	NA			<2	0.7
BCI	Large Mammal	1	Vertebrae	Back	Epiphysis Complete		NA	Unfused			2-5	0.6
BCI	Lepus	1	Femur	Upper Hindlimb	Proximal end & diaphysis fragment		R	Fused			<2	0.05
BCI	Lepus	1	Middle Phalange	Feet	Complete		NA	Adult			2-5	9.2
BCI	Medium Mammal	27	Cranium	Cranium	Fragments		NA	NA			2-5	7.6
BCI	Medium Mammal	1	Phalange	Feet	Fragment		NA	NA			2-5	21.6
BCI	Medium Mammal	1	Rib	Back	Fragment		NA	NA			2-5	1
BCI	Medium Mammal	1	Rib	Back	Fragment		NA	NA			2-5	61.2
BCI	Medium Mammal	1	Vertebrae	Back	Epiphysis Complete		NA	Unfused			2-5	3
BCI	Medium Mammal	1	Vertebrae	Back	Body fragment		NA	Unfused			<2	0.7
BCI	Medium Mammal	1	Vertebrae	Back	Almost Complete Thoracic Vertebrae		NA	Adult			2-5	0.8
BCI	Not Identifiable	13	Bone	Bone	Fragments		NA	NA	Burnt		<2	2.4
BCI	Not Identifiable	1	Bone	Bone	Fragment		NA	NA			<2	3.6
BCI	Not Identifiable	19	Bone	Bone	Fragments		NA	NA	Burnt		2-5	14.4
BCI	Not Identifiable	219	Bone	Bone	Fragments		NA	NA			2-5	6.1
BCI	Not Identifiable	12	Bone	Bone	Fragments		NA	NA			5-10	8.2
BCI	Not Identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	3.2
BCI	Not Identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		2-5	3.1
BCI	Not Identifiable	160	Bone	Bone	Fragments		NA	NA			2-5	0.5
BCI	Not Identifiable	20	Bone	Bone	Fragments		NA	NA			5-10	0.1
BCI	Not Identifiable	6	Bone	Bone	Fragments		NA	NA	Burnt		5-10	0.2
BCI	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	55.4
BCI	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	27.8
BCI	Not identifiable	21	Bone	Bone	Fragments		NA	NA	Burnt		2-5	35.4
BCI	Not identifiable	1	Bone	Bone	Fragment		NA	NA			2-5	37.5

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCI	Not identifiable	4	Bone	Bone	Fragments		NA	NA			5-10	29.5
BCI	Not Identifiable	21	Rib	Back	Fragments		NA	NA			2-5	2.2
BCI	Not identifiable	1	Rib	Back	Almost complete		R	NA			5-10	0.6
BCI	Ovis	1	Astragalus	Feet	Complete		L	Adult			2-5	7.8
BCI	Ovis	1	Astragalus	Feet	Complete		R	Neonatal			<2	2.2
BCI	Ovis	1	Carpal Bone	Feet	Complete IV		L	Adult			<2	12.4
BCI	Ovis	1	Cranium	Cranium	Prosthion fragment		L	NA			2-5	0.4
BCI	Ovis	1	Cranium	Cranium	Petrous part of petrosmastoid Complete		R	Adult			2-5	0.5
BCI	Ovis	1	Femur	Upper Hindlimb	Distal epiphysis		L	Neonatal			<2	13.6
BCI	Ovis	1	Mandible	Cranium	M2 or M3 Fragment		L	Juvenile			<2	0.4
BCI	Ovis	1	Mandible	Cranium	Coronoid Process		L	Adult			2-5	0.7
BCI	Ovis	1	Mandibular Tooth	Cranium	Incisor Fragment		R ?	Adult			<2	1.9
BCI	Ovis	1	Mandibular Tooth	Cranium	Incisor Complete		R	Adult			2-5	3.2
BCI	Ovis	1	Mandibular Tooth	Cranium	dP3-dP4		L	NA			2-5	8.1
BCI	Ovis	1	Mandibular Tooth	Cranium	P4 fragment		R	Lamb			<2	0.3
BCI	Ovis	1	Mandibular Tooth	Cranium	M2 or M3 Fragment		L	Juvenile			2-5	3.9
BCI	Ovis	1	Maxillary Tooth	Cranium	P2		R	Adult			<2	0.3
BCI	Ovis	1	Maxillary Tooth	Cranium	P3		R	Adult			<2	0.1
BCI	Ovis	1	Maxillary Tooth	Cranium	M2 or M3 Almost complete		L	Adult			2-5	0.2
BCI	Ovis	1	Metapodial	Feet	Diaphysis fragment		NA	Neonatal			2-5	1.8
BCI	Ovis	1	Radius	Upper Forelimb	Proximal diaphysis fragment		L	Neonatal			2-5	19.4
BCI	Ovis	1	Radius	Upper Forelimb	Proximal diaphysis fragment		R	Neonatal			2-5	0.5
BCI	Ovis	1	Scapula	Upper Forelimb	Almost Complete		R	Neonatal			5-10	102.1
BCI	Ovis	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	2
BCI	Ovis	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		L	Neonatal			2-5	0.1
BCI	Ovis	1	Tibia	Upper Hindlimb	Proximal end fragment		L	Fused			2-5	0.2
BCI	Ovis	1	Tibia	Upper Hindlimb	Diaphysis Complete		R	Unfused			5-10	0.2
BCI	Ovis	1	Tibia	Upper Hindlimb	Distal end fragment		R	Adult	Burnt		2-5	0.2
BCI	Ovis	1	Ulna	Upper Forelimb	Proximal diaphysis fragment		L	Neonatal			2-5	0.2
BCI	Ovis	1	Vertebrae	Back	Almost Complete Thoracic Vertebrae		NA	Body Unfused			2-5	1.8
BCI	Ovis	1	Vertebrae	Back	Almost Complete Thoracic Vertebrae		NA	Body Unfused			2-5	0.4
BCI	Ovis/Capra	1	Cranium	Cranium	Occipital Bone		NA	Fused			2-5	0.9
BCI	Ovis/Capra	1	Mandibular Tooth	Cranium	M2 or M3 Fragment		R	Adult			2-5	0.1
BCI	Ovis/Capra	1	Mandibular Tooth	Cranium	dp4 fragment		L	Juvenile			2-5	0.1
BCI	Ovis/Capra	1	Maxillary Tooth	Cranium	P2		R	Adult			<2	6.2
BCI	Ovis/Capra	1	Maxillary Tooth	Cranium	P3 or P4		R ?	Adult			<2	7
BCI	Ovis/Capra	1	Maxillary Tooth	Cranium	M1 or M2		L	Adult			2-5	4.3
BCI	Small Mammal	1	Rib	Back	Fragment		NA	NA			2-5	0.7
BCI	Sus	1	Sesamoid Bone	Feet	Complete		NA	Adult			<2	0.4
BCJ	Bos	1	Vertebrae	Back	Fragment Lumbar		NA	NA			2-5	34.5
BCJ	Not identifiable	7	Bone	Bone	Fragments		NA	NA			2-5	50.7
BCJ	Not identifiable	10	Bone	Bone	Fragments		NA	NA			<2	23.8
BCJ	Ovis	1	Carpal Bone	Feet	Radial Carpal Bone Complete		L	Adult	Burnt		<2	3.3
BCJ	Ovis	1	Epistropheus	Cranium	Almost Complete		NA	Unfused			2-5	0.2
BCJ	Ovis	1	Rib	Back	Fragments		NA	Lamb			2-5	12.9
BCJ	Ovis	1	Rib	Back	Fragments		NA	Lamb			5-10	8.3
BCJ	Ovis	1	Vertebrae	Back	Complete Lumbar Vertebrae		NA	Unfused			2-5	2.9
BCJ	Ovis	1	Vertebrae	Back	Complete Lumbar Vertebrae		NA	Unfused			2-5	4.3
BCJ	Ovis	1	Vertebrae	Back	Complete Lumbar Vertebrae		NA	Unfused			2-5	0.6
BCL	Aves	1	Carpo-Metacarpus	Feet	Distal end fragament						2-5	3.4
BCL	Aves	1	Coracoid	Back	Fragment		NA	?			<2	5.3

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCL	Aves	1	Humerus	Upper Forelimb	Distal end & diaphysis fragment		R	Adult			5-10	127.2
BCL	Aves	1	Humerus	Upper Forelimb	Distal end fragament		R	Adult			<2	54.9
BCL	Aves	1	Radius	Upper Forelimb	Diaphysis fragment		NA	Adult			2-5	8.5
BCL	Aves	1	Tarso-Metatarsus	Feet	Complete		R	Adult			2-5	11.6
BCL	Aves	1	Tibio-Tarsus	Upper Hindlimb	Distal end fragament		R	Adult			<2	14.6
BCL	Aves	1	Tibio-Tarsus	Upper Hindlimb	Proximal end & diaphysis fragment		L	Adult	Burnt		<2	13.7
BCL	Aves	1	Ulna	Upper Forelimb	Complete		R	Adult			5-10	9.4
BCL	Aves	1	Long Bone	Long Bone	?		NA	NA			2-5	4.8
BCL	Bos	1	Calcaneus	Feet	Complete		L	Adult	broken in 2 parts	next one	5-10	22.6
BCL	Bos	1	Cranium	Cranium	Horn Core		NA	NA			5-10	41.5
BCL	Bos	1	Mandibular Tooth	Cranium	M1 or M2 or M3 Fragment		R	Unerrupted			2-5	38.9
BCL	Bos	1	Mandibular Tooth	Cranium	Fragment		NA	Adult			<2	226.7
BCL	Bos	1	Mandibular Tooth	Cranium	dP2 Complete		L	Juvenile			5-10	28.9
BCL	Bos	1	Mandibular Tooth	Cranium	M1, M2 or M3 fragment		L	Adult			2-5	5.8
BCL	Bos	1	Mandibular Tooth	Cranium	Incisor		R	Adult			2-5	290.5
BCL	Bos	1	Metapodial	Feet	Fragment		NA	Fused	Burnt	Manus	5-10	4.7
BCL	Bos	1	Metatarsal	Feet	Fragment		R	Adult			>10	10.9
BCL	Bos	1	Rib	Back	Fragment		R	Adult			5-10	47.6
BCL	Bos	1	Scapula	Upper Forelimb	Fragment		L	Unfused	HUGE IN SIZE		>10	80.6
BCL	Capra	1	Cranium	Cranium	Fragment		NA	Adult	Burnt		2-5	16.1
BCL	Capra	1	Distal Phalange	Feet	Complete		NA	Adult			2-5	17.1
BCL	Capra	1	Middle Phalange	Feet	Complete		NA	Adult			2-5	22
BCL	Capra	1	Proximal Phalange	Feet	Complete		R	Adult			<2	23.7
BCL	Capra	1	Scapula	Upper Forelimb	Blade fragment		R	NA			5-10	2.1
BCL	Carnivore	1	Mandible	Cranium	Fragment			Fused			<2	163.1
BCL	Carnivore	1	Tibia	Upper Hindlimb	Diaphysis fragment		L	Fused			2-5	38.6
BCL	Carnivore	1	Vertebrae	Back	Caudal Vertebrae Complete		R	Adult			5-10	2
BCL	Carnivore	1	Vertebrae	Back	Spine Fragment Thoracic Vertebrae		L	Adult			2-5	21
BCL	Cervid	1	Maxillary Tooth	Cranium	M1 or M2 or M3 ? Almost Complete		L	Adult			2-5	1.5
BCL	Cervid	1	Radius	Upper Forelimb	Diaphysis Complete		R	Unfused			5-10	33.5
BCL	Cervid	1	Scapula	Upper Forelimb	Blade fragment		R	NA			5-10	3.6
BCL	Equus	1	Metacarpal	Feet	Distal epiphysis fragment		L	Unfused			2-5	8.7
BCL	Equus	1	Proximal Phalange	Feet	Proximal end fragment		NA	Adult			2-5	4.6
BCL	Homo	1	Carpal Bone	Feet	Fragment		NA	Adult			2-5	10.1
BCL	Large Mammal	1	Bone	Long Bone	Fragment		NA	NA			>10	3.3
BCL	Large Mammal	1	Bone	Bone	Fragment		NA	NA			5-10	0.6
BCL	Large Mammal	1	Bone	Bone	Fragment		NA	NA			5-10	4.5
BCL	Large Mammal	1	Bone	Bone	Fragment		NA	NA			>10	30.4
BCL	Large Mammal	1	Bone	Bone	Fragment		NA	NA			5-10	4.2
BCL	Large Mammal	1	Mandible	Cranium	Fragment		NA	NA			2-5	0.8
BCL	Large Mammal	1	Mandible	Cranium	Fragment		NA	Adult			5-10	0.8
BCL	Large Mammal	1	Vertebrae	Back	Body fragment		NA	Unfused			2-5	6.4
BCL	Medium Mammal	1	Rib	Back	Proximal end fragment		NA	Adult			2-5	4.8
BCL	Not identifiable	1	Bone	Bone	Fragment		NA	NA	Burnt		<2	9.6
BCL	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	2.4
BCL	Not identifiable	23	Bone	Bone	Fragments		NA	NA	Burnt		2-5	2.4
BCL	Not identifiable	208	Bone	Bone	Fragments		NA	NA			2-5	5
BCL	Not identifiable	13	Bone	Bone	Fragments		NA	NA			5-10	0.1
BCL	Not identifiable	4	Bone	Bone	Fragments		NA	NA			5-10	0.1
BCL	Not identifiable	1	Bone	Bone	Fragment		NA	NA			<2	0.1
BCL	Not identifiable	45	Bone	Bone	Fragments		NA	NA	Burnt		<2	0.1

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCL	Not identifiable	152	Bone	Bone	Fragments		NA	NA	Burnt		2-5	0.05
BCL	Not identifiable	52	Bone	Bone	Fragments		NA	NA			2-5	1.2
BCL	Not identifiable	13	Bone	Bone	Fragments		NA	NA			5-10	1.8
BCL	Not identifiable	2	Bone	Bone	Fragment		NA	NA			>10	10.2
BCL	Not identifiable	1	Cranium	Cranium	Fragment		NA	Unfused			2-5	13.3
BCL	Not identifiable	1	Cranium	Cranium	Fragment		NA	NA			2-5	9.1
BCL	Not identifiable	1	Cranium	Cranium	Fragment		NA	NA	Burnt		2-5	9.2
BCL	Not identifiable	1	Mandible	Cranium	Corocoid Process		R	Adult			5-10	5.4
BCL	Not identifiable	30	Rib	Back	Fragments		NA	NA			2-5	4.2
BCL	Not identifiable	11	Rib	Back	Fragments		NA	NA			2-5	4.1
BCL	Not identifiable	11	Teeth	Cranium	Fragments		NA	NA			2-5	1.4
BCL	Not identifiable	9	Teeth	Cranium	Fragments		NA	NA			2-5	2.4
BCL	Not identifiable	1	Vertebrae	Back	Fragment		NA	NA			2-5	3.6
BCL	Not identifiable	1	Vertebrae	Back	Fragment		NA	NA			2-5	3.2
BCL	Ovis	1	Calcaneus	Feet	Fragment		R	NA			<2	0.2
BCL	Ovis	1	Calcaneus	Feet	Complete		L	Neonatal			2-5	0.1
BCL	Ovis	1	Cranium	Cranium	Petrous part of petromastoid Complete		L	Adult			<2	0.4
BCL	Ovis	1	Distal Phalange	Feet	Complete		NA	Neonatal			<2	0.4
BCL	Ovis	1	Femur	Upper Hindlimb	Distal epiphysis Complete		R	Neonatal			2-5	25.6
BCL	Ovis	1	Humerus	Upper Forelimb	Diaphysis Complete		R	Unfused			2-5	0.5
BCL	Ovis	1	Mandible	Cranium	dP2 and dP3 present		R	Juvenile			5-10	1
BCL	Ovis	1	Mandible	Cranium	I3 Unerrupted		L	Unerrupted			2-5	12.8
BCL	Ovis	1	Mandibular Tooth	Cranium	Incisor Complete		R	Adult			2-5	2.9
BCL	Ovis	1	Mandibular Tooth	Cranium	M2 Complete		R	Adult			2-5	0.1
BCL	Ovis	1	Mandibular Tooth	Cranium	M2 Complete		R	Unerrupted			2-5	3.6
BCL	Ovis	1	Mandibular Tooth	Cranium	M2 Complete		L	Adult			2-5	0.4
BCL	Ovis	1	Mandibular Tooth	Cranium	M1 or M2 Complete		R	Adult			2-5	9
BCL	Ovis	1	Mandibular Tooth	Cranium	P3		L	Adult			<2	0.4
BCL	Ovis	1	Mandibular Tooth	Cranium	M1 Fragment		R	Adult			<2	1.5
BCL	Ovis	1	Mandibular Tooth	Cranium	P3		L	Adult			<2	2.8
BCL	Ovis	1	Mandibular Tooth	Cranium	Incisor		L	Unerrupted			<2	0.3
BCL	Ovis	1	Maxillary Tooth	Cranium	M3 Complete		R	Adult			2-5	0.3
BCL	Ovis	1	Maxillary Tooth	Cranium	M3 Complete		L	Adult			2-5	0.2
BCL	Ovis	1	Maxillary Tooth	Cranium	M1 Complete		L	Adult			2-5	0.3
BCL	Ovis	1	Maxillary Tooth	Cranium	dP3 Complete		R	Juvenile			2-5	0.1
BCL	Ovis	1	Maxillary Tooth	Cranium	dP4 Complete		R	Juvenile			2-5	0.3
BCL	Ovis	1	Maxillary Tooth	Cranium	Incisor Complete		L	Adult			2-5	0.2
BCL	Ovis	1	Maxillary Tooth	Cranium	M2 Fragment		L	Adult			2-5	0.1
BCL	Ovis	1	Maxillary Tooth	Cranium	M2		R	Adult			2-5	0.1
BCL	Ovis	1	Maxillary Tooth	Cranium	M1, M2 or M3 fragment		R	Adult			2-5	0.6
BCL	Ovis	1	Metacarpal	Feet	Distal end & diaphysis fragment		L	Fused			2-5	20.8
BCL	Ovis	1	Metapodial	Feet	Diaphysis fragment		NA	Unfused			2-5	11
BCL	Ovis	1	Metatarsal	Feet	Proximal diaphysis fragment		R	Neonatal			2-5	0.3
BCL	Ovis	1	Proximal Phalange	Feet	Distal end fragment		NA	Adult	Burnt		2-5	7.7
BCL	Ovis	1	Radius	Upper Forelimb	Distal diaphysis fragment		R	Unfused			>10	2.9
BCL	Ovis	1	Radius	Upper Forelimb	Distal diaphysis fragment		R	Neonatal			2-5	0.2
BCL	Ovis	1	Radius	Upper Forelimb	Proximal diaphysis fragment		R	Neonatal			<2	3.1
BCL	Ovis	1	Radius	Upper Forelimb	Proximal diaphysis fragment		R	Neonatal			2-5	0.4
BCL	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		L	Adult			2-5	1.3
BCL	Ovis	1	Tarsal Bone	Feet	Centraquartal Bone Complete		R	Adult			2-5	1.7
BCL	Ovis	1	Tibia	Upper Hindlimb	Distal diaphysis fragment		L	Neonatal			2-5	0.2

Pinarbasi Site B: Basic Faunal Data

Context	Genus	Count on Element	Element	Body part	Part	Sex	Side	Age Data	Comments	Cutmarks	Size	Weight
BCL	Ovis/Capra	1	Cranium	Cranium	Prosthion		L	Adult			2-5	3.2
BCL	Ovis/Capra	1	Humerus	Upper Forelimb	Diaphysis fragment		R	Adult			2-5	0.2
BCL	Ovis/Capra	1	Metapodial	Feet	Diaphysis fragment III or IV		NA	Unfused			2-5	14.5
BCL	Ovis/Capra	1	Metapodial	Feet	Diaphysis fragment III or IV		NA	Unfused	NeoNAtal		2-5	10.2
BCL	Ovis/Capra	1	Metapodial	Feet	Diaphysis fragment		NA	Unfused	Burnt		<2	6.2
BCL	Ovis/Capra	1	Metatarsal	Feet	Distal diaphysis fragment III or IV		NA	Unfused			2-5	2.8
BCL	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused	NeoNAtal		<2	6.9
BCL	Ovis/Capra	1	Middle Phalange	Feet	Complete		NA	Unfused			<2	7.7
BCL	Ovis/Capra	1	Patella	Upper Hindlimb	Complete		R	Adult			2-5	0.8
BCL	Ovis/Capra	1	Tarsal Bone	Feet	Distal epiphysis Complete Centraquartal Bone		NA	Unfused			2-5	0.1
BCL	Sarcophilus laniarius	1	Phalange	Feet	Proximal end		L	Adult			2-5	0.1
BCL	Vulpes	1	Metapodial	Feet	Distal end & diaphysis fragment		NA	Adult	Burnt		<2	3.4
BCL	Vulpes	1	Metapodial	Feet	Distal end & diaphysis fragment		L	Unfused			<2	0.5

47