A ZOOARCHAEOLOGICAL STUDY OF FOUR IRON AGE SITES IN NORTH-EASTERN BOTSWANA

BY

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ABSTRACT

This study analyses the faunal remains of four Iron Age sites from eastern Botswana, namely Phoenix 17, Phoenix 18, Thabadimasego and Dukwe 25. Phoenix 17, Phoenix 18 and Thabadimasego date to the 9^{th} century AD, and Dukwe 25 to the 15^{th} century AD. The sites are significant as they date to critical time periods during which we see shifts in the socio-political organisation, towards increasing social complexity in the 9^{th} century AD, and the establishment of powerful states in the 15^{th} century AD. By comparing the results of Phoenix 17, Phoenix 18, Thabadimasego and Dukwe 25, it will also be possible to examine whether these sites point to regional, chronological or socio-cultural variability. Other sites in eastern Botswana together with the sites in this study, can give broad understanding into animal exploitation patterns during these time periods, specifically the relative use, social use and exploitation of animals. Understanding animal exploitation patterns can assist researchers in exploring the impact these communities had on their environment. In particular, how they reacted and responded to diverse environments, rich in wild fauna, such as the Makgadikgadi.

Key words: Iron Age, Botswana, Zooarchaeology, Fauna, Social complexity, Animal exploitation, Social-zooarchaeology, Makgadikgadi Pans, Subsistence habits, Taphonomy

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The Iron Age of southern Africa dates from AD 200 until AD 1840 (e.g. Huffman 2007). This study analyses the faunal remains of four Iron Age sites from eastern Botswana (Fig 1.1), namely Phoenix 17, Phoenix 18, Thabadimasego and Dukwe 25. Phoenix 17, Phoenix 18 and Thabadimasego date to the 9th century AD, and Dukwe 25 to the 15th century AD. The sites are significant as they date to critical time periods during which we see shifts in the socio-political organisation, towards increasing social complexity in the 9th century AD, and the establishment of powerful states in the 15th century AD. Nevertheless, there are only a limited number of faunal analyses for this period in Botswana (e.g. Plug 1996; van Waarden 2012; Welbourne 1975), and more zooarchaeological evidence is needed to investigate patterns of animal exploitation, subsistence habits, and the social roles of animals at these sites.

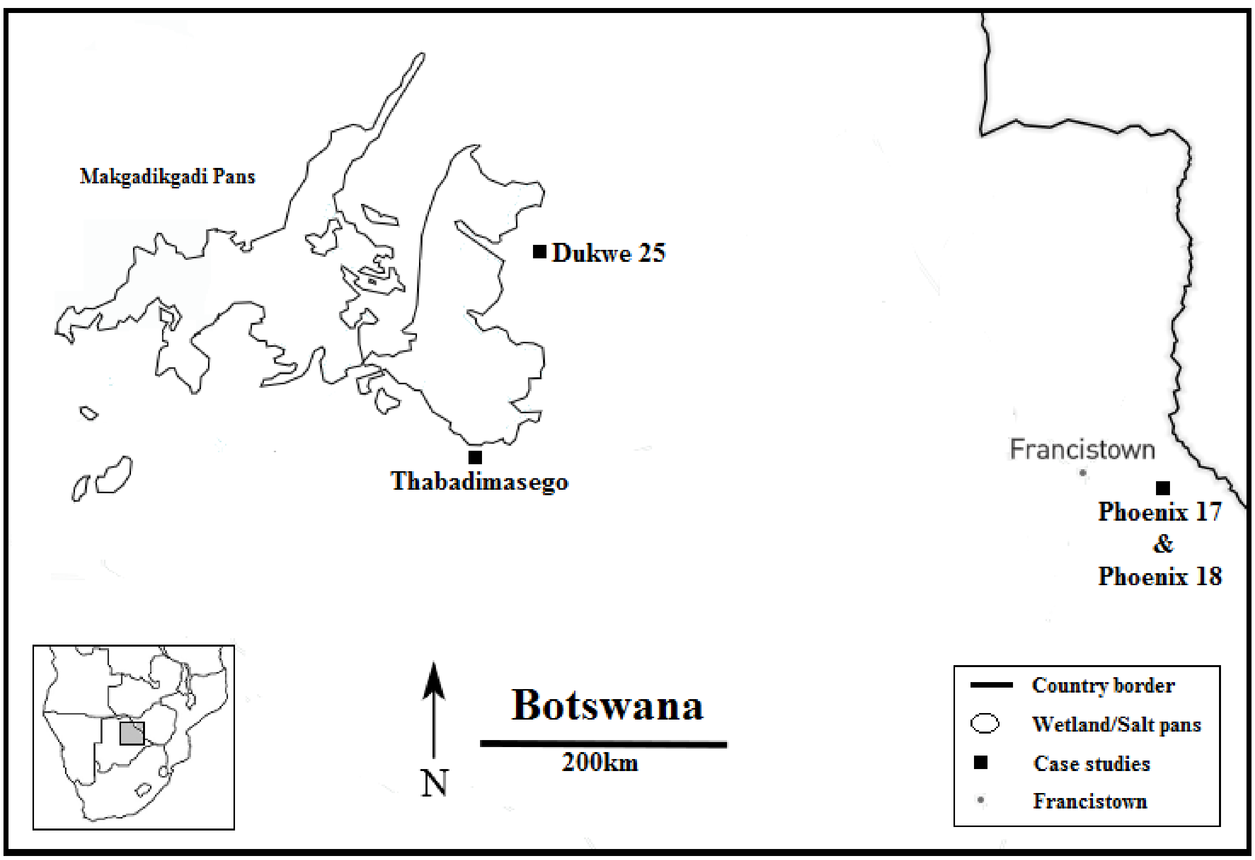

Fig. 1.1: Location of Phoenix 17, Phoenix 18, Thabadimasego and Dukwe 25

1.2 Background

By the beginning of the first millennium AD, it is widely agreed that Bantu–speaking farmers had expanded into southern Africa (Huffman 1982; 2007). They settled in southern Africa (Mitchell 2002:264–267) which led to a noticeable shift towards increased social complexity (Mitchell 2002). A branch of the Urewe ceramic tradition, Zhizo, is found during this crucial time (Mitchell 2002:264–267). Denbow (1983) notes that by about AD 900 Zhizo using people were establishing themselves in eastern Botswana. Zhizo using people were also present in the Shashe Limpopo Confluence Area (SLCA) by about AD 900 (Huffman 2000:16) at sites such as Schroda and Pont Drift. Through agriculture and control of the ivory trade, Zhizo farmers maintained political importance in the SLCA for about 100 years (Huffman 2000:16, 2007; Smith 2005). Zhizo ceramics have been found at Phoenix 17, Phoenix 18 and Thabadimasego. By about AD 1000 K2, a new capital was established in the SLCA. Huffman (1974) indicates that K2 forms part of the Leopard's Kopje ceramic tradition, and was introduced to the wider region by incoming communities from southwestern Zimbabwe. Leopard's Kopje ceramics were also found at Phoenix 17 and Thabadimasego.

After the 11th century AD, the Zhizo ceramics change in decoration and size in Botswana and are termed Toutswe (Calabrese 2000a:190; Denbow 1982). In eastern Botswana, the Toutswe tradition[1] has been well established archaeologically (Mitchell 2002:307). Around the 12th century AD, large sites such as Toutswe, Shoshong, Sung and Bosutswe appear (Reid & Segobye 2000:59). These sites had regional power and were located on hilltops (Calabrese 2000a:190; Huffman 1982:144–146, 2007; Meyer 1998). They also mark the arrival of complex social, political and economic systems in Botswana (Denbow 1982, 1983, 1990, 1999; Hall 1987). Toutswemogala was the Toutswe-period capital, (Huffman 2000:20-25) and together with Bosutswe was contemporaneous with Mapungubwe (SLCA), and part of the broader rise of social complexity in southern Africa.

After AD 1290 there was a rapid collapse of the Mapungubwe Hill complex, with suggestions that

[1] Toutswe tradition – Ceramic tradition of which Taukome is the first phase and Toutswe the second (Calabrese 2000a:190; Denbow 1982). When referring to this ceramic tradition it will be collectively known as the Toutswe tradition.

Mapungubwe Hill people moved to Great Zimbabwe by about AD 1300 (Huffman 1982:144–146, 2007; Meyer 1998). After this time, a change also occurs in the Toutswe region of Botswana with only a few sites dating to this period. The decline of these sites signal the start of states such as Great Zimbabwe (AD 1300–1450) and Khami (AD 1450–1820) (both in Zimbabwe).

As we can see from this introductory background review, there is a long history of social complexity in eastern Botswana with interactions between the SLCA and Botswana. As evidenced by the archaeology, various regional and local patterns seem to emerge, specifically in Botswana. The sites dating to this critical time period can give us greater understanding of the eastern Botswana landscape during this time.

1.3 Aims

Zooarchaeology aids in the understanding of past human relationships with the environment, specifically animals (Reitz & Wing 2008:1), and it is an important sub-discipline within archaeology. By analysing faunal remains one can extract more information from the archaeological record as the analysis provides valuable information on species utilisation, climatic conditions of the past, behavioural traits and even reconstruct past habitats (Driver 1991:38). Zooarchaeology can also be used to investigate social relations around the procurement and use of animals, as well as investigating economic questions. In southern African archaeology, subsistence habits are of interest, especially with regards to what species of animals early communities kept, what amount/amount/number of each species and how these animals were managed as part of a mixed economy (game and domesticates) (Orton *et al* 2013:117). The questions in this study are:

1) How were animals utilised at the four sites in question? Which species can be identified, and what does it tell us about the balance of game/domesticates at these sites?
2) What taphonomy and bone modification is present and what can taphonomy indicate, with particular reference to site function, or the preferential use of certain animals or animal elements?
3) What can the identification of species present and/or taphonomy tell us about attitudes towards animals, and broader socio-political structures at these sites?

4) How do these four sites compare with one another and other Iron Age sites in the region? Do they point to regional/chronological/cultural patterning?

The faunal analysis

The faunal samples utilised in this study were provided for analysis by Catrien van Waarden (Phoenix 17, Phoenix 18 and Dukwe 25) and Adrianne Daggett (Thabadimasego). The archaeological information regarding these sites were also provided by them. The faunal analysis was completed at the Ditsong National Museum of Natural History (Archaeozoology and Large Mammal Section) by utilising the comparative collection. Dr Badenhorst supervised the analysis. Together a sum total of 20 929 specimens were analysed and documented. The manual (Badenhorst 2009) utilised in this study will be attached as Appendix A, and all the completed faunal analysis forms will be attached in Appendix B.

1.4 Thesis Layout

In chapter 2, I discuss the archaeological background by investigating published literature. Chapter 3 will examine the theoretical frameworks of this study regarding how people approach and understand the role of animals, including and beyond the role of nutrition. In chapter 4, I give a brief overview of zooarchaeology and discuss the methodology used in this study concurrently with what each method could indicate through examples of case studies that are set locally or internationally. In chapter 5, the results and data of my analysis is presented. Each site will be discussed on its own to highlight the patterns which were identified and their possible meanings. Chapter 6 will compare all four sites with one another and contextualise them within the wider research landscape. Chapter 7 concludes this study with a summary and conclusion of the results obtained.

1.5 Conclusion

The analysis of the faunal remains from four sites in eastern Botswana, dating to the 9th and 15th centuries AD, are of particular interest as they can give insight into the people who lived at these sites and their subsistence practices. This project is significant in several ways, as it will investigate animal utilisation, hunting methods, taphonomy, change in subsistence patterns, social connections to animals, and preferential use of certain animals and animal elements. These four sites are also dated to a critical period of interaction and social change, and more faunal evidence is needed to investigate this time period in Botswana and animal exploitation patterns during the Iron Age.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this chapter an environmental and archaeological background will be presented in order to understand the four sites within their broader context. Faunal remains and the use of animals will also be discussed in conjunction with the archaeological evidence presented.

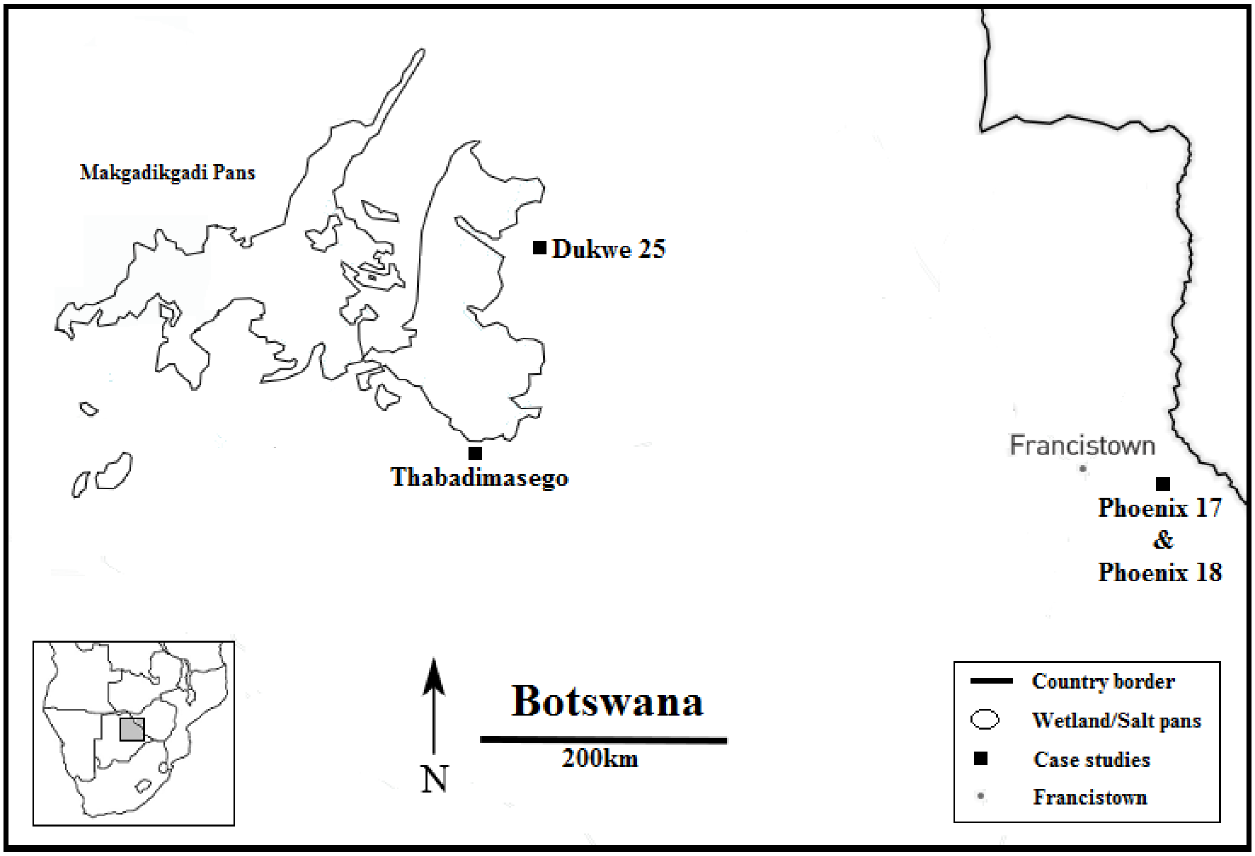

Fig. 2.1: Map illustrating the location of the Makgadikgadi Pans in relation to all four sites

2.2 Environmental background

This study's research area is situated in eastern Botswana. Today, eastern Botswana is classified as a savannah environment and receives about 500mm of rainfall, which mostly falls in the summer. This area consists of open mopane woodland with some grass cover and has a rich assortment of wild browsing and grazing mammals (Apps 2012:19). Domesticates are also prevalent today, with livestock farming contributing more than agriculture to exports (Sharma 2014:24).

All four sites are specifically located near the Makgadikgadi Pans, (Fig. 2.1), a drainage basin made up of small and large pans and stabilised sand dunes (Cooke 1979:38; Grey & Cooke 1977:123). The area receives 300mm of rainfall per year and gets a near perpetual supply of water from the Boteti River which enters the Ntwetwe pan of the Makgadikgadi complex (Cooke 1980:82; Helgren 1984:298). The Makgadikgadi area covers about 37 000 square kilometres, and lies about 945m above sea level (Cooke 1979:37). Two of the sites (Dukwe 25 and Thabadimasego), are situated close to Sowa Pan (also known as Sua Pan). Thabadimasego is situated on top of the Mosu Escarpment, south of Sowa Pan. The Mosu Escarpment consists of bluffs as well as natural springs. This area also comprises mostly of acacia and mopane thornveld. Phoenix 17 and Phoenix 18 are situated close to Francistown on the eastern border of modern Botswana. The Francistown area receives about 470mm of rainfall today and is situated near the Shashe River that feeds into the Limpopo River.

Next, the archaeological background of central southern African will be examined.

2.3 Archaeological background

In the central southern African region, significant changes in farmer socio-political complexity occurred during AD 900 to AD 1300. This had a major impact not only on the social, economic and political aspects of farmer societies, but also their subsistence habits. To understand these, and to relate my study sites to a broader regional perspective, the period leading up to the rise of social complexity, as well as the subsequent time periods must be considered.

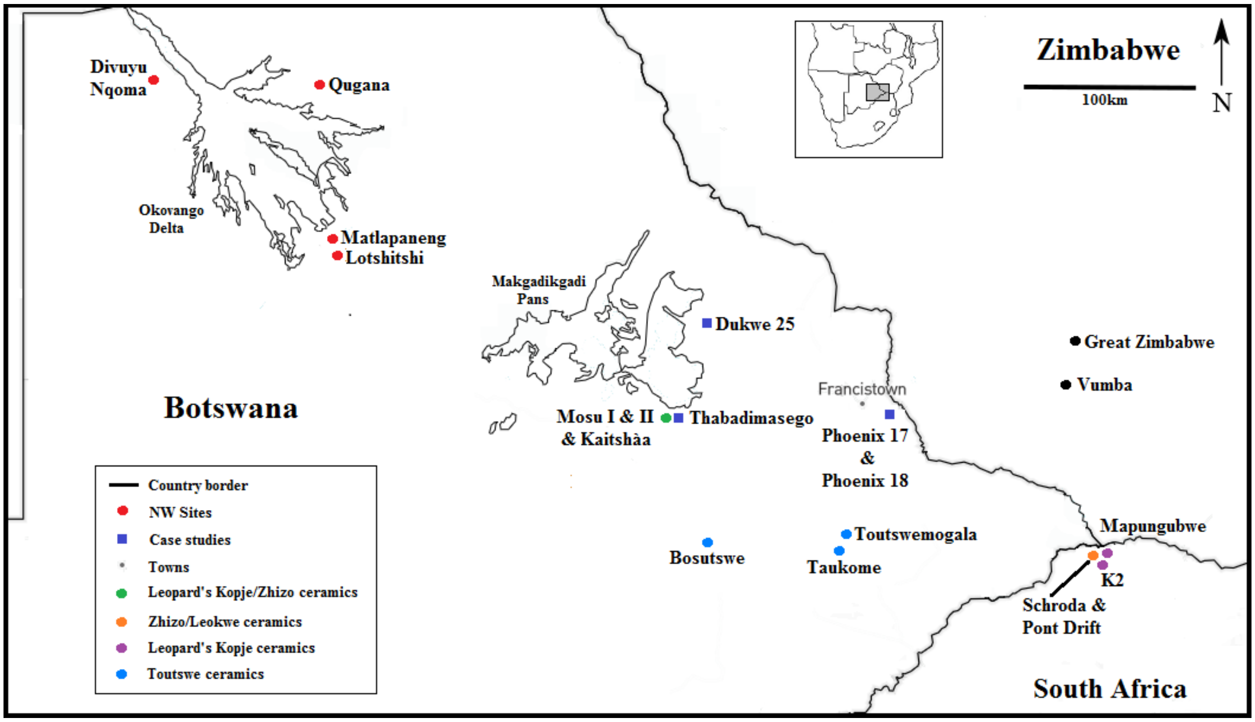

Fig. 2.2: Location of sites discussed in this review

2.3.1 First Millennium AD

The spread of Bantu speaking people into southern Africa is linked with the spread of sedentism, 'agriculture, livestock rearing, thick-walled ceramics and metallurgy' (Mitchell 2002:259), and collectively termed the Early Iron Age[2]. By about AD 200–400, it is widely agreed that Bantu–speaking farmers arrived in southern Africa (Huffman 1982; 2007). Early farmers used Happy Rest ceramics and were able to cultivate sorghum and millet due to the climatic conditions being favourable for this type of agriculture (Holmgren *et al* 1999; Tyson & Lindesay 1992). Keeping of domestic livestock also characterised this time (Huffman 2007:331-360). However, there is limited evidence for cattle and goats during this time period as sheep dominate most faunal assemblages (Badenhorst 2010:88).

[2] The Iron Age can be divided into the early (AD 200-900), middle (AD 900-1300) and late (AD 1300-1840) Iron Ages (Huffman 2007). However, many reject this terminology in favour of terms such as Early Farming Communities or Late Farming Communities. This study will use First Millennium AD when referring to the early Iron Age, and Second Millennium AD when referring to the middle and late Iron Ages.

During AD 500-700 herding increased in economic importance, as opposed to agriculture in Botswana (Denbow 1986:16). Sites such as, Bisoli (AD 650 – 1000)(Huffman 2007:217) and Panga Hill (AD 650 – 1000)(Huffman 2007:217) demonstrate the presences of these early communities in eastern Botswana and participation in the East Coast trade network as cane glass beads and cowrie shells have been found at most of these sites (Denbow 1986:14-15).

2.3.2 Taukome

Around AD 700 the Toutswe tradition ceramics in north-eastern Botswana emerged, with four large political centres, namely Toutswemogala, Bosutswe, Sung and Shoshong (Denbow 1982, 1983; Hall 1987; Kiyaga-Mulindwa 1993; Reid & Segobye 2000:59; Segobye 1998). In the Toutswe region around 250 archaeological sites have been identified and found together with Toutswe tradition ceramics (Denbow 1979, 1982, 1986:15-16). Sites in the area are indicated by social and economic differences and development of higher-order political systems in the region that can be divided into Class I, II and III sites (Denbow 1986:18-24). Class I sites were small farmstead sites and Class II and III sites were village size, with larger middens and longer occupation. Class II and III sites are situated solely on hilltops, with Class I sites only sometimes on hilltops, and otherwise around streams on the lowlands (Denbow 1986:18-24). Taukome (Class II) located around 30 km west of Toutswemogala is situated on top of a hill, with five middens (Denbow 1982, 1983). Taukome's taxa list (Table 2.1) shows that domesticated animals were utilised (around 80%) as the main animal subsistence (Denbow 1986:15-16). However, Taukome also has small animals and gathered sources, suggesting that domesticates were not the only source of sustenance. In addition, large wild game such a giraffe and elephant, indicate hunting.

Table 2.1: Taukome's taxa list (Welbourne 1975)

Taukome Species (7th – 13th centuries AD)		**NISP/MNI**
Atelerix frontalis	Hedgehog	1/1
Canis familiaris	Dog	2/1
Viverrid(ae)		5/4
Panthera pardus	Leopard	1/1
Felis caracal	Caracal	1/1
Carnivora small		27/2
Loxodonta africana	Elephant	3/1
cf. *Ceratotherium simum*	White rhinoceros	2/1
Equus burchelli	Burchell's zebra	301/16
Phacochoerus aethiopicus	Warthog	7/2

Table 2.1 cont.

Taukome Species (7th – 13th centuries AD)		**NISP/MNI**
Giraffa camelopardalis	Giraffe	79/32
Bos taurus	Cattle	566/7
Ovis aries	Sheep	3/2
Ovis/Capra	Sheep/Goat	583/18
Alcelaphus buselaphus	Hartebeest	1/1
Alcelaphus buselaphus/ Connochaetes taurinus	Hartebeest or Wildebeest	14/-
Sylvicapra grimmia	Grey duiker	12/4
Antidorcas marsupialis	Impala	5/36
Raphicerus campestris	Steenbuck	2/1
Oreotragus oreotragus/Raphicerus campestris	Klipspringer or Steenbuck	10/2
Oryx gazella	Gemsbok	2/2
Taurotragus oryx	Eland	7/14
Rattus rattus	Rat	24/8
Pedetes capensis	Springhare	2/1
Hystrix africaeaustralis	Porcupine	1/1
Praomys natalensis	Multi-mammate mouse	1/1
Lepus saxatilis	Scrub hare	5/3
Struthio camelus	Ostrich	555/4
Strigidae	Owl	39/4
Phasianadae	Partridge/Guinea Fowl	5/1
Aves small		5/3
Snake		4/2
Varanus sp.		15/2
Testudo sp.	Tortoise	331/8
Amphibian		8/1
Pisces indet.		1/1
Molusc indet.	Small land snail indet.	18/18
cf *Achatina* sp.	cf. Giant land snail	62/4
Cypraea moneta	Money cowrie	3/3
Unionidae	Feshwater mussel	25/3

Also dating to a similar time period and utilising Toutswe ceramics is Bosutswe. Bosutswe is a hilltop site situated between Serowe and Sowa Pan (Makgadikgadi Pans), approximately 100km from Toutswemogala (Fig. 2.2). Bosutswe has evidence of hunting and herding activities, as well as cultivation of sorghum, millets and cowpeas (Plug 1996). The people of Bosutswe are thought to have traded skins and salt for chert (Denbow *et al* 2008a; Plug 1996; van Waarden 1998:129). Occupation at Bosutswe can be divided into four phases, namely, Taukome (AD 700–900), Toutswe (AD 800–1200), Mapungubwe (AD 1200–1300) and Zimbabwe (AD 1450 onwards) (Denbow *et al* 2008a:463-464). During the Taukome phase domestic animals appear and a central herd management strategy was followed (Denbow *et al* 2008a:476). Hunted animals made up 60% of the fauna and cattle mostly outnumber small stock. Also during the Taukome phase the C4 grazing signature indicates that cattle were moved to outlying cattle posts from Bosutswe to preserve pastures near the site (Denbow *et al* 2008a:476). Another large Toutswe tradition political centre was Toutswemogala. However, Toutswemogala will be discussed at a later stage in its entirety.

Toutswe tradition ceramics (as utilised at Bosutswe and Toutswemogala) coincided with Zhizo ceramic using people (Mitchell 2002:264–267). By about AD 900 Zhizo famers moved into the SLCA when climate conditions improved (Huffman 2000:16). Through agriculture and control of the ivory trade, Zhizo farmers thrived in the SLCA for about 100 years (Huffman 2000:16, 2007; Smith 2005).

2.3.3 Zhizo, Leokwe and Leopards' Kopje

Schroda and Pont Drift

Schroda is seen as the main Zhizo centre (Hanisch 1980) in the SLCA. Another Zhizo using site close to Schroda is Pont Drift. Schroda and Pont Drift (Fig. 2.2) date to between the 8th and 12th centuries AD (Plug & Voigt 1985), corresponding with three of this study's sites. Therefore, they provide a useful comparison when investigating animal usage patterns between societies in southern Africa. Specifically sites that have similar social developments during the Iron Age (e.g. Schroda and Pont Drift).

Table 2.2: Schroda (S), Pont Drift (P) and K2's taxa lists (Plug & Voigt 1985)

Schroda (S), K2 and Pont Drift (P)		**(S) NISP/MNI**	**(P) NISP/MNI**	**(K2) NISP/MNI**
Species		**AD 750-1000**	**AD 810-1110**	**AD 970-1220**
Homo sapiens sapiens	Human	-/6	-/3	-/3
Primate		-/1	-/1	-/2
Canis familiaris	Dog	-/6	-/3	-/3
Carnivora indet.		-/43	-/8	-/20
	Rhinoceros/ Hippopotamus	-	-/4	-/4
Equus quagga	Zebra	-/19	-/1	-/10
Procavia capensis	Dassie	-/19	-/8	-/5
Suid		-/4	-/4	-/5
Giraffa camelopardalis	Giraffe	-/1	--	-/2
Bos taurus	Cattle	-/201	-/225	-/59
Ovis/Capra	Sheep/Goat	-/263	-/256	-/119
Bovid I (small)		-/25	-/50	-/30
Bovid II (medium)		-/15	-/8	-/6
Bovid III (large)		-/4	-/1	-/3
Bovid IV (very large)		-/5	-	-/2
	Hare/Rodent	-/92	-/85	-/103

Table 2.2 cont.

Schroda (S), K2 and Pont Drift (P)		**(S) NISP/MNI**	**(P) NISP/MNI**	**(K2) NISP/MNI**
Species		**AD 750-1000**	**AD 810-1110**	**AD 970-1220**
Orycteropus afer	Aardvark	-	-	-/1
Aves indet.		-/42	-/49	-/31
	Monitor lizard	-/18	-/3	-/7
Crocodylus niloticus	Crocodile	-/4	-/2	-
Reptilia indet.		-/17	-/5	-/11
Testudo sp.	Tortoise	-/36	-/7	-/24
Amphibian		-/6	-	-/1
	Fish/crab	-/67	-/16	-/34
	Terrestrial mollusc	-/243	-/78	-/158
	Aquatic mollusc	-/26	-/47	-/52

Schroda and Pont Drift's faunal remains (Table 2.2) were first analysed in 1985 (Plug & Voigt 1985). In 2014 Schroda and Pont Drift's Zhizo and Leokwe (a ceramic style that emerged from the interaction between Zhizo and K2 people [Huffman 2007:362]) deposits were re-analysed by Raath (Raath 2014). Schroda's faunal remains were separated into Zhizo and Leokwe deposits by Raath, where Pont Drift only has Zhizo deposits. Both Schroda and Pont Drift have extensive taxa lists (Table 2.3), which indicates a wide range of animals exploited (Raath 2014:175).

When investigating Schroda there is a trend of domesticates declining over time with wild animals increasing (Raath 2014:186). The Zhizo deposits at Pont Drift also had a higher wild bovid NISP than domesticates. This could mean that domesticates were declining over time as with Schroda. This could indicate that other sources of sustenance were sought than cattle (Raath 2014:188). However, while wild animals may have been used for food, it is likely they were also used for non-nutrition, for example the high amount/numbers of carnivores found at Schroda:

At Schroda and Pont Drift carnivores were consistently exploited. When Schroda's faunal remains were first investigated (Table 2.2) a large quantity of carnivore remains were identified. Carnivore skins could indicate trade. However, the use of carnivores at Schroda has recently been re-investigated (Antonites & Norton in prep.; Norton 2013; Raath 2014:189-190). A whole host of species were identified, such as leopard, lion, hyena, jackal, to name a few. Certain species indicate ceremonial activities at the site (Raath 2014:190) and trade in skins and trade in body parts (Voigt and Plug 1981:29; deFrance 2009). Some species (e.g. brown and spotted hyena) even indicate dangerous hunting situations, such as at night (due to being nocturnal), and some indicate easy hunting such as burrowing mongooses. Some carnivores also hunt domestic stock and the presence of these species could indicate protection of wealth (Raath 2014:191) as well as indicate a range of different environments utilised (Raath 2014:192). However, it should not be a given that carnivores were not consumed, it is possible that they were (Raath 2014:190), but what is abundantly clear is that at Schroda carnivores were utilised for reasons other than sustenance.

Table 2.3: Schroda's Zhizo and Leokwe deposits taxa lists (TSR 1-6 = excavation Areas 1-6) & Pont Drift's taxa list (TPD2 a site excavated by Hanisch [1980a]) (Raath 2014)

Taxon (Common Name)	**TSR2**		**TS R3**	**TS R4**	**TSR5**		**TSR6**		**TPD2**
	Zhizo	Leokwe	Zhizo	Zhizo	Zhizo	Leokwe	Zhizo	Leokwe	Zhizo
Soricidae (shrew)	1								
Homo sapien sapien (human)		1				4		3	
cf. *Homo sapien sapien*								1	2
Papio hamadryas (chacma baboon)						1	1	1	
cf. *Papio hamadryas*									1
Cercopithecus pygerythrus (vervet monkey)									1
Canis familiaris (dog)				4	3	3		2	5
Canis cf. *familiaris*	1							2	1
Canis mesomelas (black-backed jackal)								2	
Canis sp. (jackal/dog)				1					
Otocyon megalotis (bat-eared fox)					2				
Canidae (foxes, wild dogs & jackals)	3	2	1	1	2				3
Ictonyx striatus (striped polecat)									1
Parahyaena brunnea (brown hyaena)							1		
Crocuta crocuta (spotted hyaena)							1	1	
cf. *Crocuta crocuta*								1	
Hyaeninae (hyaena)							1		
Suricata suricatta (suricate/meerkat)									3
cf. *Ichneumia albicauda* (white-tailed mongoose)					1				
cf. *Mungos mungo* (banded mongoose)					1				
Herpestinae (surricates & mongooses)	1						3	7	5
Panthera pardus (leopard)					1				1
Panthera leo (lion)							1	3	1
cf. *Panthera leo*					2			1	
Caracal caracal (caracal)								1	
cf. *Caracal caracal*									1
Felis silvestris (African wild cat)		2		1		1			
Leptailurus serval (serval)							1		
cf. *Leptailurus serval*						1			
Felidae (cats)		1						1	

Table 2.3 cont.

Taxon (Common Name)	**TSR2**		**TS R3**	**TS R4**	**TSR5**		**TSR6**		**TPD2**
	Zhizo	Leokwe	Zhizo	Zhizo	Zhizo	Leokwe	Zhizo	Leokwe	Zhizo
Carnivore, medium	1	2		1	35	1	1	6	8
Carnivore, large		3		1	5		1		1
Loxodonta africana (elephant)			1	4	27	33			1
Ceratotherium/Diceros (rhinoceros)					1				
Equus quagga (plains zebra)	9	21	2	54	20	2	1	7	13
cf. *Equus quagga*		1				2		2	
Procavia capensis (rock hyrax)	3	2		1	17	1	2	9	9
cf. *Procavia capensis*								1	
Heterohyrax brucei (yellow-spotted rock hyrax)					1			2	
cf. Procavid (hyrax)									6
Orycteropus afer (aardvark)									1
Potamochoerus larvatus (bushpig)				1	1				
cf. *Potamochoerus larvatus*								1	
Phacochoerus africanus (common warthog)				1				2	
Suidae (pigs)				4				1	1
cf. Suidae				1					
Hippopotamus amphibius (hippo)					8				
cf. *Hippopotamus amphibius*					1				
Giraffa camelopardalis (giraffe)				7				2	7
cf. *Giraffa camelopardalis*			2	1	1				1
Bos taurus (cattle)	64	77	18	293	219	51	29	96	22
cf. *Bos taurus*		1	3	28		6	2	36	
Ovis aries (sheep)	35	29	55	122	115	13	51	133	41
cf. *Ovis aries*	1		16	44		9	7	18	1
Capra hircus (goat)	6	8	10	42	22	4	10	54	17
cf. *Capra hircus*	2		2	12	1	2	3	10	
Ovis/Capra (sheep/goat)	109	148	109	123	470	51	4	11	69
cf. *Ovis/Capra*			4	5					
Syncerus caffer (African buffalo)	2		1	4			2	3	5
cf. *Syncerus caffer*				1	3				
Tragelaphus strepsiceros (greater kudu)								2	
Tragelaphus scriptus (bushbuck)									3
Tragelaphus oryx (eland)	1							2	2
cf. *Tragelaphus oryx*									1
Connochaetes taurinus (blue wildebeest)	1							2	1
cf. *Connochaetes taurinus*	2								
Alcelaphus buselaphus (red hartebeest)								1	
Alcelaphus sp. (hartebeest)				7					
cf. *Damaliscus pygargus phillipsi* (blesbok)								1	
Sylvicapra grimmia (common duiker)	2	2			1	1	1	7	9
cf. *Sylvicapra grimmia*	3					1		1	
Redunca arundinum (southern reedbuck)									1

Table 2.3 cont.

Taxon (Common Name)	**TSR2**		**TSR3**	**TSR4**	**TSR5**		**TSR6**		**TPD2**
	Zhizo	Leokwe	Zhizo	Zhizo	Zhizo	Leokwe		Zhizo	Leokwe
Redunca cf. *fulvorufula* (reedbuck cf. mountain reedbuck)				1					
Kobus ellipsiprymnus (waterbuck)									5
cf. *Kobus ellipsiprymnus*							1		1
Antidorcas marsupialis (springbok)									4
cf. *Antidorcas marsupialis*									1
Raphicerus campestris (steenbok)				3		1			16
cf. *Raphicerus campestris*						1		1	1
Aepyceros melampus (impala)	3		12	14	9	2	3	26	38
cf. *Aepyceros melampus*				1				9	1
Oreotragus oreotragus (klipspringer)				1	1	4	1	6	14
cf. *Oreotragus oreotragus*						1		2	1
Bovid, small (Bov. I)	21	52	8	14	80	50	6	10	64
Bovid small/medium (Bov. I/II)	4							4	18
Bovid, medium (Bov. II)	218	421	109	70	1307	298	125	425	205
Bovid, medium (Bov. II, wild)		4	4	4	16	4	5	22	2
Bovid, medium/large (Bov. II/III)				3		1	1	7	18
Bovid, large (Bov. III)	80	247	8	98	863	300	74	259	108
Bovid, large (Bov. III, wild)		2	1	4	2	3	2	4	1
Bovid, very large (Bov. IV)		1		3	9				2
Thryonomys swinderianus (greater canerat)	1							5	
Pedetes capensis (springhare)	2	4		5	18	7	6	8	41
cf. *Pedetes capensis*	1	2			2	1			13
Rodent, small	16	1			1	1		3	10
Rodent, medium	3	4			7	1	3	14	12
Rodent, large	2		2						1
Rodent, indeterminate	1	6			1			1	
Lepus saxatilis (scrub hare)			1			1	1	10	9
Lepus sp. (hare)			1		1	1		5	11
Leporidae (hares, rabbits & rock rabbits)	33	42	2	2	53	25	4	3	58
Struthio camelus (ostrich; eggshell fragments only)	14	132	2	147	18	26	1	5	6
Phasianidae (pheasant/partridge/chicken/quail)									2
Numididae (guinea fowl)							2	3	7
Bird, francolin size	2							1	7
Bird, pigeon size		2		1	1				2
Bird, partridge size					3				
Bird, small	2	1	1			1		1	
Bird, medium	6	8		4	16	5	2	28	7
Stigmochelys pardalis (leopard tortoise)							22	28	
Tortoise	69	167	9	208	174	71		66	199
Snake	3	1			6	7			4

Table 2.3 cont.

Taxon (Common Name)	**TSR2**		**TS R3**	**TS R4**	**TSR5**		**TSR6**		**TPD2**
	Zhizo	Leokwe	Zhizo	Zhizo	Zhizo	Leokwe		Zhizo	Leokwe
Varanus sp. (monitor lizard)	24	45		7	31	2		8	36
cf. *Varanus* sp.	3	2				2			9
Lizard					1				
Crocodylus niloticus (Nile crocodile)				1	5			8	1
Reptile, small			1		1	1		1	
Reptile, large								1	
Reptile, indeterminate	1					1	2	4	4
Pyxicephalus adspersus (African bullfrog)								2	
Frog/Toad	9	5			3			1	1
Clarias sp. (catfish)	8	1			113	47			10
Synodontis sp. (catfish)	19	8		4	28	1			
Clarias/Synodontis							12	64	
Fish, indeterminate	9	3	1	1	89	8	19	65	
Terrestrial snail, small			1		11	7		1	1
Corbicula africana (freshwater clam)					2				
Unionidae (freshwater mussel)	16	60	1	5	25	23	39	17	24
Cypraeidae (cowrie)	1	1	2			3		10	

The carnivore usage indicates Schroda was a relatively rich society that hunted far and wide. These animals played an intricate part at Schroda and the far reaching meanings are now being realised (Raath 2014). By merely investigating one animal group in such a holistic manner the way we understand the Iron Age and specifically sites in the SLCA can be broadened.

During this Zhizo using time, it has been indicated that Zhizo people might have been forced into eastern Botswana due to Leopards' Kopje (a mixture of Mambo and K2 ceramics) groups moving into the area (Huffman, 1978, 1986, 1996:56). Calabrese (2000a, 2000b) states that Zhizo ceramics developed into Leokwe ceramics at Schroda. Calabrese (2007) also later argues that some Zhizo groups stayed in the SLCA and formed a new group with the people from K2. They included aspects of K2 decorations into their own ceramics, which in turn became Leokwe ceramics (Calabrese 2007; Huffman 2009). Either way, the Makgadikgadi Pans has evidence of Zhizo using people. It should be taken into account that Zhizo in eastern Botswana is different from Toutswe, although similar. Zhizo sites in eastern Botswana are 'intrusive' from the SLCA and not part of the long-term regional development that is Toutswe.

Makgadikgadi Pans

It has been noted that in eastern Botswana, sites around the Makgadikgadi Pans have Leopard's Kopje and Zhizo ceramics associated with them (van Waarden 1998:129). In 1998, a survey was conducted from the Francistown–Orapa road to the edge of the Makgadikgadi Pans by Samuel (1999, cited in Reid & Segobye 2000:63). He found a total of 68 archaeological sites, with the majority being either Zhizo or Leopard's Kopje settlements, indicating a cluster sites in the period AD 800–1300. However, Denbow *et al* (2015:364-366) has argued that there was an earlier Zhizo presence dating to AD 650–900 in the area. Other than the ceramics, it is also clear that communities around the Makgadikgadi Pans area had contact and trade relationships with the SLCA people, as evident in the glass beads found that were traded in from the SLCA (Denbow *et al* 2015; Reid & Segobye 2000). It has also been suggested that the southern Makgadikgadi Pans area was also an important link in these trade networks for resources such as salt (Denbow *et al* 2015; Hall 1990).

Due to the proximity of the study sites to the Makgadikgadi Pans, it is appropriate to discuss the local archaeology in some detail. One of the sites, Thabadimasego is situated on top of the Mosu Escarpment. There are dozens of archaeological sites found on the Mosu Escarpment (Fig. 2.3) and about 40 archaeological documented sites in the south Sowa area. Most of these sites in the area date to AD 800–1300 (Daggett 2015:64; Matshetshe 1998:75; Morton & Hitchcock 2014:438; Reid & Segobye 2000:62-65; Tapela 2001:65).

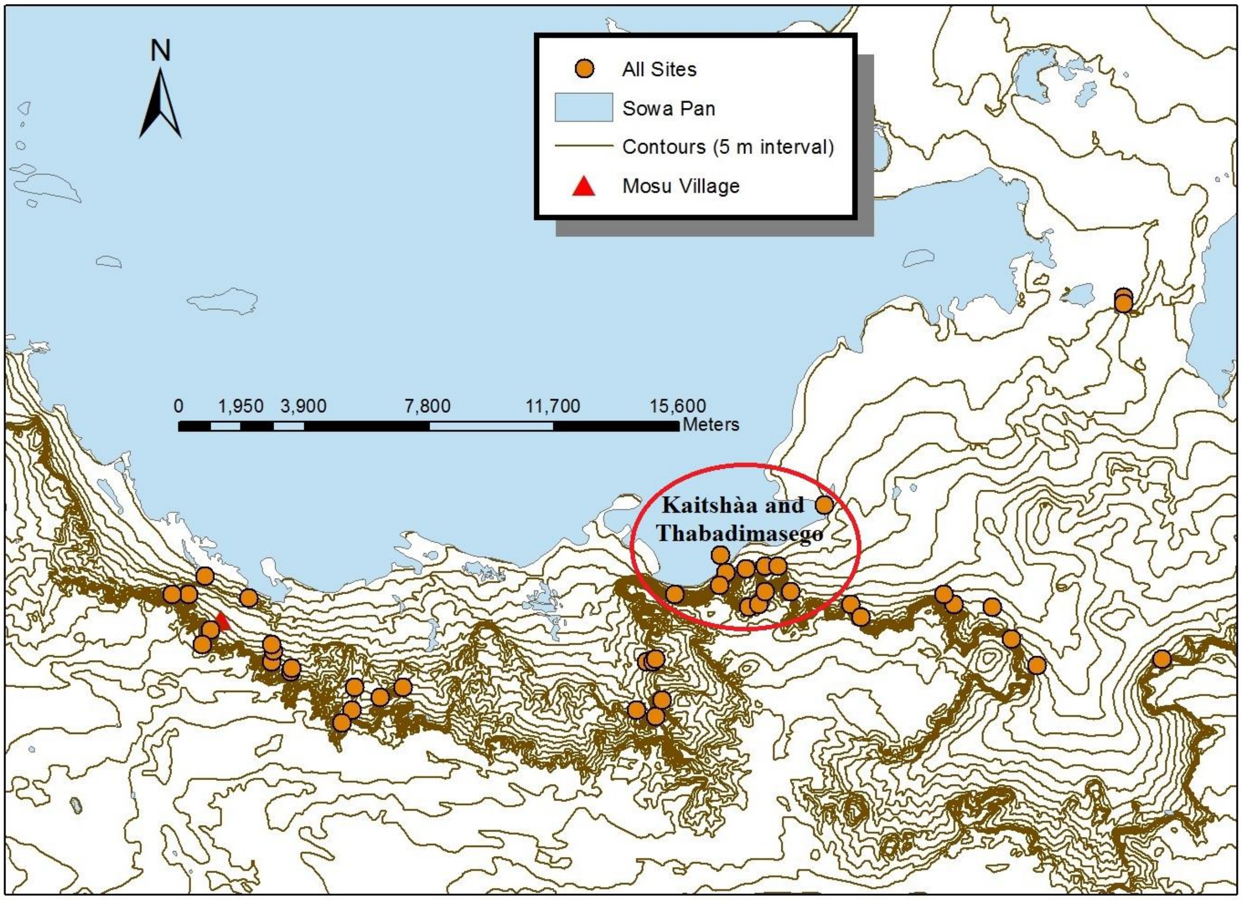

Fig. 2.3: The archaeological sites along the Mosu Escarpment indicating Kaitshàa and Thabadimasego (adapted from A. Daggett)

One of these sites is Kaitshàa (AD 900–1000) (Fig. 2.2), a large site covering about 37 000 m^2 (Reid & Segobye 2000:63). The site overlooks the southern edge of the Makgadikgadi Pans and is 80m above the Pans (Reid & Segobye 2000:63). Access to the site was gained through an entrance in a stone wall to the west and situated on the east is a dry streambed (Denbow *et al* 2015:365). Kaitshàa has Zhizo and Leopard's Kopje ceramics associated with it (Denbow *et al* 2015:366; van Waarden 1998:128). Also discovered at Kaitshàa was Zhizo and Chibuene series beads (Chibuene is a trading port situated on the coast of Mozambique [Wood *et al* 2012: 73]). It is proposed that these beads were most likely present due to the trade of salt, although this is difficult to prove (Denbow *et al* 2015:365, 373-375). Evidence suggests that Kaitshàa declined in importance after AD 1000 (Denbow *et al* 2015:373-375).

Mosu I (AD 900–1400) and Mosu II (AD 900–1050) are two other sites situated on top of the Mosu escarpment. Mosu II is a smaller site situated next to Mosu I. Mosu I is a 24 000m^2 site and during excavation a notable ivory cache was found (Reid & Segobye 2000:63-64). Mosu I and Mosu II and the sites from this area, including Kaitshàa, indicate that wild and domestic animals were being used equally, and that the communities were thus not relying solely on domesticated stock (Reid & Segobye 2000:63–64). Wild animals would also have probably been abundant here due to the lushness of the area (Bock 1998; Denbow 1986; Reid & Segobye 2000:59). Thus the communities around the southern Makgadikgadi Pans area utilised wild and domestic animals, as well as played a vital role in trade. These sites are relevant because this study aims to identify whether the two sites situated in this area that use the same ceramics, show similar results.

By about AD 1000 Zhizo ceramics were no longer seen on the landscape and during this crucial time period, there was an increase in social complexity in southern central Africa, specifically in the SLCA and eastern Botswana.

2.3.4 The rise of state formations

By about AD 1000, K2, a new capital was established in the SLCA. Huffman (1974; 2009:42) indicates that the K2 tradition is associated with Shona–speaking people dating to about AD 1000–1200 and form part of the Leopard's Kopje tradition cluster. K2 was the largest Leopard's Kopje settlement in the Limpopo Valley (Huffman 1986a, b, 1996b). The K2 site is located on the farm Greefswald, at the bottom of the Bambandyanalo Hill, close to sandstone cliffs (Meyer 2000:6). The people of K2 had a mixed agro-pastoral economy (Calabrese 2000a:187-188) and traded actively with the coast, expanding their volume of trade as time went on (Huffman 1982, 1986a, b, 1996b). K2 also manufactured and used metal artefacts, pottery, wood artefacts, ivory, ostrich eggshells, shells and mussels. Other artefacts were also found, namely figurines, ceramics objects, Garden Roller glass beads, iron artefacts and copper artefacts (Meyer 2000:11). The people of K2 also traded items such as cloth, bracelets and bone tools. It is possible that gold was also traded (Huffman 1982). K2 had a large kraal midden in the centre (Huffman 1986a, b, 1996b) which grew so large that the cattle byre had to be moved (Calabrese 2000b:187-188). K2 also had a central homestead complex, where dung deposits were found, a domestic area and smaller middens (Meyer 2000:6). By AD 1060 K2 was the biggest Leopard's Kopje settlement in the region

(Huffman, 1986a,b, 1996). It is seen as a 'socially inclusive village' (Calabrese 2000a:197-188) and one of the earliest centralized socio-political systems in southern Africa (Denbow 1986:17).

A K2 period commoner site worth noting is Castle Rock. Castle Rock has K2 and Zhizo style ceramics and large numbers of Garden Roller bead fragments and Garden Roller bead moulds, and there is evidence the people of Castle Rock had access to metal (Calabrese 2000b:103-104). Interestingly, the site had multiple cattle kraals but no grain bins present, prompting the recent suggestion that this was a cattle post (Huffman 2014:119) where only low-index meat parts (skull, feet and tails) were present, combined with a majority of wild remains (Huffman 2014:120). This is similar to what is seen at a cattle post. At a cattle post, cattle were used for breading and milking. The cattle were not owned by the people herding them and these herders could not disposes of the animal without consent (Van Waarden 1987:122). It is therefore possible that Castle Rock herdsmen herded K2 occupants cattle or even the K2-capital's cattle itself (Huffman 1982). Sites such as Castle Rock indicate that not all sites function as 'typical' farmer sites during this time of social complexity. However, it must be mentioned that Calabrese (2000b)'s finds of Garden Roller bead fragments and Garden Roller bead moulds could indicate higher level status site than a cattle post. This ties in with theory that not all sites are as clear cut as other sites during this time period and that some sites could be multifaceted.

During the decline of K2 around 1220, there was an increase of people at Mapungubwe Hill and it is suggested that the K2 leader moved to Mapungubwe Hill and formed the first kings' complex (Huffman 2007:373). This was the first time that a leader was so spatially separated from his followers, indicating new socio-political order that was expressed in the region (Huffman 2007). Mapungubwe Hill was then inhabited for around 70 – 80 years (Huffman 2007). It has been suggested (Huffman 2007:373) that the elite lived on top of Mapungubwe Hill, whereas commoners resided at the Southern Terrace of Mapungubwe Hill. Elites at Mapungubwe have been linked with control of the Indian Ocean trade networks, with items such as ivory, cattle and skins in exchange for exotic goods such as glass beads (Calabrese 2000b:184).

At Mapungubwe the faunal remains were analysed in two sections: the Hill and Southern Terrace (Plug & Voigt 1985), most likely due to socio-political differences between these two areas

(Huffman 2007; Meyer 2000:10). When the Southern Terrace and Mapungubwe Hill areas are placed side by side (Table 2.4), a pattern emerges that suggests Mapungubwe Hill residents had a larger access to domesticate animals than those residing on the Southern Terrace. When K2's faunal remains are compared (Table 2.4) against that of Southern Terrace and Mapungubwe Hill, K2 has a larger NISP of domesticates than Southern Terrace, but smaller than Mapungubwe Hill, reinforcing the idea that the people of K2 moved to Mapungubwe Hill and formed a superpower in the region. Another observation is that K2 utilised much more wild animals than the Mapungubwe Hill site complex, indicating that despite the clear reliance on cattle as part of the political economy at K2, wild animals were still utilised.

Table 2.4: Southern Terrace (ST), Mapungubwe Hill (MH) and K2's taxa lists (Plug & Voigt 1985)

Southern Terrace (ST) and Mapungubwe Hill (MH) and K2		**(ST) NISP/MNI**	**(MH) NISP/MNI**	**(K2) NISP/MNI**
Species		**AD 950 – 1300**		**AD 970-1220**
Homo sapiens sapiens	Human	-/2	-/1	-/3
Primate		-/1	-	-/2
Canis familiaris	Dog	-	-	-/3
Carnivora indet.		-/1	-/3	-/20
	Rhinoceros/ Hippopotamus	-	-	-/4
Equus quagga	Zebra	-	-/7	-/10
Procavia capensis	Dassie	-	-/2	-/5
Suid		-	-/2	-/5
Giraffa camelopardalis	Giraffe	-	-	-/2
Bos taurus	Cattle	-/46	-/96	-/59
Ovis/Capra	Sheep/Goat	-/72	-/128	-/119
Bovid I (small)		-/18	-/29	-/30
Bovid II (medium)		-	-/3	-/6
Bovid III (large)		-	-	-/3
Bovid IV (very large)		-	-	-/2
	Hare/Rodent	-/13	-/14	-/103
Orycteropus afer	Aardvark	-	-	-/1
Aves indet.	Bird	-/16	-/5	-/31
	Monitor lizard	-	-	-/7
Crocodylus niloticus	Crocodile	-	-	-
Reptilia indet.		-	-/1	-/11
Testudo sp.	Tortoise	-/5	-/1	-/24
Amphibian		-	-	-/1
	Fish/crab	-	-/2	-/34
	Terrestrial mollusc	-/14	-/16	-/158
	Aquatic mollusc	-/9	-/22	-/52

The rise of state formations also took place in north-eastern Botswana, with four large political centres, namely Toutswemogala, Bosutswe, Sung and Shoshong. (Denbow 1982, 1983; Hall 1987;

Kiyaga-Mulindwa 1993; Reid & Segobye 2000:59; Segobye 1998). The Toutswemogala site is located in the central district of Botswana (Fig. 2.2), located on top of a hill that is around 700m long and its maximum diameter is 100m (Denbow 1983; Lepionka 1971, 1978). It has extensive kraal remains and was occupied for about 500 years (Denbow 1986:15; Wilmsen & Denbow 1990:449) and classified a Class III site (Denbow 1986:20-22). Three quarters of Toutswemogala was made up of kraals and large amounts of domesticate dung was found. These dung deposits are around 25-50cm in depth and 30-100m in diameter (Denbow 1986:15-16).

The people at Toutswemogala utilised domesticated animals (around 80%) as the main animal subsistence (Denbow 1986:15-16) which indicates a high reliance on cattle. It has also been shown that sites in the Toutswemogala region may have increased their cattle wealth, and social and political complexity, because of the need to defend against Leopard's Kopje groups in the SLCA (Calabrese 2000a:184). When compared to Mapungubwe (Table 2.4) it is clear that Mapungubwe had larger NISP domesticates than Toutswemogala. Both utilised game and Toutswemogala utilised smaller game to a larger extent, which is similar to K2.

Table 2.5: Toutswemogala’s taxa list (Welbourne 1975)

Toutswemogala Species (7th – 13th centuries AD)		**NISP/MNI**
Insectivora sp. indet		-/2
Homo sapiens sapiens	Human	-/12
Primate		-/1
Canis familiaris	Dog	-/2
Carnivora indet.		-/19
	Rhinoceros/ Hippopotamus	-/1
Equus quagga	Zebra	-/6
Suid		-/1
Giraffa camelopardalis	Giraffe	-/2
Bos taurus	Cattle	-/44
Ovis/Capra	Sheep/Goat	-/76
Bovid I (small)		-/15
Bovid II (medium)		-/9
Bovid III (large)		-/8
Bovid IV (very large)		-/1
	Hare/Rodent	-/61
Aves indet.		-/14
Reptilia indet.		-/10
	Monitor lizard	-/5
Testudo sp.	Tortoise	-/15
Amphibian		-/6
	Terrestrial mollusc	-/4
	Aquatic mollusc	-/17

In contrast to the large amounts of domesticate evidence at Toutswemogala, the people at Bosutswe utilised hunting through all the phases. As mentioned, occupation at Bosutswe can be divided into four phases, namely, Taukome (AD 700–900), Toutswe (AD 800–1200), Mapungubwe (AD 1200–1300) and Zimbabwe (AD 1450 onwards) (Denbow *et al* 2008a:463-464). During the first phase cattle were moved to outlying cattle posts (Denbow *et al* 2008a:476). During the Mapungubwe and Zimbabwe phases cattle were once again kept in the central precincts of Bosutswe, along with small stock. However, cattle were most likely still also kept in outlying cattle posts (Denbow *et al* 2008a:463-476).

Below all four phases compared with one another to indicate change over time (Table 2.6). In the earlier level (Taukome) hunted animals made up 60% of the fauna and cattle mostly outnumber small stock. Then in the Toutswe phase cattle increase and hunted animals decrease to 40–50% of the fauna (Denbow *et al* 2008a). Badenhorst (2014), implemented a Game Index that investigates low ranked prey usage compared to high ranked prey usage at Bosutswe, and concluded that low ranked prey (small ground animals and wild birds) increased slightly over time, while cattle also increased over time and hunting of high ranked prey declined. These results indicate a site which changed throughout time, initially relying heavily on extensive game (e.g. leopard, scaly anteater, crocodile, aardvark, elephant and rhinoceros [Plug 1996]) and then as social complexity developed in the region Bosutswe increased its domesticate herd size to become a large centre that had regional power.

Table 2.6: The four phases of Bosutswe (Plug 1996)

Bosutswe		**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**
Species		**Taukome (TAU) phase**	**Toutswe (TOU) phase**	**Mapun-gubwe (MAP) phase**	**Zimbabwe (ZIM) phase**
Dates		**AD 700 – 900**	**AD 800 – 1200**	**AD 1200 – 1300**	**AD 1450 onwards**
Atelerix frontalis	Hedgehog	-	-	3/1	-
Homo sapiens sapiens	Human	-/2	8/3	1/1	-
Galago senegalensis	Galago	-	1/2	-	-
Papio ursinus	Baboon	-	1/1	2/1	-
Otocyon/Vulpes	Fox	-	-	-	1/1
Canis cf. *familiaris*		-	6/*	4/2	-
Canis sp.	Canid	-	3/1	-	-

Table 2.6 cont.

Bosutswe		**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**
Species		**Taukome (TAU) phase**	**Toutswe (TOU) phase**	**Mapun-gubwe (MAP) phase**	**Zimbabwe (ZIM) phase**
Dates		**AD 700 – 900**	**AD 800 – 1200**	**AD 1200 – 1300**	**AD 1450 onwards**
Canis mesomelas	Black-backed jackal	2/1	15/5	5/1	-
Civettictis civetta	Civet	-	-	2/1	-
Viverrid(ae)		2/1	4/1	3/1	-
Hyaena brunnea	Brown hyaena	-	3/3	-	-
cf. *Hyaena brunnea*	cf. Brown hyaena	-	2/*	-	-
Crocuta crocuta	Spotted hyaena	-	-	44/3	-
Hyaena/Crocuta	Brown/ Spotted hyaena	-	-	2/1	-
Panthera pardus	Leopard	-	-	1/1	1/1
Felis caracal	Caracal	-	1/1	-	-
Felis lybica	Wild cat	-	3/1	-	-
Felidae		1/1	-	1/1	-
Carnivora indet.		2/2	8/3	2/1	-
Loxodonta africana	Elephant	2/1	1/1	37/2	4/1
cf. *Ceratotherium simum*	White rhinoceros	-	-	1/1	-
cf. *Diceros bicornis*	Black rhinoceros	-	-	1/1	-
Dicerotinae		-	-	1/1	-
Equus quagga	Zebra	41/6	150/15	26/4	1/1
Equus sp.		-	1/*	-	-
Orycteropus after	Aardvark	-	1/1	-	-
Phacochoerus aethiopicus	Warthog	-	1/1	1/1	-
Suidae sp. indet		1/*	-	-	-
Hippopotamus amphibius	Hippopotamus	1/1	3/1	1/1	-
Giraffa camelopardalis	Giraffe	-	7/2	2/2	-
cf. Giraffa	cf. Giraffe	-	2/*	-	-
Bos taurus	Cattle	101/10	1125/52	1197/47	277/9
Ovis aries	Sheep	4/2	46/5	24/4	5/1
cf *Ovis aries*	cf. Sheep	-	3/*	-	-
Capra hircus	Goat	3/2	15/2	18/5	4/1
Ovis/Capra	Sheep/Goat	69/9	634/39	512/27	97/10
Connochaetes taurinus	Wildebeest	20/2	49/5	11/2	1/1
Connochaetes cf. *taurinus*	cf. Wildebeest	-	11/1	-	-
Alcelaphus buselaphus	Hartebeest	-	1/1	2/1	-
Alcelaphus cf. *buselaphus*	cf. Hartebeest	2/2	4/1	-	-
Alcelaphinae		6/2	5/*	3/1	-
Damaliscus dorcas	Blesbok	-	1/1	-	-
Damaliscus cf. dorcas	cf. Blesbok	1/1	-	-	-
cf. *Damaliscus sp.*		-	6/1	-	1/1
Sylvicapra grimmia	Grey duiker	6/1	6/3	14/3	-
cf. *Sylvicapra*		-	2/*	-	-
Antidorcas marsupialis	Impala	-	5/2	6/2	-
Oreotragus oreotragus	Klipspringer	-	3/1	6/1	-
Raphicerus campestris	Steenbuck	23/3	22/4	23/3	6/2
Raphicerus cf. *campestris*	cf. Steenbuck	-	3/*	-	-
Raphicerus sharpei	Sharpe's steenbuck	-	-	10/1	-

Table 2.6 cont.

Bosutswe		**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**
Species		**Taukome (TAU) phase**	**Toutswe (TOU) phase**	**Mapun-gubwe (MAP) phase**	**Zimbabwe (ZIM) phase**
Dates		**AD 700 – 900**	**AD 800 – 1200**	**AD 1200 – 1300**	**AD 1450 onwards**
Raphicerus sp.		-	-	1/*	-
Sylvicapra/Raphicerus		-	-	-	1/*
Aepyceros melampus	Impala	20/4	36/4	11/3	4/1
cf. *Aepyceros melampus*	cf. Impala	-	22/2	-	-
Oryx gazella	Gemsbok	-	2/1	-	-
Syncerus caffer	Buffalo	1/1	4/1	5/2	2/1
Tragelaphus strepsiceros	Kudu	-	6/1	3/1	-
Tragelaphus cf. *strepsiceros*	cf. Kudu	-	5/1	-	-
Tragelaphus spekei sitatunga		-	2/1	-	-
Tragelaphus scriptus	Bushbuck	7/2	-	-	-
Tragelaphus sp.		-	1/1	-	-
Taurotragus oryx	Eland	-	17/4	2/2	-
cf. *Taurotragus oryx*	cf. Eland	-	3/*	-	-
Redunca arundinum	Mountain Reedbuck	-	-	1/1	-
Redunca sp.		-	-	1/1	-
Kobus ellipsiprymnus	Waterbuck	1/1	-	-	-
Kobus cf. *ellipsiprymnus*	cf. Waterbuck	-	1/1	-	-
Kobus cf. *leche*	Lechwe	-	1/1	-	-
Bovid I (small)		41/1	105/3	41/3	12/*
Bovid II (medium)		16/*	90/1	42/1	16/*
Bovid II (medium) - non domestic		24/1	58/1	25/1	5/1
Bovid II/III (medium – large)		-	-	2/1	-
Bovid III (large) - non domestic		43/1	126/*	50/3	17/*
Bovid III/IV(large – very large)		-	2/*	5/*	-
Manis temmincki	Scaly anteater	-	-	1/1	-
Rattus rattus	Rat	9/3	44/43	30/21	21/3
cf. Rattus rattus	cf. Rat	-	32/4	-	-
Xerus inauris	Ground squirrel	-	-	2/1	1/1
Xerus cf. inauris	cf. Ground squirrel	-	1/1	-	-
Xerus sp.		-	1/*	1/1	-
Xerus/Paraxerus		-	-	1/1	-
Pedetes capensis	Springhare	2/1	2/1	1/1	1/1
Cryptomus hottentotus	Molerat	-	1/1	-	-
Otomys sp.	Vleirat	-	6/2	15/1	-
Aethomys sp.	Mouse/rat	-	6/2	-	-
Rhabdornys/Aethomys		-	-	22/5	-
Malacothrix typica	Large-eared mouse	-	-	4/1	-
cf. *Malacothrix typica*	cf. Large-eared mouse	-	-	-	7/1

Table 2.6 cont.

Bosutswe		**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**	**NISP/ MNI**
Species		**Taukome (TAU) phase**	**Toutswe (TOU) phase**	**Mapun-gubwe (MAP) phase**	**Zimbabwe (ZIM) phase**
Dates		**AD 700 – 900**	**AD 800 – 1200**	**AD 1200 – 1300**	**AD 1450 onwards**
Rodentia		18/2	64/7	76/4	12/3
Lepus cf. *saxatilis*	Scrub hare	1/1	2/1	5/1	-
Lepus sp.	Hare	3/*	5/2	15/2	-
Lagomorph(a)		13/1	41/2	35/2	10/2
Shrew		-	1/1	1/1	-
Gallus domesticus	Chicken	6/1	41/7	194/15	34/3
Gallus/Numida		-	-	21/1	-
Struthio camelus	Ostrich	26/3	70/4	83/6	9/1
Francolinus sp.	Francolin	4/2	7/2	8/2	1/1
Francolinus/Coturnix		-	-	1/1	-
Numida meleagris	Guinea fowl	-	-	7/2	-
Ardeotis kori	Kori bustard	-	-	1/1	-
Corvus sp.	Crow	-	-	1/1	-
Aves indet.		2/1	9/3	19/5	2/2
Snake		-	1/1	-	-
Varanus niloticus	Leguan	-	3/1	-	-
Varanus cf. niloticus	cf. Leguan	-	-	2/1	-
Varanus sp.		2/1	1/1	-	-
Crocodylus niloticus	Crocodile	-	2/1	-	-
Reptilia indet.		2/1	2/1	-	-
Testudo sp.	Tortoise	60/6	403/12	28/4	4/1
Pyxicephalus adspersus	Bullfrog	8/2	4/3	2/1	-
Amphibian		-	1/*	1/1	-
Clarias cf. *gariepinus*	cf. Barbel	-	-	1/1	-
Pisces indet.		-	1/1	1/1	-
Achatina sp.	Giant land snail	-	9/2	2/1	-
Aspatharia sp.	Feshwater mussel	-	1/1	-	-
Unionidae	Feshwater mussel	-	5/4	-	-
Marine gastropod		-	1/1	-	-

* Indicates that no teeth were present but that the individual is represented by post-cranial material

As the evidence suggests, Toutswemogala and Bosutswe seem to have relied on cattle as a source of wealth and power. This reliance on cattle also seems to be evidenced by the location of sites on hilltops to deter raids (Denbow 1986:23). These sites indicate the emergence of political without significant emphasis on long-distance, and contrasts to SLCA counterparts, Schroda and K2, which relied on extensive trade networks (Denbow 1986:24-25; Huffman 2007).

2.3.5 Second Millennium AD

Just after AD 1290 there was a rapid collapse of the Mapungubwe Hill complex, with suggestions that Mapungubwe Hill people moved to Great Zimbabwe by about AD 1300 (Huffman 1982:144–146, 2007; Meyer 1998). After this time, a change also occurs in the Toutswe region of Botswana with only a few sites dating to this period. The decline of these sites signal the start of states such as Great Zimbabwe (AD 1300–1450) and Khami (AD 1450–1820) (both in Zimbabwe).

2.3.6 Zimbabwe

Great Zimbabwe, a large archaeological site situated in Zimbabwe, had approximately 11 000–18 000 occupants (Huffman 1986:323) and is known for its free standing stone walling. Here stone was shaped in blocks which allowed for walls up to 9m high and 6m thick. Some of the walling had decoration. It has also been shown that the king of Great Zimbabwe had considerable wealth due to the amount of cattle remains recovered as well as crop cultivation and trade (Ndoru 2001:22; Pikirayi 2002). Great Zimbabwe declined around the 15th century AD due possible political disruptions (Huffman 2009:421; Pikirayi 2002:3). Other reasons for the decline have also been cited, such as new trade routes (Pikirayi 2006:768-769). No matter what the reason might have been, the people of Great Zimbabwe are thought to have moved to the Mutapa state in the north, or west to Khami (van Waarden 1998:136-137). The Khami state system (1450-1840) can be found in Zimbabwe and was part of the Butua state (Nichasike phase) (Huffman 2007; Mitchell 2002; van Waarden 1998:139-142).

From AD 1430 the Butua state emerged as one of the most powerful states in southern Africa. Not much is known about this state, except that the Butua state was known for its gold and large cattle herds (Beach 1980:200,233; Mudenge 1974:388). What is also known is that the Butua state was at peace and stable during its Chibundule phase and had stone walling (van Waarden 1998:139-142). The Nichasike phase saw decorated stone walls, but less than the Chibundule phase, as well as control of the capital shifting east. Sites in Botswana and Zimbabwe that were part of the Butua state are, Vumba, Vukwe ruins and Domboshaba (van Waarden 1998:139-142). Vumba, a 15th century Kalanga commoner site is of interest here as it can be compared to one of the case studies in this study (Dukwe 25) (C. van Waarden pers. comm.).

Vumba

Vumba is a Khami phase commoner site and is dated to AD 1462 (van Waarden 1998:146). The site had a central cattle kraal as well as a smaller eastern kraal. Houses and granaries arched around the kraal with a western entrance into the village. The houses were made from poles and daga and some of the houses were burnt down (van Waarden 1989, 1998:144-146). Vumba is also a single component site, with Khami pottery and a midden. 7.9% of Vumba's faunal assemblage was identifiable to taxon (van Waarden 2012:142-144). Of the sample, 54.6% were identified as domesticates, with 36.1% game and 9.3% other (domestic/game and self-introduced). The domesticate animals consist of caprines (58.5%), cattle (37.7%) and chicken (3.8%). This is the first instance of reported chicken during the Khami period. The cattle at Vumba were mostly older juveniles when killed, with 75% of juvenile caprines being killed. This indicates that caprine adults were generally not slaughtered (van Waarden 2012:142-144).

Vumba and Dukwe 25 had Khami phase pottery associated with them and Vumba dates to the same time as Dukwe 25 (AD 1450-1485) and can ultimately be compared with one another as sites that utilised the same potter during the same time.

Table 2.7: Vumba's taxa lists (van Waarden 2012:142-144)

Vumba Taxa		**NISP/ MNI**
Equus quagga	Zebra	3
Bos taurus	Cattle	20
Capra hircus	Goat	5
Ovis/Capra	Sheep/Goat	26
Sylvicapra grimmia	Grey duiker	5
Tragelaphus spekei	Sitatunga	1
Aepyceros melampus	Impala	5
Oryx gazella	Gemsbok	1
Taurotragus oryx	Eland	1
Bovid I (small)		5
Bovid II (medium)		2
Bovid II (medium) - non domestic		2
Bovid III (large)		3
Bovid III (large) - non domestic		6
Rodentia small	Small rodent	4
Lagomorph(a)	Hare/Rabbit	2
Gallus domesticus	Chicken	2
Aves indet.	Guinea fowl size	1
Varanus sp.	Monitor lizard	1
Testudo sp.	Tortoise	1
Pisces indet.		1

This concludes the archaeological background to the Iron Age in the region. As this review indicates, the sites in this study date to time periods of complex interactions and animal use. The next section discusses each case study in-depth.

2.4 Case studies

2.4.1 Phoenix 17

Phoenix 17 (17-B2-17) is situated east of Francistown and was excavated by Catrien van Waarden. The site dates to the late 9th century AD (C. van Waarden pers. comm.) and was excavated as part of mitigation requirements for the Phoenix nickel-copper mine when the site was going to be impacted by a pipeline and a slimes dam. The site is located on the boundary of the Phoenix nickel-copper mine in mopane woodland with an abundant water supply. There is a small water hole 100m from the site, a stream 350m from the site and a river 2.5km away. This river (Ramokgwebane River) borders Zimbabwe and would have been the site's main water supply (C. van Waarden pers. comm.). At Phoenix 17, seven possible kraals, five middens and 39 burnt dhaka (mud daub) structures, which were most likely used for storage of crops, were found. One of the kraals had vitrified dung and burnt wood, indicating that the kraal had a pole fence around that burnt. The ceramics found at Phoenix 17 were of typical Zhizo design and early Leopard's Kopje, as well as two fragments of a similar style to Toutswe tradition pottery (C. van Waarden pers. comm.). The time difference between Zhizo/Leopard's Kopje (AD 900-) and Toutswe (AD 700-) pottery's dating is interesting to note as both were found at this site.

2.4.2 Phoenix 18

Phoenix 18 is a large midden and is situated only 105m from Phoenix 17. I will therefore give Phoenix 18 the same date as there is no indication of multiple occupations at these sites (C. van Waarden pers. comm.). The ceramics are similar to Phoenix 17 and are from the Zhizo period (C. van Waarden pers. Comm.). Comparison with Phoenix 17 is of interest to investigate whether there is a difference in the faunal remains between Phoenix 17 and Phoenix 18 or if these sites were possibly the same site and not only contemporaneous (C. van Waarden pers. comm.).

2.4.3 Thabadimasego

Thabadimasego radiocarbon dates to the mid-9th century AD and was excavated by Adrianne Daggett (Michigan State University)(A. Daggett pers. comm.). The site is situated in the South Sowa area of north-eastern Botswana, on the top of the Mosu Escarpment next to the Makgadikgadi Pans (Fig. 1.1) and overlooks the salt pans, which are rich in game. Thabadimasego is situated on a plateau but extends to a narrow, steep pinch-point, where remains of a stone wall were found. Finds excavated at Thabadimasego include glass and shell beads, metal, ceramics and lithics. Most finds were found in the central area of the site as well as the remains of small dhaka structures. The ceramics are from the Zhizo period (Daggett 2015:99). Zhizo ceramics are found at numerous sites at the Makgadikgadi Pans. However, sites very close to Thabadimasego, such as Kaitshàa, Mosu I and Mosu II have both Zhizo and Leopard's Kopje ceramics associated with them (van Waarden 1998:128), nonetheless this could be attributed to the fact that Leopard's Kopje ceramics only appeared around AD 1000 (Hanisch 1980; Huffman 2007), and could indicate Thabadimasego was no longer occupied by this time.

With no kraals excavated at this site (but found sites such as Phoenix 17, Dukwe 25, Kaitshàa, Mosu I and Mosu II), and the location of Thabadimasego at the salt pans, where known sites such as Mosu I, Mosu II and Kaitshàa utilised both game and domestic animals (Reid & Segobye 2000:64–64), it is of interest to investigate how game/domesticates were utilised at Thabadimasego. Thabadimasego does not indicate the complexity of a "multi-generation village", but rather a site occupied for a brief period (Daggett 2015:195).

To date Thabadimasego three charcoal samples were submitted to the NSF-Arizona AMS Laboratory at the University of Arizona. OxCal was used to calibrate the uncalibrated dates using the Southern Hemisphere 13 calibration curve (Daggett 2015:135). Dates are displayed below (Table 2.8).

Table 2.8: AMS Dates from Thabadimasego (Courtesy of Daggett 2015:136)

Sample	**1σ**	**2σ**	**Median**
16-A1-13 U3-L2 (AA101289)	860-970 AD	774-985 AD	897 AD
16-A1-13 U19-L4 (AA101290)	864-971 AD	775-985 AD	906 AD

16-A1-12 U1-L2 (AA101288)	900-1014 AD	892-1020 AD	967 AD

2.4.4 Dukwe 25

Dukwe 25 (06-D1-25) is a 15th century AD (AD 1450-1485) smelting site situated east of Makgadikgadi Pans (Fig. 1.1), and located near three large copper mines called the Dukwe Copper Mines (historically called Bushman Mine). It was excavated by Catrien van Waarden. The site is situated close to small water pans in mopane woodland with black cotton soil. Finds include a spindle whorl (see Huffman 2000:21) and the ceramics are indicative of Khami phase (AD 1450–1820 [Huffman 2000:14]) activity (C. van Waarden pers. comm.). Initially, Dukwe 25 was thought to be a Leopard's Kopje site with potential overlap with the other three sites in this study. However, with radiocarbon dating, the limited presence of Leopards' Kopje ceramics (n=3) and Khami phase ceramics, this site dates to a later time. Nevertheless this site will still be considered in this study as a comparative scenario of a different type of site. The site can also indicate whether small samples can be used to infer larger patterns at sites.

Features of the site include a possible homestead (house and yard), a smelting site with two probable refining or smithing furnaces, and two kraals. One of the kraals had a mineralised layer at the bottom due to leaching and the furnaces were most likely associated with it. Copper was likely produced at the homestead and it is possible that occupation was seasonal if smelting was seasonal (C. van Waarden pers. comm.). Often smelting sites are far from villages due to rituals and taboos (Childs & Killick 1993; Collet 1993 & Herbert 1984, 1993 cited in Plug & Pistorius 1999:180), and it could mean that only men lived at this smelting site and worked in seclusion (Plug & Pistorius 1999:180). For example, at the Late Iron Age site of Phalaborwa, it has also been shown that men at smelting sites hunted individually (Plug 1988:322-325 cited in Plug 1993).

Dukwe 25 also dates to a similar time period as the Butua state which was known for its gold and large cattle herds (Mudenge 1974:388; Beach 1980:200,233). It could therefore be interesting to see whether Dukwe 25 had a large amount of cattle herds, as well as investigate the animal utilisation practices at this possible specialist settlement.

2.5 Conclusion

This review shows a long history of social complex interactions between communities during the Iron Age, as well as their utilisation of animals. Phoenix 17, Phoenix 18, Thabadimasego and Dukwe 25 date to this multifaceted time of interaction and trade. By investigating these sites' faunal remains, greater understanding can be garnered about people during these time periods and regions. The data can also be used to investigate regional and local patterns with regards to animal use and social behaviour.

In the following chapter, broader theories and debates, especially with regards to the archaeology of Botswana and the use of animals, will be discussed.

CHAPTER 3: THEORY

3.1 Introduction

During the Iron Age of southern Africa animals were utilised for various reasons beyond nutrition or sustenance. This chapter seeks to understand the roles of animals and how people approached and understood animals in the past. Animals are quite often seen in narrow terms of food and sustenance, whereas animals were part of communities' lives on social and economic levels (Barker & Gamble 1985:5; Raath 2014:2-4). During the 1970's zoologists were not asking the questions that archaeologists needed, and thus archaeology shifted its focus to how animals were utilised in the past to answer these questions. However, at first archaeologists were very focused on quantification (Russell 2012:6). These narrow views have since started to change in the last 30 years by focusing on the relationship and social impacts of food (Russell 2012:6-7). Yet, the faunal analysis questions have remained the same (Russell 2012:7). In 1999, Marshall and Mutundu stated that only a mere 4% of African literature regarding zooarchaeology deals with social issues (Marshall & Mutundu 1999). In 2014, Sykes states that this is still the case and that not a lot of information is gathered by zooarchaeologists beyond what past societies ate.

This study aims to rectify this shortfall to some extent by attempting to place animal exploitation patterns in a larger socio-political and cultural context. First, I will investigate how people approached animals as more than just nutrition and how we understand these social roles of animals in the past. Second, I discuss methodologies and models that aim to understand these roles. Then in the next chapter I discuss the methodologies that are ultimately used in this study and what information can be garnered from these methodologies to answer questions beyond just food.

3.2 Categorising communities using animals

Animals enter into our debates about categorising communities. There is a long standing debate (Kalahari debate) among southern African archaeologists about whether hunter–gatherers, pastoralists and agriculturists survived alongside one another, maintaining distinct socio-economic and cultural boundaries, or whether they enjoyed varying levels of contact (Barnard 1992). Indeed, it has been argued by Schrire (1992) that hunter–gatherer communities are expected to act in a certain way, for example, mainly hunting wild animals. However, such categorisation is not always so straightforward, as contact with herders or societies cannot be ignored and/or varied communities/groups treated as homogenous. For example, stone tools have been found at Early Iron Age sites in Botswana and could either mean contact between hunter–gatherers, pastoralists and agriculturists, or vestiges of earlier occupation (Sadr 1997:105-106). These lines of evidence could go either way and such discussions within southern Africa have historically been termed the 'Kalahari debate'. It is divided between those who argue that the Kalahari foragers hunted, gathered and did not come in contact with pastoralists communities that produced food and cultivated land, and thus remained isolated (e.g. Lee & Solway 1990), and the alternative opinion (e.g. Wilmsen & Denbow 1990) argues that the Kalahari foragers can be linked to wider networks and that they regularly came in contact with pastoralists and farmers. Denbow (1990) has also argued that these foragers were the base of a hierarchy where they traded commodities and cattle herding duties for grain, domesticates, milk and other products.

Consequently this debate investigates the contact and relationship between hunter–gatherers and pastoralists, and to what extent animal exploitation patterns define discrete identities and social boundaries (Smith 1998). More research is needed of Late Stone Age and Early Iron Age archaeology to add to either side of this debate, as the use of animals needs to be investigated as more than just commodities or solitary endeavours.

Another discussion on how we categories communities comes from Sadr (2008), who indicates that sites on Kasteelberg (early first millennium AD) had Later Stone Age artefacts as well as sheep remains and tortoise. Then during the late first millennium AD other sites in the area were also occupied. They also had small livestock, but show evidence of seal hunting and fewer tortoise remains (Sadr 2008:203). Some of these later sites had previous been identified as pastoralist sites, where the earlier sites had been identified as hunter-gatherers (Sadr 2008:204). Other sites that are thought to be typical pastoralist and hunter-gatherer sites show these types of patterns. For example, in Namaqualand hunters with sheep are documented to the early first millennium AD with sites such as Jakkalsberg having over 90% small livestock remains (Sadr 2008:205). This research (Sadr 2008) indicates that we can't take such clear and hard lines of separations in history at face value. Some communities welcomed the changes that occurred on the landscape, new ideas and adopted livestock, where other groups changed their lifestyles in only small ways, for example hunters with sheep (Sadr 2008:208). This evidence should open us to new questions about why some groups intensively adopted animal husbandry, and others not (Sadr 2008:209). These debates and models indicate the use of animal is not a clear cut situation and that people can't always be expected to fit into theoretical boxes. This study aims to adhere to this principle when discussing faunal results and to not see animals as merely sustenance.

The previous examples are debates that have been used to demonstrate the often fluid or porous boundaries between hunter–gatherers, pastoralists and agriculturists. Following this, I will provide a case studies of the Okavango Delta that is relevant because they shows that communities can differ from one another, even if they are situated in the same environment.

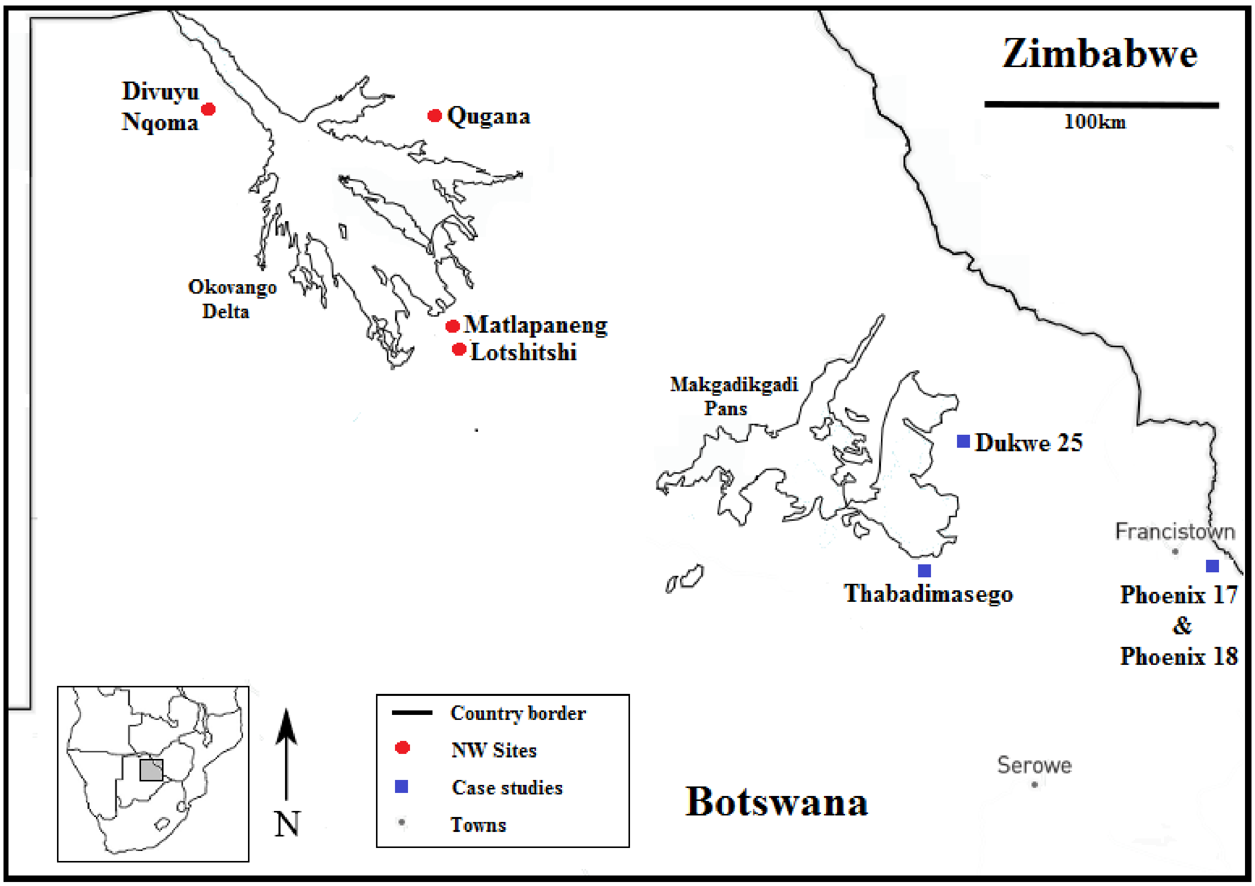

Fig. 3.1: Location of Okavango Delta sites

3.2.1 *Qugana, Lotshitshi and Matlapaneng*

Qugana, Lotshitshi and Matlapaneng are three interestingly dated sites. All three date before the appearance of domesticated stock into the time of settled first millennium AD communities (7th to 10th centuries AD) (Turner 1987b). Qugana is a herder site situated in north-western Botswana, north of the Okavango Delta where permanent shelters and game were recovered. Also found at Qugana was Early Iron Age ceramics (Turner 1987b). South of the Okavango Delta, two other sites are situated: Lotshitshi and Matlapaneng. These two sites are 1.5km apart (Denbow 1986:15; Turner 1987b). Although Matlapaneng can be seen as a herder site with metalworking evidence, lithics were also recovered. Similarly to Qugana, Matlapaneng also had permanent shelters. Where, Lotshitshi can be classified as a hunter and forager site that might have herded. To discuss the fauna, the results from all three sites are compared in Table 3.1.

No domesticates were found at Qugana (Table 3.1) and the reason could be due to Qugana's position on an island, which isolated the people of Qugana, or it could be due to an abundance of wild resources in the area (Turner 1987b:28-29) and thus no need for domesticates as sustenance. This isn't a typical 'herder' site signature and it could be that the inhabitants at Qugana were hunters and foragers instead. Similar to Qugana, at Lotshitshi game dominates the faunal assemblage pointing to a more hunting orientated site, although some cattle remains were indeed recovered. However, Lotshitshi might only have had cattle due to trade with neighbours (Denbow 1986:15; Turner 1987b). In contrast to both these two sites, Matlapaneng had an economy based on domesticated animals due to the large domesticate numbers and lower game numbers (Denbow 1986:15; Turner 1987b), which is in contrast to the lithic evidence recovered.

Table 3.1: Qugana (Q), Lotshitshi (L) & Matlapaneng's (M) taxa lists (Turner 1987b)

Qugana (Q), Lotshitshi (L) & Matlapaneng (M)		**(Q) NISP/MNI**	**(L) NISP/MNI**	**(M) NISP/MNI**
Species		**7th – 10th centuries AD**		
Otocyon megalotis	Bateared fox	-	-	1/1
Lycoan pictus	Wild dog	-	-	1/1
Canis mesomelas	Black-backed jackal	-	2/5	6/1
Viverrid(ae) sp.		-	-	1/1
Hyaenid sp.	Hyaena	-	1/1	-
Ceratotherium simum/ Diceros bicornis	White/ Black rhinoceros	-	-	4/3
Equus burchelli	Burchell's zebra	25/3	3/3	4/4

Table 3.1 cont.

Qugana (Q), Lotshitshi (L) & Matlapaneng (M)		**(Q) NISP/MNI**	**(L) NISP/MNI**	**(M) NISP/MNI**
Species		**7th – 10th centuries AD**		
Procavia capensis/Heterohyrax brucei	Rock/Yellow spotted dassie	-	2/2	1/1
Phacochoerus aethiopicus	Warthog	-	4/3	-
Hippopotamus amphibius	Hippopotamus	1/1	-	-
Giraffa camelopardalis	Giraffe	2/1	2/1	3/3
Bos taurus	Cattle	-	9/4	156/62
Ovis aries	Sheep	-	-	29/12
Capra hircus	Goat	-	-	4/3
Ovis/Capra	Sheep/Goat	-	-	148/53
Connochaetes sp.	Wildebeest	13/3	1/1	2/2
Alcelaphine sp.	Alcelaphine	-	3/1	-
Sylvicapra grimmia	Common duiker	3/1	1/1	3/2
Antidorcas marsupialis	Impala	12/3	-	1/1
cf. *Hipporagus niger*	cf. Sable	2/1	-	-
Syncerus caffer	Buffalo	3/2	-	5/5
Taurotragus oryx	Eland	5/3	-	3/3
Redunca arundinum	Reedbuck	4/2	-	8/4
Pedetes capensis	Springhare	2/1	4/3	11/8
Hystrix africaeaustralis	Porcupine	-	2/2	2/1
Praomys natalensis	Multi-mammate mouse	1/1	-	-
Tatera cf. *brantsii*	Highveld gerbil	1/1	-	1/1
Lepus sp.	Hare	-	2/2	3/3
Crocidura cf. *hirta*	Lesser red musk shrew	-	-	1/1
Struthio camelus	Ostrich	2/1	1/1	7/6
Francolinus cf. *adspersus*		-	4/2	3/2
cf. *Balearica regulorum*	Crane	1/1	-	-
Numida meleagris	Guinea fowl	1/1	2/2	7/5
Phalacrocorax africanus	Cormorant	1/1	-	-
Streptopelia capicola	Turtle dove	-	1/1	-
Aves sp.	Bird	3/2	5/3	21/17
Varanus sp.	Leguan/lizard	2/1	1/1	2/2
Testudo sp.	Tortoise	10/2	4/2	19/10
Pyxicephalus adspersus	Bullfrog	28/2	2/2	5/4
Frog		6/2	7/4	2/2
Barbus sp.		-	-	1/1
Synodontes sp.	Catfish	-	1/1	-
Clarias sp.	Clarias	-	-	1/1
Pisces sp.	Fish	4/2	4/3	-
Molusc		-	2/2	-
Achatina sp.	Giant land snail	1/1	9/4	7/5
Unio caffer	Feshwater mussel	1/1	-	2/2
Unio/Aspatharia sp.	Feshwater mussel	21/2	-	8/6
Curbella sp.	Feshwater mussel	-	-	2/1

These three sites' indicate differences at sites that are situated in a similar environmental area; reacted differently to the use of domesticates and game; and date to a similar time period. This enforces the idea that not all communities can be expected to be the same, even if some are perceived as hunter-gatherer sites and others as herder sites. They also indicate that finds such a lithics or ceramics can also be in contrast to faunal remains.

Next, Divuyu and Nqoma are discussed as perceived 'farmer' sites that are different, but also situated in north-western Botswana dating to a similar time period. These sites are used to build on the above discussion that not all sites are similar and that not all archaeological evidence can provide definite answers.

During the 6th – 12th centuries AD, the communities of Divuyu and Nqoma (Tsodilo Hills, north–western Botswana) (Fig. 3.1) both utilised wild resources in conjunction with domestic stock. Divuyu had goats (possibly sheep) but no evidence of cattle (Wilmsen & Denbow 1990:449). Evidence suggests that Nqoma was economically dominant in the region during this time and that the people of Nqoma were also part of a large trade network across the region. This could have been due to the trading livestock and copper artefacts between communities and thus taking on the role of 'middleman' (Denbow 1990:169-170).

Divuyu and Nqoma represent communities that hunted and herded as well as traded. Game comprises 40% of the faunal assemblage at Divuyu (Table 3.2) which suggests hunting was still important despite the putative shift towards domesticates. The animals at Divuyu range from elephant to impala and fish. This indicates that some animal products had to be exchanged, as some taxa in the assemblage could only have been found more than 70km away (Reid *et al* 1998:88–89). Furthermore, 7% of the animals in the assemblage were fur bearing animals, which were most likely hunted for this reason rather than just for their meat, and may have been part of the trade network (Reid *et al* 1998:88–89; Turner 1987a). Similar to Divuyu, 41% of the faunal assemblage originated from wild resources at Nqoma (Turner 1987a:7–11). Snaring and hunting could have contributed to the economy of Nqoma and that the hunted fauna could possibly have originated from two or three different habitats (Turner 1987a:7–11), including the Okavango Delta, which provided unique hunting opportunities due to a rich environment (Bock 1998; Denbow 1986).

The high number of cattle at Nqoma could possibly be due to trade (Denbow 1990:169-170). In contrast, Divuyu only had a few cattle remains, with much higher goat and sheep present. Another reason for Nqoma's high cattle remains is the possibility that cattle were "culled to conserve breeding animals" (Turner 1987a:11-12). Whereas at Divuyu sheep and goats were culled when they reached adulthood (Turner 1987a:11-12).

Table 3.2: Divuyu (D) & Nqoma's (N) taxa lists (Turner 1987a)

Divuyu (D) and Nqoma (N)		**(D) NISP/MNI**	**(N) NISP/MNI**
Species		**6th – 12th centuries AD**	
Homo sapiens sapiens	Human	1/1	71/9
Papio ursinus	Baboon	1/1	-
Otocyon megalotis	Bateared fox	1/1	4/2
Canis sp.	Canid	3/2	-
Canis mesomelas	Black-backed jackal	3/2	3/3
Civettictis civetta	Civet	-	1/1
Genet sp.	Genet	1/1	-
Viverrid(ae)	Polecat/Mongoose	-	1/1
*Viverrid(ae)*sp.	Mongoose	1/1	4/4
Panthera pardus	Leopard	2/2	1/1
Felis caracal	Caracal	5/2	-
Felis lybica	Wild cat	2/2	-
Felid(ae)	Felid	3/3	-
Pachyderm sp.	Elephant/Hippo/Rhino	-	1/1
Loxodonta africana	Elephant	-	1/1
Equus burchelli	Burchell's zebra	-	3/3
Procavia capensis	Dassie	2/2	2/2
Phacochoerus aethiopicus	Warthog	-	1/1
Suid	Pig	-	4/4
Hippopotamus amphibius	Hippopotamus	2/2	-
Hippopotamus/Rhino	Hippopotamus/Rhino	1/1	-
Giraffa camelopardalis	Giraffe	2/1	15/6
Bos taurus	Cattle	11/8	323/64
Ovis aries	Sheep	532/79	123/28
Capra hircus	Goat	16/10	4/3
Ovis/Capra	Sheep/Goat	298/70	38/19
Connochaetes taurinus	Wildebeest	4/5	13/9
Sylvicapra grimmia	Common duiker	50/18	60/19
Antidorcas marsupialis	Impala	33/14	21/11
Syncerus caffer	Buffalo	17/10	9/9
Taurotragus oryx	Eland	15/7	11/6
Redunca arundinum	Reedbuck	7/5	1/1
Kobus ellipsiprymnus	Waterbuck	3/2	1/1
Kobus cf. *leche*	Lechwe	1/1	1/1
Pedetes capensis	Springhare	3/2	89/15
Hystrix africaeaustralis	Porcupine	1/1	-
Cryptomus hottentotus	Molerat	-	3/1
Praomys natalensis	Multi-mammate mouse	-	1/1
Tatera sp.	Gerbil	3/1	1/1
Lepus sp.	Hare	6/4	1/1
Struthio camelus	Ostrich	-	47/13
Francolinus cf. *adspersus*	Red-wing francolin	12/10	-

Table 3.2 cont.

Divuyu (D) and Nqoma (N)		(D) NISP/MNI	(N) NISP/MNI
Species		6^{th} – 12^{th} centuries AD	
Numida meleagris	Guinea fowl	4/4	10/6
Varanus sp.	Lizard	36/12	58/13
Testudo sp.	Tortoise	-190	45/18
Pyxicephalus adspersus	Bullfrog	5/4	6/5
Pisces	Fish	54/18	12/7
Achatina sp.	Giant land snail	-/2	-
Unionidae/Achatina sp.	River mussel	-/9	2/2

Divuyu and Nqoma span across the 6^{th} – 12^{th} centuries AD and Qugana, Lotshitshi and Matlapaneng span across the 7^{th} – 10^{th} centuries AD. These sites are all situated around the Okavango Delta and show varying degrees of animal usage. Qugana had no domesticate remains and only game; Lotshitshi had a few cattle remains and the rest game; Matlapaneng had a much larger domesticate herds (roughly 70%); whereas Divuyu and Nqoma, the 'farmer' sites had roughly 60% domesticates. Although, these two sites still utilised domesticates differently.

This clearly indicates that not all communities utilised animals the same, even if situated in similar environments dating to similar time periods. The same principle can be applied to sites in this study as they are all situated in eastern Botswana, but seem to have different characteristics. For example, Thabadimasego had no remains of kraals, but is situated in an area that utilised both wild and domesticated animals. On the other hand, even sites in the same political systems, such as Bosutswe and Toutswemogala utilised domesticates different. This divergence could be due to how communities perceived animals. Next I will discuss how animals could be perceived and their social and economic uses beyond nutrition.

3.3 Animals beyond nutrition

Even though animals and their meat and secondary products are important, their social and symbolic roles can be equally or more important (Russell 2012:7). For example, humans create social relations through sharing, trade and exchange of meat (Russell 2012:1). In Botswana specifically, historically, the exchanging and trading of meat was common and was a means of spreading resources (Lee 1979). Trade between foragers and early farming groups in Botswana included trade of skins, game meat and foraged goods. These could have been exchanged for metal items or domestic stock (Segobye 1998:104). The Batswana and Bakgalagadi also traded furs for beads (Muthuen 1846). The trading of these animal products could then in turn have been used for clothing (sandals, cloaks), ornaments, implements, tools and weapons (Morton & Hitchcock 2013).

This indicates a wide range of uses for animals on a materialistic and economic level as well as an integral part of how societies function. The trading and exchanging of animals however, take on a deeper role in societies when one factors in the social roles of hunting and gathering these animals. First, I will discuss game and hunting and second domesticates and their roles.

3.3.1 Game

It should be recognised that hunting plays many social roles (economic, status, gender, political) beyond just fulfilling dietary requirements (Morton & Hitchcock 2013:2-3) and shouldn't be perceived as a homogenous activity (Overton & Hamilakis 2013:117). Hunting can be seen as social sharing, as hunters could share their meat and thus fulfil their social obligations (Sadr & Plug 2001:76), as well as a recreational social activity (Nelson 2008:15-21). Hunting as tribute could also fall under social obligation, where wild resources could be given to another community as tribute (Badenhorst 2010:100; Turner 1987:10) and traded or exchanged. Sharing could also have been utilised to negate the inequality of hunting returns and thus cultivate social bonds (Kent 1993:479). Some animals were hunted for other reasons associated with social status, as killing rare or dangerous animals could have been a personal experience (e.g. rite of passage), as well as a profound search for prestige (Badenhorst 2010:100; Overton & Hamilakis 2013:115).

Carnivores could have been hunted due to their skin's perceived magical properties and not for their meat or necessarily for trade, for example at Divuyu and Nqoma 7% of the animals were fur bearing and most likely hunted for this reason. Also at Schroda carnivores were consistently exploited and there is evidence of ceremonial activities at the site (Morton & Hitchcock 2013:3; Raath 2014; Turner 1987:9). It has also been shown that some elites (e.g. chiefs, shamans, etc.) had exclusive use of certain foods for feasting or certain social requirements (e.g. animal skins, body parts or even feathers) for rituals (sumptuary rules). An example is when Tswana chiefs received skins from rare or dangerous animals such as leopards (Schapera 1953).

Ritual is also another aspect that needs to be accounted for. At Bosutswe some hunted species (e.g. hyenas, scaly anteater, and crocodile) have been associated with ritual (Plug 1996). A modern day example of ritual is the Wayeyi of the Okavango Delta in Botswana, who believed that when killing a hippo there would be good floods in the Okavango (Robbins *et al* 2008:137). Masculinity or 'coming of age' rituals can also be explained by investigating the Wayeyi. They believed that they became men when they were involved in the killing of a hippo (Robbins *et al* 2008:137).

The above indicates that studying the use of game allows us to examine a range of social interactions between people, and people and animals. Hunting as an aspect on its own can also infer a lot about past societies:

Various hunting methods have been observed anthropologically and ethnoarchaeologically (Bain 1949; Morton & Hitchcock 2013; Lane 1998:186–187; Linares 1976 cited Reitz & Wing 2008:92; Plug 1996). However, not all of these can point to the social aspect of hunting as they are difficult to detect. For example, bow and arrow hunting that took place in the drier months in small groups, can be hard to detect (Lee 1979 cited in Lane 1998:187), as well as spear hunting which occurred either on foot or on horseback and was conducted in large groups (Lee 1979 cited in Lane 1998:187). Only if evidence of bow and arrow or spear damage could be detected on faunal remains, could these hunting methods be inferred, and in turn their social aspects. Even though some hunting methods are invisible in the archaeological record, especially when only observing faunal remains and not in conjunction with hunting tools (Wadley 2010:197), there are ways that hunting methods can be examined zooarchaeologically. Taphonomy can be an indicator (Binford 1984; Binford *et al* 1982; Bunn and Kroll 1986; Shipman *et al* 1984b; Lyman 1987b) of types of hunting, as well as particular faunal species found (Cohen 2010:161). For example, eggs and mussels would have been gathered (Plug 1989) and fish would have been caught using fishing techniques (Plug 1989; Smith 2008). Gathering might have been planned or opportunistic, and fauna that were gathered or fished included, ostrich eggs, tortoises, giant land snails, freshwater mussels, molluscs. Some of these also had uses other than for sustenance namely; ostrich eggshell -, freshwater mussel - and molluscs beads (Plug 1989:67).

Smaller game such as hares, could point to garden hunting or snares (Linares 1976 cited Reitz & Wing 2008:92; Plug 1996). Garden hunting is a method that could have been utilised to catch these small animals. Termed by Linares (1976 cited Reitz & Wing 2008:92), garden hunting is when farmers' crops attract wild fauna and so called pests, such as hares. Hunting these animals in turn protect the crops, as well as provide sustenance (Reitz & Wing 2008:92). On the other hand, when large and dangerous animals (e.g. elephant and rhinoceros) are present in the sample, it could indicate communal (large group) hunting (Hall 1977; Morton & Hitchcock 2013; Plug 1989; Plug 1996). Communal hunting can be seen as large organised hunts and is thought to have been an activity of men and was socially very important (Morton & Hitchcock 2013:2,17; Plug 1996).

As we can see by the above section, some hunting methods can be inferred by investigating specific species found zooarchaeology. Furthermore, indicating hunting techniques can indicate a social aspect of communities, such a communal hunting or even specialised skills that would otherwise be invisible in the archaeological record. This information can aid in understanding past societies better.

Next domesticates will be discussed in relation to how these animals could have been perceived as more than just nutrition, as well as a model of organisation tied to these animals.

3.3.2 Domestic stock

Domesticated stock had various uses during the Iron Age. They were utilised for sustenance, but could also have been economically important as they could have been used in trade (Crabtree 1990; Plug 2000). They could thus have been seen as property that could have been traded, exchanged, owned and inherited (Ducos 1978:54). Economically a reliable meat supply (Russell 2012:219) could also have been a factor. However, domestic stock could also have been relied on for the products they produced, namely milk, wool and even their blood could have been utilised (Voigt 1986:17). Beyond economic reasons, domesticates were also used in rituals (Nelson 2008:15-21; Plug 2000) and coupled with the above it is therefore clear that seeing domesticates in terms beyond nutrition is important.

Cattle specifically were seen in very strict lines in the past as power and wealth and were used in bridewealth or 'lobola'. Bridewealth is the exchange of cattle for wives and points to a very important social relationship between people and domesticates (Huffman 1998; Kuper 1982). When one possessed cattle you could marry (Reid 1996:44) and hold power (Hall 1986:86) and a ruler's position was most likely confirmed through their command over the cattle resources (Reid 1996:46). There are also models that sought to perceive cattle importance, for example the Central Cattle Pattern (CCP) of Huffman (e.g. 1982, 1986, 1998, 2001, 2007).

The CCP explains communities in regards to their cattle (Reid 1996:44). According to the CCP model, the cattle kraal was a central space in a village which was male-dominated. Burials of important men took place in the centre, as well as meetings. Butchering and milking of animals as well as the storage of grain in pits were also found in the centre. The outer 'ring' was the residential zone and the domain of woman (Huffman 2007:25;33;55; Huffman 1982:140). However, Lane (1994/95) questioned the validity of statements about spatial organisation in the Early Iron Age, as small areas were excavated and the evidence would be ambiguous.

The CCP also indicates that cattle were the most important domestic animal since the Early Iron Age when farmers first settled in southern Africa. Mitchell and Whitelaw (2005:224) argued that there was no substantial evidence of high numbers of cattle in the Early Iron Age and the models like the CCP have limitations. Hall (1986) also criticised the CCP. He maintains that cattle keeping to such a scale as the CCP suggests, may not have been possible in the first millennium of southern Africa. He also maintains that once polities in eastern Botswana, the Limpopo Valley and the Zimbabwe Plateau developed, cattle were not necessarily a "method of organising power" as it used to be, due to dependence on imported goods (Hall 1986:84-86).

What is clear is that how we few past societies can differ and that we should keep in mind that animals use is not homogenous, but factors in a whole host of aspects such as gender, power and social organisation. The above indicates that animals were utilised in the past beyond just as nutrition, but rather has a whole host of social roles which can be used to assist in defining past societies.

3.4 Conclusion

From this chapter it is clear that the theoretical frameworks surrounding the faunal remains recovered in this study can broaden our understanding of the communities that utilised animals as various resources. The theories discussed in this chapter will be incorporated in this study where possible, to not put rigid restraints on animals and their social meanings. The next chapter investigates the methodologies that can be utilised when analysing faunal remains to give us answers to the possible uses and meanings of the animals at the sites in this study.

CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter will explore the methodology and terminologies utilised in this study. This chapter will also give a brief overview of the zooarchaeological history, methods, analytical tools and interpretations that will be used to understand the faunal assemblages. I will investigate the questions that zooarchaeology can answer pertaining to this study and the methods that can be employed to answer these questions.

4.2 Zooarchaeology

Zooarchaeology (or archaeozoology) can be defined as the analysis and identification of faunal remains from archaeological sites (Brewer 1992:195-196; Grayson 1973:432; Medlock 1975:227). Three main reasons have been given for this pursuit (Kenward *et al* 1980:3), namely to construct past human diet and activity, reconstruct past environments and for the interest of biologists and ecologists. Zooarchaeology has grown rapidly as a sub-discipline over the last couple of decades (Peres 2010:17) as in shown in the methodology discussed below.

4.3 Methodology

In this study I will utilise a manual that was adapted from Driver (1991). Driver developed a description of vertebrate remains for the Crow Canyon Archaeological Center. Driver's identification manual for zooarchaeology was developed to standardise analysis and to reduce interpretive errors. Badenhorst then adapted the manual and applied it to southern Africa (Badenhorst 2009). Therefore, this manual that has been specifically adapted for Southern African zooarchaeology, will be utilised in this study to improve comparative analysis and reduce analytical errors (Appendix A). The comparative collection at the Ditsong National Museum of Natural History (Archaeozoology and Large Mammal Section) will be utilised. The measurement systems will follow Von den Driesch (1976) and Peters (1985–86).

Following Badenhorst (2009), specimens will first be grouped into categories to describe the faunal remains. The two main categories will be identifiable and unidentifiable specimens. According to Driver's method of analysis all elements that can be identified must be identifiable to at least size class (Driver 1991). All identifiable specimens will be described where possible by species (or genus/family/group), part (what portion of the element is available), sex, length, measurement, and side, using a code system (Appendix A - Badenhorst 2009). Fusion, breakage pattern, any modification, taphonomy, burn intensity, pathology and age will be specified, where possible, on both identifiable and unidentifiable specimens. These categories can help with the identification of hunting, butchering and cooking techniques. These will be explained more in detail with the recording of identifiable specimens below.

4.3.1 Typology/Element

The first step of analysis is to identify the element, for example, which bone of the skeleton is being analysed. This can be done with the help of bone thickness or known characteristics of certain specimens. This identification can aid in investigating which elements were consumed and if there is a pattern. It is important to note that it is unlikely that a taxon could be identified without knowing the element first (Driver 1991:22). Next, the element will then be assigned to a taxonomic group and can range from a species to genus or family. The order of mammals on the species list will follow Meester *et al* (1986). All Bovidae will also be categorised into size classes set out by Brain (1974). The element will then be assigned a side, part, fusion, breakage pattern and sex, where possible.

I will also employ Binomial nomenclature ("the combination of two names, the first being a generic name and the second a specific name, that together constitute the scientific name of a species") (Ride *et al* 1999) used by zoologists and set out by The International Code of Zoological Nomenclature (ICZN). Broader taxonomic groupings will also be of use in this study, such as 'small rodent', 'medium mammal' or even 'large carnivore', as sometimes, where fragmentary specimens are present, or with sites which have a large species list, it can be difficult to do more than group the specimen in one of these groupings (Brain 1974:3). Zooarchaeologists commonly use the abbreviation 'cf.' preceding a taxon in species lists, to indicate that a specimen is possibly the taxon listed after the 'cf.' (Reitz & Wing 2008:37). This study will use the prefix 'cf.'

4.3.2 Side

Each specimen's element that can be identified will be grouped according to side (left or right), and where the specimen cannot be sided (example, vertebrae) it will be stated as irrelevant. In the case where an element cannot be sided, or siding proves too difficult, it will be specified as unknown. Recording the side of an element can be used if estimate MNI (Minimum Number of Individual) numbers need to be calculated (Reitz & Wing 2008:206).

4.3.3 Skeletal part

Once the element has been identified and a side has been given, the part of the specimen will then be determined. For example an innominate (pelvis) fragment has various parts, such as acetabulum, ilium etc. (Fig 5).

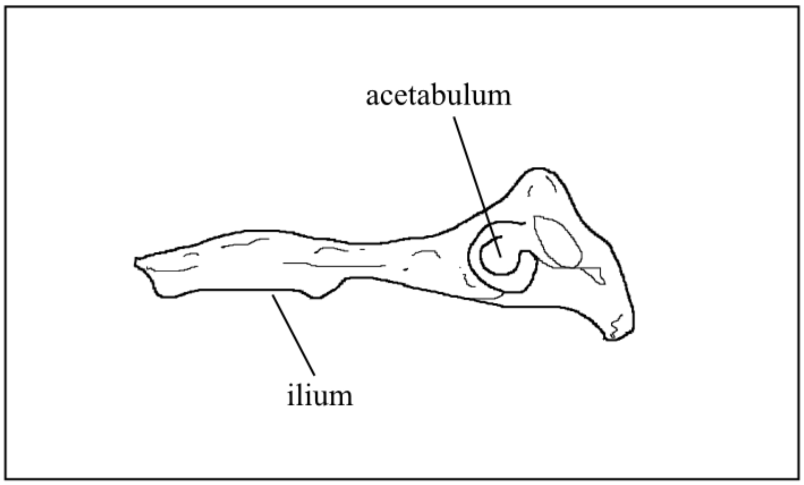

Fig. 4.1: Drawing indicating an innominate's (pelvis) acetabulum and ilium skeletal parts

Skeletal-part representation can help categorising the type of site, for example a kill site that can be indicated by the abandonment of skeletal parts which were undesirable; or secondary sites indicated by selective transporting (Schlepp-effect) of skeletal elements which were the most nutritious, for further consumptions (Bunn 1991:440). For instance, a high concentration of limb bones and the absence of, for example, vertebrae and ribs, could indicate a camp site where limb bones were transported to, for sustenance and further butchering, as the larger and heavier skeletal elements are not present (Bunn *et al* 1988:412). However, the high incidence of cattle limb and skull bones and the low (or none) incidence of the rest of the cattle skeleton can also indicate a cattle post where herdsmen were given these parts by the owners of cattle when they were slaughtered (Stayt 1931 cited in Huffman 2014:120). This would coincide with the presence of near complete wild remains to supplement the diet (Huffman 2014:119-120).

4.3.4 Fusion/Age

Fusion is one way to determine the age of an animal (Reitz & Wing 2008:173-174). Fusion is when the proximal or distal articulation is fused, indicating an adult specimen. Unfused is when the proximal or distal articulation of the specimen has not fused to the rest of the bone, in the case of foetal or neonatal specimens (Crabtree 1990:162). Each fused side of a specimen can be used to indicate aging. Crabtree (1989:109) suggested counting the epiphyses and shaft fragments (after refitting is done) as separate specimens, as I will do in this study. The size (and thus appearance of age) of an animal can fluctuate, depending on environmental conditions (Hillson 2005:214–15). Determining the age of fauna can indicate kill patterns and/or when (seasonality) a specimen died (Crabtree 1990:162). These methods can be employed for both wild and domestic animals. Voigt (1983) set out a way to determine domestic animal age only, using teeth. The age classes set out by Voigt (1983) are based on tooth wear and tooth eruption of cattle and caprines and will be utilised in the study. Thus in this study the age of an animal will be determined through fusion and domesticate tooth eruption, to assist with investigating seasonality patterns.

4.3.5 Breakage

Not all specimens will be whole and most will be broken. Therefore the breakage pattern will be noted, for example spiral fracture, traverse fracture and irregular fracture. The internal structure of a specimen dictates the break (Hill 1976:335). Breakage patterns can occur for various reasons, for example, if the specimen is subjected to cooking practices (breaking specimens to fit into a pot) or consumption (marrow extraction). Larger specimens will have a higher number of impacts per bone than smaller specimens (Fisher 1995). Breakage patterns can indicate faunal usage patterns, for example:

- **Traverse fractures** occur when the break follows at right angles to the shaft (Myers *et al* 1980:484-486). Traverse fractures are characterised as dry bone breaks because the bone is depleted of moisture, which results in diagonal breaks (Johnson 1985:160,168-169). This indicates bones were only broken much later, after death. Another break pattern which indicates this is Irregular fractures:

- **Irregular fractures** can be seen as split line cracks which produce perpendicular, diagonal or right angle offsets and occur mostly as dry bone breaks (Johnson 1985:184-188).
- **Spiral fractures** occur in fresh long-bones (also called 'green' bones) and are characterised by curved (thus spiral) or V-shaped fractures. Spiral fractures are when the bone breaks are at an oblique angle (Meyers *et al* 1980:484) and can occur at sites with human activity (Gautier & Van Waarden 1981:5) and it is thought that they very rarely occur naturally (Myers *et al* 1980:484-486). In 1957, Dart (Dart 1960) proposed that spiral breaks (fresh breaks) occur when hominids break bone to extract marrow at Makapansgat (South Africa), although human activity as a cause is debated (Myers *et al* 1980:487-489; Saunders 1977:105-108). Gautier & Van Waarden (1981:5) indicated that it is possible for discarded trampled bones to have spiral fractures, if the trampling occurs before weathering. Spiral breaks can also indicate that the bone was broken during a nutritive stage (not long after death) (Assefa 2006:59) to access marrow (Gautier & Van Waarden 1981:5; Johnson 1985:191).

Fig. 4.2: Female tortoise from Phoenix 17

4.3.6 Sex

Where possible to determine, specimens in these faunal assemblages will be noted as male or female. Male and female animals differ in size and robusticity, especially seen in specific skeletal elements such as horn core sizes and canine sizes. In tortoises (Fig. 4.2), their epiplastron project forward from the plastron (Reitz & Wing 2008:80) and differences in innominates (pelvis) can be seen in most mammals (Reitz & Wing 2008:80; Uerpmann 1973:312-314). There are also certain elements that are only found in male animals, such as the baculum (Reitz & Wing 2008:80-81).

Differentiating between male and female specimens can infer sex-based exploitation strategies. For example, in Adler *et al's* (2006) study, male and female Caucasian turs differ largely in weight with adult males outweighing females by around 40-50 kilograms, which follows that some of the male skeletal elements are larger than that of the females. The study indicates that both sexes were represented in the archaeological assemblage, which points out that the hunters in this case study did not hunt based on sex preferences and ate according to what was available and in accordance to natural distribution patterns (Adler *et al* 2006:98). In Plug's (2000) study of the fauna from the Limpopo Valley it was indicated that more young male cattle were slaughtered at the sites in the area, than females. This makes sense in regards to herd management practices, as too many young bulls aren't always necessary to maintain the herd (Plug 2000:122).

4.3.7 Pathology

Pathology indicates deformities or irregularities that can be detected on a specimen during analysis. Pathology can include, but is not limited to: graze wear on Bovidae incisors, root resorption, any teeth spacing abnormalities, abscesses, uncommon fusion of bones, extra or abnormal bone growth and deformities (Baker & Brothwell 1980; Bartosiewicz & Gal 2013; Plug & Badenhorst 2006:62; Rothschild & Martin 2006). Pathology could also be congenital anomalies and pathology could indicate poor nutrition or diseases (O'Connor 2000:98-110; Reitz & Wing 2008:170-172). Any pathology present will be indicated and/or drawn and photographed and discussed in further detail where possible.

4.4 Taphonomy

Behrensmeyer (1984:559) when discussing taphonomy in regards to fossils, states that taphonomy is concerned with all processes (organic or inorganic) that affects specimens from the time of death. A specimen goes through transformation stages. These range from: death, to decomposition, to burial and finally to fossilisation. Taphonomy occurs between these four stages, for example, when a specimen is exposed to the elements after death, and is then buried (Behrensmeyer 1984:559). Thus taphonomy is concerned with the fate of organic remains after death (Behrensmeyer & Kidwell 1985:105). The goal of recording taphonomy in zooarchaeology is to identify the human, animal and environmental processes that affected the faunal sample after death, the preservation of the specimens and if specimens were deposited naturally (Brewer 1992:225; Lyman 1982:335). A whole host of literature regarding taphonomy emerged in the 1980's (e.g. Behrensmeyer 1982; Behrensmeyer 1984; Behrensmeyer & Kidwell 1985; Binford 1984; Binford *et al* 1982; Binford *et al* 1985; Binford *et al* 1988; Brain 1981; Bunn 1981; Bunn & Kroll 1986; Gifford 1981; Shipman 1986; Lyman 1982, 1984; 1987a) with the goal to separate taphonomy, which reflects human behaviour, from natural occurrences. All modification marks fall under this category and will also be noted.

4.4.1 Modified as an artefact

Faunal specimens were fashioned into artefacts of all kinds in the past, including bone tools (formal and non-formal), beads (bone, ostrich, marine or freshwater), ivory jewellery and bone needles. Another aspect that needs to be documented is polishing. Polished specimens generally indicate human activity at an archaeological site (Brain 1967a cited in Gifford 1981:415; Brain 1967b cited in Johnson 1985:189). A polished specimen is when there is smoothing or rounding around the edges of a specimen, flat surfaces and protrusions. Polish occurs through abrasion which removes small amounts of a specimen's surface (Fisher 1995:31-33). Specimens can also be 'polished' when being made into a tool (Fisher 1995:31) or 'polished' through fluvial activity and sand abrasion (Brain 1967a cited in Gifford 1981:415; Brain 1967b cited in Johnson 1985:189).

4.4.2 Burnt specimens

Heat can modify and damage a specimen (Shipman *et al* 1984; Lyman 1994:384-393). Burnt bone in archaeological context can either indicate human activity or natural occurrences (Lyman

1994:384). Human activity can include specimens deposited in hearths which are then charred (De Graaff 1961:25; Stiner *et al* 1995:230). Natural occurrences can include veld or bush fires (Clark & Harris 1985:6). In 1981 Brain (1981:54) defined burnt specimens in a two stage colour system, namely, black (charred) and/or white (calcined). Then in 1984 Shipman *et al*, defined a five-stage colour system (Table 4.1) for burnt bones. Specimens that are burnt therefore vary in colour and can sometimes tell us about the burning conditions, for example, grey and white specimens were exposed to over 420°C indicating direct exposure to the heat source (Gilchrist & Mytum 1986).

All degrees of burning will be indicated in this study as closely as possible to a certain colour, as assessing burnt bone based on colour has been found to be effective (Taylor *et al* 1995). However, I will indicate if a specimen is black (charred) or white (calcined) as per Brain's (1981:54) study, as well as any basic colour that I observe, for example, blue or grey. An example of what burnt specimens can indicate comes from Mungo B (Australia), where white burnt bones indicate high temperate hearths and the assemblages were given a temperature burn range of 450-980°C, which is consistent with historic records of Aboriginals cooking practices (Walshe 1998:203). Shipman *et al* (1984:312-313) designated burn temperature and colours of bones that I will utilise (Table 4.1):

Table 4.1: Burn temperature and colours as per Shipman *et al* (1984:312-313)

Stage	Temperature	Colours
I	20 - < 285°C	Neutral white, pale yellow and yellow
II	285- < 525°C	Reddish brown, very dark grey-brown, neutral dark grey, and reddish-yellow
III	525- < 645°C	Neutral black, with medium blue and some reddish-yellow appearing
IV	645- < 94O°C	Neutral white predominates, with light blue-grey and light grey also present
V	940 + °C	Neutral white with some medium grey and reddish-yellow

Not mentioned above is localised burning. Localised burning is when a specimen is burnt less than 50% (Clark & Ligouis 2010:2652) and only one side or section has been affected (Fig. 4.3). Localised burning is a good indicator of cooking and occurs when a section of a bone is not covered by meat during roasting. The exposed part is then burnt and the rest of the specimen is unaffected, thus creating a black specimen with a section or half that has a natural colouring (Driver 2005; Raath 2014:285; Wells 2006:273).

Fig. 4.3: Example of localised burning from Dukwe 25

4.4.3 Carnivore/rodent damage

Carnivore damage can range from puncture marks to scoring, furrows, striations, pits, ragged and chipped edges and grooving of specimens (Fig. 4.4). The damage can vary and depends on which species made the mark, the age of the animal, and which tooth was used (Blumenschine *et al* 1996:496; Capaldo & Blumenschine 1994; Walshe 2000:78). In a study (Bunn 1981) of two faunal assemblages from Botswana that had carnivore damage, it was indicated that the more chewable and meatier skeletal parts (pelvis, ribs and vertebrae) were underrepresented, where parts such as skulls and mandibles were overrepresented (Bunn 1981:151). Where a site has visible carnivore damage, this study should be kept in mind. It could explain if elements like the pelvis is absent from the faunal remains due to carnivore consumption, with overrepresentation of cranial elements.

Fig. 4.4: Example of carnivore gnaw marks on bone from Phoenix 17

Rodent damage is indicated by small grooves made by gnawing (Binford 1981; Fisher 1995:37). Rodents gnaw marks are very common in faunal assemblages as rodents align their incisors by gnawing (Fig. 4.5). This gnawing leaves closely spaced parallel grooves. Gnawing can indicate scavengers on a site and these scavengers could have affected the faunal remains, by moving or destroying the bones (Reitz & Wing 2008:135-136).

Fig. 4.5: Example of rodent gnaw on bone from Phoenix 17

4.4.4 Cut/Chop marks

Cut mark analysis is a common occurrence of faunal analysis (for example Gautier & Van Waarden 1981:4). The degree to which cut marks and chop marks are analysed, however, differs from analyst to analyst, and it depends on the questions being asked of a specific sample. For example, this study, like many other studies (e.g. Plug & Pistorius 1999; Plug & Roodt 1990; Plug 1979) only indicates the presences of cut and chop marks on specimens.

There are differences between cut and chop marks (Fig. 4.6) and they can be distinguished from one another (Abe *et al* 2002:644). Cut marks are made by a sharp tool to remove the flesh from a bone during butchering and cooking practices. Cut marks are elongated, narrow and linear (Fig. 4.6), and are deeper in the middle of the mark and shallower towards the ends (Fisher 1995:19-39). It has been suggested that cut marks on lower-limb bones of large mammals indicate skinning, and cut marks on the ends of long bones can be associated with disarticulation (Binford *et al* 1988:131). For example, cut marks on metacarpals could relate to skinning activities (Bunn & Kroll 1986:434). A chop on the other hand, is broad, short and generally has a V shape (Fig. 4.6). Chopping can occur during butchering to separate articulated bones (Fisher 1995:19; Lyman 1987:281-286). Chop marks can also serve to shatter a specimen to more easily boil for grease rendering and to access the marrow (Abe *et al* 2002:644; Binford *et al* 1988:131). In this study hammerstone percussions or 'notches' are also categorised as chop marks. Notches or hammerstone percussions are semicircular to arcuate (bow/curved) indentations on a long bone's fracture edge that is produced by a 'chop' force that removes a flake or flakes from the bone surface (Capaldo & Blumenschine 1994:730).

Fig. 4.6: Example of cut (A) and chop (B) marks from Phoenix 17

There is no standard approach to cut mark analysis in zooarchaeology (Abe *et al* 2002:645). Analysts also approach the recording and quantifying of cut marks differently, for example recording the count and description of cut marks in a database or drawing of cut marks on a diagram of a specimen (Abe *et al* 2002:644). Unfortunately, both of these are time consuming processes which I will not utilise in this study. This study is also not aimed at exclusively investigating specific butchering patterns, but subsistence and taphonomy as a whole. Nonetheless, all humanly produced cut and chop mark damage will be recorded and distinction will be made between cut and chop marks (indicated in a separate column (Appendix B), and on which species (if possible) and specimen they are found. All cut and chop marks will also recorded on unidentifiable specimens. I will utilise fragment-count data (Abe *et al* 2002:645) where the number of fragments (identifiable and unidentifiable specimens) with cut or chop marks on them will be counted and not the number of cut marks.

4.4.5 Other taphonomic processes

Any other irregularities in the faunal assemblage will be noted, such as weathering, root etching, insect damage and trampling or digested bones; and all of these will be documented where possible:

<u>Weathering</u> – Weathering is when a specimen cracks, splits, disintegrates and decomposes due to agents (chemical or physical) either *in situ* on the surface or *in situ* within the soil, for example repeated cooling, heating, wetting and drying of a specimen (Behrensmeyer 1978:153-154). A burnt bone could also mimic weathering (Fisher 1995:32).

<u>Trampling/Digested</u> – Trampled bones could have a polished and rounded edged look with scratches (Behrensmeyer 1978:154) and trampling can be due to animal or human activity, for example trampling might occur on a house floor or a kraal (Reitz & Wing 2008:139). It should be noted however, that digested and trampled specimens often look similar. A digested bone travels through the digestive tract of an animal and is exposed to acids (Reitz & Wing 2008:136). A digested bone appears to be eroded, smoothed, polished, dissolved or perforated and looks similar to polishing. The distinction between trampled/digested will be made where possible.

Root etching – Root etching is shallow lines that are etched into the specimens by acids of plant roots, pre-burial fungi or lichen (Lyman 1994b:374-377) and consist of multiple lines that are wavy and are easily identified (Fisher 1995:43; Reitz & Wing 2008:139). Root etching can also contribute to the fragmentation of bones at a site (Badenhorst 2008:48).

Insect damage – Insect damage can also be seen on certain faunal remains (Reitz & Wing 2008:142) and will be identified where possible.

4.4.6 Fresh intrusions

Rodents disturb fauna post-depositionally by burrowing into and disturbing sites. It has been shown that rodents burrowing has the greatest impact on sites in natural grasslands, compared to forests and agricultural fields (Bocek 1986:598; Golley *et al* 1975 cited in Bocek 1986:598). Fresh intrusion will be noted where possible by the change in colour in a sample, indicating specimens were deposited later than the rest of the sample or self-introduced (Shaffer 1992:683; Shaffer & Neely 1992:348).

4.5 Measurements/Length

Digital callipers with an accuracy of 0.01mm will be utilised to measure complete specimens identified to species level, in this study. In addition, each identifiable specimen will be measured in one centimetre intervals using graph paper. Measuring specimens in this way could later be divided into fragment size intervals. For example, Voigt (1983) analysed the long bone fragments of Mapungubwe to investigate fragmentation at the site, also placing fragments into one centimetre intervals. Voigt observed that the fragments either fell in 2-4cm or 4-5cm intervals at Mapungubwe and theorised that this was due to favourable preservation conditions (deposit texture), depositional rate and low levels of human and animal activity such as trampling (Voigt 1983).

An example of subsistence behaviour that could be indicated by fragmentation is in Enloe's (1993) study among the Nunamiut Eskimo which showed that longer length specimens indicated bone marrow processing (Enloe 1993 cited in Fisher 1995:57-58). In 1969, Brain placed bone flakes from the Bushman Rock Shelter (Limpopo) into classes according to length and indicted that during the two Stone Age levels most of flakes were between 2.54cm and 5.08cm (one and two inches) long, where during the Iron Age level they were mostly between 0cm and 2.54cm (zero and one inch), and theorised that the high fragmentation of bones in the higher levels were due to activity in the shelter during modern times (Brain 1969:52).

Measurements can thus indicate different subsistence behaviour between sites, preservation conditions and human activity.

4.6 Quantification

Zooarchaeologists use quantification methods to determine the abundance of taxa in a faunal sample. Quantification converts the data into usable numbers to further investigate the sample and provide increased understanding of a particular archaeological site (O'Connor 2000:54). Two of the most common methods of quantification in zooarchaeology are Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI) (e.g. Grayson 1984). NISP is the actual amount/number of specimens of a particular taxon. The MNI is the least number of individual animals that can be derived from specimens.

It is no wonder that quantification methods are so highly debated, as differences in quantification and sample size can lead to different results and make comparisons difficult (for example see Bobrowsky 1982; Casteel & Grayson 1977; Grayson 1973, 1979, 1984; Klein 1980; Klein & Cruz-Uribe 1984; Lie 1980; Lyman 1994; Marshall & Pilgram 1993; Perkins 1973; Steele & Parama 1981; Turner 1982 to name a few). However, both NISP and MNI have their unique strengths and weaknesses (Lyman 2008). NISP is the simplest quantification method as it indicates the identified specimens assigned to a particular taxon (e.g. Grayson 1984; Lyman 2008). Some of the most important shortcomings of NISP are: butchering patterns affect NISP as some taxa transported whole and others not; NISP may differ from taxa to taxa as the analyst might be able to identify the specimens of a certain taxon completely and only a limited number of specimens of another taxon; preservation could affect taxa differently and collection techniques can affect the NISP count (Grayson 1984:20-23).

MNI also has unique strengths and weaknesses. One of the strengths include: whether a taxon was brought back to the community whole or only certain parts, the MNI count would reflect the number of whole individuals (Grayson 1984:28). A strength that makes MNI desirable is that it is not affected by the fragmentation of specimens (Lyman 2008:43-44). There are however numerous weaknesses: aggregation of samples affect the MNI count in such a way that the analyst has no way of knowing if taxa are frequent (Grayson 1984:90); MNI can be calculated via different techniques which makes comparability difficult; taxa which are rare in a sample are overrepresented compared to the NISP count; MNI indicates the minimums, but the actual number of individuals present is not represented accurately (Lyman 2008:45-46); and MNI's cannot be added (Plug & Plug 1990:56). Although, both NISP and MNI have strengths and weaknesses as shown above, the quantification method that will be used in this study is NISP, as it is most basic form of quantification used by zooarchaeologists throughout the world. NISP can be counted as the identifications are being made, which is a straightforward and uncomplicated portion of analyses.

4.7 Regional comparisons and indices

One of the aims in this thesis is to compare the sites, and see if they point to regional/chronological/cultural patterning. Regional comparisons between the sites and other sites in the area can be difficult, as the faunal samples have been analysed by different zooarchaeologists using different procedures (e.g. Brain 1974 *vs*. Driver 2005). However, excluding old collections or collections with different procedures from regional comparisons would be wasteful, reduce the sample size considerably and not give a full perspective of a certain region (Amorosi *et al* 1996:130). However it has been argued that regional comparison are possible (Badenhorst & Driver 2009:1835) using MNI and NISP by using faunal indices. A southern African example of the use of indices is when Badenhorst proposed a Cattle Index (CI) using NISP (2011) and applied it to measure the changes in cattle (*Bos taurus* and cf. *Bos taurus*) and caprine (*Capra hircus*, cf. *Capra hircus*, *Ovis aries*, cf. *Ovis aries*, *Ovis/Capra*, cf. *Ovis/Capra*) representation at Iron Age sites in southern Africa. This CI has since been utilised to measure the changes in domestic livestock in southern Africa faunal samples quantified using MNI (Fraser & Badenhorst 2014).

The Cattle Index is calculated as:

$$Cattle\ Index\ (CI) = \frac{Cattle}{Cattle + Caprines}$$

The Cattle Index provides a value between 0 and 1. Many caprines and few cattle are indicated when the value is closer to 0, and many cattle and few caprines if the value is closer to 1 (Badenhorst 2011:167).

Another index that will be applied in this study is the Game Index (Badenhorst 2015), which was applied to the fauna of Bosutswe (Botswana). The Game Index is calculated as follows:

$$Game\ Index\ (GI) = \frac{Low\ Ranked\ NISP}{Low + High\ Ranked\ NISP}$$

Badenhorst included all high-ranked prey (Equidae, wild Bovidae and Suidae), indeterminate Bovid I and Bovid IV. Low-ranked prey such as hares and wild birds were also included. He excluded indeterminate Bovid II and Bovid III, very large game that are not common in archaeological faunas (giraffes, elephants, hippopotami and rhinoceros), ostriches, small rodents and indeterminate birds. Similarly to the Cattle Index, the Game Index provides a value between 0 and 1. Many low-ranked prey and few high-ranked prey are indicated when the value is closer to 0, and many high-ranked and low-ranked prey if the value is closer to 1

During the analysis of this study Cattle and Game indices (Badenhorst 2011, 2015) are utilised to broaden understanding of the results. However, upon reflection the Game Index that is utilised as is in this study became problematic. The Cattle Index, a heuristic device, utilises only three species and sought to indicate relative utilisation of cattle and caprines. While the Game Index attempts to distinguish between high-ranked and low-ranked animals at archaeological sites and aims to differentiate which of these groups were utilised the most (Badenhorst 2015). One of the difficulties comes in with the classifying of these categories. In the 2014 study, high-ranked prey are defined as all Equidae, wild Bovidae and Suidae, indeterminate Bovid I and Bovid IV. Low-ranked are defined as hares and wild birds. By investigating this list, there are various animal groups that are excluded from this study or not mentioned. Badenhorst (2015) excludes very large game (giraffes, elephants, hippopotami and rhinoceros) and 'smaller' game such as ostriches, small rodents and indeterminate birds. These exclusions are challenging. The large game that is omitted are excluded due to their remains not being "particular common in archaeological faunas from southern Africa" (Badenhorst 2015:45). This presents a problem as these large game animals were most likely hunted. If these remains are removed from the high-ranked prey category then it gives a skewed view of high-ranked prey. These are animals that were utilised by the communities in some way and therefore should be included in an utilisation index of this kind, specifically one that investigates game, their rarity notwithstanding.

The categories also don't take into account other species that are not mentioned, for example, tortoises. However, it is stated that "all specimens identified to species, genera and families were included" (Badenhorst 2015:45) and it is therefore assumed that they are included. Another exclusion is indeterminate birds. Wild birds are indicated as being included in low-ranked prey, but not indeterminate birds. This could be due to the possible presence of chicken in middle and later Iron Age sites (Badenhorst *et al* 2011; Denbow *et al* 2008a), but should then be taken on a site by site basis. At earlier Iron Age sites all birds should be included whether or not they can be identified to species, as these birds are game that were utilised in the past (Morton & Hitchcock 2014). Another bird that is excluded is ostrich. Ostrich eggshell being excluded due to trade is expected, however ostrich bone is not made provision for.

An additional low-ranked prey group that is excluded is small rodents due to them being possible self-intrusions (Badenhorst 2015:44). There is no mention of whether medium or large rodents are excluded or included. Nonetheless all rodents should be included. Only if there is evidence of intrusions, such as 'fresh' bones or near complete skeletons (Morlan 1994:136-138) can it be assumed that these small taxa were self-introduced. Another burrowing species is frog/toad (Plug 1993:102). It should be noted that most burrowing animals don't burrow to die (Morlan 1994:135) and it seems implausible that these two groups would have died underground, and therefore be excluded from this index. Farmers are known to have consumed lizards, insects, snakes, frogs, and other small animals (Schapera 1953; Mönnig 1967) and their exclusion therefore plays into our perception of which animals were utilised in the past. It is this perception that is problematic. Even though the Game Index was found to be problematic, the results are still included in this study in an aim to make regional comparisons between the sites easier as the index takes groups of animals and pares them down to a number. However, these problems will be kept in mind and the index only used on a broad scale.

We as archeologists need to keep in mind that the present day use of animals and our biases cannot be used when investigating past animal use and restrict our knowledge into definitive boxes.

4.8 Biases/Recovery methods

A bias can be defined as the 'skewing of information in some systematic way' (Behrensmeyer *et al* 2000:128) and can be either natural or analytical, for example, incomplete stratigraphic record (natural) or inconsistent sampling methods (analytical) (Behrensmeyer *et al* 2000:128-129). Zooarchaeology deals with a 'sample assemblage', which is the faunal remains recovered during archaeological excavations (Klein & Cruz-Uribe 1984:3). The larger the sample, the more information can be extracted (Peres 2010:17). There are also other potential biases that can affect zooarchaeological samples, such as taphonomic biases, for example, the tendency for small specimens to be underrepresented (Behrensmeyer *et al* 2000:129); bone breakage could also affect a sample, for example a sample could be heavily fragmented which could lead to problematic identification and give a skewed view of the species list (Badenhorst & Plug 2011:90).

Recovery methods is another bias, for example, at Simunye (Swaziland) there was a lack of screening during excavations which resulted in 62% of the faunal assemblage being identifiable, which is a very high percentage (Badenhorst & Plug 2002; Badenhorst & Plug 2011:89). Understanding the recovery methods of the assemblage can also assist with the interpretation of the sites, for example if a large mesh size was used, smaller animal remains would not have been included in the sample, which would show that smaller animals were not utilised. This would make the results inaccurate. Smaller mesh size increases delicate faunal remains, such as fish. These small faunal remains can increase the insight into the archaeological site (Peres 2010:23).

These biases will be taken into account and avoided where possible. One way to lessen bias in zooarchaeology is to know as much as possible about the excavation process: methods and techniques used; origin of the samples (features, surface collection) and to analyse all material excavated and not just those deemed to be identifiable (Peres 2010:18).

4.9 Conclusion

In conclusion, the faunal remains from the four Iron Age sites from eastern Botswana will be analysed using known methodologies. All specimens will be documented where possible, with regards to its size, age, taphonomy, measurements and sex. This documented data will then be used to infer patterns on a site level, as well as in the broader landscape regarding subsistence habits, animal utilisation and the social roles of animals. The next chapter presents the data that will ultimately be utilised to answers these questions.

CHAPTER 5: RESULTS

5.1 Introduction

This chapter will present the faunal results of Phoenix 17, Phoenix 18, Thabadimasego and Dukwe 25 in detail. This includes an overview of each site's excavation history and features. The faunal remains amount to a joint 20 929 specimens and the remains were quantified using NISP. All four sites' results will be presented separately in this chapter and discussed and compared with one another in chapter 6.

5.2 Phoenix 17

Phoenix 17 is a 9th century AD site situated close to Francistown. Ceramics found at Phoenix 17 were of typical Zhizo design and early Leopard's Kopje pottery was also discovered, as well as two fragments of a similar style to Toutswe tradition pottery (C. van Waarden pers. comm.). The site is about 100m in diameter with seven possible kraals, five middens and 39 burnt dhaka structures. During excavations a 10x10m grid was set up from an arbitrary datum point. All surface features were mapped and 77 systematic shovel test pits (STP) were performed in the 10x10m grid (see Fig. 5.3). A 5mm mesh was used during sorting, and at a later stage a mosquito screen was utilised inside the large mesh once glass beads were being found.

Of the possible seven kraals, two large kraals were excavated, as well as two midden. The two kraals had four 1x2m trenches which were later extended. Kraal B (see Fig. 5.1) had vitrified dung and burnt wood indicating that the kraal had a pole fence around it and was burnt. The kraal excavations totalled $12m^2$ and the midden deposit excavations $4m^2$. Eight burnt dhaka structures were excavated totalling $61m^2$ and structure 8 was excavated separately (C. van Waarden pers. comm.). When a grader removed deposits from kraal A, two human adult burials were uncovered. The one adult was determined to be a male and wore a copper bangle. The other individual wore an arm bangle made from shell beads (C. van Waarden pers. comm.).

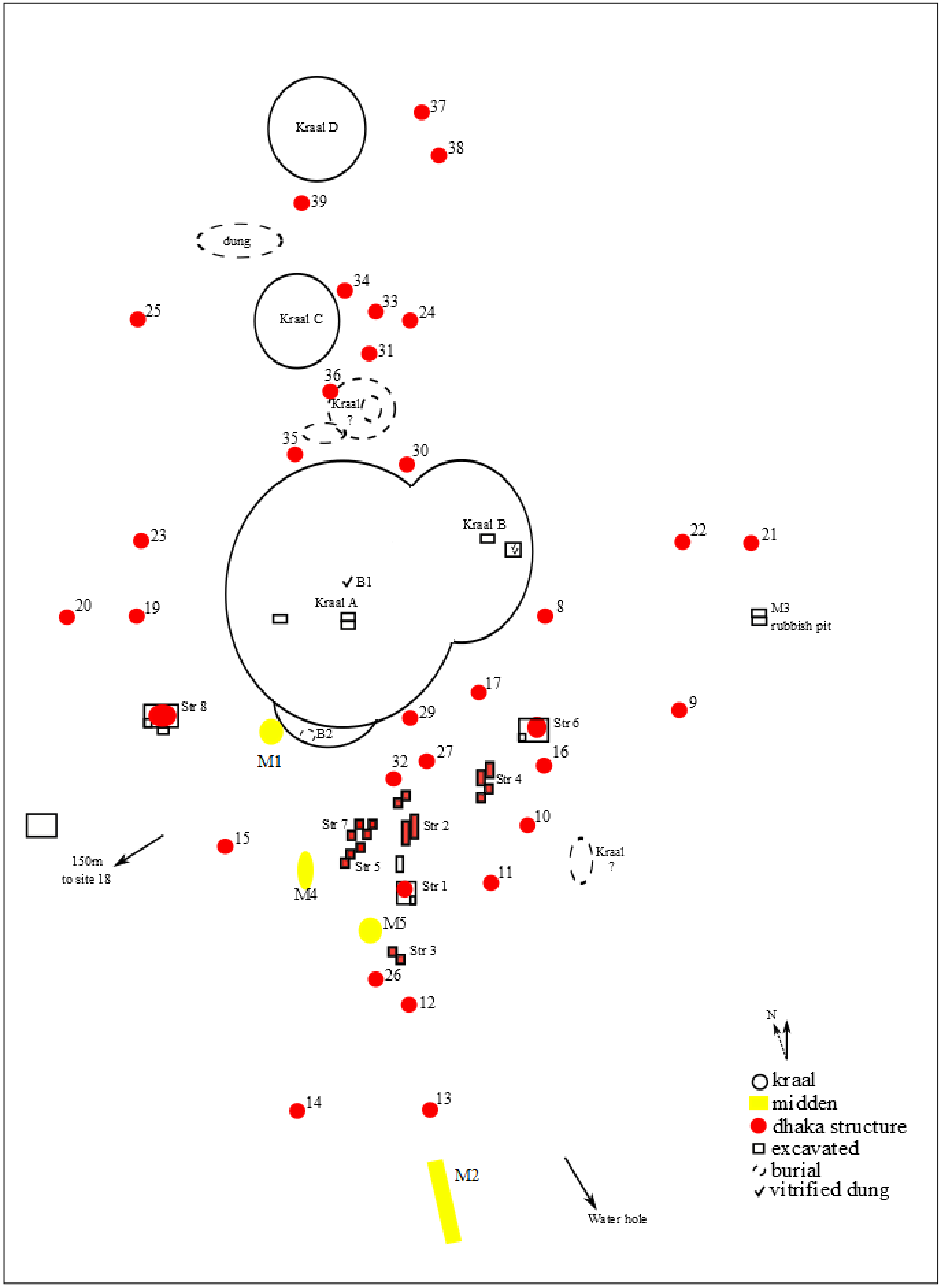

Fig. 5.1: Phoenix 17 site plan (redrawn from the original provided courtesy of C. van Waarden)

The grader also uncovered small dung deposits and burnt dhaka structures. In total eight of the 39 of the burnt daga structures (see Fig. 5.1) were excavated. These structures were most likely used for storage of crops. One of the structures (structure 8), had multiple burnt floors which could mean renewing of floor space. (C. van Waarden pers. comm.). There is no evidence of multiple occupations and thus the site was treated as a continuous occupation site (C. van Waarden pers. comm.).

All features that were excavated will be discussed below. The distribution of faunal remains between the different features could indicate if there was preferential usage of certain species at certain areas of the site.

5.2.1 Sample size

Phoenix 17 comprises of a total of 4250 specimens of which a total of 936 specimens were identifiable and 3314 specimens were unidentifiable.

5.2.2 Taxa present

A variety of taxa were identified from the sample (Table 5.1). Possible leopard tortoise (all specimens were shells), cattle and caprines stand out as the species with the highest NISP value. The hippopotamus is worth mentioning due to its size and formidability. However, hippopotamus isn't the only large taxa appearing in the species list, plains zebra and possible plains zebra are also present.

Table 5.1: Phoenix 17's taxa list

Taxa	**Common name**	**Phoenix 17 NISP**
Homo sapiens sapiens	human	18
Carnivora small	small carnivore	2
Equus quagga	plains zebra	1
cf. *Equus quagga*	possible plains zebra	1
Phacochoerus africanus	warthog	3
Hippopotamus amphibius	hippopotamus	1
Bos taurus	cattle	59
cf. *Bos taurus*	possible cattle	31
Ovis aries	sheep	5
Capra hircus	goat	2
cf. *Capra hircus*	possible goat	1
Ovis/Capra	caprine	44

Table 5.1 cont.

Taxa	**Common name**	**Phoenix 17 NISP**
cf. *Ovis/Capra*	possible caprine	5
Sylvicapra grimmia	common duiker	1
cf. *Aepyceros melampus*	possible impala	2
Bovid I (small)	small bovidae	6
Bovid II (medium)	medium bovidae	101
Bovid II (medium) – non domestic	medium non-domestic bovidae	4
Bovid III (large)	large bovidae	122
Bovid III (large) – non domestic	large non-domestic bovidae	3
Pedetes capensis	springhare	8
Cryptomus hottentotus	mole rat	32
Rodent small	small rodent	50
Rodent medium	medium rodent	2
Lagomorpha	hare/rabbit	3
Lepus sp.	hare	1
Mammal small	small mammal	23
Mammal medium	medium mammal	122
Mammal large	large mammal	108
Aves small/medium	small/medium bird	1
Aves medium	medium bird	1
Snake small	small snake	2
Snake medium	medium snake	1
Reptile small	small reptile	1
Reptile small/medium	small/medium reptile	4
cf. *Geochelone pardalis*	possible leopard tortoise	134
Tortoise	tortoise	25
Bufo/Rana	frog/toad	6
Total		**936**

As shown, a wide range of different sized animals and a mixture of domesticated and wild animals were identified at Phoenix 17. The species indicate that Phoenix 17 possibly had hunted, gathered and domesticated resources. Game and gathered resources[3] make up 29% (n=270) of the sample[4], domesticates 16% (n=147), indeterminate mammals and Bovidae[5] 51% (n=482), and self'-introduced animals 2% (n=19). When the above percentages are studied, game appears to have been the main meat contributor to the community’s diet, with domesticates second.

The game and gathered resources (29% (n=270)) indicates a community that relied on these resources to a large extent. Hunting could have been one of the main activities at Phoenix 17, as

[3] Identified wild species that would have required hunting or gathering.
[4] All the following percentages reflect percentage of identifiable bones. Unless otherwise stated or when referring specifically to unidentifiable specimens.
[5] Indeterminate mammals and Bovidae comprises of all specimens where size could be perceived, but not specific family, genus or species. And is therefore uncertain whether the specimen was game or domesticated.

there were six species identified that required hunting and one of these (hippopotamus) required considerable hunting skills (Plug 2000:123-124). Although it cannot be ruled out that this one specimen was not scavenged instead of hunted, the specimen was burnt black, which indicates that it was most likely consumed at the site. Other large animals present in the sample were plains zebra[6]. The presence of these grazers (Smith *et al* 2007:118) indicates open savanna environments (Plug 2004). The same is indicated by impala (Maggs 1982:112). Plains zebra along with impala aggregated in large herds (Plug 1997:101). Other grazers included warthogs which live in small family units (Reijnders 1993:73). In contrast, duikers that are solitary browsers and require shelter for their offspring, are present in the sample. Duikers have been found at many other Iron Age sites (Maggs 1982:112; Nelson 2008:50; Plug & Badenhorst 2001; Smithers 1983). The inclusion of such varied animal behaviors could indicate various environments being utilised.

There were also other smaller wild prey present in the sample, including gathered prey. Leopard tortoises were most likely utilised to supplement the community's diet (Badenhorst & Plug 2004/2005:3). Leopard tortoise and tortoise form a joint 17% (n=159) of the taxa at Phoenix 17, and their representation at Iron Age sites are not uncommon (Plug 2000:124). These shells could also have been traded, exchanged or bartered for (Plug 2000:124). It should also be noted that three plastrons from Kraal B were burnt on one side, but not on the other. This could indicate roasting/cooking of these specimens by placing them in fires (Sampson 1998:998-999; Thompson & Henshilwood 2014).

There were also a few species in the sample that could have been non-contributors (Plug & Badenhorst 2006:62-63) to the diet, namely, mole rat and rodent (small and medium). These species could have been self-introduced as they are burrowing animals (Plug 1993:100). However, as discussed (see chapter 3) it cannot be assumed that these animals did not contribute to the diet (Stahl 1982:827). Farmers are known to have consumed snakes, insects, frogs, lizards and other small animals (Schapera 1953; Mönnig 1967). Only if there is evidence of intrusions, such as 'fresh' bones or near complete skeletons (Morlan 1994:136-138) can it be assumed that these small taxa were non-contributors. At Phoenix 17, 32 NISP mole rat specimens were identified as fresh

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[6] For discussion purposes, specimens classified as 'cf' (e.g. cf *Ovis Aries* – possible sheep) will be combined with their confirmed counterparts (e.g. *Ovis Aries* - sheep) where necessary.

during analysis, and therefore it can be assumed that mole rat(s) were not part of the diet at Phoenix 17 and rather intrusions. Another burrowing species is frog/toad (Plug 1993:102), but with only 6 NISP and none of them deemed 'fresh' during analysis, self-introduction might not be the only answer. Both the small rodent group and frog/toad had more juveniles than adults, which could indicate another aspect: burrowing could have been to give birth. However, the most burrowing animals don't burrow to die (Morlan 1994:135) and it seems implausible that these two groups and their young would have died underground.

Other contributors to the diet may have been small carnivores, snakes, bird and reptiles (Plug & Badenhorst 2006:62-63). An example of small carnivores are mongooses. Carnivores such as these could have been utilised for ritual (Plug 1988 cited in Plug 1993), traded, hunted, skins worn (Brown 1926:51 cited in Plug & Badenhorst 2006:62-63) or opportunistically caught and consumed (Grivetti 1981). Snakes could have been self-introduced or eaten opportunistically. The snakes could also have been used in rainmaking rituals (Schapera 1971:35-42 cited in Plug & Badenhorst 2006:63) or used in medicine (Grivetti 1976). Birds were also found in the sample and may have been caught with snares or nets (Wadley 2010:180-181). Feathers of birds could be used as ornaments, decorations and trade (Morton & Hitchcock 2014). Small to medium reptiles could have been self-introduced (Plug 2000:118), however a very small number (n=4) of reptiles does not indicate this, instead it is possible that these reptiles were consumed (Schapera 1953; Mönnig 1967).

5.2.3 Features: identifiable and unidentifiable distribution

When taxa distribution by feature (Table 5.2) is investigated, all specimens that could not be identified to a specific family, genus or species were excluded. All NISP values higher than 10 are in bold. Kraal A has a large NISP number of mole rat, tortoise and human remains. Kraal A also has the highest number of different species. The high number of mole rat remains are most likely due to intrusions. Kraal B and Midden 3 have high numbers of cattle and possible cattle, with Midden 3 showing a large number of possible leopard tortoise, cattle and caprines. Human remains appear in Burial 1 as well as Kraal A. Burial 2, Structure 5, Structure 7, Structure 9 and Surface have no specimens that could be identified to species level, most likely due to sample size at these features.

Ultimately these results don't indicate much, except that the east side of the site contained the most domesticates and that middens only contained domesticates and tortoise.

Table 5.2: Phoenix 17's identifiable and unidentifiable specimen distribution

Features	**Identified totals**	**Percentages**	**Unidentified totals**	**Percentages**	**Specimen totals**	**Specimens present (total NISP)**
Burial 1	42	**4%**	82	**2%**	124	human (1), cattle and possible cattle (3), caprine and possible caprine (2)
Burial 2	5	**2%**	8	**0%**	13	-
Kraal A	349	**37%**	2126	**64%**	2475	**human (17)**, warthog (3), cattle and possible cattle (3), caprine (1), common duiker (1), possible impala (2), springhare (7), **mole rat (32)**, hare/rabbit (4), hare (1), possible leopard tortoise (3), **tortoise (19)**, frog/toad (6)
Kraal B	134	**14%**	259	**8%**	393	**cattle and possible cattle (30)**, plains zebra (1), hippopotamus (1), sheep (4), goat and possible goat (2), caprine (5), springhare (1), possible leopard tortoise (9), tortoise (6)
Shovel Test Pits	18	**2%**	31	**1%**	49	cattle and possible cattle (4), possible caprine (1), possible leopard tortoise (1)
Midden 1	29	**3%**	0	**0%**	29	possible cattle (1), caprine and possible caprine (9), goat (1)
Midden 3	324	**35%**	572	**17%**	896	**cattle and possible cattle (49)**, sheep (1), **caprine and possible caprine (20), possible leopard tortoise (121)**
Structure 1	13	**1%**	100	**3%**	113	caprine and possible caprine (2)
Structure 5	3	**0%**	20	**1%**	23	-
Structure 6	1	**0%**	0	**0%**	1	possible plains zebra (1)
Structure 7	4	**0%**	17	**1%**	21	-
Structure 8	12	**1%**	97	**3%**	109	caprine (9)
Structure 9	2	**0%**	0	**0%**	2	-
Surface	0	**0%**	2	**0%**	2	-
Total	**936**	**100%**	**3314**	**100%**	**4250**	

5.2.4 Domesticates and game

When the Cattle Index is calculated for Phoenix 17, the value is 0.61, indicating that cattle slightly outnumber caprines. Phoenix 17's domesticate animals comprise of 61.22% (n=90) cattle and 38.78% (n=57) caprines (Fig. 5.2), with cattle comprising 9.62% of the total identifiable sample and caprines 6.09%. This indicates that cattle were more prominent than caprines at Phoenix 17. This is unusual for a 9th century Iron Age site (Badenhorst 2011; Fraser & Badenhorst 2014).

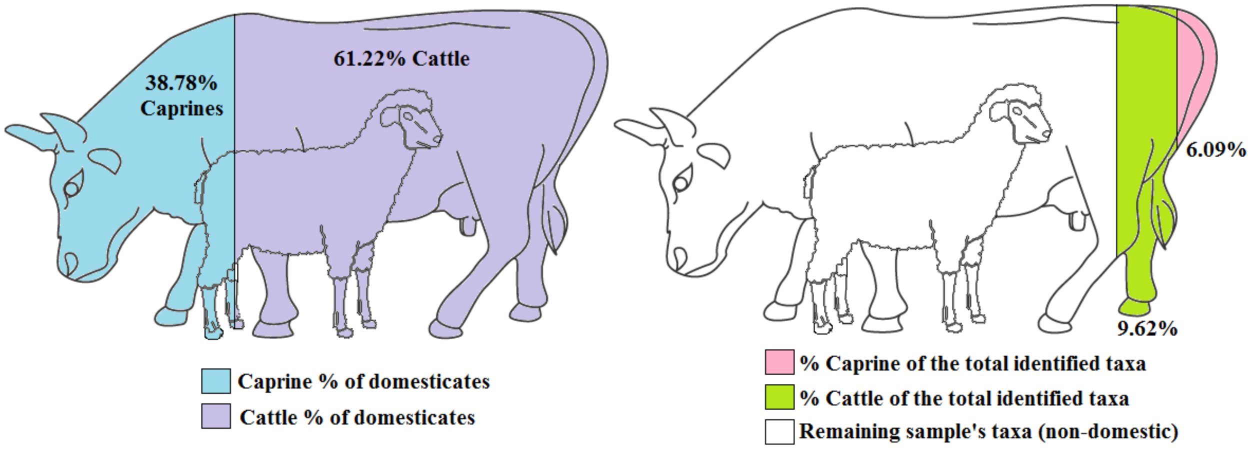

Fig. 5.2: Phoenix 17's domesticate representation

The Game Index value for Phoenix 17, is very high (0.92), indicating a higher number of low-ranked prey compared to high-ranked prey at Phoenix 17. The higher number of low-ranked prey is mostly due to the high NISP numbers of leopard tortoise.

To mitigate the shortfalls of the Game Index domesticates vs. game will be pared down further. When investigating domesticates vs. game (Fig. 5.3), there is a high percentage of hunted and gathered game (29% (n=270)). Here the question of hunting techniques such as trapping, snaring and other hunting methods needs to be examined, as well as hunting preferences. As discussed (Chapter 3) there are numerous reasons for hunting. At Phoenix 17, the principal reason seems to be sustenance, due to the low number of domesticates present. Communal hunting could have taken place at Phoenix 17, especially with regards to taxa that aggregated in herds, such as impala and plains zebra (Plug 1997:101) or dangerous animal such as the hippopotamus (Morton & Hitchcock 2013:2,17; Plug 1996). Plains zebra could have been trapped during the Iron Age (Plug 1996), as it was still being done in the 19th century by the Basotho (Badenhorst & Plug 2004/2005:3) and was recorded in Botswana by Methuen and Livingston (Campbell 1998:26). Duikers were captured using pits and snares by the G/wi. The use of snares indicates a knowledge of prey behavior as setting snares that catch prey successfully involves observing and understanding prey (Wadley 2010:181). Snaring usually involved small animals such as, hares, birds and small carnivores (Plug 1996; Wadley 2010), which could account for the small carnivore, springhare, hare/rabbit and birds at this site. These could also have been caught through garden hunting (Linares 1976 cited in Reitz & Wing 2008:92). And lastly, gathering of other small dietary sources, such as leopard tortoise and tortoise (Plug 1989:67) seems to have been an abundant activity at Phoenix 17. All of the above supports the notion that the people at Phoenix 17 were skilled hunters who used an array of hunting strategies. This is suggested by the wide range and size of animals that could not have been present in the sample simply by chance, but rather people who were adapt in hunting and not only interested in agro-pastoralism.

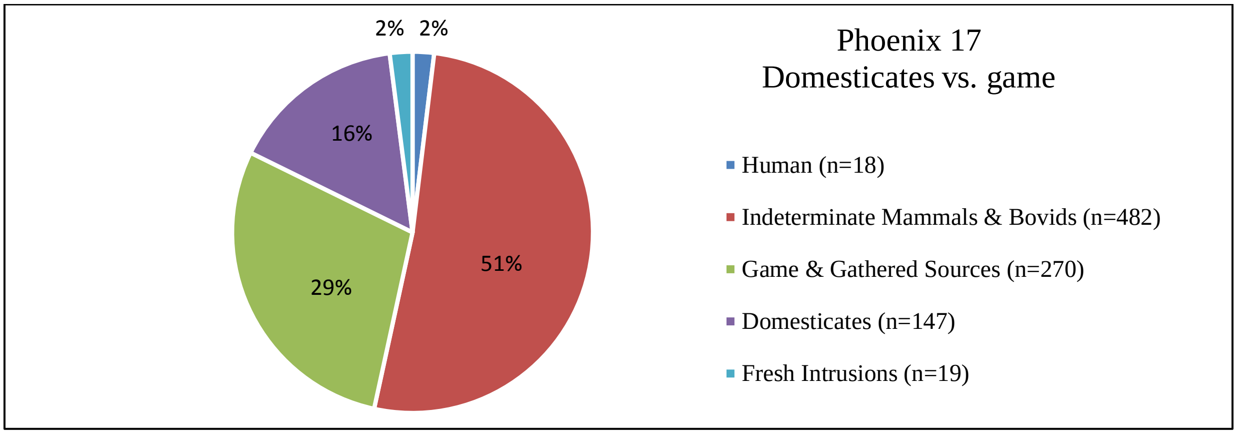

Fig. 5.3: Phoenix 17's domesticates vs. game

5.2.5 Taphonomy, pathology and intrusions

A total of 959 specimens (22.56% of the sample) from Phoenix 17 were burnt (Table 5.3) and a total of 10.99% of the assemblage has taphonomy present (Table 5.4). Weathered/sun bleached specimens stand out as occurring most frequently (59.10% of the taphonomy sample) with greenish/copper staining (8.99%) second. Cut marks also have a similar percentage of 8.57%. The rest of the taphonomy also feature but less than 5%. There is only a 2.47% difference in taphonomy occurring between identifiable and unidentifiable specimens, which will be discussed below. Fresh intrusion make up 0.45% of the sample (Table 5.5) and all fresh intrusions were identifiable (small rodent and mole rat), as well as all trampled/digested specimens.

Table 5.3: Phoenix 17's burnt specimens

Colour	**Identifiable**	**Unidentifiable**	**Total**
Pink staining	-	1	1 (0.10%)
Localised	8	27	35 (3.61%)
Brown	34	162	196 (20.21%)
Black	37	154	191 (19.69%)
Blue	2	24	26 (2.68%)
Grey	31	194	225 (23.20%)
White	12	284	296 (30.52%)
Total	**124**	**846**	**970 (100%)**
	2.92% of 4250 sample total	**19.91% of 4250 sample total**	

Table 5.4: Phoenix 17's taphonomy

Taphonomy	**Identifiable**	**Unidentifiable**	**Total**
Cut mark	25	15	40 (8.57%)
Chop mark	18	6	24 (5.14%)
Carnivore gnaw	18	7	25 (5.35%)
Rodent gnaw	3	11	14 (3%)
Greenish/copper staining	2	40	42 (8.99%)
Insect damage/drill holes	1	2	3 (0.64%)
Trampled/digested	-	19	19 (4.07%)
Root etching	3	1	4 (0.86%)
Weathered/sun bleached	103	173	276 (59.10%)
Ashy deposit	3	1	4 (0.86%)
Calcide deposit	5	11	16 (3.43%)
Total	**181**	**286**	**467 (100%)**
	4.26% of 4250 sample total	**6.73% of 4250 sample total**	

Table 5.5: Phoenix 17's intrusions

Intrusion	**Identifiable**	**Unidentifiable**	**Total**
Fresh intrusion	19	-	19 (100%)
	0.45% of 4250 sample total	**0% of 4250 sample total**	

Post depositional processes and taphonomy attrition both contribute to the morphing and fragmentation of skeletal elements to the point of non-identification. It should be noted that weathered and burn marks can contribute to fragmentation and hide cut/chop marks. Phoenix 17 has a near equal number (2.47% difference) of taphonomy between identifiable and unidentifiable specimens, indicating that taphonomy might not have contributed to specimens being unidentifiable. Weathered/sun bleached specimens make up a large percentage of taphonomy (59.10% (n=276)), but both identifiable and unidentifiable specimens' show signs of weathering. There is however, a much larger percentage (19.91%) of burn processes on unidentifiable specimens, than identifiable (2.92%). This indicates that it is possible that the burning of bones attributed to the sample's fragmentation and thus contributing to these specimens being unidentifiable.

Burning can also indicate the temperature of the heat sources (Badenhorst & Plug 2004/2005:4). Using Shipman *et al*'s (1984) five-stage colour system, heat sources between 285° C and 645°C is indicated and using Gilchrist & Mytum (1986) it is further confirmed most of the specimens were burnt in temperatures higher than 420°C, due to the white and grey coloring. These temperatures require very hot fires (Badenhorst & Plug 2004/2005:4), such as wood fires (Plug 1997:98). There were also a few localised specimens that indicate cooking and roasting (Driver 2005; Raath 2014:285; Wells 2006:273) of medium to large mammals and Bovidae as well as at least one springhare. Furthermore, a noticeable observation during analysis, was that there were two tortoise shells found in Kraal B that were burnt on the one side of the shell, but not on the other. This together with localised burning and the number of burnt specimens and species could indicate consumption through cooking and roasting of most animals at Phoenix 17.

Green staining on specimens (8.99% (n=42)) at Phoenix 17 indicates there was possible copper working on site (Plug & Roodt 1990:50) or that the community utilised copper artefacts which stained the bones. The carnivore gnaw (5.35% (n=25)) damage at Phoenix 17 could have been due to scavengers such as dogs (*Canis* sp.). It has been indicated (Badenhorst & Plug 2004/2005:4; Plug 1997:98) that almost all Iron Age people kept domestic dogs which could explain carnivore damage. However, the lack of carnivore gnaw on the bulk of the sample indicates that scavenging due to carnivores or rodents (3% (n=14)) was not common and could indicate animal remains that were not easily accessible to these scavengers.

5.2.6 Taphonomy distribution

A pattern emerges when taphonomy is examined in relation to the features excavated (both identifiable and unidentifiable specimens). Kraal A has every single taphonomy, and Kraal B has eight of them. Weathered/sun bleached specimens can be found in seven of the features (Table 5.6). In contrast, the structures have hardly any taphonomy, with only a few weathered/sun bleached specimens. Midden 3 has the most weathered specimens of all the features. However, this pattern is most likely due to sample size, as the structures did not contain a lot of faunal remains

(6.33% of the total sample), when compared to Midden 3 (21.08%) or it could be due to lack of exposure of specimens at structures, compared to middens. Surface finds comprise of only two specimens and it is not surprising that these do not have taphonomy.

Chop and cut marks make up a joint 1.5% of the total faunal sample. Cut marks are more frequent that chop marks at Phoenix 17. Both marks can be found on bones from Burial 1, Kraal A, Kraal B, Shovel Test Pits and Midden 3. Midden 3 has a large number of cut marks and a few chop marks. Kraal A and B have the most chop marks, with Kraal A having more cut marks in NISP value than Kraal B. Structure 5 and Midden 1 only have cut marks and no chop marks. Butchering marks indicate some butchering by the people of Phoenix 17, in the form of defleshing and skinning (Badenhorst & Plug 2004/2005:4; Plug 1997:103; Plug & Badenhorst 2006:65). With so few chop marks at Phoenix 17, it could be inferred that most of the disarticulation of elements took place at the kill site (Fisher 1995:19; Lyman 1987:281-286) and the chop marks present at Phoenix 17 could have been due to shattering a specimen for boiling during grease rendering or to access marrow (Abe *et al* 2002:644; Binford *et al* 1988:131).

There is also a clear difference in the distribution of carnivore and rodent gnaw damage. Carnivore gnaw alone appears in larger numbers in Midden 3. Rodent damage only occurs in Kraal A and Kraal B, and is more frequent than carnivore gnaw damage in these features. However, it should be noted that most of the taphonomy values are small (less than 50) and therefore does not provide a clear picture due to sample size.

Burnt specimens make up 22.56% of the sample, making it a larger sample to infer information from. When all the burn colour ranges, by frequency and distribution, are investigated (Table 5.7), at Kraal A, Kraal B and Midden 3 all six different burn/colours are present, with Kraal A having an additional pink specimen. White specimens are the most predominant, and grey second. Kraal A has high numbers of black, brown, grey and white. Burial 2 only has grey specimens and Midden 1 only has one specimen that was burnt (localised). This burn pattern indicates that there could have been deliberate deposition of burnt faunal remains at the two kraals and Midden 3, with scattered incidental burnt remains at the other features. The depositions of fauna at these areas conform to their functional roles during the Iron Age (e.g. Huffman 2007).

Table 5.6: Phoenix 17's taphonomy feature distribution by feature

Features	Green	Digested/ trampled	Insect damage	Root etching	Weathered/sun bleached	Ashy deposit	Calcide deposit	Chop mark	Cut mark	Rodent gnaw	Carnivore gnaw
Burial 1				1			7	4	1		1
Burial 2							3				
Kraal A	39	19	2	2	17	2	6	8	10	7	3
Kraal B	3			1	5	1		7	5	7	3
Shovel Test Pits						1		1	6		
Midden 1					7				2		2
Midden 3			1		243			4	15		16
Structure 1					1						
Structure 5									1		
Structure 7					1						
Structure 8					2						
Total	**42**	**19**	**4**	**4**	**277**	**4**	**16**	**24**	**40**	**14**	**25**

Table 5.7: Phoenix 17's burnt specimen distribution by feature

Feature	Localised	Pink	Brown	Grey	Black	Blue	White
Burial 1	1		7	6	2		3
Burial 2				12			
Kraal A	17	1	156	176	106	18	256
Kraal B	2		22	25	27	2	28
Shovel Test Pits			1		3		
Midden 1	1						
Midden 3	6		5	5	22	4	9
Structure 1			2		3	2	
Structure 7	1			1	1		
Structure 8	7		3		27		
Total	**35**	**1**	**196**	**224**	**190**	**26**	**292**

5.2.7 Breakage patterns

Bone breakage patterns can also show faunal usage by indicating the difference between fresh and dry bone breaks (Capaldo & Blumenschine 1994; Haynes 1983; Myers *et al* 1980). When the long bones' (humerus, radius, ulna, metacarpal, femur, tibia, metatarsal and metapodials) breakage patterns is investigated (Table 5.8 & Fig. 5.4), spiral breaks occur 25% (n=56) of the time, which indicates human consumption. Dry bone breaks (traverse and irregular breaks) occur 61.29% (n=156) of the time, indicating the bones were only broken much later, after death. Irregular breaks (52.34%) stand out as the most common breakage pattern. Transverse breaks feature at 8.98%, with intact specimens making up 12.50% of the sample. Broken during excavation only occurs

0.39% of the time and carnivore breaks feature at 0.78%. These results indicate a site where bones were utilised and broken in different ways during different stages after death.

Table 5.8: Phoenix 17's breakage of long bones

Spiral (S)	64 (25%)
Transverse (T)	23 (8.98%)
Irregular (V)	134 (52.34%)
Intact (I)	32 (12.50%)
Carnivore (C)	2 (0.78%)
Fashioned into an artefact (A)	0 (0%)
Broken during excavation (E)	1 (0.39%)
Total	**256 00%)**

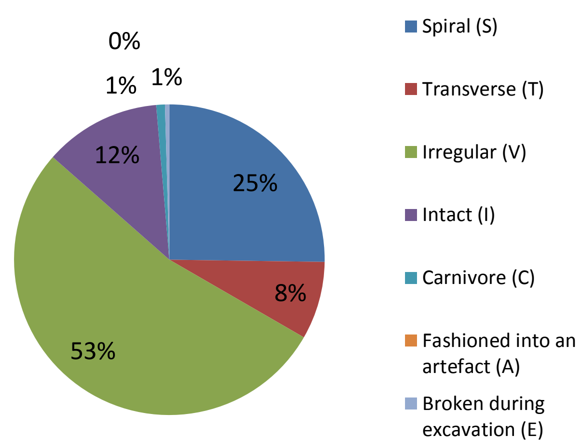

Fig. 5.4: Phoenix 17's breakage of long bones

5.2.8 Length

When all Phoenix 17's identifiable specimens are investigated by length, it is indicated that most specimens from Phoenix 17 measure from 1 to 5cm in length, with only a few measuring from 10 to 20cm (Fig. 5.5). No specimens measure between 17 and 17.99cm. The length of the specimens at Phoenix 17 indicates that the bones were very fragmented, indicating possible poor preservation conditions (Voigt 1983) and a site that was exposed to the elements (Plug 1979:132). This is supported by the percentage of weathered bones/sun bleached specimens (59.10%).

5.2.9 Aging

Age classes can be assigned to domesticate animals where teeth eruption stages are clear. Phoenix 17 has 54 cattle samples and 42 caprine samples. There is a combination of cattle ages (Table 5.9), ranging from Class II to Class VIII. Class III the most predominate age class, with Class VIII second. Caprines age classes range from Class II to Class VII, and seem to cluster around Class IV and V.

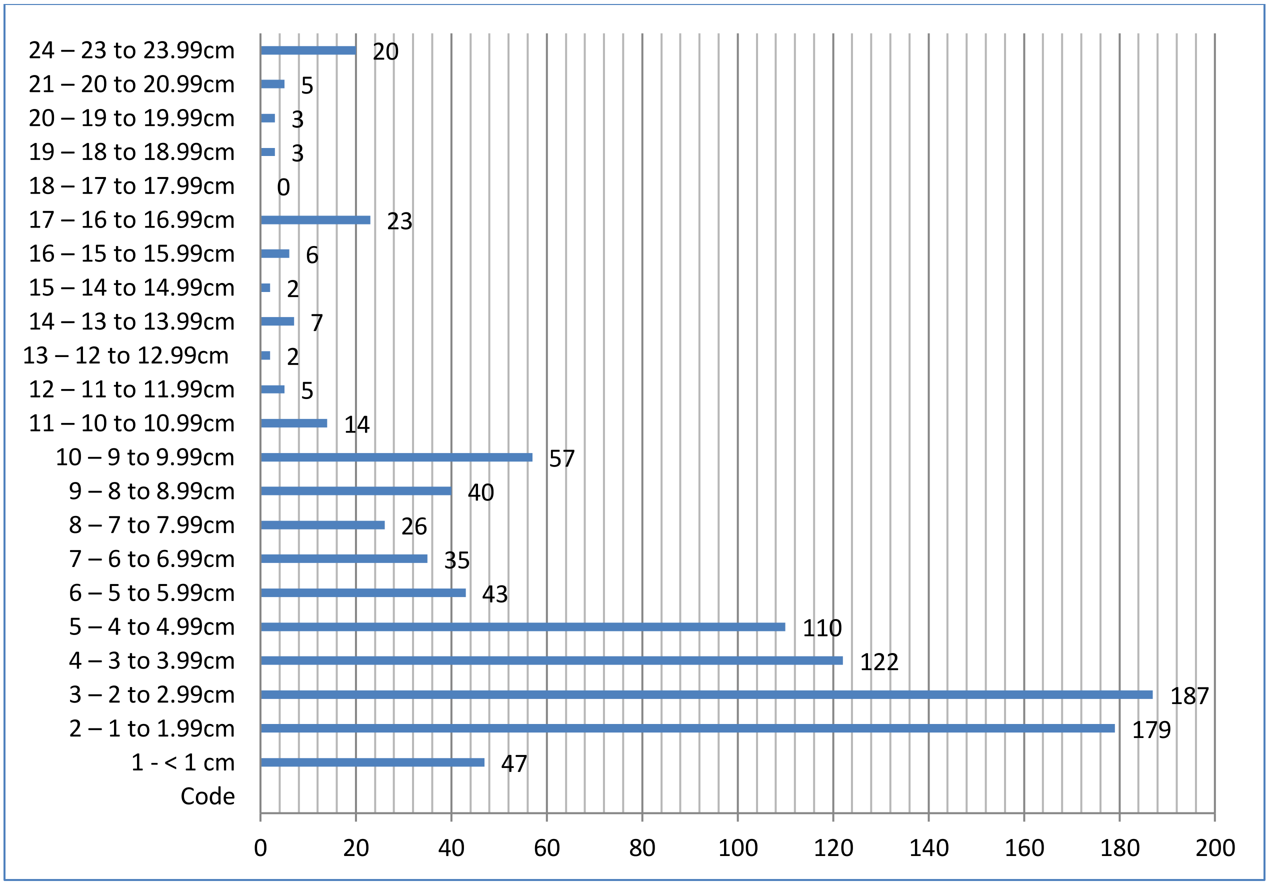

Fig. 5.5: Phoenix 17's length of identified specimen

Table 5.9: Phoenix 17's cattle and caprines age classes (adapted from Voigt 1983:47-53)

Cattle Classes	**Cattle NISP**	**Caprines Classes**	**Caprine NISP**
Class I (0-6 months)		Class I (0-3 months)	
Class II (6-15 months)	5	Class II (3-10 months)	13
Class III (15-18 months)	20	Class III (10-16 months)	
Class III/IV (18-30 months)		Class III/IV (10-30 months)	1
Class IV (18-24 months)		Class IV (16-30 months)	14
Class V (24-30 months)	3	Class V (30-60 months)	13
Class VI (30-42 months)	11	Class VI (Over 60 months)	1
Class VII (Over 42 months)		-	
Class VIII	15	-	
Class IX		-	
Total Cattle	**54**	**Total Caprines**	**42**

Tooth eruption stages indicate that cattle and caprines were slaughtered at all ages at Phoenix 17, which could indicate large enough herds, so that younger animals could be culled due to their tender meat if so desired (Plug 1993:106). The age classes of cattle indicate a near equal mortality rate of younger and older cattle at Phoenix 17. The caprine age classes indicate that older caprines were being killed (67% (n=28)). This could have been due to preference. The death of neonate and juvenile individuals of both cattle and caprines could have been due to natural causes (Plug & Badenhorst 2006:64-65).

Post cranial specimens (Table 5.10) can also be used to determine the overall age of a sample of domesticates and game, as well as the age of a specific taxa. There are quite a number of specimens that have no juveniles present, and only five groups (medium and large mammal, Bovid II and Bovid III, and small rodent) that have both present. The frog/toad group has more juveniles than adults but the rest of the sample is too small to derive any further information. If not indicated below, the specimen had an indeterminate age.

Similarly to the teeth eruption stages of domesticates, post cranial aging indicated that 72% (n=75) of the aged identified specimens in this study were adults and 28% (n=29) were juveniles, with 0% being of neonate age. All of this evidence indicates a community that utilised older domesticates in their day to day lives, as well as had culled younger animals.

Table 5.10: Phoenix 17's post cranial aging

Taxa	**Phoenix 17**		
	Neonate	Juvenile	Adult
Homo sapiens sapiens			6
cf. *Equus quagga*			1
Bos taurus			6
cf. *Bos taurus*			4
Ovis aries			1
cf. *Capra hircus*			2
Ovis/Capra		1	
cf. *Ovis/Capra*			2
Sylvicapra grimmia			2
cf. *Aepyceros melampus*			1
Bovid II (medium)		3	5
Bovid III (large)		1	8
Pedetes capensis			5
Rodent small		13	12
Lagomorpha			1
Lepus sp.			2
Mammal small		1	
Mammal medium		2	5
Mammal large		2	2
Aves medium			1
Reptile small		1	

Table 5.10 cont.

	Neonate	Juvenile	Adult
Reptile small/medium			6
Bufo/Rana		5	1
Snake medium			2
Total	**0**	**29**	**75**
Percentage of 104 total		**27.88%**	**72.12%**

5.2.10 Sex

Phoenix 17 had two specimens that could be identified as either male or female. Both were identified as possible leopard tortoise plastrons and female (Fig. 5.6). Both specimens were excavated in Midden 3 and were refitted. A significant larger number of male or female specimens are required to draw a conclusion.

Fig. 5.6: Phoenix 17's female tortoise photograph

5.2.11 Skeletal parts

When the bovid skeletal part representation is investigated, three categories are used. Domesticates are split into cattle and caprine remains; wild bovids and undetermined bovids are split into size categories of bovids; and all mammalian non-bovid taxa, such as zebra, suid and giraffe are separated into the latter category.

Bovid III has the largest sample, with Bovid I featuring the least (Table 5.11). Cattle and caprines have a majority crania elements with a few lower limb bones. The other post-cranial elements are almost completely missing. Bovid 1 – Bovid III seem to have much better spread of the skeletal elements. When the mammalian non-bovid taxa skeletal part representation is investigated, there is a similarity to the skeletal part representation of the Bovidae. Ribs are present, and also a few specimens of vertebrae, ossified costal cartilage and petrosae. Overall, skeletal parts, such as metatarsus, sternums, most of the vertebrae, ossified costal cartilage, ribs and petrosae feature very little across these categories. Petrosae (ear bone) only feature in the sample once, even though multiple cranials are represented in the sample. Of all the phalanges, the 2nd phalanx is represented the most, with the 1st and 3rd phalanges only featuring a few times.

Table 5.11: Phoenix 17's skeletal part representations

Element	**Caprine NISP**	**Cattle NISP**	**Bovid I NISP**	**Bovid II NISP**	**Bovid III NISP**	**Mammalian Non-bovid taxa**
Horn Core	2 (3.7%)				1 (0.8%)	
Cranial		18 (20%)		1 (0.91%)		27 (23.68%)
Petrosa						1 (0.88%)
Maxilla		15 (16.67%)				5 (4.39%)
Nasal					2 (1.6%)	
Mandible and *in situ* teeth	19 (35.19%)	36 (40%)		18 (16.36%)	6 (4.8%)	3 (2.63%)
Lose teeth	27 (50%)	13 (14.44%)		27 (24.55%)	48 (38.4%)	28 (24.56%)
Hyoid					3 (2.4%)	
Atlas				2 (1.82%)	2 (1.6%)	1 (0.88%)
Axis					2 (1.6%)	
Cervical						1 (0.88%)
Thoracic						4 (3.51%)
Lumbar						1 (0.88%)
Vertebrae						7 (6.14%)
Scapula			1 (14.29%)	4 (3.64%)	1 (0.8%)	3 (2.63%)
Humerus	2 (3.7%)			18 (16.36%)	9 (7.2%)	5 (4.39%)
Radius			1 (14.29%)	6 (5.45%)	2 (1.6%)	
Ulna				3 (2.73%)	3 (2.4%)	
Carpal					2 (1.6%)	1 (0.88%)
Metacarpal					5 (4%)	
Rib						21 (18.42%)
Ossified Costal Cartilage						1 (0.88%)
Caudal						1 (0.88%)
Innominate (pelvis)			2 (28.57%)	7 (6.36%)	9 (7.2%)	
Femur				8 (7.27%)	6 (4.8%)	1 (0.88%)

Table 5.11 cont.

Element	Caprine NISP	Cattle NISP	Bovid I NISP	Bovid II NISP	Bovid III NISP	Mammalian Non-bovid taxa
Tibia				5 (4.55%)	3 (2.4%)	2 (1.75%)
Astragalus			1 (14.29%)		2 (1.6%)	
Calcaneum		1 (1.11%)	1 (14.29%)	5 (4.55%)	4 (3.2%)	
Tarsal		2 (2.22%)		1 (0.91%)	2 (1.6%)	
Lateral Metatarsus				1 (0.91%)		
1st Phalanx	1 (1.85%)			1 (0.91%)		
2nd Phalanx	1 (1.85%)	4 (4.44%)			6 (4.8%)	
3rd Phalanx		1 (1.11%)			1 (0.8%)	
Metapodial	2 (3.7%)		1 (14.29%)	3 (2.73%)	5 (4%)	1 (0.88%)
Sesamoid					1 (0.8%)	
Total	**54 (100%)**	**90 (100%)**	**7 (100%)**	**110 (100%)**	**125 (100%)**	**114 (100%)**

Skeletal part representation can be utilised to investigate hunting and herding strategies. The bulk of Phoenix 17's taxa categories are made up of teeth and mandibles. However, this is to be expected as teeth generally have a high survival rate, as an adult bovid has 32 permanent teeth (Badenhorst & Plug 2004/2005:5). The other elements that are present in large numbers are, humeri, cranials, maxillae and pelvises. Phoenix 17's large game and mammal sample are high in cranial and teeth elements. However, in contrast to the bovids, the mammalian non-bovid taxa have ribs, and also a few specimens of vertebrae, ossified costal cartilage and petrosae present in the sample. This indicates that the most desirable parts of the skeletons, that were easy to transport, were clearly present at Phoenix 17, whereas the elements that are generally left at the butcher site were not present (Bunn *et al* 1988:412; Klein 1989:363-364). This would indicate that mammalian non-bovid taxa, where possible, could have been transported back to Phoenix 17 in their entirety, due to size of the animal or hunting party, which would explain the rib and spine elements when the game is investigated.

When it comes to domesticates, however, the results indicate that the chest and spine area of cattle and caprines are poorly represented by the samples. This type of result could be indicative of a cattle post (Huffman 2014). Huffman (2014:120), indicates that low-index meat parts, such as skull, feet and tails were given to herdsmen by the owners of cattle when it was slaughtered (Stayt 1931 cited in Huffman 2014:120). It should therefore be noted that Phoenix 17 was a possible cattle post where hunting was used to supplement the herder's diet.

5.2.12 Measurements

Each complete specimen was measured during analysis (Table 5.12). The complete specimens comprise of plains zebra, cattle, possible cattle, sheep, possible goat, steenbuck, impala and springhare.

Table 5.12: Phoenix 17's specimen measurements

Taxa	Feature	Element	Left/ Right	Measurement in millimeter
Equus quagga	Kraal B	Radial Carpal	L	GH: 28.33, GD: 41.59, BFd: 24.84
Bos taurus	Kraal B	2nd Phalanx	R	BP: 27.27, GL: 41.14, SD: 21.42, Bd: 22.72, Dp: 31.61
Bos taurus	Kraal B	2nd Phalanx	L	Bp: 26.84, GL: 36.35, SD: 23.62, Bd: 22.94, Dp: 29.92
Bos taurus	Kraal A	Intermediate Tarsal	R	GD: 35.48, GB: 22.32,
cf. *Bos taurus*	Midden	1st Phalanx	R	Bfp: 21.38 HP: 43.45
Ovis aries	Kraal B	Humerus	L	BT: 29.25
cf. *Capra hircus*	Kraal B	2nd Phalanx	L	Bp: 9.86, GL: 21.66, SD: 7.45, Bd: 7.82, Glpe: 20.10, Dp: 10.26
cf Ovis/Capra	Midden 3	1st Phalanx	R	BD: 11.04
Sylvicapra grimmia	Kraal A	Astragalus	L	GLl: 25, GLm: 23.33, Bd: 16.69, Dl: 14.5
cf. *Aepyceros melampus*	Kraal A	1st Phalanx	U	Bd: 11.14
Pedetes capensis	Kraal A	Femur	L	Bp: 22.29, DC: 12.85

5.2.13 Bone artefacts

There is one specimen that has been modified into an artefact (Table 5.13). The specimen comprises of a Bovid III left scapula, made up of two pieces that were refitted in the lab. The end of the broken scapula blade was polished convexly. The specimen was found in Midden 3 at 20-30cm depth. The specimen can be classified as a non-formal bone tool, as it did not seem to have been shaped for a specific purpose that could be perceived (Voigt 1983:109). Non-formal tools are common at Iron Age sites and could have been used during leather preparation (Plug & Badenhorst 2006:65; Voigt 1983) or other activities.

Table 5.13: Phoenix 17's bone artefacts

Feature	Provenience	Taxa	Element	Left/Right	NISP	Measurement(s)	Notes
Midden 3	N98E90/N/2 (20-30cm)	Bovid III	Scapula	L	2	Length: 104.35, Polished end width: 13.37	Field/lab repaired Polished blade

5.2.14 Site summary

In summary, Phoenix 17 is a 9th century site in eastern Botswana. Both wild and domesticate animals were utilised, with an emphasis on wild resources. The most notable taxa by NISP values were leopard tortoise, Bovid III, Bovid II and medium to large mammals. Other notable specimens included human, hippopotamus, plains zebra. The people at Phoenix 17 also had considerable hunting skill and most likely practised communal hunting, utilised pits, snares and gathered the occasional prey.

Cattle outnumbered caprines, which is unusual for 9th century AD site. This could indicate cattle were more important at Phoenix 17, for reasons such as bridewealth, rituals or as working animals. However, it should also be mentioned that the importance of cattle could be due to Phoenix 17 being a possible cattle post. The domesticate results indicate that the chest and spine area of cattle and caprines are poorly represented by the samples, which could mean that the low-index meat parts were given to herdsmen by the owners of cattle (Huffman 2014:120; (Stayt 1931 cited in Huffman 2014:120)). Other evidence present that could support this notion is that there were multiple cattle kraals and no grain bins present, as with Castle Rock a perceived cattle post dating to the 11th century AD and situated in the SLCA (Huffman 2014:119).

5.3 Phoenix 18

Phoenix 18 is a 9th century site also situated close to Francistown and was initially excavated as a separate site from Phoenix 17. However, Phoenix may have been one of Phoenix 17's dhaka structures which was later used as a midden. These two sites are 150m apart. Phoenix 18 is about 20m in diameter and about 40cm deep. A 1x1m unit was excavated at Phoenix 18, as well as nine STP's every two metres across the site. A 5mm mesh size was used during excavation (C. van Waarden pers. comm).

5.3.1 Sample size

Phoenix 18 comprises of a total of 48 specimens. A total of 23 specimens were identifiable and 25 specimens were unidentifiable. It is possible that due to the small sample size that any results could be biased and is therefore speculative. It is necessary to note that identifiable and unidentifiable specimens are almost a 50/50 split, a percentage that is very seldom found in faunal assemblages.

5.3.2 Taxa present

A small variety of taxa were identified from the sample (Table 5.14), including possible cattle, indeterminate bovidae, indeterminate mammals and indeterminate tortoise (shell). Possible cattle are the highest number of identifiable specimens identified to a specific species level.

Table 5.14: Phoenix 18's Taxa list (NISP)

Taxa	**Common name**	**Phoenix 18**
cf. *Bos taurus*	possible cattle	4
Bovid II (medium)	medium bovidae	3
Bovid III (large)	large bovidae	7
Mammal medium	medium mammal	1
Mammal large	large mammal	7
Tortoise	tortoise	1
Total		**23**

The faunal assemblage indicates the utilisation of both wild and domesticate animals, with a higher percentage of domesticates than game.

5.3.3 Domesticates and game

Even though Phoenix 18 has a small sample size the decision was taken work out these indices in order to compare this site to the other sites in this study, as with the other methodologies employed below. When the Cattle Index is calculated for Phoenix 18, the value is 1, indicating only cattle present. Similarly to the Cattle Index, the Game Index value is also 1, indicating only low-ranked prey. The value of 1 at both the Cattle and Game Index is not surprising, as Phoenix 18 has such a small sample.

Indeterminate mammals and bovidae comprise 78% of the faunal assemblage (Fig. 5.7), with domesticates making up 18%. Game and gathered resources comprises 4% of the sample. Indeterminate mammals could be game or domesticated animals and thus it cannot be said for certain whether hunted game or domesticates are central in this sample.

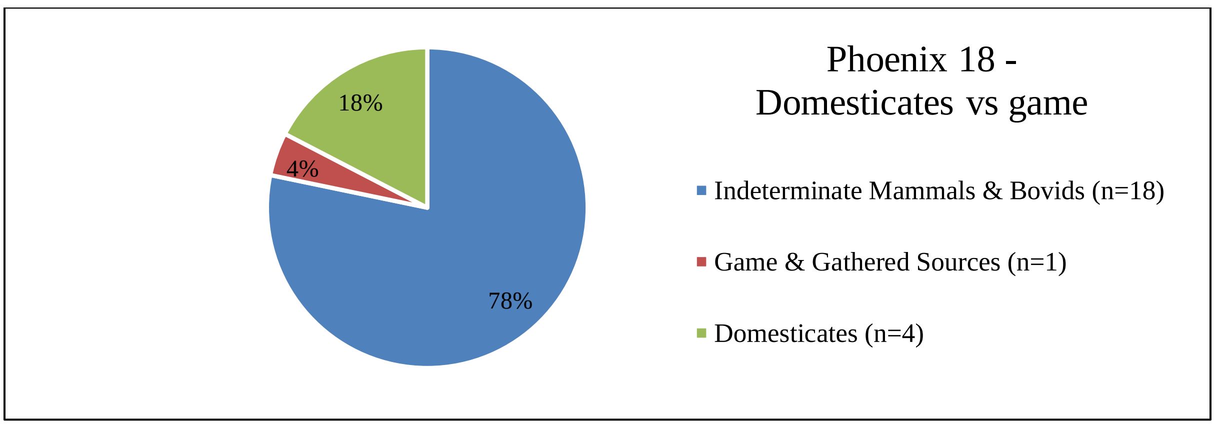

Fig. 5.7: Phoenix 18's domesticates vs. game

The only hunting technique evident at Phoenix 18 is gathering; tortoise. Which could have been caught or opportunistically gathered (Plug 1989:67). Other hunting techniques could have been utilised, but is not visible in the archaeological record (Wadley 2010:197) probably due to the small sample size. Unfortunately, the sample is too small to derive any further information about hunting or herding.

5.3.4 Taphonomy and intrusion

A total of two specimens (4.17% of the sample) from Phoenix 18 were burnt (Table 5.15). One of identifiable specimens was burnt brown, and one unidentifiable specimen was burnt grey. Grey indicates temperatures higher than 645°C and brown above 285°C (Shipman *et al* 1984). The evidence of fire along with the ashy soil accounts for the one ashy specimen.

As for the rest of the taphonomy, a total of 4.17% of the Phoenix 18's faunal assemblage has taphonomy marks present (cut marks and rodent gnaw marks) (Table 5.16). Butchering is only present in the form of one cut mark, which indicates some defleshing and skinning activities (Badenhorst & Plug 2004/2005:4; Plug 1997:103; Plug & Badenhorst 2006:65). The only other taphonomy is one rodent gnawed specimen, which is to be expected.

Table 5.15: Phoenix 18's burnt specimens

Colour	**Identifiable**	**Unidentifiable**	**Total**
Brown	1		1 (50%)
Grey		1	1 (50%)
Total	**1**	**1**	**2 (100%)**
	2.08% of 48 sample total	**2.08% of 48 sample total**	

Table 5.16: Phoenix 18's taphonomy

Taphonomy	**Identifiable**	**Unidentifiable**	**Total**
Cut mark	1		1 (33.33%)
Rodent gnaw	1		1 (33.33%)
Ashy deposit	1		1 (33.33%)
Total	**3**	**0**	**3 (100%)**
	6.25% of 48 sample total	**0% of 48 sample total**	

5.3.5 Breakage patterns

At Phoenix 18 spiral breaks occur once (12.5% n=1), which indicates consumption by the occupants of the site, on at least one long bone. Irregular breaks occur 87.5% (n=15) of the time, indicating some of the bones were only broken much later, after death (Capaldo & Blumenschine 1994; Haynes 1983; Myers *et al* 1980).

Table 5.17: Phoenix 18's breakage of long bones

Spiral (S)	1 (12.5%)
Transverse (T)	0 (%)
Irregular (V)	15 (87.5%)
Intact (I)	0 (%)
Carnivore (C)	0 (%)
Fashioned into an artefact (A)	0 (%)
Broken during excavation (E)	0 (100%)
Total	**16 (100%)**

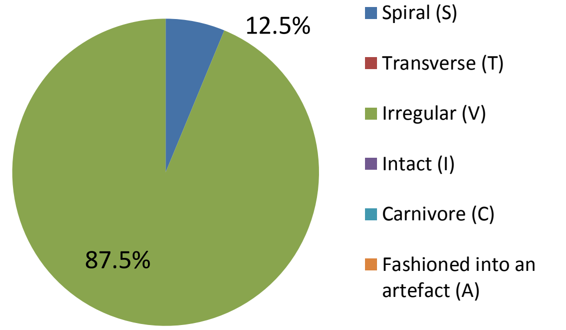

Fig. 5.8: Phoenix 18's breakage of long bones

5.3.6 Length

When all of Phoenix 18's identifiable specimens are investigated (Fig. 5.8), there is an irregular curve. Most specimens of Phoenix 18 measure from 1 to 6.99cm in length, with only two measuring between 8 to 8.99cm and 16 to 16.99cm. The length of the specimens at Phoenix 17 show the bones were very fragmented, indicating possible poor preservation conditions (Voigt 1983) and a site that was exposed to the elements (Plug 1979:132), which fits with the perceived notion of Phoenix 18 as a midden.

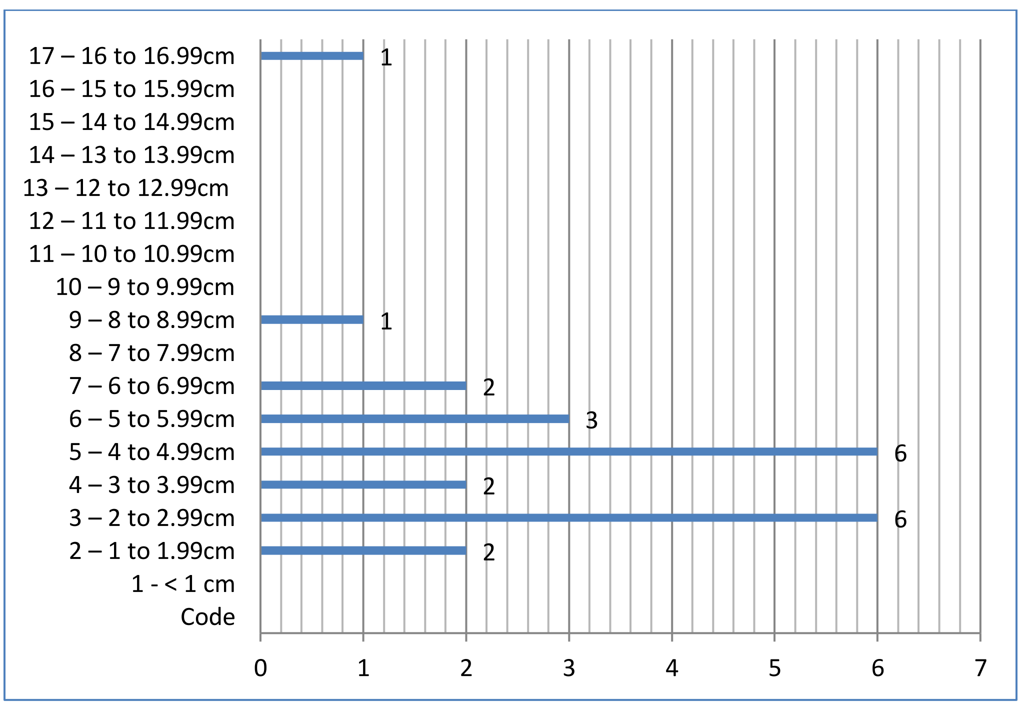

Fig. 5.9: Phoenix 18's length of identified specimen

5.3.7 Skeletal parts

When the bovid skeletal part representation is investigated (Table 5.18), the bulk of the sample is made up of loose teeth. The high incidence of loose teeth (n=7) at Phoenix 18 is not unexpected, because of the high survival rate, and the number of teeth than an animal has (Badenhorst & Plug 2004/2005:5). Mandible and *in situ* teeth and pelvises are next. Tarsals, ulnas and tibiae are the only other skeletal parts that feature in the sample. When the Mammalian Non-bovid taxa skeletal parts (Table 5.18) are investigated ribs are represented the most, with two vertebrae and one humerus. However, the sample is too small to derive any more information from it, but it does seem to replicate the results of Phoenix 17.

Table 5.18: Phoenix 18's skeletal part representations

Element	**Caprine NISP**	**Cattle NISP**	**Bovid I NISP**	**Bovid II NISP**	**Bovid III NISP**	**Mammalian Non-bovid taxa**
Mandible and *in situ* teeth				2 (50%)		
Lose teeth		3 (75%)			4 (57.14%)	
Lumbar						1 (14.29%)
Vertebrae						1 (14.29%)
Humerus						1 (14.29%)
Ulna					1 (14.29%)	
Rib						4 (57.14%)
Innominate (pelvis)				1 (50%)	1 (14.29%)	
Tibia					1 (14.29%)	
Tarsal		1 (25%)				
Total		**4 (100%)**		**1 (100%)**	**7 (100%)**	**6 (100%)**

5.3.8 Site summary

Phoenix 18 consists of a large midden, it is a relatively small site measuring 20m in diameter. It has a maximum depth of 40cm with ashy soil. No other features were noted close to this site and the faunal sample was very small, with only 48 specimens and therefore not a lot could be derived from the assemblage. 47.91% of the sample was however, identifiable. Possible cattle and tortoise were the only specimens that could be identified to species level. Domesticates and wild bovidae stand out in Phoenix 18's small sample with 61%. While not a lot could be derived from Phoenix 18 due to the small sample size, it can still be compared to Phoenix 17 to see if any broad patterns emerge between these two sites (see chapter 6).

5.4 Thabadimasego

Thabadimasego is a mid-9th century AD site situated in the South Sowa area of north-eastern Botswana, on the top of the Mosu Escarpment next to the Makgadikgadi Pans. Finds excavated at Thabadimasego include glass, shell beads, metal, Zhizo ceramics and lithics (Daggett 2015:99). During the excavation of Thabadimasego, 30x30cm test pits were dug every 10m throughout the site, then 20 1x1m excavation units were placed according to finds density finds and/or complex stratigraphy found in the test pits. Another 70 30x30cm test pits were then dug, as well as another 1x1m unit, which totals 21 excavation units and 197 test pits. None of the deposits were more than 50cm deep and a 1mm mesh was used during screening. Burrowing was also noted during excavation, which could also have displaced finds (Daggett 2015:80-83). Remains of a stone wall were found at the site, as well as small dhaka structures. There were no evidence of kraals during excavations, leading the excavator to suggest this is a possible short term occupation site without the complexity of a "multi-generation village (Daggett 2015:195). Due to the number of test pits and only 50cm deep excavations, layers will not be accounted for during the results.

5.4.1 Sample size

The Thabadimasego sample comprises a total of 15 527 specimens. A total of 1106 specimens were identifiable and 14 421 specimens were unidentifiable. With a 7.12% identifiable specimen percentage, Thabadimasego is shown as highly fragmented and thus unidentifiable specimens will also have to be considered in the results.

5.4.2 Taxa present

A variety of taxa were identified from the sample (Table 5.19). Ostrich has the highest number of identifiable specimens identified to a specific species level (all ostrich egg shell specimens), followed by giant African land snail, possible giant African land snail and molluscs. There are also large animals in the sample, namely, elephant and buffalo.

Table 5.19: Thabadimasego's Taxa list (NISP)

Taxa	**Common name**	**Thabo di Masego**
Insectivora sp. indet	For example, hedgehogs, moles and shrews	2
Homo sapiens sapiens	human	2
Viverridae	polecat/mongoose	1

Table 5.19 cont.

Taxa	**Common name**	**Thabo di Masego**
Carnivora medium	medium carnivore	1
Loxodonta africana	elephant	7
Equus quagga	plains zebra	2
cf. *Potamochoerus porcus*	possible bushpig	1
Bos taurus	cattle	11
cf. *Bos taurus*	possible cattle	3
Ovis aries	sheep	2
cf. *Ovis aries*	possible sheep	1
Ovis/Capra	caprine	12
cf. *Ovis/Capra*	possible caprine	7
Raphicerus campestris	steenbuck	3
Aepyceros melampus	impala	4
Syncerus caffer	buffalo	1
Bovid I (small)	small bovidae	18
Bovid II (medium)	medium bovidae	226
Bovid II (medium) - non domestic	medium non-domestic bovidae	1
Bovid III (large)	large bovidae	162
Bovid III (large) - non domestic	large non-domestic bovidae	1
Bovid III/IV (large – very large)	large – very large non-domestic bovidae	5
Rodent small	small rodent	159
Rodent medium	medium rodent	5
Lagomorpha	hare/rabbit	1
Mammal small	small mammal	38
Mammal medium	medium mammal	201
Mammal large	large mammal	132
Struthio camelus	ostrich	30
Aves small	small bird	1
Aves small/medium	small/medium bird	1
Aves medium	medium bird	5
Reptile small	small reptile	3
cf. *Geochelone pardalis*	possible leopard tortoise	1
Tortoise	tortoise	5
Saura sp.	lizard	8
Bufo/Rana	frog/toad	1
Achatina sp.	giant African land snail	23
cf. *Achatina* sp.	possible giant African land snail	1
Euonyma sp.	terrestrial gastropod	1
Mollusc	mollusc	17
Total		**1106**

The results indicate a variety of large and small taxa with the majority being game and gathered resources. This indicates a community relying mainly on hunting as the main contributor to their diet, with game and gathered resources making up 23% (n=251) and indeterminate mammals and Bovidae making up 71% (n=784) of the identified sample. However, the large number of indeterminate mammals and bovids may be masking the numbers of domesticates or wild game.

Therefore if we look at the available percentages, hunting was most likely the main practice of procuring meat. A wide variety of hunting techniques were most likely undertaken at Thabadimasego. For example, Buffalo, impala and plains zebra point to communal hunting as these animals are herd animals and would take more than one person to hunt (Plug 1997:101). Plains zebra could also have been caught using traps (Badenhorst & Plug 2004/2005:3; Campbell 1998:26; Plug 1996) and along with impala indicates open savanna environments (Maggs 1982:112; Plug 2004). Buffalo is a very dangerous animal and were most likely also hunted with the help of game traps (Plug 1997:101). Another large and dangerous animal is elephant, though this taxa was only present in ivory samples and no bone material was found. Elephant ivory is also associated with trade (Plug 2000:123).

Small game present in this sample (mongoose/genet/civet, hare/rabbit, lizard and medium carnivores) could have been snared (Plug 1996; Wadley 2010) and animals such as steenbuck, were most likely captured using pits and snares (Wadley 2010:181). The carnivore could have been opportunistically caught and consumed (Grivetti 1981) or utilised for its fur, for ritual purposes or traded (Brown 1926:51 cited in Plug & Badenhorst 2006:62-63; Plug 1988 cited in Plug 1993).

As with Phoenix 17, there were small diet contributors in the sample which included small rodent and reptile. These species were most likely self-introduced as indicated by their 'fresh' appearance during analysis. Birds were also found in the sample (small to medium). Their feathers could be used as ornaments, decorations and trade (Morton & Hitchcock 2014) and as they are difficult to catch, they would have been caught with snares or nets (Wadley 2010:180-181). Gathered resources include leopard tortoise and tortoise, ostrich, mollusc, giant African land snail and terrestrial gastropods.

Thabadimasego is the only site with shells, which points to a community that utilised eggshells and shells and their contents. Ostrich had the highest number of identifiable specimens identified to a specific species level and all identified specimens were eggshells. None were in bead form in the faunal assemblage received or have indication of working on them. It could be that these eggs were gathered (Plug 1989:65) to supplement the diet (Badenhorst & Plug 2004/2005:3). However, Daggett (2015:114-115) indicates that some ostrich eggshell and Achatina beads were found on site and that 'small-scale shell bead manufacture' was taking place (Daggett 2015:203). Various stages of manufacture of these beads can be found at Thabadimasego and the ostrich eggshell beads range from small to large and the Achatina beads can be seen as small (Daggett 2015:215).

Terrestrial gastropod would have been too small to be eaten and was therefore most likely self-introduced (Badenhorst & Plug 2004/2005:4). Giant African land snail could also have been collected for other reasons than food, such as bead manufacture (Plug 1997:99) or the use in pottery manufacturing (Voigt 1983:120). There is evidence that these resources were regularly gathered at earlier Iron Age sites (Plug 1989:65) and ate as a delicacy (Pilsbury & Bequaert 1927; Appleton 1985, cited in Plug 1989).

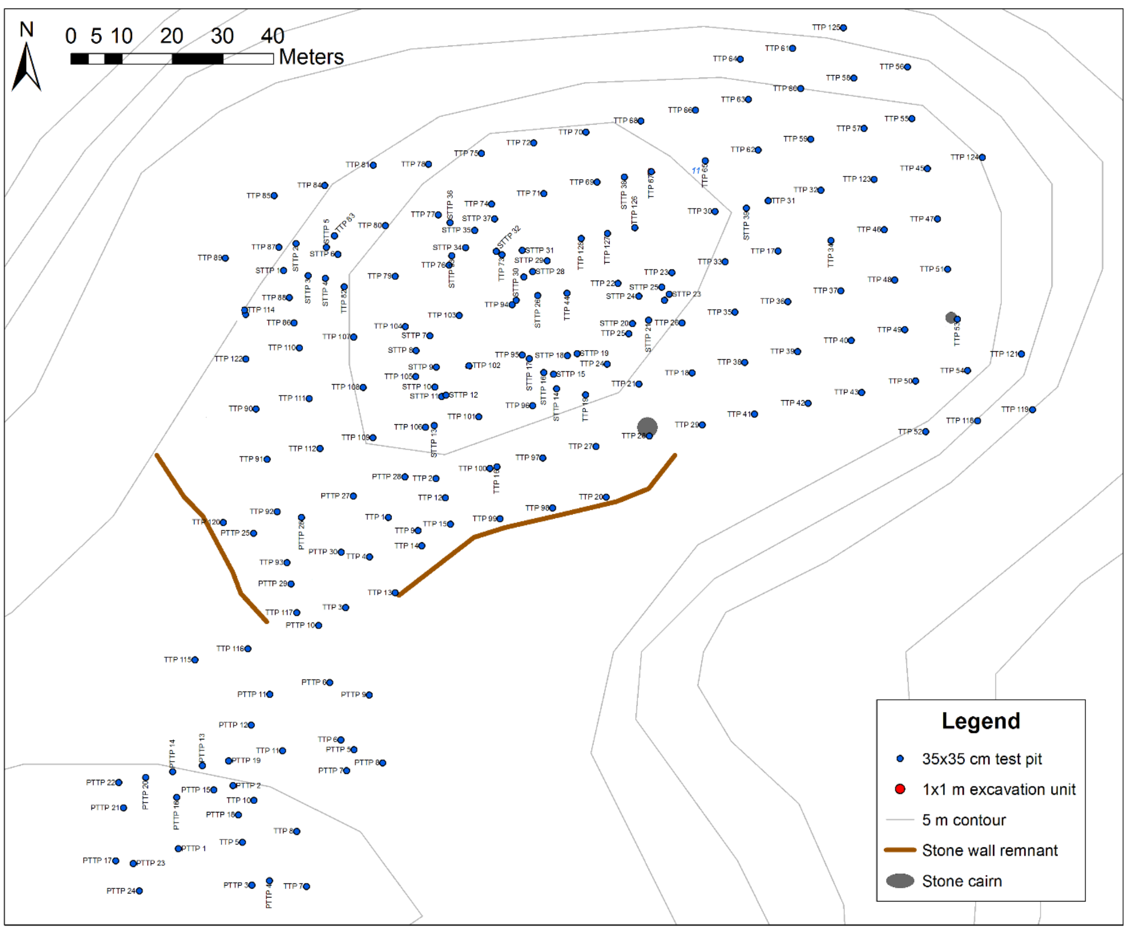

Fig. 5.10: Thabadimasego's test pits distribution map (courtesy of A. Daggett)

5.4.3 Features: identifiable and unidentifiable distribution

Thabadimasego has a 7.12% identifiable specimen percentage, with 92.88% being unidentifiable from 197 tests pits and 21 excavation units (Fig. 5.11). With such a low identifiable specimen percentage, the test pits will not be looked at separately, due to the sheer number of them, which would lower the sample size considerably. However, the excavation units will be discussed and are named Unit 1 - Unit 21 throughout this study (Fig. 5.11). Layers across these units will not be taken into account as they are spread throughout the site and not deeper than 50cm.

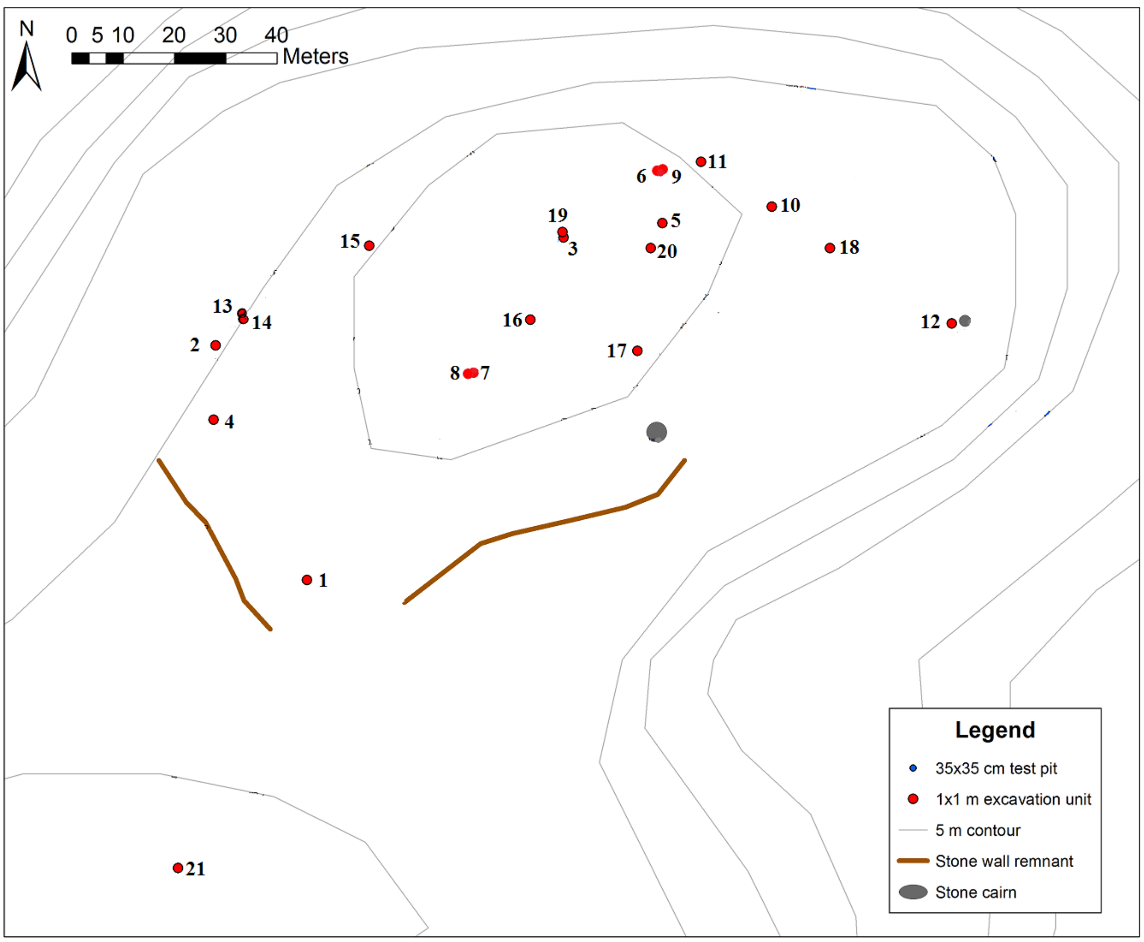

Fig. 5.11: Thabadimasego's excavation unit distribution map (courtesy of A. Daggett)

When the identifiable and unidentifiable specimens are investigated (Table 5.20 below), Unit 8, Unit 15, Unit 16, Unit 17 and Unit 20 stand out with the largest number of specimens (over 1000

NISP). These units are all situated in the middle of the site. Unit 3 and Unit 5 have the largest number of identifiable specimens, with Unit 16 and 17 having the largest number of unidentifiable specimens. These units are also all situated in the centre of the site. The units with the least number of specimens (Unit 1, Unit 13 and Unit 14) are on the fringes of the site. However, Unit 21 which is the furthest away from any other excavation units, as well as 'outside' the stone walls, has over 500 specimen totals, with most being unidentifiable. When investigating identified taxa distribution by excavation unit (Table 5.20 - all NISP values higher than five are in bold), results indicate no domesticates 'outside' the centre, only game; and all domesticates in the centre of the site, mixed with game. Daggett (2015:194) indicates that "the organization of the site does not follow any known model for Early Iron Age village layouts, and given the fairly small area occupied by the site as well as its small quantity of structures, it does not follow that Thabadimasego was in fact a long-term residential occupation."

Table 5.20: Thabadimasego's identifiable and unidentifiable specimen distribution

Units	**Identi-fied totals**	**Percen-tages**	**Unident-ified totals**	**Percen-tages**	**Speci-men totals**	**Speci-mens present (total NISP)**
					Centre	
Unit 3	119	12.53%	532	4.47%	651	possible bushpig (1), caprine (2), lizard (4)
Unit 5	106	11.16%	665	5.59%	771	human (1), impala (3), buffalo (1), sheep (1) ostrich (2)
Unit 6	23	2.42%	150	1.26%	173	-
Unit 7	82	8.63%	884	7.43%	966	plains zebra (1), frog/toad (1)
Unit 8	87	9.16%	1294	10.87%	1381	cattle (4), plains zebra (1), ostrich (2), tortoise (1), mollusc (1)
Unit 9	52	5.47%	308	2.59%	360	**caprine and possible caprine (8)**, tortoise (3), possible giant African land snail (1)
Unit 10	27	2.84%	399	3.35%	426	insectivore (2), cattle (3), ostrich (2)
Unit 11	12	1.26%	223	1.87%	235	ostrich (1)
Unit 15	94	9.89%	997	8.38%	1091	cattle (1), sheep (1), caprine (1), possible caprine (1), **ostrich (6)**, **giant African land snail (6)**
Unit 16	71	7.47%	1702	14.30%	1773	polecat/mongoose (1), cattle (2), steenbuck (1), **ostrich (7)**, giant African land snail (3), mollusc (3)
Unit 17	72	7.58%	1677	14.09%	1749	possible cattle (2), possible sheep (1), impala (1), ostrich (1), possible leopard tortoise (1)
Unit 18	7	0.74%	224	1.88%	231	mollusc (1)
Unit 19	22	2.32%	533	4.48%	555	caprine (1), mollusc (3)
Unit 20	62	6.53%	1341	11.27%	1403	cattle (1), tortoise (1), giant African land snail(1), mollusc (2)

Table 5.20 cont.

Outside centre/edge						
Unit 1	5	0.53%	14	0.12%	19	-
Unit 2	17	1.79%	115	0.97%	132	caprine (1), steenbuck (1)
Unit 4	25	2.63%	77	0.65%	102	caprine (2), steenbuck (1)
Unit 12	25	2.63%	195	1.64%	220	giant African land snail (1)
Unit 13	-	-	29	0.24%	29	-
Unit 14	4	0.42%	61	0.51%	65	-
Outside stone wall						
Unit 21	38	4.00%	484	4.07%	522	ostrich (3), **giant African land snail (6)**
Total	**950**	**100%**	**11904**	**100%**	**12854**	

5.4.4 Domesticates and game

When the Cattle Index is calculated for Thabadimasego, the value is 0.38, indicating a larger proportion of caprines when compared to cattle. Thabadimasego's domesticate animals only comprise 3% (n=36) of the sample, which illustrates a low reliance on domesticates. Cattle (38.89% (n=14)) are slightly outnumbered by caprines (61.11% (n=22)), which follows evidence suggesting the Early and Middle Iron Age sites in southern Africa are small stock heavy (Badenhorst 2011; Fraser & Badenhorst 2014). It should also be noted that although domesticates occur in higher numbers that any individual wild species (excluding shells) that as a collective, wild game outnumber domesticates.

When the Game Index value is calculated (0.21), the results indicate a higher proportion of high-ranked prey compared to low-ranked prey at Thabadimasego.

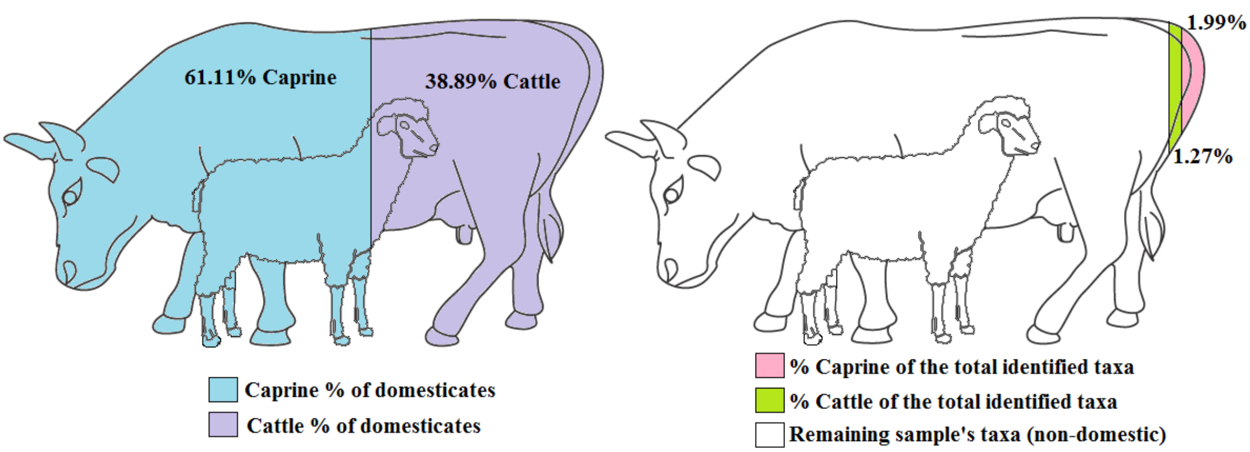

Fig. 5.12: Thabadimasego's domesticate representation

When investigating domesticates vs. game (Fig. 5.12), it is clear that indeterminate mammals and wild bovidae comprise a large part (71%) of the sample, followed by game and gathered sources (23%). Domesticates and fresh intrusions comprise 3%.

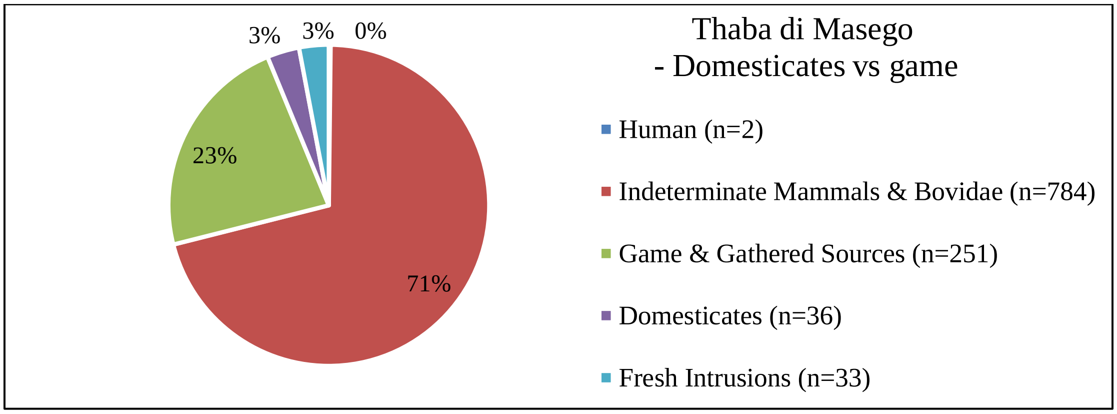

Fig. 5.13: Thabadimasego's domesticates vs. game

5.4.5 Taphonomy, intrusions and pathology

Taphonomy, intrusions and pathology is present on the specimens of Thabadimasego. Burnt specimens will be investigated first. A total of 1549 specimens, 9.97% of the sample from Thabadimasego were burnt (Table 5.21). When each individual colour range is inspected, grey is the largest group, with 47% of the burnt sample being grey. Black is second with 38.09%, white is 11.17% and localised, brown and blue only comprise a joint 7.48%. This shows that the majority of bones were burnt at a temperature higher than 525°C, which indicates that very hot fires (Badenhorst & Plug 2004/2005:4; Plug 1997:98) were utilised at Thabadimasego.

Table 5.21: Thabadimasego's burnt specimens

Colour	Identifiable	Unidentifiable	Total
Localised	10	12	22 (1.42%)
Brown	-	18	18 (1.16%)
Black	40	550	590 (38.09%)
Blue	-	18	18 (1.16%)
Grey	-	728	728 (47%)
White	33	140	173 (11.17%)
Total	**83**	**1466**	**1549 (100%)**
% of 15527 sample total	**0.53% of 15527 sample total**	**9.44% of 15527 sample total**	**9.97% of 15527 sample total**

A total of 1.99% of the Thabadimasego faunal assemblage has taphonomy marks on them (Table 5.22). Differing from the other 9th century sites in this sample (Phoenix 17 and 18), Thabadimasego's most common taphonomy is trampled/digested (46.84%). Trampling and digested bone can look similar; both of these occurrences leaves a bone looking polished with marks (scratches or perforations) (Behrensmeyer 1978:154; Fisher 1995:42-43; Horwitz 1990; Reitz & Wing 2008:136-139). With no kraals, the trampling/digestion most likely occurred because of human activity and/or carnivore activity. However, with 10.78% carnivore gnaw damage the evidence points to possible carnivore digestion.

The rest of the taphonomy feature at less than 4%. All ashy deposit specimens were identifiable, and all calcide deposit and greenish/copper staining specimens were unidentifiable. The copper staining was most likely due to copper artefacts in the soil. Butchering was also present at Thabadimasego in the form of cut (4.46% (n=12)) and chop marks (2.97% (n=8)), which indicate some defleshing and skinning at the site (Plug 1997:103; Badenhorst & Plug 2004/2005:4; Plug & Badenhorst 2006:65).

Table 5.22: Thabadimasego's taphonomy

Taphonomy	**Identifiable**	**Unidentifiable**	**Total**
Cut mark	7	5	12 (4.46%)
Chop mark	6	2	8 (2.97%)
Carnivore gnaw	16	13	29 (10.78%)
Rodent gnaw	10	12	22 (8.18%)
Greenish/copper staining	-	1	1 (0.37%)
Insect damage/drill holes	1	24	25 (9.29%)
Trampled/digested	7	119	126 (46.84%)
Root etching	5	7	12 (4.46%)
Weathered/ Sun Bleached	3	1	4 (1.49%)
Ashy deposit	3	-	3 (1.12%)
Calcide deposit	-	27	27 (10.04%)
Total	**59**	**211**	**269 (100%)**
% of 15527 sample total	**0.38% of 15527 sample total**	**1.35% of 15527 sample total**	**1.99% of 15527 sample total**

There were also 0.21% fresh intrusions and 0.01% pathology. The intrusions were identified as small rodents and one small reptile specimen. Two specimen also had pathology present. The first specimen was an impala upper left maxilla with a P2, P3, P4, M3, and M2 present. M1 was lost during life, most likely due to an abscess. The other was a bovid II whose incisor island was worn due to age, as well as graze wear just below the enamel line on the lateral side.

Table 5.23: Thabadimasego's intrusions

Taphonomy	**Identifiable**	**Unidentifiable**	**Total**
Fresh intrusion	33	-	33 (100%)
% of 15527 sample total	**0.21% of 15527 sample total**	**0% of 15527 sample total**	**0.21% of 15527 sample total**

Table 5.24: Thabadimasego's pathology

Taphonomy	**Identifiable**	**Unidentifiable**	**Total**
Pathology	2	-	1 (100%)
% of 15527 sample total	**0.01% of 15527 sample total**	**0% of 15527 sample total**	**0.01% of 15527 sample total**

5.4.6 Breakage patterns

When the long bones breakage patterns are investigated (Table 5.25 & Fig. 5.14), irregular breaks (40.06% (n=125)) make up the bulk of the sample, with spiral breaks (fresh break) indicating marrow extraction (Dart 1957 cited in Dart 1960) at 18.27% (n=57). Dry bone breaks (traverse and irregular breaks) occur a total of 49.68% (n=155), indicating most bones were broken much later after death. The high incidence of intact bones (26.92% (n=84)) are mostly due to fresh intrusion of rodents counted here. Carnivore gnaw breaks, broken during excavation and splintered breaks make up the rest of the long bone sample with a joint 5%.

Table 5.25: Thabadimasego's breakage of long bones

Spiral (S)	57 (18.27%)
Transverse (T)	30 (9.62%)
Irregular (V)	125 (40.06%)
Intact (I)	84 (26.92%)
Carnivore (C)	3 (0.96%)
Broken during excavation (E)	12 (3.85%)
Splintered (P)	1 (0.32%)
Eroded (D)	0 (0%)
Total	**312 00%)**

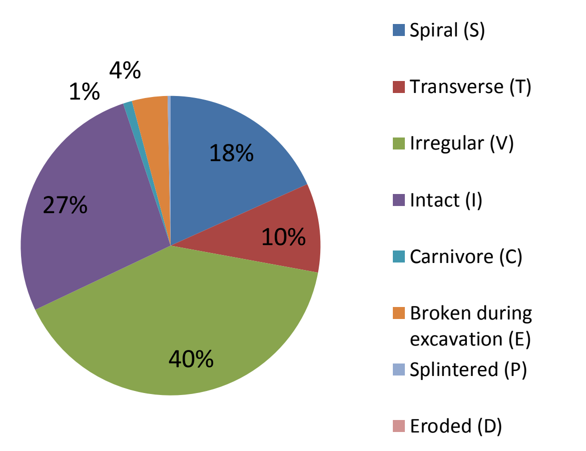

Fig. 5.14: Thabadimasego's breakage of long bones

5.4.7 Length

When the length of Thabadimasego's identifiable specimens is investigated there is a curve that decreases the longer a specimen gets (Fig. 5.15). Code 1 and Code 2 specimens seem to be the largest length groups, with Code 3 and Code 4 second. Most specimens of Thabadimasego measure from <1 to 5cm in length, with only a few measuring from 10 to 17cm. This indicates taxa that are very fragmented.

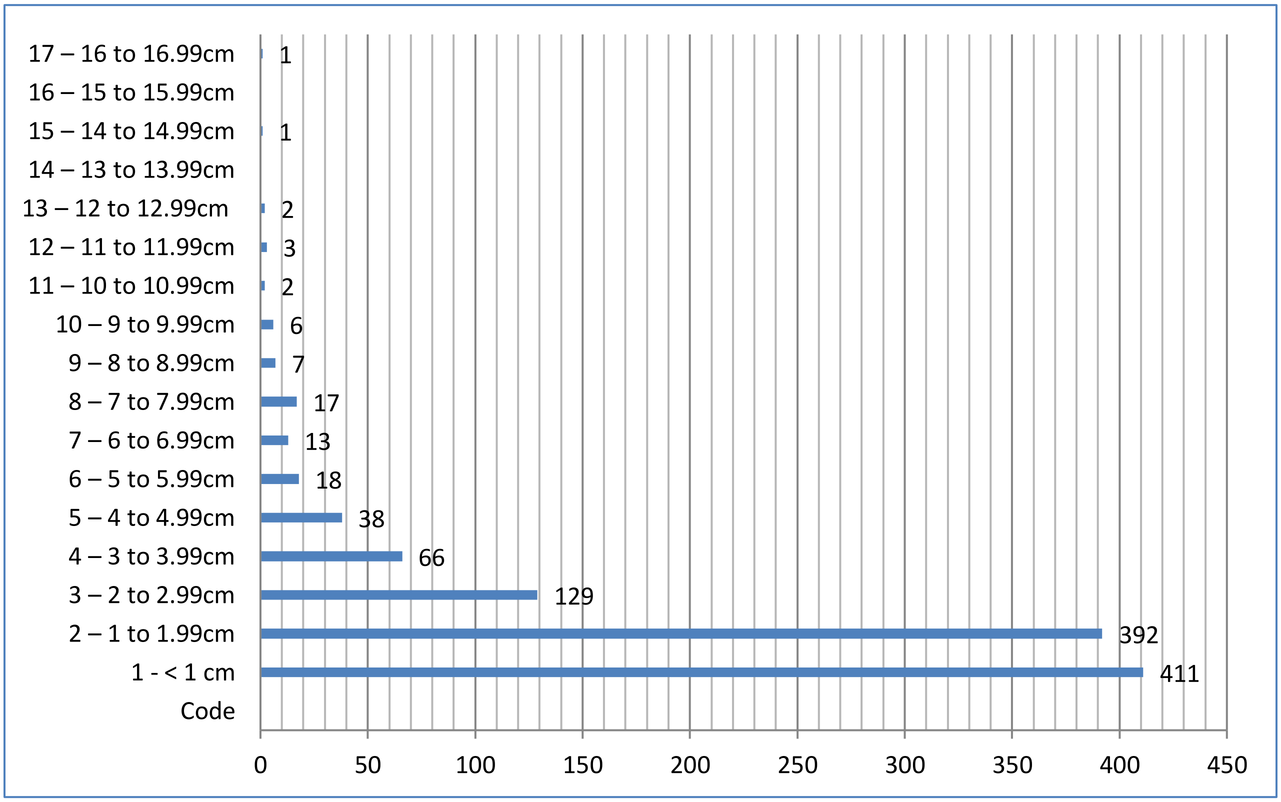

Fig. 5.15: Thabadimasego's length of identified specimen

5.4.8 Aging

Thabadimasego has 14 cattle specimens and three caprine specimens. However, only the three caprine samples could be assigned an age class. Class V and Class VI are the only age classes of caprine remains that could be identified (Table 5.26). Even though not a lot of domesticate specimens were identified, teeth eruption stages indicate that only adult caprines were slaughtered at Thabadimasego, with no evidence for cattle mortality ages. However, post cranial specimens investigated (Table 5.27) indicate that there were juvenile and neonate ages present in the sample and that cattle specimens did have juveniles present, even though not indicated by the teeth.

Table 5.26: Thabadimasego's cattle and caprines age classes (adapted from Voigt 1983:47-53)

Caprines Classes	**Caprines NISP**
Class I (0-3 months)	
Class II (3-10 months)	
Class III (10-16 months)	
Class III/IV (10-30 months)	
Class IV (16-30 months)	
Class V (30-60 months)	1
Class VI (Over 60 months)	2
Total Caprines	**3**

When the ages of specific domesticates and game's post cranial specimens are investigated (Table 5.27), the medium mammal group is the only group to have more juveniles than adults, but only by two fusion sides, whereas small mammals, possible sheep and possible caprine only have juveniles and no adults present. There is also only one specimen that was of neonate age, a Bovid II. Bovid II is also the only taxa to have all three age classes. Small rodents have large numbers (97 NISP) of juvenile and adult specimens that could be identified. In general the bovidae have larger numbers of adults than juvenile specimens. If not indicated below, the specimen had an indeterminate age.

Table 5.27: Thabadimasego's post cranial aging

Taxa	**Thabadimasego**		
	Neonate	**Juvenile**	**Adult**
Viverridae			1
Carnivora medium			1
Equus quagga			1
cf. *Potamochoerus porcus*			2
Bos taurus		3	5
cf. *Bos taurus*			1
Ovis aries			3
cf. *Ovis aries*		1	
Ovis/Capra		1	3
cf. *Ovis/Capra*		1	
Raphicerus campestris			4
Syncerus caffer			2
Bovid I (small)		2	3
Bovid II (medium)	1	5	20
Bovid II (medium) - non domestic			1

Table 5.27 cont.

	Neonate	Juvenile	Adult
Bovid III (large)		3	16
Bovid III/IV(large – very large)			2
Rodent small		39	58
Rodent medium		2	4
Lagomorpha			2
Mammal small		1	
Mammal medium		5	3
Mammal large		1	5
Aves medium			4
Reptile small			4
Saura sp.			16
Bufo/Rana			1
Total	**1**	**64**	**163**
Percentage of 228 total do at the others	**0.44**	**28.19%**	**71.37%**

5.4.9 Skeletal parts

When skeletal part representation is investigated (Table 5.28), Bovid II is the largest sample, with Bovid III second. The bulk of the sample is made up of teeth. The 1st phalanx and humerus are next, then metapodials and 2nd phalanges. Skeletal parts, such as patellae, sternums, all the vertebrae (except atlas), ossified costal cartilage, ribs and horn core don't feature at all or barely. This indicates that the chest area of all animals are poorly represented in the samples, as well as the spine area, with only a few atlas vertebrae present. This most likely indicates that Thabadimasego was a consumption/camp site (Bunn 1991:440; Bunn *et al* 1988:412) such as a specialist camp and not a long-term residential site.

Table 5.28: Thabadimasego's skeletal part representations

Element	**Caprine NISP**	**Cattle NISP**	**Bovid I NISP**	**Bovid II NISP**	**Bovid III NISP**	**Bovid III/IV NISP**	**Bovid IV NISP**	**Mammalian Non-bovid taxa**
Cranial				1 (0.42%)				10 (7.19%)
Petrosa				1 (0.42%)				8 (5.76%)
Maxilla				3 (1.25%)				1 (0.72%)
Mandible and *in situ* teeth				4 (1.67%)	4 (2.4%)			3 (2.16%)
Lose teeth	11 (55%)		4 (19.05%)	158 (65.83%)	115 (68.86%)	1 (20%)		82 (58.99%)
Hyoid				2 (0.83%)				
Atlas				1 (0.42%)	1 (0.6%)			
Axis								1 (0.72%)
Thoracic								3 (2.16%)
Lumbar								1 (0.72%)

Table 5.28 cont.

Element	Caprine NISP	Cattle NISP	Bovid I NISP	Bovid II NISP	Bovid III NISP	Bovid III/IV NISP	Bovid IV NISP	Mammalian Non-bovid taxa
Vertebrae								6 (4.32%)
Scapula		2 (12.50%)		7 (2.92%)	1 (0.6%)			
Humerus	1 (5%)	1 (6.25%)		14 (5.83%)	1 (0.6%)	2 (40%)		8 (5.76%)
Radius		1 (6.25%)	1 (4.76%)	2 (0.83%)	2 (1.2%)			
Ulna	1 (5%)			2 (0.83%)	1 (0.6%)			
Carpal		3 (18.75%)		3 (1.25%)	3 (1.8%)			
Metacarpal				2 (0.83%)	2 (1.2%)			1 (0.72%)
Rib								4 (2.88%)
Sternum								1 (0.72%)
Innominate (pelvis)				2 (0.83%)	3 (1.8%)			
Femur			1 (4.76%)	1 (0.42%)	2 (1.2%)			
Tibia			2 (9.52%)	3 (1.25%)	2 (1.2%)			6 (4.32%)
Astragalus			1 (4.76%)	3 (1.25%)				
Calcaneum			2 (9.52%)	2 (0.83%)	1 (0.6%)			
Metatarsal		3 (18.75%)	2 (9.52%)	2 (0.83%)	4 (2.4%)			
Tarsal	1 (5%)			2 (0.83%)	2 (1.2%)			
1st Phalanx	1 (5%)	3 (18.75%)	1 (4.76%)	7 (2.92%)	11 (6.59%)			
2nd Phalanx	3 (15%)		1 (4.76%)	9 (3.75%)	3 (1.8%)		1 (100%)	
3rd Phalanx	1 (5%)		1 (4.76%)	1 (0.42%)	2 (1.2%)			1 (0.72%)
Metapodial	1 (5%)	3 (18.75%)	3 (14.29%)	8 (3.33%)	5 (2.99%)	1 (20%)		1 (0.72%)
Sesamoid			2 (9.52%)		2 (1.2%)	1 (20%)		2 (1.44%)
Total	**20 (100%)**	**16 (100%)**	**21 (100%)**	**240 (100%)**	**167 (100%)**	**5 (100%)**	**1 (100%)**	**139 00%)**

5.4.10 Measurements

Below (Table 5.29) are the measurements for each identifiable specimen in the faunal assemblage. All except one of the measurable specimens come from the excavation units, with one from a test pit. Most of the measurements are domesticates (cattle, sheep, caprine), with three steenbuck, one bushpig and one buffalo.

Table 5.29: Thabadimasego's specimen measurements

Taxa	Feature	Element	Left/ Right	Measurement in millimeter
cf. *Potamochoerus porcus*	Unit 3	3rd phalanx	L	Ld 24.11, MBS 7.91, DLS 23.92, BFp 8.94
Bos taurus	Unit 8	1st phalanx	L	BP: 26.62
Bos taurus	Unit 15	Humerus	L	Dmd: 83.22, Bd: 74.89

Table 5.29 cont.

Taxa	**Feature**	**Element**	**Left/ Right**	**Measurement in millimeter**
Raphicerus campestris	Unit 16	Astragalus	R	Dm: 12.51, Dl: 13.07, GLm: 21.66, GLl: 22.82, Bd: 13.18,
Bos taurus	Unit 16	Radius	R	BP: 82.56, BFp: 76.55, Dp: 43.11
Bos taurus	Unit 16	4th Carpal	L	GH: 33.48, GD: 45.81, BFd: 27.84
Bos taurus	Unit 20	2nd & 3rd Carpal	L	GD: 33.65, HMD: 16.38, GB: 41.3
cf. *Bos taurus*	STR 2/2	Ulnar Carpal	R	GL: 53, BFp: 29.31
Ovis/Capra	Unit 15	1st phalanx	L	Bp: 12.18
Ovis/Capra	Unit 3	Scapula	R	BG 23.95, GLP 31.89, SLC 22.56
cf. *Ovis/Capra*	Unit 15	Intermediate Tarsal	R	GB: 10.12, GD: 15.37
Ovis aries	Unit 15	3rd phalanx	L	HP: 15.20, BFp: 8.24, Ld 22.70, Dls: 27.42, Mbs: 6.93
Ovis aries	Unit 5	Humerus	R	Bd 31.07
Raphicerus campestris	Unit 2	Femur	L	DC 14.9
Raphicerus campestris	Unit 4	Metatarsal	R	Dd 12.80, Bd 17.30, DD 9.41
Syncerus caffer	Unit 5	2nd phalanx	R	Dp 38.47, Bp 36.6, GL 46.16, Bd 32.83, Sd 28.94

5.4.11 Bone artefacts

Artefacts excavated at Thabadimasego included shell beads (Daggett 2015:114-115). These artefacts were excavated by the excavator and were not studied in this study and will consequently not be discussed in detail. The presence of shell beads and shell remains at Thabadimasego could indicate manufacturing at the site, as well as trade. From the whole sample, there are two specimens that have been modified into artefacts or have modification damage (Table 5.30). The first specimen comprises of an unidentifiable taxa's specimen that has one end polished convexly. The other end of the specimen is broken. This specimen could be a possible rib or vertebrae and was found in Unit 7. The specimen can be classified as a non-formal bone tool as it didn't seem to have been shaped for a specific purpose that could be perceived (Voigt 1983:109). Non-formal tools are common at Iron Age sites and could have been used during leather preparation (Plug & Badenhorst 2006:65; Voigt 1983). The other specimen was found in Unit 9 and is also classified as unidentifiable. However, this specimen can be classified as a needle point that has been polished. The needle could have been used to manufacture mats or even leather goods (Plug & Badenhorst 2006:65).

Table 5.30: Thabadimasego's bone artefacts

Feature	Pro-venience	Taxa	Element	NISP	Measurement	Notes
Unit 7	Level 2	N/A	N/A	1	Length: 26mm	Tool shaped with one end polished convexly and the other end broken - possibly a rib/vertebrae due to the presence of spongy bone on one side
Unit 9	Level 5	N/A	N/A	1	Length: 100mm, widest width: 439mm, shortest width: 149mm	Bone Point - the needle point is polished and there is a slight spiral break

5.4.12 Site summary

Thabadimasego is situated in the South Sowa area of north-eastern Botswana and dates to the mid-9th century AD. The site is situated on a plateau and extends to a narrow, steep pinch-point. The remains of a stone wall were also found at the site, as well as small dhaka structures. Stone wall sites are common at sites close the Makgadikgadi Pans and at Leopard's Kopje settlements (Campbell 1991 cited in Reid & Segobye 2000). No kraals were found at Thabadimasego, which fits in with the results as domesticates only make up 3% (n=36) of the sample. Thus hunting was most likely specialised and the main way of acquiring meat. Communal hunting, traps, snares, pits, possibly spearing and gathering took place at Thabadimasego. Shell resources were also utilised, such as, ostrich, mollusc and giant African land snail. Thabadimasego was most likely a camp site, with hunted taxa being killed elsewhere and the desired elements brought back to camp as shown by the body part distribution. It could be that the position on the escarpment made it difficult to carry large pieces of hunted animals home. However, there is evidence of animals being prepared at the site (wood fires, marrow extraction, defleshing and skinning). A large number of the specimens at Thabadimasego were also trampled or digested. This evidence of a camp site is supported by Daggett (2015:195) who argues that Thabadimasego was a possible specialist camp, perhaps for hunting game, and not a residential site. The faunal results support this conclusion. All the above evidence indicates a community that hunted and gathered resources, with a few domestic stock kept.

5.5 Dukwe 25

Dukwe 25 is a 15th century AD (AD 1450-1485) smelting site situated east of Makgadikgadi Pans and the ceramics are indicative of Khami phase ceramics (AD 1450–1820 [Huffman 2000:14]) occupation (C. van Waarden pers. comm.). It was excavated in 2006 in 2x2m grids from an arbitrary datum, and contains a possible homestead, as well as a smelting site with two probable refining furnaces (C. van Waarden pers. comm.). As with Phoenix 17 and Phoenix 18, a 5mm mesh was used during sorting and at a later stage a mosquito screen was utilised inside the large mesh once glass beads were found.

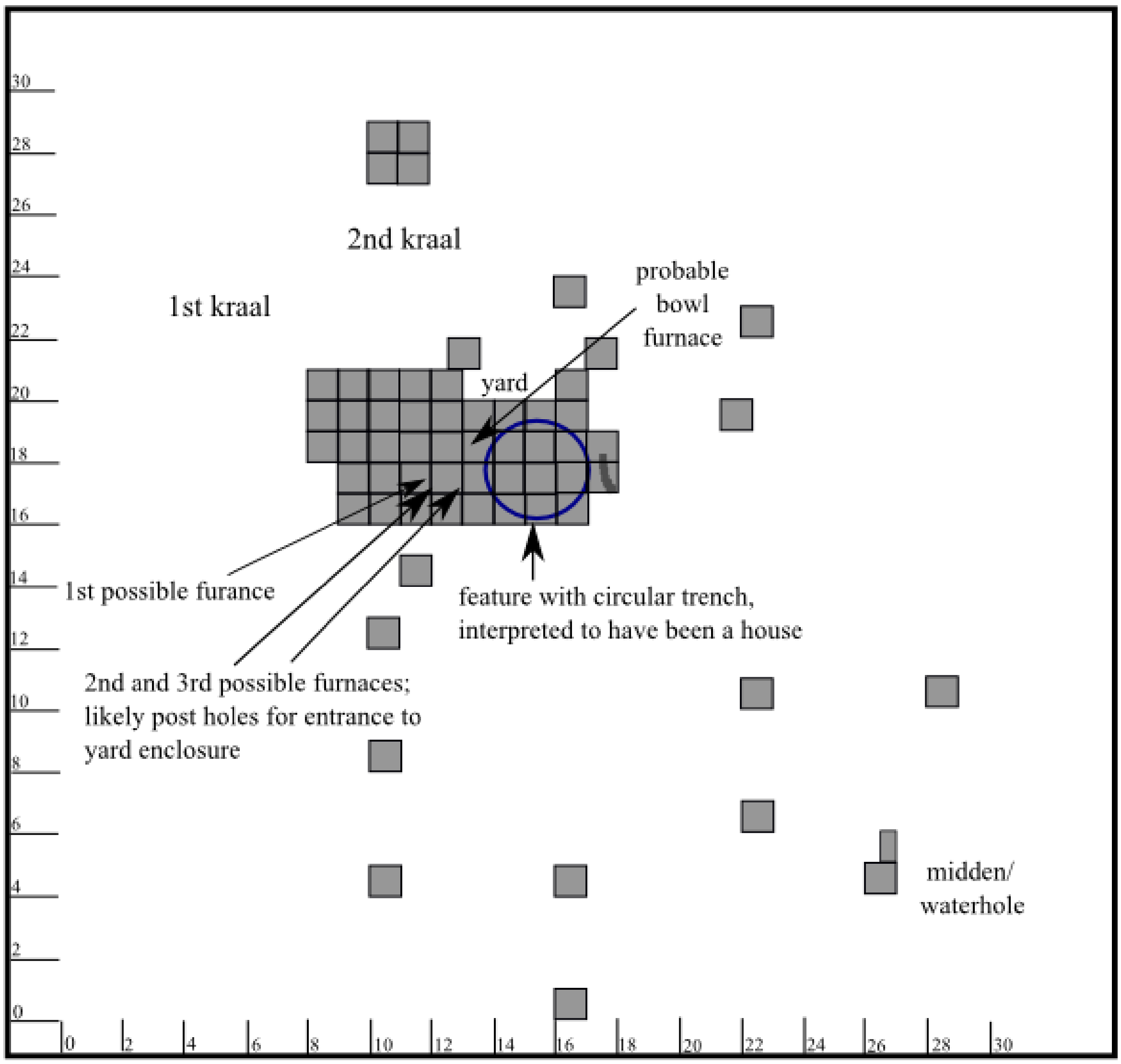

Fig. 5.16: Dukwe 25 site and excavation layout (redrawn from maps supplied courtesy of C. van Waarden)

Two kraals were found on the north-west side of the excavation one abandoned before the second was used. The first kraal (Fig. 5.16) had a mineralised layer at the bottom due to leaching and had furnaces that are most likely associated with it. The second kraal (Fig. 5.16) can be associated with a house and a yard where copper was produced (C. van Waarden pers. comm.). The analysis of Dukwe 25's faunal remains can therefore provide further insight into subsistence strategies of an economically specialist group if metal-workers who occupied the site. It is possible that occupation was seasonal if smelting was seasonal (C. van Waarden pers. comm.) and may indicate regional, chronological or socio-cultural variability and/or specific patterns associated with specialist craftsmen.

5.5.1 Sample size

Dukwe 25 comprises a total of 1104 specimens. A total of 690 specimens were identifiable and 414 specimens were unidentifiable. With a 62.5% identifiable specimen percentage, Dukwe 25 could indicate interesting results, as the bulk of the sample is identifiable.

5.5.2 Taxa present

A variety of taxa were identified from the sample (Table 5.31). Cattle and possible cattle are the highest numbers of identifiable specimens identified to a specific species level. Small rodents, hare/rabbit, tortoises (all shell specimens) and frog/toad comprise the rest of the sample, with the rest of the species only appearing in the bare minimum.

Table 5.31: Dukwe 25's Taxa list (NISP)

Taxa	**Common name**	**Dukwe 25**
cf. *Phacochoerus africanus*	possible warthog	1
Bos taurus	cattle	30
cf. *Bos taurus*	possible cattle	16
Ovis/Capra	caprine	2
cf. *Ovis/Capra*	possible caprine	2
cf. *Sylvicapra grimmia*	possible common duiker	1
Bovid I (small)	small bovidae	2
Bovid I/II (small - medium)	small – medium bovidae	1
Bovid I/II (small - medium) - non domestic	small – medium non-domestic bovidae	1
Bovid II (medium)	medium bovidae	63
Bovid II/III (medium – large) - non domestic	medium - large non-domestic bovidae	2
Bovid III (large)	large bovidae	183
Bovid III (large) - non domestic	large non-domestic bovidae	1

Table 5.31 cont.

Taxa	Common name	Dukwe 25
Bovid III/IV (large – very large)	large – very large bovidae	3
Rodent small	small rodent	7
Lagomorpha	hare/rabbit	2
Mammal small	small mammal	10
Mammal medium	medium mammal	86
Mammal large	large mammal	257
Aves small	small bird	1
Aves medium	medium bird	1
Snake indet.	indeterminate snake	1
Tortoise	tortoise	13
Bufo/Rana	frog/toad	4
Total		**690**

The sample consists of game and gathered sources (3% (n=21)), domesticates (7% (n=50)), indeterminate taxa (88% (n=609)) and self-introduced taxa (2% (n=10)). The domesticate percentage indicates a larger reliance on domesticates as the main diet contributor at Dukwe 25. This is not uncommon for African Late Iron Age sites (Badenhorst & Plug 2001).

Dukwe 25 also has some wild taxa, which indicates hunting at this site, as well as self-introduced taxa. Three of the taxa were most likely self-introduced (small rodent, frog/toad and intermediate snake) as these some of these animal remains were deemed 'fresh' during analysis. The hunted taxa include warthog that live in small family units and are grazers (Reijnders 1993:73). In contrast, common duikers are solitary browsers that require shelter for their offspring (Smithers 1983). Hare/rabbits are small, fast reproducing game that were most likely snared (Plug 1996; Smithers 1983; Wadley 2010) and tortoise were gathered. The birds could have been used the as ornaments, decorations or traded (Morton & Hitchcock 2014; Wadley 2010:180-181).

5.5.3 Features: identifiable and unidentifiable distribution

In the chart below, Dukwe 25's site layout is separated into identifiable and unidentifiable density maps (Fig. 5.17), to indicate distribution and intensity of identifiable and unidentifiable specimens. This was done with Dukwe 25 due to its fairly simple layout and distribution. A key is used to indicate intensity, with the colour increasing in darkness as the NISP of specimens increase. The bulk of both the identifiable (185 NISP) and unidentifiable (102 NISP) specimens can be found in the midden/waterhole in the south-east corner of the site (Fig. 5.17). Also indicated is that the 2nd

kraal only has identifiable specimens; the 1st kraal has a majority of identifiable specimens; the house has a near equal number of both identifiable and unidentifiable specimens; there is a spread of identifiable and unidentifiable specimens around the site and there is a cluster of higher NISP numbers of identifiable and unidentifiable specimens in the yard (Fig. 5.17).

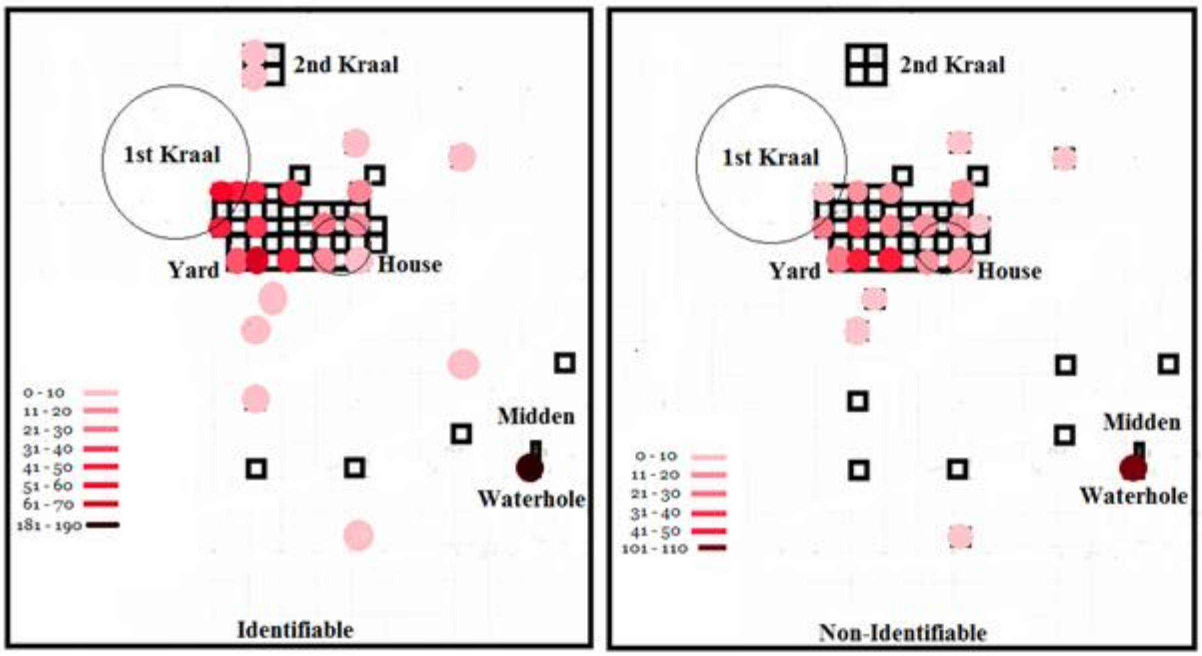

Fig. 5.17: Dukwe 25's identifiable and unidentifiable specimen distribution

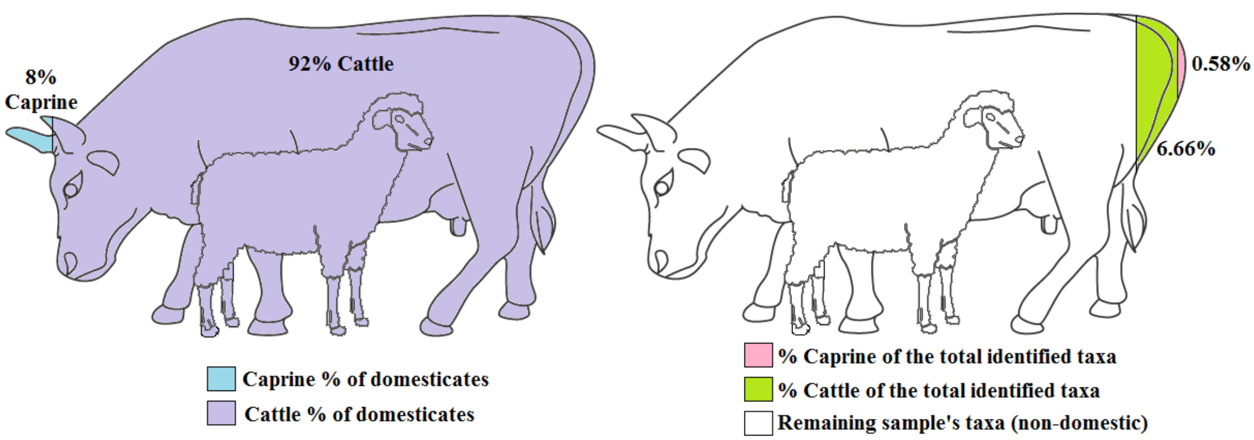

Fig. 5.18: Dukwe 25's domesticate representation

5.5.4 Domesticates and game

When the Cattle Index is calculated for Dukwe 25, the value is 0.92, indicating a very large number of cattle compared to caprines. Dukwe 25's domesticate animals comprise of 92% (n=46) cattle and 8% (n=4) caprines (Fig. 5.18), with cattle comprising 6.66% of the total sample and caprines 0.58%. The high cattle remains is not unusual for Late Iron Age sites (Badenhorst 2011; Fraser & Badenhorst 2014).

When the Game Index is calculated the value is 0.71, indicating a high number of low-ranked prey compared to high-ranked prey at Dukwe 25. It is clear that hunting of smaller prey was the main priority at Dukwe 25 (Fig. 5.19). Smaller prey such as warthog, hare/rabbit, bird and tortoise seems to have been the target. The latter could have been gathered while the people of Dukwe 25 were performing their daily duties (Plug 1989:67), where warthog and hare/rabbit would have taken some extra skill. Hares and rabbits were generally caught with snares, as well as birds (Plug 1996; Wadley 2010). This broad pattern and the hunting techniques inferred, supports the theory that men at smelting sites worked in seclusion and would have hunted by themselves, as only smaller prey were identified and solitary hunting techniques employed.

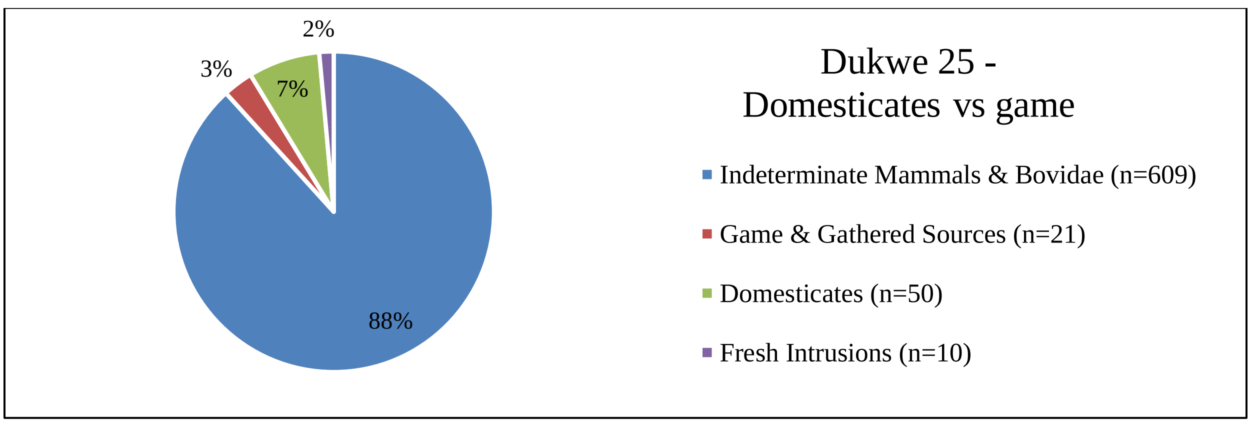

Fig. 5.19: Dukwe 25's domesticates vs. game

5.5.5 Taphonomy, intrusions and pathology

A total of 369 specimens from Dukwe 25 were burnt (Table 5.32). This is 32.96% of the sample. When each individual colour range is inspected, grey is clearly the largest group, with 64.29% of the sample being grey. Next is brown with 13.19%. Localised, black, blue and white only comprise a joint 22.53%, which is about one third of the grey specimens. These patterns indicate fires hotter than 645°C and a portion of fires between 285°C and 525°C.

Table 5.32: Dukwe 25's burnt specimens

Colour	Identifiable	Unidentifiable	Total
Localised	11	12	23 (6.32%)
Brown	35	13	52 (13.19%)
Black	14	17	32 (8.52%)
Blue	2	1	3 (0.82%)
Grey	127	107	234 (64.29%)
White	8	17	26 (6.87%)
Total	**197**	**167**	**364 (100%)**
	17.84% of 1104 sample total	**15.12% of 1104 sample total**	**32.96% of 1104 sample total**

A total of 29.53% of the assemblage has taphonomy (Table 5.33). Greenish/copper staining stands out as occurring the most (47.76%), with an ashy deposit residue occurring at 25.97%. It is not surprising that greenish/copper staining is prevalent at this site, as Dukwe 25 is seen as a copper smelting site. Copper artefacts and furnaces, and copper residue stain the specimens when in the ground (Plug & Roodt 1990:50). Also, with such a high burnt specimen percentage, ashy deposits are to be expected. Next, cut marks comprise the highest percentage (9.85%), with chop marks at 2.99%. This shows a higher number of defleshing and skinning occurring at Dukwe 25 (Plug 1997:103; Plug & Badenhorst 2006:65; Badenhorst & Plug 2004/2005:4), than shattering of specimens for boiling during grease rendering or to access marrow (Abe *et al* 2002:644; Binford *et al* 1988:131). Disarticulation of elements most likely took place at a kill site (Fisher 1995:19; Lyman 1987:281-286) or further from the site.

The rest of the taphonomy comprises of carnivore gnaw, rodent gnaw, insect damage, trampled/digested, root etching and calcide deposit featuring, but not by much. All chop marks, trampled/digested and calcide deposits were identifiable. It is worthwhile to note that identifiable samples have roughly 17% more taphonomy present that unidentifiable specimens. This could indicate that taphonomy agents did not contribute to the sample's fragmentation as specimens were still identifiable.

Table 5.33: Dukwe 25's taphonomy

Taphonomy	Identifiable	Unidentifiable	Total
Cut mark	24	9	33 (9.85%)
Chop mark	10	0	10 (2.99%)
Carnivore gnaw	9	2	11 (3.28%)
Rodent gnaw	5	3	8 (2.39%)
Greenish/copper staining	121	39	160 (47.76%)
Insect damage/drill holes	3	1	4 (1.19%)
Trampled/digested	2	0	2 (0.60%)
Root etching	16	2	18 (5.37%)
Ashy deposit	72	15	87 (25.97%)
Calcide deposit	2	0	2 (0.60%)
Total	**264**	**71**	**335 (100%)**
	23.1% of 1104 sample total	**6.43% of 1104 sample total**	**29.53% of 1104 sample total**

Fresh intrusions (Table 5.34) also occur at Dukwe 25. All the fresh intrusion taxa were identified as frog/toad, small rodent and one indeterminate snake.

Table 5.34: Dukwe 25's intrusions

Taphonomy	Identifiable	Unidentifiable	Total
Fresh intrusion	10	0	10 (100%)
	0.91% of 1104 sample total	**0% of 1104 sample total**	

Pathology is also present at Dukwe 25 (Table 5.35). The one pathology specimen was an unidentified specimen of unknown element, with abnormal bone growth present (Fig. 5.20 below).

Table 5.35: Dukwe 25's pathology

Taphonomy	Identifiable	Unidentifiable	Total
Pathology	1	1	2 (100%)
	0.09% of 1104 sample total	**0.09% of 1104 sample total**	

Fig. 5.20: Dukwe 25 - Unidentified pathology specimen

5.5.6 Breakage patterns

When only the long bones breakage patterns are investigated (Table 5.36 % Fig. 5.21), irregular breaks (57.33%) stand out as the most common breakage pattern, with spiral breaks (20.43%) next highest. Spiral breaks (fresh break) indicate consumption by the occupants of the site. Transverse breaks feature at 16.13%, with intact specimens making up 5.38% of the sample. Dry bone breaks (traverse and irregular breaks) occur 73.46% (n=141) of the time, indicating the bones were only broken much later after death. Carnivore breaks feature at 0.54% and no other breaks were recorded on the long bones.

Table 5.36: Dukwe 25's breakage of long bones

Spiral (S)	38 (20.43%)
Transverse (T)	34 (16.13%)
Irregular (V)	107 (57.33%)
Intact (I)	10 (5.38%)
Carnivore (C)	1 (0.54%)
Total	**190 00%)**

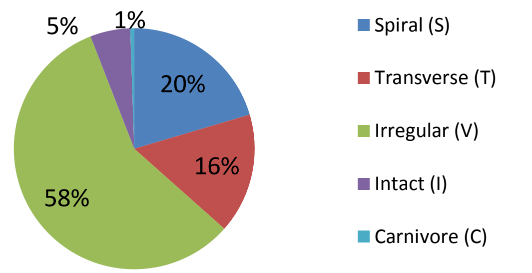

Fig. 5.21: Dukwe 25's breakage of long bones

5.5.7 Length

When all Dukwe 25's identifiable specimens are investigated by length, a curve appears that decreases the longer a specimen gets (Fig. 5.22). Code 3 specimens seems to be the largest length group, with Code 2 and Code 4 next. Code 1 does not fit the curve, with less than 20 specimens being smaller than 1cm. Most specimens of Dukwe 25 measure from 1 to 5cm in length, with only a few measuring from 10 to 20cm. This indicates taxa that are very fragmented, even if not by taphonomy processes.

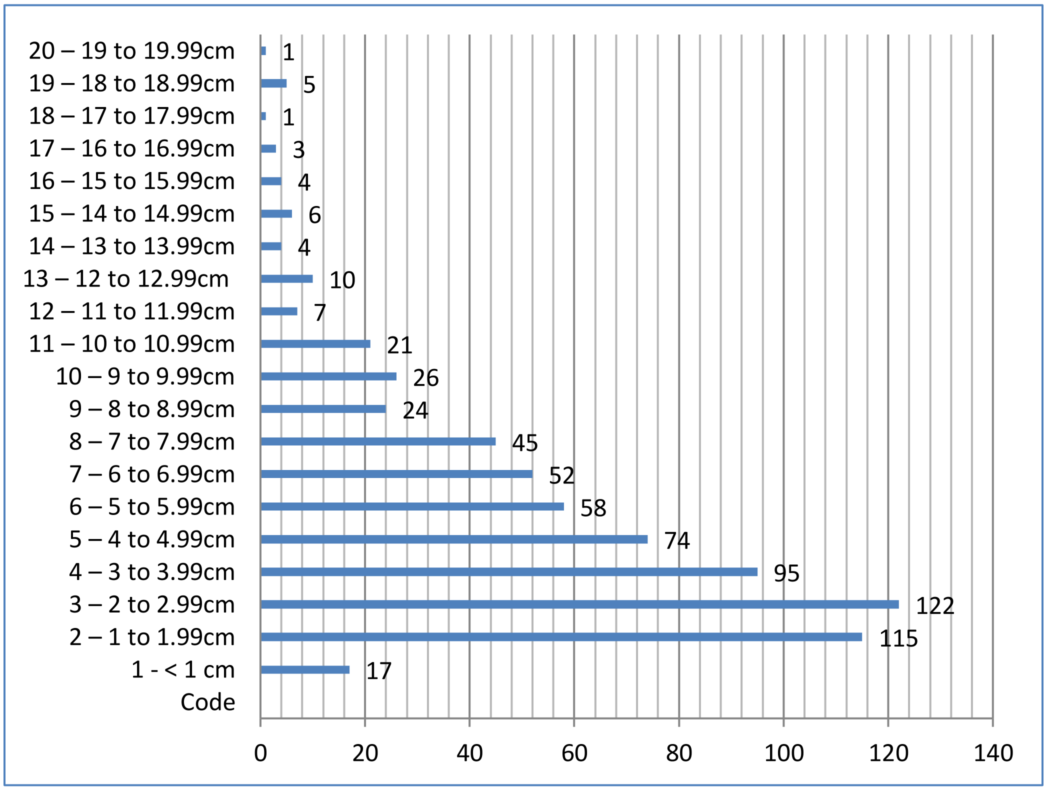

Fig. 5.22: Dukwe 25's length of identified specimen

5.5.8 Aging

Dukwe 25 has 46 cattle specimens, of which only nine samples could be assigned an age class. No caprines could be assigned an age class. Class VII is the predominant class of cattle remains found, with Class VIII second highest (Table 5.37). Class III and Class IV are also present and are still young individuals. The cattle age classes indicate cattle were slaughtered at all ages.

Table 5.37: Dukwe 25's cattle and caprines age classes (adapted from Voigt 1983:47-53)

Cattle Classes	**Cattle**
Class I (0-6 months)	
Class II (6-15 months)	
Class III (15-18 months)	1
Class IV (18-24 months)	1
Class V (24-30 months)	
Class VI (30-42 months)	
Class VII (Over 42 months)	5
Class VIII	2
Class IX	
Total Cattle	**9**

The post cranial specimens of domesticates and game indicates that 78% of the aged specimens were adults, and 22% were juveniles, with 0% being of neonate age (Table 5.38). The large mammal group is the only group to have more juveniles than adults, but only by one fusion side. Possible caprine and bovid III non-domestic groups only have juveniles present and no adults. There is also one unidentifiable specimen that was not included in the table below, which was clearly juvenile when analysed, but could not be identified to a specific family, order, genus, species or age class. The results indicate a site that utilised older animals over younger animals.

Table 5.38: Dukwe 25's post cranial aging

Taxa	**Dukwe 25**		
	Neonate	Juvenile	Adult
Bos taurus			22
cf. *Bos taurus*			6
cf. *Ovis/Capra*		1	
cf. *Sylvicapra grimmia*			1
Bovid I/II (small - medium)			1
Bovid II (medium)		2	1
Bovid III (large)		9	24
Bovid III (large) - non domestic		1	
Bovid III/IV(large – very large)			1
Rodent small		2	6
Lagomorpha			2
Mammal medium			2
Mammal large		10	8
Bufo/Rana			3
Snake indet.			2
Non ID		1	
Total	**0**	**26**	**79**
Percentage of 105 total do at the others		**24.76%**	**75.24%**

5.5.9 Skeletal parts

When skeletal part representation is taken into account, a very familiar picture emerges. Teeth make up the bulk of the sample (n=86) with 1st phalanx second (n=24), as well as metapodials, mandibles plus teeth and cranial elements. Similar to the Phoenix 17, the chest area of domesticates and Bovidae are poorly represented by the sample, as well as the spine area, with only a few caudal, sacral, thoracic and vertebrae present. However, the chest and spine area of the mammalian non-bovid taxa are present, with the rest of the skeleton appearing in lesser percentages. Interestingly this could indicate a site where bovidae and domesticates were not slaughtered on site, but where mammalian non-bovid taxa were.

Table 5.39: Dukwe 25's skeletal part representations

Element	**Caprine NISP**	**Cattle NISP**	**Bovid I NISP**	**Bovid I/II NISP**	**Bovid II NISP**	**Bovid II/ III NISP**	**Bovid III NISP**	**Bovid III/IV NISP**	**Mammalian Non-bovid taxa**
Horn Core						2 (100%)	3 (1.62%)		
Cranial		3 (6.52%)			12 (19.05%)		4 (2.16%)		38 (14.73%)
Petrosa									4 (1.55%)
Maxilla							1 (0.54%)		1 (0.39%)
Mandible and *in situ* teeth		3 (6.52%)			11 (17.46%)		5 (2.7%)		5 (1.94%)
Lose teeth	2 (50%)	12 (26.09%)			20 (31.75%)		62 (33.51%)		28 (10.85%)
Hyoid							1 (0.54%)		
Atlas									1 (0.39%)
Axis									
Cervical									16 (6.20%)
Thoracic							1 (0.54%)		10 (3.88%)
Lumbar									14 (5.43%)
Vertebrae					1 (1.59%)		1 (0.54%)		31 (12.02%)
Scapula					3 (4.76%)		4 (2.16%)		3 (1.16%)
Humerus			1 (33.33%)				4 (2.16%)		7 (2.71%)
Radius					2 (3.17%)		5 (2.7%)		2 (0.78%)
Ulna	1 (25%)				1 (1.59%)		2 (1.08%)		
Carpal		4 (8.7%)			1 (1.59%)		5 (2.7%)		1 (0.39%)
Metacarpal							5 (2.7%)		
Rib									86 (33.33%)
Ossified costal cartilage									
Sacral							1 (0.54%)		
Caudal					1 (1.59%)		1 (0.54%)		1 (0.39%)
Sternum									
Innominate (pelvis)				1 (50%)	1 (1.59%)		7 (3.78%)		3 (1.16%)
Femur					2 (%)		4 (2.16%)		2 (0.78%)
Patella							1 (0.54%)		
Tibia							13 (7.03%)		2 (0.78%)
Metatarsus		1 (2.17%)					5 (2.7%)		
Astragalus	1 (25%)	3 (6.52%)	1 (33.33%)				3 (1.62%)	1 (33.33%)	
Calcaneus			1 (33.33%)		1 (1.59%)		8 (4.32%)		
Tarsal							4 (2.16%)		
Lateral Metatarsus		1 (2.17%)					2 (1.08%)		
1^{st} Phalanx		10 (21.74%)		1 (50%)			12 (6.49%)	1 (33.33%)	
2^{nd}Phalanx		7 (15.22%)					5 (2.7%)		
3^{rd}Phalanx							2 (1.08%)	1 (33.33%)	
Metapodial		2 (4.35%)			6 (9.52%)		12 (6.49%)		2 (0.78%)
Sesamoid					1 (1.59%)		2 (1.08%)		1 (0.39%)
Total	**4 (100%)**	**46 (100%)**	**3 (100%)**	**2 (100%)**	**63 (100%)**	**2 (100%)**	**185 (100%)**	**3 (100%)**	**257 (100%)**

5.5.10 Measurements

Most of the measurable specimens (Table 5.40) at Dukwe 25 come from the yard area, two from the house area, one from a test pit and four from the 1st kraal. Almost all of the measurements are from cattle and possible cattle, with one Bovid I, one caprine and one possible common duiker.

Table 5.40: Dukwe 25's specimen measurements

Taxa	**Feature**	**Element**	**Left/ Right**	**Measurement in millimeter**
Bos taurus	Yard	1st phalanx	L	BD: 26.74
Bos taurus	Yard	2nd & 3rd Carpal	L	GD: 33.13, HMD: 18.66, L: 41.43
Bos taurus	Yard	1st phalanx	L	Dp: 29.63
Bos taurus	Yard	1st phalanx	L	BD: 26.55
Bos taurus	Yard	2nd phalanx	L	Bd: 22.59, SD: 22.34, GL: 44.29, Bp: 27.59, Glpe: 40.36. Dp: 27.49
Bos taurus	Yard	2nd phalanx	R	Bd: 26.15, SD: 27.14, GL: 40.68, Bp: 32.78, Glpe: 35.11, Dp: 32.52
Bos taurus	Kraal 1	1st phalanx	L	Bd: 29.68, SD: 25.80, GL: 58.03, Bp: 29.72, Glpe: 57.03, Dp: 29.88
Bos taurus	Kraal 1	1st phalanx	L	Bd: 28.93, SD: 26.01, Glpe: 56.38, Bp: 29.92, Dp: 26.97
Bos taurus	Kraal 1	2nd phalanx	L	SD: 22.38, Bd: 24.26, Dp: 28.04
Bos taurus	Kraal 1	2nd phalanx	R	Bp: 28.08
Bos taurus	Yard	1st phalanx	L	Glpe: 26.21, Bp: 32.36, Dp: 32.09
Bos taurus	Yard	1st phalanx	L	Bd: 22.08
Bos taurus	House	Astragalus	R	Bd: 45.68, GLl: 61.00, Dl: 37.81
cf. *Bos taurus*	Yard	Astragalus	R	BD: 40.35
cf. *Bos taurus*	Test Pit	4th Carpal	L	BFd: 28.69, GH: 21.73
Ovis/Capra	House	Astragalus	R	Dm: 13.74, GLm: 25.28, Bd: 16.03, GLl: 23.44, Dl: 13.79
cf. *Sylvicapra grimmia*	Yard	Humerus	R	BT: 23.10, BD: 24.06, Dmd: 21.63

5.5.11 Bone artefacts

From the whole sample, there is one specimen that was modified into an artefact (Table 5.41 & Fig. 5.23). The specimen is a Bovid I/II left 1st phalanx with a hole drilled through the distal part of the phalanx. The hole was most likely drilled through the phalanx to be used as adornment and strung on leather (Plug & Badenhorst 2006:65). The specimen was found in the 1st kraal on a burnt floor. The one fusion side available indicates the specimen as an adult.

Table 5.41: Phoenix 17's bone artefacts

Feature	Provenience	Taxa	Element	Left/Right	NISP	Measurement	Notes
1st Kraal	N18E8/SW/4+5 (cleaning burnt floor)	Bovid I/II	P1	L	1	Fig. 5.23 below	Drilled hole through distal part of phalanx.

Fig. 5.23: Dukwe 25's bovid I/II drilled phalanx artefact

5.5.12 Notes

A noticeable observation during analysis was that one of the tortoise shells found in a test pit was burnt on the one side of the shell, but not on the other. This indicates possible roasting at the site

5.5.13 Site summary

Dukwe 25 is situated east of the Makgadikgadi Pans and has been dated to AD 1450-1485 (15th century AD). The site has a house and yard, two cattle kraals and two probable refining or smithing furnaces and is therefore considered a metalworking site associated with copper mines (C. van Waarden pers. comm.). With a 62.5% (n=1104) identifiable ratio, Dukwe 25 should be able to investigate patterns such as hunting/herding practices at the site with a higher amount of accuracy than the 9th century AD sites in this study. Other Late Iron Age and even 19th century AD sites don't have such a high identifiable ratio (Plug 2000:119; Plug & Brown 1982; Plug & Pistorius 1999; Plug & Roodt 1990). There are many reasons for such a high identifiable ratio, such as taxa and elements that are easy to identify (tortoise, teeth) and less fragmentation (Badenhorst & Plug 2002; Badenhorst & Plug 2011:89).

Domesticates were more prominent that wild taxa and cattle outnumbered caprines significantly. It is also possible that domesticates were not killed at Dukwe 25. The hunting indicates individual hunting as well as gathered and snared taxa with hunted taxa being brought back to site. Hot fires, copper staining and ashy deposit is prevalent at Dukwe 25, indicating copper working. All the above evidence suggests a small smelting homestead that herded, hunted and traded.

The next chapter will take the results from all four sites and compare them with one another. Then the broader landscape will be taken into account and the four sites will be compared with sites across regions and throughout time, to ultimately place them within this socially complex history.

CHAPTER 6: DISCUSSION

6.1 Introduction

This chapter will expand the discussion on the four case studies to indicate whether these four sites point to regional, chronological or cultural patterning. To discuss these questions, the broader landscape of southern Africa during the Iron Age needs to be reviewed and compared in relation to these sites. The case studies will also be compared with one another to show whether they diverge or are similar.

From the previous chapter a few broad patterns were inferred: Thabadimasego was a possible specialist hunting site; Phoenix 17 was a possible cattle post; Phoenix 18 and Phoenix 17 were possibly the same site; and Dukwe 25 was a typical 15th century metalworking site. Presented below is a discussion of the case studies. The 9th – 11th centuries AD will first be discussed, followed by the 15th century AD.

6.1.1 Phoenix 17 and Phoenix 18

The results indicate that Phoenix 17 and Phoenix 18 are the same archaeological site. Phoenix 17 has a number of dhaka structures and Phoenix 18 is interpreted as a dhaka structure, which eventually became a midden (van Waarden 2000; C. van Waarden pers. comm.). Other factors such as the small sample size of Phoenix 18, the same ceramics (Zhizo), situated 150m apart, and no obvious differences in the faunal sample, make it very likely that Phoenix 17 and Phoenix 18 were indeed one site and will, from here on, be discussed as one site – termed Phoenix 17.

This study determined that Phoenix 17 was a 9th century AD site. Both wild and domesticate animals were utilised at this site. Game was utilised more than domesticates and the sample indicates that large and dangerous animals (hippopotamus and elephant) were present, as well as large numbers of leopard tortoise and tortoise. The former indicates a wide variety of hunting techniques such as communal hunting. Where the latter could be due to tortoise being gathered to supplement the diet.

During the 9th – 10th centuries AD in the SLCA, Schroda was the main Zhizo centre (Hanisch 1980) where female initiations took place and a large cache of clay figurines were also found (Huffman 2007). However, Calabrese (2007) and Raath (2014) indicate that ritual activity occurred in the Leokwe phase (post- AD 1000). Phoenix 17 which dates to a similar time, also had the remains of a clay figurine, indicating possible ritual or initiations here as well (although not on the same scale as Schroda). When Schroda and Pont Drift's taxa lists (Plug & Voigt 1985; Raath 2014) are compared with Phoenix 17, there is a larger amount of wild taxa at Schroda and Pont Drift than Phoenix 17. However, the large number of indeterminate mammals and bovids at Schroda and Pont Drift may be playing a role here and be obscuring this figure. When only Raath (2014)'s Zhizo layers are compared the same pattern persists. Phoenix 17's large scale use of game, can also be seen elsewhere, for example, in the Taukome and Toutswe phases of Bosutswe, which have a similar date. Ultimately when the percentages are investigated the results show that during the 9th – 10th centuries AD, Phoenix 17 hunted to a similar extent to the other sites during this time.

On the other hand, Phoenix 17 also had a pastoral economy with cattle outnumbering caprines. When both the Cattle and Game indices are calculated (Table 6.1), Phoenix 17 has a value of 0.61, indicating a higher number of cattle than caprines and a higher quantity (0.92) of low-ranked prey compared to high-ranked prey. When compared to Schroda and Pont Drift domesticates were much more prominent at Phoenix 17, while at Schroda caprines outnumber cattle (Plug & Voigt 1985).

Table 6.1: Cattle and Game Indices

Indices	**Phoenix 17**	**Phoenix 18**	**Thabo di Masego**	**Dukwe 25**
Cattle Index	0.61	1	0.38	0.92
Game Index	0.92	1	0.21	0.71

Contrasting to Schroda and Pont Drift, is the site of Castle Rock in the SLCA that shows a similar pattern of cattle herding to Phoenix 17. Castle Rock is a K2 period commoner site that had multiple kraals as with Phoenix 17, as well as low-index meat parts which is indicative of a cattle post (Huffman 2014:119-120). When skeletal part representation is also investigated at Phoenix 17, the results indicate that Phoenix 17 was also a possible cattle post. This is evidenced by low-index parts of domesticates, such as skull, feet and tails which were present and is indicative of cattle owners giving these parts to herdsmen (Stayt 1931 cited in Huffman 2014:120). In contrast, most

of the game's skeletal parts were present, demonstrating that game was brought back to Phoenix 17 and all parts utilised.
There is also evidence of cattle posts communities closer to Phoenix 17, at Bosutswe. Bosutswe most likely kept their cattle in outlying cattle posts (Denbow *et al* 2008a:476), which is similar to what is supposed at Phoenix 17. The Taukome and Toutswe phases of Bosutswe also show that cattle outnumbered caprines (more so in the Toutswe phase) (Badenhorst 2015; Plug 1996), as with Phoenix 17. The large number of leopard tortoise and tortoise already discussed, could also indicate Phoenix 17 being a cattle post, where tortoise was gathered to supplement the diet. This, coupled with the skeletal part representations, show a different than 'normal' use of animals at this site, which could point to a cattle post.

The above evidence indicates occupants that valued and herded cattle for other people within the community. There is evidence of copper working, possible ritual or initiations and the use of Zhizo and Toutswe tradition ceramic. Phoenix 17 also shows a community where hunting was relied on for sustenance instead of domesticates.

6.1.2 Thabadimasego

Thabadimasego is situated on the top of the Mosu Escarpment next to the Makgadikgadi Pans. It dates to the mid-9th century AD and was most likely a specialised camp site where hunting was the main means of acquiring meat. Daggett makes the point that "…the organization of the site does not follow any known model for Early Iron Age village layouts, and given the fairly small area occupied by the site as well as its small quantity of structures, it does not follow that Thabadimasego was in fact a long-term residential occupation." (Daggett 2015:194).

When Thabadimasego and Phoenix 17 (discussed above), which both date to a comparable time are compared, both have similar sample sizes and have large and dangerous animals (Table 6.2). Communal hunting, traps, snares, pits, possibly spears and gathering took place at Thabadimasego as evidence by species such as buffalo, impala and plains zebra, elephant, hare/rabbit, carnivores and steenbuck. Thabadimasego also has the largest taxa list of all the sites (Table 6.2). Occupants of Thabadimasego also relied on gathered resources as is evidenced by shell resources, such as molluscs, giant African land snail and terrestrial gastropod. These shell resources were most likely consumed as well as used to possibly manufactured beads. This is in contrast with Phoenix 17 where gathering is also present, but evidenced by leopard tortoise and tortoise instead.

When placed within the broader landscape, specifically during the 9th – 10th centuries AD in the SLCA, Schroda and Pont Drift's taxa lists (Plug & Voigt 1985; Raath 2014) show a larger number of wild taxa than at Thabadimasego. However, as with Phoenix 17, the large number of indeterminate mammals and bovids may be playing a role here and when percentages are investigated with this in mind, occupants of Thabadimasego hunted to a similar extent as those at Schroda and Pont Drift (even when only investigating the Zhizo phases). When the Taukome and Toutswe phases of Bosutswe, which have a similar date, are compared, a pattern of hunting over agro-pastoralism is also evident in the region. At the southern Makgadikgadi Pans it has been indicated that wild and domestic animals were being used equally around the Makgadikgadi Pans (Reid & Segobye 2000:63-64; van Waarden 1998:128). Thabadimasego's sample therefore shows a more hunting orientated site than some other in this area at this time. This could be due to the abundance of wild animals in the immediate Makgadikgadi area (Bock 1998; Denbow 1986; Reid & Segobye 2000:59) and the possible nature of Thabadimasego as a specialist/short-term site (i.e. no resident cattle/caprine herds).

Table 6.2: All four sites' Taxa list (NISP)

Taxa	**Common name**	**Phoenix 17**	**Phoenix 18**	**Thabo di Masego**	**Dukwe 25**
Insectivora sp. indet	for example, hedgehogs, moles and shrews			2	
Homo sapiens sapiens	human	18		2	
Viverridae	mongoose/genet/civet			1	
Carnivora small	small carnivore	2			
Carnivora medium	medium carnivore			1	
Loxodonta africana	elephant			7	
Equus quagga	plains zebra	1		2	
cf. *Equus quagga*	possible plains zebra	1			
Phacochoerus africanus	warthog	3			
cf. *Phacochoerus africanus*	possible warthog				1
cf. *Potamochoerus porcus*	possible bushpig			1	
Hippopotamus amphibius	hippopotamus	1			
Bos taurus	cattle	59		11	30
cf. *Bos taurus*	possible cattle	31	4	3	16
Ovis aries	sheep	5		2	
cf. *Ovis aries*	possible sheep			1	
Capra hircus	goat	2			
cf. *Capra hircus*	possible goat	1			

Table 6.2 cont.

Taxa	**Common name**	**Phoenix 17**	**Phoenix 18**	**Thabo di Masego**	**Dukwe 25**
Ovis/Capra	caprine	44		12	2
cf. *Ovis/Capra*	possible caprine	5		7	2
Sylvicapra grimmia	common duiker	1			
cf. *Sylvicapra grimmia*	possible common duiker				1
Raphicerus campestris	steenbuck			3	
Aepyceros melampus	impala			4	
cf. *Aepyceros melampus*	possible impala	2			
Syncerus caffer	buffalo			1	
Bovid I (small)	small bovidae	6		18	2
Bovid I/II (small - medium)	small – medium bovidae				1
Bovid I/II (small - medium) - non domestic	small – medium non-domestic bovidae				1
Bovid II (medium)	medium bovidae	101	3	226	63
Bovid II (medium) - non domestic	medium non-domestic bovidae	4		1	
Bovid II/III (medium – large)	medium – large bovidae				2
Bovid III (large)	large bovidae	122	7	162	183
Bovid III (large) - non domestic	large non-domestic bovidae	3		1	1
Bovid III/IV (large – very large)	large – very large bovidae			5	3
Pedetes capensis	springhare	8			
Cryptomus hottentotus	mole rat	32			
Rodent small	small rodent	50		159	7
Rodent medium	medium rodent	2		5	
Lagomorpha	hare/rabbit	3		1	2
Lepus sp.	hare	1			
Mammal small	small mammal	23		38	10
Mammal medium	medium mammal	122	1	201	86
Mammal large	large mammal	108	7	132	257
Struthio camelus	ostrich			30	
Aves small	small bird			1	1
Aves small/medium	small/medium bird	1		1	
Aves medium	medium bird	1		5	1
Snake indet.	indeterminate snake				1
Snake small	small snake	2			
Snake medium	medium snake	1			
Reptile small	small reptile			3	
Reptile small/medium	small/medium reptile	4			
cf. *Geochelone pardalis*	possible leopard tortoise	134		1	
Tortoise	tortoise	25	1	5	13
Saura sp.	lizard			8	
Bufo/Rana	frog/toad	6		1	4
Achatina sp.	giant African land snail			23	
cf. *Achatina* sp.	possible giant African land snail			1	
Euonyma sp.	terrestrial gastropod			1	
Mollusc	molluscs			17	
Total		**936**	**23**	**1106**	**690**

The difference at Thabadimasego becomes evident when one investigates domesticates on the broader landscape. The Cattle and Game indices (Table 6.2 above) show that Thabadimasego has a higher number of caprines (0.38) than cattle and a higher number of high-ranked prey compared to low-ranked prey (0.21). This is divergent from Phoenix 17 and these two sites shows the difference on a broad scale between a 9th century specialist short term site and a 9th century cattle post and differential usages of animals during the same time. Sites such as Schroda, Pont Drift, Bosutswe, Kaitshàa, Mosu I and Mosu II, which date to a relatively similar time period, also relied much more on domesticates than Thabadimasego, yet, at Schroda caprines outnumber cattle (Plug & Voigt 1985), as is the case at Thabadimasego. Thabadimasego, however, only had 3.25% (n=50) domesticates in its sample, which is much smaller the comparable dated sites, and shows a reliance on hunted fauna despite the divergent caprine/cattle ratios.

When skeletal part representation is investigated, Thabadimasego contrasts with Phoenix 17 (presence of almost only low-index domesticate parts). At Thabadimasego all animals' chest areas were poorly represented in the sample, as well as the spine area, with only a few atlas vertebrae present. This most likely indicates that Thabadimasego was a consumption/camp site, which reinforces the idea of a temporary camp site where animals were brought back for consumption.

In Chapter Two of this study, it has been shown that hunting and agro-pastoralism were relied on during this critical time period in Botswana (e.g. Kaitshàa), with an emphasis on hunting. There is also an increased use of domesticates and a shift away from game, for example at Taukome, Taukome phase of Bosutswe and K2 in the SLCA (Denbow 1986:15-16; Denbow et al 2008a:476; Plug & Voigt 1985). This data, together with the faunal results in this study, reinforces what Daggett has argued about Thabadimasego: "Given its anomalous, low-complexity features, it should also be characterized as something other than a long-term residential site." (Daggett 2015:194-195). I therefore suggest that Thabadimasego was a short-term occupational site and/or seasonal site, which included small-scale bead manufacturing and where hunting was utilised as the main source of sustenance.

6.1.3 Dukwe 25

The later site in this study, Dukwe 25, is a 15th century small homestead with two probable refining or smithing furnaces, two cattle kraals, situated east of the Makgadikgadi Pans. Domesticates were more prominent than wild taxa and cattle significantly outnumbered caprines. The hunting results indicate individual hunting, as well as gathered and snared taxa. Dukwe 25 also had less fragmentation, more burnt specimens and more taphonomy than at the 9th century AD sites in this study. Dukwe 25 also had neither the large dangerous animals, nor the shells (Table 6.2 above). This could be due to Dukwe 25's presumed status as a small metalworking homestead, where smelters only hunted opportunistically as evidence by hare/rabbits, tortoise, snake and bird in the sample.

That said, Dukwe 25 dates to an interesting time period during the Iron Age. In the course of the 15th century AD, the people of Great Zimbabwe are thought to have moved to the Mutapa state in the north, or west to Khami - a Butua state site (van Waarden 1998:136-137). Khami extended its influence into northeast Botswana and the Butua state was known for its gold, large cattle herds and stone walling (Beach 1980:200,233; Mudenge 1974:388). Khami phase ceramics were found at Dukwe 25. Similarly to Butua state sites, domesticates were more prominent that wild taxa and cattle outnumbered caprines at Dukwe 25. Cattle and Game indices (Table 6.1 above) indicate a higher number of cattle than caprines and a higher quantity of low-ranked prey compared to high-ranked prey. This is similar to Phoenix 17 (9th century cattle post), but divergent from Thabadimasego (9th century short occupational site).

Dukwe 25 can also be compared to Vumba (Khami phase), a 15th century Kalanga village in Botswana (C. van Waarden pers. comm.). Vumba also had two cattle kraals with houses and granaries around the central kraal (van Waarden 1989, 1998:144-146). Both Vumba and Dukwe 25 had Khami phase pottery associated with them. Vumba was part of the Butua state and although Dukwe 25 did not have evidence of large cattle herds, it did have more domesticates than hunted fauna. Vumba's domesticate animals consist of caprines (58.5%), cattle (37.7%) and chicken (3.8%), where Dukwe 25's cattle remains constitute 92% and caprines 8% of the sample, indicating a larger reliance on cattle than at Vumba. The cattle at Vumba were mostly older juveniles when killed, with 75% of juvenile caprines being killed (van Waarden 2012:142-144), whereas at Dukwe

25, cattle were slaughtered at all ages. These two sites could indicate large enough herds, so that younger animals could be culled due to their tender meat if so desired (Plug 1993:106) or that culling could have been due to preference. After the 15th century AD it has been documented that cattle played a big role in the societies of southern Africa (for example in bridewealth) (Hall 1986; Huffman 2001; Mitchell 2002). At the Zimbabwe phase of Bosutswe, domesticates played a very large role and cattle outnumbered caprines. When the large indeterminate amount of animals (88% (n=609)) are accounted for at Dukwe 25, it is possible that Dukwe 25 had a similar ratio of wild versus domesticates. Cattle most certainly outnumbered caprines at Dukwe 25.

Another important aspect of Dukwe 25 is the metalworking evidence. Iron Age people mined and smelt minerals (Murphy *et al* 1994). Evidence of smelting communities can be found in Botswana at Tsodilo Hills, where mine caves were excavated during the 7th – 11th centuries AD (Murphy *et al* 1994). Dukwe 25 indicates smelting communities were still active in the 15th century AD. Smelting was thought to be a male dominated activity (Calabrese 2000a:102) and smelting often occurred far from villages due to rituals and taboos (Childs & Killick 1993; Collet 1993 & Herbert 1984, 1993 cited in Plug & Pistorius 1999:180). This suggests men lived, worked and hunted in seclusion (Plug & Pistorius 1999:180) at Dukwe 25 as at other second millennium AD sites (Plug 1988:322-325 cited in Plug 1993).

The above evidence indicates utilisation of larger numbers of domesticates than wild resources at Dukwe 25 than at the 9th century AD sites in this study. Dukwe 25 is also similar to other second millennium AD sites and has an expected pattern of domesticate and game usage that fits during this time. It is also possible that it fit the pattern of men in seclusion that smelted, hunted and gathered prey opportunistically.

6.2 Conclusion

The results and discussion in this study indicate a landscape that was concerned with wild taxa for sustenance during the first millennium AD of southern Africa. Hunting slowly decreased over time, as domesticates became more prominent during the second millennium AD. Phoenix 17 does not follow the norm of caprines outnumbering cattle at earlier Iron Age sites but is similar to other cattle posts site in Botswana and the SLCA, whereas Thabadimasego follows this broad pattern.

However, Thabadimasego is seen as a short-term occupational site which relied on hunting. Dukwe 25 has a similar pattern to other sites in the 15th century AD, and reflects this collective change to increased reliance on domesticates.

When all three sites are compared with one another, it is clear that they are varied. This provides a similar pattern than that of Qugana, Lotshitshi and Matlapaneng (Chapter 3) that are situated in a similar environmental area, date to a similar time period, yet reacted differently to the use of domesticates and game. Divuyu and Nqoma also indicate that not all communities utilised animals alike. The same principle can be applied to sites in this study as they are all relatively close to each other in time and place, but seem to have different characteristics, function and faunal use.

The next chapter will give a final conclusion of all the results in this study and discuss the future of zooarchaeology in southern Africa and this research's significance.

CHAPTER 7: CONCLUSION

7.1 Introduction

At the start of this study, the goal was to investigate animal utilisation at four sites in Botswana dating to the Iron Age of southern Africa. Animal utilisation included identifying species present at these sites, as well as patterns of hunting and agro-pastoralism. A subset of this goal was to identify any social elements, such as site function, preferential use of certain animals or animal elements. This was achieved with the help of identifying taphonomy and taxa. The final aim was to compare these sites to other sites in their general area, in the broader landscape and to see if regional/chronological/cultural patterning could be identified. These goals were reached and below a summary of the results and conclusions are detailed.

7.2 Case studies

The analysis of the faunal data of the sites in this study gives new data and perspective to the 9th and 15th centuries AD. They indicate societies that fit into the broader landscape in sometimes similar, yet divergent ways. Below, I will look at the conclusions extracted from this study, as well as these sites' broader meanings:

When all four sites were contrasted and compared, the broad patterns indicate that Phoenix 17 and Phoenix 18 were the same site. Phoenix 17 was a cattle post that made it necessary for the community to hunt for sustenance, due to domesticates being the property of others. This would explain the large numbers of tortoise remains, number of kraals, presence of low-index domesticates parts and cattle outnumbering caprines. The people at Phoenix 17 also had considerable hunting skill. However, as not a lot of 'cattle post' excavations are known, the results do look similar those sites such as Castle Rock. My interpretation of Phoenix 17 as a cattle post is therefore speculative.

Thabadimasego was a specialist/temporary camp site that only had a small percentage of domesticate (3% (n=36)) and no kraals. Hunting was specialised and the main way of acquiring meat, with hunted taxa being killed elsewhere and the desired elements brought back to camp. Shell resources were also utilised and used for small-scale manufacturing of beads. This indicates a community that hunted and gathered resources, with a few domestic stock kept. Thabadimasego, therefore diverges from other sites on top of the Mosu Escarpment, cementing it as a specialised hunting and short term occupational site.

Dukwe 25 is a metalworking site associated with copper mines where cattle outnumbered caprines significantly. The hunting activities indicate individual hunting such as gathering and snaring with hunted taxa being brought back to site. This is not dissimilar to other Late Iron Age sites where cattle became the dominant domestic animal when they replaced sheep (Badenhorst 2010:88). Khami phase ceramics were found at Dukwe 25 and as found at the Butua state sites, domesticates were more prominent that wild taxa. It is evident that Dukwe 25 was a small homestead site with possibly just men, who smelted, herded and hunted on occasion. The evidence suggests a typical Late Iron Age smelting site as those found in Phalaborwa.

7.3 Zooarchaeology and the significance of this study

This study signifies that the three sites in this study are very different from one another. Although they show broad patterns of domesticate and game usage, which is similar to other sites during the Iron Age of southern Africa, they also illustrate variations and demonstrate that not each and every site is the same, even when situated close to one another and dating to the same time period.

The faunal remains of these case studies and other sites during the Iron Age also point to the possibility of comparisons being used to infer larger patterns of animal usage. For example, sites in the SLCA (Schroda, K2 etc.) and in Botswana (Bosutswe, Toutswemogala etc.) indicate preferential use of cattle that increases over time. Furthermore, this study points out that the faunal remains of an archaeological site can be used to infer social and economic activities.

This study contributes to the faunal literature of southern Africa that seeks to address social ties with the procurement and use of animals, site function and broader socio-political structures. This study therefore also illustrates how the communities at specific sites can be understood by analysing their food provisioning as more than just sustenance.

In the future, studies such as this can be used in conjunction with other faunal studies to investigate site specific patterns in eastern Botswana, but also the 9th and 15th centuries AD as a whole in southern Africa. There is a need for further faunal investigations of sites in eastern Botswana, specifically around the Makgadikgadi Pans, to fill the research gap during this critical time period and further our understanding.

7.4 Conclusion

In conclusion, this study indicates that faunal remains can be used to infer cultural patterns on a broad scale, as well as give inter-site perspective. These three sites that date to a critical period of interaction and social change, now have analysed faunal evidence that has been used to garner insights into communities and their subsistence practices. This project shows the results that are possible when investigate animal utilisation, hunting methods, taphonomy, social connections to animals, and preferential use of certain animals and animal elements. By analysing more faunal remains from the Iron Age of southern Africa, the doors for further comparisons can be opened, which could give additional insights into the past, which was previously not possible.

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1. Appendix A

CROW CANYON ARCHAEOLOGICAL CENTER
MANUAL FOR DESCRIPTION OF VERTEBRATE REMAINS

Jonathan C. Driver, April 1999, 6th edition

(adapted by Shaw Badenhorst, July 2009)

ELEMENT

Bone fragments which cannot be identified to element must be recorded as:
UN UNIDENTIFIED

Mammalian element codes arranged anatomically
AN ANTLER
HC HORN CORE
CR CRANIAL
BO BASIOCCIPITAL
BS BASISPHENOID
BU BULLA
FA FACIAL
FR FRONTAL
LA LACRIMAL
MX MAXILLA
NS NASAL
OC OCCIPITAL CONDYLE
OX OCCIPITAL
PE PETROSA
PO PAROCCIPITAL
PR PARIETAL
PM PREMAXILLA
PS PRESPHENOID
SP SPHENOID
SQ SQUAMOSAL
TE TEMPORAL
ZG ZYGOMATIC

MN MANDIBLE

HY HYOID

VE VERTEBRA
AT ATLAS
AX AXIS
CE CERVICAL
TH THORACIC
RI RIB
OO OSSIFIED COSTAL CARTILAGE
ST STERNUM
LU LUMBAR
SA SACRAL
UR CAUDAL

SC SCAPULA
CL CLAVICLE
HU HUMERUS
RA RADIUS
UL ULNA
CP CARPAL
MC METACARPUS
ML LATERAL METACARPUS (UNGULATES)

IN INNOMINATE
FE FEMUR
PA PATELLA
FI FIBULA
TI TIBIA
AS ASTRAGALUS
CA CALCANEUS
TA OTHER TARSALS
MT METATARSUS
MV LATERAL METATARSUS (UNGULATES)

MP METAPODIAL
1P PROXIMAL PHALANX (FIRST PHALANX)
2P MEDIAL PHALANX (SECOND PHALANX)
3P TERMINAL PHALANX (THIRD PHALANX)
SE SESAMOID

BA BACULUM

Mammalian teeth
The only teeth to be coded are loose teeth. Teeth which can be fitted back into mandibles and maxillae should not be coded. Each tooth is assigned a two letter code. The first letter defines the type of tooth (incisor, premolar etc.). The second letter describes the tooth as either deciduous or

permanent. Remember that only incisors, canines and premolars have deciduous precursors; there are no deciduous molars.

Tooth name codes (first letter)

Y INCISOR
K CANINE
X PREMOLAR
Z MOLAR
T UNKNOWN TOOTH FRAGMENT

Age codes (second letter)

D DECIDUOUS
P PERMANENT
N NOT KNOWN

Examples:
KP is a permanent canine; XD is a deciduous premolar

Avian elements

Birds have a skeleton similar to mammals, with similarly named elements. For bird bones, use all applicable mammalian codes, with the following additions and changes.

Mandible - although bird mandibles are composed of more than one bone, in most cases the portions which survive archaeologically will not be of individual bones but composite pieces. Therefore, bird mandibles will be coded as MN (as in mammals).

It is possible that you will find tracheal rings (TR) preserved.

Vertebral column - same codes, but remember that posterior thoracics, lumbars, sacrals, and anterior caudals are fused to form the synsacrum (SS). The most posterior vertebra is the pygostyle (PY).

Ribs - same codes, but remember birds have separate sternal ribs (SR) which lie between the ribs and the sternum.

Pectoral girdle - same code for scapula; add coracoid (CO) and furculum (FU)

Pelvic girdle - same codes

Wing - same codes for analagous bones. The carpometacarpus is coded as a metacarpus, as in the mammals. See below for phalanx codes.

Leg - same codes for analogous bones. The tibiotarsus is coded as a tibia. The tarsometatarsus is coded as a metatarsus, as in mammals. Remember that birds don't have tarsals. See below for phalanx codes. Ossified tendons (OT) are quite common.

Birds have distinctive vestigial phalanges at the tips of the wings. These are coded simply as one category - wing phalanges (WP). The phalanges of the feet are often difficult to distinguish, with the exception of the terminal phalanx. If you are confident of the position of the individual phalanx, use the following codes : proximal phalanx (P1), second phalanx (P2), third phalanx (P3), terminal phalanx (P4). If you are not confident, use PH (phalanx).

Egg shell is coded EG

Thus, the only new codes you will require for bird bone are as follows :

TR TRACHEAL RING
SS SYNSACRUM
PY PYGOSTYLE
SR STERNAL RIB
CO CORACOID
FU FURCULUM
WP ANY WING PHALANX
PH ANY FOOT PHALANX
P1 PROXIMAL PHALANX
P2 SECOND PHALANX
P3 THIRD PHALANX
P4 TERMINAL PHALANX
EG EGG SHELL
QU QUADRATE
OT OSSIFIED TENDON

Amphibians and reptile elements

When possible, the codes for mammals and birds are to be used for amphibian and reptile bones which have the same names. Use the system for bird phalanges to code phalanges of amphibians and reptiles. Notes and additions to the codes are as follows:

For cranium and mandible use CR and MN (as for mammals and birds) for any fragments which are composed of more than one named bone type.

In turtles, you may divide portions of the "shell" into plastron (PL) or carapace (CC). For fragments of shell which cannot be so determined, use SH ("shell").

Vertebrae are not always named in the same way as birds and mammals. For unassigned vertebrae use VE. Some reptiles and amphibians have an urostyle (US).

As radius/ulna and tibia/fibula are fused together in amphibians, use RU for the former and TF for the latter.

All portions of the sternal complex should be coded as ST (same as birds and mammals).

The new codes for amphibians and reptiles are:

PL PLASTRON
CC CARAPACE
SH SHELL (INDETERMINATE TURTLE SHELL)
VE VERTEBRA
US UROSTYLE
RU RADIUS/ULNA
TF TIBIA/FIBULA

Element codes for fish

As fish remains will be rare on most sites, and as there is controversy about how fish bones should be named, these codes are a minimal list, and more will have to be added if substantial quantities of fish are recovered. Use codes for mammals and birds for similarly named elements. Otherwise use the following codes

BP BASIPTERIGIUM
CH CERATOHYAL
CT CLEITHRUM
DE DERMETHMOID
EP ECTOPTERYGOID
HM HYOMANDIBULAR
IO INTEROPERCULAR
ME METAPTERYGOID
OP OPERCULUM
PC PREOPERCULAR
PD PARASPHENOID
PG PHARYNGEAL PLATES
SB SUBOPERCULUM
SO SUPRAOCCIPITAL
SU SUPRAETHMOID
VO VOMER
DT DENTARY
AR ARTICULAR
BR BARNCHIOSTEGAL
PT PTERYGIOPHORES
EC SCALE

SIDE

A one letter code must be provided for each fragment.

L Left
R Right
I Irrelevant (i.e. for elements which cannot be sided, such as vertebrae)
U Unknown (i.e. for elements which can be sided but are too fragmentary or too difficult to assess; examples of this might be phalanges, rib fragments etc.)

PART

A one or two digit code is used to describe the portion of the element represented.

Mammal Element Part Codes

Antler/ horn core

1 Complete
10 Fragment attached to cranium
2 Fragment

Cranial

The cranium is composed of individually named bones. If the cranial fragment consists only of a single bone, name the element and use the following codes

1 Complete
2 Fragment

If the specimen is a complete cranium, or if it is a fragment made up of more then one cranial bone (e.g. the temporal and the zygomatic) use the following codes.

1 Complete
3 Posterior fragment
4 Anterior fragment
5 Ventral fragment
6 Dorsal fragment
7 Other fragment
20 Complete posterior to nasals
21 Fragment with complete maxilla and premaxilla
22 Fragment with complete maxilla
23 Fragment with partial maxilla
24 Fragment with complete premaxilla
25 Fragment with partial premaxilla
26 Fragment with maxilla and partial premaxilla
27 Fragment with partial maxilla and premaxilla
28 Fragment with partial maxilla andpartial premaxilla

Mandible

1 Complete
30 Molar and premolar toothrow
31 Molar row with partial premolar row
32 Premolar row with partial molar row
33 Fragment of molar row
34 Fragment of premolar row
35 Anterior to premolars
36 Posterior to molars
37 Anterior through molar row
38 Anterior through partial molar row
39 Anterior through partial premolar row
40 Premolar and molar row plus ascending ramus
41 Partial premolar row, molar row, and ascending ramus

42 Partial molar row plus ascending ramus
43 Ventral fragment of horizontal ramus

Loose teeth
1 Complete
2 Fragment

Hyoid
1 Complete
2 Fragment

Vertebrae
1 Complete
50 Complete centrum
51 Centrum fragment
52 Unfused epiphysis of centrum
53 Centrum plus neural arch
54 Neural arch fragment
55 Transverse process, complete or fragment
56 Spinous process, complete or fragment
57 Anterior or posterior zygapophysis
58 Vertebra split along anterior/posterior axis
59 Vertebra split along medio/lateral axis
7 Other fragment

Ribs
1 Complete
70 Ventral fragment
71 Dorsal fragment
72 Shaft fragment

Costal cartilage
1 Complete
2 Fragment

Sternum
1 Complete
2 Fragment

Scapula
1 Complete
80 Glenoid area plus part of blade
81 Blade fragment

Innominate (pelvis)
1 Complete

90 Fragment with ilium, acetabulum, pubis and ischium
91 Ilium fragment
92 Ilium plus acetabulum
93 Ischium and/or pubis fragment
94 Ischium and/or pubis fragment plus acetabulum
95 Acetabulum fragment

Long bones (includes humerus, radius, ulna, metacarpus, femur, fibula, tibia, metatarsus and phalanges)
1 Complete
100 Proximal end complete, plus >50% of shaft
101 Proximal end present but incomplete, plus >50% of shaft
102 Proximal end complete, plus <50% of shaft
103 Proximal end present but incomplete, <50% of shaft
104 Unfused proximal epiphysis
105 Distal end complete, plus >50% of shaft
106 Distal end present but incomplete, plus >50% of shaft
107 Distal end complete, plus <50% of shaft
108 Distal end present but incomplete, plus <50% of shaft
109 Unfused distal epiphysis
110 Diaphysis (Shaft)

Other bones (includes carpals, tarsals, sesamoids, patella, clavicle, baculum)
1 Complete
120 Fragment with more than 50%
121 Fragment with less than 50%

Unidentifiable
1 Complete
2 Fragment

Bird Element Part Codes
As far as possible, bird codes will follow mammal codes. Differences are discussed below:

Mandible
As birds lack teeth, most mammalian codes will be inappropriate. Therefore, the following codes will apply:
1 Complete
2 Fragment
3 Posterior fragment
4 Anterior fragment

Sternal ribs
1 Complete
2 Fragment

Sternum
This bone is more complex in birds, and requires more codes
1 Complete
4 Anterior fragment
7 Other fragment

Furculum
1 Complete
5 Ventral fragment
6 Dorsal fragment
7 Other fragment

Coracoid
1 Complete
4 Fragment with anterior end (end which articulates with scapula)
6 Fragment with posterior end (end which articulates with sternum)
7 Other fragment

Reptile, Amphibian, and Fish Element Part Codes
Use the same system for mammals and birds. For all bones not included in those systems, use the following codes:
1 Complete
2 Fragment

FUSION

Every fragment must receive a two letter code, even if it is not possible to define fusion states. The fusion code is designed to record the state of fusion for the entire element, not simply for the fragment described. The first letter is used to define the state of fusion for the proximal end (in the case of limb bones) or the anterior end (in the case of axial elements). The second letter refers to the distal or posterior end. As many fragments will be incomplete, it will often be necessary to code one or both ends as "unknown".

To avoid confusion, the following rules will be followed :

Fusion codes are always given as "NN" for the following elements, except in the case of fetal/neonatal specimens (see below): cranial, mandible, hyoid, sternum, teeth, carpal, tarsal (except calcaneus), sesamoid, patella, innominate.

Fusion for vertebrae refers to the epiphyses of the centrum.

The glenoid area of the scapula is considered the anterior end.

For ribs, the first letter refers to the dorsal end of the rib (i.e. where it articulates with the thoracic vertebrae).

In mammals the proximal end of the calcaneus has an epiphysis.

For separate, unfused epiphyses (e.g. a complete unfused proximal epiphysis of a deer humerus) remember that the fusion code is referring to the whole element, not just the epiphysis. In the example given above, the deer humerus is unfused at the proximal end and unknown at the distal end (because you don't have the rest of the element that the epiphysis came from). Do not code such a bone as fused at the proximal end and unfused at the distal end.

Any specimens which are clearly from fetal or neonatal specimens can be coded "BB"

Codes:

F Fused. No gap between the epiphysis and diaphysis. A line of fusion may be present.

J Just fused. Fusion has begun, but spaces can still be seen between the epiphysis and diaphysis.

U Unfused. Epiphysis separate from rest of bone. This will be used to describe an isolated epiphysis, or a diaphysis which displays an unfused end, or a separate epiphysis which can be fitted back to a diaphysis.

B Fetal or neonatal. Very small with poor development of cortex. This designation may be applied to fetal elements with no well defined epiphyses, such as carpals, tarsals etc.

N Cannot be coded because the end of the bone is absent.

X Indeterminate. Should only be used rarely, and you should check with the supervisor of the faunal analysis before using this code.

Examples:

Complete cottontail humerus, with an unfused proximal end (epiphysis missing) and a fused distal end: UF

Isolated proximal unfused epiphysis of a jackrabbit tibia: UN

Fetal metapodial of deer, lacking epiphyses: BB

Immature deer femur diaphysis, with unfused epiphyses which can be fitted to proximal and distal ends: UU

BREAKAGE

A two letter code must be provided for each bone fragment. The first letter refers to the proximal or dorsal or anterior end; the second letter refers to the distal or ventral or posterior end. For tooth fragments the first letter refers to the occlusal surface and the second to the root.

I Intact. The end of the bone has suffered no significant damage.

D Eroded break

E Broken during excavation. Break surface should be markedly different in color from the rest of the bone, usually lighter. (NB always glue together bones broken by the excavator if possible)

A Made into an artifact, i.e. this end of the bone was purposefully worked by humans. (This includes offcuts, waste from bone tool manufacture, unfinished artifacts etc.)
C Chewed by carnivores. Look for scoring, furrowing and punctures.
D Eroded. The end of the bone has been worn smooth or rounded by natural processes such as sand abrasion or water. A useful clue for this condition is the exposure of cancellous bone on a smooth surface.
P Splintered. The bone exhibits a series of transverse fractures, terminating at different points. This is the result of weathering, and is often associated with weathering cracks.
R Gnawed by rodents. Look for many shallow parallel grooves.
S Spiral fracture. As well as exhibiting a spiral morphology, the break surfaces should be fairly smooth.
T A transverse fracture, essentially a simple snap break running perpendicular to the long axis of the bone. Typical of fragments which have been heavily weathered or broken when dry. Often seen on burnt bone.
V Irregular fractures, not perpendicular to or parallel with the long axis of the bone. "zig-zag" appearance at the end of the bone fragment.

Examples :
(a) a deer humerus is complete at the proximal end, and broken with a spiral fracture on the shaft. This would be coded: IS.

(b) a shaft fragment of a cottontail tibia is gnawed by rodents at the proximal end and is snapped transversely at the distal end. This would be coded: RT.

(c) a fox ulna is formed into an awl at the distal end, and the proximal end was broken during excavation. This would be coded: EA.

MODIFICATION

These codes apply to any alterations defined below which can be observed on the specimen. In some cases the alteration will have already been described in the breakage code because the alteration affects an end of the bone fragment. In such cases, the alteration will also be coded in this field. However, there will be many cases in which the alteration does not affect the end of a fragment, which is why this field exists.

A Modified as an artifact. Include in this category finished artifacts and waste material such as grooved and snapped offcuts from making bird bone tubes. Also include any bone which exhibits polish, abrasion etc. caused by humans.
B Burnt black.
C Carnivore damage, including scoring, grooving, furrowing, punctures.
K Humanly produced cutmarks.
L Localised burning. One good indicator that small mammals and birds were cooked is localised burning on bones. (Burning over the entire specimen is not a good indicator of cooking). Localised burning seems to occur when a bone is partially exposed during roasting. The exposed part is charred black but the remainder of the bone, which is covered by the meat, is unburnt. Localised buring is defined by a black area of burning,

usually quite sharply defined, and often surrounded by a dark brown zone grading into the normal color of unburnt bone. Such areas are seen most often on mandibles and long bones, but can occur elsewhere.

P Pathological condition present.
R Rodent gnawing.
W Burnt white, grey or blue/grey.

LENGTH

The length of each fragment should be measured on a simple scale (you could use graph paper). Exact lengths are not required, and the following coding system should be used:

1 less than 1 cm
2 1 to 1.99 cm
3 2 to 2.99 cm
4 3 to 3.99 cm

CORTICAL THICKNESS

This is to be used only for long bones, including identified and unidentified specimens. As cortical thickness varies, use the thickest portion of cortex to define the thickness. The measurement is taken perpendicularly from the outside to the inside (marrow cavity) of the fragment. The following codes should be used:

1 less than 2 mm
2 2 to 3.99 mm
3 4 to 5.99 mm
4 6 to 7.99 mm
5 8 to 9.99 mm
6 10 to 11.99 mm
7 12 to 13.99 mm
8 14 to 15.99 mm
9 16 to 17.99 mm

2. Appendix B

Phoenix 17 - Identifiable

Feature	Provenience	Other	Bone #	Level	Specie	Element	Part	Side	Fusion	Breakage	Modification	Length	NISP	Comments	Measure	Other Comments
Shovel Test Pits	STP N70E70	#28 STP N70E70	28-2		Bov II	MN	33/34	U	NN	VV		4	1			
Shovel Test Pits	STP N90E80	#33 STP N90E80	33		Bov II	TN	2	U	NN	SV		2	1			
Shovel Test Pits	STP N90E40	#37 STP N90E40	37-2		Bov III	TA	121	R	NN	VV	B	4	1			
Shovel Test Pits (Midden)	STP N100E90	#42 STP N100E90	42-1		Bos taurus	MN	39	L	NN	VV		12	1			
Shovel Test Pits (Midden)	STP N100E91	#42	42-2		Bos taurus	MN	39	L	NN	VV	K	16	3	Cut		Class V, Mandible + P2 + P3 teeth
Shovel Test Pits (Midden)	STP N100E92	#42	42-3		Bov II	HU	110	L	NN	VS	K	8	1	Cut		
Shovel Test Pits	STP N110E40	#46 STP N110E40	46-1		cf Ovis/Capra	MP	103	L	FN	VS		4	1			
Shovel Test Pits	STP N110E20	#49 STP N110E20	49-1		Large Mammal	TI	110	U	NN	SV		17	1	Ashy		
Shovel Test Pits	STP N120E50	#56 STP N120E50	56-1		cf Geochelonia pardalus	SH	2	I	NN	TV		5	1			
Shovel Test Pits	STP N120E70	#60	60-1		Bov III	MN	43	L	NN	VV	K	6	1	Cut		
Shovel Test Pits	STP N130E20	#65	65-1		Medium Mammal	RI	72	U	NN	VV		7	1			
Shovel Test Pits	STP N130E20	#65	65-2		Medium Mammal	HU	110	U	NN	SV		5	1			
Shovel Test Pits	STP N130E20	#65	65-3		Medium Mammal	RI	72	U	NN	VV		5	1			
Shovel Test Pits	STP N130E30	#67	67-1		Bov II	HU	110	U	NN	VS		5	1			
Shovel Test Pits	STP N130E40	#69	69-1		Large Mammal	TH	53	I	NN	TV		10	1			
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-1		Large Mammal	VE	54	I	NN	VV	K	8	1	Cut		
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-2		Bov III non-domestic	AS	121	L	NN	VV	W	5	1	White, Blueish		
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-3		Large Mammal	CE	54	I	NN	VV	W, K	6	1	White, Greenish, Cut		
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-5		Bov II	IN	91	L	NN	VS	W	5	1	Brown		

Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-6		Bov II	FE	110	U	NN	VV	W	11	1	Grey		
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-7		Bov II	MN	35	U	NN	VV	B	4	1			
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-8		Bov II	RA	110	R	NN	VV	C	9	1			
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196-11		Bov III	RA	110	U	NN	SV		13	1			
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196			Bov III	TN	2	U	NN	VV		3	2			
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196			Bov III	TN	2	U	NN	VV		3	3			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-3		Bos taurus	ZP	2	R	NN	VS		4	1		Class VI	
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-4		Large Mammal	TN	2	U	NN	VV		3	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-5		Equus quagga	CP	1	L	NN	II	R	5	1		GH: 28.33, GD: 41.59, BFd: 24.84	
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-6		Medium Mammal	CE	54	I	NN	VV		4	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-7		Small Rodent	FE	101	L	UN	IS		3	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-10		Small Mammal	CR	7	I	NN	VV		3	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-11		Tortoise	SH	2	I	NN			2	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-12		Large Mammal	HU	110	U	NN	SV		6	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-14		Bov II	HU	110	U	NN	SS	W	5	1	Grey		
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-16		Bov II	MN	35	UU	NN	VV	W	5	1	Brown		
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-19		Medium Mammal	RI	72	U	NN	SV	B	6	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-20		Large Mammal	RI	72	U	NN	TT		5	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226	226-21		Large Mammal	RI	72	U	NN	VT		7	1			
Kraal B	N108/E54/S/4 (30-40cm)	#226			Large Mammal	TN	2	U	NN	SV		3	1			
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-1		Ovis/Capra	MN	38	L	NN	VV		7	3	Mandible + PM4 + M1		Class IV
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-2		Ovis/Capra	XP	1	R	NN	II		3	1	P2 of P3		Class VI
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-3		Bov II	CA	1	R	FN	II	C	5	1			
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-4		Bov II	FE	103	R	FN	VS	B, K	4	1	Cut		
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-5		Bov III	HU	110	R	NN	SS	B	9	1			
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-6		Large Mammal	CR	7	U	NN	VV	W	4	1	White		
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-7		Large Mammal	CR	7	U	NN	VV		4	1			
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-9		Bov III non-domestic	IN	91	L	NN	VV		10	1			
Kraal B	N108/E54/N/3 (20-30cm)	#210	210-10		Bov III	UL	110	U	NN	SS		7	1			
Kraal B	N108/E54/N/3 (20-30cm)	#210			Medium Aves	RA	108	U	NF	VI		3	1			
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-1		Hippopotamus amphibius	AT	53	I	NN	VV	B	8	1			
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-2		Bov II	ZP	2	R	NN	VV	B	4	1	M3		
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-3		cf Bos taurus	XP	2	U	NN	TV	B	2	1	central island worn	Fit	

Kraal B	N108/E54/S/2 (10-20cm)	#202	202-4		cf Bos taurus	XP	2	U	NN	VV	B	2	1	central island worn		
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-5		cf Bos taurus	MN	39	R	NN	VV	B	7	1			
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-6		Ovis aries	HU	108	L	NF	SV		7	1		BT: 29.25	
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-8		Tortoise	SH	2	I	NN	TT	B	3	1	Burned on the one side		
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-9		Tortoise	SH	2	I	NN	TV	B	3	1	Burned on the one side		
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-10		Large Mammal	TN	2	U	NN	TT		5	1	Possibly worked ivory		
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-11		Bov III	IN	91	U	NN	SV	W	7	1	Grey		
Kraal B	N108/E54/S/2 (10-20cm)	#202	202-14		Large Mammal	CR	7	I	NN	VV		5	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-1		cf Bos taurus	CR	7	I	NN	VV		17	17	Almost complete Dorsal cranial fragment of a young cf Bos taurus		
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-2		Capra hircus	HC	2	U	NN	VV		10	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-3		Ovis/Capra	ZP	1	L	NN	II		3	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-4		Bov II	TN	2	L	NN	VV		3	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-8		cf Geochelonia pardalus	SH	2	I	NN	TV		4	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-9		cf Geochelonia pardalus	SH	2	I	NN	SV		4	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-10		Bov II	MN	30	U	NN	VV		6	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-11		Bov III	MN	30	U	NN	VV		4	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-12		Bov III non-domestic	IN	91	L	NN	VV		5	1			
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-13		Bov I	IN	94	L	NN	VV	W	2	1	White		
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-14		cf Geochelonia pardalus	SH	2	I	NN	SV	B	5	1	Burned on the one side		
Kraal B	N108/E54/S/3 (20-30cm)	#214	214-15		Medium Mammal	RI	72	U	NN	VV		12	1			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-1		cf Geochelonia pardalus	SH	2	I	NN	TT		6	2			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-2		cf Geochelonia pardalus	SH	2	I	NN	TT		6	2			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-3		Tortoise	SH	2	I	NN	TT	B	7	1			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-4		cf Bos taurus	ZP	1	R	NN	II	B	4	1	M1 of M2		Class II
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-5		Large Mammal	RI	72	U	NN	VV		11	1			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-6		Bov II	TI	110	U	NN	SV		11	1	Root etching		
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-7		Medium Mammal	RI	72	U	NN	VV		5	1			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-8		Medium Mammal	CR	7	U	NN	VV		4	1			
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-9		Small Mammal	CR	7	U	NN	VV	W	3	1	Brown		
Kraal B	N108/E54/N/4 (30-40cm)	#220	220-10		Bov III	HU	110	U	NN	SV		5	1			
Kraal B	N108/E54/N/4 (30-40cm)	#220			Medium Mammal	CR	7	U	NN	VV		3	1			
Kraal B	N108/E55.45 (30-40cm) BS	#224	224-1		Bos taurus	MN	31	L	NN	TV	K	17	5	Chop	Class VI	MN + M3 +M2 +M1

Kraal B	N108/E54/N/5 (40-50cm)	#229	229-1		Bov III	FE	103	U	NN	VV	R	6	1			
Kraal B	N108/E54/N/5 (40-50cm)	#229	229-2		Ovis aries	MN	33	R	NN	VV		5	3	Class II		Dp4
Kraal B	N108/E54/N/5 (40-50cm)	#229	229-3.1		Medium Mammal	RI	72	U	NN	VV	W	7	1	White		
Kraal B	N108/E54/N/5 (40-50cm)	#229	229-3.2		Small Rodent	IN	94	L	NN	VV		3	1			
Kraal B	N108/E54/N/5 (40-50cm)	#229	229-5		Medium Mammal	LU	55	I	NN	TV	B	4	1			
Kraal B	N108/E54/N/5 (40-50cm)	#229	229-8		Large Mammal	RI	72	U	NN	VV		4	1			
Kraal B	N108/E54/N/5 (40-50cm)	#229	229-9		Large Mammal	CR	7	U	NN	VV		5	1			
Kraal B	N108/E54/N/5 (40-50cm)	#229			Small Mammal	HU	110	U	NN	SV		3	1			
Kraal B	N108/E54/N/5 (40-50cm)	#233	233-1		Bov II	HU	110	R	NN	VT	R, K	9	1	Cut		
Kraal B	N108/E54/N/5 (40-50cm)	#233	233-2		cf Bos taurus	XP	1	R	NN	II		3	1	Class VI		
Kraal B	N108/E54/N/5 (40-50cm)	#233	233-3		Small Rodent	TI	110	L	NN	TV		3	1			
Kraal B	N108/E54/N/5 (40-50cm)	#233	233-5		Small Mammal	RI	72	U	NN	VV	W	4	1	Grey		
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-1		Bos taurus	2P	1	R	FF	II		4	1	Ashy	BP: 27.27, GL: 41.14, SD: 21.42, Bd: 22.72, Dp: 31.61	
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-2		Large Mammal	TH	51	I	UU	VV		5	1			
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-3		Large Mammal	ZG	2	U	NN	VV		5	1			
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-4		Pedetes capensis	LU	1	I	FF	II		3	1			
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-5		Bov II	TN	2	U	NN	VV		3	1			
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-6		Large Mammal	CR	7	U	NN	VV	W	3	1	Brown		
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-8		Medium Mammal	RI	72	U	NN	VV		5	1			
Kraal B	N108/E54/S/5 (40-50cm)	#238	238-9		Medium Mammal	RI	72	U	NN	VV		4	1			
Kraal B	N110/E54/S/5 (40-50cm)	#238	238-10		Medium Mammal	OO	2	U	NN	VV		3	1			
Kraal B	N110/E50/S/2 (10-20cm)	STR2 #244	244-2		Large Mammal	HU	110	U	NN	VV	W	5	1	Brown		
Kraal B	N110/E50/S/3 (20-30cm)	STR2 #247	247-1		Tortoise	SH	2	I	NN	TV		3	1			
Kraal B	N110/E50/S/4 (30-40cm)	STR2 #250	250-1		Bov III	FE	103	U	NN	VV	K	5	1	Cut		
Kraal B	N110/E50/S/4 (30-40cm)	#250	250-3		Bov III	FE	110	U	NN	SS		9	1			
Kraal B	N110/E50/S/4 (30-40cm)	#250	250-5		Bov III	CP	121	R	NN	VV		4	1			
Kraal B	N110/E50/S/4 (30-40cm)	#250	250-6		Large Mammal	VE	7	I	NN	VV		4	1			
Kraal B	N110/E50/S/5 (40-50cm)	#254	254-1		Bos taurus	2P	1	L	FF	II		4	1	Small indv.	Bp: 26.84, GL: 36.35, SD: 23.62, Bd: 22.94, Dp: 29.92	
Kraal B	N110/E50/S/5 (40-50cm)	#254	254-2		cf Capra hircus	2P	1	L	FF	II	W	3	1	Brown	Bp: 9.86, GL: 21.66, SD: 7.45, Bd: 7.82, Glpe:	

															20.10, Dp: 10.26	
Kraal B	N110/E50/S/5 (40-50cm)	#254	254-3		cf Geochelonia pardalus	SH	2	I	NN	TT		4	1			
Kraal B	N110/E50/S/5 (40-50cm)	#254	254-4		Tortoise	SH	2	I	NN	TV		5	1			
Kraal B	N110/E50/S/5 (40-50cm)	#254	254-5		Large Mammal	VE	7	I	NN	VV	W	4	1	Brown		
Structure 1	N60E38/NE/1 (0-5cm)	#259	259-1		Ovis/Capra	XP	1	R	NN	II		3	1	Class V		
Structure 1	N60E38/NE/1 (0-5cm)	#259	259-2		cf Ovis/Capra	XP	1	R	NN	II		4	1	Class V		
Structure 1	N60E38/NE/1 (0-5cm)	#259			Bov II	TN	2	U	NN	VV		1	1			
Structure 1	N60E38/NE/1 (0-5cm)	#259			Bov II	TN	2	U	NN	VV		1	1			
Structure 1	N60E38/NE/1 (0-5cm)	#259			Bov II	TN	2	U	NN	VV		1	1			
Structure 1	N60E38/NE/1 (0-5cm)	#259			Bov II	TN	2	U	NN	VV		2	1			
Structure 1	N60E38/NE/1 (0-5cm)	#259			Bov II	TN	2	U	NN	VV		2	1			
Structure 1	N62E38/NE/1 (0-5cm)	#275	275-1		Bov III	TA	1	U	NN	VV		4	1	Weathered	Too weathered to measure	
Structure 1	N68E38/NE/1 (0-5cm)	#280	280-1		Bov II	CA	12 0	R	NN	VV		6	2			
Structure 1	N70E40/SW/1 (0-5cm)	#291	291-1		Bov II	AT	53	I	NN	VV		4	1			
Structure 1	N70E40/SW/1 (0-5cm)	#291	291-3		Large Mammal	VE	7	I	NN	VV		3	1			
Structure 1	N70E40/SW/1 (0-5cm)	#291	291-4		Bov II	HU	11	U	NN	SV		7	1			
Structure 5	N66E30/SW/1 (0-5cm)	STR5 #314	314-1		Bov III	UL	11 0	L	NN	VV	K	9	1	Cut		
Structure 5	N66E30/SW/1 (0-5cm)	STR5 #314	314-2		Large Mammal	RI	72	U	NN	TV		9	1			
Structure 5	N66E30/SW/1 (0-5cm)	STR5 #314	314-3		Medium Mammal	RI	72	U	NN	VV		5	1			
Structure 6	N82E58/NW/1 (0-5cm)	STR6 #325	325-1		cf Equus quagga	MP	10 8	U	NF	VT		5	1			
Structure 7	N84E40/SW/1 (0-5cm)	STR8 #347 N84E4/S W/1	347-1	0- 15c m	Bov III	ZP	2	U	NN	VV		5	1			
Structure 7	N84E40/SW/1 (0-5cm)	STR8 #347	347-2	0- 15c m	Bov III	ZP	2	U	NN	VV		4	1			
Structure 7	N86E0/SE/1 (0-5cm)	STR8 #351	351-1		Bov III	2P	10 1	U	NN	VV		4	1	Weathered		
Structure 7	N86E0/SE/1 (0-5cm)	STR8 #351			Bov II	TN	2	U	NN	VV		2	1			
Structure 8	N86E4/NE/1+2 (0-15cm)	STR8 #362	362		Large Mammal	HU	11 0	U	NN	SV		4	1			
Structure 8	N86E4/SE/2 (5-10cm)	STR8 #374 N86 E4 /SE/2	374- 1.1		Bov III	2P	10 1	U	NN	VV		4	1	Weathered		
Structure 8	N86E4/SE/2 (5-10cm)	STR8 #374	374- 2.1		Ovis/Capra	ZP	1	R	NN	II		3	8	Class II		
Structure 8	N86E4/SE/2 (5-10cm)	STR8 #374	374- 2.2		Ovis/Capra	XP	1	R	NN	II		2	1	Class II		
Structure 8	N86E4/SE/2 (5-10cm)	STR8 #374			Bov III	TN	2	U	NN	VV		2	1			
Structure 9	N66E38/SW/1 (0-5cm)	STR9 #386	386		Bov II	TN	2	U	NN	VV		2	2			

Midden 3	N98E90/N1.2/1 (0-20cm)	STR #391	391-2		Bov III	TN	2	U	NN	VV		5	1			
Midden 3	N98E90/N1.2/1 (0-20cm)	STR #391			Bov III	TN	2	U	NN	VV		3	1			
Midden 3	N98E90/N1.2/1 (0-20cm)	STR #391			Bov III	TN	2	U	NN	VV		3	1			
Midden 3	N98E90/N1.2/1 (0-20cm)	STR #391			Bov III	TN	2	U	NN	VV		3	1			
Midden 3	N98E90/N1.2/1 (0-20cm)	STR #391			Bov III	TN	2	U	NN	VV		3	1			
Midden 3	N98E90/N1.2/1 (0-20cm)	STR #391			Bov III	TN	2	U	NN	VV		1	1			
Midden 3	N98E90/N/2 (20-30cm)	#395	395-1		Ovis/Capra	ZP	2	R	NN	VV		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-2		Bov III	XP	2	U	NN	VV		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-3		cf Bos Taurus	2P	101/106	L	FF	VV		5	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-4		cf Bos Taurus	3P	101	R	FN	VV		6	1	Weathered	Bfp: 21.38 HP: 43.45	
Midden 3	N98E90/N/2 (20-30cm)	#395	395-9		Bov II	AT	53	I	NN	VV		5	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-10		Bov III	AS	121	L	NN	VV		4	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-11		Medium Mammal	RI	72	U	NN	VV	K	9	1	Weathered, cut		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-12 and 401-1		Bov III	SC	81	U	NN	VA	A	11	1	Made into artifact. 1 end of broken scapula blade polished	L: 104.35, Polished end width: 13.37	Drawn
Midden 3	N98E90/N/2 (20-30cm)	#395	395-14		cf Geochelonia pardalus	SH	2	I	NN	VT		4	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-15		cf Geochelonia pardalus	SH	2	I	NN	VT		5	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-16		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-17		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-18		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-19		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-20		cf Geochelonia pardalus	SH	2	I	NN	VT		5	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-21		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-22		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-23		cf Geochelonia pardalus	SH	2	I	NN	VT		5	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-24		Large Mammal	CR	7	I	NN	VV		3	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-25		cf Geochelonia pardalus	SH	2	I	NN	VT		4	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395	395-30		Large Mammal	TN	2	U	NN	VV		2	1	Weathered		
Midden 3	N98E90/N/2 (20-30cm)	#395			Bov II	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/2 (20-30cm)	#395			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/2 (20-30cm)	#395			Medium Mammal	TN	2	U	NN	VV		1	1			
Midden 3	N98E90/N/2 (20-30cm)	#395			Medium Mammal	TN	2	U	NN	VV		1	1			
Midden 3	N99.7E90.55/N/3 (30cm) BS	#396	396-1		Bos Taurus	MN	30	L	NN	VV		24	20	Weathered	Class III	Mandble + dp4 + M1 + M2 + Incisor
Midden 3	N98E90/N/3 (30-40cm)	#401	401-3		Ovis/Capra	ZP	1	L	NN	II		3	1		Class V	
Midden 3	N98E90/N/3 (30-40cm)	#401	401-4		Ovis/Capra	ZP	1	R	NN	II		3	1		Class V	

Midden 3	N98E90/N/3 (30-40cm)	#401	401-5		Bov III	XP	2	U	NN	VV		3	1			
Midden 3	N98E90/N/3 (30-40cm)	#401	401-6		Bov II	MN	30	U	NN	VV		3	1			
Midden 3	N98E90/N/3 (30-40cm)	#401	401-7		Large Mammal	MN	30	U	NN	VV		7	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-8		Large Mammal	TH	56	I	NN	VV		8	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-9		Bov III	HU	108	R	NF	SV	K	5	1	Weathered, chop	Chop	
Midden 3	N98E90/N/3 (30-40cm)	#401	401-10		Large Mammal	VE	57	I	NN	VV		4	1	Weathered		Possibly insect
Midden 3	N98E90/N/3 (30-40cm)	#401	401-11		Bov II	TI	110	R	NN	SV		14	1			
Midden 3	N98E90/N/3 (30-40cm)	#401	401-13		Bov II	FE	110	U	NN	SS		8	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-14		Bov II	FE	110	U	NN	SV		7	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-15		Bov II	HU	110	R	NN	VV	K	10	1	Cut, Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-16		Bov II	FE	110	R	NN	SV		8	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-17		Bov II	MP	110	U	NN	SV		8	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-20		Medium Mammal	RI	72	U	NN	VT		7	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-21		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-22		cf Geochelonia pardalus	SH	2	I	NN	VS		4	1			
Midden 3	N98E90/N/3 (30-40cm)	#401	401-23		Large Mammal	OO	2	U	NN	TS		5	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-24		Medium Mammal	RI	72	U	NN	VT		3	1	Weathered		
Midden 3	N98E90/N/3 (30-40cm)	#401	401-25		cf Ovis/Capra	1P	105	R	NF	SI		3	1	Weathered	BD: 11.04	
Midden 3	N98E90/N/3 (30-40cm)	#401	401-28		Medium Mammal	OO	2	U	NN	VV		6	1			
Midden 3	N98E90/N/3 (30-40cm)	#401	401-31		Bov II	UL	110	R	NN	TT		5	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		4	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		4	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		3	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N98E90/N/3 (30-40cm)	#401			Medium Mammal	TN	2	U	NN	VV		1	1			
Midden 3	N99.95E90.25/N/3 41 BS	#404	404-1		Bov II	RA	110	R	NN	SV	L	13	1			
Midden 3	N99.70 E90.35 41BS	N98E90/N/3 N99.70 E90.35/41BS #405	405-1		Bov II	TI	110	L	NN	VS		19	1			
Midden 3	N99.55 E90.30 35BS	N98E90/B1/2/3 N99.55E 90.30/35 BS #406	406-1		cf Geochelonia pardalus	SH	2	I	NN	VT		6	1	Weathered		
Midden 3	N99.55 E90.30 35BS	#406	406-1		cf Geochelonia pardalus	SH	2	I	NN	VT		5	2	Weathered		
Midden 3	N99.55 E90.30 35BS	#406	406-1		cf Geochelonia pardalus	SH	2	I	NN	VT		4	4	Weathered		

Midden 3	N99.55 E90.30 35BS	#406	406-1		cf Geochelonia pardalus	SH	2	I	NN	VT		3	9	Weathered		
Midden 3	N99.55 E90.30 35BS	#406	406-1		cf Geochelonia pardalus	SH	2	I	NN	VT		2	11	Weathered		
Midden 3	N99.55 E90.30 35BS	#406	406-1		cf Geochelonia pardalus	SH	2	I	NN	VT		1	1	Weathered		
Midden 3	N99.82E90.52 32 BS	N98E90/N1.5/3 N99.82E90.52/32 BS #407	407-1		Large Mammal	RI	72	U	NN	SV		12	1	Weathered		
Midden 3	N99.82E90.52 32 BS	#407	407-2		Bov II - no dom	MN	30	R	NN	VV	C	9	4	Weathered	Class II	Mandible + dp4 + Dm1 + partial dp3
Midden 3	N99.82E90.52 32 BS	#407	407-3		Bov II	SC	81	U	NN	VV		6	1	Weathered		
Midden 3	N99.68E90.85 38 BS	N98E90/N1.5/3 N99.68E90.85/38 BS #408	408-1		Bov III	TI	110	L	NN	VS		16	1			
Midden 3	N99.95E91.06 40 BS	N98E90/N1.5/3 N99.95E91.60/40 BS #409	409		cf Geochelonia pardalus	SH	2	I	NN	VT		14	2	Very large complete piece - plastron	photo	Female
Kraal B	N108/E54/N/5 (40-50cm)	#226 IN #409	226-1		Large Mammal	SC	81	R	NN	TV	K	16	1	Chop		
Kraal B	N108/E54/N/5 (40-50cm)		226-2		Bov III	IN	91	U	NN	VV	K	9	1	Chop		
Kraal B	N108/E54/N/5 (40-50cm)		226-22		Large Mammal	TI	110	U	NN	VV	W	19	1	Brown		
Midden 3	N99.62E91.58 40BS	N98E90/N1.5/3 N99.62E91.58/40 #410	410-1		Bos taurus	MN	43	R	NN	VV	C	10	1			
Midden 3	N99.85E91.98 33 BS	N99.85E91.98/33 BS M98E90/N1.5/3 #411	411-1		Large Mammal	CR	7	U	NN	VV		6	1			
Midden 3	N99.89E91.90 35BS	N98E90/N1.5/3 N99.89E91.90/35 BS #412	412		Bov II	TI	110	R	NN	TV		19	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	N90E20/N1.5/4 #419	419-1	30-40cm	Large Mammal	RI	72	U	NN	SV		20	1	Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-2		Medium Mammal	RI	72	U	NN	SV		15	1	Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-3		Bov II	RA	110	R	NN	VV		14	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-4		Ovis/Capra	MN	30	L	NN	VV		11	6	Mandible + M3 + M2 + M1 + P4 + P3	Class V	419-8 XP fits
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-5		Capra hircus	HC	2	U	NN	VV		10	1			

Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-6		cf Ovis/Capra	ZP	1	L	NN	IV		3	1	Class II		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-7		Ovis/Capra	ZP	2	L	NN	VV		3	1	Class III-IV		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-8		Ovis/Capra	XP	1	R	NN	VV		2	1	P2	Class V	Fits into 419-4
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-9		Bov III	TN	2	U	NN	VV		3	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-10		Bov III	TN	2	U	NN	VV		4	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-11		Bov III	TN	2	U	NN	VV		3	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-12		Bov II	MN	30	U	NN	VV		5	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-13		Bov II	MN	43	R	NN	VV		6	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-14		Medium Mammal	RI	72	U	NN	VV	L	4	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-17		Bov III	HY	2	I	NN	VV	K	5	1	Cut		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-19		Large Mammal	HU	110	U	NN	VV		9	1	Very large		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-20		Large Mammal	LU	53	I	NN	VV	C, K	6	1	Cut, Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-21		cf Bos taurus	CR	6	I	NN	VV	C	7	1	Os basisphenoidale		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-22		Bov III	HU	108	U	NF	VV		5	1	Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-23		Large Mammal	CR	7	I	NN	VV		3	1	Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-24		Bov III	CA	121	L	NN	VV		6	1	Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-25		Large Mammal	CR	7	I	NN	VV		4	1	Weathered		
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-26		Medium Mammal	CR	7	I	NN	VV		2	1			
Midden 1	N90E20/N1.5/3 (40-50cm)	#419	419-27		Small Mammal	VE	7	I	NN	VV		2	1			
Midden 3	N100E90/S/1 (0-20cm)	#421	421-1		Bos taurus	ZP	2	R	NN	VV		6	1	Class VI		
Midden 3	N100E90/S/2 (20-30cm)	#424	424-1		Ovis/Capra	ZP	2	L	NN	VV		4	1	Class V		
Midden 3	N100E90/S/2 (20-30cm)	#424	424-2		Bov II	TN	2	U	NN	VV		4	1			
Midden 3	N100E90/S/2 (20-30cm)	#424	424-3		Ovis/Capra	ZP	2	L	NN	VV		3	1	Class V		
Midden 3	N100E90/S/2 (20-30cm)	#424	424-4		Bov III	TN	2	U	NN	VV		2	1			
Midden 3	N100E90/S/2 (20-30cm)	#424	424-5		Bov II	RA	110	L	NN	VS		10	1			
Midden 3	N100E90/S/2 (20-30cm)	#424	424-7		Bov II	UL	103	R	NN	VV	C	5	1			
Midden 3	N100E90/S/2 (20-30cm)	#424	424-8		Bov II	UL	110	U	NN	VV		5	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Bov II	IN	93	U	NN	VV		3	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Medium Mammal	TN	2	U	NN	VV		3	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Medium Mammal	TN	2	U	NN	VV		2	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Medium Mammal	TN	2	U	NN	VV		1	1			
Midden 3	N100E90/S/2 (20-30cm)	#424			Medium Mammal	TN	2	U	NN	VV		1	1			
Midden 3	N100E90/S/3 (30-40cm)	N100E90 /S1.5/3 #427	427-1		Bos taurus	ZP	2	L	NN	VV		6	2	M3 + piece of MN	Class VI	
Midden 3	N100E90/S/3 (30-40cm)	#427	427-2		Ovis/Capra	ZP	1	R	NN	II		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-3		Ovis/Capra	ZP	1	R	NN	II		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-4		Ovis/Capra	ZP	2	L	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-5		Bov II	TN	2	U	NN	VV		3	1			

Midden 3	N100E90/S/3 (30-40cm)	#427	427-6		cf Bos taurus	YP	1	R	NN	II		3	1	cetral island worn - aged		
Midden 3	N100E90/S/3 (30-40cm)	#427	427-7		cf Bos taurus	YP	2	U	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-8		Bov II	TN	2	U	NN	VV		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-9		cf Geochelonia pardalus	SH	2	I	NN	VT		6	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-10		cf Geochelonia pardalus	SH	2	I	NN	VV		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-11		cf Geochelonia pardalus	SH	2	I	NN	VV		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-12		Bov III	MP	110	U	NN	SV	K	14	1	Cut		
Midden 3	N100E90/S/3 (30-40cm)	#427	427-13		Bov III	MN	30	U	NN	SS		11	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-14		cf Bos taurus	PM	2	R	NN	VV	K	11	1	Chop		
Midden 3	N100E90/S/3 (30-40cm)	#427	427-15		Bov III	NS	2	U	NN	VV	K	7	1	Cut		
Midden 3	N100E90/S/3 (30-40cm)	#427	427-17		Bov II	HU	110	U	NN	SS		5	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-18		Bov II	HU	110	U	NN	SV	W	5	1	grey	Photo neem	
Midden 3	N100E90/S/3 (30-40cm)	#427	427-19		Bov II	IN	91	U	NN	VV	K	7	1	Cut		
Midden 3	N100E90/S/3 (30-40cm)	#427	427-21		Medium Mammal	RI	72	U	NN	TV		8	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-22		Large Mammal	RI	72	U	NN	TV		7	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-23		Medium Mammal	RI	72	U	NN	TV		7	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-24		Medium Mammal	RI	72	U	NN	TV		7	2			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-25		Large Mammal	LU	56	I	NN	VV		7	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-26		Large Mammal	CR	7	I	NN	VV		5	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-27.1		Large Mammal	CR	7	I	NN	VV		5	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-27.2		Large Mammal	CR	7	I	NN	VS		5	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-28		Bov II	FE	110	U	NN	TS		7	1			
Midden 3	N100E90/S/3 (30-40cm)	#427	427-30		Large Mammal	CR	7	I	NN	VV		5	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	RI	72	U	NN	VT		8	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	RI	72	U	NN	VV		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	RI	72	U	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	RI	72	U	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	RI	72	U	NN	VT		2	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			cf Geochelonia pardalus	SH	2	I	NN	VT		3	4			
Midden 3	N100E90/S/3 (30-40cm)	#427			cf Geochelonia pardalus	SH	2	I	NN	VT		2	4			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	CR	7	I	NN	VV		4	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	CR	7	I	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	CR	7	I	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	TN	2	U	NN	VV		3	1			
Midden 3	N100E90/S/3 (30-40cm)	#427			Medium Mammal	TN	2	U	NN	VV		1	1			
Midden 3	N100E90/S/4 (40-50cm)	N100E90 /S1.5/4 #478	478-1	40-50cm	Bov III	AT	59	I	NN	VV		8	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-2		Bov III	AT	59	I	NN	VV		6	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-3		Small Mammal	VE	53	I	NN	VV		2	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-4		Medium Mammal	VE	51	I	UU	VV		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-7		Medium Mammal	TH	56	I	NN	VV	C	5	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-11		Medium Mammal	VE	7	I	NN	VV	C	4	1			

Midden 3	N100E90/S/4 (40-50cm)	#478	478-14		Bov III	MP	108	R	NF	SV		8	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-15		Ovis/Capra	ZP	1	L	NN	II		5	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-16		Large Mammal	CR	7	I	NN	VV		3	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-17		Large Mammal	CR	7	I	NN	VV		5	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-18		Large Mammal	CR	7	I	NN	VV		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-19		cf Geochelonia pardalus	SH	2	I	NN	VT		6	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-20		cf Geochelonia pardalus	SH	2	I	NN	VT		5	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-21		cf Geochelonia pardalus	SH	2	I	NN	VT		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-22		cf Geochelonia pardalus	SH	2	I	NN	VT		3	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-23		cf Geochelonia pardalus	SH	2	I	NN	VT		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-24		Bov III	IN	92	R	NN	VV	W	8	1	Grey		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-25		Bov III	MN	35	R	NN	EV	K	8	1	Chop		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-26		Bov III	MN	43	U	NN	VV		14	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-28		Ovis aries	HU	110	L	NN	VV		8	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-29		Bov III	MP	110	U	NN	VV		11	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-30		Bov II	RA	110	L	NN	VV	K	9	1	Cut		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-31		Bov III	HU	110	L	NN	VV	K	9	1	Cut		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-32		Bov III	MC	110	U	NN	VV		9	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-34		Medium Mammal	HU	110	U	NN	TV		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-35		Bov III	RA	110	R	NN	VV	W, K	16	1	Brown, Chop		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-36		Large Mammal	RI	72	U	NN	VV	K	21	1	Cut		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-37		Medium Mammal	RI	72	U	NN	VV		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-38		Medium Mammal	RI	72	U	NN	VV		6	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-39		Medium Mammal	RI	72	U	NN	VV	C	8	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-40		Medium Mammal	MN	35	U	NN	VV		5	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-41		Medium Mammal	RI	72	U	NN	VV		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-42		Bov II	MP	102	U	NN	VV	W	6	1	Brown		
Midden 3	N100E90/S/4 (40-50cm)	#478	478-43		Medium Mammal	RI	72	U	NN	VV		9	1			
Midden 3	N100E90/S/4 (40-50cm)	#478	478-50		Large Mammal	RI	72	U	NN	VC	C	20	2			
Midden 3	N100E90/S/4 (40-50cm)	#478			Bov III	HY	2	U	NN	VV	W	7	1	Brown		Weathered
Midden 3	N100E90/S/4 (40-50cm)	#478			Bov II	HU	110	L	NN	VV		5	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			Medium Mammal	RI	72	U	NN	VV		3	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			Medium Mammal	RI	72	U	NN	VV		3	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			Bov III	TN	2	U	NN	VS		2	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			Medium Mammal	CR	7	I	NN	VV		3	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			Medium Mammal	CR	7	I	NN	VV		3	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			cf Geochelonia pardalus	SH	2	I	NN	VT		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#478			cf Geochelonia pardalus	SH	2	I	NN	VT		3	3			
Midden 3	N100E90/S/4 (40-50cm)	#478			cf Geochelonia pardalus	SH	2	I	NN	VT		2	4			
Midden 3	N100E90/S/4 (40-50cm)	N100E90 /S1.5/4 #480	480-3		Bos taurus	MN	30	R	NN	VV		21	4	MN + M2 + dp3 + dp2		CLASS II

Midden 3	N100E90/S/4 (40-50cm)	#480	480-4		cf Bos taurus	TA	120	R	NN	VV		6	1	Weathered, insect damage		
Midden 3	N100E90/S/4 (40-50cm)	#480	480-5		Ovis/Capra	MN	30	L	NN	VV		5	10	MN + M1 + M2 + partial M3		CLASS IV
Midden 3	N100E90/S/4 (40-50cm)	#480	480-6		Large Mammal	CR	7	I	NN	VV		4	1			
Midden 3	N100E90/S/4 (40-50cm)	#480	480-7		Large Mammal	RI	72	U	NN	TT	K	7	1	Cut		
Midden 3	N100E90/S/4 (40-50cm)	#480	480-8		Bos taurus	MX	30	L	NN	VV		10	15	MX + M3 + M2+ M1 + PM4	Class VIII	Aged - central islands worn
Midden 3	N100E90/S/4 (40-50cm)	#480	480-2		cf Geochelonia pardalus	SH	2	I	NN	VT		9	21	Bunch of SH all in one bag - seems to fit one another		
Midden 3	N100E90/S/4 (40-50cm)	#480	480-1		cf Geochelonia pardalus	SH	2	I	NN	VT		10	33	Bunch of SH all in one bag - seems to fit one another	1 female piece 2nisp	
Shovel Test Pits	STP N110E30	#496	496-3		Small Mammal	RI	72	U	NN	VT		3	1			
Burial 1	Burial 1 (Above the pots)	7-1	7		cf Ovis/Capra	YP	1	L	NN	II		3	1			
Burial 1	Burial 1 (Above the pots)	7-2	7		Medium Mammal	CR	7	U	NN	VV		4	1			
Burial 1	Burial 1 (Above the pots)	7-4	7		Bov I	IN	91	R	NN	VV		4	1			
Burial 1	Burial 1 (Above the pots)	7-6	7		Bov III	MC	103	L	FN	CS	C	7	1	carnivore		
Burial 1	Burial 1 fill of grave	11-1	11		Bos taurus	XP	1	R	NN	II		5	1	Class VI		
Burial 1	Burial 1 fill of grave	11-2	11		Bov III	ZP	2	U	NN	VV		4	1			
Burial 1	Burial 1 fill of grave	11-3	11		Bov III	TN	2	U	NN	VV		3	1			
Burial 1	Burial 1 fill of grave	11-4	11		Bov III	YP	2	U	NN	VV		3	1			
Burial 1	Burial 1 fill of grave	11-5	11		Large Mammal	MX	23	U	NN	TV		3	1			
Burial 1	Burial 1 fill of grave	11-6	11		Bov III	NS	20	L	NN	VV		8	1			
Burial 1	Burial 1 fill of grave	11-7	11		Large Mammal	RI	72	U	NN	VV	K	7	1	Chop		
Burial 1	Burial 1 fill of grave	11-8	11		Large Mammal	RI	72	U	NN	VV		10	1			
Burial 1	Burial 1 fill of grave	11-11	11		Small Rodent	FE	110	L	UN	IV		3	1			
Burial 1	Burial 1 fill of grave	11-12	11		Bov III	HY	2	U	NN	VT		2	1			
Burial 1	Burial 1 fill of grave	11-13	11		Medium Mammal	VE	7	I	NN	VV		2	1			
Burial 1	Burial 1 fill of grave	11-14	11		Large Mammal	TN	2	U	NN	VV		2	1			
Burial 1	Burial 1 fill of grave	11-16	11		Bov I	MP	110	U	NN	TT		6	1			
Burial 1	Burial 1 fill of grave	11-17	11		Bov II	SC	81	U	NN	VV		5	1			
Burial 1	Burial 1 fill of grave	11-18	11		Large Mammal	CR	7	U	NN	VV		5	1			
Burial 1	Burial 1 fill of grave	11-22	11		Large Mammal	SC	80	R	FN	VV	W	5	1	Brown		
Burial 1	Burial 1 fill of grave	11-23	11		Large Mammal	MX	23	U	NN	TV	W	4	1	Brown		
Burial 1	Burial 1 fill of grave	11-24	11		Bov II	CA	121	L	NN	VV	W	5	1	Brown		
Burial 1	Burial 1 fill of grave		11		Large Mammal	MX	23	U	NN	TV		3	1			

Burial 1	Burial 1 (nearby)	13-1, Near burial 1	13		Bov III	CA	121	L	UN	IE		8	1			
Burial 1	Burial 1 (nearby)	13-2, Near burial 1	13		Bos taurus	MN	39	L	NN	EV	K	11	1	Chop		
Burial 1	Burial 1 (nearby)	13-3, Near burial 1	13		Bov II	CR	3	I	UU	VV		8	1	Juv		
Burial 1	Burial 1 (Fill)	19-1	19		cf Bos taurus	ZP	2	L	NN	VV		6	1			
Burial 1	Burial 1 (Fill)	19-2	19		Homo sapien sapien	TA	1	R	NN	II		3	1			R Medial (first) cuneiform
Burial 1	Burial 1 (Fill)	19-3	19		Ovis/Capra	MP	109	R	NU	II		3	1	Juv		
Burial 1	Burial 1 (Fill)	19-4	19		Large Mammal	CR	7	U	NN	TS		6	1			
Burial 1	Burial 1 (Fill)	19-6	19		Large Mammal	CR	7	U	NN	VV	W	3	1	white		
Burial 1	Burial 1 (Fill)	19-7	19		Bov II	TA	121	R	NN	VV	W	3	1	white		
Burial 1	Burial 1 (Fill)	19-8	19		Bov II	SC	81	L	NN	VV		4	1			
Burial 1	Burial 1 (Fill)	19-11	19		Bov II	HU	110	L	NN	SV		6	1	Calcide		
Burial 1	Burial 1 (Fill)	19-12	19		Large Mammal	TH	54	I	NN	VV	K	4	1	Chop, Calcide		
Burial 1	Burial 1 (Fill)	19-13	19		Bov III	IN	93	L	NN	VV		14	1			
Burial 1	Burial 1 (Fill)	19-14	19		Large Mammal	RI	72	U	NN	VV		7	2			
Burial 1	Burial 1 (Fill)	19-16	19		Large Mammal	RI	72	U	NN	VV		4	1			
Burial 1	Burial 1 (Fill)	19-17	19		Medium Mammal	RI	71	U	FN	VV		4	2	Calcide		
Burial 2	Burial 2 (Near the ribs)	24-1	24		Medium Mammal	FE	108	U	NF	VV	W	3	1	Grey		
Burial 2	Burial 2 (Near the ribs)	24-2	24		Bov II	MN	43	U	NN	VS	W	3	1	Grey		
Burial 2	Burial 2 (Near the ribs)	24-3	24		Medium Mammal	RI	72	U	NN	VT	W	7	1	Grey		
Burial 2	Burial 2 (Near the ribs)	24-4	24		Medium Mammal	RI	72	U	NN	TT	W	5	1	Grey		
Burial 2	Burial 2 (Near the ribs)	24-5	24		Medium Mammal	RI	72	U	NN	TV	W	4	1	Grey		
Kraal A	N98E20/N/1 (0-10 cm)	Nq8E20/N1/2/1 75-1	75	0-10cm	Bov II	YP	2	R	NN	VV		2	1			
Kraal A	N98E20/N/1 (0-10 cm)	Nq8E20/N1/2/1 75-2	75	0-10cm	Bov II	YP	2	U	NN	VV		2	1			
Kraal A	N98E20/N/1 (0-10 cm)	Nq8E20/N1/2/1 75-3	75	0-10cm	Bov III	FE	108	L	NN	VV		5	1			
Kraal A	N98E20/N/2 (10-20 cm)	79-3	79		Bov II	MP	103	U	FN	TV		3	1			
Kraal A	N98E20/N/2 (10-20 cm)	79-4	79		Tortoise	SH	2	I	NN	TV		2	1			
Kraal A	N98E20/N/2 (10-20 cm)		79		Bov III	TN	2	U	NN	VV		3	1			
Kraal A	N98E20/N/5 (40-50 cm)	82-1	82		Medium Mammal	RI	72	U	NN	TV		3	1			
Kraal A	N98E20/N/5 (40-50 cm)	82-2	82		Medium Mammal	CR	7	U	NN	VV		2	1			
Kraal A	N98E20/N/5 (40-50 cm)		82		Large Mammal	TN	2	U	NN	SV		3	1			
Kraal A	N98E20/6 (50-60 cm)	85-1	85		Bov II	MN	33	U	NN	VV	W	2	1	white		
Kraal A	N98E20/6 (50-60 cm)		85		Medium Mammal	TN	2	U	NN	VV	B	2	1			
Kraal A	N98E30/N/1 (0-10 cm)	87-1	87		Bov III	HU	110	R	NN	SV		7	1			

Kraal A	N98E30/N/1 (0-10 cm)	87-4	87		Bov III	2P	103	U	FN	VV		2	1			
Kraal A	N98E30/N/1 (0-10 cm)	87-5	87		Large Mammal	VE	55	I	NN	VV		3	1			
Kraal A	N98E30/N/1 (0-10 cm)		87		Bov III	TN	2	U	NN	VV	L	2	1			
Kraal A	N98E30/N/1 (0-10 cm)		87		Bov II	TN	2	U	NN	VT		2	1			
Kraal A	N98E30/S/1 (0-10 cm)	91-3	91		Bov III	MP	110	U	NN	CV	C,K	8	1	Cut		
Kraal A	N98E30/S/1 (0-10 cm)	91-6	91		Tortoise	HU	110	U	NN	TT		2	1			
Kraal A	N98E30/S/1 (0-10 cm)		91		Bov III	TN	2	U	NN	VV	B	3	1	Juv		
Kraal A	N98E30/N/2	95-2	95		Small/Medium Reptile	VE	1	I	FF	II		1	1			
Kraal A	N98E30/N/2	95-3	95		Medium Mammal	RI	72	U	NN	VV	W	12	1	Brown		
Kraal A	N98E30/N/2	95-4	95		Medium Mammal	RI	72	U	NN	VV		4	1			
Kraal A	N98E30/N/2	95-5	95		Bov III	CA	121	R	NN	VV	L	6	1			
Kraal A	N98E30/N/2	95-10	95		Medium Mammal	OO	2	I	NN	TV		2	1			
Kraal A	N98E30/N/2	95-12	95		Bov III	UL	110	U	NN	VV	W	6	1	Grey		
Kraal A	N98E30/N/2	95-16	95		Medium Mammal	CR	7	U	NN	VV		2	1			
Kraal A	N98E30/N/2		95		Large Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/2		95		Bov III	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/2		95		Bov III	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/5/2 (10-20cm)	N98E30/E30/5/2 99-1	99		Homo sapien sapien	ZP	2	U	NN	VV		3	1	Aged		
Kraal A	N98E30/5/2 (10-20cm)	99-3	99		Small Mammal	CR	7	I	NN	VV		2	1			
Kraal A	N98E30/5/2 (10-20cm)	99-5	99		Large Mammal	VE	54	I	NN	VV	W	5	1	Grey		
Kraal A	N98E30/5/2 (10-20cm)	99-7	99		Large Mammal	SC	80	U	FN	VV	W	4	1	Brown		
Kraal A	N98E30/5/2 (10-20cm)	99-11	99		Tortoise	SH	2	I	NN	VV	W	3	1	Brown		
Kraal A	N98E30/5/2 (10-20cm)	99-12	99		Medium Mammal	MX	23	U	NN	TV	W	2	1	Grey		
Kraal A	N98E30/5/2 (10-20cm)	99-18	99		Bov II	HU	110	U	NN	VS	W	4	2	Brown		
Kraal A	N98E30/5/2 (10-20cm)		99		Phacochoerus aethiopicus	TN	2	U	NN	VV		2	3			
Kraal A	N98E30/N/3 (20-30cm)	Nq8E20/N1/2/3 - 102-1	102	20-30cm	Bov III	FE	110	R	NN	VS	W	8	1	Grey		
Kraal A	N98E30/N/3 (20-30cm)	102-2	102	20-30cm	Large Mammal	FE	110	R	NN	VV	W,K	8	1	Grey, Chop		
Kraal A	N98E30/N/3 (20-30cm)	102-4	102	20-30cm	Bov III	2P	108	U	NF	SI	K	3	1	Chop		
Kraal A	N98E30/N/3 (20-30cm)	102-5	102	20-30cm	cf Aepyceros melampus	1P	102	U	NF	IV	W	2	1	Grey	Bd: 11.14	
Kraal A	N98E30/N/3 (20-30cm)	102-6	102	20-30cm	Bov III	TI	110	U	NN	VV	W	12	1	Brown		
Kraal A	N98E30/N/3 (20-30cm)	102-7	102	20-30cm	Bov II	IN	93	L	NN	VV	W	5	1	Grey, Calcide		

Kraal A	N98E30/N/3 (20-30cm)	102-8	102	20-30cm	Bov III	MC	103	R	FN	TV	W, K	5	1	Brown, Chop		
Kraal A	N98E30/N/3 (20-30cm)	102-9	102	20-30cm	Bov III	IN	95	U	NN	VV		3	1			
Kraal A	N98E30/N/3 (20-30cm)	102-12	102	20-30cm	Tortoise	SH	2	I	NN	TT	W	3	1	Grey		
Kraal A	N98E30/N/3 (20-30cm)	102-13	102	20-30cm	cf Geochelonia pardalus	SH	2	I	NN	TT	B	3	1	Black		Inside is burnt
Kraal A	N98E30/N/3 (20-30cm)	102-14	102	20-30cm	Tortoise	SH	2	I	NN	TT	W	3	1	Grey		
Kraal A	N98E30/N/3 (20-30cm)	102-15	102	20-30cm	Small Rodent	FE	110	R	UN	IV		3	1	Fresh		
Kraal A	N98E30/N/3 (20-30cm)	102-16	102	20-30cm	Pedetes capensis	TN	2	U	NN	IV		3	1			
Kraal A	N98E30/N/3 (20-30cm)	102-17	102	20-30cm	Pedetes capensis	TN	2	U	NN	IV		2	1			
Kraal A	N98E30/N/3 (20-30cm)	102-18	102	20-30cm	Medium Mammal	OO	2	I	NN	VV		4	1			
Kraal A	N98E30/N/3 (20-30cm)	102-19	102	20-30cm	Medium Mammal	RI	72	U	NN	VV	W	6	1	Brown		
Kraal A	N98E30/N/3 (20-30cm)	102-20	102	20-30cm	Large Mammal	RI	72	U	NN	SV	W	5	1	Grey		
Kraal A	N98E30/N/3 (20-30cm)	102-21	102	20-30cm	Medium Mammal	RI	72	U	NN	TT		5	2			
Kraal A	N98E30/N/3 (20-30cm)	102-22	102	20-30cm	Medium Mammal	RI	72	U	NN	VV		5	1			
Kraal A	N98E30/N/3 (20-30cm)	102-23	102	20-30cm	Small Mammal	RI	72	U	NN	VV	W	3	1	Brown		
Kraal A	N98E30/N/3 (20-30cm)	102-24	102	20-30cm	Medium Mammal	CR	23/25	U	NN	VV	W	3	1	Brown		
Kraal A	N98E30/N/3 (20-30cm)	102-26	102	20-30cm	Large Mammal	HU	110	U	NN	SV	W	5	1	White, Green		
Kraal A	N98E30/N/3 (20-30cm)	102-28	102	20-30cm	Bos taurus	TA	1	R	NN	II		4	1	Weathered	GD: 35.48, GB: 22.32,	
Kraal A	N98E30/N/3 (20-30cm)	102-29	102	20-30cm	Bov III	CP	121	L	NN	IT	W	3	1	Grey, Chop		

Kraal A	N98E30/N/3 (20-30cm)	102-30	102	20-30cm	Bov III	2P	108	U	NN	TV	B	3	1			
Kraal A	N98E30/N/3 (20-30cm)	102-32	102	20-30cm	Large Mammal	CR	7	I	NN	VV		4	1			
Kraal A	N98E30/N/3 (20-30cm)	102-35	102	20-30cm	Bov III	ZP	2	U	NN	VV	B	2	1			
Kraal A	N98E30/N/3 (20-30cm)	102-36	102	20-30cm	Bov III	YP	2	U	NN	VS		3	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Tortoise	SH	2	I	NN	TV		2	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Large Mammal	TN	2	U	NN	VV	B	3	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Large Mammal	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Large Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Large Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Bov III	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/N/3 (20-30cm)		102	20-30cm	Bov III	TN	2	U	NN	VV		2	1			
Kraal A	Nq8E30/S/5 44cm BS	Nq8E30/S1/2 - Nq8.8E300 /44cm BS	126		cf Bos Taurus	CA	100	R	FN	VI		8	1			
Kraal A	N98E30/S/3	106-1	106		Bov III	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/S/3	106-2	106		Medium Mammal	RI	71	U	NN	VV	W	3	1	Grey		
Kraal A	N98E30/S/3	106-3	106		cf Geochelonia pardalus	SH	2	I	NN	TV		4	1			
Kraal A	N98E30/S/3	106-4	106		Large Mammal	MX	28	U	NN	TV		4	1			
Kraal A	N98E30/S/3	106-5	106		Bov II	FE	110	U	NN	VS		8	1	Root etching		
Kraal A	N98E30/S/3	106-6	106		Bov I	CA	121	R	NN	VV	C	3	1			
Kraal A	N98E30/S/3	106-7	106		Bov II	IN	93	L	NN	VS	W	4	1	Ashy		
Kraal A	N98E30/S/3	106-8	106		Medium Mammal	OO	2	U	NN	TV		2	1			
Kraal A	N98E30/S/3	106-9	106		Bov III	MC	103	U	NN	TV	K	3	1	Chop		
Kraal A	N98E30/S/3	106-14	106		Bov II	MV	1	L	FF	II	B	2	1		GD: 14.55	
Kraal A	N98E30/S/3	106-19	106		Bov I	RA	110	U	NN	SS	W	3	1	Blue		
Kraal A	N98E30/S/3		106		Medium Mammal	TN	2	U	NN	SV	B	2	1			

Kraal A	N98E30/N/4 (30-40cm)	Nq8E30/ N1/2 Unit 4 - 110-1	110	30-40cm	Large Mammal	TN	2	U	NN	VV	B	3	1			
Kraal A	N98E30/N/4(30-40cm)	110-2	110	30-40cm	Medium Snake	VE	1	I	FF	II		2	1			
Kraal A	N98E30/N/4(30-40cm)	110-3	110	30-40cm	Medium Mammal	UR	1	I	FF	II		2	1			
Kraal A	N98E30/N/4(30-40cm)	110-5	110	30-40cm	Bov II	YP	2	L	NN	VV	W	2	1	Brown		
Kraal A	N98E30/N/4(30-40cm)	110-6	110	30-40cm	Small Rodent	FE	100	R	FU	II		3	1			
Kraal A	N98E30/N/4(30-40cm)	110-7	110	30-40cm	Tortoise	FE	110	U	NN	TV		2	1			
Kraal A	N98E30/N/4(30-40cm)	110-8	110	30-40cm	Large Mammal	CR	7	U	NN	VV	L	5	1			
Kraal A	N98E30/N/4(30-40cm)	110-9	110	30-40cm	Large Mammal	CR	7	I	NN	VV	L	4	1			
Kraal A	N98E30/N/4(30-40cm)	110-10	110	30-40cm	Bov III	SE	1	U	NN	II		3	1			
Kraal A	N98E30/N/4(30-40cm)	110-11	110	30-40cm	Bov II	IN	93	U	NN	VT	L	6	1			
Kraal A	N98E30/N/4(30-40cm)	110-12	110	30-40cm	Bov III	MC	110	L	NN	VV	K	15	1	Cut		
Kraal A	N98E30/N/4(30-40cm)	110-13	110	30-40cm	Bov III	HU	110	R	NN	VV		9	1	Weathered		
Kraal A	N98E30/N/4(30-40cm)	110-14	110	30-40cm	Bov III	FE	110	U	NN	VV		8	1			
Kraal A	N98E30/N/4(30-40cm)	110-17	110	30-40cm	Medium Mammal	RA	110	U	NN	ST		5	1			
Kraal A	N98E30/N/4(30-40cm)	110-21	110	30-40cm	Large Mammal	RI	72	U	NN	VV		6	1			
Kraal A	N98E30/N/4(30-40cm)	110-23	110	30-40cm	Large Mammal	RI	72	U	NN	SV		4	1			
Kraal A	N98E30/N/4(30-40cm)	110-24	110	30-40cm	Large Mammal	RI	72	U	NN	SV	W	3	1	Grey		

Kraal A	N98E30/N/4(30-40cm)	110-25	110	30-40cm	Bov II	HU	110	U	NN	ST		5	1			
Kraal A	N98E30/N/4(30-40cm)	110-27	110	30-40cm	Tortoise	SH	2	I	NN	TT	W	3	1	Brown		
Kraal A	N98E30/N/4(30-40cm)	110-31	110	30-40cm	Tortoise	SH	2	I	NN	VV		3	1			
Kraal A	N98E30/N/4(30-40cm)	110-32	110	30-40cm	Bov II	IN	93	U	NN	VV	W	2	1	Grey		
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Medium Mammal	CR	7	I	NN	VV		2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV	B	2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV	B	2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV	B	2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV	B	2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Large Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Bov II	TN	2	U	NN	VV		1	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Bov II	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/4(30-40cm)		110	30-40cm	Bov II	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/S/4 (30-40cm)	116-1	116		Large Mammal	CR	7	U	NN	VV		4	1			
Kraal A	N98E30/S/4 (30-40cm)	116-4	116		Bov II	HU	110	U	NN	VV		5	1			
Kraal A	N98E30/S/4 (30-40cm)	116-5	116		Large Mammal	CR	28	U	NN	VV		4	1			
Kraal A	N98E30/S/4 (30-40cm)	116-6	116		Bov III	IN	93	U	NN	VV		5	1			

Kraal A	N98E30/S/4 (30-40cm)	116-7	116		Bov III	HU	110	U	NN	VV		7	1			
Kraal A	N98E30/S/4 (30-40cm)	116-8	116		Bov III	MP	110	U	NN	VV	W	9	1	Grey		
Kraal A	N98E30/S/4 (30-40cm)	116-9	116		Bov II	FE	110	U	NN	SS		6	1			
Kraal A	N98E30/S/4 (30-40cm)	116-13	116		Bov II	HU	110	U	NN	SV	K	6	1	Cut		
Kraal A	N98E30/S/4 (30-40cm)		116		Large Mammal	TN	2	U	NN	VV	B	3	1			
Kraal A	N98E30/N/5 (40-50cm)	121-1	121		Large Mammal	ZP	2	U	NN	VV	W	3	1	Brown		
Kraal A	N98E30/N/5 (40-50cm)	121-3	121		Bov III	2P	108	U	NF	VT		2	1			
Kraal A	N98E30/N/5 (40-50cm)	121-5	121		Bov I	SC	80	U	NN	VV	B	2	1			
Kraal A	N98E30/N/5 (40-50cm)	121-6	121		Small Mammal	IN	94	L	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)	121-7	121		Small Mammal	CR	7	U	NN	VT		2	1			
Kraal A	N98E30/N/5 (40-50cm)	121-11	121		Bov II	HU	110	U	NN	VV		4	1			
Kraal A	N98E30/N/5 (40-50cm)	121-12	121		Medium Mammal	CR	7	U	NN	VV		3	1			
Kraal A	N98E30/N/5 (40-50cm)	121-13	121		Small Mammal	CR	7	U	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)	121-14	121		Pedetes capensis	HU	110	U	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)	121-17	121		Medium Mammal	CR	7	U	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)		121		Medium Mammal	TN	2	U	NN	VV		3	1			
Kraal A	N98E30/N/5 (40-50cm)		121		Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)		121		Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)		121		Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/N/5 (40-50cm)		121		Bov III	TN	2	U	NN	SS		2	1			
Kraal A	N98E30/S/5 (40-50cm)	129-1	129		Bov III	TI	110	R	NN	TV	W	10	1	Brown		
Kraal A	N98E30/S/5 (40-50cm)	129-4	129		cf Geochelonia pardalus	SH	2	I	NN	VV		5	1			
Kraal A	N98E30/S/5 (40-50cm)	129-5	129		Bov III	AX	54	I	NN	VV		3	1			
Kraal A	N98E30/S/5 (40-50cm)	129-6	129		Medium Mammal	RI	72	U	NN	VV		5	1			
Kraal A	N98E30/S/5 (40-50cm)	129-8	129		Bov II	MN	36	U	NN	VV		5	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-1	132		Bos Taurus	2P	101	L	FF	VV		5	1	Weathered		Too broken to measure
Kraal A	N98E30/N/6 (50-60 cm)	132-2	132		Bov II	SC	81	R	NN	VV		5	1	Weathered		
Kraal A	N98E30/N/6 (50-60 cm)	132-4	132		Medium Mammal	CR	28	U	NN	VV		3	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-5	132		Lagomorph	RA	100	R	FN	IV		4	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-6	132		Bov II	MN	34	U	NN	VV		5	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-7	132		Tortoise	SH	2	I	NN	VV		2	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-17	132		Small Mammal	RI	72	U	NN	TV		3	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-18	132		Small Mammal	RI	72	U	NN	VV		2	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-21	132		Bov II	RA	110	L	NN	SV		4	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-23	132		Bov III	ZP	2	U	NN	VV		5	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-24	132		Small Rodent	YP	1	U	NN	II		2	1			
Kraal A	N98E30/N/6 (50-60 cm)	132-25	132		Pedetes capensis	TN	2	U	NN	IV		2	1			
Kraal A	N98E30/N/6 (50-60 cm)		132		Medium Mammal	OO	2	U	NN	TV		2	1			
Kraal A	N98E30/N/6 (50-60 cm)		132		Large Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/S/6 (50-60cm)	138-1	138		Sylvicapra grimmia	AS	1	L	FF	II		3	1		Dm: broken, GLl: 25,	

															GLm: 23.33, Bd: 16.69, Dl: 14.5	
Kraal A	N98E30/S/6 (50-60cm)	138-2	138		Tortoise	SH	2	I	NN	VV		3	1			
Kraal A	N98E30/S/6 (50-60cm)	138-3	138		Large Mammal	CR	28	U	NN	VV	W	8	1	Brown		
Kraal A	N98E30/S/6 (50-60cm)	138-4	138		Bov II	HU	110	U	NN	VV	W	5	1	White		
Kraal A	N98E30/S/6 (50-60cm)		138		Small Mammal	CR	7	U	NN	VV		2	1			
Kraal A	N98E30/N/7 (60-70cm)	142-1	142		Pedetes capensis	FE	103	L	FN	ES	L	8	1	Lightly scorched	Bp: 22.29, DC: 12.85	
Kraal A	N98E30/N/7 (60-70cm)	142-3	142		Large Mammal	PE	2	U	NN	VV	B	4	1			
Kraal A	N98E30/N/7 (60-70cm)	142-4	142		Bov III	CA	121	R	NN	VV	B	4	1			
Kraal A	N98E30/N/7 (60-70cm)	142-5	142		Pedetes capensis	P1	1	R	FF	II		3	1			
Kraal A	N98E30/N/7 (60-70cm)	142-6	142		Small Rodent	FE	1	R	FF	II		4	1	fresh		
Kraal A	N98E30/N/7 (60-70cm)	142-7	142		Small Rodent	FE	103	R	FN	VV		2	1	fresh		
Kraal A	N98E30/N/7 (60-70cm)	142-8	142		Small Rodent	FE	100	R	FU	II		3	1	fresh		
Kraal A	N98E30/N/7 (60-70cm)	142-9	142		Small Rodent	TI	110	U	NN	SS		2	1	fresh		
Kraal A	N98E30/N/7 (60-70cm)	142-10	142		Small Carnivore	ZP	2	U	NN	II		1	1			
Kraal A	N98E30/N/7 (60-70cm)	142-11	142		Small Rodent	AT	53	I	NN	VV		1	1			
Kraal A	N98E30/N/7 (60-70cm)	142-12	142		Medium Rodent	YP	2	U	NN	TV		3	1			
Kraal A	N98E30/N/7 (60-70cm)	142-14	142		Tortoise	SH	2	I	NN	VV		2	1			
Kraal A	N98E30/N/7 (60-70cm)	142-15	142		Tortoise	SH	2	I	NN	VV		3	1			
Kraal A	N98E30/N/7 (60-70cm)	142-19	142		Medium Mammal	MN	33/34	U	NN	VV		3	1			
Kraal A	N98E30/N/7 (60-70cm)	142-25	142		cf Aepyceros melampus	CA	1	L	NN	II		2	1		Wrong measurements taken. Not sure what these were: GD: 16.66, HMD: 9.92, GB: 17.92	
Kraal A	N98E30/N/7 (60-70cm)	142-29	142		Medium Mammal	RI	72	U	NN	VV		5	1	Root etching		
Kraal A	N98E30/N/7 (60-70cm)	142-30	142		Medium Mammal	RI	72	U	NN	VV		3	1			
Kraal A	N98E30/N/7 (60-70cm)	142-35	142		Bov III	ZP	2	R	NN	VV		5	9			
Kraal A	N98E30/N/8 (70-80 cm)	159-2	159		Bov III	AX	54	I	NN	VV		5	1			
Kraal A	N98E30/N/8 (70-80 cm)	159-3	159		Bov III	3P	103	L	NN	VV		4	1			
Kraal A	N98E30/N/8 (70-80 cm)	159-6	159		Bov II	TI	109	U	NU	VV	W	2	1	Grey		
Kraal A	N98E30/N/8 (70-80 cm)	159-8.1	159		Tortoise	SH	2	I	NN	VV		3	1			
Kraal A	N98E30/N/8 (70-80 cm)	159-9	159		Medium Mammal	CR	7	U	NN	VV		3	1			
Kraal A	N98E30/N/8 (70-80 cm)	159-10	159		Tortoise	SH	2	I	NN	VV		2	1			
Kraal A	N98E30/N/8 (70-80 cm)	159-11	159		Small Rodent	IN	90	R	NN	VV		3	1	fresh		
Kraal A	N98E30/N/8 (70-80 cm)	159-12	159		Medium Mammal	TN	2	U	NN	VV	B	1	1			

Kraal A	N98E30/N/8 (70-80 cm)		159		Medium Mammal	TN	2	U	NN	TC		1	1			
Kraal A	N98E30/S/8 (70-80cm)	163-1	163		Bov III	IN	95	R	NN	VV		7	1			
Kraal A	N98E30/S/8 (70-80cm)	163-2	163		Bov III	HU	110	L	NN	SV		7	1			
Kraal A	N98E30/S/8 (70-80cm)	163-3	163		Ovis/Capra	ZP	1	R	NN	II		4	1	Age Class IV		
Kraal A	N98E30/S/8 (70-80cm)	163-4	163		Bov II	ZP	2	R	NN	VV		4	1			
Kraal A	N98E30/S/8 (70-80cm)	163-5	163		Medium Mammal	TN	2	U	NN	VT	W	2	1	Brown		
Kraal A	N98E30/S/8 (70-80cm)	163-6	163		Medium Mammal	YP	2	U	NN	VV		2	1			
Kraal A	N98E30/S/8 (70-80cm)	163-15	163		Small Mammal	LU	56	U	NN	TV	W	2	1	Brown		
Kraal A	N98E30/S/8 (70-80cm)	163-16	163		Small Rodent	YP	2	U	NN	ST	B	1	1			
Kraal A	N98E30/S/8 (70-80cm)	163-18	163		Small Rodent	TI	110	U	NN	TT		2	1			
Kraal A	N98E30/S/8 (70-80cm)	163-23	163		Tortoise	SH	2	I	NN	TV		2	1			
Kraal A	N98E30/S/8 (70-80cm)	163-29	163		Bov III	HC	2	U	NN	TV		3	1			
Kraal A	N98E30/S/8 (70-80cm)		163		Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/S/8 (70-80cm)		163		Small Mammal	TN	2	U	NN	VV		1	1			
Kraal A	N98E30/S/8 (70-80cm)		163		Bov III	TN	2	U	NN	TV		1	1			
Kraal A	N98E30/N/9 (80-90cm)	172-2	172		Large Mammal	MN	33/34	U	NN	VV	B	4	1			
Kraal A	N98E30/N/9 (80-90cm)	172-3	172		Medium Mammal	MN	33/34	U	NN	VV	B	2	1			
Kraal A	N98E30/N/9 (80-90cm)	172-10	172		Small Mammal	SC	80	U	NN	VV		2	1			
Kraal A	N98E30/N/9 (80-90cm)	172-11	172		Small Mammal	CR	7	I	NN	VV		2	1			
Kraal A	N98E30/N/9 (80-90cm)	172-15	172		Cryptomys hottentotus	CR	1	I	NN	II		3	11	fresh		
Kraal A	N98E30/N/9 (80-90cm)		172		Tortoise	SH	2	I	NN	TV	W	2	1	Brown		
Kraal A	N98E30/N/9 (80-90cm)		172		Large Mammal	TN	2	U	NN	VS		2	1			
Kraal A	N98E30/N/9 (80-90cm)		172		Large Mammal	TN	2	U	NN	TS		2	1			
Kraal A	N98E30/S/9 (80-90cm)	176-1	176		Homo sapien sapien	VE	53	I	FF	VV		6	1			
Kraal A	N98E30/S/9 (80-90cm)	176-12	176		Small Snake	VE	1	I	NN	VV		1	1			
Kraal A	N98E30/S/9 (80-90cm)	176-13	176		Small Snake	VE	1	I	NN	VV		1	1			
Kraal A	N98E30/S/9 (80-90cm)	176-14	176		Medium Rodent	VE	53	I	NN	VV		1	1			
Kraal A	N98E30/S/9 (80-90cm)	176-15	176		Small Rodent	IN	92	R	NN	EV		1	1			
Kraal A	N98E30/S/9 (80-90cm)		176		Medium Mammal	TN	2	U	NN	VS		2	1			
Kraal A	N98E30/S/9 (80-90cm)		176		Small Mammal	TN	2	U	NN	VS		2	1			
Kraal A	N98E30/S/10 (90-100cm)	184-3	184		Bov II	TN	2	U	NN	VS		2	1			
Kraal A	N98E30/S/10 (90-100cm)	184-4	184		Small Rodent	MX	26	L	NN	VV		1	3	Maxilla + 2 teeth		
Kraal A	N98E30/S/10 (90-100cm)	184-9	184		Bov III	MN	43	U	NN	VV		3	1			
Kraal A	N98E30/S/10 (90-100cm)		184		Medium Mammal	TN	2	U	NN	VS		2	1			
Kraal A	N98E30 Clean up	188-1	188		Pedetes capensis	TN	2	U	NN	IV		2	1			
Kraal A	N98E30 Clean up	188-2	188		Small/Medium Aves	IN	94	L	NN	VV		2	1			
Kraal A	N98E30 Clean up	188-3	188		Small Rodent	LU	53	U	FU	IV		1	1			
Kraal A	N98E30 Clean up	188-4	188		Lepus sp	AS	1	l	FF	II	W	2	1	Brown		
Kraal A	N98E30/S/8 (70-80cm)	501-7	501		Bov II	HU	110	U	NN	SV		2	1			
Kraal A	N98E30/S/8 (70-80cm)		501		Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/S/8 (70-80cm)		501		Medium Mammal	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-1	149		Large Mammal	MX	23/25	U	NN	VV		5	1			
Kraal A	N98E30/S/7 (60-70cm)	149-3	149		Large Mammal	CR	7	U	NN	TV		5	1			

Kraal A	N98E30/S/7 (60-70cm)	149-8	149		Lagomorph	MX	23/25	L	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-9	149		Small Rodent	MN	32	R	NN	VV		2	2	Worn 3rd molar, fresh		Mandible + tooth
Kraal A	N98E30/S/7 (60-70cm)	149-10	149		Small Rodent	YP	2	U	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-11	149		Small Carnivore	YP	2	U	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-12	149		Small Rodent	YP	2	U	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-13	149		Small Rodent	MX	5	U	NN	VV		1	1			
Kraal A	N98E30/S/7 (60-70cm)	149-14	149		Small Rodent	HU	103	L	FN	VS		1	1			
Kraal A	N98E30/S/7 (60-70cm)	149-15	149		Small Rodent	SC	80	L	FN	IS		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-16	149		Small/Medium Reptile	VE	1	I	FF	II		1	1			
Kraal A	N98E30/S/7 (60-70cm)	149-17	149		Small/Medium Reptile	VE	51	I	NN	VV		1	1			
Kraal A	N98E30/S/7 (60-70cm)	149-18	149		Lagomorph	TN	2	U	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-22	149		Medium Mammal	1P	103	U	NN	VV		2	1			
Kraal A	N98E30/S/7 (60-70cm)	149-24	149		Small Mammal	VE	52	I	UN	TV		3	1			
Kraal A	N98E30/S/7 (60-70cm)	149-31	149		Bov III	ZP	2	U	NN	VV		3	1			
Kraal A	N98E30/S/7 (60-70cm)	149-32	149		Bov III	ZP	2	U	NN	VV		3	1			
Kraal A	N98E30/S/7 (60-70cm)	149-33	149		Tortoise	SH	2	I	NN	TV		5	1			
Kraal A	N98E30/S/7 (60-70cm)	149-34	149		Tortoise	SH	2	I	NN	TV	W	2	1	Grey		
Kraal A	N98E30/S/7 (60-70cm)		149		Small Mammal	HU	110	U	NN	ST	W	2	1	White		
Kraal A	N98E30/S/7 (60-70cm)		149		Small Mammal	CR	7	I	NN	VV		1	1			
Kraal A	N98E30/S/7 (60-70cm)		149		Medium Mammal	TN	2	U	NN	TV		2	1			
Kraal A	N98E30/S/7 (60-70cm)		149		Bov II	TN	2	U	NN	TV		2	1			
Kraal A	N98E30/S/7 (60-70cm)		149		Bov II	TN	2	U	NN	SV		2	1			
Kraal A	N98E30/S/8 (70-80cm)	N98E30/S1/2/8 - 509-1	509	70-80cm	Small Reptile	VE	1	U	UN	II		1	1			
Kraal A	N98E30/S/8 (70-80cm)	509-2	509	70-80cm	Small Rodent	MX	23	L	NN	VV		1	2	Maxila + molar		
Kraal A	N98E30/S/8 (70-80cm)	509-3	509	70-80cm	Small Rodent	SC	80	U	NN	VV		2	1			
Kraal A	N98E30/S/8 (70-80cm)	509-4	509	70-80cm	Small Rodent	HU	107	L	NF	VI		2	1			
Kraal A	N98E30/S/8 (70-80cm)	509-5	509	70-80cm	Small Rodent	MN	33/34	U	NN	VV		1	2	Mandible + molar		
Kraal A	N98E30/S/8 (70-80cm)	509-6	509	70-80cm	Small Rodent	RA	101	U	FN	IV		2	1			
Kraal A	N98E30/S/8 (70-80cm)		509	70-80cm	Small Rodent	HU	107	L	NF	VI		2	1			
Kraal A	N98E30/S/8 (70-80cm)		509	70-80cm	Small Rodent	ZP	1	U	NN	II		1	1			

Kraal A	N98E30/N1.2/9 (80-90cm)	N98E30/N1/2/9 - 510-1	510	80-90cm	Small Rodent	FE	110	U	NN	VV		2	1			
Kraal A	N98E30/N1.2/9 (80-90cm)	510-2	510	80-90cm	Small Rodent	MX	33	R	NN	VV		1	2	Maxilla + molar		
Kraal A	N98E30/N1.2/9 (80-90cm)	510-3	510	80-90cm	Frog/Toad	RA/UL	1	U	JN	II		2	2			
Kraal A	N98E30/S1.2/9 (80-90cm)	N98E30/S1/2/9 - 511-1	511	80-90cm	Cryptomys hottentotus	CR	1	I	NN	II		4	2 1			
Kraal A	N98E30/S1.2/9 (80-90cm)	511-2	511	80-90cm	Small Rodent	FE	110	R	UU	II		2	1			
Kraal A	N98E30/S1.2/9 (80-90cm)	511-3	511	80-90cm	Small Rodent	TI	110	L	UU	II		2	1			
Kraal A	N98E30/S1.2/9 (80-90cm)	511-4	511	80-90cm	Small Rodent	TI	106	R	NU	VI		2	1			
Kraal A	N98E30/S1.2/9 (80-90cm)	511-5	511	80-90cm	Small Rodent	FE	110	L	UU	II		2	1			
Kraal A	N98E30/S1.2/9 (80-90cm)	511-6	511	80-90cm	Small Rodent	CE	53	I	NN	VV		1	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	N98E30/S1/2/9 - 513-2	513	90-120cm	Small/Medium Reptile	VE	53	I	FF	VV		1	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	513-5	513	90-120cm	Small Rodent	FE	100	R	FN	IT		2	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	513-8	513	90-120cm	Small Rodent	YP	2	U	NN	VV		2	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	513-9	513	90-120cm	Small Rodent	MN	34	U	NN	VV		2	2	Mandible + Incisor		
Kraal A	N98E30/S1.2/9 (90-120cm)	513-10	513	90-120cm	Frog/Toad	IN	93	U	NN	VV		2	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	513-11	513	90-120cm	Frog/Toad	TI	110	U	UN	IS		1	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	513-12	513	90-120cm	Frog/Toad	TI	110	U	UN	IV		2	1			
Kraal A	N98E30/S1.2/9 (90-120cm)	513-13	513	90-120cm	Frog/Toad	RA/UL	1	U	UF	II		1	1			
Kraal A	N98E30/S1.2/9 (90-120cm)		513	90-120cm	Small Rodent	ZP	1	U	NN	VV		1	1			

SMALL BAG SENT LATER																
Burial 1	Burial 1 fill of grave		#11-26		Large Mammal	MN	30	U	NN	VV	W	6	1	Brown		
Kraal A	N98E30/N/9 (80-90 cm)		#168-2		Small Rodent	YP	2	U	NN	VV		3	1			
Kraal B	N110E50/S/3 (20-30cm)		#247-2		cf Geochelonia pardalus	SH	2	I	NN	TT		4	1			

Phoenix 17 – Non-Identifiable

Feature	Provenience	Other	Bone #	Level	UN	Black	Grey	Localised	Blue	Brown	Green-ish	White	Sun Bleached	Carnivore	Rodent	Cut	Drill Holes Insect	Chop	Trampled/Digested	Root etching	Weatherd	Pinkish	Ashy	L Mammal Long Bone	Calcide	Comments
Shovel Test Pits	STP N70E70	#28 STP N70E70	28		14	1																				
Shovel Test Pits	STP N90E40	#37 STP N90E40	37-1		1	1										1		1								
Shovel Test Pits	STP N90E40	#40 STP N90E20	40-1		1																					
Shovel Test Pits (Midden)	STP N100E91	#42 STP N100E90	42		1																					
Shovel Test Pits	STP N110E20	#49 STP N110E20	49		2					1																Juv
Shovel Test Pits	STP N120E20	#53 STP N120E20	53		4																					
Shovel Test Pits	STP N120E60	#58 STP N120E60	58		1																					
Shovel Test Pits	STP N150E20	#73	73		2																					
Kraal B	N108/E54/N1.5/1 (0-10cm)	#191	191-1		1																					
Kraal B	N108/E54/S/1 (0-10cm)	#193	193		11	1				1		3														
Kraal B	N108/E54/N1.2/2 (10-20cm)	#196	196		44	2	5	1		2		3		1												
Kraal B	N108/E54/S/4 (30-40cm)	#226	226		24		4																			
Kraal B	N108/E54/N/3 (20-30cm)	#210	210		10		1			1																
Kraal B	N108/E54/S/2 (10-20cm)	#202	202		18	2	2			3		7														
Kraal B	N108/E54/S/3 (20-30cm)	#214	214		33	2	1					4			1											
Kraal B	N108/E54/N/4 (30-40cm)	#220	220		4	1	1																			
Kraal B	N108/E54/N/5 (40-50cm)	#229	229		19		3			1	1	2														
Kraal B	N108/E54/N/5 (40-50cm)	#233	233		11		2								1											
Kraal B	N108/E54/S/5 (40-50cm)	#238	238		21					5					1											
Kraal B	N110/E50/S/1 (0-10cm)	STR2 #241	241		2								1													
Kraal B	N110/E50/S/2 (10-20cm)	STR2 #244	244		8					1		1														

Kraal B	N110/E50/S/4 (30-40cm)	STR2 #250	250		45	2	2		1		1	1	4													
Kraal B	N110/E50/S/5 (40-50cm)	#254	254		4	1						1														
Structure 1	N60E38/NE/1 (0-5cm)	#259	259		21																					
Structure 1	N62E38/NE/1 (0-5cm)	#261	261		4	1																				
Structure 1	N62E38/NW/1 (0-5cm)	#264	264		3	2				1																
Structure 1	N62E38/SE/1 (0-5cm)	#267	267		7				1																	
Structure 1	N62E40 Surface	#269	269		3																					
Structure 1	N62E40/NW/2 (5-10cm)	#278	278		3																					
Structure 1	N68E38/NE/1 (0-5cm)	#280	280		4																					
Structure 1	N70E40/e1.5/0 Surface	#284	284		3				1	1																
Structure 1	N70E40/SW/1 (0-5cm)	#287	287		6																					
Structure 1	N70E40/SW/1 (0-5cm)	#291	291		44																					
Structure 1	N70E40/SW/3 (10-15cm)	#294	294		2																					
Structure 5	N66E30/SW/1 (0-5cm)	STR5 #310 N66E30/ SW/1	310	10 cm	11																					
Structure 5	N66E30/SW/1 (0-5cm)	STR5 #314	314		7																					
Structure 5	N68E32/SW/1 (0-5cm)	STR5 #322 N68E32/ SW/1	322	10 cm	2																					
Structure 7	N70E30/SE/1 (0-10cm)	STR7 #337 N70E30/ SE/1	337		5																					
Structure 7	N84E40/SW/1 (0-5cm)	STR8 #347 N84E4/S W/1	347	0-15 cm	4																					
Structure 7	N86E0/SE/1 (0-5cm)	STR8 #349	349		2																					
Structure 7	N86E0/SE/1 (0-5cm)	STR8 #351	351		3	1																				
Structure 7	N86E4/SE/1+2 (0-15cm)	STR8 #358	358		3		1	1																		
Structure 8	N86E4/NE/1+2 (0-15cm)	STR8 #362	362		20																					
Structure 8	N86E4/SW 11BS	STR8 #363 N86.14E 5.12/11	363		50	23		6																		
Structure 8	N86E4/SE/2 (5-10cm)	STR8 #374	374-1.2		1																1					
Structure 8	N86E4/SE/2	STR8 #376 N86E2/N E/2	376		10																					
Structure 8	N86E4/SE/2 (5-15cm)	STR8 #380 N84E9/N E/2	380		16	4		1		3																

Midden 3	N98E90/N1.2/1 (0-20cm)	#391	391		16																					
Midden 3	N98E90/N/2 (20-30cm)	#395	395		105	1	1	1	1			3				2					9					
Midden 3	N98E90/N/3 (30-40cm)	#401	401		94	8		3				5				1					68					
Midden 3	N99.55 E90.30 35BS	N98E90/ B1/2/3 N99.55E 90.30/35 BS #406	406		2																2					
Midden 3	N99.82E90.52 32 BS	N98E90/ N1.5/3 N99.82E 90.52/32 BS #407	407		14																14					
Midden 3	N99.68E90.85 38 BS	N98E90/ N1.5/3 N99.68E 90.85/38 BS #408	408		1																1					
Kraal B	N108/E54/N/5 (40-50cm)	#226 IN #409	226		4	1		1				1			1											
Midden 3	N99.85E91.98 33 BS	N99.85E 91.98/33 BS M98E90/ N1.5/3 #411	411		61																59					
Midden 3	N90E20/N1.5/3 (40-50cm)	N90E20/ N1.5/4 #419	419	30 - 40 cm	43	7	1		1	1		1		1							1					
Midden 3	N100E90/S/2 (20-30cm)	#424	424		43	1	1																			
Surface finds	Hidden on track - S	#447	447		1																					
Surface finds	STP N73E45	#490	490		1																					
Midden 3	N100E90/S/3 (30-40cm)	N100E90 /S1.5/3 #427	427		109	3										2								1		
Midden 3	N100E90/S/4 (40-50cm)	N100E90 /S1.5/4 #478	478	40 - 50 cm	78	1		1		1				4		1										
Midden 3	N100E90/S/4 (40-50cm)	N100E90 /S1.5/4 #480	480		3																					
Shovel Test Pits	STP N110E30	#496	496		3																					
Midden 3	N98E90/M1.5/2 (20-30cm)	N98E90/ N1.5/2 #515	515	20 - 30 cm	3	1			2																	
Shovel Test Pits	STP N110E30	#496	498		2																					

Burial 1	Burial 1 (Above the pots)		7		22	1	2					1						1							2	
Burial 1	Burial 1 (Above the pots)		11		38	1	3	1		3						1										
Burial 1	Burial 1 (Fill)		19		22		1													1					1	
Burial 2	Burial 2 (Near the ribs)		24		8		7																		3	
Kraal A	N98E20/N/1 (0-10 cm)		75	0-10 cm	38	4	3			1	1	5	1						3							
Kraal A	N98E20/N/2 (10-20 cm)		79		59	4	7			6		5	1	1					6							
Kraal A	N98E20/N/5 (40-50 cm)		82		12	1	2			1		1	1													
Kraal A	N98E20/6 (50-60 cm)		85		41		9			4		1	2													
Kraal A	N98E30/N/1 (0-10 cm)		87		60	2	3	3	1	6	2	10	1			1			2							
Kraal A	N98E30/S/1 (0-10 cm)		91		60	6	7	2	2	3		6	1													
Kraal A	N98E30/N/2		95		93	5	10	1		7		12	2		1	1	1		1							2 VERY Large specimens present (nr 6 & 9)
Kraal A	N98E30/5/2 (10-20cm)		99		83	4	6		1	10		11	1		1		1		1		1					
Kraal A	Nq8E20/N1/2/3		102	20-30 cm	176	8	15	1	2	2	1	23			3	1			5						2	
Kraal A	N98E30/S/3		106		48	2	4			2	1	6						1					1			
Kraal A	Nq8E30/N1/2 Unit 4		110	30-40 cm	147	6	15			19	3	14			1	3		2	1		1	1			2	
Kraal A	N98E30/S/4 (30-40cm)		116		26	1	2			2		2													1	
Kraal A	N98E30/N/5 (40-50cm)		121		113	1	10			3		18														
Kraal A	N98E30/S/5 (40-50cm)		129		19	2	2	1				2														
Kraal A	N98E30/N/6 (50-60 cm)		132		94	4	8			4	1	16														
Kraal A	N98E30/S/6 (50-60cm)		138		27		2			4	1	7														
Kraal A	N98E30/N/7 (60-70cm)		142		87	3	5		1	5		13														
Kraal A	N98E30/N/8 (70-80 cm)		159		91	6	3	1	2	4		9	1													
Kraal A	N98E30/S/8 (70-80cm)		163		186	3	11			13	1	28														
Kraal A	N98E30/N/9 (80-90cm)		172		158	6	4	1	6	1	25	1														
Kraal A	N98E30/S/9 (80-90cm)		176		101	5	6	1		6		8						1								
Kraal A	N98E30/S/10 (90-100cm)		184		85	1	6		1	7		16														
Kraal A	N98E30 Clean up		188		45	1	4			6		5			1											
Kraal A	N98E30/S/8 (70-80cm)		501		112	4	5		1	9	1	13														
Kraal A	N98E30/S/7 (60-70cm)		149		159	6	7			12	1	19				1										
Kraal A	N98E30/S1.2/9 (90-120cm)		513-8	90-12	6																					

				0c m																						

Phoenix 17 – Human

Feature	Provenience	Other	Site	Bone #	Specie	Element	Part	Side	Fusion	Breakage	Modification	Length	NISP	Comments
Kraal A	N98E30/N/6 (50-60 cm)	132-3.1	17-B2-17	132	cf Homo sapien sapien	1P	103	U	FN	VE		2	1	Possibly the same 1P
Kraal A	N98E30/N/6 (50-60 cm)	132-3.2	17-B2-17	132	cf Homo sapien sapien	1P	105	U	NF	EI		2	1	
Kraal A	N98E30/N/6 (50-60 cm)	132-4	17-B2-17	132	cf Homo sapien sapien	MX	23/25	I	NN	VV		3	1	Fits 149-7
Kraal A	N98E30/S/5 (40-50cm)	129-10	17-B2-17	129	cf Homo sapien sapien	Unknown	.	.	.	.		3	1	
Kraal A	N98E30/N/7 (60-70cm)	142-24	17-B2-17	142	cf Homo sapien sapien	Unknown	.	.	.	.		4	1	
Kraal A	N98E30/N/7 (60-70cm)	142-26	17-B2-17	142	cf Homo sapien sapien	Unknown	.	.	.	.		2	1	
Kraal A	N98E30/S/7 (60-70cm)	149-6	17-B2-17	149	cf Homo sapien sapien	Unknown	120	U	NN	VV	Grey	3	1	
Kraal A	N98E30/S/7 (60-70cm)	149-7	17-B2-17	149	cf Homo sapien sapien	MX	23/25	I	NN	VV		3	1	Fits 132.4
Kraal A	N98E30/S/7 (60-70cm)	149-23	17-B2-17	149	cf Homo sapien sapien	1P	105	U	NN	SV	Grey	2	1	
Kraal A	N98E30/S/7 (60-70cm)	149-27	17-B2-17	149	cf Homo sapien sapien	Unknown	.	.	.	.		2	1	
Kraal A	N98E30/S/9 (80-90cm)	176-1	17-B2-17	176	Homo sapien sapien	VE	53	I	FF	VV		6	1	
Kraal A	N98E30/S/9 (80-90cm)	176-3	17-B2-17	176	cf Homo sapien sapien	Cuboid?	.	.	.	.		2	1	
Kraal A	N98E30/S/10 (90-100cm)	184-1	17-B2-17	184	cf Homo sapien sapien	Unknown	.	.	.	.	Grey/ White	2	1	
Kraal A	N98E30/S/10 (90-100cm)	184-7	17-B2-17	184	cf Homo sapien sapien	Unknown	.	.	.	.		1	1	
Kraal A	N98E30/S/8 (70-80cm)	501-1	17-B2-17	501	cf Homo sapien sapien	RI	71	U	NN	SV		3	1	

Phoenix 18 – Identifiable

Features	Provenience	Site	Bone #	Level	Specie	Element	Part	Side	Fusion	Breakage	Modi-	Length	CT	N1SP	Comments	Measure
Midden	NqE10/1 (0-10cm)	17-B2-18	#2-1		Bov III	TN	2	U	NN	VV		3		1		
Midden	NqE10/2 (10-20cm)	17-B2-18	#8-3		L Mammal	RI	72	U	NN	VV	R	7		1		
Midden	NqE10/2 (10-20cm)	17-B2-18	#8-4		L Mammal	RI	72	U	NN	VV		6		2		
Midden	NqE10/2 (10-20cm)	17-B2-18	#8-5		L Mammal	RI	72	U	NN	VV		4		1		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-1		Bov III	UL	103	L	NN	VS		9		1		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-2		L Mammal	HU	103	U	NN	VV		5	n/a	1		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-3		M Mammal	FE	103	U	NN	VV		2		1		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-6		L Mammal	VE	57	I	NN	VV	W	5		1	Brown, Ashy	
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-12		Bov II	MN	30	U	NN	VV		5		2		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-13		Tortoise	SH	2	U	NN	TT		2		1		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12-14		Bov III	TN	2	U	NN	ST		3		1		
Shovel Test Pits across Midden	STP N18E10	17-B2-18	#29-1		cf Bos taurus	TA	1	L	NN	II		6		1		L: 51.63, Dp: 45.77
Shovel Test Pits across Midden	STP N18E10	17-B2-18	#29-2		Bov III	XD	2	U	NN	VV		3		1		
Shovel Test Pits across Midden	STP N18E10	17-B2-18	#29-3		cf Bos taurus	ZP	2	U	NN	VV		5		2		
Shovel Test Pits across Midden	STP N14E10	17-B2-18	#24-1		Bov III	TI	110	U	NN	VV		17	4	1		
Shovel Test Pits across Midden	STP N16E10	17-B2-18	#26-2		cf Bos taurus	XP	2	U	NN	VV		3		1		
Shovel Test Pits across Midden	STP N16E10	17-B2-18	#26-2		Bov III	ZP	2	U	NN	VV		3		1		
Shovel Test Pits across Midden	STP N16E10	17-B2-18	#26-3		Bov III	IN	95	R	NN	TV	K	7		1	Cut	
Shovel Test Pits across Midden	STP N16E10	17-B2-18	#26-4		L Mammal	LU	54	I	NN	VV		4		1		
Shovel Test Pits across Midden	STP N16E10	17-B2-18	#26-5		Bov II	IN	92	R	NN	TS		3		1		

Phoenix 18 – Non-Identifiable

Features	Provenience	Site	Bone #	Level	UN	Black	Grey
Midden	NqE10/1 (0-10cm)	17-B2-18	#2		3		
Midden	NqE10/2 (10-20cm)	17-B2-18	#8		3		
Midden	NqE10/3 (20-30cm)	17-B2-18	#12		7		1
Shovel Test Pits	STP N18E10	17-B2-18	#29		1		
Shovel Test Pits	STP N20E10	17-B2-18	#32		1		
Shovel Test Pits	STP N16E10	17-B2-18	#26		10		

Thabadimasego – Identifiable

Lot	Unit	Level	Specie	Element	Part	Side	Fusion	Breakage	Modification	Length	NISP	Comments	Measure
21	1	1 (0-23cm)	Large Mammal	TN	2	U	NN	PP		1	1		
21	1	2 (10-23cm)	Bov III	ZP	2	U	NN	EE		4	3	Fit together	
21	1	2 (10-23cm)	Bov III	TN	2	U	NN	PP		2	1		
22	2	2 (0-20cm)	Medium Mammal	TN	2	U	NN	PP		1	3	Idividual Specimens	
22	2	2 (0-20cm)	Raphicerus campestris	FE	102	L	FN	IV		3	1		DC 14.9
22	2	2 (0-20cm)	Bov I	MP	108	U	NN	VE		2	1		
22	2	2 (0-20cm)	Bov II	MP	108	U	NN	VE		2	1		
22	2	2 (0-20cm)	Ovis/Capra	MP	108	U	NN	VI	C	2	1		
23	2	2 (20-30cm)	Bov II	TN	2	U	NN	PP		3	1		
23	2	2 (20-30cm)	Bov II	TN	2	U	NN	PP		2	1		
23	2	2 (20-30cm)	Medium Mammal	TN	2	U	NN	PP		1	1		
23	2	2 (20-30cm)	Medium Mammal	TH	53	I	NN	VV		3	1		
23	2	2 (20-30cm)	Bov III	1P	108	U	NF	ST		3	1		
25	2	3	Large Mammal	TN	2	U	NN	PP		2	2	Idividual Specimens	
25	2	3	Bov II	YP	2	L	NN	IS		2	1		
25	2	3	Bov III	MC	110	U	NN	SS		10	1		
25	2	3	Bov II	RA	110	L	NN	SV		9	1		
27	3	2 (10-20cm)	Medium Mammal	OO	2	U	NN	ST		2	1		
27	3	2 (10-20cm)	cf Patamochoerus porcus	3P	103	L	FF	II		3	1		Ld 24.11, MBS 7.91, DLS 23.92, BFp 8.94
27	3	2 (10-20cm)	Bov II	2P	2	R	FN	VV		2	1		
27	3	2 (10-20cm)	Medium Aves	FE	110	U	NN	VS	R K	6	2	Fit together, cut	
27	3	2 (10-20cm)	Medium Mammal	TN	2	U	NN	PP		1	2	Idividual Specimens	
27	3	2 (10-20cm)	Small Rodent	IN	92	R	NN	ST		2	1		
27	3	2 (10-20cm)	Small Rodent	FE	110	U	FF	EE		2	1		
27	3	2 (10-20cm)	Medium Mammal	LU	55	I	NN	DI		3	1		
28	3	2 (10-20cm)	Large Mammal	HU	110	U	NN	ES		8	3	Fit together	
28	3	2 (10-20cm)	Large Mammal	HU	110	U	NN	VS		9	1		
28	3	2 (10-20cm)	Ovis/Capra	SC	80	R	FN	EI		7	2	Fit together	BG 23.95, GLP 31.89, SLC 22.56
28	3	2 (10-20cm)	Large Mammal	LU	57	I	NN	VC	C	5	1		
34	3	3	Bov II	TN	2	U	NN	SV		2	1		
34	3	3	Medium Mammal	RI	72	U	NN	VV		6	1		
34	3	3	Large Mammal	PE	2	U	NN	VV		3	1		
34	3	3	Large Mammal	MN	33	U	NN	VV		5	1		
34	3	3	Medium Mammal	HU	110	U	NN	SV	C	3	1		
34	3	3	Bov II - non domestic	2P	121	R	NF	SI	R	2	1		
34	3	3	Medium Mammal	UR	51	I	UN	IV	R	2	1		
34	3	3	Bov I	MT	110	U	NN	VV		4	1		
36	3	3	Bov II	XP	1	L	NN	II		2	1	Central islands worn, aged	
36	3	3	Bov II	YP	1	l	NN	II		3	1		

36	3	3	Bov III	TI	108	L	NF	ST	K	7	1	Deep chop mark - distal shaft	
36	3	3	Medium Mammal	TH	56	I	NN	VV		6	1		
36	3	3	Bov II	TI	108	L	NF	VI		2	1		
36	3	3	Medium Carnivore	MP	107	U	NF	TI	B	1	1		
36	3	3	Small Rodent	IN	90	R	NN	ST		1	1		
36	3	3	Bov III	IN	95	U	NN	VV		5	1		
36	3	3	Large Mammal	LU	57	I	NN	CV	C	4	1		
42	3	4	Large Mammal	ST	2	I	NN	VE		7	1		
42	3	4	Medium Mammal	RI	72	U	NN	VV		8	1		
42	3	4	Small Rodent	PM	24	L	NN	VI		1	2	PM + Incisor	
42	3	4	Small Rodent	PM	24	L	NN	VI		1	2	PM + Incisor	
42	3	4	Small Rodent	PM	24	L	NN	VI		1	2	PM + Incisor	
42	3	4	Small Rodent	MX	23	L	NN	VV		1	2	MX + 1M	
42	3	4	Small Rodent	MN	41	L	NN	SI		2	3	MN + 2M	
42	3	4	Small Rodent	MN	41	L	NN	VV		2	2	MN + 1M	
42	3	4	Small Rodent	MN	1	L	NN	II		2	2	MN + 1M	
42	3	4	Small Rodent	MN	35	L	NN	VI		2	2	MN + Incisor	
42	3	4	Small Rodent	PM	24	R	NN	VI		1	2	PM + Incisor	
42	3	4	Small Rodent	MX	23	R	NN	VV		1	3	MX + 2M	
42	3	4	Small Rodent	MX	23	R	NN	VV		1	3	MX + 2M	
42	3	4	Small Rodent	MX	21	R	NN	VV		1	4	MX + 3M	
42	3	4	Small Rodent	MN	1	R	NN	II		2	3	MX + 2M	
42	3	4	Small Rodent	MN	41	R	NN	VI		2	2	MX + 1M	
42	3	4	Small Rodent	MN	34	R	NN	VV		1	2	MN + Incisor	
42	3	4	Saura sp	MN	32	R	FF	SS		1	4	MN + 3 Teeth	
42	3	4	Small Rodent	YP	2	U	NN	IV		1	2	2 Molars	
42	3	4	Small Rodent	YP	2	U	NN	IV		2	1		
42	3	4	Small Rodent	YP	2	U	NN	VV		1	1		
42	3	4	Small Rodent	ZP	1	U	NN	II		1	2		
42	3	4	Small Rodent	UL	1	L	FF	II		2	1		
42	3	4	Small Rodent	TI	1	L	UF	II		2	1		
42	3	4	Small Rodent	SC	80	L	FN	IV		1	2		
42	3	4	Small Rodent	FE	100	L	FU	II		2	2		
42	3	4	Small Rodent	FE	101	L	FN	IS		2	1		
42	3	4	Small Rodent	FE	100	R	FU	II		2	1		
42	3	4	Small Rodent	FE	100	R	FN	IS		2	1		
42	3	4	Small Rodent	HU	100	L	UF	II		2	2		
42	3	4	Small Rodent	HU	100	L	NF	IS		1	2		
42	3	4	Small Rodent	HU	105	R	UF	II		2	1		
42	3	4	Small Rodent	HU	102	R	NF	IS		1	1		
42	3	4	Small Rodent	RA	100	U	FN	IT		1	2		
42	3	4	Small Rodent	MP	110	U	NU	TI		1	1		
42	3	4	Small Rodent	IN	90	L	NN	TS		2	1		
42	3	4	Small Rodent	UR	1	I	UU	II		1	2		
42	3	4	Small Rodent	AT	1	I	FF	TT		1	1		
42	3	4	Small Rodent	CE	1	I	FF	TT		1	1		
42	3	4	Small Rodent	TH	1	I	FF	II		1	2		
42	3	4	Small Rodent	LU	1	I	UU	TT		1	1		
42	3	4	Small Rodent	SA	1	I	UU	TT		1	1		
42	3	4	Small Rodent	AX	1	I	FF	II		1	1		
24	3	1	Medium Mammal	TN	2	U	NN	VV		1	3		

24	3	1	Large Mammal	TN	2	U	NN	VV		1	1		
24	3	1	Large Mammal	TN	2	U	NN	VV		2	1		
44	3	5	Bov III	SE	120	I	NN	IV	R	2	1		
44	3	5	Small Rodent	AT	1	I	NN	TT		1	1		
44	3	5	Small Rodent	MN	42	L	NN	SS		1	2	PM + Incisor	
26	4	1	Bov III	ZP	2	U	NN	EV		5	1		
26	4	1	Ovis/Capra	ZP	2	L	NN	IE		3	2	Class VI	
29	4	2	Bov II	TN	2	U	NN	ST		1	1		
29	4	2	Bov II	TN	2	U	NN	SV		2	1		
29	4	2	Bov II	TN	2	U	NN	VV		2	2		
29	4	2	Bov III	TN	2	U	NN	SS		1	1		
29	4	2	Large Mammal	TN	2	U	NN	VV		2	3		
29	4	2	Medium Mammal	HU	110	U	NN	VT		3	1		
29	4	2	Medium Mammal	HU	110	U	NN	SS		3	1		
29	4	2	Large Mammal	VE	52	I	UN	VV		2	1		
33	4	3	Raphicerus campestris	MT	108	R	NF	SI	C	4	1		Dd 12.80, Bd 17.30, DD 9.41
33	4	3	Medium Mammal	RI	72	U	NN	VT		4	2		
33	4	3	Small Rodent	MN	1	R	NN	II		2	4	Mandible + 3 Teeth + Incisor	
35	4	4	Bov II	TN	2	U	NN	TS		1	1		
35	4	4	Bov II	TN	2	U	NN	TT		1	1		
35	4	4	Medium Mammal	TN	2	U	NN	SS		1	1		
35	4	4	Medium Mammal	HU	110	U	NN	TV		3	1		
37	5	1	Bov II	ZP	2	U	NN	TV		2	1		
37	5	1	Bov III	TN	2	U	NN	TT		1	1		
37	5	1	Large Mammal	TN	2	U	NN	TV		2	1		
37	5	1	Large Mammal	TN	2	U	NN	TS		2	1		
37	5	1	Large Mammal	TN	2	U	NN	IS		1	1		
37	5	1	Large Mammal	TN	2	U	NN	IV		2	1		
37	5	1	Large Mammal	TN	2	U	NN	VV		1	1		
37	5	1	Large Mammal	TN	2	U	NN	TT		2	1		
37	5	1	Large Mammal	TN	2	U	NN	VV		2	1		
37	5	1	Bov II	TN	2	U	NN	VV		1	1		
37	5	1	Bov II	TN	2	U	NN	TV		1	1		
37	5	1	Medium Mammal	TN	2	U	NN	TS		1	1		
37	5	1	Medium Mammal	TN	2	U	NN	TT		1	1		
37	5	1	Medium Mammal	TN	2	U	NN	IT	B	1	1		
37	5	1	Bov I	YN	2	L	NN	TV		2	2	Fit together	
37	5	1	Homo Sapien Sapien	YP	1	U	NN	II		1	1	Unerupted Incisor	
37	5	1	Bov III	TN	2	U	NN	IS		2	1		
37	5	1	Bov II	XP	1	U	NN	II		1	1	Lower premolar - central islands worn	
37	5	1	Bov II	SC	81	U	NN	SS	B	3	2	Fit together	
37	5	1	Small Mammal	SC	81	U	NN	SV		2	1		
37	5	1	Medium Aves	NT	103	U	FN	IV		2	1		
37	5	1	Small Mammal	RI	72	U	NN	VV		4	1		
37	5	1	Small Mammal	VE	54	I	NN	VV		2	1		
37	5	1	Bov II	CP	1	R	NN	II		2	1	Radial Carpal	
37	5	1	Bov II	HU	110	U	NN	SV		4	1		
37	5	1	Bov II	PE	2	I	NN	VV		2	1		
37	5	1	Medium Mammal	UR	1	I	UU	II		3	1		
37	5	1	Medium Mammal	AT	57	I	NN	TV	L	3	1		

37	5	1	Large Mammal	PE	2	I	NN	VV		2	1		
37	5	1	Bov III	1P	103	U	FN	TV	L	3	2	Fit together	
37	5	1	Bov III	FE	110	R	NN	SV		9	1		
37	5	1	Medium Mammal	CE	57	I	NN	VT	B	5	2		
37	5	1	Bov III	1P	108	U	NF	VT		3	1		
37	5	1	Bov III	3P	103	U	FN	VV	L	3	1		
37	5	1	Bov II	CA	120	L	NU	CV	C	5	1		
37	5	1	Bov II	HU	110	R	NN	EV		3	1		
37	5	1	Struthio camelus	SH	2	U	NN	TT		1	2		
43	5	2	Large Mammal	TN	2	U	NN	SV		1	1		
43	5	2	Large Mammal	TN	2	U	NN	ST		2	1		
43	5	2	Large Mammal	TN	2	U	NN	ST	B	2	1		
43	5	2	Large Mammal	TN	2	U	NN	VV		2	1		
43	5	2	Large Mammal	TN	2	U	NN	VV		2	1		
43	5	2	Bov III	TN	2	U	NN	TS		2	1		
43	5	2	Bov III	TN	2	U	NN	TS		2	1		
43	5	2	Bov III	ZP	2	U	NN	EV		3	1	Island worn	
43	5	2	Bov II	ZP	2	U	NN	VV		2	1		
43	5	2	Bov II	XP	2	U	NN	TT		2	1		
43	5	2	Bov II	MN	34	L	NN	IV		3	3	Mandible + premolar split in 2	
43	5	2	Small Aves	MT	110	U	NN	SV		2	1		
43	5	2	Medium Mammal	1P	101	U	UN	CC	C	2	1		
43	5	2	Small Mammal	RI	72	U	NN	VT	W	2	1		
43	5	2	Medium Mammal	RI	72	U	NN	ST	W	2	1		
43	5	2	Small Mammal	RI	72	U	NN	ST		5	1		
43	5	2	Medium Mammal	RI	72	U	NN	VV	L	5	1		
43	5	2	Medium Mammal	MN	23	U	NN	EE		3	1		
43	5	2	Medium Mammal	MN	23	U	NN	EE		3	1		
43	5	2	Large Mammal	CR	2	I	NN	VV	W	3	1		
43	5	2	Bov II	CR	2	I	NN	VV		5	1		
43	5	2	Bov II	HU	110	U	NN	SV	B	5	1		
43	5	2	Bov II	HU	110	U	NN	SV		4	1		
43	5	2	Bov II	HU	110	R	NN	VV		5	1		
43	5	2	Bov III	MP	108	U	NN	VV		3	1		
43	5	2	Medium Mammal	UR	58	I	FN	IS	B	3	1		
43	5	2	Bov II	IN	95	U	NN	TV	W	2	1		
43	5	2	Bov II	FE	104	U	UN	CC	C	3	1		
43	5	2	Large Mammal	TI	110	R	NN	ST	W	8	1		
43	5	2	Bov III	CA	121	R	NN	CC	C	4	1		
43	5	2	Large Mammal	PE	2	I	NN	VV	W	3	1		
43	5	2	Large Mammal	VE	7	I	NN	VV		4	1		
43	5	2	Large Mammal	VE	7	I	NN	EV		3	1		
43	5	2	Large Mammal	LU	54	I	NN	VV	W	4	1		
43	5	2	Bov III - non domestic	AT	59	I	NN	VV		5	1		
43	5	2	Large Mammal	LU	51	I	NN	TV	K	5	1	Chopped	
43	5	2	Large Mammal	VE	51	I	NN	VV	C	3	1		
43	5	2	Bov III	MN	32	R	NN	EV		6	3	2 frags that fit and one Fragment of premolar attached	
43	5	2	Aepyceros melampus	MX	32	L	NN	VV	P	8	3	UL MX P2, P3 P4 M3 - M2 and M1	

												lost during life, possible absess	
43	5	2	Ovis aries	HU	108	R	NF	SI	C	6	1		Bd 31.07
43	5	2	Bov III	MP	108	U	NF	VT	W	5	1		
43	5	2	Syncerus caffer	2P	1	R	II	II		5	1		Dp 38.47, Bp 36.6, GL 46.16, Bd 32.83, Sd 28.94
45	5	3	Small Rodent	CE	1	I	FF	II		1	1		
45	5	3	Medium Mammal	TN	2	U	NN	SV		1	1		
45	5	3	Small Mammal	VE	54	I	NN	VV		2	1		
45	5	3	Medium Mammal	VE	54	I	NN	IS		3	1	Trampled/Digested	
45	5	3	Bov III	MT	103	U	FN	VV	B	10	1		
45	5	3	Medium Mammal	RI	72	U	FN	PV		12	1		
45	5	3	Bov II	SC	81	U	NN	VT		6	1		
45	5	3	Bov II	HU	110	U	NN	SV		4	1		
45	5	3	Large Mammal	MX	2	U	NN	VV		3	1		
45	5	3	Bov III	MC	103	U	FN	TT	K	4	1	Chopped breakage	
145	5	4	Medium Mammal	TN	2	U	NN	TT	B	1	1		
146	5	4	Bov II	HU	110	U	NN	SV		6	1		
146	5	4	Medium Mammal	RI	72	U	NN	SV	W	4	1		
146	5	4	Bov I	RA	110	U	NN	VV	R	8	1		
146	5	4	Bov III	IN	95	L	NN	VV		7	1		
146	5	4	Bov I	TI	110	R	NN	SV		17	1		
133	6	Feat 2	Medium Mammal	CE	57	I	FN	IV		4	1		
148	6	2	Large Mammal	TN	2	U	NN	TT		1	1		
148	6	2	Medium Mammal	TN	2	U	NN	TS		2	1		
148	6	2	Bov II	TN	2	U	NN	VV		2	1		
149	6	3	Bov I	CA	121	L	NN	VS	W	3	1	Digested	
149	6	3	Large Mammal	TN	2	U	NN	TS		2	1		
149	6	3	Large Mammal	TN	2	U	NN	TS		1	1		
149	6	3	Large Mammal	TN	2	U	NN	VV		1	1		
149	6	3	Bov III	TN	2	U	NN	SV		1	1		
149	6	3	Medium Mammal	TN	2	U	NN	TV		1	1		
149	6	3	Medium Mammal	TN	2	U	NN	TV		1	1		
149	6	3	Medium Mammal	TN	2	U	NN	TT		1	1		
149	6	3	Medium Mammal	TN	2	U	NN	TT		1	1		
150	6	3	Medium Mammal	TN	2	U	NN	TT	B	1	1		
150	6	3	Bov II	TN	2	U	NN	TV		1	1		
152	6	4	Bov II	TN	2	U	NN	SV		2	1		
152	6	4	Bov I	TN	2	U	NN	VV		2	1		
152	6	4	Bov II	TN	2	U	NN	SV		1	1		
152	6	4	Medium Mammal	TN	2	U	NN	TT		1	1		
152	6	4	Medium Mammal	TH	56	I	NN	VV		4	1		
152	6	4	Small Mammal	RI	72	U	NN	CV	C	2	1		
152	6	4	Bov II	CA	121	U	UN	IV	B	2	1		
152	6	4	Bov I	MP	103	U	FN	VV		6	1		
162.1	7	Feat 3(1)	Small Mammal	TN	2	U	NN	TT		1	1		
162.3	7	Feat 3(2)	Bov III	TN	2	U	NN	SV		3	1		
160	7	2	Bov III	ZP	2	U	NN	IT		3	1		
160	7	2	Bov III	TN	2	U	NN	SV		1	1		
160	7	2	Bov III	TN	2	U	NN	TT		2	1		
160	7	2	Bov III	TN	2	U	NN	TV		1	1		
160	7	2	Bov III	TN	2	U	NN	VV		2	1		

160	7	2	Bov III	TN	2	U	NN	VV		2	1		
160	7	2	Bov III	TN	2	U	NN	SV		2	1		
160	7	2	Bov III	TN	2	U	NN	TT		1	1		
160	7	2	Bov III	TN	2	U	NN	TS		1	1		
160	7	2	Bov III	TN	2	U	NN	TV		1	1		
160	7	2	Large Mammal	TN	2	U	NN	SV		2	1		
160	7	2	Large Mammal	TN	2	U	NN	TS		2	1		
160	7	2	Bov II	TN	2	U	NN	VV		1	1		
160	7	2	Bov II	TN	2	U	NN	IS		2	1		
160	7	2	Bov II	TN	2	U	NN	TT		1	1		
160	7	2	Medium Mammal	TN	2	U	NN	TV		2	1		
160	7	2	Medium Mammal	TN	2	U	NN	SS		2	1		
160	7	2	Small Mammal	PE	2	U	NN	IV		1	1		
161	7	3	Bov III	ZP	2	U	NN	TV		5	1		
161	7	3	Bov III	TN	2	U	NN	VV		5	1		
161	7	3	Bov III	TN	2	U	NN	SV		3	1		
161	7	3	Bov III	TN	2	U	NN	VV		2	1		
161	7	3	Bov III	TN	2	U	NN	VV		2	1		
161	7	3	Bov III	TN	2	U	NN	VV		1	1		
161	7	3	Bov III	ZP	2	U	NN	VI	B	4	1		
161	7	3	Bov III	ZP	2	U	NN	VI	B	4	1		
161	7	3	Bov III	TN	2	U	NN	VV	B	4	1		
161	7	3	Bov III	TN	2	U	NN	VT	B	3	1		
161	7	3	Bov III	TN	2	U	NN	TV	B	3	1		
161	7	3	Bov III	TN	2	U	NN	VV	W	2	1		
161	7	3	Bov III	TN	2	U	NN	ST	B	2	1		
161	7	3	Bov III	TN	2	U	NN	TS	B	2	1		
161	7	3	Large Mammal	TN	2	U	NN	SV		1	1		
161	7	3	Large Mammal	TN	2	U	NN	VT		2	1		
161	7	3	Large Mammal	TN	2	U	NN	TT		2	1		
161	7	3	Large Mammal	TN	2	U	NN	VV	W	3	1		
161	7	3	Large Mammal	TN	2	U	NN	TT	B	2	1		
161	7	3	Large Mammal	TN	2	U	NN	TS	B	2	1		
161	7	3	Large Mammal	TN	2	U	NN	TS	W	3	1		
161	7	3	Large Mammal	TN	2	U	NN	SV	W	1	1		
161	7	3	Bov II	TN	2	U	NN	VT		1	1		
161	7	3	Bov II	TN	2	U	NN	TT	B	1	1		
161	7	3	Bov II	TN	2	U	NN	TT		1	1		
161	7	3	Medium Mammal	TN	2	U	NN	VV		1	1		
161	7	3	Small Mammal	RI	72	U	NN	TS		2	1	Root etching	
161	7	3	Large Mammal	CR	7	I	NN	VV		3	1		
161	7	3	Large Mammal	CR	7	I	NN	VV		2	1		
161	7	3	Large Mammal	CR	7	I	NN	VT		4	1		
161	7	3	Large Mammal	RI	72	U	NN	SV	R	5	1		
161	7	3	Bov III	1P	108	L	NF	VI		4	1		
161	7	3	Large Mammal	TH	50	I	FF	EE	K	3	1	Cut	
161	7	3	Equus quagga	MC	103	U	NF	VI	B	5	1		
164	7	4	Medium Mammal	RI	72	U	NN	TT	W	2	1		
164	7	4	Bov II	XP	2	U	NN	IV		1	1		
165	7	5	Large Mammal	PE	2	U	NN	IV	B	3	1		
165	7	5	Medium Mammal	TN	2	U	NN	TS		1	1		
163	7	4	Bov III	ZP	2	U	NN	IV		3	1		

163	7	4	Bov III	TN	2	U	NN	VV		3	1		
163	7	4	Bov III	TN	2	U	NN	TV		2	1		
163	7	4	Bov III	TN	2	U	NN	VS		2	1		
163	7	4	Bov III	TN	2	U	NN	VV		2	1		
163	7	4	Bov III	TN	2	U	NN	VV	B	2	1		
163	7	4	Bov III	TN	2	U	NN	TT		1	1		
163	7	4	Large Mammal	TN	2	U	NN	SS		2	1		
163	7	4	Bov II	TN	2	U	NN	IV		2	1		
163	7	4	Medium Mammal	TN	2	U	NN	VT		2	1		
163	7	4	Medium Mammal	TN	2	U	NN	VV		2	1		
163	7	4	Medium Mammal	TN	2	U	NN	TV	B	1	1		
163	7	4	Bov I	1P	108	U	NF	SI		2	1		
163	7	4	Bov II	1P	108	U	NF	IV	W	2	1		
163	7	4	Bov I	3P	103	U	FN	IV	W	2	1		
163	7	4	Frog/Toad	MP	2	U	NF	VV		2	1	Long Bone	
163	7	4	Medium Mammal	CR	2	I	NN	VV	W	2	1		
163	7	4	Medium Mammal	CR	2	I	NN	VV		4	1		
163	7	4	Large Mammal	CR	2	I	NN	TV	B	3	1		
163	7	4	Medium Mammal	HU	110	U	NN	VV	B	2	1		
163	7	4	Large Mammal	HU	110	U	NN	VV	W	3	1		
163	7	4	Large Mammal	HU	110	U	NN	SV		5	1		
163	7	4	Medium Mammal	CE	57	I	NN	VV	B	4	1		
163	7	4	Bov III	1P	105	U	NU	VI	K	5	1	Chop	
165	8	1	Bov III	TN	2	U	NN	ST		2	1		
165	8	1	Bov III	TN	2	U	NN	VT		2	1		
165	8	1	Large Mammal	TN	2	U	NN	TT		1	1		
165	8	1	Large Mammal	TN	2	U	NN	TV	W	1	1		
165	8	1	Large Mammal	TN	2	U	NN	VS		1	1		
165	8	1	Bov II	TN	2	U	NN	TS		2	1		
165	8	2	Bov III	TN	2	U	NN	VV		3	1		
165	8	2	Bov III	TN	2	U	NN	IV		3	1		
165	8	2	Bov III	TN	2	U	NN	IV		1	1		
165	8	2	Bov III	TN	2	U	NN	VV		2	1		
165	8	2	Bov III	TN	2	U	NN	IV		1	1		
165	8	2	Large Mammal	TN	2	U	NN	VS		2	1		
165	8	2	Large Mammal	TN	2	U	NN	IV		2	1		
165	8	2	Large Mammal	TN	2	U	NN	IV		2	1		
165	8	2	Large Mammal	TN	2	U	NN	VV		2	1		
165	8	2	Large Mammal	TN	2	U	NN	IT	W	1	1		
165	8	2	Large Mammal	TN	2	U	NN	SV	W	1	1		
165	8	2	Large Mammal	TN	2	U	NN	TT	W	1	1		
165	8	2	Bov II	TN	2	U	NN	TV		2	1		
165	8	2	Bov II	TN	2	U	NN	SV		2	1		
165	8	2	Medium Mammal	TN	2	U	NN	TS		2	1		
165	8	2	Medium Mammal	TN	2	U	NN	TS	W	2	1		
165	8	2	Medium Mammal	TN	2	U	NN	ST		2	1		
165	8	2	Medium Mammal	TN	2	U	NN	VV		2	1		
165	8	2	Medium Mammal	TN	2	U	NN	SV		1	1		
165	8	2	Medium Mammal	TN	2	U	NN	TT		1	1		
165	8	2	Medium Mammal	TN	2	U	NN	TS		1	1		
165	8	2	Medium Mammal	TN	2	U	NN	ST		2	1		
165	8	2	Medium Mammal	TN	2	U	NN	VV		1	1		

165	8	2	Small Mammal	TN	2	U	NN	TT		1	1		
165	8	2	Small Mammal	TN	2	U	NN	TT		1	1		
165	8	2	Molusc	SH	2	U	NN	VV		3	1		
165	8	2	Struthio camelus	SH	2	U	NN	TP		2	1		
165	8	2	Large Mammal	TN	2	U	NN	TV	B	2	1		
165	8	2	Bov II	RA	102	U	FN	VV		3	1	Trampled/Digested	
165	8	2	Bov III	3P	110	U	NN	VV		3	1		
165	8	2	Medium Mammal	VE	54	U	NN	VV		2	1		
165	8	2	Bov III	MN	43	U	NN	TV	W	4	1		
169	8	3	Large Mammal	TN	2	U	NN	TS		1	1		
169	8	3	Large Mammal	TN	2	U	NN	SV		1	1		
169	8	3	Medium Mammal	TN	2	U	NN	SV		1	1		
169	8	3	Medium Mammal	TN	2	U	NN	VV		1	1		
169	8	3	Small Mammal	TN	2	U	NN	TV		1	1		
168/169	8	3	Bov II	TN	2	U	NN	ST		1	1		
168/169	8	3	Bov II	TN	2	U	NN	VV		1	1		
168/169	8	3	Bov II	TN	2	U	NN	SS		1	1		
168/169	8	3	Bov II	TN	2	U	NN	TS		2	1		
168/169	8	3	Large Mammal	TN	2	U	NN	ST		2	1		
168/169	8	3	Bov III	TN	2	U	NN	VV		2	1		
168/169	8	3	Bov III	TN	2	U	NN	VV		1	1		
168/169	8	3	Small Mammal	RI	72	U	NN	VS		2	1		
168/169	8	3	Large Mammal	RI	72	U	NN	SV	L	3	2	Root etching	
168/169	8	3	Medium Mammal	RI	72	U	NN	VV	W	2	1		
168/169	8	3	Medium Mammal	PE	2	U	NN	VV		2	1		
168/169	8	3	Bov I	TI	104	R	UN	IV		3	1		
168/169	8	3	Bov II	HU	110	U	NN	SV		3	1		
168/169	8	3	Small Mammal	P1	108	U	NN	VV		1	1		
168/169	8	3	Bos taurus	P1	103	U	FN	TS		5	1	Fits together 170/8/4	
168/169	8	3	Bov III	P2	103	U	FN	VV	R	3	3	Trampled/Digested	
168/169	8	3	Bov II	MP	110	U	NN	SV		6	1	Root etching	
168/169	8	3	Bos taurus	P1	106	L	NF	TV	K	4	1	Fits together 170/8/4 Chop	BP: 26.62
168/169	8	3	Large Mammal	TI	110	U	NN	TS		7	2		
168/169	8	3	Large Mammal	TI	110	U	NN	VV		9	1		
168/169	8	3	Struthio camelus	SH	2	I	NN	TT		1	1		
170	8	4	Bov II	TN	2	U	NN	VV		1			
170	8	4	Bov II	TN	2	U	NN	VT		1			
170	8	4	Bov II	TN	2	U	NN	VV		2			
170	8	4	Bov III	TN	2	U	NN	VS		1	1		
170	8	4	Bov III	TN	2	U	NN	TV		3	1		
170	8	4	Large Mammal	TN	2	U	NN	TV		2	1		
170	8	4	Large Mammal	TN	2	U	NN	VT	B	3	2		
170	8	4	Small Mammal	TA	120	L	NN	IV		2	1		
170	8	4	Small Mammal	CE	57	I	NN	VV		2	1		
170	8	4	Bov II	HY	2	I	NN	VV	K	2	1	Cut	
170	8	4	Bov III	SE	1	U	NN	II		3	1		
170	8	4	Bos taurus	P1	103	U	FN	TV		4	1	Fits together 168/169/8/3	
170	8	4	Tortoise	SH	2	I	NN	TV		2	1		
170	8	4	Bov III	MT	103	R	FN	VV		7	1		
170	8	4	Bov III	IN	91	U	NN	VV		8	1		

170	8	4	Large Mammal	VE	54	I	NN	VV	B	6	1		
172	8	5	Bov II	XP	2	U	NN	VV		2	1		
172	8	5	Large Mammal	TN	2	U	NN	SV		2	1		
172	8	5	Equus quagga	SE	1	U	NN	II		3	1		
171	8	4	Bov II	TN	2	U	NN	TV		2	1		
170	8	4	Bos taurus	MP	2	L	NN	IE		6	1		Too broken to measure
176	9	1	Large Mammal	TN	2	U	NN	SV		2	1		
176	9	1	Medium Mammal	TN	2	U	NN	TV		1	1		
177	9	2	Medium Mammal	TN	2	U	NN	VV		1	1		
177	9	2	Medium Mammal	TN	2	U	NN	VT		1	1		
177	9	2	Medium Mammal	TN	2	U	NN	TV		1	1		
177	9	2	Medium Mammal	TN	2	U	NN	TS		1	1		
177	9	2	Bov II	TN	2	U	NN	VV		2	1		
177	9	2	Bov II	TN	2	U	NN	SV		1	1		
177	9	2	Bov III	TN	2	U	NN	TS		1	1		
177	9	2	Bov III	TN	2	U	NN	SS		1	1		
177	9	2	Bov III	TN	2	U	NN	TS		2	1		
177	9	2	Bov III	TN	2	U	NN	TV	W	2	1		
177	9	2	Large Mammal	TN	2	U	NN	TV		2	1		
177	9	2	Tortoise	SH	2	U	NN	TT		1	1		
179	9	3	Medium Mammal	TN	2	U	NN	TS		1	1		
179	9	3	Medium Mammal	TN	2	U	NN	TT		1	1		
179	9	3	Medium Mammal	TN	2	U	NN	TT		1	1		
179	9	3	Medium Mammal	TN	2	U	NN	ST		1	1		
179	9	3	Medium Mammal	TN	2	U	NN	TV	W	1	1		
179	9	3	Medium Mammal	TN	2	U	NN	SV		1	1		
179	9	3	Bov II	TN	2	U	NN	SV		2	1		
179	9	3	Bov II	TN	2	U	NN	ST		2	1		
179	9	3	Tortoise	SH	2	U	NN	ST		2	1		
179	9	3	cf Achatina sp	SH	2	U	NN	TV		1	1		
181	9	4	Large Mammal	TN	2	U	NN	SS		1	1		
181	9	4	Large Mammal	TN	2	U	NN	ST	W	1	1		
181	9	4	Large Mammal	TN	2	U	NN	ST		1	1		
181	9	4	Bov III	ZP	2	U	NN	VV		3	1		
181	9	4	Bov II	ZP	2	R	NN	IV		2	1	Central Islands Worn	
181	9	4	Medium Aves	UL	103	U	FN	TS		2	1		
181	9	4	Tortoise	SH	2	U	NN	TT		2	1		
181	9	4	Medium Mammal	TH	56	I	NN	VV	L	4	1		
181	9	4	Bov II	SC	80	L	FN	CS	C K	5	1	Root etching, cut	
193	9	5	Large Mammal	TN	2	U	NN	ST		2	1		
193	9	5	Bov III	TN	2	U	NN	VV		2	1		
185	9	6	Ovis/Capra	ZP	2	L	NN	SE		4	4		Too broken to measure
185	9	6	cf Ovis/Capra	ZP	2	U	NN	VE		4	4		Too broken to measure
185	9	6	Large Mammal	MN	30	U	NN	VV		4	1		
185	9	6	Large Mammal	MN	30	U	NN	VV		4	1		
185	9	6	Bov II	HU	110	U	NN	ST		4	1		
187	9	7	Bov II	TN	2	U	NN	TV		2	1		
187	9	7	Medium Rodent	FE	109	U	NU	II		1	1		
187	9	7	Medium Rodent	SA	53	I	FF	VV		1	1		
187	9	7	Medium Rodent	FE	100	L	FN	IV		3	1		

187	9	7	Medium Rodent	FE	101	R	UN	IV		3	1		
187	9	7	Medium Rodent	UL	100	L	FN	IV		3	1		
190	10	2	Small Mammal	TN	2	U	NN	TV		1	1		
190	10	2	Bov II	TN	2	U	NN	TV		2	1		
190	10	2	Bov II	YP	2	R	NN	IT		2	1	Incisor Island is worn - aged + Grazing wear just below the enamel line on the lateral side	Length: 11.59cm Width: 4.47cm
192	10	3	Small Mammal	TN	2	U	NN	ST		1	1		
192	10	3	Bov II	TN	2	U	NN	TV		2	1		
192	10	3	Bov II	TN	2	U	NN	SV		1	1		
192	10	3	Bov II	TN	2	U	NN	VS		1	1		
192	10	3	Medium Mammal	TN	2	U	NN	VV		2	1		
192	10	3	Small Rodent	TI	107	L	FN	IS		1	1		
194	10	4	Medium Mammal	TN	2	U	NN	SV		1	1		
194	10	4	Bov II	TN	2	U	NN	TV		1	1		
194	10	4	Bov II	TN	2	U	NN	VV		1	1		
194	10	4	Bov III	UL	110	R	NN	VV		11	1		
194	10	4	Struthio camelus	SH	2	I	NN	TT		1	1		
199	10	5	Bov II	YP	2	U	NN	SS		1	1		
199	10	5	Small Rodent	MN	30	R	NN	VS		1	4	Mandible + 3 Teeth	
201	10	6	Struthio camelus	SH	2	I	NN	TT		2	1		
201	10	6	Small Rodent	FE	100	R	UU	II		2	1		
201	10	6	Bos taurus	MT	110	L	NU	VI		6	1	Fit together, ashy layer	
201	10	6	Bos taurus	MT	109	L	NU	II		4	1	Fit together, ashy layer	
201	10	6	Bos taurus	MT	109	L	NU	II		4	1	Fit together, ashy layer	
202	10	7	Bov II	MP	110	U	NN	VV		7	1		
205	10	8	Insectivore	MN	32	R	NN	VV	B	1	2	Mandible + Incisor and 2 premolars	
206	11	1	Bov II	TN	2	U	NN	TT		1	1		
207	11	2	Bov II	TN	2	U	NN	VV		2	1		
207	11	2	Bov II	TN	2	U	NN	SV		2	1		
207	11	2	Small Reptile	VE	1	I	FF	II		1	1	Fresh	
207	11	2	Small Rodent	FE	103	R	UN	IV		1	1		
207	11	2	Small Rodent	YP	2	U	NN	IV		2	1		
207	11	2	Small Rodent	FE	109	U	NU	II		1	1		
207	11	2	Struthio camelus	SH	2	I	NN	TT		1	1		
209	11	3	Medium Mammal	TN	2	U	NN	TS		1	1		
209	11	3	Medium Mammal	TN	2	U	NN	TS		1	1		
209	11	3	Small Rodent	FE	103	U	FN	IV		1	1		
211	11	4	Small Rodent	FE	102	R	UN	IS		2	1		
219	12	4	Bov III	TN	2	U	NN	SV		3	1		
219	12	4	Large Mammal	TN	2	U	NN	TV		2	1		
219	12	4	Bov II	HU	110	U	NN	SS		5	1		
219	12	4	Bov II	P1	108	U	NF	VV		1	1		
219	12	4	Bov II	P1	108	U	NF	VV		2	1		
214	12	1	Achatina sp	SH	2	U	NN	TV		2	1		
214	12	1	Medium Mammal	TN	2	U	NN	TV		1	1		

215	12	2	Bov II	TN	2	U	NN	VS		1	1		
215	12	2	Bov III	TN	2	U	NN	VV		2	1		
215	12	2	Bov III	TN	2	U	NN	SV		2	1		
215	12	2	Bov III	TN	2	U	NN	VS		3	1		
215	12	2	Bov III	TN	2	U	NN	TS		2	1		
215	12	2	Large Mammal	TN	2	U	NN	TS		2	1		
217	12	3	Bov II	TN	2	U	NN	TT		1	1		
217	12	3	Large Mammal	TN	2	U	NN	VV		3	1		
217	12	3	Bov III	TN	2	U	NN	VV		1	1		
217	12	3	Bov III	TN	2	U	NN	VS		2	1		
217	12	3	Bov III	TN	2	U	NN	SV		2	1		
217	12	3	Bov III	TN	2	U	NN	TV		2	1		
217	12	3	Bov III	TN	2	U	NN	SV		2	1	Could all be the same tooth	
217	12	3	Bov III	TN	2	U	NN	VT		2	1		
217	12	3	Bov III	TN	2	U	NN	SS		3	1		
217	12	3	Bov III	TN	2	U	NN	VV		3	1		
217	12	3	Bov III	TN	2	U	NN	TV		2	1		
217	12	3	Bov III	TN	2	U	NN	SS		4	1		
227	14	1	Bov III	TN	2	U	NN	VV		2	1		
227	14	1	Bov II	TN	2	U	NN	TT		1	1		
227	14	1	Large Mammal	TN	2	U	NN	TS		1	1		
229	14	2	Large Mammal	TN	2	U	NN	TS		1	1		
236	15	1	Small Rodent	FE	109	U	NU	II		1	1	Sunbleached	
236	15	1	Small Rodent	LU	53	I	UU	VV		1	1		
236	15	1	Small Rodent	MN	37	L	NN	VV		2	5	Mandible + 3 Teeth + Incisor	
238	15	2	Bov II	TN	2	U	NN	SV		1	1		
234	15	3	Bov III	TN	2	U	NN	VV		1	1		
240	15	3	Struthio camelus	SH	2	I	NN	TV		1	1		
240	15	3	Achatina sp	SH	2	U	NN	TT		1	1		
240	15	3	Medium Mammal	TN	2	U	NN	TV		2	1		
240	15	3	Medium Mammal	TN	2	U	NN	TV		2	1		
240	15	3	Medium Mammal	TN	2	U	NN	TV		2	1		
240	15	3	Medium Mammal	TN	2	U	NN	TV		2	1		
240	15	3	Bov II	TN	2	U	NN	TT		2	1		
240	15	3	Bov II	TN	2	U	NN	TV		2	1		
240	15	3	Small Rodent	AT	1?	I	FF	II		1	1		
240	15	3	Small Rodent	CR	28?	L	NN	TT		1	1		
240	15	3	Ovis/Capra	1P	102	L	FN	IV		3	1		Bp: 12.18
240	15	3	Large Mammal	HU	110	U	NN	VE		5	1		
240	15	3	Medium Mammal	PE	2	U	NN	VV		1	1		
242	15	4	Bov I	YP	2	R	NN	IV		2	1	Aged	
241	15	4	Small Mammal	TN	2	U	NN	TV		1	1		
241	15	4	Medium Mammal	TN	2	U	NN	TV		2	1		
241	15	4	Medium Mammal	TN	2	U	NN	TT		2	1		
241	15	4	Bov II	TN	2	U	NN	TV		1	1		
241	15	4	Bov II	TN	2	U	NN	TV		1	1		
241	15	4	Bov II	TN	2	U	NN	TT		1	1		
241	15	4	Bov II	TN	2	U	NN	TV		1	1		
241	15	4	Bov II	TN	2	U	NN	TT		1	1		
241	15	4	Struthio camelus	SH	2	I	NN	TV		2	1		
241	15	4	Struthio camelus	SH	2	I	NN	TT		1	1		

241	15	4	Achatina sp	SH	2	U	NN	TV		2	1		
241	15	4	Achatina sp	SH	2	U	NN	TV		2	1		
241	15	4	Achatina sp	SH	2	U	NN	TV		2	1		
241	15	4	Small Rodent	MN	30	U	NN	II		2	1		
241	15	4	Small Rodent	HU	105	L	UN	II		2	1	Fresh	
241	15	4	Bov III/IV	HU	110	U	NN	SS		8	2		
241	15	4	Bov III/IV	MP	109	U	NN	VV		2	1		
244	15	5	Struthio camelus	SH	2	I	NN	TT		1	1		
244	15	5	Struthio camelus	SH	2	I	NN	TT		1	1		
244	15	5	Achatina sp	SH	2	U	NN	TT		1	1		
244	15	5	Achatina sp	SH	2	U	NN	TV		1	1		
244	15	5	Medium Mammal	TN	2	U	NN	ST		2	1		
244	15	5	Bov III	TN	2	U	NN	VS		2	1		
244	15	5	Bov III	TN	2	U	NN	VT		2	1		
244	15	5	Bov III	TN	2	U	NN	VV		2	1		
244	15	5	Large Mammal	TN	2	U	NN	VV		2	1		
244	15	5	cf Ovis/Capra	TA	1	R	NN	II		2	1		GB: 10.12, GD: 15.37
244	15	5	Bov II	IN	95	R	NN	VV		4	1		
244	15	5	Large Mammal	TI	103	R	FN	VE		13	2		
246	15	6	Struthio camelus	SH	2	I	NN	TT		1	1		
246	15	6	Bov II	TN	2	U	NN	VV		2	1		
246	15	6	Bov II	TN	2	U	NN	TV		1	1		
246	15	6	Bov II	TN	2	U	NN	TS		1	1		
246	15	6	Bov III	TN	2	U	NN	SV		2	1		
246	15	6	Small Rodent	UL	100	L	FN	IT		3	1	Fresh	
246	15	6	Small Rodent	IN	94	R	NN	VV		2	1	Fresh	
246	15	6	Small Rodent	MN	30	R	NN	VV		1	2	Fresh	
246	15	6	Small Rodent	MN	30	L	NN	VV		2	3	Mandible + Incisor + 1 Premolar - Fresh	
246	15	6	Small Rodent	PM	2	L	NN	VV		1	2	Premolar row + Incisor - Fresh	
246	15	6	Small Rodent	MX	26	L	NN	VV		2	3	Maxilla + 2 Molars fit - Fresh	
246	15	6	Small Rodent	MX	26	R	NN	VV		2	3	Maxilla + 2 Molars fit - Fresh	
246	15	6	Small Rodent	LU	1	I	FF	VV		1	1	Fresh	
246	15	6	Small Rodent	UR	1	I	FF	VV		1	1	Fresh	
246	15	6	Small Rodent	UR	51	I	NN	VV		1	1	Fresh	
246	15	6	Small Rodent	AT	1	I	FF	VV		1	1	Fresh	
246	15	6	Small Rodent	AT	51	I	NN	VV		1	1	Fresh	
246	15	6	Small Rodent	PE	2	I	NN	VV		1	1	Fresh	
246	15	6	Small Rodent	PE	2	I	NN	VV		1	1	Fresh	
246	15	6	Small Rodent	CR	7	I	NN	VV		1	1	Fresh	
246	15	6	Small Rodent	CR	7	I	NN	VV		1	1	Fresh	
246	15	6	Small Rodent	HU	105	L	UF	VI		2	1	Fresh	
246	15	6	Small Rodent	FE	101	L	FU	VV		1	1	Fresh	
246	15	6	Small Rodent	TI	105	L	UF	II		3	1	Fresh	
246	15	6	Small Rodent	RA	100	R	UN	IV		3	1	Fresh	
246	15	6	Small Rodent	MP	1	U	NN	II		2	1	Fresh	
246	15	6	Small Rodent	MP	1	U	NN	II		2	1	Fresh	
246	15	6	Ovis aries	3P	1	L	FF	II		3	1		HP: 15.20, BFp: 8.24, Ld 22.70, Dls: 27.42, Mbs: 6.93

246	15	6	Bov II	MP	103	L	FN	ST		8	1		
246	15	6	Large Mammal	RI	71	I	FN	EV		9	1		
246	15	6	Bos taurus	HU	107	L	NF	SI		11	1		Dmd: 83.22, Bd: 74.89
246	15	6	Small Mammal	YP	2	U	NN	VV		1	1		
248	16	1	Struthio camelus	SH	2	I	NN	TV		1	1		
248	16	1	Struthio camelus	SH	2	I	NN	TT		1	1		
248	16	1	Achatina sp	SH	2	U	NN	TV		1	1		
248	16	1	Medium Mammal	TN	2	U	NN	TT		1	1		
248	16	1	Bov II	TN	2	U	NN	TT	B	1	1		
248	16	1	Bov II	TN	2	U	NN	TT		2	1		
248	16	1	Bov II	TN	2	U	NN	TV		2	1		
250	16	2	Struthio camelus	SH	2	I	NN	TT		2	1		
250	16	2	Struthio camelus	SH	2	I	NN	TT		1	1		
250	16	2	Struthio camelus	SH	2	I	NN	TT		1	1		
250	16	2	Molusc	SH	2	U	NN	TV		1	1		
250	16	2	Molusc	SH	2	U	NN	TT		1	1		
250	16	2	Medium Mammal	TN	2	U	NN	TV		1	1		
250	16	2	Medium Mammal	TN	2	U	NN	TT		1	1		
250	16	2	Medium Mammal	TN	2	U	NN	TS		1	1		
250	16	2	Bov II	TN	2	U	NN	TS		1	1		
250	16	2	Bov II	TN	2	U	NN	TV		1	1		
250	16	2	Bov II	TN	2	U	NN	SV		2	1		
250	16	2	Bov II	TN	2	U	NN	SV		2	1		
250	16	2	Small Rodent	TI	110	L	UN	IV		1	1		
250	16	2	Small Rodent	MP	1	U	FF	II		1	1		
250	16	2	Small Rodent	RA	102	L	FN	IS		1	1		
250	16	2	Small Rodent	PE	2	I	NN	VV		1	1		
250	16	2	Medium Mammal	RI	72	U	NN	VS		5	2		
251	16	2	Small Reptile	VE	51	I	FF	TV		2	1		
253	16	3	Bov II	MP	108	U	NF	VV		2	1		
258	16	4	Struthio camelus	SH	2	I	NN	TT		1	1		
252	16	3	Achatina sp	SH	2	U	NN	TT		2	1		
252	16	3	Achatina sp	SH	2	U	NN	TT		2	1		
252	16	3	Bov II	TN	2	U	NN	TT		1	1		
252	16	3	Bov II	TN	2	U	NN	VV		2	1		
252	16	3	Bov III	TN	2	U	NN	TV		2	1		
252	16	3	Bov III	TN	2	U	NN	VV		2	1		
252	16	3	Small Rodent	TI	110	R	NN	TT		2	1		
252	16	3	Small Rodent	IN	92	R	NN	TV		2	1		
252	16	3	Bov II	TA	1	R	I	II		2	1		
252	16	3	Bov II	ZP	2	L	NN	VV		2	3		
252	16	3	Large Mammal	PE	2	I	NN	VV		3	1		
254	16	4	Medium Mammal	TN	2	U	NN	TS		1	1		
254	16	4	Bov II	TN	2	U	NN	VV		1	1		
254	16	4	Bov III	TN	2	U	NN	TS		3	1		
254	16	4	Bov III	TN	2	U	NN	VV		2	1		
254	16	4	Struthio camelus	SH	2	I	NN	TV		1	1		
254	16	4	Small Rodent	TI	105	L	NF	TI		2	1	Fresh	
254	16	4	Bov II	1P	108	U	FU	TS		3	1		
254	16	4	Bov II	HU	110	U	NN	VS		3	1		
254	16	4	Medium Mammal	RI	72	U	NN	VV		5	1		
254	16	4	Bov II	SC	80	R	FN	CC	L	5	1		

254	16	4	Bov II	UL	110	R	BN	IT		7	1		
254	16	4	Bov II	MN	43	L	NN	VV		4	1		
254	16	4	Bov III/IV	SE	1	I	I	II		3	1		
254	16	4	Raphicerus campestris	AS	1	R	I	II		3	1		Dm: 12.51, Dl: 13.07, GLm: 21.66, GLl: 22.82, Bd: 13.18,
254	16	4	Medium Mammal	RI	72	U	NN	VV		5	1		
254	16	4	Large Mammal	PE	1	I	NN	II		3	1		
254	16	4	Bov III	TI	110	U	NN	VV		8	1		
254	16	4	Bos Taurus	RA	102	R	FN	IV		10	1		BP: 82.56, BFp: 76.55, Dp: 43.11
254	16	4	Large Mammal	PE	2	I	NN	VV		2	1		
254	16	4	Bov III	CP	120	R	NN	VV		3	1		
256	16	5	Molusc	SH	2	U	NN	TV	B	1	1		
256	16	5	Bov II	YP	2	U	NN	SV		2	1		
256	16	5	Bov I	SE	1	U	NN	II		2	1		
256	16	5	Vivirridae	HU	108	U	NF	VV		2	1		
256	16	5	Bov II	TI	109	L	NU	VV		3	1		
256	16	5	Bos taurus	CP	1	L	NN	II		4	1		GH: 33.48, GD: 45.81, BFd: 27.84
256	16	5	Large Mammal	TH	56	I	NN	VV		7	1		
256	16	5	Large Mammal	TH	56	I	NN	VV		9	1		
256	16	5	Large Mammal	LU	54	I	NN	VV		5	1		
			Small Mammal	LU	57	I	NN	VV		2	1		
256	16	5	Bov III	FE	103	R	FN	VV		8	1		
			Bov II	AT	54	I	NN	VV		3	1		
259	17	1	Medium Mammal	TN	2	U	NN	ST		1	1		
259	17	1	Medium Mammal	TN	2	U	NN	SV		2	1		
259	17	1	Medium Mammal	TN	2	U	NN	TV		1	1		
259	17	1	Medium Mammal	TN	2	U	NN	TS		1	1		
259	17	1	Medium Mammal	TN	2	U	NN	TT		2	1		
259	17	1	Bov II	TN	2	U	NN	TV		1	1		
259	17	1	Bov II	TN	2	U	NN	TT		1	1		
259	17	1	Bov II	TN	2	U	NN	TV		2	1		
259	17	1	Bov II	TN	2	U	NN	VV		2	1		
259	17	1	Bov II	TN	2	U	NN	ST		2	1		
259	17	1	Bov II	TN	2	U	NN	SV		2	1		
259	17	1	Bov II	TN	2	U	NN	VV		2	1		
259	17	1	Bov II	TN	2	U	NN	VV		2	1		
259	17	1	Bov II	TN	2	U	NN	VV		1	1		
259	17	1	Struthio camelus	SH	2	I	NN	TT		2	1		
259	17	1	Medium Mammal	PE	2	I	NN	VV		3	1		
261	17	2	Medium Mammal	TN	2	U	NN	TT		1	1		
261	17	2	Bov II	TN	2	U	NN	TS		2	1		
261	17	2	Bov II	TN	2	U	NN	VV		2	1		
261	17	2	Bov II	TN	2	U	NN	TV		1	1		
261	17	2	Bov II	YP	2	U	NN	VV		2	1		
261	17	2	Bov III	TN	2	U	NN	VS		2	1		
261	17	2	Bov III	TN	2	U	NN	TS		2	1		
261	17	2	Bov II	ZP	2	L	NN	VV		2	1		
261	17	2	Medium Mammal	TH	56	I	NN	VV		3	1		
261	17	2	Bov III	RA	110	R	NN	VV	K	8	2	Cut	
261	17	2	cf Bos Taurus	MP	108	U	NN	TV	K	3	1	Chop, FITS	
263	17	3	Medium Mammal	TN	2	U	NN	TV		1	1		

263	17	3	Medium Mammal	TN	2	U	NN	TV		1	1		
265	17	3	Medium Mammal	TN	2	U	NN	TS		1	1		
265	17	3	Bov II	TN	2	U	NN	TT		1	1		
265	17	3	Bov II	TN	2	U	NN	TS		1	1		
265	17	3	Bov II	TN	2	U	NN	TV		1	1		
265	17	3	Bov II	TN	2	U	NN	TT		1	1		
265	17	3	Bov III	TN	2	U	NN	TV		2	1		
265	17	3	Bov III	TN	2	U	NN	VS		3	1		
265	17	3	Bov III	TN	2	U	NN	SS		3	1		
265	17	3	Large Mammal	TN	2	U	NN	TS		2	1		
265	17	3	Bov II	UL	110	L	NN	TS		4	1		
265	17	3	Small Rodent	MN	34	U	NN	VV		1	2	Mandible + Tooth	
265	17	3	Small Rodent	TI	105	R	NF	VS		2	1		
265	17	3	Small Mammal	HU	110	U	NN	VS		2	1		
265	17	3	Aepyceros melampus	XP	1	R	NN	II		3	1	Aged, islands worn	
265	17	3	Large Mammal	CR	7	I	NN	VV		3	1		
265	17	3	cf Geochelonia pardalus	SH	2	I	NN	TT		4	1		
265	17	3	Large Mammal	AX	57	I	NN	VV		6	1		
265	17	3	cf Bos taurus	MP	108	R	NF	VV		9	1	FITS	
265	17	3	Bov I	SE	120	I	NN	VV		1	1		
267	17	4	Bov II	1P	108	L	NF	VV		3	1		
267	17	4	Bov II	2P	108	R	NF	VV		2	1		
267	17	4	Medium Mammal	RI	72	U	NN	TV		5	1		
267	17	4	Small Mammal	RI	72	U	NN	TV		3	1		
267	17	4	Large Mammal	CR	7	I	NN	VV		5	1		
267	17	4	Large Mammal	CR	7	I	NN	VV		4	1		
267	17	4	Large Mammal	CR	7	I	NN	VV		4	1		
267	17	4	Medium Mammal	CR	7	I	NN	VV		3	1		
267	17	4	cf Ovis Aries	UL	102	R	UN	IV		5	1		
267	17	4	Bov I	CA	104	U	UN	II		2	1		
267	17	4	Medium Mammal	VE	52	I	UN	TV		1	1		
267	17	4	Bov II	TN	2	U	NN	VV		1	1		
267	17	4	Bov II	TN	2	U	NN	VV		1	1		
267	17	4	Small Reptile	VE	7	I	NN	VV		1	1		
267	17	4	Bov II	YP	2	L	NN	IV		2	1		
267	17	4	Bov II	TN	2	U	NN	VV		2	1		
267	17	4	Bov II	YP	2	L	NN	IV		2	1		
267	17	4	Bov III	TN	2	U	NN	VV		2	1		
267	17	4	Bov III	TN	2	U	NN	VV		1	1		
267	17	4	Bov III	TN	2	U	NN	VV		2	1		
267	17	4	Bov III	TN	2	U	NN	VV		2	1		
267	17	4	Bov III/IV	TN	2	U	NN	VV		3	1		
269	18	2	Molusc	SH	2	U	NN	TS		1	1		
270	18	2	Medium Mammal	TN	2	U	NN	TT		1	1		
270	18	2	Bov II	TN	2	U	NN	TD		1	1		
270	18	2	Bov II	TN	2	U	NN	TT		1	1		
270	18	2	Bov II	TN	2	U	NN	TV		2	1		
270	18	2	Medium Mammal	VE	7	I	NN	VV		2	1		
272	18	3	Bov II	TN	2	U	NN	TV		1	1		
276	19	2	Bov II	TN	2	U	NN	TT		1	1		
276	19	2	Bov II	TN	2	U	NN	SV		1	1		
276	19	2	Bov II	TN	2	U	NN	SS		1	1		

281	19	3	Bov II	XP	2	U	NN	TV		2	1		
281	19	3	Bov II	YP	2	U	NN	TI		1	1		
281	19	3	Small Rodent	FE	103	R	FN	VV		1	1		
284	19	4	Bov III	HU	110	U	NN	VV		5	1		
284	19	4	Bov II	HY	2	I	NN	VV		3	1		
284	19	4	Bov II	ZP	2	L	NN	VV		2	1	Juvinile, L Disidious Premolar 4	
286	19	5	Molusc	SH	2	U	NN	TT		1	1		
286	19	5	Molusc	SH	2	U	NN	VV		1	1		
286	19	5	Molusc	SH	2	U	NN	VV		1	1		
286	19	5	Medium Mammal	TN	2	U	NN	TV		1	1		
286	19	5	Small Rodent	TI	110	R	UN	IT		2	1		
286	19	5	Ovis/Capra	P2	104	R	UN	II		2	1		
286	19	5	Bov II	1P	108	U	NF	VV		4	1		
286	19	5	Bov II	MT	103	L	FN	TV		2	1		
286	19	5	Large Mammal	HU	110	L	NN	SV		12	1		
289	19	6	Small Mammal	RI	72	U	NN	TV		2	1		
289	19	6	Small Rodent	HU	107	L	NF	TT		2	1		
289	19	6	Small Rodent	HU	107	L	UF	IV		2	1		
289	19	6	Small Rodent	HU	107	L	UF	IT		2	1		
295	20	3	Bov II	XD	2	U	NN	VV		2	2		
295	20	3	Bov II	XD	2	U	NN	VV		2	4		
295	20	3	Bov II	YP	2	R	NN	VV	L	2	1		
295	20	3	Bov III	ZP	2	U	NN	VV		2	1		
295	20	3	Bov II	TN	2	U	NN	TV	B	3	1		
295	20	3	Bov II	TN	2	U	NN	TV		1	1		
295	20	3	Bov II	TN	2	U	NN	TV		1	1		
295	20	3	Bov III	TN	2	U	NN	TT		2	1		
295	20	3	Bov III	TN	2	U	NN	VV		2	1		
295	20	3	Bov III	TN	2	U	NN	VV		2	1		
295	20	3	Bov III	TN	2	U	NN	VT		2	1		
295	20	3	Large Mammal	TN	2	U	NN	VV		2	1		
295	20	3	Medium Mammal	VE	54	I	NN	VV		4	1		
295	20	3	Tortoise	SH	2	U	NN	VV		2	1		
295	20	3	Bov III	MT	103	R	FN	TP		6	1		
298	20	4	Bov II	TN	2	U	NN	TT		1	1		
298	20	4	Bov II	TN	2	U	NN	TV		2	1		
298	20	4	Large Mammal	TN	2	U	NN	VV		2	2		
298	20	4	Large Mammal	TN	2	U	NN	VV		2	1		
298	20	4	Large Mammal	TN	2	U	NN	VT		3	1		
298	20	4	Bov III	TN	2	U	NN	TV		3	1		
298	20	4	Bov III	TN	2	U	NN	VV		3	1		
298	20	4	Medium Mammal	CR	7	U	NN	VV		2	1		
298	20	4	Small Rodent	TI	108	R	NF	VI		2	1		
298	20	4	Medium Aves	1P	1	U	FF	II		2	1		
298	20	4	Small Mammal	FE	110	U	NN	SV		3	1		
298	20	4	Small Mammal	VE	52	I	UN	II		1	1		
298	20	4	Bov I	MP	110	U	NN	SV	B	4	1		
298	20	4	Bov II	HU	110	U	NN	VV		5	1		
298	20	4	Bos taurus	CP	1	L	NN	II	W	4	1	Drill hole	GD: 33.65, HMD: 16.38, GB: 41.3
291	20	1	Medium Mammal	TN	2	U	NN	TT		1	1		

291	20	1	Medium Mammal	TN	2	U	NN	ST		1	1		
291	20	1	Medium Mammal	TN	2	U	NN	ST		1	1		
291	20	1	Molusc	SH	2	U	NN	TS		1	1		
291	20	1	Molusc	SH	2	U	NN	TT		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TV		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TS		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TV		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TS		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TT		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TV		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TT		2	1		
293	20	2	Medium Mammal	TN	2	U	NN	TV		1	1		
293	20	2	Medium Mammal	TN	2	U	NN	TS		2	1		
293	20	2	Bov II	TN	2	U	NN	TV		2	1		
293	20	2	Bov II	TN	2	U	NN	TS		2	1		
293	20	2	Bov II	TN	2	U	NN	VV		1	1		
293	20	2	Bov II	TN	2	U	NN	VV		2	1		
293	20	2	Achatina sp	SH	2	U	NN	TT		2	1		
293	20	2	Small Mammal	PE	2	U	NN	VV		1	1		
293	20	2	Small Mammal	CR	7	I	NN	VV		2	1		
293	20	2	Small Mammal	CR	7	I	NN	VV		1	1		
293	20	2	Bov I	2P	108	U	NN	VV		2	1		
293	20	2	Small Mammal	VE	54	I	NN	VV		2	1		
293	20	2	Bov II	MP	108	U	NN	VC	C	2	1		
293	20	2	Bov II	AS	121	U	NN	VV		3	1	Digested	
301	20	5	Medium Mammal	TN	2	U	NN	TT		2	1		
345	21	1	Bov III	TN	2	U	NN	SS		3	1	Weathered (sun bleached)	
345	21	1	Bov III	TN	2	U	NN	TV		2	1	Weathered (sun bleached)	
345	21	1	Bov III	TN	2	U	NN	TS		2	1		
345	21	1	Bov III	TN	2	U	NN	TS		2	1		
345	21	1	Bov III	TN	2	U	NN	ST		2	1		
345	21	1	Bov III	TN	2	U	NN	VV		2	1		
345	21	1	Bov II	TN	2	U	NN	TT		2	1		
345	21	1	Medium Mammal	TN	2	U	NN	TT		1	1		
345	21	1	Medium Mammal	TN	2	U	NN	TV		1	1		
345	21	1	Achatina sp	SH	2	U	NN	VV		2	1		
345	21	1	Achatina sp	SH	2	U	NN	TT		1	1		
346	21	2	Medium Mammal	TN	2	U	NN	TT		1	1		
346	21	2	Medium Mammal	TN	2	U	NN	TT		1	1		
346	21	2	Medium Mammal	TN	2	U	NN	TT		2	1		
346	21	2	Medium Mammal	TN	2	U	NN	VV		2	1		
346	21	2	Medium Mammal	TN	2	U	NN	TV		1	1		
346	21	2	Medium Mammal	TN	2	U	NN	VV		1	1		
346	21	2	Medium Mammal	TN	2	U	NN	TV		1	1		
346	21	2	Medium Mammal	TN	2	U	NN	TV		1	1		
346	21	2	Bov II	TN	2	U	NN	VV		1	1		
346	21	2	Bov II	TN	2	U	NN	TV		1	1		
346	21	2	Bov II	TN	2	U	NN	VV		2	1		
346	21	2	Bov II	TN	2	U	NN	TV		2	1		
346	21	2	Bov II	TN	2	U	NN	TV		2	1		

346	21	2	Bov II	TN	2	U	NN	TV		2	1		
346	21	2	Bov II	TN	2	U	NN	TT		2	1		
346	21	2	Bov III	TN	2	U	NN	TV		4	1		
346	21	2	Large Mammal	TN	2	U	NN	TV		2	1		
346	21	2	Struthio camelus	SH	2	U	NN	TT		2	1		
346	21	2	Struthio camelus	SH	2	U	NN	TT		1	1		
346	21	2	Struthio camelus	SH	2	U	NN	TT		1	1		
346	21	2	Achatina sp	SH	2	U	NN	TT		2	1		
346	21	2	Achatina sp	SH	2	U	NN	VV		2	1		
348	21	3	Medium Mammal	TN	2	U	NN	TT		1	1		
348	21	3	Medium Mammal	TN	2	U	NN	TT		2	1		
348	21	3	Medium Mammal	TN	2	U	NN	TV		1	1		
348	21	3	Achatina sp	SH	2	U	NN	TV		1	1		
348	21	3	Achatina sp	SH	2	U	NN	TV		1	1		
342	Perimeter test pit	2	Achatina sp	SH	2	U	NN	VV		2	1		
342	PTTP	2	Achatina sp	SH	2	U	NN	TT		1	1		
342	PTTP	2	Achatina sp	SH	2	U	NN	TV		1	1		
342	PTTP	2	Medium Mammal	TN	2	U	NN	TV		1	1		
342	PTTP	2	Medium Mammal	TN	2	U	NN	TV		1	1		
342	PTTP	2	Bov III	TN	2	U	NN	VT		2	1		
350	PTTP	5	Medium Mammal	TN	2	U	NN	TV		1	1		
350	PTTP	5	Small Rodent	YP	2	U	NN	VT		1	1		
352	PTTP	7	Achatina sp	SH	2	U	NN	TV		1	1		
359	PTTP	14	Medium Mammal	TN	2	U	NN	TV		1	1		
364	PTTP	22	Bov III	TA	120	U	NN	VV		3	1	Articulates	
364	PTTP	22	Bov III	TA	120	U	NN	VV		3	1	Articulates	
366	PTTP	24	Medium Mammal	TN	2	U	NN	TV		1	1		
366	PTTP	24	Medium Mammal	TN	2	U	NN	TV		1	1		
311	STTPN77	STR 1/2	Medium Mammal	TN	2	U	NN	TV		1	1		
311	STTPN77	STR 2/2	Medium Mammal	TN	2	U	NN	TS		1	1		
312	STTPN75	STR 2/3	Large Mammal	TN	2	U	NN	TS		1	1		
312	STTPN75	STR 3/2	Bov II	TN	2	U	NN	VV		2	1		
313	STTPN75	STR 2/3	Small Mammal	TN	2	U	NN	TS		1	1		
313	STTPN75	STR 3/3	Large Mammal	TN	2	U	NN	TT		2	1		
313	STTPN75	STR 3/3	cf Ovis/Capra	P2	107	R	NN	VV		3	1		
315	STTPN72	STR 1/2	Bov III	TN	2	U	NN	VT	W	2	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VV		1	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VV		1	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VV		2	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VS		1	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VV		2	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VV		1	1		
315	STTPN72	STR 2/2	Bov II	TN	2	U	NN	VS		1	1		
315	STTPN72	STR 2/2	Struthio camelus	SH	2	U	NN	TT		1	1		
315	STTPN72	STR 2/2	Medium Mammal	TN	2	U	NN	TS		1	1		
315	STTPN72	STR 2/2	Small Mammal	YP	2	U	NN	TT		2	1		
315	STTPN72	STR 2/2	Medium Mammal	PE	2	I	NN	VV		2	1		
315	STTPN72	STR 2/2	Small Mammal	RI	72	I	NN	TT		4	1		
315	STTPN72	STR 2/2	Medium Mammal	RI	72	I	NN	TV		4	1		
315	STTPN72	STR 2/2	Small Rodent	MN	35	U	NN	VV		1	1		
315	STTPN72	STR 2/2	Bov III	CP	1	R	NN	II		4	2	Trampled	

316	STTPN75	STR 1	Medium Mammal	TN	2	U	NN	TS		1	1		
316	STTPN75	STR 2/2	Achatina sp	SH	2	U	NN	TV		1	1		
316	STTPN75	STR 2/2	Struthio camelus	SH	2	U	NN	TT		1	1		
316	STTPN75	STR 2/2	Struthio camelus	SH	2	U	NN	TT		1	1		
316	STTPN75	STR 2/2	Struthio camelus	SH	2	U	NN	TT		2	1		
316	STTPN75	STR 2/2	Medium Mammal	TN	2	U	NN	TT		1	1		
316	STTPN75	STR 2/2	Medium Mammal	TN	2	U	NN	TT		1	1		
316	STTPN75	STR 2/2	Medium Mammal	TN	2	U	NN	TS		1	1		
316	STTPN75	STR 2/2	Medium Mammal	TN	2	U	NN	VV		1	1		
316	STTPN75	STR 2/2	Small Rodent	UR	1	I	UU	II		1	1		
316	STTPN75	STR 2/2	Small Rodent	HU	105	R	UF	TI		2	1		
316	STTPN75	STR 2/2	Small Mammal	PE	2	I	NN	VV		1	1		
316	STTPN75	STR 2/2	Bov II	AS	1	R	NN	EI	C	4	2	Digested	too broken to measure
316	STTPN75	STR 2/2	Bov II	MT	103	R	FN	SV		4	1		
316	STTPN75	STR 2/2	Bov III	MT	110	U	NU	VV		15	1		
317	STTPN76	STR 1	Bov III	TN	2	U	NN	VT	W	2	1		
317	STTPN76	STR 2/2	Molusc	SH	2	U	NN	VV		1	1		
317	STTPN76	STR 2/2	Molusc	SH	2	U	NN	VV		1	1		
317	STTPN76	STR 2/2	Molusc	SH	2	U	NN	VV		1	1		
317	STTPN76	STR 2/2	Molusc	SH	2	U	NN	VV		1	1		
317	STTPN76	STR 2/2	Molusc	SH	2	U	NN	TT		1	1		
317	STTPN76	STR 2/2	Molusc	SH	2	U	NN	TT		1	1		
317	STTPN76	STR 2/2	Medium Mammal	TN	2	U	NN	TT		1	1		
317	STTPN76	STR 2/2	Small Mammal	TN	2	U	NN	TT		1	1		
317	STTPN76	STR 2/2	cf Bos taurus	CP	1	R	NN	II		4	1		GL: 53, BFp: 29.31
318	STTPN79	STR 3/3	Medium Mammal	TN	2	U	NN	TT		1	1		
			Bov II	2P	103	U	NN	VV		2	1	Digested	
318	STTPN79	STR 3/3	Bov II	TN	2	U	NN	TT		2	1		
318	STTPN79	STR 2/3	Bov II	MC	103	R	FN	VV		3	1		
318	STTPN79	STR 2/3	Bov III	SC	81	R	NN	VV		10	3		
319	STTPN78	STR 3	Bov II	TN	2	U	NN	TT		1	1		
319	STTPN78	STR 3	Bov III	TN	2	U	NN	TT		2	1		
319	STTPN78	STR 3	Medium Mammal	PE	2	I	NN	VV		1	1		
319	STTPN78	STR 3	Medium Mammal	CP	120	U	NN	VV		2	1	Digested	
319	STTPN78	STR 3	Medium Mammal	FE	108	R	NN	VV		2	1		
320	STTPN78	STR 2	Medium Mammal	TN	2	U	NN	TT		1	1		
320	STTPN78	STR 3	Medium Mammal	TN	2	U	NN	TT		2	1		
320	STTPN78	STR 3	Small Rodent	IN	90	L	NN	VV		3	2		
320	STTPN78	STR 3	Small Rodent	FE	105	L	UJ	II		3	2		
320	STTPN78	STR 3	Small Rodent	TI	105	L	UF	II		3	1		
308	STTPN87	STR 2/3	Molusc	SH	2	U	NN	TT		1	1		
308	STTPN87	STR 2/3	Medium Mammal	TN	2	U	NN	TT		1	1		
308	STTPN87	STR 2/3	Medium Mammal	TN	2	U	NN	TT		1	1		
308	STTPN87	STR 2/3	Medium Mammal	TN	2	U	NN	TS		1	1		
308	STTPN87	STR 2/3	Bov II	TN	2	U	NN	TT		1	1		
308	STTPN87	STR 3	Large Mammal	TN	2	U	NN	TT		2	1		
321	STTPN82	STR 2	Bov II	YP	2	R	NN	TT		2	1		
321	STTPN82	STR 2	Small/Medium Aves	1P	1	R	NN	II		2	1		
322	STTPN82	STR 3	Struthio camelus	SH	2	U	NN	TT		2	1		
322	STTPN82	STR 3	Bov II	MP	110	U	NN	VV		7	1		
322	STTPN82	STR 3	Bov II	HU	110	U	NN	SV		6	1		
322	STTPN82	STR 3	Bov III	1P	108	U	UN	TV		3	1		

322	STTPN82	STR 3	Large Mammal	PE	2	I	NN	VV		3	1		
310	STTPN82	STR 3	Bov II	CP	121	U	NN	VV		2	2		
322	STTPN82	STR 2	Bov II	TN	2	U	NN	TT		1	1		
323	STTPN85	STR 2	Lagomorph	1P	1	R	FF	II		2	1		
323	STTPN85	STR 2	Struthio camelus	SH	2	U	NN	TT		1	1		
324	STTPN86	STR 2	Bov III	TN	2	U	NN	VS		2	1		
324	STTPN86	STR 2	Bov III	TN	2	U	NN	VS		3	1		
325	STTPN87	STR 2	Medium Mammal	TN	2	U	NN	TS		1	1		
325	STTPN87	STR 2	Saura sp	MN	32	R	FF	SS		1	4	Mandible + 3 Teeth	
326	STTPN88	STR 3	Bov II	P2	107	L	NN	VV		2	2		
327	STTPN91	STR 2	Medium Mammal	TN	2	U	NN	TV		1	1		
327	STTPN91	STR 2	Medium Mammal	TN	2	U	NN	TS		1	1		
327	STTPN91	STR 3	Small Mammal	RI	72	U	NN	VV		3	1		
327	STTPN91	STR 3	Small Mammal	CR	7	I	NN	VV		2	1		
327	STTPN91	STR 3	Bov II	HU	108	L	NN	VV		5	1		
328	STTPN95	STR 2	Medium Mammal	TN	2	U	NN	TT		2	1		
328	STTPN95	STR 2	Medium Mammal	TN	2	U	NN	TT		1	1		
328	STTPN95	STR 2	Small Rodent	MX	34	L	NN	VV		1	1		
328	STTPN95	STR 2	Medium Mammal	TN	2	U	NN	TT		1	1		
328	STTPN95	STR 3	Bov II	MC	103	R	FN	SV		4	1		
328	STTPN95	STR 3	Bov II	TI	110	L	NN	VV		12	1		
329	STTPN96	STR 3	Medium Mammal	CR	7	U	NN	VV		2	1		
329	STTPN96	STR 3	Terrestrial Gastropod	SH	2	U	NN	VV		1	1		
329	STTPN96	STR 3	Medium Mammal	TN	2	U	NN	TT		1	1		
330	STTPN97	STR 2	Medium Mammal	TN	2	U	NN	ST		1	1		
330	STTPN97	STR 3	Loxodonta africana	YP	2	U	NN	TT		1	7		
330	STTPN97	STR 3	Medium Mammal	RI	72	I	NN	VV		7	1		
330	STTPN97	STR 3	cf Ovis/Capra	2P	104	L	UN	II		2	1		
330	STTPN97	STR 3	Large Mammal	SE	120	U	NN	EE		3	1		
330	STTPN97	STR 3	Large Mammal	CR	7	I	NN	VV		2	1		
331	STTPN91	STR 2	Medium Mammal	TN	2	U	NN	VV		1	1		
340	STTPN99	STR 2	Medium Mammal	TN	2	U	NN	VV		1	1		
305	STTPN102	STR 3	Bov II	YP	1	R	NN	II		2	1		
305	STTPN102	STR 3	Medium Mammal	MP	103	U	NN	VV		3	1		
307	STTPN106	STR 2	Medium Mammal	TN	2	U	NN	VV		1	1		
307	STTPN106	STR 3/3	Ovis/Capra	XP	1	L	NN	II		3	1	Upper, Class V	
332	STTPN100	STR 2	Medium Mammal	TN	2	U	NN	TV		1	1		
333	STTPN101	STR 3	Large Mammal	VE	57	I	NN	VV		2	1		
333	STTPN101	STR 3	Medium Mammal	HU	110	U	NN	VV		2	1		
333	STTPN101	STR 3	Bov II	TN	2	U	NN	TV		2	1		
333	STTPN101	STR 3	Homo Sapien Sapien	ZP	1	U	NN	II		2	1		
335	STTPN103	STR 2	Bov III	1P	108	U	NN	VV		4	1		
336	STTPN106	STR 2	Bov II	TN	2	U	NN	TV		2	1		
337	STTPN108	STR 2	Medium Mammal	TN	2	U	NN	TV		1	1		
339	STTPN110	STR 2	Medium Mammal	TN	2	U	NN	VV	W	1	1		
339	STTPN110	STR 2	Medium Mammal	TN	2	U	NN	SV		1	1		
339	STTPN110	STR 2	Medium Mammal	TN	2	U	NN	SV		1	1		
339	STTPN110	STR 3	Achatina sp	SH	2	U	NN	TV		1	1		

Thabadimasego – Non-Identifiable

Lot	Site	Unit	Level	UN	Black	Grey	Localised	Blue	Brown	Greenish	White	Sun Bleached	Carnivore	Rodent	Cut	Drill Holes Insect	Chop	Trampled/Digested	Root etching	Aves	Calcide	Artifact/Tool	Comments on Tool/Artifact
21	16-A1-13	1	1 (0-23cm)	14									1										
21	16-A1-13	2	1	4	2						2												
22	16-A1-13	2	2 (0-20cm)	71																			
23	16-A1-13	2	2 (20-30cm)	34			1								1								
25	16-A1-13	2	3	6		1																	
27	16-A1-13	3	2 (10-20)	220	10									1	1								
28	16-A1-13	3	2 (10-20)	40																			
30	16-A1-13	3	2	18																			
34	16-A1-13	3	3	119	5																		
36	16-A1-13	3	3	75	1	1								1				1		1			
42	16-A1-13	3	4	20										1									
24	16-A1-13	3	1	38	1						5												
44	16-A1-13	3	5	2										2									
26	16-A1-13	4	1	19	1						5												
29	16-A1-13	4	2	26												1							
33	16-A1-13	4	3	15																			
35	16-A1-13	4	4	17	1																		
37	16-A1-13	5	1	308	8	35					1						1	3			3		
43	16-A1-13	5	2	249	7	31					1		2	1				2					
45	16-A1-13	5	3	81	3	11	1							1				4					
146	16-A1-13	5	4	27	3	6	1																
133	16-A1-13	6	Feat 2	2																			
147	16-A1-13	6	1	2																			
148	16-A1-13	6	2	16														1					
149	16-A1-13	6	3	37	1	3																	
150	16-A1-13	6	3	6																			
145	16-A1-13	6	4	2							1												
151	16-A1-13	6	4	7	1						1												
152	16-A1-13	6	4	50	4	8	2																
154	16-A1-13	6	5	23	2	3												1					
156	16-A1-13	6	6	4																			
158	16-A1-13	6	7	1																			
16.2	16-A1-13	7	soil sample	2	1	1																	
162.1	16-A1-13	7	Feat 3(1)	42	12	28					1												
162.3	16-A1-13	7	Feat 3(2)	27	1																		
160	16-A1-13	7	2	188	11	32			7		6			1								1	Looks like a tool, drawing, take photos later. Length 26mm, one end polished convexly, other end broken, possibly rib/vert due to

																							the presence of spongy bone on one side
161	16-A1-13	7	3	192	34	119			1									1					
164	16-A1-13	7	4	34																	1		
165	16-A1-13	7	5	66	2	3												3			3		
163	16-A1-13	7	4	333	40	134	1	2	2		1							2			8		
165	16-A1-13	8	1	60	6	2		2			2							1					
165	16-A1-13	8	2	464	12	34		3										18					
169	16-A1-13	8	3	12																			
168/169	16-A1-13	8	3	357	14	4	3				3			1				12					
170	16-A1-13	8	4	318	6	8		1			4			1				9					
172	16-A1-13	8	5	79	7				1		1							8					
171	16-A1-13	8	4	4	2	1																	
176	16-A1-13	9	1	29	1																		
177	16-A1-13	9	2	80	1	1					2		2					4					
179	16-A1-13	9	3	114	10	5			1		3							3					
181	16-A1-13	9	4	32	3	7							1					7					
193	16-A1-13	9	5	15	2	2							1				1	1				1	Bone Point, Length: 10cm, Width: 4.39 and 1.49 The needle point is polished and there is a slight spiral break
185	16-A1-13	9	6	21		2																	
186	16-A1-13	9	6	4																			
187	16-A1-13	9	7	13	2				1														
198	16-A1-13	10	15-20 cm	2																			
189	16-A1-13	10	1	3							1												
190	16-A1-13	10	2	33							1												
192	16-A1-13	10	3	97		1																	
194	16-A1-13	10	4	123	2	1												2					
199	16-A1-13	10	5	73		1							1										
201	16-A1-13	10	6	40	2																		
202	16-A1-13	10	7	11	1	1																	
205	16-A1-13	10	8	17	2	3																	
206	16-A1-13	11	1	22		1																	
207	16-A1-13	11	2	52		2																	
209	16-A1-13	11	3	69	1	4																	
211	16-A1-13	11	4	15		1																	
219	16-A1-13	11	4	65	2								3			9		2					
214	16-A1-13	12	1	102	2	3		1			3												
215	16-A1-13	12	2	21		1										2							
217	16-A1-13	12	3	68										1	1	9							
218	16-A1-13	12	3	4												2							
222	16-A1-13	13	1	5	1																		
224	16-A1-13	13	2	13	1	3																	
226	16-A1-13	13	3	11	2	2																	
227	16-A1-13	14	1	6																			
229	16-A1-13	14	2	18	6																		
230	16-A1-13	14	2	1																			
231	16-A1-13	14	3	27	3			1															
233	16-A1-13	14	3	9									1		1	1							
236	16-A1-13	15	1	88	2	13					3												
238	16-A1-13	15	2	91							2												
234	16-A1-13	15	3	4																			

240	16-A1-13	15	3	229	5	20					2												
242	16-A1-13	15	4	16																			
241	16-A1-13	15	4	219	6	8																	
244	16-A1-13	15	5	192	7	2																	
246	16-A1-13	15	6	158	8	3																	
248	16-A1-13	16	1	214	8	10		1			3												
250	16-A1-13	16	2	541	18	8		1			2												
251	16-A1-13	16	2	10	1																		
253	16-A1-13	16	3	-																			
258	16-A1-13	16	4	45	1																		
252	16-A1-13	16	3	286	31	2																	
254	16-A1-13	16	4	327	7	1					1												
256	16-A1-13	16	5	279	14	6								1									
259	16-A1-13	17	1	489				1			4							10	2		6		
261	16-A1-13	17	2	284	4													7			2		
263	16-A1-13	17	3	9																			
265	16-A1-13	17	3	506	6	3		1	2		4							14			2		
267	16-A1-13	17	4	389	3	2	2		1		2							2			1		
268	16-A1-13	18	1	5							1												
269	16-A1-13	18	2	4																			
270	16-A1-13	18	2	82		1					1												
271	16-A1-13	18	3	4																			
272	16-A1-13	18	3	96		1					2												
274	16-A1-13	18	4	33	1	2		1			1												
275	16-A1-13	19	1	3																			
276	16-A1-13	19	2	67		4					1												
281	16-A1-13	19	3	295	15	9																	
284	16-A1-13	19	4	94	2	4					1								1				
285	16-A1-13	19	4	2							2												
286	16-A1-13	19	5	49	5	1					1												
289	16-A1-13	19	6	23																			
295	16-A1-13	20	3	485	23	6			1		1							1					
298	16-A1-13	20	4	281	10	20					1												
291	16-A1-13	20	1	120	7	3					5												
293	16-A1-13	20	2	385	6	7	1						1										
297	16-A1-13	20	2/3	3																			
296	16-A1-13	20	3	8																			
299	16-A1-13	20	4	12	1	2															1		
301	16-A1-13	20	5	47	13	2																	
345	16-A1-13	21	1	47	10			2			2												
346	16-A1-13	21	2	332	2	11					1												
348	16-A1-13	21	3	105	8	1																	
341	16-A1-13	PTTP	1	3																			
342	16-A1-13	PTTP	2	107	5	1					1												
344	16-A1-13	PTTP	4	2																			
350	16-A1-13	PTTP	5	22							1												
352	16-A1-13	PTTP	7	7	2																		
353	16-A1-13	PTTP	8	2																			
354	16-A1-13	PTTP	9	1																			
355	16-A1-13	PTTP	10	3		1																	
357	16-A1-13	PTTP	12	2																			
362	16-A1-13	PTTP	20	1																			

364	16-A1-13	PTTP	22	69	4	1					1												
365	16-A1-13	PTTP	23	7																			
366	16-A1-13	PTTP	24	40	3	3					1												
367	16-A1-13	PTTP	25	3																			
368	16-A1-13	PTTP	26	9																			
370	16-A1-13	PTTP	28	4																			
311	16-A1-13	STTPN77	STR 2/2	14	1	1																	
312	16-A1-13	STTPN75	STR 1/3	1																			
312	16-A1-13	STTPN75	STR 2/3	32																			
312	16-A1-13	STTPN75	STR 3/2	30		1																	
313	16-A1-13	STTPN75	STR 1	1																			
313	16-A1-13	STTPN75	STR 2/3	35																			
313	16-A1-13	STTPN75	STR 3/3	33	1						1												
314	16-A1-13	STTPN70	STR 1	1		1																	
314	16-A1-13	STTPN70	STR 2	3																			
314	16-A1-13	STTPN70	STR 3	1		1																	
315	16-A1-13	STTPN72	STR 1/2	30		1		1			2												
315	16-A1-13	STTPN72	STR 2/2	199	2	1									1								
316	16-A1-13	STTPN75	STR 2/2	166	1	3																	
317	16-A1-13	STTPN76	STR 1	2																			
317	16-A1-13	STTPN76	STR 2/2	63	4						1												
318	16-A1-13	STTPN79	STR 3/3	26																			
318	16-A1-13	STTPN79	STR 2/3	15	1																		
319	16-A1-13	STTPN78	STR 1	9	2	1					1												
319	16-A1-13	STTPN78	STR 2	1						1	1												
319	16-A1-13	STTPN78	STR 3	29	2						2												
320	16-A1-13	STTPN78	STR 1	1							1												
320	16-A1-13	STTPN78	STR 2	2																			
320	16-A1-13	STTPN78	STR 3	31	1																		
308	16-A1-13	STTPN87	STR 1/3	8							2												
308	16-A1-13	STTPN87	STR 2/3	47																			
308	16-A1-13	STTPN87	STR 3	56	1																		
309	16-A1-13	STTPN85	STR 2/3	4																			
310	16-A1-13	STTPN81	STR 2/3	2																			
310	16-A1-13	STTPN81	STR 3/3	32	1	1					1												
321	16-A1-13	STTPN82	STR 2	25	5						1												
322	16-A1-13	STTPN82	STR 3	37	1	2																	
322	16-A1-13	STTPN82	STR 2	2	1																		
322	16-A1-13	STTPN82	STR 1	50	1				1														
323	16-A1-13	STTPN85	STR 2	19	1																		
324	16-A1-13	STTPN86	STR 2	18	1	1																	
325	16-A1-13	STTPN87	STR 1	2		1					1												
325	16-A1-13	STTPN87	STR 2	29	2	4																	
326	16-A1-13	STTPN88	STR 1	1		1																	
326	16-A1-13	STTPN88	STR 2	3		1																	
326	16-A1-13	STTPN88	STR 3	10		1																	
327	16-A1-13	STTPN91	STR 2	26																			
327	16-A1-13	STTPN91	STR 3	66	4	1					1												
328	16-A1-13	STTPN95	STR 1	17							4												
328	16-A1-13	STTPN95	STR 2	59	1						6												
328	16-A1-13	STTPN95	STR 3	59	1																		
329	16-A1-13	STTPN96	STR 2	47	2	3					1												

329	16-A1-13	STTPN96	STR 3	165	7	6																	
330	16-A1-13	STTPN97	STR 2	17	3	1					2												
330	16-A1-13	STTPN97	STR 3	109	2	10																	
331	16-A1-13	STTPN91	STR 2	120	2	2					1												
340	16-A1-13	STTPN99	STR 2	19	1	1					1												
302	16-A1-13	STTPN105	L2	1																			
303	16-A1-13	STTPN110	STR 1	1								1											
304	16-A1-13	STTPN103	STR 2	8																			
305	16-A1-13	STTPN102	STR 2	4															4				
305	16-A1-13	STTPN102	STR 3	12																			
306	16-A1-13	STTPN108	STR 1/1	19																			
307	16-A1-13	STTPN106	STR 1	3	1						1												
307	16-A1-13	STTPN106	STR 2	5																			
307	16-A1-13	STTPN106	STR 3/3	27																			
332	16-A1-13	STTPN100	STR 2	30	1	1					4												
332	16-A1-13	STTPN100	STR 3	48	3	1					2												
333	16-A1-13	STTPN101	STR 2	23	2	4					1												
333	16-A1-13	STTPN101	STR 3	97	3	4					6												
334	16-A1-13	STTPN102	STR 2	6	1																		
334	16-A1-13	STTPN102	STR 3	33	3	3																	
335	16-A1-13	STTPN103	STR 1	6							1												
335	16-A1-13	STTPN103	STR 2	65	2	1																	
336	16-A1-13	STTPN106	STR 1	3							2												
336	16-A1-13	STTPN106	STR 2	10							1												
337	16-A1-13	STTPN108	STR 2	9																			
338	16-A1-13	STTPN107	STR 2	11		1																	
338	16-A1-13	STTPN107	STR 3	5	1	1																	
339	16-A1-13	STTPN110	STR 2	19	1	2																	
339	16-A1-13	STTPN110	STR 3	16							1												

Dukwe 25 – Identifiable

Provenience	Bone #	Specie	Element	Part	Side	Fusion	Breakage	Modification	Length	N1SP	Comments	Measure	Other Comments
N0E15/SW/3 (10-15cm)	#27-1	Medium Mammal	TN	2	U	NN	VV		2	1			
N4E26/SW/6 (25-30cm)	#119-1	cf Phacochoerus aethiopicus	TN	2	U	NN	VV		1	1			
N4E26/SW/6 (25-30cm)	#119-2	Bov II	TN	2	U	NN	VV		2	1			
N4E26/SW/6 (25-30cm)	#119-3	Large Mammal	TN	2	U	NN	VV		2	1			
N4E26/SW/6 (25-30cm)	#119-4	Bov III	TN	2	U	NN	VV		2	1			
N4E26/SW/6 (25-30cm)	#119-5	Bov III	TN	2	U	NN	VV		2	1			
N4E26/SW/6 (25-30cm)	#119-6	Large Mammal	TN	2	U	NN	VV		1	1			
N4E26/SW/6 (25-30cm)	#119-6	Bov II	TN	2	U	NN	VV		2	3			
N4E26/SW/6 (25-30cm)	#119-6	Bov II	TN	2	U	NN	VV	W	2	1	Green		
N4E26/SW/6 (25-30cm)	#119-6	Bov III	TN	2	U	NN	VV		3	3			
N4E26/SW/6 (25-30cm)	#119-9	Bov III	AS	121	R	NN	VV	W	3	1	White		
N4E26/SW/6 (25-30cm)	#119-10	Bov III	CR	7	I	NN	VV	W	4	1	White		
N4E26/SW/6 (25-30cm)	#119-11	Bov II	IN	95	U	NN	VV	W	3	1	Blue		
N4E26/SW/6 (25-30cm)	#119-13	Bov III	3P	103	L	NN	VV		5	1			
N4E26/SW/6 (25-30cm)	#119-15	Large Mammal	CA	121	R	NN	VV		3	1	Insect damage		
N4E26/SW/6 (25-30cm)	#119-17	Medium Mammal	VE	54	I	NN	VV		3	1			
N4E26/SW/6 (25-30cm)	#119-18	Large Mammal	CR	7	I	NN	VV	W	5	1	Greenish		
N4E26/SW/6 (25-30cm)	#119-19	Medium Mammal	MN	30	I	NN	VV	W	3	1	Greenish, Insect damage		
N4E26/SW/6 (25-30cm)	#119-21	Bov III	TI	110	R	NN	VV	W	13	1	Greenish, root etching		
N4E26/SW/6 (25-30cm)	#119-22	Large Mammal	RI	72	U	NN	VV	W	8	1	Greenish, root etching		
N4E26/SW/6 (25-30cm)	#119-25	Bov III	MN	39	U	NN	VV	W	8	1	Greenish, root etching		
N4E26/SW/6 (25-30cm)	#119	Medium Mammal	MN	30	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-1	Large Mammal	TN	2	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-2	Bov III	TN	2	U	NN	VV	W	2	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-3	Bov III	TN	2	U	NN	VV	W	3	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-4	Large Mammal	TN	2	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-5	Bov II	TN	2	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-6	Bov II	TN	2	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-7	Bov II	TN	2	U	NN	VV	W	2	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-8	Bov II	TN	2	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-9	Medium Mammal	TN	2	U	NN	VV		1	1			
N4E26/SW/7 (30-35cm)	#136-10	Bov III	TN	2	U	NN	VV		4	1			
N4E26/SW/7 (30-35cm)	#136-11	Bov III	TN	2	U	NN	VV		4	1			
N4E26/SW/7 (30-35cm)	#136-12	Bov III	TN	2	U	NN	VV		2	3			
N4E26/SW/7 (30-35cm)	#136-12	Bov III	TN	2	U	NN	VV		3	4			
N4E26/SW/7 (30-35cm)	#136-12	Bov III	TN	2	U	NN	VV	B	4	1			
N4E26/SW/7 (30-35cm)	#136-13	Tortoise	SH	2	U	NN	TV	W	3	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-13	Tortoise	SH	2	U	NN	TV		2	1			
N4E26/SW/7 (30-35cm)	#136-14	cf Bos taurus	MP	108	R	NN	VV		4	1	Insect damage		
N4E26/SW/7 (30-35cm)	#136-15	Large Mammal	SE	121	U	NN	VV		2	1			

N4E26/SW/7 (30-35cm)	#136-17	Medium Mammal	VE	51	I	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-19	Large Mammal	VE	51	I	NN	TV	W	4	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-20	Large Mammal	CR	7	U	NN	VV		4	6			
N4E26/SW/7 (30-35cm)	#136-20	Large Mammal	CR	7	U	NN	VV	W	2	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-24	Small Mammal	RI	72	U	NN	VV		2	1			
N4E26/SW/7 (30-35cm)	#136-25	Large Mammal	RI	72	U	NN	VV	W	13	1	Greenish, root etching		
N4E26/SW/7 (30-35cm)	#136-26	Medium Mammal	RI	72	U	NN	SV	W	9	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-27	Large Mammal	TH	56	I	NN	VV		6	1	Greenish, root etching		
N4E26/SW/7 (30-35cm)	#136-28	Medium Mammal	VE	53	I	NN	VV		3	1			
N4E26/SW/7 (30-35cm)	#136-30	Large Mammal	HU	110	U	NN	VV	W	5	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-31	Large Mammal	CR	7	U	NN	VV	W	3	1	Greenish		
N4E26/SW/7 (30-35cm)	#136-34	Large Mammal	RA	103	U	NN	VV	B	6	1			
N4E26/SW/8 (35-40cm)	#141-1	Large Mammal	RI	71/72	U	NN	VV		19	1	Trampled		
N4E26/SW/8 (35-40cm)	#141-2	Large Mammal	LU	56	U	NN	TV	W	11	1	Greenish		
N4E26/SW/8 (35-40cm)	#141-3	Large Mammal	TH	56	U	NN	TV	W	11	1	Greenish, root etching		
N4E26/SW/8 (35-40cm)	#141-4	Bov III	MN	30	L	NN	VV		14	1			
N4E26/SW/8 (35-40cm)	#141-5	Large Mammal	MX	30	U	NN	VV	W	6	1	Greenish		
N4E26/SW/8 (35-40cm)	#141-6	Bov III	TN	2	U	NN	VV	W	3	1	Greenish		
N4E26/SW/8 (35-40cm)	#141-7	Bov III	ZP	2	U	NN	VV	W	3	1	Greenish		
N4E26/SW/8 (35-40cm)	#141-9	Bov III	TN	2	U	NN	VV		4	1			
N4E26/SW/8 (35-40cm)	#141-10	Bov III	TN	2	U	NN	VV		4	1			
N4E26/SW/8 (35-40cm)	#141-10	Bov III	TN	2	U	NN	VV		3	2			
N4E26/SW/8 (35-40cm)	#141-10	Bov III	TN	2	U	NN	VV		3	6			
N4E26/SW/8 (35-40cm)	#141-10	Bov III	TN	2	U	NN	VV	W	3	3	Greenish		
N4E26/SW/8 (35-40cm)	#141-10	Medium Mammal	TN	2	U	NN	VV	W	1	1	White		
N4E26/SW/8 (35-40cm)	#141-10	Medium Mammal	TN	2	U	NN	VV	W	1	3	Greenish		
N4E26/SW/8 (35-40cm)	#141-10	Medium Mammal	TN	2	U	NN	VV		1	6			
N4E26/SW/8 (35-40cm)	#141-10	Bov II	UR	1	I	NN	II		3	1			
N4E26/SW/8 (35-40cm)	#141-11	Medium Mammal	VE	52	I	NN	II		2	1			
N4E26/SW/8 (35-40cm)	#141-17	Tortoise	SH	2	U	NN	TV		2	2			
N4E26/SW/8 (35-40cm)	#141-21	Medium Mammal	CR	7	U	NN	VV	W	4	1	Greenish		
N4E26/SW/8 (35-40cm)	#141-25	Medium Mammal	CR	7	U	NN	VV	B	3	1			
N4E26/SW/9 (40-45cm)	#155-1	Ovis/Capra	YP	2	R	NN	II	W	3	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-2	cf Ovis/Capra	YP	2	L	NN	II	W	3	1	Greenish		Aged - central islands worn
N4E26/SW/9 (40-45cm)	#155-3	Bov II	ZP	2	L	NN	VV	W	3	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-4	cf Bos taurus	ZP	2	U	NN	VV	W	5	1	Greenish	root resorbtion, photo	
N4E26/SW/9 (40-45cm)	#155-5	Bov III	ZP	2	U	NN	VV	W	3	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-8	Medium Mammal	RI	72	U	NN	VV	W	12	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-9	Large Mammal	CE	54	I	NN	VV		5	1			
N4E26/SW/9 (40-45cm)	#155-10	Large Mammal	TH	56	I	NN	VV	W	8	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-12	Bov II	CP	1	R	NN	II	W, C	2	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-13	Medium Mammal	VE	52	I	NN	VV	W	2	1	Greenish		
N4E26/SW/9 (40-45cm)	#155-14	Bov III	MP	110	U	NN	SV	W, K	19	1	Greenish, Cut	photo	4 cut marks seem seperated by the same amount of space
N4E26/SW/10 (45-50cm)	#165-1	Tortoise	SH	2	U	NN	TV		3	1			
N4E26/SW/10 (45-50cm)	#165-3	Bov II	CR	30	U	NN	VV	W	4	1	Greenish		
N4E26/SW/10 (45-50cm)	#165-3	Bov II	CR	30	U	NN	VV	W	4	1	Greenish		
N4E26/SW/10 (45-50cm)	#165-4	Large Mammal	RI	72	U	NN	VV	W	7	1	Greenish		

N4E26/SW/10 (45-50cm)	#165-5	Large Mammal	MN	43	U	NN	VV	W	10	1	Greenish		
N4E26/SW/10 (45-50cm)	#165-7	Bov III	MT	110	U	NN	SV	W	10	1	Greenish, root etching		
N4E26/SW/10 (45-50cm)	#165-8	Bov II	FE	110	U	NN	SS	W	8	1	Greenish		
N4E26/SW/10 (45-50cm)	#165-11	Large Mammal	LU	54	I	NN	VV	W	3	1	White		
N4E26/SW/10 (45-50cm)	#165-13	Bov III	HY	2	U	NN	SV	W	3	1	Greenish		
N4E26/SW/10 (45-50cm)	#165	Bov III	TN	2	U	NN	VV	W	2	1	Greenish		
N4E26/SW/10 (45-50cm)	#165	Large Mammal	TN	2	U	NN	VV	W	2	1	Greenish		
N4E26/SW/10 (45-50cm)	#165	Large Mammal	TN	2	U	NN	VV		2	1			
N4E26/SW/11 (50-55cm)	#177-1	Large Mammal	RI	72	U	NN	VV		8	1			
N4E26/SW/11 (50-55cm)	#177-2	Large Mammal	RI	72	U	NN	VV		8	1			
N4E26/SW/11 (50-55cm)	#177-3	Large Mammal	RI	72	U	NN	VV	W	9	1	Greenish, root etching		
N4E26/SW/11 (50-55cm)	#177-4	Medium Mammal	RI	72	U	NN	VV	W	4	1	Greenish		
N4E26/SW/11 (50-55cm)	#177-5	Medium Mammal	RI	72	U	NN	VV	B	4	1	Brown		
N4E26/SW/11 (50-55cm)	#177-6	Large Mammal	CR	7	I	NN	VV		5	1			
N4E26/SW/11 (50-55cm)	#177-7	Large Mammal	UR	51	I	FN	VV	W	3	1	Greenish		
N4E26/SW/11 (50-55cm)	#177-8	Bov III	TI	110	U	NN	VV		8	1			
N4E26/SW/11 (50-55cm)	#177	Bov III	TN	2	U	NN	VV		3	1			
N4E26/SW/11 (50-55cm)	#177	Bov II	TN	2	U	NN	VV		2	1			
N4E26/SW/11 (50-55cm)	#177	Medium Mammal	TN	2	U	NN	VV	W	2	1	Greenish		
N4E26/SW/10 (45-50cm)	#165-2	Bos taurus	CR	6	I	NN	VV		11	2	Possibly same CR, from a young induvidual		
N4E26/SW/12 (60-65cm)	#182-1	Large Mammal	TN	2	U	NN	VV		2	1			
N4E26/SW/12 (60-65cm)	#182-3	Bos taurus	CR	7	U	NN	VV		5	1			
N4E26/SW/12 (60-65cm)	#182	Large Mammal	CR	7	U	NN	VV		2	3			
N4E26/SW/12 (60-65cm)	#182-8	Bov III	MT	110	U	NN	SV	W, K	12	1	Greenish, Chop	PHOTO	
N4E26/SW/12 (60-65cm)	#182-10	Bov III non-dom	MP	109	U	UN	VV	W	3	1	Greenish		
N4E26/SW/12 (60-65cm)	#182-11	Bov III	TI	108	R	NN	VV	W	4	1	Greenish		
N4E26/SW/12 (60-65cm)	#182-13	Large Mammal	RI	72	U	NN	VV	W	9	1	Greenish		
N4E26/SW/12 (60-65cm)	#182-14	Medium Mammal	RI	72	U	NN	VV	W	8	1	Greenish		
N4E26/NW/E1.5/2	#193-1	Large Mammal	CR	7	U	NN	VV		9	1			
N4E26/NW/E1.5/3	#193-2	Large Mammal	CR	30	U	NN	VV	W	6	1	Greenish		
N4E26/NW/E1.5/4	#193-3	Bov II/III	HC	2	U	NN	VV		2	2			
N4E26/NW/E1.5/5	#193-5	Tortoise	SH	2	U	NN	TV	W	2	1	White		
N4E26/NW/E1.5/6	#193-6	Bov II	MN	30	L	NN	VV		10	10			
N4E26/NW/E1.5/7	#193-7	Bov II	ZP	2	U	NN	VV		4	1			
N4E26/NW/E1.5/8	#193-7	Bov II	ZP	2	U	NN	VV		2	1			
N4E26/NW/E1.5/9	#193-7	Bov II	ZP	2	U	NN	VV		2	1			
N4E26/NW/E1.5/10	#193-7	Bov II	ZP	2	U	NN	VV		2	1			
N4E26/NW/E1.5/11	#193-8	cf Bos taurus	2P	101	R	NN	TT		4	1			
N4E26/NW/E1.5/12	#193-9	Bov III	2P	101	U	UN	TT		3	3			
N4E26/NW/E1.5/13	#193-10	Bov II	CA	110	L	NN	VV	K	5	1	Cut		
N4E26/NW/E1.5/14	#193-11	Bov III	1P	103	U	NN	TV	B	4	1			
N4E26/NW/E1.5/15	#193-12	Bov III	1P	103	R	NN	VS	B	3	1			
N4E26/NW/E1.5/16	#193-13	Large Mammal	MP	108	U	NN	VV		3	1			
N4E26/NW/E1.5/17	#193-14	Bov III	MP	103	U	NN	VT	W	9	1	White		
N4E26/NW/E1.5/18	#193-15	Large Mammal	VE	56	I	NN	VV	W	6	1	Greenish		
N4E26/NW/E1.5/19	#193-16	Large Mammal	RA	110	U	NN	TV	W	17	1	Greenish		
N4E26/NW/E1.5/20	#193-18	Large Mammal	LU	56	I	NN	VV	W	10	1	Greenish		
N4E26/NW/E1.5/21	#193-19	Large Mammal	RI	72	U	NN	VV		8	1			
N4E26/NW/E1.5/22	#193-20	Large Mammal	RI	72	U	NN	VV	W, K	12	1	Greenish, root etching, cut		
N4E26/NW/E1.5/23	#193-22	Large Mammal	RI	72	U	NN	VV		16	1			
N4E26/NW/E1.5/24	#193-30	Medium Mammal	CR	7	U	NN	VV		2	1			

N4E26/NW/E1.5/25	#193	Bov III	TN	2	U	NN	VV		2	1			
N4E26/NW/E1.5/26	#193	Large Mammal	TN	2	U	NN	VV		2	1			
N4E26/NW/E1.5/27	#193	Bov II	TN	2	U	NN	VV		1	1			
N8E10/SW/4 (15-20cm)	#239-1	Bov III	TN	2	U	NN	VV		4	1			
N8E10/SW/4 (15-20cm)	#239	Bov III	TN	2	U	NN	VV		2	1			
N8E10/SW/5 (20-25cm)	#244-1	Medium Mammal	VE	52	I	NN	VV		2	1			
N10E22/SW/3 (10-15cm)	#264	Bov III	TN	2	U	NN	VV		3	1			
N12E10/SW/5 (20-25cm)	#325	Large Mammal	CR	7	U	NN	VV	W	3	1	Brown		
N12E10/SW/5 (20-25cm)	#332	Tortoise	SH	2	U	NN	TV	W	2	1	Grey		Darker on the one side
N12E10/SW/9 (40-45cm)	#348-1	Large Mammal	VE	53	I	NN	VV		7	3			
N12E10/SW/9 (40-45cm)	#348-2	Large Mammal	VE	53	I	NN	VV		3	1			
N14E10/SE/1 (0-5cm)	#361	Large Mammal	TN	2	U	NN	VV		2	1			
N14E10/SE/1 (0-5cm)	#361	Large Mammal	TN	2	U	NN	VV		2	1			
N14E10/SE/1 (0-5cm)	#368	cf Bos taurus	CP	1	L	NN	II	L	3	1	4TH	BFd: 28.69, GH: 21.73	
N14E10/SE/4 (15-20cm)	#380-2	Small Mammal	VE	57	U	NN	VV		2	1			
N14E10/SE/4 (15-20cm)	#380-3	Large Mammal	TN	2	U	NN	VV		2	1			
N14E10/SE/4 (15-20cm)	#380	Large Mammal	TN	2	U	NN	VV		2	1			
N16E8/NE/1 (0-5cm)	#390	Large Mammal	TN	2	U	NN	VV		2	1			
N16E8/NE/1 (0-5cm)	#390	Large Mammal	TN	2	U	NN	VV		2	1			
N16E8/NE/2 (5-10cm)	#395	Medium Mammal	TN	2	U	NN	VV		1	1			
N16E8/NE/2 (5-10cm)	#395	Large Mammal	TN	2	U	NN	VV		2	1			
N16E8/NE/2 (5-10cm)	#395-1	Lagomorph	HU	102	L	NF	VI	W	2	1	Grey		
N16E8/NE/2 (5-10cm)	#395-2	Bov III/IV	3P	101	U	NN	VV	L	5	1			
N16E8/NE/2 (5-10cm)	#395-3	cf Bos taurus	MP	108	R	NN	TV	W	4	1	Grey		
N16E8/NE/2 (5-10cm)	#395-5	Medium Mammal	IN	93	L	NN	VV	W	4	1	Grey		
N16E8/NE/3 (10-15cm)	#402-1	Bos taurus	1P	105	L	FF	TS		6	1		BD: 26.74	
N16E8/NE/3 (10-15cm)	#402-2	Bov III	HU	108	L	NN	VV	W	5	1	Greenish		
N16E8/NE/3 (10-15cm)	#402-7	Large Mammal	CR	7	U	NN	VV	W	4	1	Grey		
N16E8/NE/3 (10-15cm)	#402-10	Large Mammal	RI	72	U	NN	VV	W	7	1	Grey		
N16E8/NE/3 (10-15cm)	#402-18	Tortoise	SH	2	U	NN	TV		2	1			
N16E10/NE/1 (0-5cm)	#408-2	Large Mammal	RI	72	U	NN	VV	W	5	1	Grey		
N16E10/SW/1 (0-5cm)	#415-1	Large Mammal	TN	2	U	NN	VV		2	1			
N16E10/SW/1 (0-5cm)	#415-4	Bov III	2P	103	U	FN	TV	W	3	1	Grey		
N16E10/NW/1 (0-5cm)	#427-1	Bov III	MP	108	U	NN	VV	W	2	1	Grey		
N16E10/NW/1 (0-5cm)	#427-2	Bov III/IV	1P	108	L	NF	VS	W	4	1	Grey		
N16E10/NW/2 (5-10cm)	#435-2	Large Mammal	TN	2	U	NN	VV		2	1			
N16E10/NW/2 (5-10cm)	#435-3	Large Mammal	CR	7	U	NN	VV	W	4	1	Grey		
N16E10/NW/2 (5-10cm)	#435-4	Large Mammal	RI	72	U	NN	TT	W	4	1	Grey		
N16E10/NW/2 (5-10cm)	#435-5	Large Mammal	RI	72	U	NN	VV	W	3	1	Grey		
N16E10/NE/2 (5-10cm)	#443-1	Bov III	RA	103	R	NN	VV	L	4	1			
N16E10/NE/2 (5-10cm)	#443-2	Bov III	SC	80	U	NN	TT	W	4	1	Grey		
N16E10/NE/2 (5-10cm)	#443-4	Large Mammal	TN	2	U	NN	VV		3	1			
N16E10/NE/2 (5-10cm)	#443-4	Large Mammal	TN	2	U	NN	VT		2	1			
N16E10/NE/2 (5-10cm)	#443-5	Small Mammal	RI	72	U	NN	TT	W	2	1	Grey		
N16E10/SE/2 (5-10cm)	#448-1	Bov I	AS	1	L	NN	II	B	3	1		Dm: 12.67, GLm: 19.60, GLl: 21.42, Bd: 14.15, Dl: 11.84	
N16E10/SE/2 (5-10cm)	#448-2	Large Mammal	IN	94	L	NN	TV	W	4	1	Grey		
N16E10/SE/2 (5-10cm)	#448-3	Large Mammal	VE	51	I	NU	TT	W	4	2	Grey		
N16E10/SE/2 (5-10cm)	#448-6	Large Mammal	VE	51	I	NN	TT	W	3	1	Grey		

N16E10/SE/2 (5-10cm)	#448-8	Medium Mammal	RI	72	U	NN	TT	W	3	1	Grey		
N16E10/SW/2 (5-10cm)	#453-2	Large Mammal	VE	51	I	FN	TT	W	4	1	Brown		
N16E10/NE/3 (10-15cm)	#466-1	Large Mammal	VE	54	I	NN	TT	W	5	1	Grey		
N16E10/NE/3 (10-15cm)	#466-3	Small Rodent	FE	101	R	FN	VS		3	1			
N16E10/NE/3 (10-15cm)	#466-6	Large Mammal	CR	6	I	NN	VV		5	1			
N16E10/NE/3 (10-15cm)	#466-10	Small Mammal	RI	72	U	NN	TT	W	2	1	Grey		
N16E10/SW/2 (5-10cm)	#453-3	Bov III	TH	56	I	NN	VV		4	1			
N16E10/SW/2 (5-10cm)	#453-4	Large Mammal	FE	110	L	NN	TS	W	5	1	Grey		
N16E10/SW/2 (5-10cm)	#453-7	Large Mammal	HU	110	U	NN	TS	B	3	1			
N16E10/SW/2 (5-10cm)	#453-8	Large Mammal	CR	7	U	NN	VV		4	1			
N16E10/SW/2 (5-10cm)	#453-9	Large Mammal	CR	7	U	NN	VV		3	1			
N16E10/NW/3 (10-15cm)	#458-1	cf Bos taurus	MT	108	U	NF	ST	W, K	7	1	Grey, Chop		
N16E10/NW/3 (10-15cm)	#458-3	Bov III	1P	103	U	FN	TT	W	2	1	Grey		
N16E10/NW/3 (10-15cm)	#458-4	Large Mammal	VE	51	I	UN	TT	W	3	1	Greenish		
N16E10/NW/3 (10-15cm)	#458-7	Large Mammal	TN	2	U	NN	VV		2	1			
N16E10/NW/3 (10-15cm)	#458-8	Large Mammal	CR	7	U	NN	VV	W	5	1	Grey		
N16E10/NW/3 (10-15cm)	#458-9	Large Mammal	HU	110	U	NN	TS	W	13	1	Grey		
N16E10/NW/3 (10-15cm)	#458-14	Bov III	CA	121	R	UN	VT	W	6	1	Grey		
N16E10/NW/3 (10-15cm)	#458-16	Large Mammal	VE	7	I	NN	TT	W	2	1	Grey		
N16E10/NW/3 (10-15cm)	#458-17	Bov III	SC	81	U	NN	VV	W	8	1	Grey		
N16E10/NW/3 (10-15cm)	#458-18	Medium Mammal	RI	72	U	NN	TV	W	7	3	Grey		
N16E10/NW/3 (10-15cm)	#458-19	Medium Mammal	RI	72	U	NN	TT	W	4	1	Grey		
N16E10/SE/3 (10-15cm)	#473-1	Bov III	TI	108	R	NF	TS	W	6	1	Grey		
N16E10/SE/3 (10-15cm)	#473-2	Large Mammal	HU	110	U	NN	VV		8	1			
N16E10/SE/3 (10-15cm)	#473-8	Large Mammal	RI	72	U	NN	TV	W	7	1	Grey		
N16E10/SE/3 (10-15cm)	#473-9	Medium Mammal	RI	72	U	NN	TV	W	5	1	Grey		
N16E10/SW/3 (10-15cm)	#481-1	Large Mammal	CE	54	I	NN	TV	W	5	1	Grey		
N16E10/SW/3 (10-15cm)	#481-4	Medium Mammal	CR	7	U	NN	VV		4	1			
N16E10/SW/3 (10-15cm)	#481-5	Medium Mammal	RI	72	U	NN	VV		4	1			
N16E10/SW/3 (10-15cm)	#481-8	Bov III	HU	110	U	NN	VV	W	8	1	Greenish		
N16E10/SW/3 (10-15cm)	#481-9	Bov III	HU	110	U	NN	VV	W	10	1	Greenish		
N16E8/SE/1-4 (0-20cm)	#492-1	Bov III	MC	101	U	NN	VS		17	1			
N16E8/SE/1-4 (0-20cm)	#492-2	Bov III	MP	101	R	FN	VS	W, K	11	1	Brown, cut		
N16E8/SE/1-4 (0-20cm)	#492-3	Bov III	1P	108	R	NF	TS	W	3	1	Grey		
N16E8/SE/1-4 (0-20cm)	#492-4	Bov III	CP	120	U	NN	VT	W	3	1	Grey		
N16E8/SE/1-4 (0-20cm)	#492-8	Large Mammal	CR	7	U	NN	VV		3	1			
N16E8/SE/1-4 (0-20cm)	#492-9	Medium Mammal	CR	7	U	NN	VV		3	1			
N16E8/SE/1-4 (0-20cm)	#492-13	Medium Mammal	CR	7	U	NN	VV	W	3	1	Grey		
N16E8/SE/1-4 (0-20cm)	#492-15	Large Mammal	HU	110	U	NN	VV		6	1			
N16E10/NW/4 (15-20cm)	#501-1	Bov III	CA	120	R	NN	ST	W, K	7	1	Grey, Cut		
N16E10/NW/4 (15-20cm)	#501-2	cf Bos taurus	AS	107	R	NF	ST	W	4	1	Grey	BD: 40.35	
N16E10/NW/4 (15-20cm)	#501-6	cf Bos taurus	MN	35	L	NN	VV		9	1			
N16E10/NW/4 (15-20cm)	#501-7	Bov III	HC	2	U	NN	VV	W	5	2	Greenish		
N16E10/NW/4 (15-20cm)	#501-8	Large Mammal	RI	72	U	NN	TS	W	10	1	Greenish		
N16E10/NW/4 (15-20cm)	#501-9	Large Mammal	RI	72	U	NN	TT	W	7	1	Grey		
N16E10/NW/4 (15-20cm)	#501-10	Large Mammal	RI	72	U	NN	VV	W	7	1	Grey		
N16E10/NE/4 (15-Burnt floor)	#505-1	Bov III	MC	103	L	NN	TT	W	6	1	Grey		
N16E10/NE/4 (15-Burnt floor)	#505-3	Medium Mammal	VE	57	I	NN	VV	W	4	1	Grey		
N16E10/NE/4 (15-Burnt floor)	#505-5	Bov III	MV	1	L	NN	II	W, K	4	1	Grey, Cut		
N16E10/NE/4 (15-Burnt floor)	#505-6	Large Mammal	CR	7	U	NN	VV	W	5	1	Greenish		
N16E10/NE/4 (15-Burnt floor)	#505-7	Medium Mammal	OO	2	I	NN	TT	W	3	1	Grey		
N16E10/NE/4 (15-Burnt floor)	#505-8	Medium Mammal	MN	30	U	NN	VV	W	3	1	Grey		

N16E10/NE/4 (15-Burnt floor)	#505-9	Medium Mammal	CR	7	U	NN	VV	W	3	1	Grey		
N16E10/NE/4 (15-Burnt floor)	#505-10	Large Mammal	MP	110	U	NN	VV	W, R	8	1	Greenish		
N16E10/SE/4 (15-Burnt floor)	511-1	Medium Mammal	VE	51	I	FN	VV		5	1			
N16E10/SE/5 Main furnace 2	#516-1	Large Mammal	RI	72	U	NN	TV		11	1			
N16E12/SW/2 (5-10cm)	#540-1	Bos taurus	CP	1	L	NN	II	W	5	1	Grey	GD: 33.13, HMD: 18.66, L: 41.43	
N16E12/SW/3 (10-15cm)	#552-2	Large Mammal	VE	53	I	NN	VV	W	3	1	Grey		
N16E12/SW/3 (10-15cm)	#552-3	Bov III	MP	108	U	NN	VV	W	3	1	Brown		
N16E12/SW/3 (10-15cm)	#552-5	Large Mammal	CR	7	U	NN	VV		2	1			
N16E12/NW/3 (10-15cm)	#559-1	Bov III	CA	103	R	NN	VV	W	6	1	Grey		
N16E12/NW/3 (10-15cm)	#559-2	Large Mammal	VE	57	I	NN	VT	W	4	1	Grey		
N16E12/NW/3 (10-15cm)	#559-3	Bov III	MN	30	U	NN	VT	W	3	1	Grey		
N16E12/SW/4 (15-20-Burnt floor)	#566-1	Bov II	CR	6	I	NN	VV		7	9	Os basisphenoidale + part of base of skull		
N16E12/SW/4 (15-20-Burnt floor)	#566-2	Bov III	MP	108	U	NN	VV		3	1			
N16E12/SW/4 (15-20-Burnt floor)	#566-3	Bov III	CA	121	R	NN	VV	K	3	1	Cut		
N16E12/NW/4 (15-20-Burnt floor)	#575-1-4	Bov III	TI	110	U	NN	VV	W	13	2	Grey		
N16E12/NW/4 (15-20-Burnt floor)	#575-2	Large Mammal	RI	72	U	NN	TV		8	1			
N16E12/NW/4 (15-20-Burnt floor)	#575-2	Large Mammal	SC	81	U	NN	ST	L	9	1			
N16E12/NW/4 (15-20-Burnt floor)	#575-2	Large Mammal	RI	72	U	NN	VV		9	1			
N16E12/NW/4 (15-20-Burnt floor)	#575-6	Large Mammal	RI	72	U	NN	TV	W	11	1	Grey		
N16E12/NW/4 (15-20-Burnt floor)	#575-7	Large Mammal	RI	72	U	NN	TV	W	6	1	Grey		
N16E12/NW/4 (15-20-Burnt floor)	#575-8	Large Mammal	CR	7	U	NN	VV	W	4	1	Grey		
N16E12/NW/4 (15-20-Burnt floor)	#575-9	Bov II	XP	1	R	NN	II		2	1			
N16E12/NE/4 (0-20-Burnt floor)	#583-1	Large Mammal	RI	71	U	FN	SV	R	6	1			
N16E12/NE/4 (0-20-Burnt floor)	#583-2	Large Mammal	CE	57	I	NN	VV	W	5	1	Grey		
N16E12/NE/4 (0-20-Burnt floor)	#583-3	Bov III	AS	103	U	NN	VV	K	3	1	Cut		
N16E12/NE/4 (0-20-Burnt floor)	#583-5	Bov II	VE	52	I	UN	VV	W	2	1	Grey		
N16E12/NE/4 (0-20-Burnt floor)	#583-6	Bov II	SE	1	U	NN	II	W	2	1	Brown		
N16E12/NE/4 (0-20-Burnt floor)	#583-11	Bov III	XP	2	R	NN	VV	B	3	1			
N16E12/NE/4 (0-20-Burnt floor)	#583-12	Bov III	TN	2	U	NN	VV	W	2	1	Dark Greenish		
N16E12/NE/4 (0-20-Burnt floor)	#583-16	Medium Mammal	RI	72	U	NN	VV	W	9	1	Brown		
N16E12/NE/4 (0-20-Burnt floor)	#583-17	Bov III	FE	110	U	NN	TV	W	11	1	Greenish		
N16E12/SE/1-4 (0-20-Burnt floor)	#592-1	Bov III	CA	101	R	FN	VV		10	1			
N16E12/SE/1-4 (0-20-Burnt floor)	#592-2	Bov III	CA	102	R	FN	IV	W, K	6	1	Grey, Cut		
N16E12/SE/1-4 (0-20-Burnt floor)	#592-3	Bos taurus	1P	101	R	FN	VV	W	6	1	Grey		
N16E12/SE/1-4 (0-20-Burnt floor)	#592-10	Large Mammal	RI	71	U	FN	VS		10	1			
N16E12/SE/1-4 (0-20-Burnt floor)	#592-11	Bov II	MP	110	U	NU	SI		6	1	Ashy		
N16E12/SE/1-4 (0-20-Burnt floor)	#592-16	Large Mammal	RI	72	U	NN	SV	W	8	1	Grey		
N16E12/SE/1-4 (0-20-Burnt floor)	#592-17	Large Mammal	PE	2	U	NN	VV	B	3	1			
N16E14/SW/1 (0-15-Floor+Fill of wall trench)	#600-1	Bov III	IN	94	L	NN	VV	W	6	1	Grey		
N16E14/SW/1 (0-15-Floor+Fill of wall trench)	#600-2	Bov II	SC	81	U	NN	VV	W	9	1	Grey		
N16E14/SW/1 (0-15-Floor+Fill of wall trench)	#600-3	Bov II	SC	81	U	NN	VV		5	1			
N16E14/NW/1 (On Burnt floor)	#609-1	Bov III	TN	2	U	NN	VV	B	3	1			
N16E14/NW/1 (On Burnt floor)	#609-2	Bov II	MN	30	I	NN	VV		4	1			
N16E14/SE/1 (0-15cm/Brown soil)	#616-1	Large Mammal	IN	81	U	NN	VV	W	7	1	Grey		
N16E14/SE/1 (0-15cm/Brown soil)	#616-3	Bov III	TN	2	U	NN	VV	W	1	1	Grey		
N16E14/NE/1 (0-15cm)	#625-3	Bov III	CP	120	R	NN	TV		2	1			
N16E14/NE/1 (0-15cm)	#625-4	Medium Mammal	MP	110	U	NN	TT	W	2	1	Grey		

N16E14/SW+NW+N/18E14/SW Brown strature to floor = unit 3	#641-1	Large Mammal	TH	56	I	NN	VV		6	1			
N16E14/NE/3 Brown strature	#661-1	Large Mammal	RI	72	U	NN	SV	W	14	1	Brown		
N16E14/NE/3 Brown strature	#661-6	Tortoise	FE	110	U	NN	VV	W	2	1	Grey		
N16E14/NW/4 Clean up + trench	#667-1	Large Mammal	CE	57	I	NN	VV	K	8	1	Cut		
N16E14/NW/4 Clean up + trench	#667-2	Bov III	MV	120	R	NN	VV		4	1			
N16E16/SW/2 (5-10cm)	#700-1	Ovis/Capra	AS	1	R	NN	II		3	1	Ashy	Dm: 13.74, GLm: 25.28, Bd: 16.03, GLl: 23.44, Dl: 13.79	
N16E16/SW/2 (5-10cm)	#700-2	Bov II	MP	108	U	NF	VV	W	3	1	Grey		
N16E16/SW/2 (5-10cm)	#700-3	Medium Mammal	RI	72	U	NN	SV	W	5	1	Brown		
N16E16/SW/2 (5-10cm)	#700-4	Bov III	TN	2	U	NN	VV	W	3	1	Brown		
N16E16/NE/2 (5-10cm)	#707-1	Bov III	1P	108	U	NN	VV		2	1			
N16E16/NE/2 (5-10cm)	#707-2	Bov III	1P	103	U	NN	VT		2	1			
N16E16/SW/4 Clean up to grey clay floor + trench fill	#745-1	Large Mammal	TH	56	I	NN	VV	W	20	1	Greenish		
N18E8/SE/1 (0-50cm)	#753-2	Large Mammal	TI	110	R	NN	SV		8	1	Calcide/Ashy		
N18E8/SE/2 (5-10cm)	#760-1	Bov III	P1	102	L	FF	TV	W	7	1	Grey		
N18E8/SE/3 (10-15cm)	#773-3	Bov III	TN	2	U	NN	VV		4	1			
N18E8/SE/3 (10-15cm)	#773-4	Large Mammal	MN	30	U	NN	VV	W	4	1	Grey		
N18E8/SW/1-3 (0-15cm)	#778-1.1	Large Mammal	RI	72	U	NN	TV		5	1	Ashy		
N18E8/SW/1-3 (0-15cm)	#778-5	Large Mammal	RI	72	U	NN	TV		6	3			
N18E8/SW/1-3 (0-15cm)	#778-6	Bov III	RA	103	U	NN	VV	W	6	1	Grey		
N18E8/NW/3-4 (Below kraals to burnt floor)	#787-1	Large Mammal	LU	56	I	NN	VV		9	1			
N18E8/NW/3-4 (Below kraals to burnt floor)	#787-2	Large Mammal	CE	57	I	NN	VV	K	8	1	Cut		
N18E8/NW/1-2 (0-12cm)	#765-1	Large Mammal	CE	54	I	NN	VV		5	1	Ashy		
N18E8/NW/1-2 (0-12cm)	#765-2	Small Mammal	LU	56	I	NN	VV		3	1			
N18E8/SW/1-3 (0-15cm)	#778-1.2	Bov III	SA	51	I	NN	VV		15	1			
N18E8/SW/4+5 (cleaning burnt floor)	#798-2	Large Mammal	RI	72	U	NN	TV	W	6	1	Grey		
N18E8/NE/5 (Cleaning of floor)	#787B-1	Bov III	TI	108	R	NN	VV		7	1	Ashy		
N18E8/NE/5 (Cleaning of floor)	#787B-2	Bov III	TA	121	R	NN	VV	W	5	1	Grey		
N18E8/NW/3-4 (Below kraals to burnt floor) - N18E8/NW/5 (just above burnt floor + in trench)	#787-3 / #784b-1	cf Ovis/Capra	UL	101	L	UN	VV		11	1	Root etching		
N18E8/NW/3-4 (Below kraals to burnt floor) - N18E8/NE/1-4 (0 to burnt floor)	#787-4 / #791-1	Bov III	MX	30	U	NN	VV		6	1	Ashy		
N18E8/NE/5 (Cleaning of floor)	#787b-5	Medium Mammal	PE	2	U	NN	VV		2	1			
N18E8/NW/3-4 (Below kraals to burnt floor)	#787-4	Bov III	TN	2	U	NN	VV		3	1			
N18E8/NW/3-4 (Below kraals to burnt floor)	#787-7	Medium Mammal	RI	72	U	NN	TV		6	1	Ashy		
N18E8/NW/3-4 (Below kraals to burnt floor)	#787-8	Small Aves	IN	94	R	NN	VV		2	1	Sacrum Part as well		
N18E8/SE/4 (15-20cm/burnt floor)	#784-1	Bov III	TI	108	L	NF	TS	W	7	1	Grey		
N18E8/NW/5 (just above burnt floor + in trench)	#784b-2	Large Mammal	LU	56	I	NN	VV	K	9	1	Chop		
N18E8/NW/5 (just above burnt floor + in trench)	#784b-3	Large Mammal	LU	56	I	NN	VV	K	5	1	Cut		

N18E8/NE/1-4 (0 to burnt floor)	#791-2	Large Mammal	RI	72	U	NN	VV		5	1			
N18E8/NE/1-4 (0 to burnt floor)	#791-3	Bov III	MC	103	L	NF	ST	W, K	6	1	Grey, Chope		
N18E8/NE/1-4 (0 to burnt floor)	#791-6	Medium Mammal	TN	2	U	NN	VV	W	1	1	Greenish		
N18E8/NE/1-4 (0 to burnt floor)	#791-6	Medium Mammal	TN	2	U	NN	VV	B	2	1			
N18E8/NE/1-4 (0 to burnt floor)	#791-6	Large Mammal	TN	2	U	NN	VV		3	1			
N18E8/NE/1-4 (0 to burnt floor)	#791-6	Large Mammal	TN	2	U	NN	VV		3	1			
N18E8/NE/1-4 (0 to burnt floor)	#791-6	Large Mammal	TN	2	U	NN	VV		3	1			
N18E8/NE/1-4 (0 to burnt floor)	#791-8	cf Bos taurus	MV	120	R	NN	VV		3	1			
N18E8/NE/1-4 (0 to burnt floor)	#791-11	Tortoise	SH	2	U	NN	TV	W	2	1	Brown		
N18E8/NE/1-4 (0 to burnt floor)	#791-13	Medium Mammal	RI	72	U	NN	VV		5	1	Ashy		
N18E10/SW/2 (5-10cm)	#808-1	Bos taurus	2P	101	L	FF	TT	W, K	4	1	Grey, Cut		
N18E10/SW/2 (5-10cm)	#808-2	Bos taurus	1P	102	L	FN	IS	W	4	1	Grey	Dp: 29.63	
N18E10/SW/2 (5-10cm)	#808-3	Bov III/IV	AS	121	L	NN	TS	W	5	1	Grey		
N18E10/SW/2 (5-10cm)	#808-4	cf silvicapra grimmia	HU	107	R	NF	SI	W	3	1	Grey	BT: 23.10, BD: 24.06, Dmd: 21.63	
N18E10/SW/2 (5-10cm)	#808-5	Bov III	P3	110	U	NN	VV	W	4	1	Grey		
N18E10/NW/2 (5-10cm)	#816-1	Bov III	TN	2	U	NN	VV		3	1			
N18E10/NW/2 (5-10cm)	#816-2	Large Mammal	TN	2	U	NN	VV	W	2	1	Brown		
N18E10/NW/3 (10-15cm)	#824-1	Bov III	FE	104	U	UN	CV	C	5	1	Digested		
N18E10/NW/3 (10-15cm)	#824-2	Bov III	CA	121	R	UN	II		4	1			
N18E10/NW/3 (10-15cm)	#824-3	Large Mammal	CE	51	I	NN	VV		4	1			
N18E10/NW/3 (10-15cm)	#824-4	Large Mammal	AT	54	I	NN	VV		3	1			
N18E10/NW/3 (10-15cm)	#824-6	Bov III	XP	2	U	NN	VV	W	4	1	Greenish		
N18E10/NW/3 (10-15cm)	#824-7	Bov II	XP	2	U	NN	VV	W	2	1	Greenish		
N18E10/NW/3 (10-15cm)	#824-8	Large Mammal	LU	56	I	NN	VV		12	1	Ashy		
N18E10/NW/3 (10-15cm)	#824-9	Medium Mammal	RI	72	U	NN	VV		3	1	Ashy		
N18E10/NW/3 (10-15cm)	#824-10	Medium Mammal	RI	72	U	NN	VV		6	1	Ashy		
N18E10/NW/4 (15-burnt ground)	#839-1	cf Bos taurus	2P	101	L	FF	VC	C	6	1	Ashy		
N18E10/NW/4 (15-burnt ground)	#839-2	Bov III	MC	103	R	FN	TS	W	5	1	Grey		
N18E10/NW/4 (15-burnt ground)	#839-5	cf Bos taurus	ZP	2	U	NN	VV		3	1			
N18E10/NW/4 (15-burnt ground)	#839-6	Medium Mammal	VE	52	I	NN	VV	W	2	1	Grey		
N18E10/NW/4 (15-burnt ground)	#839-7	Medium Mammal	RI	72	U	NN	VV	W	5	1	Grey		
N18E10/NW/4 (15-burnt ground)	#839-9	Medium Mammal	RI	72	U	NN	ST	W	5	1	Grey		
N18E10/SW/4 (15-burnt floor)	#831-1	Large Mammal	TN	2	U	NN	VV	W	3	1	Greenish		
N18E8/NW/3-4 (Below kraals to burnt floor)	#787-6	Large Mammal	VE	57	I	NN	VV		4	1			
N18E8/SE/1-4 (0-burnt floor)	#841-1	Bov I/II Non-domestic	IN	84	L	NN	TV	W	6	1	Grey		
N18E8/SE/1-4 (0-burnt floor)	#841-6	Large Mammal	CE	55	I	NN	VV	W	4	1	Brown		
N18E8/SE/1-4 (0-burnt floor)	#841-11	Bov III	MT	110	U	NN	VS	W	7	1	Grey		
N18E8/SE/1-4 (0-burnt floor)	#841-12	Large Mammal	TH	56	I	NN	VV	W	5	1	Grey		
N18E8/SE/1-4 (0-burnt floor)	#841-16	Medium Mammal	RI	72	U	NN	VV	W	3	1	Brown		
N18E10/SW/3 (10-15cm)	#852-3	Large Mammal	VE	51	I	UU	VV	W	5	1	Grey		
N18E10/SW/3 (10-15cm)	#852-4	Large Mammal	VE	52	I	UN	VV	W	3	1	Greenish		
N18E10/SW/3 (10-15cm)	#852-5	Large Mammal	VE	52	I	UN	VV	W	2	1	Grey		
N18E10/SW/3 (10-15cm)	#852-10	Large Mammal	LU	55	I	NN	VV		4	1			
N18E10/SW/3 (10-15cm)	#852-11	Large Mammal	RI	71	U	FN	VV	W	8	1	Brown		
N18E10/SW/3 (10-15cm)	#852-13	Medium Mammal	FE	110	U	NN	SS	W	5	1	Grey		
N18E10/SW/3 (10-15cm)	#852-15	Bov III	TN	2	U	NN	VV		4	1			
N18E10/SW/3 (10-15cm)	#852-16	Large Mammal	MN	30	U	NN	VT	W	3	1	Grey		
N18E10/SW/3 (10-15cm)	#852-17	Medium Mammal	MN	30	U	NN	VV		2	1			
N18E10/SW/3 (10-15cm)	#852-18	Bov III	IN	91	L	NN	VV		4	1			

N18E10/SW/3 (10-15cm)	#852-22	Bov III	MN	43	R	NN	VT		7	1			
N18E10/SW/3 (10-15cm)	#852-23	Large Mammal	RI	72	U	NN	VV	W	13	2	Grey		
N18E12/NE/1 (0-burnt floor)	#869-1	Large Mammal	LU	56	U	NN	TV	W, K	9	1	Greenish, Cut, Root etching		
N18E12/NE/1 (0-burnt floor)	#869-2	Bov III	HU	108	U	NN	VT	W, K	4	1	Greenish, Cut		
N18E12/NE/1 (0-burnt floor)	#869-4	Bov III	TI	108	R	NF	SV	W, C	8	1	Greenish		
N18E12/NE/1 (0-burnt floor)	#869-8	Bov III	TN	2	U	NN	VT		2	1			
N18E12/NE/1 (0-burnt floor)	#869-9	Large Mammal	RI	72	U	NN	VV		8	1			
N18E12/SE/1 (furnace?)	#862-1	Bov II	CR	6	I	NN	VV		5	1	Os basisphenoidale		
N18E12/SE/1 (furnace?)	#862-7	Bov I	CA	101	U	NN	VV	W	3	1	Grey		
N18E12/SE/1 (furnace?)	#862-9	Medium Mammal	CR	7	U	NN	VV		2	1			
N18E12/SE/1 (furnace?)	#862-10	Bov II	FE	110	U	NN	SS	W	9	1	Greenish		
N18E12/SE/1 (furnace?)	#862-11	Large Mammal	RI	72	U	NN	VT	W	11	1	Brown		
N18E12/SE/1 (furnace?)	#862-12	Medium Mammal	RI	72	U	NN	VT		7	1			
N18E12/SE/1 (furnace?)	#862-14	Medium Aves	HU	110	L	NN	VS	W	4	1	Brown		
N18E12/SE/1 (furnace?)	#862-15	Frog/Toad	VE	1	I	FF	II		2	1	fresh		
N18E12/SE/1 (furnace?)	#862-16	Frog/Toad	RA/UL	101	U	FN	IT		2	1	fresh		
N18E12/SW/1 (0-burnt floor)	#874-1	Medium Mammal	FE	110	U	NN	TS	W	4	1	Grey		
N18E12/SW/1 (0-burnt floor)	#874-2	Large Mammal	VE	54	U	NN	VV	K	5	1	Cut		
N18E12/SW/1 (0-burnt floor)	#874-3	Bov III	RA	110	U	NN	VV		7	1			
N18E12/SW/1 (0-burnt floor)	#874-6	Large Mammal	TN	2	U	NN	VV	W	2	1	Greenish		
N18E12/SW/1 (0-burnt floor)	#874-7	Bov III	TN	2	U	NN	VV	W	2	1	Greenish		
N18E12/SW/1 (0-burnt floor)	#874-8	Bov II	TN	2	L	NN	VV	W	4	1	Greenish		
N18E12/SW/1 (0-burnt floor)	#874-9	Large Mammal	RI	72	U	NN	VV	W	6	1	Brown		
N18E12/SW/1 (0-burnt floor)	#874-10	Large Mammal	RI	72	U	NN	VV	W	7	1	Brown		
N18E12/SW/1 (0-burnt floor)	#874-11	Large Mammal	RI	72	U	NN	VV	W	6	1	Greenish		
N18E12/NW/1 (0-burnt floor)	#879-1	Bos taurus	1P	105	L	NF	SI		4	1		BD: 26.55	
N18E12/NW/1 (0-burnt floor)	#879-2	Large Mammal	RI	72	U	NN	VV		4	1			
N18E12/NW/1 (0-burnt floor)	#879-5	Large Mammal	RI	72	U	NN	VV		18	1			
N18E12/NW/1 (0-burnt floor)	#879-6	Large Mammal	RI	72	U	NN	TT		6	1			
N18E12/NW/1 (0-burnt floor)	#879-7	Large Mammal	RI	72	U	NN	VV		6	1			
N18E12/NW/1 (0-burnt floor)	#879-8	Large Mammal	CR	7	U	NN	VV		10	1			
N18E12/NE/4	#897-2	Lagomorph	SC	80	L	FN	VV	W	4	1	Greenish		
N18E12/NE/5	#897-5	Large Mammal	RI	72	U	NN	SS	W	6	1	Greenish		
N18E12/NW/2 Cleaning burnt floor	#894-1	Bov III	TI	103	U	NN	VT		5	1			
N18E12/SE/2 (18-20cm) below grey ash, above burnt floor)	#887-2	Bov III	CR	4	U	NN	VV		4	1	condilys occipitales		
N18E12/SW/4	#906-1	cf Bos taurus	1P	101	R	FF	VV	C	6	1			
N18E12/SW/4	#906-2	cf Bos taurus	CP	1	R	NN	II	C	5	1		Too broken to measure	
N18E12/SW/4	#906-3	Bov III	AS	103	R	NN	VT	W, K	5	1	Greenish, Cut, Chop		
N18E12/SW/4	#906-5	cf Bos taurus	XP	2	L	NN	TV	W	5	1	Greenish		
N18E12/SW/4	#906-6	Bov III	TA	120	R	NN	TT	W	3	1	Greenish		
N18E14/NE/1 (0-5cm)	#917-1	Large Mammal	VE	7	I	NN	VV		6	1			
N18E14/NE/1 (0-5cm)	#917-7	Bov III	TN	2	U	NN	VV	W	3	1	Grey		
N18E14/SE/1 (0-15cm/floor)	#924-2	Bos taurus	ZP	2	R	NN	VV		5	5		Class VII	
N18E14/NE/3 (clean to floor)	#935-1	Large Mammal	VE	55	I	NN	VV		3	1			
N18E14/NE/3 (clean to floor)	#935-2	Bov II	TN	2	U	NN	VV		2	1			
N18E14/NE/3 (clean to floor)	#935-1	Small Rodent	IN	90	L	NN	VV		3	1	Fresh		
N18E14/NE/3 (clean to floor)	#935-2	Small Rodent	SA	120	I	NN	VV		2	1	Fresh		
N18E14/NE/3 (clean to floor)	#935-3	Snake	VE	1	I	FF	II		2	1	Fresh		
N18E14/NE/3 (clean to floor)	#935-4	Small Rodent	TI	105	R	NF	VI		3	1	Fresh		

N18E14/SE/3 (brown + ash to floor)	#940-2	Medium Mammal	RI	72	U	NN	VV	K	5	1	Cut		
N18E14/NW/4	#948-1	Large Mammal	CE	53	I	NU	VV	W	7	1	Brown		
N18E14/NW/4	#948-2	Large Mammal	CR	7	I	NN	VV	W	7	1	Greenish		
N18E14/NW/4	#948-5	Bov III	1P	103	L	FN	VS		4	1			
N18E14/NW/4	#948-8	Small Mammal	LU	56	I	NN	VV		2	1			
N18E14/NW/4	#948-9	Bov III	TN	2	U	NN	VV	B	2	1			
N18E14/NW/4	#948-10	Large Mammal	TH	56	I	NN	VV		8	1			
N18E14/NW/4	#948-11	Large Mammal	RI	72	U	NN	VV	W, R	8	1	Greenish		
N18E14/NW/4	#948-12	Medium Mammal	RI	72	U	NN	VV		5	1			
N18E14/NW/4	#948-13	Medium Mammal	RI	72	U	NN	VV	W	6	1	Greenish		
N18E14/NW/4	#948-14	Medium Mammal	RI	72	U	NN	VV	W	3	1	Brown		
N18E16/SW/2 (5-10cm)	#970-1	Bov III	TN	2	U	NN	VV		2	1			
N18E16/SW/2 (5-10cm)	#970-2	Tortoise	SH	2	U	NN	TV	W	3	1	Grey		
N18E16/NW/2 (5-10cm)	#979-1	Bov III	MP	110	U	NN	ST		5	1	Ashy		
N18E16/NW/2 (5-10cm)	#979-2	Large Mammal	CE	57	I	NN	VV	W	4	1	Greenish, White		
N18E16/SE/1-4 (0-floor)	#1003-1	BOV III	CR	4	I	NN	VV		6	2	condilys occipitales		
N18E16/SE/1-4 (0-floor)	#1003-4	BOV III	TA	121	U	NN	VV	W	3	1	Grey		
N18E16/SE/1-4 (0-floor)	#1003-5	Tortoise	SH	2	U	NN	VV	L	4	1	Burned on one side		
N18E10/SW/3 (10-15cm)	#852-1	Bos taurus	2P	1	L	FF	II		5	1		Bd: 22.59, SD: 22.34, GL: 44.29, Bp: 27.59, Glpe: 40.36. Dp: 27.49	
N18E10/SW/3 (10-15cm)	#852-2	Bos taurus	2P	1	R	FF	II		5	1		Bd: 26.15, SD: 27.14, GL: 40.68, Bp: 32.78, Glpe: 35.11, Dp: 32.52	
N18E16/SW/4 (Brown + ash to floor)	#1013-1	Small Rodent	FE	106	R	FF	VI	W	3	1	Greenish		
N18E16/SW/4 (Brown + ash to floor)	#1013-2	Small Mammal	CR	7	I	NN	VV		2	1			
N18E16/SW/4 (Brown + ash to floor)	#1013-3	Bov III	TN	2	U	NN	VV		3	1			
N18E16/SW/4 (Brown + ash to floor)	#1013-4	Bos taurus	CP	120	R	NN	VV	K	4	1	Cut	Too broken	
N18E16/NW/4 (Brown -floor)	#1021-2	Bov III	UR	51	I	UN	VS		2	1	Ashy		
N18E16/NW/4 (Brown -floor)	#1021-4	Bov II	SC	81	U	NN	VV		3	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-1	Large Mammal	HU	110	R	NN	VV	W, C	12	1	Grey, Root etching		
N20E8/SE/1 (0-burnt floor)	#1028-2	Bov III	RA	110	R	NN	VV	W, K	19	1	Grey, Root etching, Chop		
N20E8/SE/1 (0-burnt floor)	#1028-4	Bos taurus	MN	35	L	NN	VT	W	15	1	Greenish		
N20E8/SE/1 (0-burnt floor)	#1028-5	Bov III	TI	103	R	FN	VS	W, K	7	1	Brown, Cut		
N20E8/SE/1 (0-burnt floor)	#1028-6	Large Mammal	FE	110	U	NN	SV		11	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-7	Large Mammal	SC	81	R	NN	VV	W	10	1	Brown		
N20E8/SE/1 (0-burnt floor)	#1028-7	Bov III	FE	104	U	UN	VV	W	5	1	Brown		
N20E8/SE/1 (0-burnt floor)	#1028-8	Bov III	IN	82	L	NN	VV	W	5	1	Brown		
N20E8/SE/1 (0-burnt floor)	#1028-9	Bov III	IN	82	R	NN	VV	W	10	1	Ashy, Brown		
N20E8/SE/1 (0-burnt floor)	#1028-10	cf Bos taurus	AS	103	R	NN	TT		5	1			
N20E8/SE/1 (0-burnt floor)	#1028-12	Large Mammal	IN	81	U	NN	VV		7	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-13	Large Mammal	CE	57	I	NN	VV	W, K	6	1	Greenish, Cut		
N20E8/SE/1 (0-burnt floor)	#1028-20	Large Mammal	RI	72	U	NN	VT		8	11	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-22	Large Mammal	RI	72	U	NN	VT		5	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-23	Large Mammal	RI	72	U	NN	VT	W	5	1	Grey		

N20E8/SE/1 (0-burnt floor)	#1028-25	Large Mammal	CR	7	I	NN	VV		4	1			
N20E8/SE/1 (0-burnt floor)	#1028-27	Large Mammal	RI	72	U	NN	VT	W	4	1	Grey		
N18E16/NW/4 (Brown -floor)	#1021-1	Large Mammal	RI	72	U	NN	VV		13	1			
N18E16/NW/4 (Brown -floor)	#1021-3	Bov III	MP	110	U	NN	VV		17	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-11	Large Mammal	TH	56	I	NN	VV		9	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-15	Large Mammal	RI	72	U	NN	VT		12	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-16	Large Mammal	RI	72	U	NN	VT		10	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-17	Large Mammal	RI	72	U	NN	VT		7	1	Ashy		
N20E8/SE/1 (0-burnt floor)	#1028-18	Large Mammal	RI	72	U	NN	VT	B	7	1			
N20E8/SE/1 (0-burnt floor)	#1028-19	Large Mammal	RI	72	U	NN	VT		9	1	Ashy, Greenish		
N20E8/SW/1 (0-burnt floor)	#1034-1	Large Mammal	RI	72	U	NN	VT	K	16	1	Ashy, Cut		
N20E8/SW/1 (0-burnt floor)	#1034-2	Large Mammal	RI	72	U	NN	SS	W	6	1	Grey		
N20E8/SW/1 (0-burnt floor)	#1034-3	Bos taurus	ZP	1	R	NN	IV	W	7	1	Greenish	Class III	
N20E8/SW/1 (0-burnt floor)	#1034-4	Large Mammal	TN	2	U	NN	VV	W	2	1	Greenish		
N20E8/SW/1 (0-burnt floor)	#1034-5	Large Mammal	PE	2	U	NN	VV	W	2	1	Greenish		
N20E8/SW/1 (0-burnt floor)	#1034-7	Bov III	UL	103	U	NN	VV		2	1	Ashy		
N20E8/SW/1 (0-burnt floor)	#1034-8	Bov III	2P	103	U	NN	TV		2	1	Ashy		
N20E8/SE/4 (cleaning of floor)	#1039-1	cf Bos taurus	MN	43	L	NN	VT	W	16	1	Grey, Ashy, Root etching		
N20E8/SE/4 (cleaning of floor)	#1039-2	Large Mammal	MN	30	U	NN	VT	W	3	1	Grey, Ashy		
N20E8/SE/4 (cleaning of floor)	#1039-3	Large Mammal	LU	54	I	NN	TV	W	4	1	Grey, Ashy		
N20E8/SE/4 (cleaning of floor)	#1039-4	Bov III	IN	91	U	NN	VV	W	10	1	Grey, Ashy		
N20E8/SE/4 (cleaning of floor)	#1039-5	Large Mammal	TI	110	U	NN	TV	W	16	1	Grey, Ashy		
N20E8/SE/4 (cleaning of floor)	#1039-6	Large Mammal	RI	72	U	NN	VT	W	14	1	Grey, Ashy		
N18E8/SE/1-4 (0-burnt floor)	#841-2	Bov III	1P	101	U	FF	VV	W	6	1	Grey, Ashy		
N18E8/SE/1-4 (0-burnt floor)	#841-3	Bov III	1P	101	U	FN	VT		3	1			
N18E8/SE/1-4 (0-burnt floor)	#841-4	Bov III	CA	110	R	NN	VV	W	5	1	Grey		
N18E8/SE/1-4 (0-burnt floor)	#841-5	Bov III	CP	120	U	NN	VV	W	4	1	Grey		
N20E10/SE/4 (cleaning burnt floor)	#1065-1	Bos taurus	1P	1	L	FF	II	C	6	1	Ashy	Bd: 29.68, SD: 25.80, GL: 58.03, Bp: 29.72, Glpe: 57.03, Dp: 29.88	
N20E10/SE/4 (cleaning burnt floor)	#1065-2	Large Mammal	CR	7	U	NN	VV	W	6	1	Grey, Ashy		
N20E8/SW/4 (clear up of floor)	#1045-1	Bos taurus	P1	1	L	FF	II		7	1	Ashy	Bd: 28.93, SD: 26.01, Glpe: 56.38, Bp: 29.92, Dp: 26.97	
N20E8/SW/4 (clear up of floor)	#1045-2	Large Mammal	VE	7	I	NN	TV		5	1			
N20E8/SW/4 (clear up of floor)	#1045-3	Large Mammal	VE	7	I	UN	TV		8	1	Ashy		
N20E8/SW/4 (clear up of floor)	#1045-4	Large Mammal	TH	56	I	NN	VV		10	1	Ashy		
N20E8/SW/4 (clear up of floor)	#1045-5	Bov III	SC	81	U	NN	VV		6	1	Ashy		
N20E10/SW/1 (0-burnt floor)	#1058-1	Large Mammal	CR	4 and 6	I	NN	VV	K	11	4	Chop		
N20E10/SW/1 (0-burnt floor)	#1058-2	Large Mammal	CR	4	I	NN	VT		6	1	condilys occipitales		
N20E10/SW/1 (0-burnt floor)	#1058-3	Large Mammal	VE	7	I	UN	TV		5	1			
N20E10/SW/1 (0-burnt floor)	#1058-4	Large Mammal	LU	53	I	FF	TV		6	1			
N20E10/SW/1 (0-burnt floor)	#1058-6	Bos taurus	XP	1	L	NN	II		4	1		Class VIII	
N20E10/SW/1 (0-burnt floor)	#1058-7	Bos taurus	ZP	1	L	NN	II		7	1		Class VIII	
N20E10/SW/1 (0-burnt floor)	#1058-8	Large Mammal	CE	53	I	FN	TV		7	1			
N20E10/SW/1 (0-burnt floor)	#1058-9	Large Mammal	TH	56	I	NN	VV	W	8	1	Greenish		
N20E10/SW/1 (0-burnt floor)	#1058-10	Medium Mammal	RI	72	U	NN	VT		6	1			
N20E10/SW/1 (0-burnt floor)	#1058-11	Large Mammal	RI	72	U	NN	VT		6	1			

N20E10/SE/1 (0-burnt floor)	#1051-1	Bos taurus	ZP	2	L	NN	VV		6	1		Class IV	
N20E10/SE/1 (0-burnt floor)	#1051-2	Bos taurus	P2	106	L	NF	VV		4	1		SD: 22.38, Bd: 24.26, Dp: 28.04 - rest n/a	
N20E10/SE/1 (0-burnt floor)	#1051-3	Bos taurus	P2	101	R	FN	VV		4	1		Bp: 28.08	
N20E10/SE/1 (0-burnt floor)	#1051-4	Bov III	CP	121	R	NN	VV		3	1		Too broken	
N20E10/SE/1 (0-burnt floor)	#1051-5	Bov III	TA	1	R	NN	II		4	1		Too broken/worn	
N20E10/SE/1 (0-burnt floor)	#1051-7	Bov II	UL	110	U	NN	VT		8	1			
N20E10/SE/1 (0-burnt floor)	#1051-8	Large Mammal	RI	72	U	NN	VT	W	14	1	Brown		
N20E10/SE/1 (0-burnt floor)	#1051-9	Large Mammal	RI	72	U	NN	VT		10	1			
N20E10/SE/1 (0-burnt floor)	#1051-10	Medium Mammal	RI	72	U	NN	TT		8	3			
N20E10/SE/1 (0-burnt floor)	#1051-11	Large Mammal	RI	72	U	NN	VV	W	8	1	Brown		
N20E10/SE/1 (0-burnt floor)	#1051-12	Medium Mammal	RI	72	U	NN	VS	W	9	1	Greenish		
N20E10/SE/1 (0-burnt floor)	#1051-13	Medium Mammal	RI	72	U	NN	VT	W	7	1	Grey		
N20E10/SE/1 (0-burnt floor)	#1051-14	Medium Mammal	RI	72	U	NN	VV		11	1			
N20E10/SE/1 (0-burnt floor)	#1051-16	Medium Mammal	RI	71	U	FN	IV		5	1			
N20E10/SE/1 (0-burnt floor)	#1051-18	Bov III	MT	101	R	FN	TV		13	1			
N20E10/SE/1 (0-burnt floor)	#1051-19	Large Mammal	RI	72	U	NN	VT		11	1			
N20E10/SE/1 (0-burnt floor)	#1051-23	Bov III	IN	94	R	NN	VV	W	8	1	Greenish		
N20E10/SE/1 (0-burnt floor)	#1051-24	Large Mammal	SC	81	U	NN	TV		9	1			
N20E10/SE/1 (0-burnt floor)	#1051-25	Bov III	MN	43	R	NN	TV		8	1			
N20E10/SE/1 (0-burnt floor)	#1051-27	Large Mammal	RI	72	U	NN	VT		8	1			
N20E10/SE/1 (0-burnt floor)	#1051-28	Bov III	IN	91	R	NN	TV		7	1			
N20E10/SE/1 (0-burnt floor)	#1051-29	Large Mammal	CE	53	I	NN	VV		9	1			
N20E10/SE/1 (0-burnt floor)	#1051-30	Large Mammal	CE	57	I	NN	VV	W	7	1	Greenish		
N20E10/SE/1 (0-burnt floor)	#1051-31	Large Mammal	VE	7	I	NN	VV	W, C	5	1	Brown		
N20E10/SE/1 (0-burnt floor)	#1051-33	Large Mammal	VE	52	I	NN	VV		4	2			
N20E10/SE/1 (0-burnt floor)	#1051-34	Large Mammal	CR	7	U	NN	VV	W	6	1	Brown		
N20E10/SE/1 (0-burnt floor)	#1051-35	Bov III	MT	110	U	NN	VV	W	5	1	Grey		
N20E10/SE/1 (0-burnt floor)	#1051-36	Bov III	CP	121	L	NN	VV	W	3	1	Grey		
N20E10/SW/4 (cleaning burnt floor)	#1072-1	Bos taurus	P1	101	L	FF	VV		7	1	Ashy/Calcide	n/a	
N20E10/SW/4 (cleaning burnt floor)	#1072-3	Medium Mammal	RI	72	U	NN	VT		4	1			
N20E10/SW/4 (cleaning burnt floor)	#1072-2	Bov III	TI	108	R	NF	VT		9	1			
N18E8/SE/3 (10-15cm)	#773-1	Large Mammal	CE	7	U	NN	VV	K	7	1	Cut		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-1	Bov III	MC	101	R	FN	TS		11	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-2	Bov III	FE	110	U	NN	VS		19	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-3	Bov III	MP	110	U	NN	SV		13	1	Ashy, Root etching		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-4	Large Mammal	MN	30	U	NN	VS	W, R	19	1	Ashy, Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-8	Bov II	RA	110	U	NN	VS		8	1	Ashy		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-9	Medium Mammal	RI	72	U	NN	VS		5	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-10	Bos taurus	1P	101	L	FF	TT		7	1	Ashy	Bd: n/a, SD: n/a, GL:pe: 26.21, Bp: 32.36, Dp: 32.09	
N20E12/1.5 of N/1 (0-burnt floor)	#1076-11	Bos taurus	1P	107	L	NF	SI	W	3	1	Grey	Bd: 22.08	
N20E12/1.5 of N/1 (0-burnt floor)	#1076-12	Bov III	1P	103	L	FN	TC	W	6	1	Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-13	Bov III	1P	103	R	FN	TS		5	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-14	Bov III	SE	120	U	NN	VV		2	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-15	Bov III	ZD	2	U	NN	VV		5	4			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-17	Large Mammal	LU	56	I	NN	VV		7	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-18	Large Mammal	LU	56	I	NN	VT		6	1	Ashy, Root etching		

N20E12/1.5 of N/1 (0-burnt floor)	#1076-19	Large Mammal	VE	53	I	NN	VV	W	4	1	Grey		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-20	Bov III	SC	81	R	NN	VV	W	11	1	Grey		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-21	Bov III	MP	108	U	NN	VV	W	3	1	Ashy, Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-23	Large Mammal	CR	7	U	NN	VV		3	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-23	Large Mammal	PE	2	U	NN	VV		3	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-24	Large Mammal	RI	72	U	NN	VT	W	12	1	Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-25	Large Mammal	RI	72	U	NN	VV		10	1	Ashy		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-26	Large Mammal	RI	72	U	NN	SV	W	7	1	Ashy, Brown		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-27	Large Mammal	RI	72	U	NN	VV	W, K	9	1	Ashy, Brown, Cut		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-28	Large Mammal	RI	72	U	NN	VV		10	1			
N20E12/1.5 of N/1 (0-burnt floor)	#1076-29	Medium Mammal	RI	72	U	NN	VV	W	9	1	Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-30	Medium Mammal	RI	72	U	NN	VV	W	6	1	Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-31	Medium Mammal	RI	72	U	NN	VV	W, R	6	1	Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-32	Medium Mammal	RI	72	U	NN	VS	W	5	1	Greenish		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-33	Medium Mammal	RI	72	U	NN	VV	W	5	1	Brown		
N20E12/1.5 of N/1 (0-burnt floor)	#1076-35	Large Mammal	RI	72	U	NN	TV	W	9	1			
N20E16/NE/1 (0-grey clay)	#1093-1	Bov III	PA	121	R	NN	VV	W	4	1	White, Greenish, Light Blueish		
N20E16/NE/1 (0-grey clay)	#1093-2	Tortoise	SH	2	U	NN	TT		2	1			
N20E16/NE/1 (0-grey clay)	#1093-3	Bov III	TI	104	U	UN	TV	B	3	1			
N20E16/NE/1 (0-grey clay)	#1093-5	Large Mammal	VE	52	I	NN	VT		3	1			
N20E16/NE/1 (0-grey clay)	#1093-6	Large Mammal	VE	52	I	NN	VT	W	4	1	Brown		
N20E16/SW/1 (0-grey clay)	#1084-1	Small Mammal	RI	72	U	NN	TT	W	4	1	Brown		
N20E16/SW/1 (0-grey clay)	#1084-4	Bov III	MP	110	U	NN	TS	W	7	1	Grey, Ashy		
N20E16/SW/1 (0-grey clay)	#1084-5	Bov III	SE	1	U	NN	II	W	3	1	Grey		
N20E16/SW/1 (0-grey clay)	#1084-6	Bov III	UL	110	R	NN	VT	W	4	1	Grey, Ashy		
N20E16/SW/1 (0-grey clay)	#1084-11	Large Mammal	CE	54	I	NN	VV		4	1	Ashy		
N20E16/SW/1 (0-grey clay)	#1084-14	Medium Mammal	RI	72	U	NN	TT		3	1	Ashy		
N20E16/SW/1 (0-grey clay)	#1084-14	Medium Mammal	RI	72	U	NN	VV		3	1	Ashy		
N20E16/SW/1 (0-grey clay)	#1084-15	Large Mammal	RI	72	U	NN	TV	L	4	1			
N20E16/SW/1 (0-grey clay)	#1084-18	Bos taurus	AS	1	R	NN	IV	L	6	1	Half Black, Half Nothing	Dm: n/a, Bd: 45.68, GLm: n/a, GLl: 61.00, Dl: 37.81,	Photo
N20E16/NE/4 (to floor)	#1104-1	Bov II	RA	110	U	NN	TS	W	11	1	Greenish		
N20E16/NE/4 (to floor)	#1104-3	Large Mammal	LU	55	I	NN	VT		4	1			
N20E16/NE/4 (to floor)	#1104-4	Small Mammal	CR	7	I	NN	VV	W	4	1	Greenish		
N20E16/NE/4 (to floor)	#1104-5	Bov III	TN	2	U	NN	VV	W	2	2	Greenish		
N20E16/NE/4 (to floor)	#1104-7	Large Mammal	CR	7	I	NN	VV		6	1			
N18E16/SW/4 (Brown + ash to floor)	#1013-5	Large Mammal	RI	72	U	NN	TV		9	1			
N22E22/SW/2 (5-10cm)	#1142-1	Bov II	MP	110	U	NN	VV	L	15	4	Brown, ashy, localised		
N22E16/NW/4 (15-20cm)	#1128-1	Bov III	RA	103	R	FN	VS	W	7	1	Greenish		
N22E16/NW/4 (15-20cm)	#1128-2	Bov III	HC	2	U	NN	VV		6	1			
N22E16/NW/3 (10-15cm)	#1170-1	Large Mammal	RI	72	U	NN	SV		11	1			
N22E16/NW/3 (10-15cm)	#1170-2	Large Mammal	HU	110	U	NN	VS		7	1			
N22E16/NW/3 (10-15cm)	#1170-4	Bov III	TN	2	U	NN	VV		2	1	Aged, central island worn		
N28E10/NE/2 (5-10cm)	#1165-1	Large Mammal	PE	2	U	NN	VV		3	1			
N30E10/SE/2 (5-10cm)	#1183-1	Frog/Toad	RA	110	U	NN	TT		2	1	fresh		
N30E10/SE/2 (5-10cm)	#1183-1	Frog/Toad	RA	110	U	NN	TT		2	1	fresh		
N30E10/SW/5 (20-25cm)	#1192-1	Small Rodent	TI/FI	106	L	UF	II		4	2	fresh		
N30E10/SW/5 (20-25cm)	#1192-2	Small Mammal	VE	56	I	NN	VV		2	1			

		SMALL BAG SENT LATER											
N18E8/SW/4+5 (cleaning burnt floor)	#798-1	Bov I/II	P1	105	L	NF	VA		3	1	Bore hole through distal part of phalanx.	Drawn	Photo

Dukwe 25 – Non-Identifiable

Feature	Other details	Provenience	Bone #	UN	Black	Grey	Local-ised	Blue	Brown	Green-ish	White	Carnivore	Rodent	Cut	Drill Holes Insect	Path	Trampled/Digested	Root etching	Juv	Ashy
Test Pit		N0E16/SW/1 (0-5cm)	#90	2							1									
Midden in Waterhole		N4E26/SW/5 (20-25cm)	#110	1							1									
Midden in Waterhole		N4E26/SW/6 (25-30cm)	#119	17						6	2				1			1		
Midden in Waterhole		N4E26/SW/6 (25-30cm)	#119-20	1												1				
Midden in Waterhole		N4E26/SW/7 (30-35cm)	#136	17				1		3	5									
Midden in Waterhole		N4E26/SW/8 (35-40cm)	#141	15	2		2			2	3									
Midden in Waterhole		N4E26/SW/9 (40-45cm)	#155	3						2										
Midden in Waterhole		N4E26/SW/10 (45-50cm)	#165	13						2									1	
Midden in Waterhole		N4E26/SW/11 (50-55cm)	#177	7																
Midden in Waterhole		N4E26/SW/12 (60-65cm)	#182	13						3										
Midden in Waterhole		N4E26/NW/E1.5/4	#190	1							1									
Midden in Waterhole		N4E26/NW/E1.5/2 (25)	#193	14						4				1						
Yard	burnt floor	N20E12/1.5 of N/1 (0-burnt floor)	#1076	2	1					1										
Test Pit		N12E10/SW/5 (20-25cm)	#232	1																
Test Pit		N14E10/SE/4 (15-20cm)	#380	1																
Test Pit		N14E10/SE/4 (15-20)	#381	1																
Yard		N16E8/NE/2 (5-10cm)	#395	3	1	2														
Yard		N16E8/NE/3 (10-15cm)	#402	13	2	6														
Yard		N16E10/NE/1 (0-5cm)	#408	2		1														
Yard		N16E10/SW/1 (0-5cm)	#415	2		2														
Yard		N16210/NW/2 (5-10cm)	#422	2		1				1										
Yard		N16E10/NW/1 (0-5cm)	#427	1		1														
Yard		N16E10/NW/2 (5-10cm)	#435	1		1														
Yard		N16E10/SE/2 (5-10cm)	#448	3		2	1													
Yard		N16E10/SW/2 (5-10cm)	#453	1		1	1													
Yard		N16E10/NE/3 (10-15cm)	#466	3		1			1											
Yard		N16E10/SW/2 (5-10cm)	#453	3		1			1											
Yard		N16E10/NW/3 (10-15cm)	#458	9		7				1			1							
Yard		N16E10/SE/3 (10-15cm)	#473	2	1	1														
Yard		N16E10/SW/3 (10-15cm)	#481	4		3														
Yard		N16E8/SE/1-4 (0-20cm)	#492	7		3								1						
Yard		N16E10/NW/4 (15-20cm)	#501	4		2				2										
Yard	Burnt floor	N16E10/NE/4 (15-Burnt floor)	#505	2		2														
Yard	Burnt floor	N16E10/SE/4 (15-burnt floor)	#508	2		1														1

Yard	Main furnace 2	N16E10/SE/5 Main furnace 2	#516	2	1	1				1										
House		N16E14/NE/1 (0-15cm)	#625	1							1									
Yard		N16E12/SW/2 (5-10cm)	#540	3		3														
Yard		N16E12/NW/2 (5-10cm)	#546	1		1														
Yard		N16E12/SW/3 (10-15cm)	#552	6		3	1				1			1						
Yard		N16E12/NW/3 (10-15cm)	#559	1		1														
Yard	Burnt floor	N16E12/SW/4 (15-20-Burnt floor)	#566	4	1	1														
Yard	Burnt floor	N16E12/NW/4 (15-20-Burnt floor)	#575	5		1								2						
Yard	Burnt floor	N16E12/NE/4 (0-20-Burnt floor)	#583	9	1	1			1	1										
Yard	Burnt floor	N16E12/SE/1-4 (0-20-Burnt floor)	#592	12		6			1				1							1
House	Floor+Fill of wall trench	N16E14/SW/1 (0-15-Floor+Fill of wall trench)	#600	4		1	1							1						
House	Burnt floor	N16E14/NW/1 (On Burnt floor)	#609	2							1									
House	Brown soil	N16E14/SE/1 (0-15cm/Brown soil)	#616	1		1														
House		N16E14/NE/1 (0-15cm)	#625	2		1			1											
House	Brown strature	N16E14/NE/3 Brown strature	#661	4	1		1		1											
House		N16E16/NW/1 (0-5cm)	#673	2	1		1													
House		N16E16/NW/2 (5cm)	#693	1																
House		N16E16/NE/2 (5-10cm)	#707	2	1	1														
House	Brown ash	N16E16/NW/3 (10-15/Brown ash)	#715	1		1														
House	Brown ash	N16E16/NW/3 (10-15/Brown ash)	#721	1					1											
House		N16E16/NW/3 (10-15cm)	#734	1		1														
House	Clean up to grey clay floor + trench fill	N16E16/SW/4 Clean up to grey clay floor + trench fill	#745	3																
Kraal 1		N18E8/SE/1 (0-50cm)	#753	1		1														
Kraal 1	Below kraals to burnt floor	N18E8/NW/3-4 (Below kraals to burnt floor)	#787	2		1														
Kraal 1		N18E8/NW/1-2 (0-12cm)	#765	4			1		2											
Kraal 1		N18E8/NW/3-4 (Below kraals to burnt floor)	#783	1		1														
Kraal 1	Burnt Floor	N18E8/SW/4+5 (cleaning burnt floor)	#798	1		1														
Yard		N18E10/SW/ (0-5cm)	#793	2		1			1					1						
Kraal 1	Below kraals to burnt floor	N18E8/NW/3-4 (Below kraals to burnt floor)	#787	2			1											1		
Yard	Burnt Floor	N18E18/SE/4 (15-20cm/burnt floor)	#784	4																
Kraal 1	Burnt Floor	N18E8/NE1-/4 (0-burnt floor)	#791	7		1						1								2
Yard		N18/E10/NW/1 (0-5cm)	#802	2		2														
Yard		N18E10/SW/2 (5-10cm)	#808	4		3														
Yard		N18E10/NW/3 (10-15cm)	#824	8	2	2														1
Yard	burnt ground	N18E10/NW/4 (15-burnt ground)	#839	5		4														
Kraal 1	burnt floor	N18E8/SE/1-4 (0-burnt floor)	#841	7	1	1														
Yard		N18E10/SW/3 (10-15cm)	#852	11		7			1											1
Yard	burnt floor	N18E12/NE/1 (0-burnt floor)	#869	5		1			1	2										
Yard	Furnace?	N18E12/SE/1 (furnace?)	#862	7		3														
Yard	burnt floor	N18E12/SW/1 (0-burnt floor)	#874	5																
Yard	burnt floor	N18E12/NW/1 (0-burnt floor)	#879	2																
Yard		N18E12/NE/4	#897	3																
Yard	Cleaning burnt floor	N18E12/NW/2 Cleaning burnt floor	#894	1																
Yard	below grey ash, above burnt floor	N18E12/SE/2 (18-20cm) below grey ash, above burnt floor)	#887	1																
Yard		N18E12/SW/4	#906	2						1										
House	burnt floor	N18E14/SW/1 (0-20/Burnt floor)	#912	4		3				1										

House		N18E14/NE/1 (0-5cm)	#917	5		3														
House		N18E14/SE/1 (0-15cm/floor)	#924	1		1														
House	brown + ash to floor	N18E14/SE/3 (brown + ash to floor)	#940	3									1							
House		N18E14/NW/4	#948	7		1								1						
House		N18E16/SW/2 (5-10cm)	#970	2							1									
House	Floor	N18E16/SE/1-4 (0-floor)	#1003	3		1														
House	Brown + ash to floor	N18E16/SW/4 (Brown + ash to floor)	#1013	2																
House	Brown-floor	N18E16/NW/4 (Brown -floor)	#1021	4			1													1
Kraal 1	Burnt floor	N20E8/SE/1 (0-burnt floor)	#1028	8		2						1								1
Kraal 1	Burnt floor	N20E8/SW/1 (0-burnt floor)	#1034	1																1
Kraal 1	Cleaning of burnt floor	N20E10/SE/4 (cleaning burnt floor)	#1065	1																
Kraal 1	Burnt floor	N20E10/SW/1 (0-burnt floor)	#1058	1																1
Kraal 1	Burnt floor	N20E10/SE/1 (0-burnt floor)	#1051	8		1								1						
Yard	Cleaning of burnt floor	N20E12/1.5 of N/1 (0-burnt floor)	#1076	14		1			1	4										2
House	Grey clay	N20E16/NE/1 (0-grey clay)	#1093	2																
House	Grey clay	N20E16/SW/1 (0-grey clay)	#1084	10		3	1			1										3
House	Floor	N20E16/NE/4 (to floor)	#1104	3						1										
Test Pit		N22E16/NW/4 (15-20cm)	#1128	1																
Test Pit		N22E16/NW/3 (10-15cm)	#1170	1																
Test Pit		N22E22/SW/3 (10-15cm)	#1150	2																
Yard	Burnt floor	N20E12/1.5 of N/1 (0-burnt floor)	#1176	1																
Yard		N18E10/NW/3 (10-15cm)	#824	1																
Kraal 1	Burnt floor	N20E10/SW/4 (cleaning burth floor)	#1072	1	1															