

# **THE SPACES BETWEEN PLACES**

A landscape study of foragers on the Greater  
Mapungubwe Landscape, southern Africa

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# **The Spaces Between Places: a landscape study of foragers on the Greater Mapungubwe Landscape, southern Africa**

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## **ABSTRACT**

Our understanding of the Later Stone Age (LSA) on the Greater Mapungubwe Landscape has until now been fairly limited. However, it is a landscape upon which foragers witnessed and partook in agriculturalist state formation between AD 900 and 1300, altering their cultural behaviour to suit their changing social and political topography. Nowhere else in southern Africa were foragers part of such developments. For this project a landscape approach was used to study the various changes in the regional LSA record as well as the way in which foragers interacted with farmers.

In order to address these issues, data were obtained from an archaeological survey followed by an excavation of seven sites in north-eastern Botswana, part of the Greater Mapungubwe Landscape. These finds indicate that the local forager record varies chronologically and spatially, which had not previously been recorded. Foragers also used a variety of site types and in each a different forager expression was deposited, providing indications of their changing settlement pattern. Notably, this included a gradual movement into agriculturalist homesteads beginning by at least AD 1000 and concluding by AD 1300, when the Mapungubwe capital was abandoned. Thus, interactions, at least in some cases, led to assimilation. There is also clear evidence of exchange with agriculturalists at many of the excavated sites, but this does not always seem to be related to their proximity with one another.

Performing a landscape study has also made it possible to make two general conclusions with regard to LSA research. First, these data challenge ethnography, displaying its limitations particularly with linking modern Bushman practices, such as aggregation and dispersal patterns or *hxaro* gift exchange, to LSA foragers. Second, a full landscape understanding combines the archaeology of multiple cultural landscapes and in this case also crosses national borders, two themes often neglected in southern African archaeological studies.

Dedicated to William Douglas Forssman

My oupa

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## LIST OF ACRONYMS

CCP	Central Cattle Pattern
CCS	Crypto-crystalline silicate
ESA	Early Stone Age
GIS	Geographic Information Systems
LSA	Later Stone Age
MBP	Miscellaneous backed piece
MRP	Miscellaneous retouched piece
MSA	Middle Stone Age
ORAU	Oxford Radiocarbon Accelerator Unit
TK2	Transitional K2

## CHAPTER 1: INTRODUCTION AND OUTLINE

### 1.1 INTRODUCTION

Forager studies in southern Africa have tended to focus on rockshelters and, of them, larger and more impressive sites have had the greatest influence on developing sequences and on our understanding of past cultural landscapes (Mitchell *et al.* 2011). For example, sites such as Elands Bay Cave (Parkington 1972, 2001), Sehonghong (Mitchell 1996a, 2010a), Rose Cottage Cave (Wadley 1997), Jubilee Shelter (Wadley 1986), Olieboomspoort (Van Der Ryst 2006), Border Cave (Villa *et al.* 2012), Wonderwerk Cave (Humphreys & Thackeray 1983), Melkhoutboom (H. Deacon 1976) and Pomongwe Cave (Walker 1995a) have dominated southern African hunter-gatherer archaeological studies (Figure 1.1). They have often been referred to in discussing social processes within the Later Stone Age (LSA), such as aggregation and dispersal cycles, long-distance trade, and subsistence and mobility patterns. I am not suggesting here that these are the only sites archaeologists have used to gain insights into the last 20,000 years, in fact, there have been many smaller sites such as Cave James in the Magaliesberg, North West Province of South Africa (Wadley 1986, 1996) and Siphiso Shelter, Swaziland (Barham 1992), as well as open-air studies in the Northern Cape, South Africa (I. Parsons 2007, 2008), northern Namibia (Vogelsang 1998, 2000; Kinahan 2004) and Lesotho (Plug *et al.* 2010; Mitchell *et al.* 2011) that have all challenged and improved our understanding of the past. Nevertheless, archaeological research has focused mostly on large rockshelter occupations, usually single site types, and it is these that have been used to interpret regional patterns. There is great value in this approach, hence its persistence in archaeology over the years, but it neglects a large proportion of southern Africa's LSA that can help us better interpret the past and understand foraging people (Mitchell *et al.* 2011); the LSA that exists in the spaces between places.

On the Greater Mapungubwe Landscape (Figure 1.2), situated around the confluence of the Limpopo and Shashe Rivers, there has been an emphasis on rockshelters. Here, there have been a number of LSA projects, yet our understanding of the forager record is still relatively limited. Of these studies, Hall and Smith's (2000) excavation of Little Muck Shelter and van Doornum's (2005) work at Balerno Main Shelter, Tshisiku Shelter and Balerno Shelter 2 and 3 have been used to develop a regional model, while Walker's (1994) excavation of Tuli Lodge in north-eastern Botswana has mostly been forgotten. The model developed by van Doornum (2005) defines five cultural phases spanning 12,000 years, but, since it is based on a few excavations across a limited area, we may ask whether these phases a fair or robust representation of the local forager sequence, especially considering affect local state development had on hunter-gatherers?

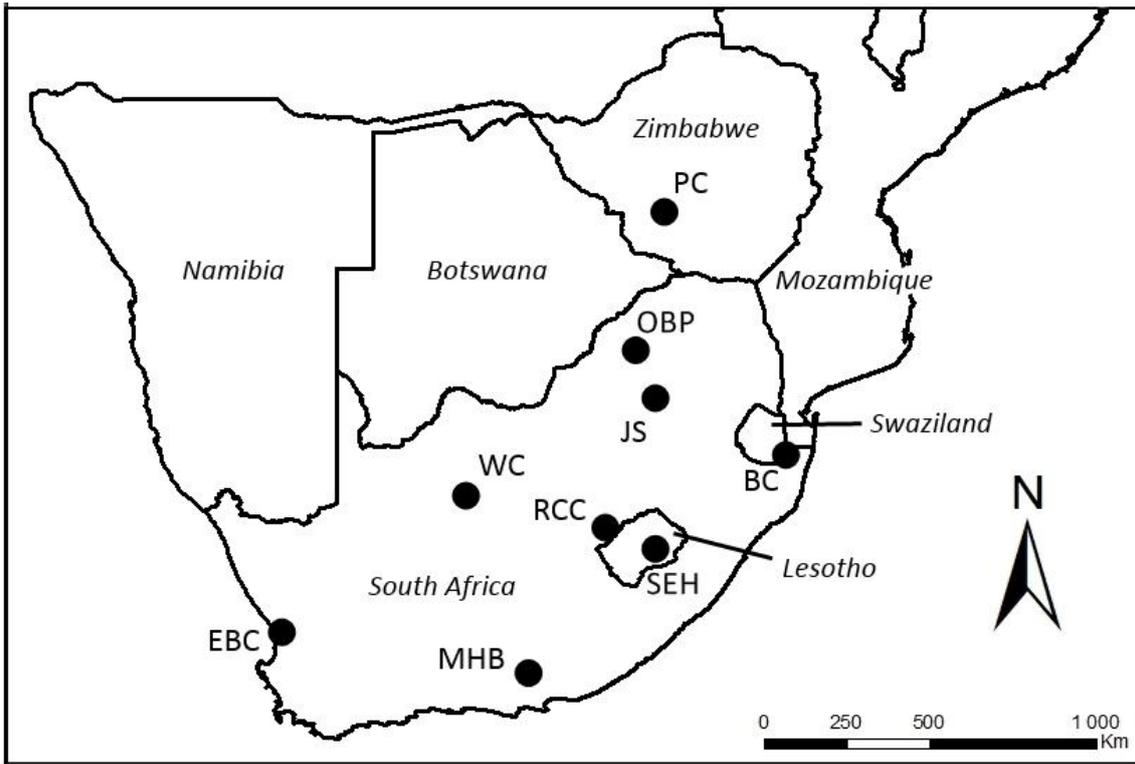


Figure 1.1: Major LSA sites in southern Africa mentioned in the text: BC, Border Cave; EBC, Eland's Bay Cave; JS, Jubilee Shelter; MHB, Melkhoutboom; PC, Pomongwe Cave; OBP, Olieboomspoor; RCC, Rose Cottage Cave; SEH, Sehonghong; and WC, Wonderwerk Cave.

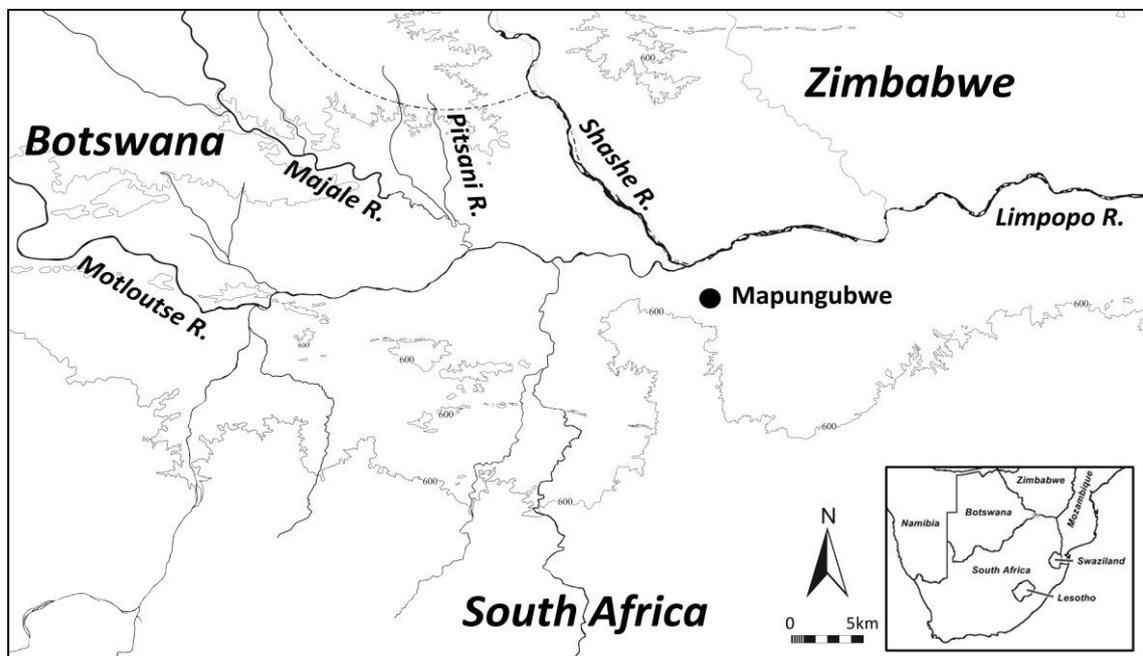


Figure 1.2: The Greater Mapungubwe Landscape.

Compared to other landscapes upon which foragers and agriculturalists interacted, Mapungubwe's is among the most significant in southern Africa. Foragers have been present on the landscape since at least 10,890 BC\* (van Doornum 2008), whereas agriculturalists settled here in the last 2000 years. After farmers established a political centre in the area around AD 900, economic and social developments over the next 300 years led to the establishment of southern Africa's first state level society, with its capital at Mapungubwe (Huffman 2000). This is one of the very few examples where foraging people witnessed, and arguably played a role in, state formation. Understanding their place in the agricultural world and how foragers changed to suit their new social position may lead to broader understandings on how they persisted into modern times with parts of their largely hunting and gathering lifeways still intact. On the Greater Mapungubwe Landscape, the Mapungubwe capital was abandoned around AD 1300, after which the regional foraging material record is said to have ceased; implying that by this point foragers had become reliant on, and partly integrated into, agricultural communities or abandoned the region altogether.

The goal of this project is to explore the value of a landscape approach in studying the forager archaeological record, and in so doing address some of the questions raised through previous LSA research in the area. Firstly, are there different LSA expressions in different site types? All of those used in van Doornum's (2005) model are located in the sandstone belt of northern South Africa and all are rockshelter excavations, yet their context is not always the same: the Balerno sites are said to be relatively isolated, whereas Little Muck is near to a number of agricultural homesteads. Nevertheless, as van Doornum (2005: 192) herself acknowledges, using a handful of sites that fulfil a similar function to one another to formulate a regional model poorly represents the forager record. The various LSA expressions are not contained in single sites and must be observed from a variety of site types that are related to one another chronologically (Binford & Binford 1969).

By using a site distribution approach, can we observe changing settlement patterns and the changing LSA cultural sequence, particularly over the last 2000 years when foragers and agriculturalists came into contact with one another? For example, previous studies suggest that after the arrival of farmers, possibly as early as AD 350, the archaeological record left by foragers began to change in terms of the stone tool record (a proliferation of scraping tools while the

\* I use BC and AD when referring to dates within the LSA period, the last 20,000 years, because this is generally how scholars have referred to periods in southern Africa that date to within, at least, the last 2000 years (e.g. van Doornum 2005; Huffman 2007). For pre-LSA periods I have used BP. I have not used the AD designation when referring to dates post-1600, which is considered as broadly the European period. I have used OxCal 4.1 and ShCal04 to calibrate my dates whereas with some of the published dates the Pretoria curve was used.

number of backed tools diminished), an increase in the number of jewellery and bone points, also referred to as bone tools, and the appearance of ceramics, glass beads and domesticated fauna and flora (Deacon 1984a; Mitchell 1997). By AD 1300, when Mapungubwe was abandoned, the forager material record ceased altogether (van Doornum 2005: 196). After this point there are no forager assemblages in any of the excavations as they are generally recognised as containing diagnostic stone tools (microlithic and macrolithic), organic beads (ostrich eggshell but also land snail shell and bone, including manufacturing debris), decorated ostrich eggshell, bone tools, fishing equipment (locally dependent) and rock art (Lombard *et al.* 2012). If this truly represents the disappearance of the forager material sequence, does it mean that foragers left in search of 'free' space or that they assimilated into the farming economy? Until a regional study is performed, it is not possible to determine what the outcome may have been.

Van Doornum's (2005) model also relies on a series of changes that occurred in the LSA record at specific times but does it apply across the whole of the regional landscape? In my previous work in northern South Africa (Forssman 2010), I noticed two important aspects of the local LSA. First, little uniformity exists between van Doornum's (2005) excavations and that of Hall and Smith's (2000). Cultural changes at each of the sites concerned are incongruent with one another, demonstrating a sequence displaying cultural variability, possibly related to site context, the nature of forager interactions with agriculturalists, or forager decision-making. Second, I analysed 25 surface LSA assemblages and was unable to relate all of the open-air assemblages, typologically, to those excavated in rockshelters. Although still undated, there is clearly at least one additional LSA expression present that does not exist in rockshelters (Forssman 2010, 2013). Thus, the use of a narrow site-set, referring to the site types used, does not aid in recording archaeological variability found across the landscape. What, then, does record this variability?

The only way effectively to overcome archaeological inter-site variability is by performing a landscape study. Such an approach enables one to observe a wider spectrum of sites represented across the landscape, between ecological zones and used for different reasons. These sites are all related and form part of a larger framework that persists across the landscape (Binford 1964, 1983). To test this method, I chose north-eastern Botswana as my study zone for a number of reasons. First, it is part of the Greater Mapungubwe Landscape and has seen very little previous research, resulting in a limited understanding of the local forager sequence. Second, the Limpopo River is the national border between South Africa and, to the north, Botswana and Zimbabwe, and there are major geomorphological and ecological zones that could have, in the past, formed cultural boundaries. Previous studies have, however, largely ignored this possibility and assumed

that the same archaeological sequence recorded in northern South Africa applies to both Botswana and Zimbabwe. Lastly, due to the intense socio-political developments leading to state formation, the variety of forager responses to agricultural contact are expected to be diverse, and yet only rockshelters have been excavated. We are not able to fully assess the impact of contact if we do not consider changing settlement patterns and study a variety of site types. The lack of research in this part of Botswana and its closeness to South Africa provide an ideal opportunity from which to study different forager sequences across a landscape and assess the role that proximity between major agricultural centres as well as homesteads played in influencing foraging lifeways.

Therefore, the first question is what characterises the local forager sequence and how does this compare with other parts of the landscape, particularly South Africa where all of the work thus far has been conducted? Also of interest is whether different sections of the landscape were used differently. Several distinct ecological zones can be identified and formed different human environments in which foragers would have interacted differently with each other, the landscape, herders and agriculturalists. Although I use the term Greater Mapungubwe Landscape we must remember that, in reality, it was likely composed of multiple 'landscapes' and what foragers and farmers considered a 'landscape' may also have differed (see Tilley 1994). Thus, how did the distribution of resources, both natural and human, affect the forager sequence? Furthermore, was the impact that agriculturalists had on foragers consistent across the landscape and between sites? It is important to understand the way in which agriculturalists changed foragers. The modern Bushman societies that were studied so intensely by anthropologists and heavily relied upon by archaeologists wishing to reanimate their finds and understand past foraging societies are, at least in part, the result of these interactions.

By using a landscape approach to archaeology, we may be able to gather enough data to move beyond ethnographically dense archaeological interpretations and give a greater voice to the variation of the archaeological record itself. For example, on the Greater Mapungubwe Landscape Balerno Main has been argued to be an aggregation site, whereas Balerno 2 and 3 are thought to have been dispersal camps (van Doornum 2008). I am not convinced that because one site has a large number and diversity of artefacts it is an aggregation camp, with its various connotations, and thus do not believe that we can show that these ethnographic cycles occurred simply because we have sites that 'match' behaviour practised amongst modern Kalahari Bushmen. *Hxaro*, reciprocal gift exchange of the kind found among contemporary Ju/'hoansi Bushmen, is another practice that is drawn into question here. Debating the value of ethnography in

archaeological research has been done so for many decades in studies performed across Africa (e.g. Wilmsen & Denbow 1990; Solway & Lee 1990; Stahl 1994), and in other parts of the world (e.g. Headland & Reid 1989). Thus, the findings made here appeal to a global discussion of whether, and to what extent, we can reliably use ethnography to understand the archaeologically preserved past.

## **1.2 HYPOTHESES AND AIMS**

For this dissertation, certain hypotheses have been established, which are:

1. The spectrum of forager expressions across the Greater Mapungubwe Landscape is more variable than what has previously been detected from excavations in a limited number of rockshelters sites, and all in northern South Africa.

Performing a landscape study allows one to observe, record and study a greater spectrum of forager expressions and responses, at individual sites, while also grasping how they differ from one another, in order to better understand forager lifeways and the way these changed over time. To test this, a range of site types, or sites in different contexts, must be studied that demonstrate discontinuity in the cultural record as it is distributed across the landscape.

2. Likewise, the spectrum of forager responses to the arrival of agriculturalists on the Greater Mapungubwe Landscape is more variable than previously thought or recorded.

Chief among these are shifts in forager settlement patterns. I suspect that due to farmers restricting forager mobility and possibly diminishing or destroying their resource base, foragers would have been forced to rely on agricultural practices in order to survive, or abandon the landscape in search of 'free' space. In this event, I expect that most foragers living on the Greater Mapungubwe Landscape after the establishment of the Mapungubwe state either did so as agriculturalists or in very small numbers, possibly engaging in casual labour or trade arrangements. By excavating and dating forager occupied sites across the landscape and agricultural homesteads which contain forager assemblages we can test whether their settlement pattern changed and they began living in sedentary camps.

3. Changes in the forager sequence may be detectable in the archaeological record, specifically in site types, settlement patterns (as mentioned above) and stone tool, bone point, ceramic, glass bead and subsistence assemblages.

For example, at Little Muck, which is near to a major agriculturalist centre, there is ample evidence indicating exchange between foragers and farmers, primarily in the form of an increase

in stone tool scrapers, bone points and a proliferation of organic beads, suggesting an emphasis on trade when coupled with the appearance of ceramics and glass beads, which were acquired from farmers (Hall & Smith 2000). At Balerno Main, on the other hand, very little evidence of exchange was recorded and it has been argued that this is due to the site's relative isolation; no farmer homestead has been recorded within 3km of the site (van Doornum 2008). Therefore, to understand how foragers changed due to contact with farmers a range of sites must be studied along with various archaeological assemblages.

4. Through studying a variety of forager expressions, including changes linked to contact with agriculturalists, the limitations of ethnography can be demonstrated.

Since the 1980s there has been considerable dissent regarding the value of using the ethnographic record to interpret the past, and since the late 1990s there has been very little effort, other than in the field of rock art (e.g. Jolly 1996; Solomon 1997, 1998), to curb our reliance on ethnography; Sadr (1997) and Mitchell's (2003) work are two of the most recent papers devoted to this topic outside the realm of rock art. By incorporating a more complete spectrum of different forager expressions it is possible to provide the evidence required to show that ethnography is incapable of accounting for cultural variability and change. Too often archaeologists draw upon a variety of ethnographic accounts, extracting features from very different Bushman groups that suit their argument, and lumping them together to create a non-realistic Bushman group, thus homogenising the archaeological record using a very time specific body of evidence (see Earle 1987).

In order to test these hypotheses, this dissertation has the following aims:

- To develop a LSA forager sequence for north-eastern Botswana over the Holocene period with special attention to late Holocene sites;
- To observe and date changes in the forager sequence and compare these to those found in northern South Africa and further abroad;
- To use a variety of site types to develop an understanding of the cultural patterning across the landscape. These include so-called aggregation and dispersal camps as well as more non-descript ephemeral sites, stone tool assemblages in agriculturalist homesteads and trade workshops, all distributed in a variety of contexts such as in the sandstone belt, northern basalt zone, in close proximity to farmers and further away;

- To improve our understanding on the relationship between foragers and farmers over the last 2000 years by studying foragers from a farmer perspective;
- To study the Holocene using a landscape approach, testing current site-specific approaches used by archaeologists, and assess the value of using such an approach; and,
- To contribute to discussions on the use of ethnography as an analytical technique by taking into consideration aggregation and dispersal camps, *hxaro* gift exchange and settlement patterns.

### **1.3 FRAMEWORK AND GOALS**

Testing the hypotheses is done using a particular framework, namely, landscape archaeology. The key principles of this approach are that distributed across the landscape are a variety of cultural expressions, often dissimilar to one another even though part of the same techno-complex (Foley 1981a; Cosgrove & Daniels 1988). More specifically, the forager sequence, for example, is composed of various expressions and these are not all found at a single site but stored in various locations across their home-range or territory (Binford 1964). In considering these assemblages and relating them chronologically as well as contextually, a more complete archaeological sequence can be established. It is based on this principle, and by using the appropriate methods, that this project seeks to achieve its goals.

It is fairly obvious how this method and theoretical framework might aid the establishment of a local sequence, and it follows that doing so will make it possible to observe and date any cultural changes that may be present. Studying forager and farmer interactions is also enhanced by this approach through refining the resolution at which we view the past; by performing a landscape study a greater spectrum of site types are studied along with an equally diverse set of interaction-driven cultural outcomes or manifestations, observed through material and settlement change. Thus, as a theoretical framework, landscape archaeology will assist in achieving the aims of this study, testing the hypotheses that have been setup and reaching meaningful conclusions.

The overarching goal in this dissertation is to develop a refined forager sequence not only for north-eastern Botswana but for the Greater Mapungubwe Landscape, which also includes parts of northern South Africa and south-western Zimbabwe. The various changes and forager expressions noted across the landscape have been placed into a broader sequence allowing us to more effectively understand the cultural processes, as far as they can be observed through the material record, which led to social, political and economic reform in the local archaeological

sequence. In making these observations from a regional perspective, I will not only contribute to our understanding of forager lifeways but also test the values of landscape archaeology in a southern African perspective, providing a more effective method for studying the intra- and inter-regionally variable forager sequence. From this work a number of additional questions arise for future research on the role foragers played on the Greater Mapungubwe Landscape.

#### **1.4 STRUCTURE OF THE DISSERTATION**

Chapter 2 establishes a structural and theoretical framework for this project, expanding and detailing that which has been mentioned above and outlining certain key interpretive bases from which I will assess and interpret the data collected for this doctoral project. Chapter 3 then introduces the research area, the Greater Mapungubwe Landscape, and then describes the local topography, fauna and flora and rainfall history. In Chapter 4, the frontier framework into which I place the local archaeological record is presented, followed by a review of the findings made in previous studies on the Greater Mapungubwe Landscape and a review of the little archaeological work that has been conducted in the Northern Tuli area of Botswana, the focus of my own fieldwork.

Chapter 5 presents the methods for the archaeological survey and the seven excavations I conducted in Northern Tuli. The former is presented along with a review of archaeological surveys, whereas for the latter an overview of the typological systems used for analysing the excavated material is mentioned before each site is dealt with alone. I present each site with the rationale for excavating it, the methods used and the stratigraphy observed. Chapters 6 and 7 present the data collected during the survey and excavations respectively.

Chapter 8 then develops a discussion on each excavated site. I address each site by first discussing the chronology, followed by reviewing some key finds and then testing the applicability of J. Alexander's (1984) frontier model where possible. Chapter 9 combines this information to address the key points raised in this dissertation: the analytical value of ethnography, forager settlement patterns, viewing foragers from a farmer perspective and the value of landscape archaeology. Lastly, Chapter 10 draws together the main conclusions of the project, demonstrating the value of studying the entire landscape and how it has been used in this study to improve our understanding of the local LSA, before making various suggestions for future research.

## **CHAPTER 2: THEORETICAL AND STRUCTURAL FRAMEWORK**

The aim of this chapter is to outline the various theoretical and structural components that will be relied upon in this project. The framework developed here has been used to inform the interpretation of the data collected and from it infer meaning. As such, there is a need to explicitly demonstrate the perspective from which I assess the value of various archaeological patterns that were recorded across the Greater Mapungubwe Landscape and within the excavated assemblages. There are three basic tiers to the framework used here, and each is addressed separately below; they are: a theoretical perspective that deals with ethnography, followed by an assessment of landscape archaeology, and lastly a material perspective addressing the meaning of specific changes in the artefact assemblage, such as in the stone tool, bone point, ceramic, bead categories and subsistence.

### **2.1 THEORETICAL PERSPECTIVE**

#### **2.1.1 Ethnography in archaeology and the great debate**

Bushman ethnography has been extensively used over the past four decades to inform archaeological interpretations of southern African hunter-gatherers (e.g. Yellen & Harpending 1972; Yellen 1976; Brooks 1984; Brooks & Yellen 1987; Kent 1992; Jolly 1986; Wadley 1986, 1989; Barham 1992; S. Hall 2000). Ethnography is not only used in southern Africa to assist in archaeological inquiry but also in other parts of Africa (see MacEachern 2000) such as in the interpretation of faunal patterns at archaeological sites in East Africa (Lupo 2001), the obscure images in Pygmy rock art, such as dumbbells and circles (Namono 2012), and in the Dogon territory of Mali (Van Beek 1991). Even further abroad it has been used to interpret Upper Palaeolithic art of Europe (Lewis-Williams & Dowson 1988) and Northern Eurasia (McCall 2007); the archaeology of the Inuit in Canada (Hood 1998) and Native Americans in the United States (Trigger 1980; Lightfoot 1995); interaction between foragers and farmers in the Philippines (Junker 1996) and understanding Australian landscape patterns (McNiven 2004), settlement history and rock art (Gould 1971). As a theoretical framework it has been used globally, but its interpretive value has been criticised. It was once thought that the anthropological study of any First or Indigenous People offered archaeologists a unique insight into prehistory (see Lee 1976; Kent 1992; Sadr 1997). However, in southern Africa our use of the ethnographic record been argued as being overly centred on Kalahari Bushmen (e.g. Parkington 1984; S. Hall 1990; Mitchell 1997, 2005a; Sadr 1997, 2002a), creating a false 'pan-San' impression (Jolly 1986, 1996; Skotnes 1991; Solomon 1997; Guenther 1996), and as being largely devoid of any historical context (e.g.

Schrire 1980; Denbow & Wilmsen 1986; Earle 1987; Wilmsen 1989; Wilmsen & Denbow 1990); similarly, the use of Bantu farmer ethnography has been criticised as an interpretive tool (e.g. Lane 1994; Whitelaw 2013). These conflicting opinions of the ethnographic record's applicability form the core of the Kalahari Debate (Deacon & Deacon 1999), which at times has incited fiery discussions (see Wilmsen & Denbow 1990 with comments and Lee & Guenther 1991 for examples).

The outcome of this debate is a general agreement that foragers are part of an intricate socio-cultural system with considerable inter- and intra-regional, social and cultural variations (Barnard 1992). Needless to say, before we can fully explore the arguments presented in this debate, or its deep academic structure (see Guenther 1996), we need to consider both the ethnographic and archaeological records, because, as Kent (1992) argues, much of the debate is fuelled by the assumption that the ethnographic record is analogous with the Holocene LSA sequence. I am not going to summarise the ethnographic record here – this has been done elsewhere (Barnard 1992) – instead I will focus on two examples where it has been used to aid archaeological interpretation and subsequently criticised, after which I will turn more specifically to the Kalahari Debate.

### **2.1.2 Ethnography and archaeology**

Aggregation and dispersal settlement patterns and *hxaro* gift exchange are two examples where ethnography has been used to explain the archaeological record. Another example is rock art. The interpretation of forager artwork relies on an ethnographic decoder (e.g. Lewis-Williams 1974, 1980, 1981), and with it we now know that forager art is mostly a narrative of the spirit world and related to tasks such as the trance dance, healing and the capturing of rain animals (see Lewis-Williams & Pearce 2004). However, there are two main arguments that have stemmed from the emphasis rock art studies have placed on ethnography: the specifics of ethnography may not apply throughout southern Africa (e.g. Jolly 1996; Solomon 1997) and Bushman interactions with Nguni (Thackeray 1994; Prins 1996) and Sotho farmers (Jolly 1996) and Khoekhoe (Hoff 1997) and Nama herders (Jolly 2008) may have led to derived concepts in the artwork, more so if the artists were part of an ethnically mixed group as with the AmaTola in the southern Lesotho mountains (Challis 2012) or Vaalpanse in South Africa's Limpopo Province (J. van Schalkwyk 1985). In both arguments, and with the examples following, ethnography is problematised as an interpretive tool.

### 2.1.2.1 Aggregation and dispersal camps

In Wadley's (1986) PhD thesis, she discussed her findings at two rockshelters: Jubilee Shelter and Cave James, both in the bushveld complex of the Magaliesberg, South Africa. Both sites have a long Stone Age sequence, but from 2000 BC they were both used intensively (Wadley 1996). However, despite their closeness and relative ecological similarities, the sites have distinctive artefact assemblages (Table 2.1). Notably, during the post-classic and late Wilton occupations, from about 3000 BC until the beginning of the first millennium AD at Jubilee (Wadley 1992), Wadley (1987) concludes that the sites were used in a single occupation cycle but represented different phases: aggregation versus dispersal. Her argument drew heavily on the ethnographic record and hinged on differences in the artefact and faunal profiles present at each site. Wadley (1987, 1989, 1992, 1996) concludes that based on the list of cultural attributes present at Jubilee, their great density and what appear to be gender separated zones, it functioned as an aggregation site, whereas the lack of such evidence at James indicates that it was occupied during the dispersal phase.

This neat correlation between the amount of different cultural attributes at Jubilee and James and relating it to aggregation and dispersal phases has not gone unchallenged. Barham (1992), the main propagator of the critique, began his evaluation by looking at the ethnographic record. He argues that because the aggregation and dispersal sites described by the ethnographers were at open-air camps, one cannot assume that the same social rules and structures as laid out by Brooks and Yellen (1987) were present in rockshelters. They found that a camp followed a basic structure: the centre of the camp was open and it was here where children played and the trance dance was performed, surrounding this was the hut zone and each hut had its own hearth – the locus of activity where the greatest accumulation of artefacts is found – and behind this was the outer zone where offensive activities occurred, such as hide preparation. Dispersal camps were less structured and this spatial organisation may only have partially existed (Brooks & Yellen 1987). As useful as this breakdown may be, and by Yellen's (1976) own admission, very little is known of forager social organisation and camp structure in rockshelter occupations and whether these followed the same pattern. Furthermore, Yellen (1977) found that between 16 dispersal camps which he analysed, little uniformity existed in terms of camp structure and the build-up of cultural material.

Barham's (1992) concern with the applicability of the ethnographic model is not only because of Yellen (1976) and Brooks and Yellen's (1987) findings, but because of his own work at Siphiso in Swaziland. At this small shelter ostrich eggshell beads are present, albeit in varying degrees,

throughout the entire sequence. Bone points are rare and occur with evidence of eyed-bone bead production. Bladelets are common in the stone assemblage, but few are backed. Haematite, possibly transported from 100km away, was found, as well as unmodified quartz crystals. Based on Wadley's (1987) criteria, the archaeological record at Siphiso appears typical of aggregation site assemblages.

**Table 2.1: Jubilee Shelter and Cave James artefact assemblages (from Wadley 1987, 1996).**

	<b>Jubilee Shelter</b>	<b>Cave James</b>
Stone tools	Retouched formal tools	Informal assemblage
Raw material	Emphasis on exported, fine-grained rock from 20 to 30km away	Predominant use of locally available quartz and quartzite
Jewellery	Large ostrich eggshell and bone bead assemblage	None
Bone points	Bone points and manufacturing debris present	None
Fauna	Combination of large hunted meat packages and small snared or trapped species	Small meat packages
Ritual items	Middle Stone Age tools, quartz crystals, rubbed pebbles, magnetite chunks and a striated soapstone chunk smeared with red ochre	None

However, as Barham (1992) notes, the rockshelter is small, approximately 34m<sup>2</sup> in area, and has no outdoor space due to its location on the side of a steep slope. Jubilee is also small but has a large outdoor zone that was utilised by the occupants (Wadley 1987). In addition, the faunal remains at Siphiso are typical of so-called dispersal camps in that it is dominated by small meat packages (Barham 1989). Therefore, it fulfils the requirements, in part, of both site types. Barham (1992) further argues that two neighbouring open-air sites that have poor organic preservation, few formal tools and low frequencies of haematite are aggregation sites, despite them not adhering to Wadley's (1987) criteria.

Wadley (1992) reassessed Siphiso and, based on the numbers of beads and worked bone points, argued that it was a dispersal site since it pales in comparison to the density of such artefacts at Jubilee. But, the aggregation and dispersal model is based on the tenet that the ethnographic record is directly analogous with the archaeological record in all environments (Barham 1992). However, in the ethnographic record Bushman groups in similar environments are culturally

disparate (Guenther 1996) and this is evident in the archaeological record across regions in terms of artefact assemblages and subsistence patterns (see Wadley 2000 for a review). Therefore, we cannot expect regional signatures of the same occurrence, such as the aggregation and dispersal model, to be directly analogous.

With this in mind, Walker (1995a) offers an entirely new view on aggregation and dispersal sites. He asked if two beads mean little gift-exchange and 20 means a lot, what do we make of 200? In the Matopo Hills of south-western Zimbabwe Walker (1995a, 1995b) found sites with many thousands of beads and if the aggregation model had been developed here, even Wadley's (1987) Jubilee would be cast in doubt. While a valid argument that draws attention to regional variability, it must be accepted cautiously; using site density values to interpret the archaeological record, which Wadley (1986), Barham (1992) and Walker (1995a) have all done, without fully understanding the depositional rates, area of settlement and length of occupation is problematic in that we cannot tell over what time frame or how rapidly the artefact assemblage accumulated at the site (cf. Jerardino 1995); what might appear to be an aggregation site might actually be a series of occupations superimposed on one another because of a slow depositional rate.

Perhaps the conclusion Barham (1992) arrives at should be kept in mind: foragers lived across the landscape in varying fashions and the predominantly Ju/'hoansi-focused ethnography used by archaeologists does not account for this variability (see Walker 1995a; Jolly 1996; Mitchell 1997, 2005a). The aggregation and dispersal debate highlights these unevenly represented features of the Bushman culture and its representation in the archaeological record. On the one hand, it is a neat model that fits the ethnographic record succinctly (Wadley 1987, 1989, 1992, 1996; van Doornum 2008), yet it has also been suggested that the ethnographic record constrains archaeological interpretations and does not account for intra-regional variation (Barham 1992; Walker 1995a; Sadr 2002b).

### **2.1.2.2 *Hxaro*: reciprocal gift exchange**

Wiessner (1982: 72-74) found that gift exchange was integral in Ju/'hoansi society. By the time a couple marry they each had between 10 and 16 different *hxaro* partners. These partners may have been kin related or were friends and could have lived over a wide region of the territory, sometimes in excess of 100km away. Importantly, there was also an understanding between gift-givers that they had access rights to water and plant resources within the *hxaro* partner's territory (Wiessner 1982: 74-77). Gifts included general non-consumable items such as clothing, jewellery, weapons, tools, cooking utensils and trade goods, which included pots and tobacco

(Barnard 1992). Obviously, many of these items were not present more than 2000 years ago, but it has been assumed that the practice continued even though the exchange items changed (cf. Mitchell 2003); iron implements, for example, were traded but would not have been available before the arrival of agriculturalists.

Lee (1979), Tanaka (1980), Silberbauer (1981) and Wiessner (1982) all showed that gift giving and gift manufacture occurred at aggregation sites. Yellen (1977) does mention that at times gift manufacture may have occurred at so-called dispersal camps and D. Bleek (1928) found that amongst the Nharo gifts are requested and made in preparation for the aggregation period. Either way, Wadley (1987) argued that evidence of *hxaro* is archaeologically visible. Mazel (1989) also argued in favour of *hxaro* in the Thukela Basin of KwaZulu-Natal as a way that groups formed alliances and Hall and Binneman (1987) suggest that goods found in mid-Holocene graves in the Eastern Cape may be *hxaro*-related.

By looking at the ethnographic record it becomes apparent that the use of *hxaro* to explain the archaeological record is problematic, since many Bushman groups did not practise reciprocal gift exchange at all (Barnard 1992). Heinz did not find any form of gift giving, for example, amongst the !Xo of south-western Botswana (cf. Barnard 1992: 67) and the same was true of the G/w and G//ana of the central Kalahari (see Tanaka 1976; Silberbauer 1981). Further south, in the Northern Cape, the /Xam practised a form of delayed and reciprocal gift giving, in some circumstances, but to a lesser extent (Bleek & Lloyd 1911: 274-285; see Mitchell 2003). Therefore, even amongst modern and recent Bushmen the practice of *hxaro* was restricted to certain groups.

*Hxaro* must not be confused with trade or non-reciprocal gift-giving. Silberbauer (1981: 237-238) found that gift-giving was taught to initiates who were told not to expect gifts in return, and even amongst relatives gifts were given with this same expectation. D. Bleek (1928: 37) recorded a bartering process between Nharo and ≠Au//eisi traders for skin, wooden utensils and metal items. It has been argued that Bushmen were also involved in long-distance mercantile trade for Tswana farmers in Botswana and traded for a range of items including coffee, tobacco, wooden bowls, metal tools, glass beads and cowrie shells (Wilmsen 1982, 1986; Gordon 1984). Bushmen used bush meat, hides, horns, ostrich feathers and shell beads to obtain such items (Gordon 1984: 207). Thus, gift items found in archaeological sites might equally indicate trade and not necessarily *hxaro*.

Mitchell (2003) argues that the presence of ostrich eggshell beads and other items such as arrowheads, represented archaeologically by bone points and segments, while being *hxaro* trade goods amongst the Ju/'hoansi, did not necessarily have the same role in other parts of southern Africa. He continues to argue that items such as ostrich eggshell can be found in most areas in southern Africa and so beads made from it need not move far. Even in the absence of bead-manufacturing debris, we cannot say what distance the shell was transported over (J. Deacon 1984a). Bone points and weapon composites can also not be shown to have moved between people or over space (Mitchell 2003). Another issue is misinterpreting the archaeological record; it may be that items such as beads, bone and stone implements were made for personal use (Walker 1995a: 210), confusing the issue of identifying *hxaro* items. Complicating the situation further are perishable items that may have been traded such as honey, wooden and metal implements, animal products and subsistence and smoking goods (Schapera 1930).

It is not always possible to determine whether artefacts were given as gifts or transported over a large distance (Mitchell 2003). Coupled with the inconsistent practice of *hxaro* between Bushman groups (see Barnard 1992), one wonders whether this is a case of ethnographic selection, in which features of modern Bushman society are selected to explain the past, regardless of which group they come from or if they were practised by all Bushmen between different ecological contexts. If so, like aggregation and dispersal and indeed aspects of rock art, archaeologists have relied on a generalised foraging signature that has been developed from merging various actual Bushman groups to explain the archaeological record. *Hxaro* is such an example of ethnographic homeostasis, which has then been applied to much of southern Africa.

### **2.1.3 Setting the record straight: affluent or underclass?**

The Kalahari Debate is not the only academic debate involving ethnography and its application in archaeological studies, but it certainly has generated the greatest involvement by academics all over the world (Mitchell 2009). The belief that modern hunter-gatherers could be used to explain the past comes from the view that they are 'pristine' or 'isolated' people who have not been affected by interactions with herding or farming communities (Headland & Reid 1989). Examples where academics have perceived foragers in such a way include the Yanomamo (Chagnon 1983), Philippine Negritos (e.g. Fox 1963; Eder 1978), Australian Aboriginals (e.g. Spencer & Gillen 1912; Radcliffe-Brown 1930), the Mbuti Pygmies of eastern Congo (Hart & Hart 1986), Borneo's Penan foragers (Headland 1987) and, of course, Bushmen (B. Campbell 1983). However, in all of these cases it has been realised that the concept of 'isolated' hunter-gatherers is a misnomer, stimulating debate into whether anthropological studies can be used to explain the past (for a

review see Headland & Reid 1989; Stiles 1992; Kelly 1995; Kent 2002a); this debate is also not unique to foragers (e.g. Van Beek 1991). While it is important to discuss the global ethnographic debates, for the purpose of this project it is the Kalahari Debate that is most relevant.

The rich ethnographic record available to us does not offer a cultural dictionary to Bushman studies, past or present. While there are broad similarities between Bushman groups, the considerable variability between them does not afford researchers the luxury of having an unbroken ethnographic record across the southern African landscape (Barham 1992), or one unaltered by history (McIntosh 1999). Prescribing ethnographic solutions to archaeological problems, which has been done not only in southern Africa but also to East African hominins and prehistoric groups in the north-eastern United States (Root 1984: 29), introduces a suite of new symptoms. It is this use of the ethnographic record as an archaeological interpretive technique that has generated academic conflict and resulted in the Kalahari Debate (Kent 1992); there is an assumed link between modern people and past communities through a shared historical connection (Stahl 1994). Yet ethnography cannot be discarded as a false concept of Bushmen, as some have argued (e.g. Wilmsen 1989; Wilmsen & Denbow 1990; Gordon 1992), a view which is a critique of earlier opinions of Bushmen being cultural isolates and analogous to Holocene hunting and gathering human populations (e.g. Lee 1976, 1979; Tanaka 1976, 1980; Silberbauer 1981; Lee & Guenther 1991; Solway & Lee 1990; Kent 1992). These two arguments are the opinion of the revisionists or integrationists, spearheaded by Wilmsen and Denbow, and the traditionalists or isolationists, in the case of Lee and colleagues.

Essentially, the revisionists question the validity of ethnographic data, its use as an archaeological tool and the autonomy of modern Bushmen (Sadr 2002b). It is structured, in part, on historical observations made by early travellers and commentators who encountered Bushmen (which were later criticised as being misread; Lee & Guenther 1991). For example, Siegfried Passarge (1905, 1907), who features prominently in Wilmsen's (1989) discussions, believed that previous commentators had presented a caricature of Bushmen (cf. Fritsch 1906), and that they are in fact the result of many decades of political upheaval (Passarge 1905). Wilmsen and Denbow (1990; and elsewhere Wilmsen 1983, 1989) considered these views a *prima facie* as it was recorded well before the Harvard School of Ethnographers began their work (cf. Shott 1992) and from it, along with a number of other sources, conclude that "'Bushmen' and 'San' are invented categories" (Wilmsen & Denbow 1990: 490). The reason for this creation was because of the role they occupied in farmer society and, with this in mind, the revisionists reject the arguments set forth by Lee (1976) and colleagues. In their opinion, much of modern Bushman social organisation is

the result of their relations with farmers (Woodburn 1988). Wilmsen (1989) argues that foragers were part of an extensive network of mercantile trade, based on finding agriculturalist items at forager camps, and suggested this began around AD 500. Foragers, he argues, were essentially 'middle-men' in trade relations across large areas and between different people (cf. Guenther 1996), resulting in the need to be mobile, carry few items and not settle in a single camp. The result of their relationships with agriculturalists and their role as mobile merchants is what Wilmsen (1989) considers the modern Bushman condition. Their appearance today is due to them fulfilling the underclass role in forager/farmer relations. Therefore, the view that they are isolates is incorrect and only exists because, as the underclass, Bushmen occupied lands that farmers did not favour, such as parts of the Kalahari Desert (Wilmsen 1989; Wilmsen & Denbow 1990). Revisionists believe that Bushmen, as hunter-gatherers, are a created culture produced by the intersection of various processes including class distinction and ethnogenesis (Schrire 1980), and so one cannot use the ethnographic record as an analogy to hunter-gatherers and, due to contact, modern Bushmen cannot be considered true foragers. Humphreys (2007) even argues that Australian Aboriginals would be more analogous with LSA foragers because they were mostly isolated from the rest of the world until Europeans first settled in what is now Australia starting in 1788. Essentially, revisionists claim that Lee and his advocates have neglected to account for historical factors, primarily their interactions with agriculturalists, which resulted in Bushmen as they were encountered in the Harvard School's study.

However, Kent (1992) argues that contact did not modify Bushmen so much that they can no longer be considered hunter-gatherers. Interaction need not result in either assimilation, social enslavement or subjugation (Zvelebil 1986; Patterson 1990), as Wilmsen and colleagues seem to imply (Solway & Lee 1990; Lee & Guenther 1991; Kent 1992; Sadr 1997), but could also result in avoidance and co-existence, which occurred in a variety of degrees (Kent 2002a). In some instances foraging people are known to oscillate between owning livestock or not (Barnard 2008) and, for example, in Central Africa some Bagoumbe Pygmies plant their own gardens (Pederson & Waehle 1988), hunt commercially (Hart 1978) or possess chickens (Fisher 1986). Likewise, the Aché foragers from Paraguay, for instance, spend less than 40% of their time on foraging tasks and for the rest they involve themselves in horticultural activities (Hill *et al.* 1987: 5). It is not unusual, nor should it be (Ames 2004), for foragers to occasionally or even permanently take on agricultural practices. Therefore, the possibility that southern African foragers were interacting and integrating into a farming economy without becoming serfs or subordinates should hardly come as a surprise.

Wilmsen and Denbow (1990) drew heavily on Wilmsen's (1989) study, which broke the prevailing 'pristine' image of Bushmen (Barnard 2006), and specifically his work the forager camp Xai Xai, north-western Botswana. Wilmsen argued that the presence of what appears to be a cattle tooth and bone associated with ceramics indicates encapsulation, showing that Bushmen were and have been part of mercantile trade for many centuries and are tethered to the agricultural economy. This idea is based on two principles: Bushman commodities found at agricultural homesteads and *vice versa* and rock art depictions of Bushman herders with cattle in Tsodilo Hills, amongst other locations (cf. Sadr 1997). From this, the notion of encapsulation is developed, referring to a client-patron relationship in which foragers were the underclass in the agriculturalist economy (Denbow 1984; Wilmsen & Denbow 1990). However, Yellen and Brooks (1989, 1990) challenged Wilmsen's (1989) findings at Xai Xai after they were unable to find any evidence of interaction with farmers in their excavations at the site, leading them to believe that the finds were intrusive.

Many late Holocene forager sites with evidence of interaction do not have a high density of agricultural items (Sadr 1997 and see Hall & Smith 2000; Sadr 2002b, 2005; van Doornum 2005 for examples), resulting in Sadr (1997: 107; author's note in parenthesis) asking: 'Do handfuls of potsherds and a few pieces of metal prove Bushmen encapsulation in the extensive EIA [*Early Iron Age*] social and economic network of the time?' Sadr (1997) concludes that, if this is the case, Bushmen did not gain much from their relationship with farmers, at times not even a complete pot. If foragers were subordinated, so Sadr (1997) and Kent (2002b) argue, one would expect this to be much more explicit in the archaeological record. Furthermore, if they were heavily involved in trade, one would expect to find evidence supporting such claims, and not root diggers with few clothes and ancient tools, as so often described by early travellers and missionaries (e.g. Lichtenstein 1815: 218-219; Hahn 1870; Elton 1872; Schinz 1891; Selous 1893; Passarge 1905; Dornan 1917). Simply put, there is little hard evidence supporting Wilmsen and Denbow's (1990) claims of Bushmen encapsulation, but there is ample evidence suggesting foragers were also not isolates (cf. Mitchell 2002: 292).

#### **2.1.4 Ethnography, an archaeological tool? A theoretical framework**

Beyond the debate of Wilmsen and company, the ethnographic record has been accused of creating a 'pan-San' approach to the archaeological record (see Jolly 1986, 1996; Mitchell 2004). At present, our liberal use of ethnography (e.g. Brunton *et al.* 2013) has resulted in applying Ju/'hoansi cultural features to most late Holocene archaeological sites regardless of their ecological zonation (Mitchell 1997). For example, Sealy (2006) has shown that in the southern

Cape, based on isotope data collected from human skeletons, some mid- to late Holocene foragers did not venture great distances inland for subsistence products but hunted and gathered in the coastal zone and had mutually exclusive territories. There have been more calls made to de-!Kung archaeology (see Parkington 1984; Mitchell 2004; Humphreys 2005, 2007) and more readily accept inter-regional differences (see Parkington 1980; Wadley 2000 for an archaeological discussion on this topic). Jerardino (2001: 865) calls for archaeology “to become the ethnography of the past and not just a wavering reflection of the recent ethnographic present”. If we cannot cease to use ethnographic and historical records to explain the archaeological past, Sadr (2002a) warns that we will not be able to find out more about the past than what we already know in the present.

With this in mind, the Kalahari Debate has spurred on archaeological research, particularly in the ways pre-colonial and modern Bushmen are viewed, studied and placed into the broader social network of ethnicities and relationships. Whereas previously Bushmen were seen as isolates (see Wilmsen 1989; Wilmsen & Denbow 1990), it is now acknowledged that they have interacted with farmers for many centuries (Kent 1992), but before this with herders and with one another. This interaction has led to a number of cultural changes usually in the form of assimilation, avoidance, partial cultural exchange or cultural reinforcement (e.g. Solway & Lee 1990; Robb & Miracle 2007). This simplification hides the fact that there are multiple degrees of each category and significant inter- and intra-site differences. For example, the forager records from Balerno Main (van Doornum 2008) and Little Muck (Hall & Smith 2000), both sites on the Greater Mapungubwe Landscape, are very different from one another. Further away in the Waterberg, sites show variable forager sequences that are also related to the arrival and movement of agriculturalists (Van der Ryst 2006). A similar pattern was recorded by Sadr (2002b) near Thamaga, Botswana, at Ostrich and Radiepolong Shelter. However, it is not only proximity to agriculturalists that may cause sites to contain different forager expressions during the last 2000 years, but also the labour opportunities presented to foragers, access to resources or the restriction thereof, trade and exchange and mobility (Solway & Lee 1990; Kent 1992). The result is a diverse forager cultural record for the past 2000 years, demonstrating the need to consider a number of sites in different areas of the landscape in order to fully understand the foraging cycle. It is this diversity of change and sharing of social and cultural resources during this time that led Sadr (2008a) to call for the adoption of an Age-less approach to archaeology, rather than categorising and defining people by their technological systems (i.e. Stone Age, Iron Age and also herder) because, in fact, there was a great degree of overlap.

It seems that the only way to address this issue of the applicability of ethnography in explaining the past is by the greater use of archaeological data from surveys and excavations. While, as Laudan (1996) cautions, using data alone cannot speak for the past, we must not by default resort to reflexive archaeological approaches because the possibility to do so arises; we should not compromise archaeological interpretations or 'truths' simply because there are modern stakeholders to the past (Hodder 2003). Data alone is meaningless and its interpretation relies on the use of a theoretical framework – in this case ethnography (e.g. Smith & Blundell 2004) – yet the applicability of that particular framework remains uncertain. In order to test ethnography as a model for interpreting the past I will study sites that do not fit ethnographic expectations, such as ephemeral camps or special-purpose sites (e.g. Stahl 1994) and look more specifically at ecological variability and the archaeological evidence within such zones, and between them to answer questions of regionality and whether a pan-San approach is useful. To achieve this, I will rely on landscape archaeology.

## **2.2 A LANDSCAPE PERSPECTIVE**

Landscape archaeology is based on the premise that evidence of human habitation in an area is widely distributed and exists in a variety of forms (Foley 1981a, 1981b). A study of the landscape thus seeks to identify these various archaeological forms and unravel the layers of cultural patterning or representation that have been deposited over time (Cosgrove & Daniels 1988: 1). Adopting this approach therefore requires an understanding of the region through archaeological survey and the recording of all archaeological features within the survey zone. At present, this has not been done in Northern Tuli and only parts of northern South Africa have been surveyed for LSA forager (Forssman 2010) and agriculturalist sites (Huffman 2012). In other parts of southern Africa surveys are largely informal (cf. Sadr 2009) and limited to favourable zones where sites are expected to occur (Walker 1998), with Sampson's (1984a, 1984b) work a notable exception. A consequence of this approach is a poorly developed archaeological landscape which often excludes sites, such as ephemeral open-air camps, because they are not deemed to have archaeological significance (Orton 2007). When conducted properly, structured surveys can help contextualise excavations and enhance our understanding of regional, settlement and mobility patterns. Using this information to select a variety of sites to excavate within different contextual zones, both ecological and social, further develops the archaeological sequence. Therefore, the central premise of any landscape study is an understanding of the cultural patterning of a region, which can be achieved through archaeological surveying.

Identifying and grading archaeological sites is the primary phase of any archaeological study (Tartaron 2003). Site inspection and comparison, whether through a well-defined survey or visiting sites identified by landowners, community members or miners, is an integral step before deciding on which site to excavate (Wandsnider & Camilli 1992). A well-structured survey makes it possible to identify regional cultural structures (Tainter 1998), past settlement and mobility patterns (Cherry 1983) and understand and characterise the landscape in terms of cultural organisation, such as has been done in Mediterranean Spain (McClure *et al.* 2008). Not only can this information inform regional studies, but it also allows excavations to be placed into the broader cultural perspective of a landscape (Cherry 1984; Tainter 1998). For example, Little Muck on the Greater Mapungubwe Landscape is argued to have been a workshop site used by foragers for trading with neighbouring farmers (Hall & Smith 2000). Huffman's (2009b) extensive surveying of the area around Little Muck enabled Hall and Smith (2000) to relate changes in the rockshelter's sequence to the peopling of the surrounding landscape. In the same way, van Doornum (2008) argued that the lack of homesteads around Balerno Main may explain why, during the last two millennia, the artefact record at the site remained fairly consistent; there were no nearby farmers to interact with and so there was little change in the foraging record. Surveys are also logistically simpler and economically less taxing than excavations (Cherry 1983), not to mention non-destructive (Dunnell & Dancey 1983). The benefits of a full archaeological survey are evident and the data acquired using this technique offers information about the nature and distribution of sites (Tainter 1998) and help to inform excavation results and place them into a cultural landscape (Wandsnider & Camilli 1992). Some even consider the survey as more important than the excavation itself (Bower 1986; Alcock & Cherry 2004)

Post-processual theorists, on the other hand, see surveying in landscape archaeology as an overly-empirical exercise (cf. Fleming 2006), one not capable of offering interpretations unless a theoretical framework, such as ethnography, is used (Smith & Blundell 2004). The argument continues that the landscape should be seen as an experience, one aimed at being 'sensual, interpretive, romantic' rather than hidden behind a presumed scientific objectivity (Pearson & Shanks 2001: 162). The motivation behind this is that it should be the goal of the archaeologist to translate the remains of the past into meaning in the present (Pearson & Shanks 2001: 156-8). While new thinking has been welcomed, it has, however, generally been concluded that the practical and theoretical framework of a 'post-processual' landscape approach is problematic and can easily be overcome by relying on the principles of conventional landscape archaeology (Fleming 2006).

This is not to presuppose, though, that landscape archaeology, and surveying, are problem free. In fact, when surveying there are many variables that need to be considered when conducting such an assessment (Sullivan *et al.* 2007; Lewarch & O'Brien 1981). When inferring settlement patterns, population dynamics, forager mobility and resource exploitation from survey results, uncaptured variables pose a risk to researchers who may misread the archaeological record, unless they are taken into account. For example, contrary to earlier opinions, not every site is observable on the surface and surface scatters are not necessarily good indications of what is contained within the deposit (e.g. Redman & Watson 1970; Flannery 1976). Techniques such as test pits (Nance & Ball 1986) and the analysis of anthrosols (Wells *et al.* 2000) can be used to understand the buried distribution of sites better, but are time consuming. The way in which these tests are performed, their frequency and depth, influences the identification of sites and the fine-grained resolution of the study; depending on the spacing between pits or anthrosol samples, sites might be missed. Other issues with survey results include the quality of the data (Cowgill 1989) and it remains a concern as to what the surface finds actually represent (Wandsnider & Camilli 1992): it may be a disturbed, mixed or a poor representation of the entire site. Dating also frequently remains a problem (Sadr 2009) and with a lack of dates developing cultural sequences is not possible. More basic concerns include the bias created by survey procedures (Cherry *et al.* 1988), vegetation cover (Foley 1981a), substrate (Shennan 1985), the distance from the surveyor to the artefact and the artefact type and colour, all of which may make finding the artefact difficult if it blends into the background; for example a glass bead is less noticeable than a large grinding stone (Banning *et al.* 2006).

In summary, for the purpose of this project, the landscape is viewed as the largest unit of analysis (Foley 1981). It is within this unit that the forager system is observed (Binford 1964). Through the analysis of outdoor spaces (Robin & Rothschild 2012), observations on the local foraging sequence, and especially its variability in terms of assemblage composition, are made here and from these a more complete understanding of the foraging signature obtained. The smallest unit of analysis is the artefact itself, and the artefact assemblage. Within this latter category, certain changes have been interpreted as indications of trade and exchange between foragers and farmers, generating shifts in forager lifeways. Understanding the basis of these arguments establishes a framework into which material shifts can be placed and understood.

## **2.3 A MATERIAL PERSPECTIVE: EVIDENCE OF INTERACTION**

### **2.3.1 Stone tools, bone points and organic beads**

It has been argued that the shift in formal tool types, specifically from backed tools to scrapers, is linked to exchange with agriculturalists (e.g. Hall & Smith 2000; Sadr 2002a). Historically, foragers are known to have traded game meat, ostrich eggshell feathers and eggs and probably other consumables but also, and primarily, animal hides (see Barnard 1992: 123). As trade increases so too does hide production and the need for scraping tools, which have been shown to be specifically linked to hide preparation (Deacon & Deacon 1980). Therefore, typically in post-2000 BP forager assemblages we see a corresponding increase in the percentage of scrapers in the formal tool assemblage, a marker of forager exchange patterns with farmers. Of course, this is not the only forager-produced item that increased at the onset of interaction and likely for trade purposes. Bone points and organic beads, made from ostrich eggshell, land snail shell and bone, also increased in certain assemblages of which Little Muck is an example (Hall & Smith 2000). The increase in bone points may be linked to an increase in hunting and, once again, hide preparation; bone linkshafts are used as composites in forager arrows and bone needles and punches are used for hide production (J. Deacon 1984a). Beads and other forms of jewellery were most likely used as trade goods and often in post-2000 BP assemblages these are accompanied by a large amount of manufacturing debris or incomplete beads (J. Deacon 1984a; Hall & Smith 2000; Sadr 2002). This does not, however, preclude the possibility that some of these beads, and also stone tools and bone points, were produced for foragers, including as gifts, or for the purpose of obtaining their own subsistence requirements. It is also possible that farmers produced beads for their own purposes. Thus, while these items have been used as evidence of interaction, it cannot be shown with certainty that *all* such items, whether stone tools, bone points or beads, were produced for these purposes (see Mitchell 2003).

### **2.3.2 Ceramics**

Sadr (1997) rightly notes that many forager sites occupied within the last 2000 years contain only a few ceramic sherds, representing maybe a few complete pots, which van Doornum (2005: 148) found to be the case on the Greater Mapungubwe Landscape. Trade is one way that foragers acquired pottery, but they may also have received them through *hxaro* exchange with one another (Wadley 1996), or through labour relations with agriculturalists (e.g. Guenther 1986). In the latter case, foragers may have herded livestock (Solway & Lee 1990), tilled fields (Barnard 1992: 119) or been specialist hunters or ritual practitioners (Dowson 1994) in, for example, rain-

control practices (Schoeman 2006b; Brunton *et al.* 2013). In return they may have received goods such as pots but also milk, livestock, meat, sorghum, millet or grain (e.g. Jolly 1986; Van der Ryst 1998) and other non-tangible returns; Bushmen are known to have used agriculturalists as social resources (Denbow 1984; Moore 1985), for example, to resolve conflicts or disputes (Wadley 1996). As is clear, there are a number of ways that a forager might obtain ceramics, excluding simply finding sherds and returning them to their camps. What does seem to be consistent is that sites in close proximity to farmers contain more evidence of exchange indicated by having larger ceramic or glass bead assemblages than those further away (Hall & Smith 2000; Sadr 2002a). However, this is based on the assumption that all the 'evidence of interaction', for example ceramics, are brought back to the rockshelter and disposed of once there. If this is not the case, or if the item given to the forager by the agriculturalist is consumable or intangible, we may not find any evidence of this and thus assume that pots and beads, and maybe even scrapers and linkshafts, are all that equate to interaction. Using such cultural markers in a single site to comment on regional interaction may be, therefore, problematic.

### **2.3.3 Glass beads**

Glass beads are of particular interest because they were considered by agriculturalists to be prestige items and are consistently found in archaeological sites dating from at least AD 900 (Wood 2000, 2011). On the Greater Mapungubwe Landscape, the earliest finds of glass beads is probably at Schroda, AD 900 to 1020, where a large sample was found along with evidence of ivory production and girls' initiation (Hanisch 1980, 1981b). Based on al Mas'udi's (an Arab historian and geographer) reports in AD 915 of gold coming from southern Africa, it seems that it was this precious metal that was being used as a trade good (Wood 2012: 16). In addition to this, ivory was a major trading item (Huffman 2009a), as well as rhinoceros horn and other consumables. At succeeding agriculturalist centres on the Greater Mapungubwe Landscape, such as K2, AD 1010 – 1220 (Calabrese 2000a), and Mapungubwe, AD 1220 – 1300 (Huffman 2000), considerably more glass beads were found due to the intensification of international trade that had begun by this time (Wood 2000, 2012: 16). Other major centres, for example Mmamagwa (G. Hall 2003), Leokwe Hill (Calabrese 2000a) and Den Staat AB32 (Huffman 2012), also contain glass bead assemblages as do some forager campsites (e.g. Hall & Smith 2000; van Doornum 2005). Therefore, glass beads are found in a number of site types on the Greater Mapungubwe Landscape, each site varying in terms of size, importance and occupants. In addition, beads can be used to date the assemblage, provided that there has not been post-depositional movement.

As with ceramics, it is possible that glass beads were acquired through services rendered for or trade with agriculturalists. With smaller assemblages, such as Balerno Main (van Doornum 2005: 142) and Balerno Shelter 3 (van Doornum 2000: 80) containing a single bead each, little can be said as they may have been obtained through interaction, found by the occupants or mixed into the deposit. Interpreting the glass beads at Tshisiku (van Doornum 2005: 293) and Balerno 2 (van Doornum 2005: 300), where there are eight and five glass beads respectively, is no easier and, like ceramics, may have been acquired through a number of ways. It is important, for these reasons, to view bead assemblages with caution and to accept that, while they are useful in determining chronology and indicating interaction, this can be speculative.

#### **2.3.4 Subsistence**

There are two categories here, faunal and botanical remains, and the representation of each varies between forager, herder and farmer settlements. For this reason, and due to the differences between each economic mode, faunal and botanical remains can be used to distinguish between different cultural groups. However, it is the reliability of this method that must be questioned. I look first at the difference between foragers and herders, followed by foragers and farmers.

*Foragers and herders:* Throughout Africa, pastoralist sites are generally recognised by a predominance of livestock bones (e.g. Gifford-Gonzalez 1998: 175-180; Garcea 2003: 120; Sadr 2008b). However, often the pastoral phase is preceded by a casual herding phase, during which there are domesticated remains in otherwise forager assemblages, however scarce (Cremaschi & Di Lernia 1998; Hassan 2002; Kuper & Köpelin 2006; González-Ruibal *et al.* in press). Needless-to-say, relying on faunal remains to distinguish foragers and herders is problematic due to taphonomic processes or to cultural patterns in which livestock were kept away from the settlement or faunal remains removed from it for reasons of safety or cleanliness, leading to a lower representation of livestock remains in the faunal record (Sadr 2008b). Thus, the presence of livestock in the archaeological assemblage cannot be relied upon to distinguish forager and herder settlements. Regarding botanical remains, the paucity of the necessary data in southern Africa, whether from forager or herder sites, is problematic. Notable exceptions are, for example, forager studies at De Hangen (Parkington & Poggenpoel 1971) and Boomplaas, both in the Western Cape (H. Deacon 1979), yet these are not helpful in this study. Put plainly, because no herder sites have been identified on the Greater Mapungubwe Landscape, we cannot characterise the local herding signature and so have no way of knowing which camps were occupied by herders, or indeed whether these differ from forager sites. The only redeeming

factor, which I rely on here, is the continuity of the LSA techno-complex from before the suspected arrival of herders, which too is somewhat problematic because foragers may have practised animal husbandry, and this may go unnoticed in the archaeological record.

*Foragers and farmers:* Besides the obvious difference in forager and farmer settlement patterns – fixed homesteads with hut and grainbin structures and animal kraals (corrals) in the case of farmers (more on this in Chapter 4) compared to ephemeral, rockshelter and non-descript forager camps – it is also possible to separate their faunal and botanical assemblages. Regarding fauna, domesticates dominate farmer assemblages throughout the Limpopo Valley area of northern South Africa, albeit that their abundance relative to wild fauna varies between sites (Plug 2000 also see Turner 1987; Badenhorst 2011). Wild fauna in farmer assemblages does not necessarily mean that trade between foragers and farmers occurred, as Denbow (1999) argues, because farmers also hunted, snared and trapped game (Kusimba 2005). At forager camps where there is a general lack of domesticates and a dominance of wild game, the composition of which often varies seasonally and depends on the site's ecological location (e.g. J. Deacon 1984; Wadley 1986; Mitchell *et al.* 2006). Botanical studies, however, are in need of development and at present we have very little detailed understanding of the plants that foragers and farmers were exploiting on the Greater Mapungubwe Landscape (Antonites & Antonites 2013). What we can assume is that, at least until contact with farmers, plant remains from forager camps would lack domesticated species and that at both kinds of sites the composition of these assemblages are likely to have varied seasonally and geographically (e.g. see Mitchell 1997).

In summary, while it is possible to distinguish forager, herder and farmer sites from one another using faunal and botanical remains, this is not without its problems. Fortunately, in the case of foragers and farmers, the stark structural differences in their settlements assist in separating their occupation sites, but between foragers and herders the differences are, at present, unknown.

### **2.3.5 Evidence of interaction**

Certain artefact types either appeared in forager assemblages when they first met and began interacting with farmers, or increased, such as the prevalence of scraping tools, bone points and ostrich eggshell beads. Such changes were often accompanied by shifts in settlement and mobility patterns as a result of farmers restricting forager access to places and resources on the landscape (Moore 1985; Hall & Smith 2000); at present this has not been recorded on the Greater Mapungubwe Landscape and, if identified, may contribute to understanding the range of outcomes from forager contact with farmers. Both of these observations – the impact trade had

on forager assemblages and the shift in settlement patterns when interactions began – have been recorded amongst modern Bushman groups (Smith & Lee 1997; Lee 2002). These changes, however, are exclusively related to shifts in the material record as a consequence of forager and farmer interactions. When observing these it is also important to consider depositional rate and patterns, possibly linked to social processes; it may be that foragers used certain sites during times of increased exchange, depositing the ‘evidence of interaction’ at these locations or it may be that they did not return all they acquired to their rockshelters or campsites. If so, building an interpretation on a single site will lead to a misunderstanding of the relationship between foragers and farmers across the landscape. Lastly, there were presumably also many intangible outcomes from forager and farmer interactions. These, for example, could have been in terms of religious beliefs, language, legal or political assistance and consumable goods. Regarding the latter, some consumable items might remain in the archaeological record, such as faunal or botanical remains, and could indicate interaction, but this might not always be the case especially if an item such as milk was acquired. Thus, while material remains are useful indicators of interactions, exchange and trade, they have limitations and cannot be seen as the only indicators of forager and farmer relations because not all evidence is materially represented at a single site or in the archaeological record.

## **2.4 SUMMARY**

In this chapter I have summarised the theoretical and material perspectives from which I will assess and interpret the data collected in the field. These perspectives have also informed previous research in the area (Hall & Smith 2000; van Doornum 2005; Schoeman 2006a; Brunton *et al.* 2013), as well as in other parts of southern Africa, such as, for example, the nearby Waterberg (Van der Ryst 2006), the Magaliesberg (Wadley 1986, 1989), the southern Cape (Parkington 1980, 1984; Sealy 2006), the Thukela Basin, KwaZulu-Natal (Mazel 1989), Swaziland (Barham 1992) and the Matopo Hills in Zimbabwe (Walker 1995a). I do not suggest that this is exclusively a southern African phenomenon since ethnography and landscape perspectives have been used in many other parts of the world, as highlighted above, as has the use of artefacts to mark social change or interaction. Thus, my argument and the framework from which I choose to study the forager sequence of the Greater Mapungubwe Landscape, has implications for southern African studies, as well as for international studies in related fields and discussions. I now turn to look more specifically at the study area.

## **CHAPTER 3: THE ENVIRONMENT OF THE GREATER MAPUNGUBWE LANDSCAPE**

The Greater Mapungubwe Landscape, covering approximately 35,000km<sup>2</sup> (Peace Parks 2012 and see Berry & Cadman 2007), is also known as the Shashe-Limpopo Confluence Area and the Greater Mapungubwe Transfrontier Conservation Area. I prefer the former term because it acknowledges that it is a cultural landscape and contextualises it in terms of the Mapungubwe area. I do not intend to downplay the importance of other sites in the area by using the word 'Mapungubwe', but rather to indicate that it is linked to the national park and transfrontier conservation area. The geographic location of this area is at the confluence of the Shashe and Limpopo Rivers. South of the Limpopo River is South Africa and to the north are Botswana and Zimbabwe, separated by the Shashe River and the Tuli Circle. As these rivers demarcate national borders, they also mark academic boundaries with little archaeological work crossing them, perhaps politically motivated, and may in the past have formed cultural boundaries. Thus, the three regions that form the Greater Mapungubwe Landscape may in fact represent distinct cultural landscapes, even though there may have been a degree of cultural and material transference across them.

### **3.1 A BRIEF OVERVIEW OF THE RESEARCH AREA**

#### **3.1.1 The local topography**

It is important to consider the layout of the study region, beyond a phenomenological perspective (Smith & Blundell 2004), when conducting landscape archaeology because it is possible that the inhabitants used the various features as boundaries (Flynn 1997) or places of power, such as ritual sites (Tilley 1996), regardless of how we would identify these archaeologically. The Greater Mapungubwe Landscape has a number of geographic locations that may have acted as boundaries or were used in particular ways. These represent distinctive parts of the landscape and can be divided into water systems and geological features.

##### **3.1.1.1 Water systems**

There are three major rivers in the area: the Shashe, Limpopo and Motloutse. Before the influence of European-drilled boreholes in the early twentieth century, these rivers, and possibly others, flowed throughout the year, supplying water to local inhabitants and wildlife (Huffman 2008). There are also a number of tributaries that may have been non-perennial, such as the Kolope and a network of rivers in Botswana: the Majale, Matabole and Njaswe, all flowing into the Pitsani (Figure 3.1). These rivers were useful resources to early inhabitants who could

cultivate their floodplains, collect drinking water and live off the surrounding vegetation. They would also have attracted wildlife, especially during the dry winter months, which could then be hunted, snared or collected.

A unique feature of the landscape is the wetlands, locally known as vleis, of which there are at least three still active. One of the more prominent vleis is on the southern side of the Limpopo River (Figure 3.1), while the other two are in Botswana: one east of the Motloutse River and the other near to where the Pitsani River joins the Limpopo. With regard to the South African vlei, it is formed when the Shashe River causes the Limpopo River to back flood, filling the southern floodplain upstream of the confluence (J. Smith 2005). The soil here is a combination of clay and silt and is enriched with phosphorus and nitrogen. It is ideal for cultivation and indigenous species thrive in this area (Smith *et al.* 2007; Huffman 2008). A settlement study of local agriculturalist homesteads revealed that the majority are found near to this area or along floodplains leading into the vlei zone (Du Piesanie 2008), probably for cultivation purposes. During poor rainfall periods the vleis would have helped mitigate the effect dry conditions would have on crop survival (Smith *et al.* 2007). Clay deposits, found in floodplains including in the Kolope River's drainage basin, also hold moisture well into the dry season and are ideal for cultivation in a savannah biome (Denbow 1984).

### **3.1.1.2 Geological features**

There are three geologically distinct zones. In South Africa, approximately 7km south of the Limpopo River, a relatively flat and undulating landscape extends until the Soutpansberg, about 80km south. Here there are a number of rivers, the largest being the Kolope River, all of which drain into the Limpopo River to the north. The next topographic area is the sandstone belt that is situated within about 7km south of the Limpopo River until about 10km east of the river's confluence with the Shashe River. It is also found in Zimbabwe along the Limpopo River and in Botswana along the same river, and the Shashe and Motloutse Rivers. Due to local alluvial and continental erosion and shear deformation (Le Baron *et al.* 2011) caused by the movement between the northern Zimbabwe craton and southern Kaapvaal craton, which meet at the Limpopo River in what is called the Limpopo Mobile Belt (Ranganai *et al.* 2002), the sandstone belt is dominated by ridges and sandstone inselbergs and torrs, known as koppies (Gerrard 1988; Bordy & Catuneanu 2002). Most of the area north of the Limpopo River is characterised by basalt ridges running east-west, intersected only by river networks (Figure 3.2).

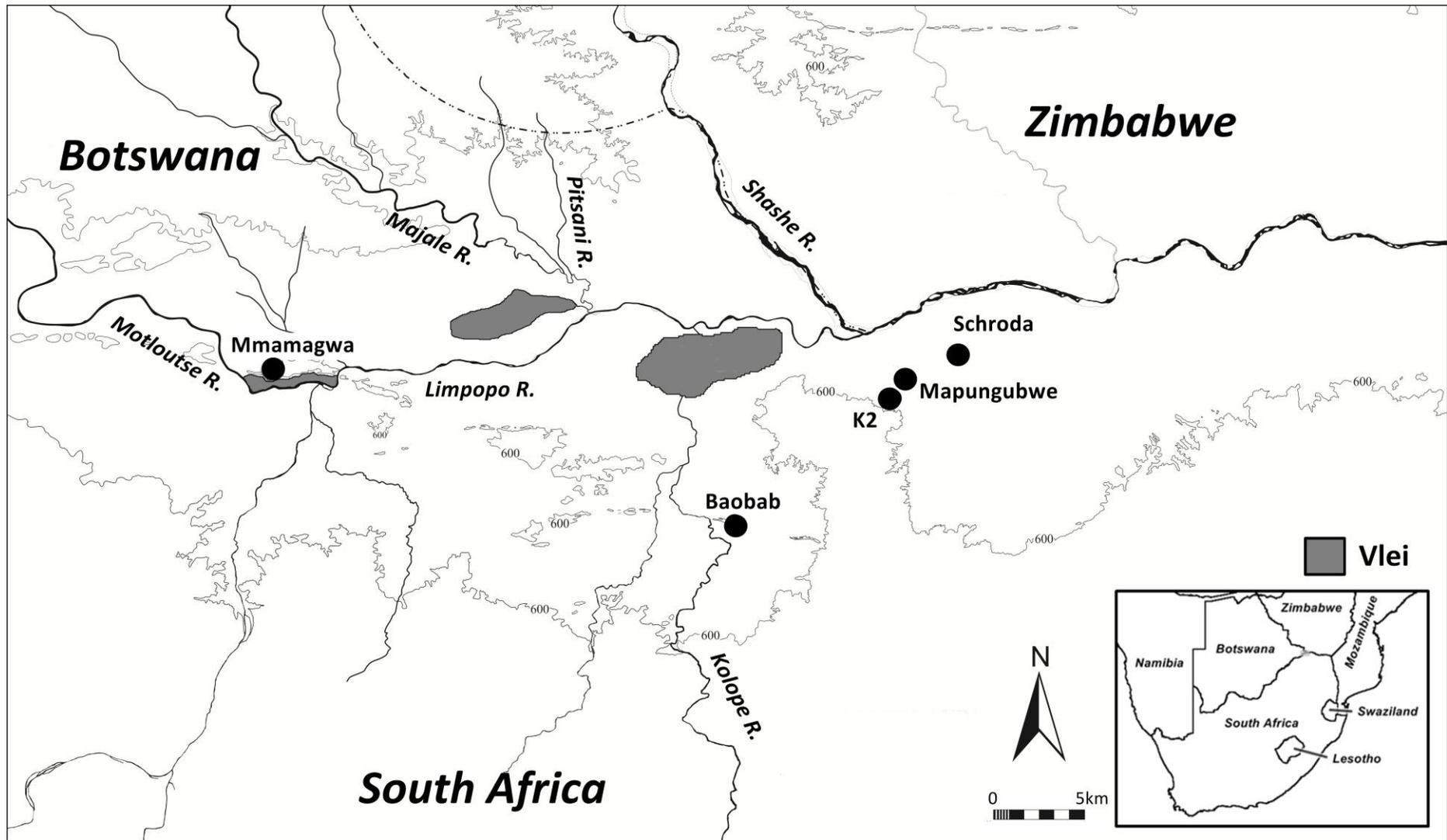
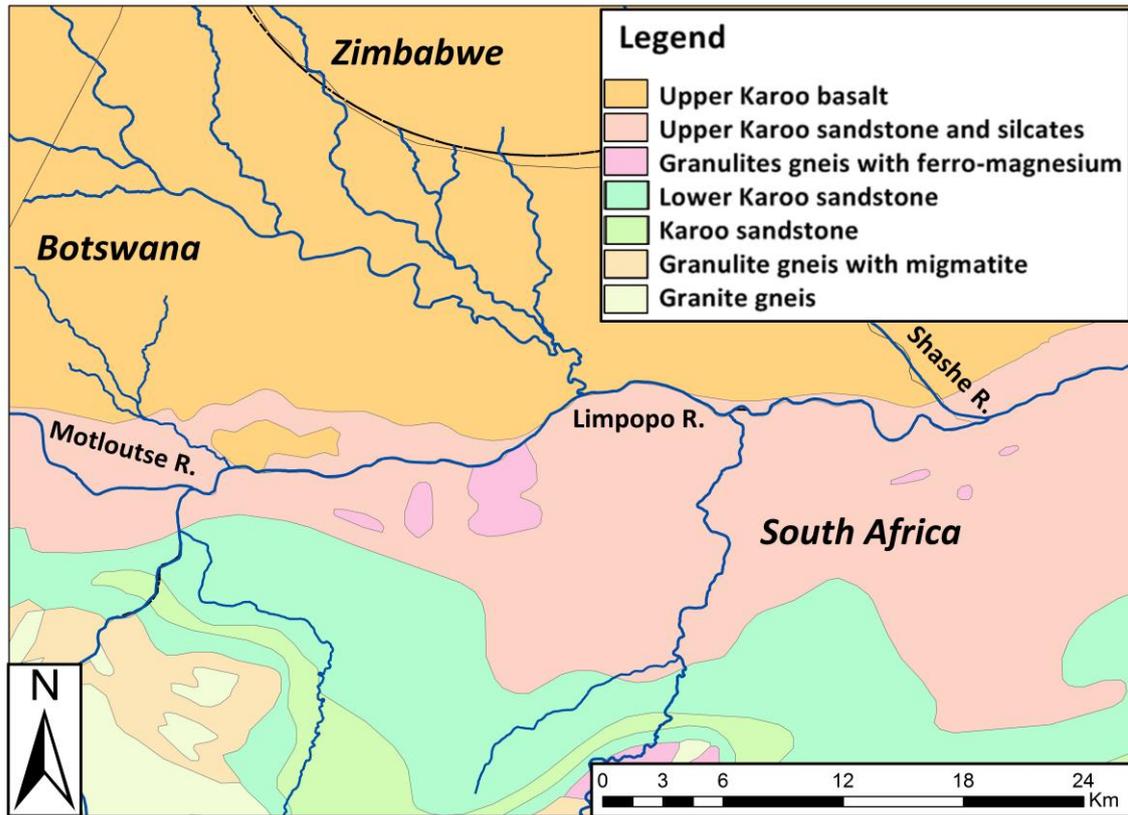


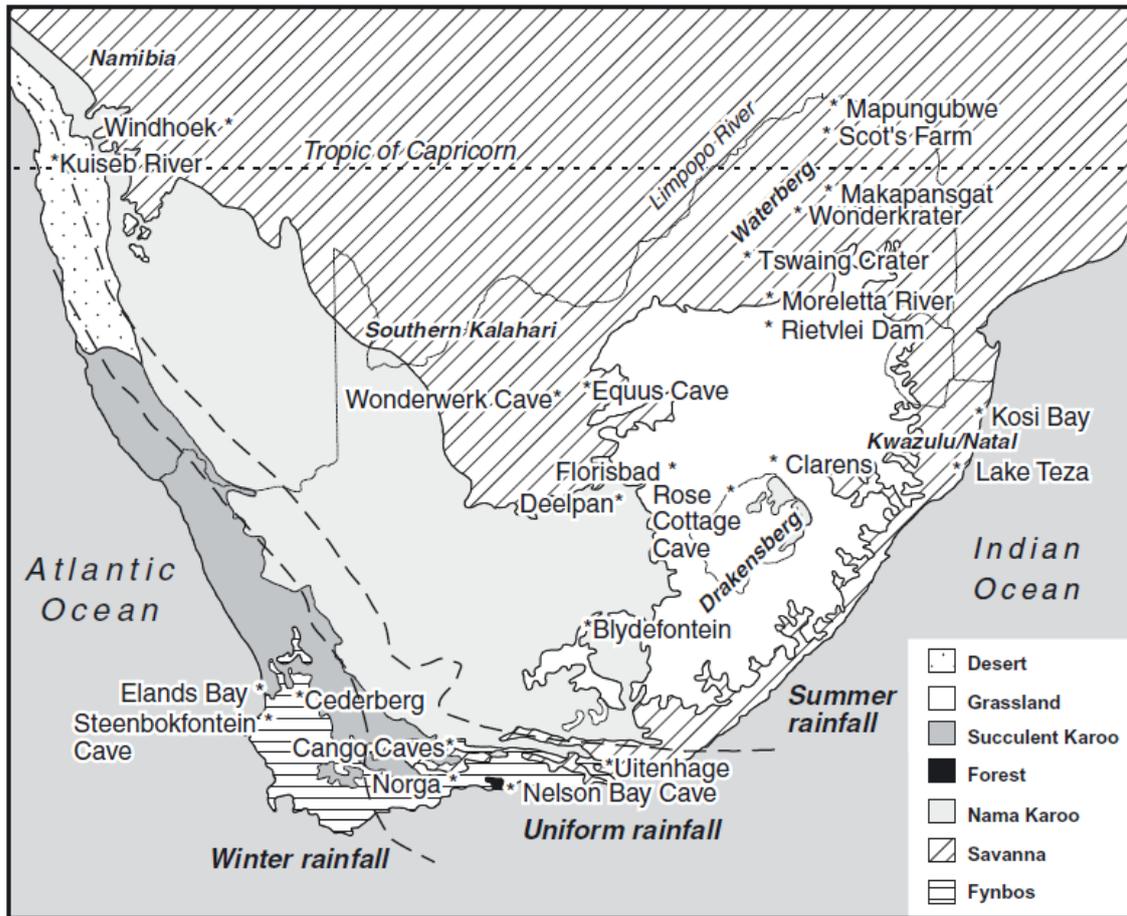
Figure 3.1: Water networks on the Greater Mapungubwe Landscape and prominent sites.



**Figure 3.2: The geology of the Greater Mapungubwe Landscape (source: Peace Parks Foundation).**

### 3.1.2 A savannah biome: fauna and flora

Presently, the landscape is a semi-arid savannah environment (Scott & Lee-Thorp 2004; J. Smith 2005: 38), which is widespread in southern Africa (Figure 3.3). According to the South African Weather Bureau (1975-1988; cf. J. Smith 2005), rainfall increases from August and decreases from January after its peak. A similar pattern is noticed with regard to average temperatures with an increase beginning from July and a peak in January after which temperatures begin to decrease. However, annual rainfall is extremely variable and ranges between about 120 and 600mm (J. Smith 2005: 38), and for this reason is considered a limiting factor on agricultural production (Hanisch 1981a; Huffman 1996). However, Mortimer (1998: 12) warns that using millimetres as a measure of rainfall in arid regions might not be the best indication of precipitation and instead *events* should be measured since in these environments rainfall is often in the form of localised showers. For example, 80km south around the Soutpansberg rainfall is on average 500mm per annum, significantly higher than on the Greater Mapungubwe Landscape (J. Smith 2005: 41). Therefore, rainfall needs to be viewed locally. Winter months are generally dry and cool while summer temperatures often exceed 30°C and drop to around 20°C during the night.



**Figure 3.3: The location of biomes in southern Africa, with Mapungubwe indicated in the north-eastern portion of South Africa (from Scott & Lee-Thorp 2004).**

Within the savannah biome is a diversity of plant species. Locally, however, this is dominated by mopane trees (*Colophospermum mopane*; Low & Rebelo 1996), which thrive in low-altitude, hot regions with little rainfall (Van Wyk & Van Wyk 2007). Grazing herbivores will browse upon this tree in the winter months, whereas mixed-feeders use mopane trees throughout the year (Wellington 1955: 299). The relatively high protein and phosphorus content of the mopane tree provides sustained nutritional value into the winter months when there is a lack of grasses (Roodt 1998). Other  $C_3$  genera that are found in the area are *Adenium*, *Aleo*, *Boscia*, *Cassine*, *Combretum*, *Commiphora*, *Cordia*, *Croton*, *Cussonia*, *Dombeya*, *Ehretia*, *Ficus*, *Flacourtia*, *Grewia*, *Gymnopia*, *Hyphaene*, *Opuntia*, *Salix*, *Spirostochys*, *Sterculia*, *Vachellia* and *Ximena*. All of these trees have been used by both human populations and animals because of their fruit and leaves and were relied on more so during periods of drought (Roodt 1998; Van Wyk *et al.* 2008). While the mopane veld gives an impression of floral uniformity, the landscape is, in fact, quite diverse (Hanisch 1981a), with a number of ecological niches (J. Smith 2005). Along the riverine networks are riparian forests, which includes lala palm (*Hyphaene coriacea*), fever tree (*Acacia*

*xanthophloea*) and nyala or mashatu trees (*Xanthocercis zambesiaca*), while in the sandstone koppies are a variety of succulents and fruit-bearing species (Eastwood & Eastwood 2006: 19). Grasses also thrive in this landscape and the climate and environment support grasses using the C<sub>4</sub> photosynthetic pathway (J. Smith 2005: 60). The grass types on the Greater Mapungubwe Landscape are also sweet, meaning that they retain nutritional value into the dry season, and are characteristic of low-lying, arid areas receiving rainfall between 250 and 500mm per annum (van Oudtshoorn 1992: 37). The little precipitation and therefore little leaching, encourages grass high in nutrients relative to indigestible cellulose, making them nutritious throughout the year (Ellery 1992: 170).

Highly nutritious grass species, a diversity of plant species and ecological variability should support a large population of antelope, pachyderms, rodents, reptiles and birds (Huffman 2008). At present this is not the case (Ford 1971; Harris 1986) because of land degradation, commercial farming, expanded settlements, sport hunting and livestock protection (J. Smith 2005: 69). Early travellers, such as Harris (1986; reprint from 1840), Elton (1872), Selous (1907, 1908) and Dornan (1917) all comment on the diversity of animals in the area and their massive numbers. Hunting exploits during the nineteenth century and the Rinderpest epidemic at the end of the 1890s resulted in a massive decline in animal numbers (Ford 1971: 303). Even though the number of animals has dropped, the species composition of the landscape appears to have remained fairly consistent over time (Voigt 1980). Examples of large mammals present in the region include blue wildebeest (*Connochaetes taurinus*), bushbuck (*Tragelaphus scriptus*), common duiker (*Sylvicapra grimmia*), eland (*Taurotragus oryx*), impala (*Aepyceros melampus*), klipspringer (*Oreotragus oreotragus*), kudu (*Tragelaphus strepsiceros*), waterbuck (*Kobus ellipsiprymnus*), zebra (*Equus burchelli*), giraffe (*Giraffa camelopardalis*), elephant (*Loxodonta africanus*), white (*Ceratotherium simum*) and black rhinoceros (*Diceros bicornis*), hippopotamus (*Hippopotamus amphibious*), lion (*Panthera leo*), leopard (*Panthera pardus*), cheetah (*Acinonyx jubatus*), wild dog (*Lycaon pictus*), buffalo (*Syncerus caffer*), small carnivores such as bat-eared foxes (*Otocyon megalotis*) and black-backed jackals (*Canis mesomelas*), various mongoose species (*Feliformia* sp.) and rock (*Procavia capensis*) and yellow-spotted rock hyraxes (*Heterohyrax brucei*), plus a large number of bird and reptile species.

The landscape, thus, has an ample supply of plant sources and animal food packages for people occupying it to draw upon. The occurrence of freestanding water in a number of the rivers and presumably in the vleis into the winter months is ideal for settlement and the vleis and floodplains are both suitable for cultivation. However, the opportunities present on the landscape

are also dependent on the climate, particularly for agriculturalists, and this both varies across the Greater Mapungubwe Landscape and has certainly changed over the last 2000 years.

### **3.1.3 Late Holocene climate and rainfall**

In southern Africa, it was thought that a colder climate is associated with less rainfall, whereas warmer periods are wetter (Tyson & Lindsay 1992). This conclusion, however, lacks the appropriate data demonstrating this correlation between temperature and moisture (Holmgren *et al.* 2001; Scott *et al.* 2003). There are, nevertheless, climatic fluctuations and small, abrupt changes that occurred seasonally during the Holocene (Mitchell 2002: 25). Tyson and Lindsay's (1992) study was based on marine shells from coastal and inshore sites, stratified remains of marine micro-organisms (foraminifera) and oxygen isotopes of cave speleothems and were able to reconstruct the climate for the last two millennia. More recently, there has been a studies based on stalagmites in Makapansgat Cave, about 210km south (e.g. Holmgren *et al.* 2001; Lee-Thorp *et al.* 2001), pollen (e.g. Scott *et al.* 2003) and J. Smith's (2005) work on nitrogen isotope ratios ( $^{15}\text{N}/^{14}\text{N}$ ) from faunal samples recovered from archaeological sites on the Greater Mapungubwe Landscape dating to between AD 880 and 1645. Tyson and Lindsay's (1992) conclusions have since been refined (e.g. Holmgren *et al.* 2001; Smith *et al.* 2007) and J. Smith's (2005) results are from the region and more accurately records localised climatic changes, and so her interpretation is favoured in this dissertation for the applicable period. From Table 3.1 it is clear that J. Smith's (2005) data have a finer resolution and more accurately tracks localised variations, which both studies acknowledge as characterising the local climate. The most notable difference in their data is the onset of poor conditions from c. AD 1300. Tyson and Lindsay (1992) mark this as the beginning of the Little Ice Age, yet J. Smith (2005) only found conditions to decline from AD 1475 (also see Holmgren *et al.* 2001). Of further interest is the variable nature of rainfall conditions over the landscape during the same period.

## **3.2 SUMMARY OF THE LOCAL ENVIRONMENT**

In this brief overview of the Greater Mapungubwe Landscape it is clear that there is a degree of ecological variability. There are geologically distinct zones, ecological niches and a diversity of wildlife species. These opportunities were ideal for human habitation, including agriculturalists, especially during warmer, wetter periods. The landscape allowed for the growth of the agricultural sector and population (Huffman 2008), contributing to the changing forager sequence (van Doornum 2007, 2008), because of features such as the vlei zones and the various floodplains

allowing for large livestock communities and cultivation. The following chapter presents the local archaeological sequence, with emphasis on the forager record.

**Table 3.1: Comparison of Tyson and Lindesay (1992) and J. Smith's (2005) findings.**

Tyson & Lindesay (1992)	Period (AD)	J. Smith (2005)
Cool and dry	100 200	
Warm and wet	250 600	
Variably cool and dry	880 900	Rainfall 350 to 450mm; variability; comparable to modern conditions
Medieval warm epoch: generally warm and dry	900 1010 1290 1300	General increase in rainfall only felt by AD 1190 = 450 to 500mm
Little Ice Age: cool and dry except for a warming period from AD 1500 to 1675	1310 1415 1475 1685 1850	Rainfall seems to be consistently above 500mm Marked decrease in rainfall to 350 to 450mm; comparable to AD 900
Ameliorating post-Little Ice Age conditions	1850 Present	

## CHAPTER 4: FRAMING THE ARCHAEOLOGY OF THE GREATER MAPUNGBWE

### LANDSCAPE

The first evidence for the LSA on the Greater Mapungubwe Landscape dates from at least 10,980 BC (van Doornum 2008), but it is the cultural changes that occurred since the arrival of agriculturalists, and possibly herders, at the beginning of the first millennium AD that are of particular interest (Hall & Smith 2000). The relationship between foragers and farmers is thought to have fundamentally altered the forager record, eventually resulting in its supposed disappearance (van Doornum 2005: 196). The various changes leading up to this point, I believe, can be placed into J. Alexander's (1984) frontier model, which I demonstrate in my review of the regional forager sequence in this chapter. Following this, I present the archaeology of Northern Tuli as it is known through the limited studies that have been performed in the area.

#### 4.1 THE AFRICAN FRONTIER

In 1984 John Alexander presented a model he called the African frontier in which he discussed the different phases of interaction between foragers and the arriving agriculturalists within the last 2000 years in southern Africa. The first phase, which he called the moving frontier, was the initial phase of farmer settlement in a territory devoid of other agriculturalists. This might happen at first in small numbers, the pioneer groups perhaps in part adopted the culture of the incumbent foragers and maintained cordial relations with them. This was followed by a phase characterised by large scale settlement of the area on behalf of the agriculturalists. At this time the settling group firmly established their economy and social structure on the landscape. This was followed by the static frontier when the colonists developed long-distance relationships, instituted political authority and possibly formed polities. J. Alexander's (1984) model has been applied across southern African frontiers (e.g. Denbow 1986; Parkington & Hall 1987a; M. Hall 1988; Reid & Segobye 2000), and more recently also in East Africa (Lane 2004). It provides a framework from which to view the interaction network between foragers and agriculturalists over a landscape.

Igor Kopytoff (1987) has also proposed a frontier model for Africa. He argues that there were three outcomes when people moved onto a new landscape: the arriving group either displaced the original occupants, tamed them and used them in certain menial or specialised tasks or the superior group incorporated the 'other' into their own structures, stripping them of their identity. Kopytoff's (1987) model, however, focussed on interactions between different agriculturalist groups and not necessarily with foraging people. Thus, for this project, J. Alexander's (1984)

model is favoured because it deals specifically with foragers interacting with agriculturalists and provides more details between the stages of interaction, considered as polythetic ranges, while allowing for variation within them.

Another approach is one used by Jan Vansina (1990: 35) who studied foragers in what were the Cameroon forests 5000 years ago. Specifically he studied changes in their sequence that included increased sedentism, the appearance of ceramics and shifts in their subsistence base, linked to interactions with agriculturalists from c. 600 BC. Vansina (1990: 55) does not rely on a single model because of the duration of the agricultural expansion and the variety of habitat types that were occupied (e.g. Vansina 1995), instead he looks more specifically at the data. For example, the low density of foragers led to relative isolation and, when farmers did arrive, their settlements became the cultural focus for all foraging people in the area. Thus, proximity played a significant role in the way foragers interacted with one another and integrated into the agricultural economy. This was at first only at a very small level but eventually led to the adoption of metallurgy and domestic crops before the conclusion of the Bantu expansion (Vansina 1990: 59-61). Vansina's (1990) analysis of agriculturalist movements and the impact it had on foragers is very similar to what has been recorded on the Greater Mapungubwe Landscape: the initial impact of farmers created some change in the forager sequence and later resulted in major cultural shifts and eventually the disappearance of the forager material record; all of which this project aims to test and expand upon.

Frontiers, however, are fraught with theoretical underpinnings (Moore 1985). Whether dealing with archaeological frontiers (Kopytoff 1987), modern cultural boundaries (Gupta & Ferguson 1992), or frontiers created by political boundaries (Lightfoot & Martinez 1995), there is a need to establish a dialogue regarding frontier dynamics, definitions and a theoretical stance. In a study such as this it becomes necessary to elaborate on concepts that will be used to negotiate relationships between foragers and farmers. It is important to do so because at each stage of the frontier exchange and cultural interactions occurred (Kopytoff 1987), the degree of which is debated (Sadr 1997), and changes within cultural groups were instituted and developed (McIntosh 1999). Since a major aspect of this research is dealing with the articulation of foraging and farming people, from about 2000 years ago, terminology needs to be clearly established.

Throughout the world archaeologists define cultures and create 'boxes' – explainable units based on observations and findings in the archaeological record (Green & Perlman 1985). However, this is entirely imagined as people do not fit into such neat categories; they recreate and reproduce their own culture daily and often incorporate features of another's into their own (Hodder 1982).

In frontiers, the distinction between and within ethnic groups changes (Kopytoff 1987), a transformation spurred on by dynamic cultural conflict (Moore 1985), and this problematises our cultural categories. The blurring of these cultural boundaries is further compromised in archaeology because of palimpsest effects in excavatable deposits, preservation issues, post-depositional movement and our own research biases, such as the importance we place on certain sites and areas of the landscape (see Arthur 2008). A trend arises in that the categories which are often so well defined, such as the LSA industries (e.g. J. Deacon 1984a), are no longer able to account for post-contact cultural change (Sadr 2008a). We now need to reconsider and take on another system of nomenclature and definition or adopt a new way of viewing the last 2000 years.

Sadr (2008a) does just that. He claims that due to inter-ethnic sharing of ideas (e.g. Jolly 1996; Hoff 1997), and the transference of cultural material between ethnic groups (e.g. S. Hall 2000; Kent 2002a; Sadr 2002b), defining people based on a stadial system, such as is currently done with the 'LSA's' separation from the Iron Age (e.g. Lombard *et al.* 2012), entangles late Holocene archaeology. At this time the distinction between groups becomes blurred; both information and material was transferred across cultural boundaries. Foragers acquired agriculturalist artefacts and ceramics and they may have become merchants, labourers or, according to historical accounts, criminals (see Wilmsen 1989). Bantu-speaking agriculturalists also changed to integrate new features into their own culture, such as the Nguni and South Sotho who incorporated clicks into their language – which is a feature of Bushman languages – and adopted Bushman myths, beliefs and rituals (e.g. Hammond-Tooke 1999). Places, those being the spatial and temporal opportunities of a location and the meaning given to it by local people (Parkington 1980; B. Smith 1994), were now shared and contested between different cultural entities; multiple 'places' could be found within one another (Massey 1994) because people did not view or use them in the same way (Strang 1997). As such, frontiers and the conflict of places with their materialised power and ideological agents offer provocative histories of social change (Moore 1985) and the construction and manipulation of identities (Donnan & Wilson 1994). This period is therefore one of cultural integration, rather than cultural distinction. As Sadr (2008a) argues, cultural systems are open, fluid and disparate within and between the so-called Ages that still govern how we think about the southern African past.

Within frontiers these changes are more exaggerated than elsewhere. It is here on a landscape with different ethnicities that cultures combine, recreate, reform and split to form new groups that either succeed and become archaeologically distinct (J. Alexander 1984), or disappear

altogether (Kopytoff 1987). For this reason, defining such groups, strictly speaking, is not always possible yet it persists in modern archaeology (Sadr 2008a). On the Greater Mapungubwe Landscape, the 'Stone Age' people persisted through 'Iron Age' social, economic and political developments resulting in the establishment of the first capital, Mapungubwe (see Huffman 2000). Nowhere else in southern Africa have foragers been a part of state formation; usually they meet people who have already undergone these processes. Thus, Sadr's (2008a) concept of an Age-less system is favoured here, but the term LSA is maintained and used to refer to the entire stone tool producing industry as much of it was in existence prior to the arrival of farming people. The late Holocene is rather seen as a period of cultural *integration*. People are viewed as being a part of the broader social and political economy while retaining certain features of their culture, such as forager subsistence patterns (Lee 1976) and tool production (e.g. S. Hall 2000), the agriculturalist settlement pattern (Huffman 1986, 2007: 25) or animal husbandry (A. Smith 1992a).

I aim to interpret the forager sequence of the Greater Mapungubwe Landscape using J. Alexander's (1984) frontier model. Van Doornum (2005) itemised her findings into five forager phases beginning c. 11,000 BC and ending AD 1300. However, she refers to these phases in terms of 'contact': the early and late pre-contact phase, early contact phase and then the Zhizo and Leopard's Kopje phases. By doing this we homogenise the diversity of outcomes that interactions with agriculturalists produced. Similarly, creating a 'pre-contact' phase implies that there is no significance placed on interactions between different hunter-gatherer groups (see Mitchell 2003), who are often culturally distinct and diverse (Stiles 2001). The respective periods are stripped of their variability between different people and over the landscape. As has been argued by van Doornum (2008), within a single site and between sites (van Doornum 2005 but see Hall & Smith 2000; Sadr 2002b) different patterns of interaction exist and the result is a different cultural record expressed in artefact phases. The lumping of each category into a 'contact' phase denies it the distinction that contact requires due to the various outcomes that it may produce (Kent 1992; Blundell 2004). Lastly, by relying on the Zhizo and especially Leopard's Kopje terms as markers for their respective periods, the ceramic traditions produced by other farmers are neglected. For example, during the Leopard's Kopje period Leokwe, Toutswe and to a lesser extent Eiland ceramics are all present in the region and foragers may have interacted with these agriculturalists in different ways. The terminology implies that contact between all Zhizo and Leopard's Kopje ceramic-producing people was consistent even though they covered a large area (see Huffman 2007), when in fact their interactions may have varied. With this in mind, van Doornum's (2005) phases are not used here and Lombard and colleagues' (2012) terminology is favoured for the

period prior to 2000 years ago as it is a new and revised sequence. Within the last 2000 years, however, I do not feel that their terms ‘final LSA’ or ‘ceramic LSA’ are specific enough considering the changes noted by van Doornum (2005), and so I will use J. Alexander’s (1984) framework (Table 4.1).

**Table 4.1: Archaeological phases for the LSA sequence proposed by van Doornum (2005) for the Greater Mapungubwe Landscape and Lombard *et al.* (2012) for southern Africa alongside Alexander’s (1984) model with possible dates for the research area.**

Date	Van Doornum (2005)	Lombard <i>et al.</i> (2012)	J. Alexander’s (1984)
10,000 - 5000 BC	Early pre-contact	Oakhurst	NA
6000 - 2000 BC		Wilton	
2000 - 1220 BC		Final LSA	
1220 BC - AD 350	Late pre-contact		
AD 350 – 900	Early contact	Final LSA / Ceramic final LSA	First moving frontier
AD 900 – 1010	Zhizo period		Second moving frontier
AD 1010 – 1300	Leopard’s Kopje period		Static frontier
AD 1300 – 1600	NA		Consolidating frontier
From AD 1600	NA		European period

#### **4.2 THE HOLOCENE PREHISTORY OF THE GREATER MAPUNGUBWE LANDSCAPE IN A FRONTIER FRAMEWORK**

The period with which this study is concerned is roughly the last 4000 years. During this time the Greater Mapungubwe Landscape went from being occupied by only hunting and gathering people to a landscape dense with ethnicities, but notably those of farmers who began arriving from the beginning of the first millennium AD (van Doornum 2005; Figure 4.1). From AD 900 onwards, and over the succeeding 300 year period, agriculturalists underwent changes in their social structure and leadership that Mapungubwe, the first southern African settlement of centralised power and wealth, was established (Huffman 2000, 2007). These changes impacted foragers to such a degree that it is thought by AD 1300, when the Mapungubwe capital was abandoned, their material culture disappeared altogether (van Doornum 2005). Why this happened is unknown, as is whether foragers vacated the landscape or assimilated with agriculturalists. Either way, interactions with agriculturalists irreversibly changed the foraging culture to the degree that they became unrecognisable, or have not been recognised, in the archaeological record post-AD 1300. In order to assess the reasons behind these changes it is important to first consider the entire forager sequence for the region.

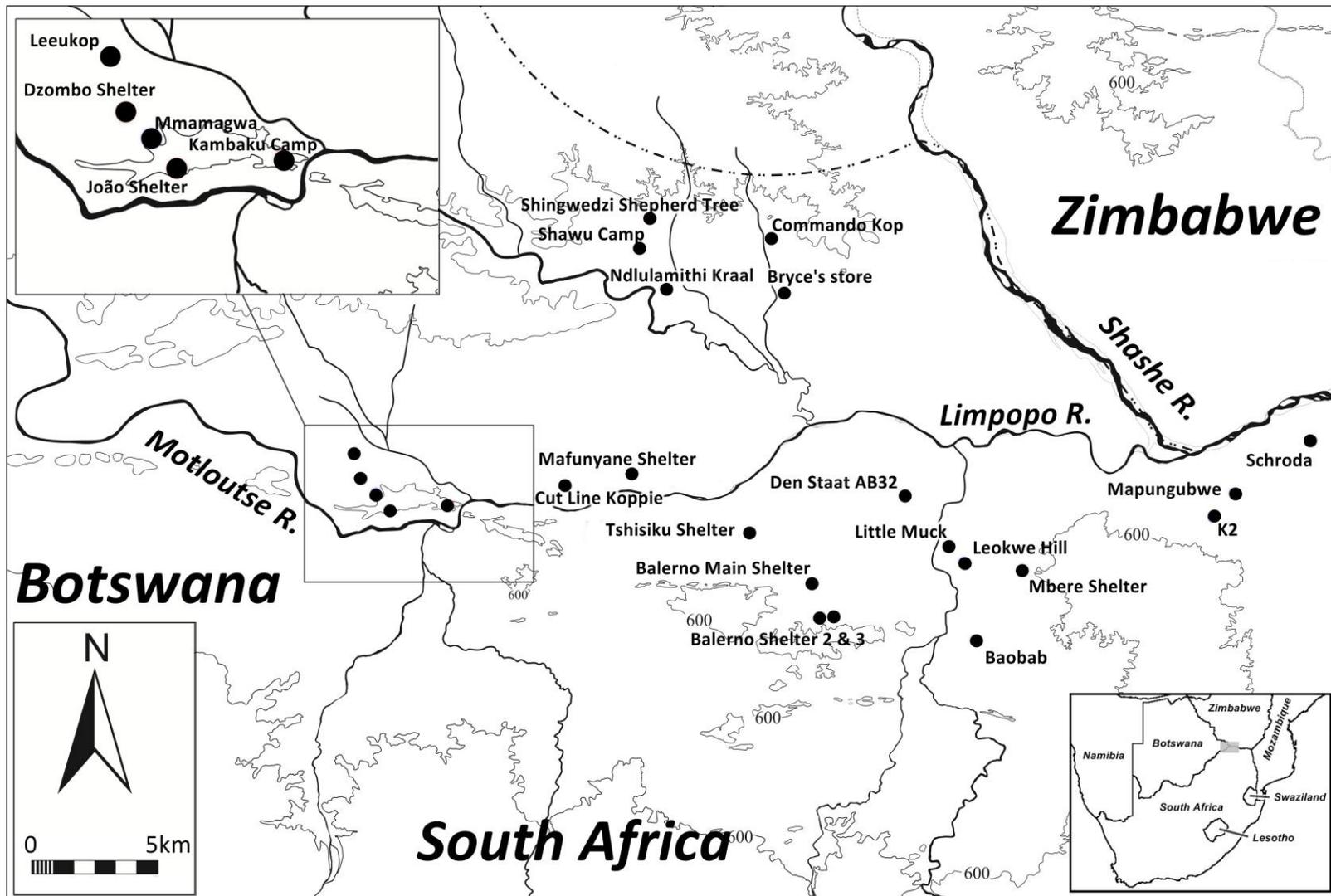


Figure 4.1: Important archaeological sites on the Greater Mapungubwe Landscape.

#### 4.2.1 Early and mid-Holocene LSA and final LSA – 11,120 BC to AD 350

The early and mid-Holocene LSA is used here to refer to two separate industries: the Oakhurst and Wilton. I have also included the final LSA here, which dates to within the last 4000 years (Lombard *et al.* 2012), but I only use it to refer to the period before the arrival of agriculturalists, which is prior to AD 350 on the Greater Mapungubwe Landscape. During this time foragers occupied the region interacting with one another and lived what is generally accepted as a hunting and gathering lifestyle (J. Deacon 1984a). On the Greater Mapungubwe Landscape, however, van Doornum (2005) was able to separate this period into two phases, distinguished by an increase in the amount and diversity of artefact categories from the early into the mid-Holocene.

The initial LSA forager occupation of the Greater Mapungubwe Landscape is poorly understood and it is not known whether it represents an Oakhurst industry (van Doornum 2008). It has only been identified at Balerno Main dating to about 11,000 BC and is similar to Oakhurst assemblages (J. Deacon 1984a; Lombard *et al.* 2012). Compared to the Wilton, final and ceramic final LSA sites, there are significantly fewer Oakhurst sites, though more than during the preceding Robberg period, across southern Africa (see Appendix in Lombard *et al.* 2012). Some of the prominent Oakhurst sites include Boomplaas (J. Deacon 1982), Elands Bay Cave (Orton 2006) and Melkhoutboom Cave (H. Deacon 1976) with a number of examples further inland, such as Ha Makotoko (Mitchell & Arthur 2010), Jubilee (Wadley 1987), Rose Cottage Cave (Wadley 1997, 2000), Sehonghong (Mitchell 1996a), Olieboomspoort (Van der Ryst 1998, 2006), Wonderwerk Cave (Humphreys & Thackeray 1983) and Pomongwe Cave, Zimbabwe (Walker 1995a). No Oakhurst sites have yet been identified in the Limpopo Province, South Africa (see Lombard *et al.* 2012).

There are a number of possible reasons why there are few sites on the Greater Mapungubwe Landscape dating to before 1220 BC: van Doornum (2005) believes that it may be that there were fewer foragers in the area, but it is also possible that the environment was unfavourable to site preservation; that sites have been disturbed or buried by modern agriculture, erosion or deflation; too few sites have been excavated, or the sites that have been excavated are not the type of sites that were occupied in the early Holocene. However, the widespread trend across southern Africa of a mid-Holocene increase in LSA sites (J. Deacon 1984a) seems to be matched on the Greater Mapungubwe Landscape (van Doornum 2005: 165), and on neighbouring landscapes (e.g. Walker 1995a). This was a time when widespread changes occurred in the area,

and indeed around the sub-continent, which included shifts in settlement patterns, demography and social organisation (Deacon & Deacon 1999: 129-130).

From 1220 BC there are clear changes in the LSA record of the Greater Mapungubwe Landscape. Notably, there is an increase in sites occupied by foraging people: all of the excavated sites were occupied from at least 350 BC onwards, with the exception of Tshisiku, which was continually occupied from about 5660 BC, and Balerno Main, which after being occupied around 11,120 BC was abandoned until around 350 BC (van Doornum 2005: 167). An increase in the number of sites at this time is reflected elsewhere in southern Africa such as in Namaqualand (e.g. Vogel *et al.* 1997; Webley *et al.* 1993), the Gariiep Dam area (e.g. Bousman 1991), northern Namibia (e.g. Vogel & Marais 1971; Parkington & Hall 1987b), the Kalahari Desert (e.g. Yellen & Brooks 1989) and Tsodilo Hills (Robbins *et al.* 1994) in Botswana and the Matopos (Walker 1995a) in Zimbabwe.

On the Greater Mapungubwe Landscape, at this time, there is a trend towards small, collectable meat packages, fish, suid and some bovids of size classes I, II and even III (van Doornum 2005: 166; see Brain 1981 for bovid size classes). The stone tool assemblage is dominated by cryptocrystalline silicate (CCS) materials with a greater dominance on the other material types – quartz, agate, quartzite and dolerite – than previously recorded, along with a decrease in formal tool diversity (van Doornum 2005: 166-167). It was also at this stage that clear differences in the forager record appear between the different sites. For example, at Balerno 2 and 3, which are argued as small rockshelter dispersal or ‘overflow’ camps, few formal tools were found and little bead production and hide preparation took place, whereas there is clear evidence that these activities occurred at Balerno Main (van Doornum 2005: 167, 2008). Van Doornum (2005: 167) concluded that it was during this time, and for unknown reasons, that the Greater Mapungubwe Landscape became attractive to foragers. However, she still considers this phase as largely ephemeral when compared to the succeeding phases in which further increases in artefact and site densities occur.

#### **4.2.2 First moving frontier – AD 350 to 900**

Changing the terminology here, and for the remaining phases, to include the concept of a frontier is done intentionally for two reasons. First, J. Alexander’s (1984) model has been applied to many frontiers around southern Africa. In the region of the Mapungubwe capital, developments through van Doornum’s (2005) early contact and Zhizo phases are strikingly similar to the first and second moving frontiers, respectively. During the second moving frontier, Zhizo ceramic-producing farmers living on the Greater Mapungubwe Landscape were trading extensively with

the east coast and yet the hunting and gathering economy persisted and in some cases intensifying (van Doornum 2008). It was only after AD 1000 when forager artefact frequencies waned and eventually disappeared altogether, marking the transition into the next phase, the static frontier (J. Alexander 1984). Second, the concept of a frontier invokes a landscape filled with multiple ethnicities interacting in a variety of ways and producing incongruent cultural groups (Green & Perlman 1985; Kopytoff 1987). Unlike the concept of contact, which is ill-defined, frontiers have been negotiated, defined and considered over many decades even though in nature these are diverse (e.g. Billington 1967; J. Alexander 1977, 1984; Lane 2004). The outcome of interactions between foragers and farmers varies (Kent 1992) and the degree to which foragers and herders have influenced one another is debated (see Sadr 2008b). Regardless, this was a time when different people met, affecting change in their cultural constitution. This happened at different times across southern Africa, beginning around AD 350 on the Greater Mapungubwe Landscape.

From the first centuries AD, the forager sequence changed, albeit that these changes were expressed differently at the various excavated sites within the Greater Mapungubwe Landscape. For example, at Balerno 2 and 3 and Little Muck, unprocessed ostrich egg and landsnail shell increased, while at Balerno Main they decreased, which may indicate that they were traded away from the site (van Doornum 2005: 169, 2008). Raw material preferences also differ. At Tshisiku CCS and fine-grained dolerite dominate, while at all other sites CCS alone dominates the assemblages, while, in general, quartz and agate are less prevalent. Tool diversity is also high, with backed bladelets, segments, adzes, planes and spokeshaves present (van Doornum 2005: 170); at Balerno Main a tanged arrowhead and a retouched MSA tool were also found (van Doornum 2008). Even so, there is a trend in all assemblages for scraper frequencies to increase and backed tools to decrease (van Doornum 2005: 172), also recorded in other parts of southern Africa beginning about 2000 years ago (J. Deacon 1984a). Another feature in common between the sites was an increase in artefact density, indicating what van Doornum (2005: 170-171) believes to be an increase in the local foraging population. Hall and Smith (2000) argue that this may be because foragers moved onto the landscape in an attempt to avoid farmers who settled in other areas and not on the Greater Mapungubwe Landscape, possibly because at that time the environment was unfavourable for agriculture.

The first signs of agriculturalists on the landscape are difficult to discern since no homesteads dating to the early to mid-first millennium AD have been identified. However, Huffman (2009a) states that Happy Rest ceramics, which date to between AD 500 and 750 (Huffman 2007: 219; see

Table 4.2), are found at three or more rain-control sites, including on the Mapungubwe hilltop, and at Little Muck (Hall & Smith 2000). Huffman suggests that, considering how integral rain-control was in the agriculturalist worldview, such sites would only exist where agriculturalists were in fact living and so they must have occupied the area at this time even though their homesteads have not yet been located. More spuriously, the appearance of Bambata ceramics, dating to between AD 150 and 650 (Huffman 2007: 213), might indicate the arrival of agriculturalists, but this is keenly debated. Huffman (1994, 2005) believes it is linked to the *Benfica* ceramic branch of Angola and thus produced by agriculturalists. Others, such as Denbow (1984) and Reid and colleagues (1998), argue that because most of the known Bambata sherds are located in forager sites, it may have been produced by mobile stone tool using people who had access to livestock. Walker (1983), who found the ware in similar contexts in the Matopos, believes that while it is associated with the forager occupation, it may have been obtained via trade with arriving agriculturalists. Bambata, thus, could equally well have been traded for by foragers or even produced by stone tool manufacturing people as by anyone else. Thus, the likely arrival of agriculturalists in the area is between AD 350, a minimum date on Happy Rest (van Doornum 2005: 168), and AD 500.

**Table 4.2: Agricultural phases on the Greater Mapungubwe Landscape (from Huffman 2007).**

<b>Ceramic facie</b>	<b>Period (calibrated)</b>
Bambata	AD 150 - 650
Happy Rest	AD 350/500 - 750
Zhizo	AD 750 - 1050
K2	AD 1000 - 1200
Leokwe	AD 1050 - 1220
Toutswe	AD 1050 - 1300
TK2	AD 1200 - 1250
Mapungubwe	AD 1250 - 1300
Icon	AD 1300 - 1500
Khami	AD 1400 - 1820
Venda	AD 1600 - 1840

It cannot be said whether or not foragers were in contact with agriculturalists living on the landscape in the first centuries AD for the reasons mentioned above. However, they may have acquired items such as ceramics, glass beads and metal tools through long-distance trade, such as Wadley's (1996) argument with regard to *hxaro* at Jubilee, or traded with agriculturalists who were passing through the area (van Doornum 2005: 172). In either case, changes in the forager sequence are the result of agriculturalists arriving in the area, which includes the Soutpansberg,

80km south (Hall & Smith 2000) and possibly on neighbouring landscapes, such as the Matopos (Walker 1995a) and the Waterberg (Van der Ryst 1998, 2006). The forager stone tool sequence changed to accommodate increases in trade and ceramics and glass beads appeared in forager assemblages as well as a diversification of their subsistence base with the incorporation of a wider range of smaller meat packages possibly indicating a shift in their mobility patterns (van Doornum 2005: 169). Part of the reason foraging people altered their lifeways was in order to accommodate an agriculturalist economy, which was fundamentally different to their own.

Agriculturalists and foragers differ in terms of their worldview, beliefs and settlement patterns. Huffman (2007) summarises what he calls the 'Iron Age package' into three tiers: ideological, settlement and social structures. Southern African farmers, many of whom were Eastern Bantu-language speaking (Huffman 1970; Figure 4.2), had a positive view of their ancestors, were patriarchal and practised bridewealth in the form of cattle (Hammond-Tooke 1974). Much of this is reflected in the village structural pattern known as the Central Cattle Pattern (CCP; Huffman 2000). At the centre of each homestead was a kraal, displaying the salient role of cattle in the farmer ideology (Kuper 1980). Surrounding the kraal was the residential zone. Behind each hut there may have been a grainbin, a small-stock kraal, an herb or vegetable garden, a midden and storage pits (Huffman 2000). Each space had a symbolic attribute. The kraal-to-house zone was the public area and considered the men's domain. The residential zone was the private area and correspondingly was linked to women (Comaroff 1985; Huffman 1986, 1989). It has been argued that this courtyard area is where various ritual goods were prepared and certain rituals may have been performed because of its ideological link to nature due to its location at the 'back' of the settlement (Willoughby 1928). For this reason it was considered a sacred area. Huffman (2000) argues that all of these features were present on the Greater Mapungubwe Landscape, but it has been suggested that we cannot rely on the CCP to be consistently present at archaeological homesteads and need to reassess our use of agriculturalist ethnography in this respect (Badenhorst 2009).

It seems likely that foragers encountered farmers at this time, but it cannot be said whether this was via long-distance trade with agriculturalists living on a different landscape or the result of interactions with those sharing the landscape with foragers. Hence, this period fulfils the role of the first moving frontier in which changes begin, but are not wholly observable in the archaeological record; a time when foraging people may have been relied on by farmers for their knowledge and ritual specialisation and pioneering agricultural groups settled and established themselves on the landscape (J. Alexander 1984).

#### 4.2.3 Second moving frontier – AD 900 to 1010

It was only by about AD 900 that the Greater Mapungubwe Landscape was firmly settled by farming people. At this stage the inward agriculturalist migration became abundantly apparent in the archaeological record, in line with J. Alexander's (1984) concept of the second moving frontier. There have been a number of arguments as to why the area was so suddenly and thoroughly occupied but the accepted view is that it had to do with acquiring ivory for the evolving East Coast Trade Network along the present day Mozambique coastline (see Mitchell 2005b; Figure 4.3). Whether or not this is correct, it resulted in a shift in the foraging culture (Hall & Smith 2000) and began a process of ethnic stratification (van Doornum 2005: 174-175). The wealth generated during this time laid the framework for social and political developments that would ultimately culminate in the establishment of southern Africa's first state (Huffman 2000). Yet it was the foraging people who at this time were affected the most by the arriving agriculturalists (Hall & Smith 2000).

Van Doornum (2005: 175) suggests that Tshisiku was used less frequently or by a smaller forager group from AD 900 since there is a continual decrease in artefact densities from this time. Balerno 2 and 3 also experienced decreases, which van Doornum (2005: 175-176) suggests indicates that smaller sites were not being used as frequently during this period. She also believes larger sites may have been used more regularly, such as Balerno Main in which increases in most artefact categories occurred (van Doornum 2005: 177). She posits that sites within or nearer to farmer homesteads may also have been occupied during this phase in order to be closer to agriculturalists. Alas, research has not yet been able to confirm her suggestion. Forager assemblages were found in homesteads at Den Staat AB32 (Forssman 2010) and Haakdoring AD168 (Huffman 2009b), but do not convincingly show a link between foragers and farmers (Forssman 2010, 2013); in other parts of southern Africa there is strong evidence of this association (e.g. Mason 1981; Maggs 1980; S. Hall 2000). Locally, Calabrese (2005) found forager stone tools in and associated with a Zhizo site on Edmondsberg called Baobab, but he rightly questions who the producers of these tools were, suggesting that farmers may have made them at commoner sites since few iron implements have been found in these contexts and during this period. Farmers, too, may have knapped stone at rain-control sites (see Schoeman 2006b). Thus, stone tools in farmer contexts do not always mean that foragers lived at the site – they may have visited it periodically – or that they were the producers of the artefacts.

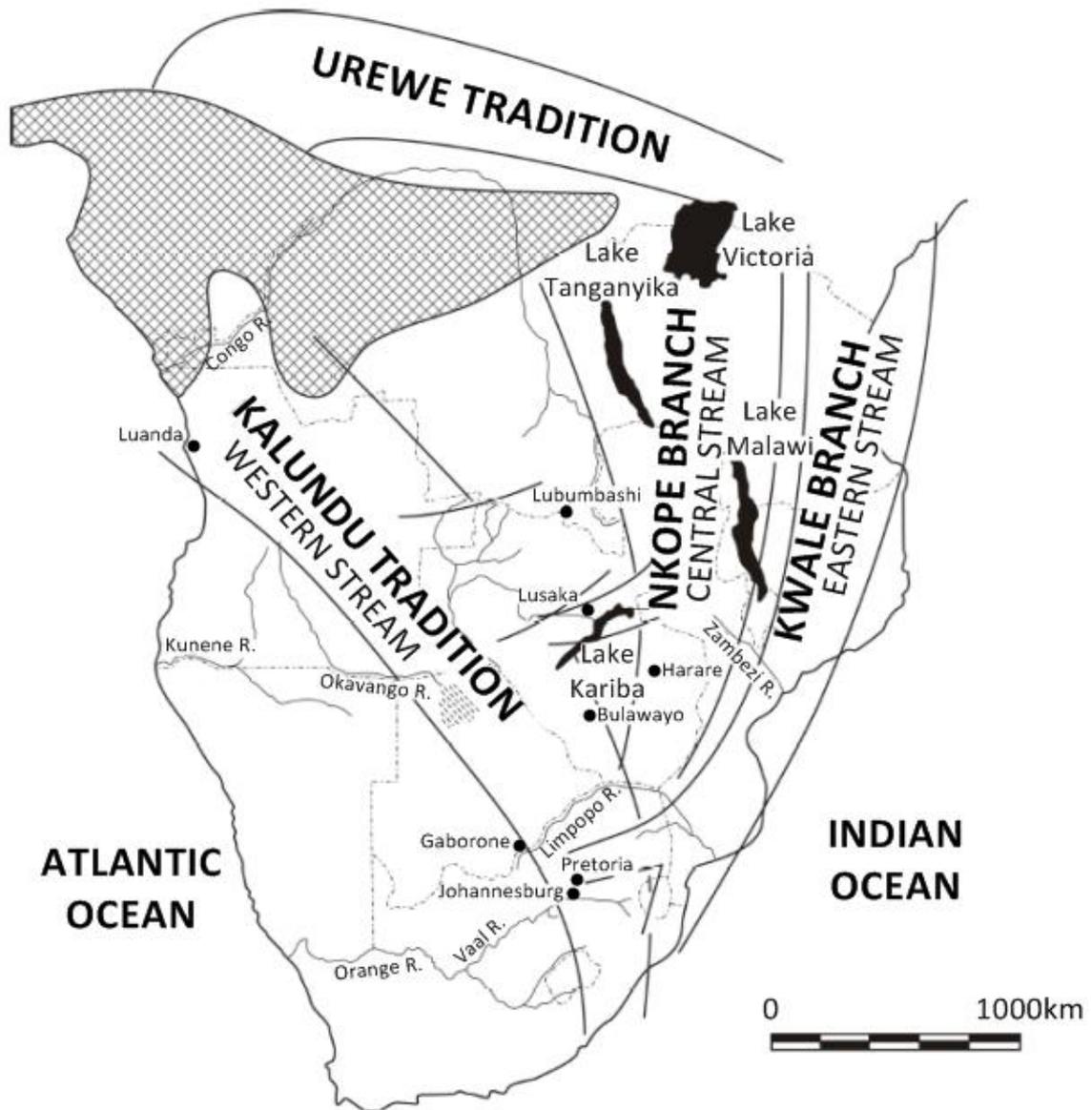


Figure 4.2: The migration routes taken by agriculturalists arriving in southern Africa (adapted from Huffman 2007: 336).



**Figure 4.3: The Greater Mapungubwe Landscape to the east coast of Africa with other important sites shown (adapted from Huffman 2009a).**

Little Muck shows a very different forager record. From AD 900, artefact frequencies continue to increase (van Doornum 2005: 175), which may be because of nearby Zhizo homesteads as well as the major agriculturalist settlement of Leokwe Hill, about 1.5km away (Calabrese 2000a, 2000b). Hall and Smith (2000) argue that during this time the rockshelter was used, in part, as a workshop to manufacture trade goods, as seen by the high frequency of scraping tools, shell beads and bone linkshafts, to exchange with nearby agriculturalists. Van Doornum (2005: 177) suggests that sites such as Little Muck may have been used temporarily when larger rockshelters, like Balerno Main, were not being used. She postulates that this may have been done in order to avoid contact, but this surely was not the case; the difference of a few kilometres could not have truly separated foraging and farming people. Other possibilities may be intentional avoidance of face-to-face contact with agriculturalists periodically, or an incomplete understanding of the archaeological patterning of the landscape; we do not yet know where all of the sites are and so it is possible that agriculturalists did, in fact, live within the so-called 3-4km ‘farmer free’ zone around Balerno Main.

Corresponding with these changes in the forager record is the settlement of the valley by Zhizo ceramic-producing farmers. By at least AD 900 Zhizo homesteads are found in a number of

locations (Huffman 2000, 2007: 366), though by AD 1020 all evidence of Zhizo ceramics disappeared (Huffman 2007: 366); stylistic traits of the facies continued in the form of Leokwe and Toutswe ceramics (Calabrese 2000a). Most Zhizo homesteads clustered on the escarpment edge above the vlei zone and the Limpopo River floodplain and not in the vlei where there are fertile soils (Du Piesanie 2008; Figure 4.4). One would expect farmers to have settled on the edge of the floodplain had they occupied the area for cultivation purposes. Instead, it has been suggested that their settlement was in order to access the large ivory reserves of the area for trade purposes with East African and Arabic merchants (Huffman 2000). The earliest evidence of such trade is from Makuru where glass beads were found (Huffman 1973), dating to the eighth and ninth centuries AD (Huffman 2007: 75). By AD 900 goods were being exported from the Greater Mapungubwe Landscape to the East African coast near modern day Vilanculos, Mozambique (Wood 2011), to a site known as Chibuene (Sinclair 1982). This included ivory, rhinoceros horn, leopard skins, gold and probably certain perishables (e.g. Barnard 1992: 55). In return farmers received glass beads (see Wood 2000), cloth and later glazed stoneware (Huffman 2007: 77-78, 2009a), with the occasional unusual item such as a copper coin found at Great Zimbabwe (Huffman 1972). Glass beads are of great interest because they can be used, if they have not moved in the deposit, as chronological markers and are fairly abundant in the local archaeological record (Wood 2000, 2005).

The location of the Zhizo political centre, known as Schroda, situated northeast of Mapungubwe (Hanisch 1980), indicates a focus on trade rather than cultivation since it is located away from fertile land and in close proximity to a large vlei in which the elephant population fed (Huffman 2007: 368-371). It may be that the capital shifted to Leokwe Hill in a more fertile area sometime in the latter portion of the Zhizo occupation (Huffman 2007:368). This would explain some of the Zhizo sites that are located in the fertile zone (Du Piesanie 2008: 27-29) such as Baobab (Calabrese 2000a). While this remains to be shown (Huffman 2007: 368), all available evidence indicates that the Greater Mapungubwe Landscape was first properly settled by farmers in order to support their trade endeavours, rather than for agricultural purposes (this is currently being challenged by Annie Antonites and myself in separate studies). This would have influenced their relationship with foragers as they may have become embroiled in labour that might have included elephant hunting, cultivation, herding and mercantile trade, possibly facilitating the passage of goods to and from the coast (see van Doornum 2005: 173). This last idea is of particular interest. Denbow (1986, 1990) discusses the role foraging people played in the area around the Makgadikgadi Pans of north-central Botswana; evidence from Nqoma and Divuyu in Tsodilo Hills seems to indicate that they were used to transport goods between different Bantu-

speaking groups and possibly over large distances such as across the Kalahari Desert (see Gordon 1984: 207). Elsewhere, he suggests that farmers may have traded with foragers based on finding chert blanks at Bosutswe (Denbow 1999), an agricultural homestead occupied from AD 700 to 1700. Here, too, there is ample evidence of trade in the form of luxury items such as glass beads, bronze and game meat, but the authors are not specific as to who may have been involved in this trade other than neighbouring farming people (Denbow *et al.* 2008). Likewise, near Gaborone Reid and Segobye (2000) report on foraging campsites situated near to major agricultural polities, which they argue was in order to take part in trade arrangements. The extent to which foragers were involved in such trade, and whether they were involved in long-distance trade as travelling traders, cannot be said for certain but it seems they played a role in these activities.

The initial settlement by farmers on a foreign landscape may have favoured the role of foragers in the farming economy beyond being merchants. In northern Uganda and northern Tanzania, farmers had a generally negative perception of foraging people yet were well aware of their extensive knowledge and used them as a resource (Kenny 1981). In southern Africa farmers appropriated forager sites in order to obtain ancestral power over the landscape. This happened at Thaba Sione in the North West Province (Ouzman 1995) and at the Matsieng creation site in southern Botswana (Walker 1997) within the last 1500 years, and in the Soutpansberg at Tomba-La-Ndou, a rock art site used by the Venda people (Loubser & Dowson 1987), and Salt Pan Shelter as well as possibly Little Muck between AD 1000 and 1200 (Hall & Smith 2000). It may be that early settlers adopted a part-time foraging economy when they first settled on a new landscape to help cope with their unfamiliar surroundings and to establish their fields before subduing the landscape (J. Alexander 1984). If so, at this time they may have relied on foragers.

During the period of the second moving frontier farmers firmly established themselves on the Greater Mapungubwe Landscape. Homesteads appeared in the region (Du Piesanie 2008) and local capitals were established (Calabrese 2000a; Huffman 2007: 368). The forager record changed most notably at Little Muck (Hall & Smith 2000) and it appears that forager settlement patterns were now being disrupted, as indicated by the decreasing artefact frequencies at Balerno 2 and 3 and to a lesser extent Tshisiku (van Doornum 2005). Thus, at this stage the establishment of polities and exploitation of local resources, which in this case included elephants, fulfils Kopytoff's (1987) concept of a frontier. The static frontier succeeded this phase and is a period where the possibly previously innocuous changes in the forager record gave way to wholesale shifts in forager identity, ideology and material culture.

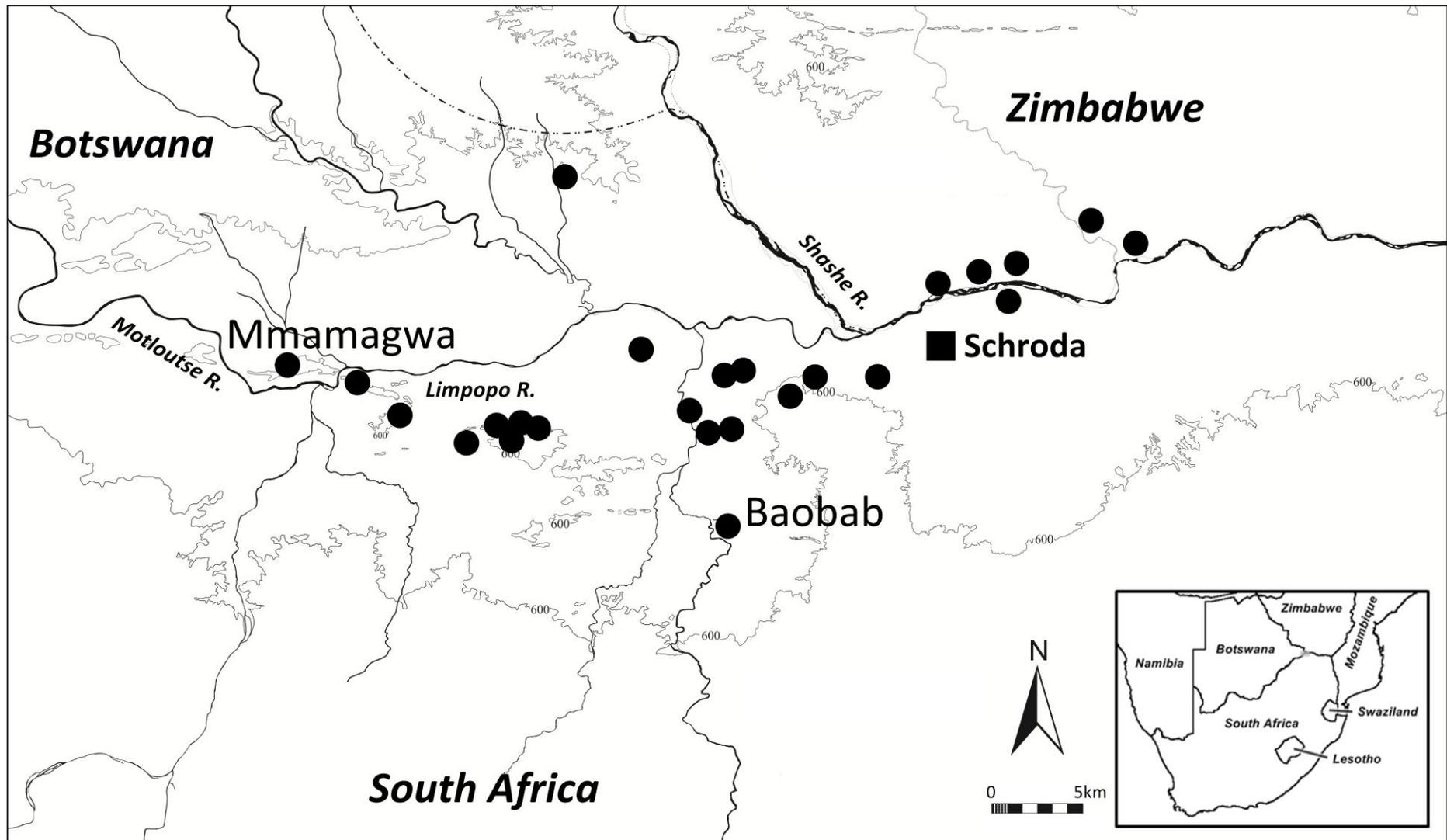


Figure 4.4: Zhizo settlements on the Greater Mapungubwe Landscape (adapted from Huffman 2000).

#### 4.2.4 Static frontier – AD 1010 to 1300

The static frontier represents the greatest and possibly most permanent shift in the region's foraging signature. By its end the forager record, as it has been recognised archaeologically, ceases to exist on the Greater Mapungubwe Landscape (van Doornum 2005: 183). Of course, this may be due to a number of issues including eventual assimilation, migration, or the fact that only large or impressive rockshelters have been excavated so far. Changing settlement patterns may have resulted in foragers living within farming homesteads (cf. Moore 1985) and unless foragers are studied from a farmer perspective (Sadr 2008a) this could go unnoticed. In other words, homesteads with forager residues should be excavated, as shown by S. Hall's (2000) work in Madikwe and Huffman's at Den Staat AB32 (Forssman 2010). Smaller discrete signatures need to be considered as it is to this that the foraging culture may have been reduced (S. Hall 2000). It is also entirely possible that the forager identity continued although altered; the lack of archaeological remains does not mean local extinction since foragers may have continued living in the area 'invisible' to archaeologists once they had adopted farming practices.

From about AD 1010 Leopard's Kopje ceramics appear in the archaeological record, ceasing around AD 1300 (Huffman 2000). The facies exists in three phases (Huffman 2009a): K2 (AD 1010 – 1220), Transitional K2 (TK2; AD 1200 – 1250) and Mapungubwe (AD 1220 – 1300). During the first phase, agriculturalists seized political control of the landscape from the incumbent Zhizo ceramic-producing farmers (Calabrese 2000a; Huffman 2007: 371-373). Importantly, farmers took over the trade network and in so doing obtained control of the incoming wealth (Calabrese 2000a). Like the findings from Schroda (Hanisch 1980), but to a greater degree, glass beads and ivory pieces at the K2 political centre, Bambandyanalo, occur in burials and around the main midden, thereby demonstrating the importance of trade wealth (Huffman 2007: 373). There also appears to be an emphasis on political elitism during this time based on a shift in settlement structure; whereas previously cattle were in the centre of the homestead, at Bambandyanalo the court took up this central zone (see Meyer 1998; Calabrese 2000a). Evidence indicating that the political elite were K2 ceramic-producing farmers appears in the form of the diffusion of ceramic decorative motifs. At the time when K2 ceramics first appear, a new ceramic tradition known as Leokwe develops and is a combination of Zhizo and K2 decorative styles (Calabrese 2000a). To the west, at the same time, Toutswe ceramics appear (see Denbow 1982, 1983; Van Waarden 1999; Reid & Segobye 2000), which are also notably influenced by K2 styles (Huffman 2007: 387). In both cases, however, the K2 facies did not change. There is also a division between the K2 and Toutswe regions and the Motloutse River in Northern Tuli appears to be the boundary (Huffman

2007: 387). The evidence seems to indicate that the K2 ceramic-producing farmers, with their access to trade wealth, were the local elite community.

Social distinction and stratification formed the basis of the succeeding Mapungubwe state, Johnson and Earle's (1987) 'regional polity'. The old spatial pattern at K2 did not suit the new social order, prompting the eventual shift of the capital to a more appropriate site nearby (Huffman 2007: 373, 376). The hilltop complex provided ample opportunity to restrict access to a chief who spatially was now distinct and considered sacred (Huffman 2009a). The hill, too, had been used as a rain-control site since the mid-first millennium AD and the chief was perceived to be able to access this power and use it to benefit his people. Mapungubwe thus represents the pinnacle of social stratification, political power, the accumulation of wealth and the largest population in the region's pre-colonial history (Huffman 2000, 2009a). At this time farmers had thoroughly subdued the landscape, controlled local wealth and established long-distance relationships with other communities up to 450km away (Huffman 2000). Certainly by the time of the Mapungubwe capital, J. Alexander's (1984) static frontier existed. However, it was through political and social developments during the K2 period that the framework for the Mapungubwe state was established. Massive increases in wealth at K2 and the beginning of social stratification between K2, Leokwe and Toutswe ceramic-producing people, indicate that the static frontier, in fact, began around AD 1010. Evidence in the forager record appears to concur.

By the time K2 ceramics appear, forager assemblages had been increasing in density at all of the excavated sites (van Doornum 2005: 172; but see Jerardino 1995). While their settlement patterns had changed along with their utilisation of the landscape, foragers seemingly adapted to the arriving agriculturalists and engaged in trade (Hall & Smith 2000) and possibly labour. It is suggested that interactions were sporadic rather than intense based on limited evidence of exchange goods at most sites (van Doornum 2005: 174) and the possible tempering of interaction through forager mobility patterns (see Moore 1985; van Doornum 2005: 177); I find this to be an odd conclusion considering that not all 'evidence of interaction' was tangible and, what was, may not have all been returned to the rockshelter site to begin with. Nevertheless, foragers maintained their autonomy at least in part at sites such as Little Muck, Balerno Main, Tshisiku and Balerno 2 and 3 (see van Doornum 2005). Forager assemblages found at Den Staat AB32 and Haakdoring AD168 might suggest that this was not always the case and that some foragers were intimately involved with farmers, possibly engaging in the agricultural economy.

However, only at Balerno Main, during the static frontier, did the forager assemblage maintain its frequency, something that van Doornum (2008) suggests is an indication that the occupation

intensity of the site remained fairly consistent. In all other sites stone artefacts diminished and disappeared altogether (see van Doornum 2005); only around AD 1300 when the Mapungubwe capital was abandoned did this occur at Balerno Main (van Doornum 2008). It is suggested that because the site was an aggregation camp, it may have been used throughout this period, whereas dispersal camps were abandoned and sites near or within farmer homesteads favoured (van Doornum 2005: 182). It seems entirely possible that during this phase foragers themselves began abandoning the landscape and taking refuge in 'free' space found elsewhere. Equally, increased interaction and the restriction of space (Moore 1985) may have led to assimilation (S. Hall 2000; Hall & Smith 2000), resulting in the archaeological invisibility or masking of foragers; they now appear, materially, as farmers. If so, conclusions such as the suggestion that Little Muck was now appropriated by farmers (Hall & Smith 2000) need to be questioned. If this is the case, it suggests that foragers were still present on the landscape but not engaging in a recognisable 'LSA' economy and if so we may need to rethink how we view these 'foragers'. Identifying such a pattern is dependent on discrete finds in the archaeological record (see S. Hall 2000) and expectedly very difficult to identify.

#### **4.2.5 Consolidating frontier – AD 1300 to present**

The term consolidating frontier is used here to describe the period after the Mapungubwe capital was abandoned (after Lane 2004). During this time, in J. Alexander's (1984) model, there is increasing warfare, the intensification of technologies such as those involved in agriculture, population restrictions, consolidation of symbiotic relations between foragers, herders and farmers, encapsulation and, significantly, the disappearance of the forager language and culture (see Lane 2004). In essence, the consolidating frontier is a development from the static frontier in which the changes that began during that phase are intensified, such as the disappearance of the forager record. While archaeologically this seems to have occurred by AD 1300, some excavations, and also some historic evidence, indicate that foragers persisted on the landscape into the last century.

Findings at Hall and Smith's (2000) and van Doornum's (2005) excavations in northern South Africa indicate that the forager record disappeared around AD 1300, which is probably linked to the abandonment of the Mapungubwe capital (van Doornum 2008). However, each excavation has been conducted inside a rockshelter and so we cannot test whether between AD 1000 and 1300 the gradual decrease in density of forager artefacts and sites was linked to changes in their settlement patterns, including them living in open-air sites or in sedentary camps. Two sites may indicate this shift: Den Staat AB32 (Forssman 2010) and Haakdoring AD168 (Huffman 2009a).

Both sites are agriculturalist homesteads that contained forager assemblages but in each the association between the forager and farmer use of the sites could not be established due to mixing. Thus, even though, for example, Den Staat AB32 was occupied after 1600, it does not indicate that foragers were still present on the landscape (Forssman 2010).

Historical accounts are of great interest. Many travellers, missionaries and hunters left records of their interactions and meetings with Bushmen and other indigenous people (e.g. Lichtenstein 1815; Burchell 1822; Anderson 1888; Selous 1893). There are only a few accounts, however, that offer us deeper insights into the most recent Bushman occupants of the Greater Mapungubwe Landscape. Notably, Elton (1872) reported on his findings from a voyage down the Shashe River into the Limpopo River and towards the coast searching for a more viable route from the Tati River mines in Botswana to the merchant ships of the Indian Ocean. He noted that Bushmen were living in agricultural homesteads near the confluence of the Shashe and Limpopo Rivers. They lived as an inferior community amongst other farmers and he described them as wretched specimens of humanity, a sentiment often used to describe Bushmen (e.g. Lichtenstein 1815; Harris 1844). Dornan (1917) found that Bushmen in the Motloutse district were the subjects of Khama III, king of the Bamangwato people, and they owed him tribute goods in the form of skins and ostrich feathers in return for protection. Of particular interest was their living habits; like Elton (1872) before him, he too found Bushmen that had settled in permanent villages but this time on the Motloutse River, about 35km west of where Elton (1872) encountered Bushmen. Interestingly, these are not the only accounts of Bushmen living in homesteads and practising an agricultural economy in the area. About 120km south at a village called Senwabarwana there is a well which is known as 'The place where Bushmen drink' and it is used to this day because of its perceived power. Local people told the Eastwoods that Bushmen here were not persecuted but married into Koni and Hananwa families and lived among them (Eastwood & Eastwood 2006: 188). Whether this was the case throughout the area is unknown.

Sadly, not all reports are good. Although somewhat anecdotal, Selous (1907: 243) account from his activities in the area mentions the merciless slaughter of local Bushmen who lived off the vegetation and wildlife in the hunting grounds of Lobengula, king of the Ndebele, which included the Greater Mapungubwe Landscape. Such killings of the Bushman people along with the *difaqane*, a period of widespread unrest, coupled with large-scale hunting exploits in the region, left the local Bushmen in a desperate state (Eastwood & Eastwood 2006: 188). In addition, Bushmen were victims in the wars between the Tswana and the Matabele during this period of unrest (N. Parsons 1995). Their numbers dwindled and they mixed with other marginalised

Khoekhoe and Bantu groups, becoming what are known today as the Vaalperse or Masele (J. Van Schalkwyk 1985; Van der Ryst 2003). In all historic accounts, only small numbers of Bushmen are mentioned living in the area after the conflict (e.g. Baines 1870; Elton 1872; Selous 1908; Finaughty & Tabler 1973).

There are also a few anecdotal accounts of Bushmen living in and around the Greater Mapungubwe Landscape in the last century. Eastwood and Cnoops (1999) were told by an informant that he had encountered Bushmen on numerous occasions throughout the 1940s and that they lived in grass huts in Zimbabwe and crossed into Botswana to collect lala palms. The Eastwood's also had an informant who mentioned a shaman who operated in the region during the 1930s and 1940s, offering his services and trading with agriculturalists using herbs, medicines and even goats (Eastwood & Eastwood 2006: 189). Their informant also spoke of a hill 30km north of Mapungubwe called *Thavha-ya-Vhasarwa*, the Hill of Bushmen, where they would gather in large numbers to dance. The hill was used until 1947 after which no informant mentioned encountering Bushmen in the area (also see Fletemeyer 1976). If true, this corroborates with a story that I was told by a land owner in Zimbabwe (still within the Greater Mapungubwe Landscape) who had small Bushman groups pass over their family farm occasionally prior to 1950 and believed they lived nearby but in very low numbers (Colin Bristow pers. comm. 2012).

It seems quite possible that Bushmen did persist in the region into the twentieth century and maintained parts of their culture rather than assimilating completely with agriculturalists. However, until we find archaeological data from between AD 1300 and the last century indicating their continual occupation of the Greater Mapungubwe Landscape, after the collapse of the Mapungubwe capital, we cannot say for certain that they inhabited the landscape post-AD 1300 instead of returning much later.

#### **4.2.6 Summary: turning our attention to Northern Tuli**

Archaeological interest on the Greater Mapungubwe Landscape began in the 1930s with the discovery and excavation of Mapungubwe (Fouché 1937). Since then there has been increasing focus on the region's prehistory, especially over the last two decades. Much of this involves the local agricultural sequence (see Huffman 2000) while more recently van Doornum (2005, 2007, 2008) has paid ample attention to the forager record (and see Hall & Smith 2000; Schoeman 2006a; Forssman 2010). Immediately to the north of the Limpopo River in north-eastern Botswana and south-western Zimbabwe, comparatively less work has been conducted. For

example, in Zimbabwe much of the focus has been on the local agricultural sequence, yet even so only a few excavations have been performed (e.g. Robinson 1966; Garlake 1966; Manyanga *et al.* 2000; Manyanga 2006), with even fewer at forager sites (e.g. Robinson 1964; Cooke & Simons 1967; Thorp 2010). In north-eastern Botswana there has been less systematic work conducted and fewer excavations than even Zimbabwe. The result is a gap in our understanding of the local cultural landscape and, significantly, across the Shashe and Limpopo Rivers, in a region which hosted massive political and social changes over the past two millennia. Understanding the archaeology of these landscapes, thus, will contribute to our overall understanding of the region's prehistory. I now provide an overview of the work that has already been conducted in north-eastern Botswana upon which this study will expand.

### **4.3 THE ARCHAEOLOGY OF NORTHERN TULI**

The Northern Tuli Game Reserve is located in the north-eastern corner of Botswana between the Shashe, Limpopo and Motloutse Rivers. As with other parts of the Greater Mapungubwe Landscape, the majority of the work performed here has to do with the agriculturalist sequence (Figure 4.5). This is primarily so because G. Hall was employed by Mashatu Game Reserve (Mashatu) and began a PhD dissertation at the Mmamagwa agriculturalist site. He conducted a surface analysis of the site and studied material eroding from the banks of a seasonal stream in the Mmamagwa valley. In addition he performed an informal survey on Mashatu and with the help of Huffman and Murimbika identified 41 agriculturalist homesteads on the reserve. Only vehicle surveying was used with informal foot surveys around the Mmamagwa ruins during his work at the site. While G. Hall did not complete his PhD, he did compile a compendium of sites on Mashatu and the history of the area along with his up-to-date research (G. Hall 2003). The only published data he collected is included in Wood's (2005) study of the glass beads from Mmamagwa, where she identified Zhizo (AD 900 – 1010) and K2 (AD 1010 – 1220) series beads, Mapungubwe oblates (AD 1220 – 1300) and Khami Indo-Pacific beads (AD 1400 – 1820).

Two additional surveys have been conducted. Mooketsi (2009) surveyed the western portion of Mashatu around the Mmamagwa ruins and identified five archaeological sites with an additional eleven immediately outside of Northern Tuli and around the Mothlabaneng village. Her findings from Northern Tuli include Stone Age (N=2), pre-AD 900 agriculturalist (N=2) and rock art (N=1) sites, but she does not discuss her survey technique or the way that she defines a site. The other survey was conducted by the late Ed Eastwood (pers. comm. 2010), who covered the area along the Motloutse River looking for rock art sites. He found ten within Northern Tuli and an additional 15 in the Tuli Block outside of the reserve. His focus was exclusively on rock art sites and he made

no other recordings of stone tool scatters or homesteads unless they featured in rockshelters containing rock art. Of the sites he found in Northern Tuli, five are brush painted, two are finger-painted (Eastwood & Smith 2005), two are either *mankala* boards – a type of game – grooved stones or cupules which may have been authored by foragers, herders or agriculturalists, and one is an engraved animal track that was likely authored by a forager (see Eastwood & Eastwood 2006).

In addition to the limited surveys there have been a few excavations. The earliest of these was van Waarden's (1979, 1980) excavations at Leeukop Koppie. On the hill a well preserved late-1800 occupation was found with a possibly earlier 1600 component. Van Waarden (1980) identified over 40 pole-and-daga structures, several middens, ceramics, beads and a number of human burials all associated with agriculturalists. The site may have also been used for rainmaking (G. Hall 2003) based on its physical appearance: steep sides, difficult access, limited space and it being a distinctive feature on the landscape (see Huffman 2007: 71-73). Linked to this possible ritual use of Leeukop is the modern perception of the site; I was told by local Birwa people that they consider it sacred and if the proper permission is not acquired before climbing the koppie one risks angering the ancestors.

Leeukop was excavated as part of a larger project sponsored by Trent University, Canada (van Waarden 1979), under which Commando Kop or Pitsani Hill (Voigt & Plug 1981), approximately 22km northeast from Leeukop along the Pitsani River, was also excavated. The site was occupied between AD 850 and 1000 and both Zhizo and Leopard's Kopje (probably K2 based on the dates) ceramics were found during excavations. Of interest is the faunal record, which like Pont Drift, a Zhizo homestead in South Africa, suggests that hunting and gathering was important because wild game make up the major component of the assemblage; normally goats, sheep and cattle dominate the faunal record of agriculturalist homesteads (Voigt 1986). Excavations at Commando Kop also revealed collapsed huts, ash middens, small pole-and-daga structures, ceramics, figurines, glass beads and iron implements. A total of eleven human burials were also found (Voigt & Plug 1981). There is an historic use of the site from the Second Anglo-Boer War (1899 – 1902), during which the area saw some action between British and Boer soldiers, particularly around an old trading post called Bryce's store, which was attacked in 1899 (Hickman 1972). At this time Commando Kop was used as a cannon station because it is ideally situated 2km upstream from Bryce's store (Huffman 2012). Fortunately, the Boer War activity at Commando Kop did not disturb the archaeological record significantly (Voigt & Plug 1981).

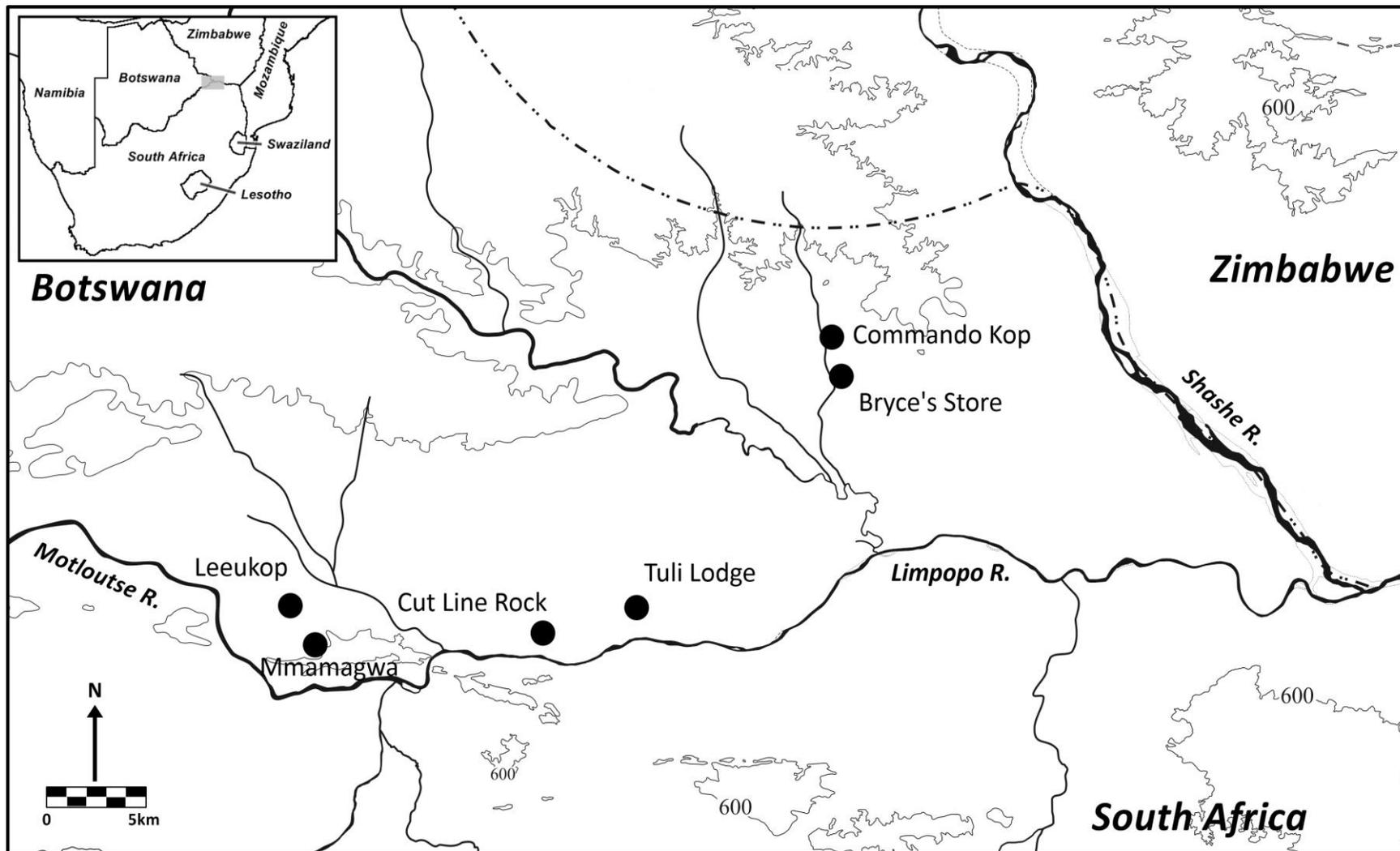


Figure 4.5: Previous excavations in Northern Tuli.

More recently there have been two excavations in Northern Tuli: Walker's (1994) excavation of Tuli Lodge and Mosothwane's (2011) at Cut Line Rock. Mosothwane's (2011) excavation in 2008 was limited to the removal of a desiccated human body, which had been partially exposed. She found that the individual was a black African male aged between 40 and 60 years old. The homestead from which the remains were found contained Khami ceramics indicating an agriculturalist occupation of between AD 1400 and 1820 (Huffman 2007: 259). The site also has so-called Khoekhoe rock art not mentioned in Mosothwane's (2011) paper. Walker's (1994) excavation of Tuli Lodge is more relevant to this dissertation. He excavated the site as part of a larger project to show the diversity of forager assemblages across Botswana. Also reported on in the paper are Tsodilo Shelter in Tsodilo Hills, Magagarape near Gaborone and Mantenge Shelter in the Northeast District. At Tuli Lodge Walker (1994) excavated two 1x1m squares to a depth of 30cm. He identified six stratigraphic units in his excavations, all about 5cm thick (pale sand, grey sand, grey ash, ash with spalls, stony, very stony). In total, he recovered 14,379 stone tools of which 441 are formal tools (3.1%). He noted a decline of backed pieces relative to scrapers in upper levels although he is not specific about this trend. The assemblage also included Bambata sherds and what Walker (1994) calls Mapungubwe/Zimbabwe ware, as well as large amounts of copper slag. A small faunal record was studied and showed a diversity of species, including fish. In the absence of dates Walker (1994) believes the site was occupied from about the first few centuries AD for approximately 1000 years.

Clearly, the archaeology of Northern Tuli is underdeveloped. The few excavations and unsystematic survey work does not allow for a complete archaeological sequence for the landscape especially with the lack of radiocarbon dating. The lack of attention to the archaeology of this region is one of the concerns with regard to the research focus on the Greater Mapungubwe Landscape, others of which are highlighted below.

#### **4.4 WHAT ARE THE CONCERNS WITH THE FORAGER SEQUENCE OF THE GREATER MAPUNGUBWE LANDSCAPE?**

The work of Hall and Smith (2000) brought to our attention the complex nature of interactions occurring between foragers and farmers on the Greater Mapungubwe Landscape, research which was then later pursued by van Doornum (2000). Her work (van Doornum 2005, 2007, 2008) sought to establish a forager sequence for the region and she did so by arguing that five cultural phases existed beginning c. 11,000 BC. I have previously attempted to test this model by incorporating open-air finds and found that the landscape is culturally inconsistent; different forager expressions can be found in different areas of the region (Forssman 2010, 2013). Other

work has looked at the role foragers played within the rain-control ritual in agricultural society (Schoeman 2006a, 2006b; Brunton *et al.* 2013). While these studies have made major contributions to our understanding of the local forager sequence, we are discovering more about landscape utilisation patterns, site variability and the nature of 'contact' that is helping to develop the way we view the late Holocene, and particularly foragers.

Van Doornum (2000, 2005, 2007, 2008) has conducted the majority of research in the area and laid down the foundation for future work. She argues that her model characterises the hunting and gathering people of the region. The question of whether her excavations are representative of the local foragers sequence; based on my previous findings in northern South Africa, this does not seem to be the case (Forssman 2010). There, I found a range of hunter-gatherer camps including rockshelter sites as well as open-air camps in valleys, on top of koppies, in rain-control sites, at large boulders and around pans, all in a variety of ecological zones. Den Staat AB32 proves that there are excavatable open-air assemblages outside of the sandstone belt. With this in mind, the five excavations used to develop a regional model clearly do *not* represent the full complement of forager site types. Thus, it is unlikely that all forager activities and expressions of their cultural record are present at the five excavated rockshelters. In fact, to assume that findings here represent the full forager sequence is incorrect. In order to obtain such a representation, sites in different contexts and occupied during different phases of the forager cycle and at different times during the Holocene period must be studied. Only then, once this information is combined with our current findings, will we be able to understand the local forager sequence.

The assumption also seems to have been made that these site types (rockshelters) are an accurate measure of forager and farmer interactions. This has not only been done on the Greater Mapungubwe Landscape (Hall & Smith 2000; van Doornum 2005), but also further afield (e.g. S. Hall 1986, 1994; Sadr 2002b). Furthermore, where such major polities as K2 and Mapungubwe exist, it is conceivable that forager lifeways were more influenced than elsewhere, particularly in terms of their mobility and settlement structures (see Moore 1985); for example, Reid and Segobye (2000) found evidence indicating that foragers moved towards large polities in Botswana for trade and exchange purposes. Rockshelters on any landscape may not contain all of the evidence of interaction especially where major polities occur and foragers may have temporarily occupied camps near to farmers to interact with them, such as in Madikwe (S. Hall 2000) and at Broederstroom (Wadley 1996). On the Greater Mapungubwe Landscape, forager stone tools have been found in a handful of agricultural homesteads (see Forssman 2010) and it seems reasonable

to posit that foragers may not have returned all items acquired through interactions to rockshelters. It is possible, then, that rockshelters do not contain the complete forager assemblage produced and acquired by a single group over their annual cycle. Using only material remains, such as pots, beads and subsistence goods, as an indicator of interaction assumes that these items are worthy indicators of social relations. Modern Bushmen used farmers as social resources to resolve conflict (Lee 1979); a practice that leaves no material remains. One could fairly assume then that there may have been other forms of interaction that left no observable residues. Material items, thus, are a partial indicator of interaction and the lack of such items does not mean that interaction did not occur.

Another issue with current forager studies, such as those on the Greater Mapungubwe Landscape, is the use of ethnography as an analytical technique. It is suggested here that by using a landscape approach, which incorporates findings from various site types and in different contexts, we are able to develop a complete forager sequence and address issues of ethnography, asking can we apply ethnographic findings over southern Africa, for the entire Holocene and between different foraging groups in different ecological contexts? Furthermore, a landscape study is capable of crossing possible cultural boundaries, such as the Limpopo or Motloutse River, and to observe variable archaeological patterns between such territories as well as ecological zones. To do so, a large-scale study is required that takes into account the entire landscape and uses a conservative and all inclusive method.

## CHAPTER 5: METHODS: ARCHAEOLOGICAL SURVEY AND EXCAVATIONS

The fieldwork was conducted in two phases: a survey of the Northern Tuli landscape and, based on these findings, excavations conducted at a number of sites within different contexts. Each phase is presented separately below beginning with a review of survey methods, techniques and definitions; three points that must be considered before a survey method can be established.

### 5.1 PHASE 1: SURVEY

#### 5.1.1 Survey methodology

There has been some debate from these concerns regarding the methodology of an archaeological survey (Bower 1986). Some argue that smaller discrete sites are not found or are overlooked (Orton 2007), and that certain site types are preferred, creating an appearance of uniformity in the archaeological record (Fish & Kowalewski 1990). Often expectations in the forager sequence are based on ethnographic data or previous research, sometimes conducted in very different environments, or those that have not considered the entire landscape (but see Mazel 1989). If not taken into account, identifying archaeological remains may be problematic, but these pitfalls are avoidable. Sampson (1985, 1986a) showed that by constructing a survey technique that identifies and records all manner of archaeological occurrences (and see Foley 1981a, 1981b), sampling bias can be removed, or at least greatly contained. However, no method is able to identify every archaeological feature of a landscape.

Selecting an area to survey is challenging. Considerations such as environmental zones, ecological patchiness, access to land, research costs and time and known archaeological sites – along with the need for a survey – need to be taken into account. In Mazel's (1984 and later) Drakensberg survey in KwaZulu-Natal he selected the survey zone based on known archaeological sites. This secures the success of the survey since it was already known that archaeological features existed in the area. However, not finding any sites, too, is data in itself even though it does not aid in reconstructing cultural assemblages. Mazel's goal was to identify rock art sites for a management plan and so he needed to ensure that he would be able to find them. Sampson's (1985) goals in the Seacow Valley differed from Mazel's (1984) and, accordingly, so too did his survey. Sampson (1985) wanted to test Yellen and Harpending's (1972) hypothesis that Bushman territories are not identifiable in the archaeological record. To do so he selected an area larger than any known Bushman territory. Here he would be able to make observations in the forager sequence, but also identify pastoralist sites. In his survey zone there were a number of different ecological areas and he used a different survey technique in each of them. The local environment plays a major role in

the structure of surveys and the surveyor's ability to find artefacts and sites. For example, in some parts of Namibia different challenges need to be confronted because of the lack of sites in a primary context and the difficult desert conditions (Vogelsang 1998). Vogelsang (1998, 2000) and colleagues, therefore, employed a stratified sampling technique in which they divided the landscape into representative zones that would be surveyed; the area is simply too large to cover fully. In doing so, sites in a variety of contexts were identified and studied further, and the findings in different ecological contexts were compared. Thus, surveying is very much landscape and ecologically dependent.

It is clear from these examples that the survey technique and surveyor's choices are limited by research questions and the landscape itself. There are a number of techniques available to a surveyor. Google Earth, for example, has been used to plot stone-walling structures and identify their features in the Suikerbosrand Nature Reserve, South Africa. Here, Sadr and Rodier (2011) were able to identify all manner of stone-walled constructions dating to the last three centuries and place them into a structural sequence developed in the North West Province. Airborne remote sensing (Bennett *et al.* 2011) and aerial photography (e.g. Mason 1968; Nkhasi-Lesaoana 2008) are also frequently relied on (e.g. Taylor 1979; M. Hall 1981), and were used by Denbow (1984) to identify agriculturalist homesteads in east-central Botswana. He argued that by identifying certain grass types, particularly *Cenchrus ciliaris*, which are clearly observable in aerial photographs, sites could be identified. Reid and Segobye (2000) tested this hypothesis and found that to validate its accuracy it needed to be used in conjunction with a foot survey (see also Foley 1981a). Survey on the ground also takes various forms. A survey is structured in terms of full landscape coverage, partial coverage or a representative survey in different ecological zones. In some cases, surveying smaller areas is favoured (Isaac & Harris 1975), but in order to study settlement patterns and changing lifeways larger zones are required (Sampson 1985). Generally, the survey zone is divided into sectors based perhaps on ecological zones or a grid superimposed over the landscape. If a grid is used, squares within it might be selected randomly or systematically. It is more effective to combine these two techniques to ensure that the entire grid is equally represented, avoiding unintentionally clustering squares in a certain zone and ignoring others (Ammerman 1981; Dunnell & Dancey 1983; Tartaron 2003). Surveying can also be done randomly (Sampson 1985; Lane 1996) or in transects (Bintliff & Snodgrass 1988), within vegetation or geological zones, or at specific features of the landscape such as koppies (e.g. Forssman 2010). In each case the approach is structured around maximising the area surveyed within a time frame and identifying a representative sample of sites.

Sampling is a major concern in any archaeological survey. With any survey technique sites will be missed due to a number of reasons including visibility, vegetation cover, aeolian processes or simply the fact that the area was not covered. The result is that while some sites can be recorded others have been unintentionally excluded. The issue is whether the observable units affect the archaeological characterisation of the survey zone along with its variability (Sullivan *et al.* 2007); in other words, are the sites that were identified representative of the landscape? All of the methods described above strive to reduce the number of sites that are missed while surveying in an area sufficiently sized for the research project to achieve its goals in a short time frame or within the duration of the project. Needless to say, it must be accepted that the data are not complete and in some instances may be based on disturbed sites. However, with studies that take into consideration a large number of sites over a large area and use an effective and thorough recording method, sample size will help lessen the effect that inaccurate data – such as those collected from disturbed sites – have on the overall interpretation of the findings (e.g. Sadr 2009).

### **5.1.2 Assessing archaeological features**

All surveyors must assess and record the quality of the sites or features that they encounter (Foley 1981a). Sites may be composed of multiple occupations giving them the appearance of a single unit. Dating or even studying such palimpsests is problematic as the date may apply to any of the occupations, but which one may be unknowable (Sadr 2009). In such cases it is also difficult to distinguish the association between different artefact types or related artefacts that may have been deposited at the site during different occupations. Determining a mixed assemblage may only be done on further inspection and mixing on the surface may not be indicative of mixing within the deposit. Surface assemblages are of particular value to archaeologists if treated correctly (Forssman 2010) and offer a landscape archaeologist a useful measure of the cultural patterning across the landscape, distribution of sites and zones of increased cultural activity from a regional and intra-site perspective. The necessity for studying surface sites has not been fully appreciated in southern Africa (see Orton 2007), but if their value is accepted and the challenges they pose overcome (see Sadr 2009), they will offer deep insights into the prehistory of any landscape.

The final issue a surveyor must consider is the definition of a site. The basic definition states that a site is a determinable zone with an accumulation and preservation of artefacts in the form of, for example, stone tools, bone or shell (Foley 1981a: 11; Le Baron *et al.* 2010). In North America and Europe some researchers have abandoned the use of the word 'site' because of problems in defining this feature (Ebert 2001). Isaac and Harris (1975), for example, looked at 'the scatter

between the patches' and demonstrated the problems with defining sites which resulted in excluding artefact scatters or assemblages occurring between them. Suggestions have been made that the 'site' is not the ideal framework for analysis because artefacts are found continuously across the landscape but in discontinuous cultural forms (D. Thomas 1975; Foley 1981a), meaning that, for example the forager cultural signature, can be found over an entire region but all of its expressions are not found at the same site type, regardless of how each site type can inform researchers on different aspects of behaviour (Binford 1983). Sampson (1984b) argued that sampling methods are problematic when the nature of the archaeological remains is unknown; only after assemblage configurations are established can sampling of sites be introduced. Other scholars have adopted a less specific use of the word, using it to refer to any artefact scatter, whether a short or long term occupation or a multi-phased human settlement (e.g. Bevan & Conolly 2002-2004). Similarly, according to Foley (1981a: 11) being a 'site' does not refer to the concentration of artefacts but rather their presence. The same approach was used in modern day Virginia where Palaeo-Indian sites are sparse (Gardner 1983), and the term 'site' therefore appropriate. However, in the Vézère Valley in southwest France the surface is littered with flint tools and the region cannot be divided into distinct sites (Blades 1999). On the Greater Mapungubwe Landscape, I found a combination of these examples; in some areas there was an extensive stone tool scatter, whereas in others distinct sites were found (Forssman 2010).

The definition of a site draws on other debates regarding special-purpose sites (Binford 1983) and those that archaeologists choose to excavate, which generally fit the definition of a 'site', ignoring those that do not (Orton 2007). It thus depends on the surveyor's intentions (Sullivan *et al.* 2007), and in some areas using sites as the observable unit may be appropriate (Wright 2004), but in others it may be more appropriate to use features (Wilcox 1999), or artefacts (Foley 1981a, 1981b; Ebert 2001), to define archaeological points. For this reason, rather than categorising finds as 'sites', I have decided to refer to them as archaeological features. These include all the varieties of sites, which includes occupation or special-purpose sites (Binford 1983), as well as ephemeral surface scatters and off-site finds (see Foley 1981a). This absolves us from the issue of addressing the contentious definition of a site.

Considering the importance of a survey in archaeological research (Alcock & Cherry 2004), its ability to acquire (Sampson 1985) as well as improve on data (Sadr 2009), while challenging our current understanding of the local archaeology (Forssman 2010), discussion of the theoretical and methodological issues I have just outlined is often unduly lacking in southern Africa. Instead, it seems surveys here are generally informal and lack the accreditation and attention they deserve

(cf. Sadr 2009) or have not been conducted effectively (e.g. Mooketsi 2009 against results presented here). A number of local surveys have, however, enhanced our understanding of the past (e.g. Sampson 1974, 1985; Mazel 1984) and have shown that the need to construct the landscape and fill it with archaeological sites, patterns and representations is evidently apparent and required to develop any regional model.

### **5.1.3 Surveying Northern Tuli**

#### **5.1.3.1 Survey zone**

The first stage of my research was to establish a viable survey zone on the Greater Mapungubwe Landscape. In my previous work in northern South Africa, I surveyed koppies in an area of approximately 160km<sup>2</sup> (Forssman 2010). While a number of sites were identified in the survey, the major flaw was that it did not consider all features of the landscape. Primarily, the sandstone zone in between the koppies was mostly ignored because few sites were identified in this zone during a preliminary survey (Forssman 2010: 27). Nevertheless, another survey of a fairly large area in South Africa would offer an ideal comparative sample for any data collected elsewhere in the region, including from excavations, and so continuing research of this nature would prove highly valuable. However, much has been done and the unsurveyed area is in amongst van Doornum's (2005) excavations and alongside an area that I previously surveyed (Forssman 2010, 2013). Immediately to the north across the Limpopo River in Botswana and Zimbabwe, however, very little archaeological work has been conducted, though the findings from South Africa are used *a priori* when discussing this area (Huffman 2000, 2009a; van Doornum 2005). The result is a dearth of research in an area which is intimately linked to the important archaeological landscape surrounding the Mapungubwe state. It was decided, based on the limited amount of previous research, lack of any systematic survey and scarcity of peer-reviewed publications, that north-eastern Botswana would be the study area. Due to time constraints, access to land and political tensions, Zimbabwe would not be included in this study.

Northern Tuli, a 72,000 ha private concession composed of a number of private game reserves, is located in this area of Botswana and is part of the Greater Mapungubwe Landscape. The Shashe and Limpopo Rivers are Northern Tuli's north-eastern and southern borders with an arbitrary fence marking the north-western boundary. A total of 12 weeks were allocated for the survey and so all of Northern Tuli could not be visited and specific farms needed to be selected for research. In the area, Mashatu has seen the majority of research (see G. Hall 2003; Mooketsi 2009) and includes the large Mmamagwa complex; it is also the largest reserve in Northern Tuli (25,018.5

ha). After discussions with the Mashatu managing director, David Evans, and the reserve manager, Pete Le Roux, they agreed to allow access to all parts of the reserve and for archaeological research to be undertaken provided the correct permit was obtained. Two other farms in Northern Tuli were of interest: Tuli Safari Lodge (Tuli; 2143.3 ha) and Uitspan South (Uitspan; 793.65 ha). The only previous excavation at a forager site in the region (Walker 1994) is on the former and the farm itself is relatively small. Uitspan is the smaller neighbour to the west of Tuli and it was here that Mosothwane (2011) excavated the desiccated remains of a Bantu language-speaking farmer. The owners of Uitspan, the van Rensburg family, also specifically wanted research to be conducted on their land. Therefore, due to access and known archaeological sites it was decided that Mashatu, Tuli and Uitspan would make up the survey area, covering 27,955.5 ha of Northern Tuli – an area thought large enough to obtain a representative sample of archaeological sites (Figure 5.1).

#### **5.1.3.2 Survey method, design and techniques**

It was decided that the survey needed to be highly structured in order to:

- Cover as much ground as possible over the 12 week survey phase;
- Keep strict records of which areas were visited by use of tracklogs;
- Identify a representative sample of features in the area from the different ecological zones;
- Provide a detailed account of each recorded archaeological feature;
- Determine the value of transects versus an intentional survey in terms of the results each technique produced;
- Record raw material outcrops;
- Observe differences between ecologically distinct areas; and,
- Record all manner of archaeological evidence regardless of what defines a 'site'.

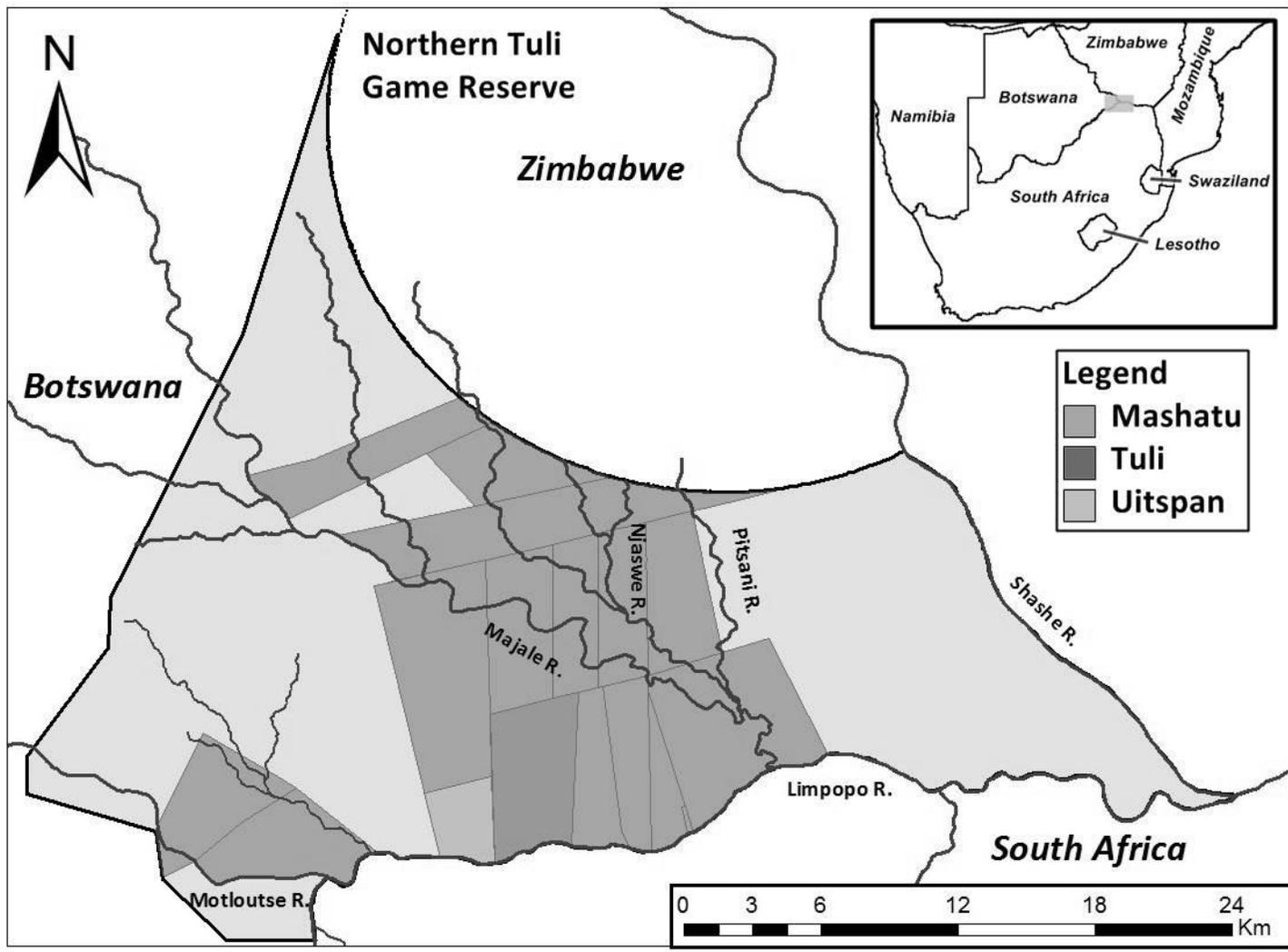


Figure 5.1: Mashatu Game Reserve, Tuli Safari Lodge and Uitspan South with Northern Tuli farm division.

The survey design is based on the techniques used by other surveyors conducting research both locally and abroad. A review of their work shows that there is a great diversity of methods; no single technique appears to be favoured. Transects are often used, but how they are employed varies: some researchers believe that there is an optimal distance between transects (e.g. Bintliff & Snodgrass 1988), and others argue in favour of survey teams (e.g. Lane 1996). Some surveyors have used the natural landscape to determine their survey structure (e.g. Sadr 2009), whereas others have varied their survey through different ecological zones (Sampson 1985, 1986a). One theme that does seem to have persisted is that many surveys were centred in the vicinity of known archaeological sites (e.g. Mazel 1984; Cherry *et al.* 1988; Sadr 2009; Forssman 2010). The most striking feature, however, has little to do with survey methods, but instead the general lack of discussion about them in a southern African framework when further abroad surveys have been discussed for decades (e.g. Schiffer *et al.* 1978; Tainter 1998; Tartaron 2003; Sullivan *et al.* 2007).

Since the whole of Mashatu was not to be surveyed in its entirety, the area needed to be subdivided into zones based either on an arbitrary grid or following ecological zones. The former was chosen in order to not favour specific ecological areas in which archaeological features would be expected. To divide the area and select survey zones, a grid composed of minute squares was laid-out over the area using a topographic map (Figure 5.2) and the squares were labelled alphabetically (west to east) and numerically (north to south). The area of each square that is within Mashatu was calculated (Catalogue A.1.1), but due to the curvature of the earth was later found to be incorrect. This was corrected by taking the known size of Mashatu and the calculated size based on the minute squares; the difference offered a percentage of 1.9% that could be used to offset the area of each square. A number of features were recorded in each square, including terrain ruggedness (length of contours; Catalogue A.1.2), hill ranges (length of hilltop), the dominant geological features and soil types (Catalogue A.1.3) and the number of koppies, known sites and possible sites found using Google Earth (Catalogue A.1.4). Regarding the latter category, agriculturalist kraals and sometimes stone walling were clearly visible, yet still needed to be inspected on foot (see Reid & Segobye 2000). The selection of squares for survey was based on the presence and absence of these conditions and each square was intentionally selected with the goal of covering areas (Table 5.1):

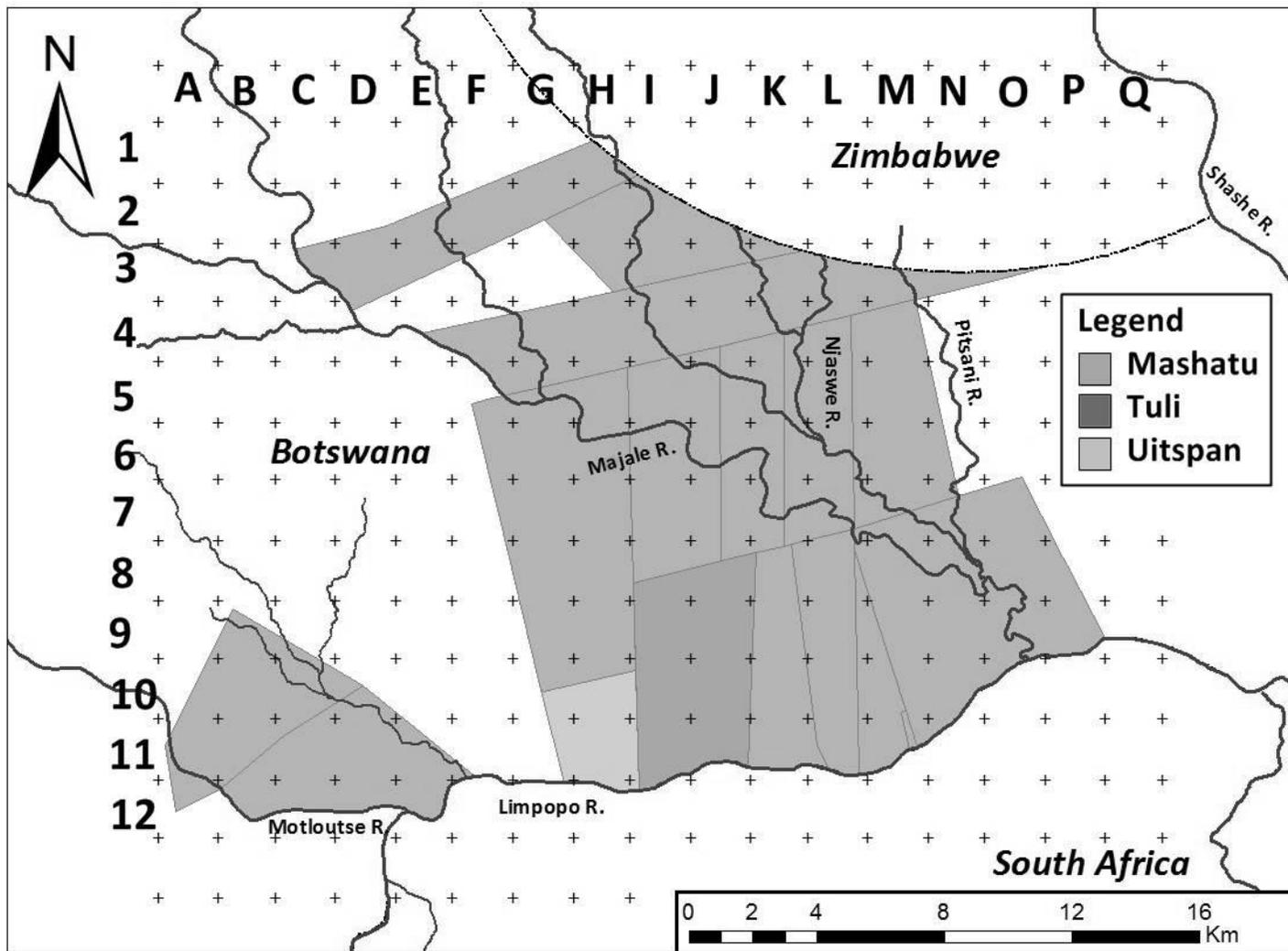


Figure 5.2: The 1x1 minute grid placed over the Mashatu Game Reserve, Tuli Safari Lodge and Uitspan South.

**Table 5.1: Foot survey details: TR, terrain ruggedness; dominant geology and dominant soil type  
(see Catalogue A.1.3 for breakdown).**

Horizontal	Vertical	Km <sup>2</sup>	TR (km)	Area:	TR	Possible sites	Koppies	Hill ranges	Geology	Soil type
A	10	1.4507	8.093	1.000	17.505	6	3	0	B	F
A	11	2.6295	13.628	1.000	16.263	1	1	1	B	C
A	12	0.2932	0.465	1.000	4.978	0	0	0	A	D
B	11	3.1379	13.581	1.000	13.582	3	4	0	B	F
B	12	1.8142	15.860	1.000	27.433	0	1	0	B	C
C	11	3.1379	27.256	1.000	27.256	8	2	1	B	F
C	12	1.8908	24.744	1.000	41.065	1	1	0	B	C
D	11	3.1379	44.279	1.000	44.280	10	4	0	B	C
D	12	1.7298	22.512	1.000	40.836	0	1	1	A	D
E	11	1.8873	31.488	1.000	52.353	2	1	0	AB	D
E	12	1.6673	25.163	1.000	47.357	7	3	0	B	F
G	7	3.1379	23.628	1.000	23.628	1	3	0	A	D
G	11	1.7630	0.000	1.000	0.000	0	13	1	A	F
G	12	0.0992	0.651	1.000	20.599	0	3	1	B	F
H	7	3.1379	19.442	1.000	19.442	4	2	0	B	C
H	11	3.1379	26.605	1.000	26.605	0	4	0	B	F
H	12	0.4210	5.488	1.000	40.904	0	0	0	A	F
I	7	3.1379	25.372	1.000	25.372	3	1	0	B	C
I	10	3.1379	23.907	1.000	23.907	0	0	0	B	F
I	11	3.0690	5.535	1.000	5.659	0	8	1	B	F
I	12	0.2547	3.256	1.000	40.106	0	0	0	B	F
J	4	3.1379	23.326	1.000	23.326	1	6	1	B	D
J	5	3.1379	21.302	1.000	21.303	6	3	1	B	D
J	6	3.1379	25.860	1.000	25.861	3	3	0	B	C
J	7	3.1379	25.628	1.000	25.628	0	5	0	B	F
J	11	2.6252	30.884	1.000	36.915	0	1	0	B	F
K	4	3.1379	26.233	1.000	26.233	4	4	0	B	F
K	5	3.1379	31.209	1.000	31.210	0	5	0	B	C
K	6	3.1379	23.512	1.000	23.512	4	5	0	A	D
K	10	3.1379	8.093	1.000	8.093	0	3	0	B	C
K	11	2.6165	18.233	1.000	21.866	9	3	0	B	C
L	5	3.1379	25.628	1.000	25.628	2	3	0	AB	C
L	7	3.1379	16.186	1.000	16.186	7	3	0	B	C

- In which koppies and hills were present along with known sites;
- To cover all major ecological zone;
- Where no known sites were recorded;
- Where sites were not expected;
- Around the major settlement of Mmamagwa;
- In flat areas with few koppies and hills; and,
- Where floodplains were not present.

It was estimated that one square could be surveyed each day and eight weeks were devoted to surveying Mashatu. It was calculated that 40 squares could be visited during the survey, but in reality only 31 were surveyed on foot over the allocated period since in some areas more time was needed due to the terrain. It was decided that for Tuli and Uitspan the whole of each farm would be surveyed since both farms are relatively small. The southern portion of Tuli was surveyed on foot, but the northern basalt area was vehicle surveyed because in this area, on the neighbouring portion of Mashatu, very few sites were recorded. At Uitspan a Rough Terrain Vehicle was used to survey the farm (Figure 5.3).

The foot survey route was decided upon in the field with an emphasis on identifying as many archaeological features as possible, visiting each ecological zone, and not only areas where a high density of sites occurs. Using this method, time spent surveying was optimised as certain areas could be avoided. In total, 102.7km<sup>2</sup> (10,268.2 ha; 36.7%) of the survey area was covered on foot. A tracklog was made of the entire route using a Trimble Juno SC. While the tracks are useful they do not portray the actual survey intensity of an area. For example, they do not show areas intentionally neglected, such as old agricultural fields or airstrips where sites would have been destroyed by modern interference, or areas where sites are very unlikely to exist or survive, for example steep slopes. Dense mopane stands were also avoided because mopane is a climax species and takes >40 years to re-establish itself (Scholes 1990; Francis Siebert pers. comm.); at most kraals, even at Zhizo sites occupied around AD 900, no regrowth has occurred. Tracks should also be seen as having a 'visibility buffer' on either side as features can be seen from a distance. Lane (1996) argues this is from 10 to 50m from the surveyor in a similar environment, whereas in others it might be as little as 2.5m (Bintliff & Snodgrass 1988). If avoiding specific areas the 'visibility buffer' could be much larger. A series of transects were walked with a team over a day-

and-a-half on the western portion of Mashatu for comparative purposes. The goal was to test which technique was more effective in terms of obtaining results and coverage. The team included five members who walked in single-file along north-south transects. The same recording system used during the foot survey was used here and tracklogs were recorded using the Juno Trimble SC. There are fundamental differences between transects and the foot surveys: a transect survey includes every feature in its path, such as steep hillsides, and represents the entire area equally, whereas an intentional survey could avoid features where sites would not exist, thus allowing the surveyor to cover a larger area in less time than during a transect survey but it risks presenting biased coverage of the survey zone. Comparing the two results, however, is problematic because the landscape differs environmentally and topographically and they did not overlap; ideally the two survey methods should be conducted on the same stretch of land by two different surveyors and immediately after one another before natural forces alter the visibility or appearance of sites – there was not enough time in this project to conduct such a test.

Vehicle surveys were also used in conjunction with foot surveys and by doing so an additional area of 104.2km<sup>2</sup> (10,423.5 ha; 37.3%) was covered. The use of vehicle surveys allowed for coverage of areas that have a low density of sites that would generally take up too much time if they were to be walked. However, not as many sites are recorded by doing this since one moves through an area quicker than on foot and is confined to the road networks (Table 5.2); identifying artefacts from a vehicle is also less reliable than doing so on foot. Nevertheless, combining the two survey approaches allowed for a much wider coverage of the area (see Figure 5.3).

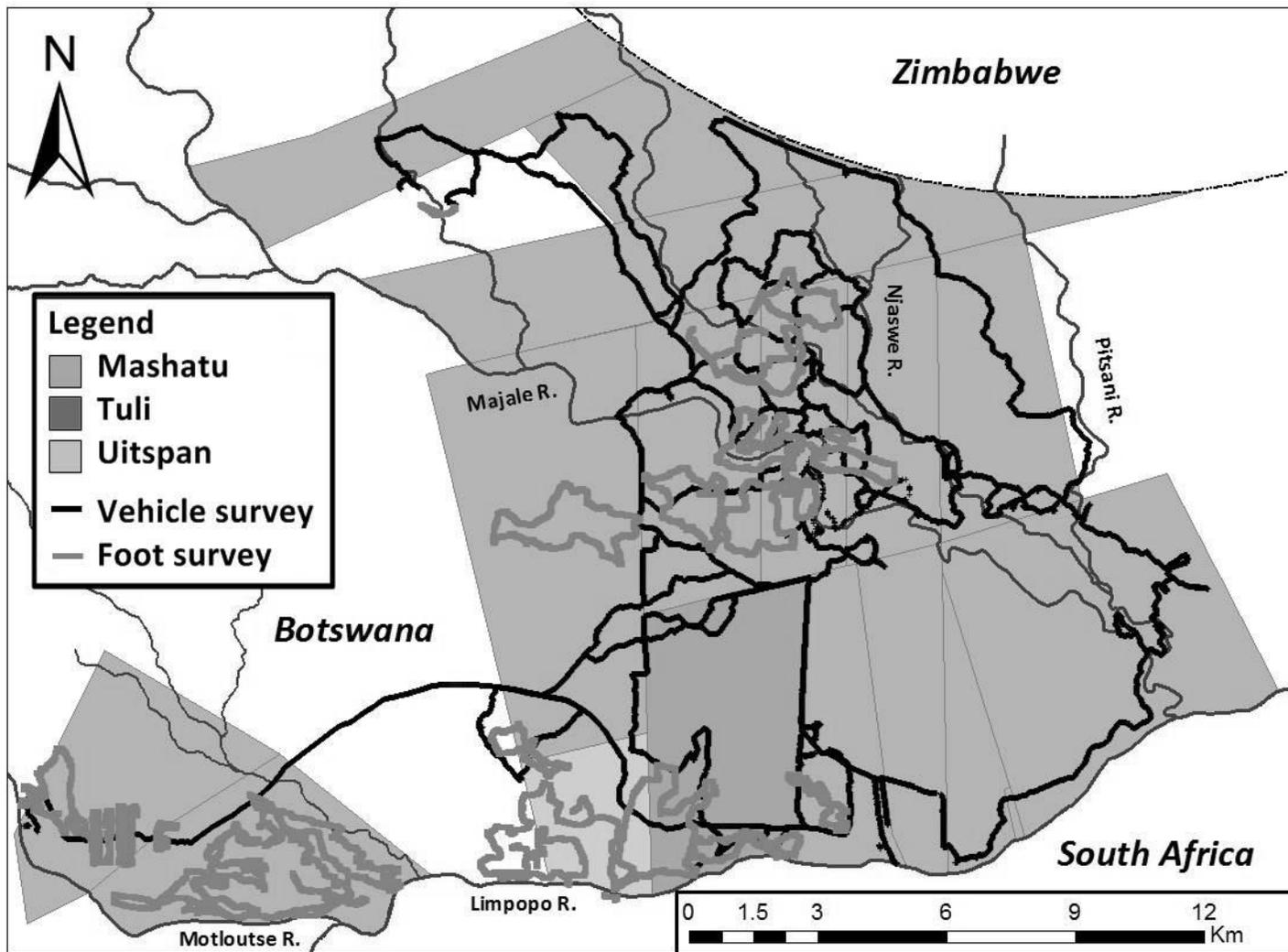


Figure 5.3: Area of Northern Tuli surveyed on foot or in a vehicle.

Table 5.2: Vehicle survey details (see Catalogue A.1.3 for breakdown).

Horizontal	Vertical	Km <sup>2</sup>	TR (km)	Area : TR		Possible sites	Koppies	Hill ranges	Geology	Soil type
E	3	2.0919	15.581	1.000	23.372	0	1	1	B	C
E	4	0.1290	1.349	1.000	32.822	1	0	0	B	C
F	3	0.5819	3.953	1.000	21.318	0	1	0	B	C
F	4	1.2543	16.744	1.000	41.890	3	1	0	B	C
G	9	3.0885	28.512	1.000	28.968	0	2	0	B	C
H	2	3.1379	16.651	1.000	16.651	3	1	0	B	F
H	3	2.9229	17.767	1.000	19.074	0	1	0	A	F
H	4	2.9847	22.093	1.000	23.227	3	1	0	B	C
H	9	3.1378	6.744	1.000	6.744	0	1	0	B	C
I	2	2.4888	12.814	1.000	16.156	1	1	0	B	C
I	4	3.1379	18.465	1.000	18.465	0	1	0	B	C
I	8	2.5802	12.093	1.000	14.707	0	0	0	B	C
I	9	3.1379	11.442	1.000	11.442	0	0	0	B	F
J	3	3.1379	13.163	1.000	13.163	0	2	0	B	C
J	8	1.8263	9.116	1.000	15.663	2	1	0	A	FG
J	9	3.1379	0.535	1.000	0.535	0	0	0	B	F
J	10	3.1379	16.744	1.000	16.744	0	0	0	B	F
K	2	3.1147	0.000	1.000	0.000	0	0	0	B	C
K	7	3.1379	13.070	1.000	13.070	3	4	0	B	F
K	9	3.1379	10.605	1.000	10.605	1	0	0	B	F
L	3	2.1321	16.698	1.000	24.574	1	0	0	B	C
L	4	3.1379	19.349	1.000	19.349	5	3	0	A	F
L	6	3.1379	21.907	1.000	21.907	5	3	0	A	F
L	8	3.1379	13.698	1.000	13.698	0	3	0	B	C
L	9	3.1379	12.233	1.000	12.233	0	1	0	B	C
L	11	2.9042	13.907	1.000	15.026	2	1	0	AB	F
M	4	3.0607	19.907	1.000	20.409	8	2	0	B	C
M	5	3.1379	20.000	1.000	20.000	5	3	0	B	C
M	7	3.1379	7.372	1.000	7.372	0	2	1	B	C
M	8	3.1379	6.256	1.000	6.256	0	0	0	B	C
M	9	3.1379	10.791	1.000	10.791	3	1	1	B	C
M	11	2.0980	6.070	1.000	9.078	0	0	0	AB	FG
N	6	1.5119	8.837	1.000	18.342	10	1	1	B	C
N	7	2.5813	6.140	1.000	7.463	1	0	1	B	D
N	9	3.1379	7.140	1.000	7.140	1	1	0	B	F
N	10	2.5824	2.977	1.000	3.617	0	0	0	B	C
O	8	3.1290	5.302	1.000	5.317	0	2	0	B	C
O	9	3.1379	2.070	1.000	2.070	0	0	0	B	C

### 5.1.3.3 Recording archaeological features

Following Foley (1981a), a number of conditions were recorded at each archaeological feature using a system specifically designed to optimise time spent at each recording while obtaining all the necessary data. To do this, three different recording cards were created: a brief card to record raw material outcrops (Catalogue A.1.5), a simple recording sheet for ephemeral archaeological features or those with a single cultural unit (Catalogue A.1.6) and a detailed recording sheet for multi-component features (Catalogue A.1.7). One of the challenges any surveyor faces is data management; providing commentaries on archaeological sites takes up space when writing it down and when stored digitally. Using numbers or letters as references to a predetermined list of attributes makes data collection efficient, storage minimal and allows for a better manipulation of the data in Microsoft Excel, the program used here for storage and manipulation. Thus, a system of notation was designed with this in mind (Catalogue A.1.8). Under each variable (e.g. soil type, location etc.) there are a number of possible conditions and each is given a numerical value. When recording in the field only the numerical value needed to be recorded. For example, when recording soil depth the conditions are 1 = <5cm, 2 = 5 – 20cm 3 = 20 – 50cm, 4 = 50 – 100cm and 5 = >100cm. Only the number representing the applicable depth measurement is recorded. Using this system means that the descriptions used at each archaeological feature are comparable. It also made it easy to separate sites with particular conditions, such as being inside of a rockshelter, into separate groups using the 'Filter' and 'Sort' function in Microsoft Excel. Having extensive knowledge of Microsoft Excel allows for simple and easy data management and is seen as an invaluable tool in the storage and use of data. All photographs of the sites were recorded in their own record sheet, which included GPS co-ordinates, photographic number, description, site number and cardinal orientation. Sites were named using a prefix derived from the name of the farm on which they were found (MGR – Mashatu Game Reserve; TL – Tuli Safari Lodge and US – Uitspan South), and were numbered in the order of their discovery (e.g. MGR1).

All the archaeological features and the survey tracklogs were imported into ArcMap, a Geographic Information Systems (GIS) and a powerful tool for data management and assessment (Conolly & Lake 2006: 11-13). Using GIS, an archaeologist is able to study the relationship between sites, the landscape and the various features of the region such as watercourses and topography (Conolly & Lake 2006: 16). When it comes to landscape archaeology a GIS program has a massive impact on the outcomes of the study and a number of techniques can be used for analysis (Lock 2003). For example, GIS has the ability to collate information from a variety of surveys that used different methods and combine them into a single mapset (Conolly & Lake

2006: 41). GIS can be used in intensive point plotting surveys where every artefact is recorded (e.g. Fanning & Holdaway 2001; Ketz 2001) or extensive surveys seeking only to record the location of archaeological sites (e.g. Du Piesanie 2008; Forssman 2010). A variety of geoprocessing tools can be used to relate sites to features, identify patterns and statistically analyse the relationship between sites and their surroundings (Ormsby *et al.* 2004: 301). The value and applicability of GIS programs in archaeology are discussed elsewhere (Conolly & Lake 2006). However, J. Thomas (1993) warns that the acquisition of information and its projection into a GIS program does not mean that the information is understood. Simply relating sites to one another and the landscape does not place them into a cultural map. More information is required to do so and this can be acquired from surface analyses at sites and, as presented below, excavations.

It is possible to use GIS to analyse the findings made in the survey statistically and relate them to one another and the various features of the landscape. This has not been done in this project. Unfortunately, many of the variables needed for calculating statistical models are unknown, such as erosion patterns and local geomorphology, a detailed ecological map, radiocarbon dating for many of the identified archaeological features and access to privately owned land. For this reason, I do not feel that the data are robust enough for an accurate statistical analysis, but I do feel that a fairly representative sample of archaeological features was identified.

## **5.2 PHASE 2: EXCAVATIONS**

The way in which a site is excavated largely depends on the questions that it needs to answer. There is no one method; excavations depend on substrate, location, cultural associations, research questions, hypotheses and the availability of time. When approaching an excavation one needs to manage all of these issues and organise them into a coherent assembly of requirements and necessities. They determine the placement of trenches, whether areas with a high density of artefacts are excavated or other more discrete zones in the camp (e.g. Wadley 1989); quadrants might be used to generate a finer resolution to record spatial distribution (e.g. Sampson *et al.* 1989); the entire site might be excavated so that the relationship between different zones can be assessed or only a small portion of the site to increase or obtain a representative sample of the occupation. There are some basic principles that always apply, such as stratigraphy and the use of trenches, and often spits in the absence of or within stratigraphic units, regardless of the above mentioned considerations. An effective excavation should achieve the goals of the research in obtaining the required data so that research questions can be answered (the aims of the project are listed in Chapter 1).

A review of the previous local excavations was used to develop an excavation technique for this dissertation (e.g. Hall & Smith 2000; van Doornum 2000, 2005; Van der Ryst 2006). At all of my excavations, barring Trenches 2 and 3 at Kambaku, the removed deposit was recorded in terms of cubic metres extrapolated from bucket percentage (each bucket is 13lt [0.013m<sup>3</sup>]) and measured, where applicable, in each spit, square and stratigraphic unit in order to calculate artefact density. A standard method of digging in trenches organised into 1x1m squares which were excavated in spits within stratigraphic horizons, provided that they were thick enough, was used. In some cases, squares were divided into quadrants in the event that a better understanding of spatial patterns, in terms of archaeological artefact frequencies and distribution (Sampson *et al.* 1989), was later required. Not all trenches were dug identically and at times the method was amended to accommodate a specific requirement. Amendments included not using quadrants or excavating only by natural stratigraphic horizons; the excavation method for each individual site is summarised in Table 5.3. Site-specific details are presented below along with a justification of the trenches, maps and stratigraphy. All of the artefactual data and radiocarbon dating results are presented in the following chapter.

**Table 5.3: Northern Tuli excavation details: DS, Dzombo Shelter; MS, Mafunyane Shelter; JS, João Shelter; SC, Shawu Camp; KC, Kambaku Camp; and NK, Ndlulamithi Kraal.**

Site	Trench	Square	Quads	Spit (cm)	Max depth (cm)	Site	Trench	Square	Quads	Spit (cm)	Max depth (cm)	
DS	1	D	A-D	3	60	KC	1	A	A-D	3	12	
		E	A-D	3	40			E	NA	Strat.	9	
	2	D	A-D	3	15			G	NA	Strat.	9	
		F	A-D	3 & 9*	92			T	NA	Strat.	17	
		G	A-D	3	21		2	C	NA	Strat.	12	
MS	3	C	NA	3	19			D	NA	Strat.	12	
		JS	1	A	A-D		3	21	3	D	NA	Strat.
B	A-D			3	27		E	NA		Strat.	34	
C	A-D			3	27		F	NA		Strat.	33	
B2	A-D			3	36		3	J	NA	3	6	
2	B		Spit 5: B & D	5	25	NK		15	L	NA	3	22
3	C	A-D	3	9	R		NA		3	15		
SC	4	B	Spit 6: A & C		5	30	SST	1	D	NA	3	6
			1	B	A-D	3	6	* Spits were dug in 3 cm increments up to spit XI and thereafter in 9 cm increments				
2	B	A-D	3	6								

## **5.2.1 Analysis methodology**

### **5.2.1.1 Stone tool analysis**

The stone tool assemblage was analysed using van Doornum's (2005) typology (Catalogue B.1 – B.2), which is based on Walker (1994) and J. Deacon's (1984b) typological sequences, the latter widely accepted as the model typology for the LSA of southern Africa. Essentially, the aim of J. Deacon's (1984b) typology is to categorise all LSA stone artefacts, some of which are considered microlithic (less than 25mm in length), and separate them into two basic categories: waste and formal tools, which exhibit secondary working. The main focus of this stone tool analysis was to assess technological change, which could indicate socio-cultural change, and typological change, possibly linked to activity patterns (e.g. van Doornum 2005: 84). It is not suggested here that J. Deacon's (1984b) typology is problem free, and revisions have begun (see Orton 2012: 105), but it is maintained for comparative purposes.

### **5.2.1.2 Ceramic analysis**

The ceramics were analysed using Huffman's (2007) *Handbook to the Iron Age* (Catalogue B.3), in which he presents the various ceramic facies in full detail along with their accepted chronology. Calabrese's (2005) PhD research at Leokwe Hill and Baobab also contained a detailed breakdown of local ceramic facies and this, too, was drawn upon. Due to Huffman's extensive work, along with that of others (e.g. Hanisch 1981b; Calabrese 2000b, 2005), ceramics can be used with great precision to identify cultural periods within the agriculturalist sequence. For this analysis, ceramics were divided into two categories, plain and diagnostic, the latter being those sherds that are either decorated or contain part of the rim; both these features have the potential to allow for placing the sherd into a typological sequence, if the sherd and sample is large enough.

### **5.2.1.3 Organic and glass bead analysis**

Organic beads were separated into three categories, ostrich eggshell, bone or *Achatina* (land snail), which could then be further divided, based on Orton (2008), into complete (Stage Va), incomplete (preform; Stages IIa & IIIb), broken complete (Stage Vb) or broken incomplete (preform; Stages IIb, IIIb & IVb) beads. Dividing the organic beads in this way is useful because it allows one to observe the stages of production occurring at the site (Jacobson 1987). Glass beads can be used, similarly, and the typology established by Wood (2005) is the only appropriate typology for the region (Catalogue B.4). Glass beads are not as reliable chronological markers as ceramics because they are highly susceptible to post-depositional movement.

#### 5.2.1.4 Faunal analysis

The faunal samples were analysed by Stefanie Baker, from the University of the Witwatersrand. She identified the number of identifiable specimens (NISP) in each spit and weighed the total sample. Where possible, when diagnostic features were noticed, she included faunal species in her analysis, but when this was not possible she only listed the faunal class. Along with these details, she listed the NISPs with body part details. This information was then condensed. Brain's (1981) bovid size classes were used: class I, <23kg; II, 23-84kg; III, 84-296kg; and IV, >296kg.

#### 5.2.2 Naming the excavated sites

The excavated sites were named in a specific way because names did not already exist. Roger and Pat de la Harpe (2005) wrote a book on the region and titled it *Tuli: Land of Giants* because of the local massive mashatu trees, baobab trees and the region's elephant population – the largest naturally occurring population on a private reserve in southern Africa (Selier *et al.* in press). Approximately 300km east is the Kruger National Park. One of the hallmarks of this reserve is the Magnificent Seven; seven of the largest elephant bulls recorded in the park between the 1980s and 1990s, which became famous in South Africa. It was decided that they would be named in honour of these specimens and the elephants currently occupying the *Land of Giants* (Figure 5.4).

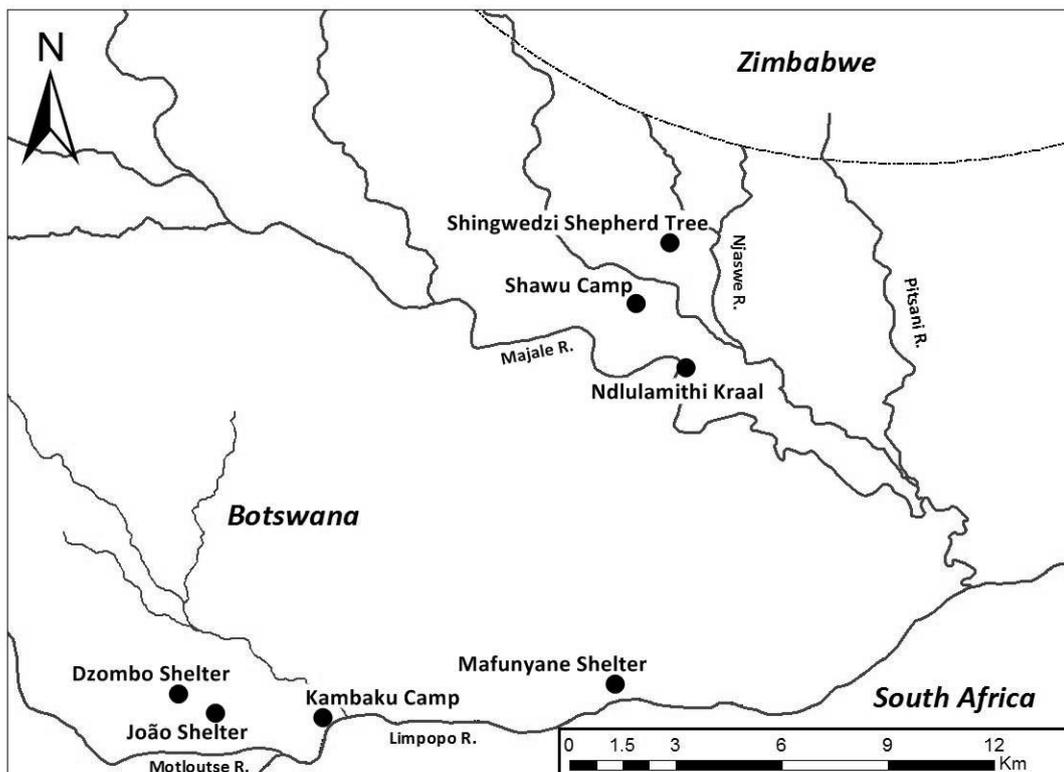


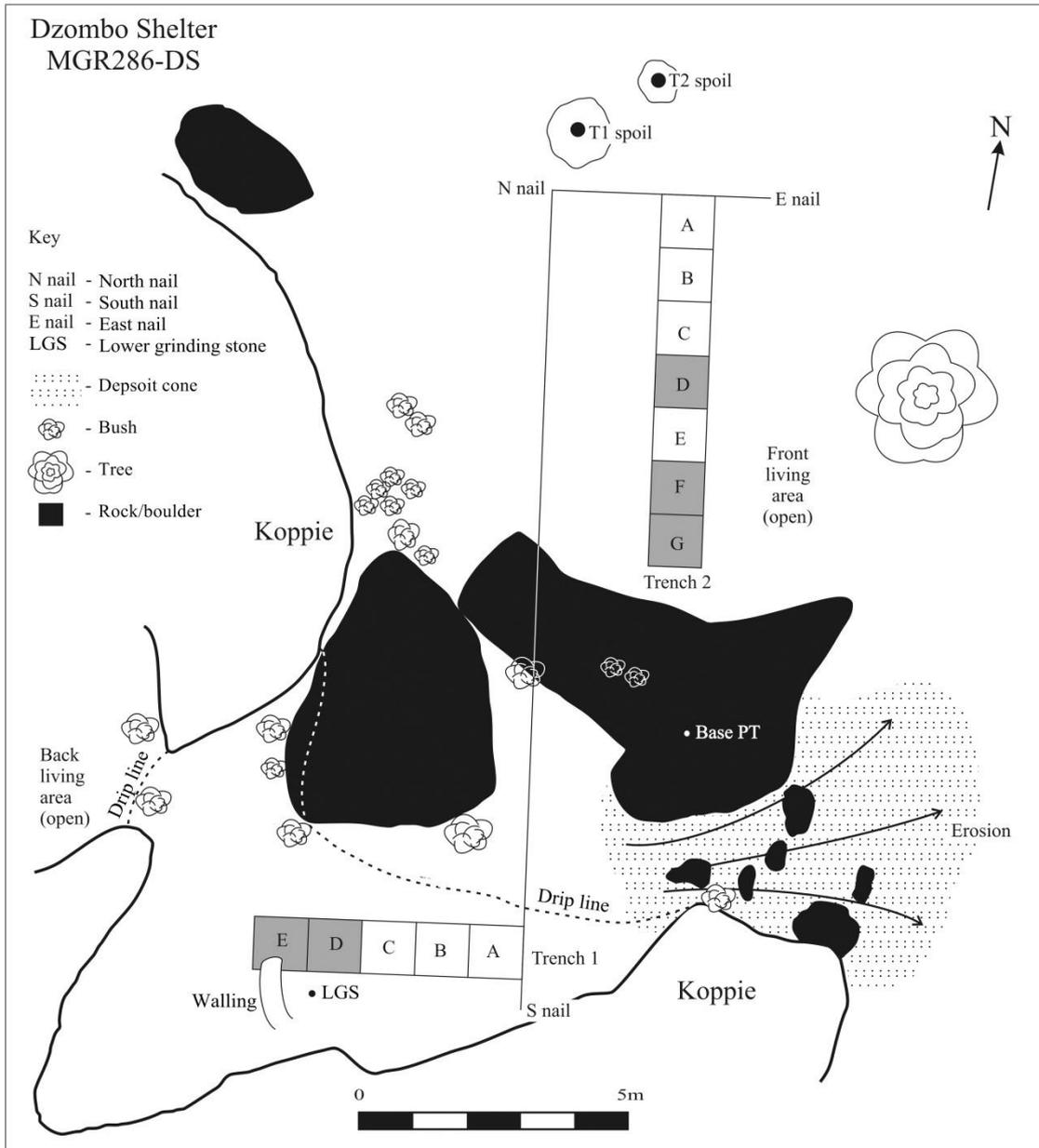
Figure 5.4: Location of the excavations in Northern Tuli.

### 5.2.3 Dzombo Shelter: MGR286-DS

#### 5.2.3.1 Site details

Dzombo (22° 12' 35.24" S; 28° 59' 38.54" E) is a north-facing rockshelter with what appeared to be a substantial deposit. In front of the rockshelter is a large living space and to the west of the rockshelter there is a courtyard, formed naturally by the koppie and accessed through an archway in the rockshelter (Figure 5.5; Catalogue A.2.1 – A.2.2). The koppie itself is situated in a palaeo-floodplain created by the Motloutse River, about 1.8km south of the site, and is in an area that is characterised by roughly north-south running ridges that are approximately 7km in length, interspaced with floodplains and Kalahari Sands (G. Alexander 1984). This is restricted to the area between the western Motloutse River, the Limpopo River to the south and a seasonal stream to the east that may have been larger historically based on its extensive floodplain, in an area approximately 18km<sup>2</sup>. Southeast of Dzombo, by about 600m, is the major agriculturalist centre of Mmamagwa (Catalogue A.2.3), where in a naturally U-shaped valley there are a number of homesteads dating from at least AD 900 through until the twentieth century. In addition, G. Hall (2003) and Mooketsi (2009) have identified Stone Age, rock art and agriculturalist sites in the area. Therefore, Dzombo is ideally placed among a range of possibly contemporaneous archaeological sites. The presumed depth of the site's deposit increased the possibility of there being different occupation phases at the rockshelter, which could be correlated to those identified by van Doornum (2005) in South Africa.

Behind Dzombo is a rockshelter named JB Shelter. Its ceiling is approximately 1.2m high and on the floor are agriculturalist items in the form of ceramics and iron fragments. Of particular interest are the two apron designs painted on the roof (Figure 5.6; Catalogue A.2.4). These have been finger-painted in red ochre and closely resemble the rock art attributed to Khoekhoe herders (Eastwood & Smith 2005). The presence of the artwork suggests that Dzombo may have been used by pastoralists and could contain evidence thereof. If identified, this would be the first excavated evidence of Khoekhoe herders in the archaeological record of the Greater Mapungubwe Landscape. Thus, Dzombo is ideally situated to comment on forager and farmer relations, but may also assist in recognising a local pastoralist economy and offer greater insights into the herder debate.



**Figure 5.5: Dzombo Shelter: site plan.**

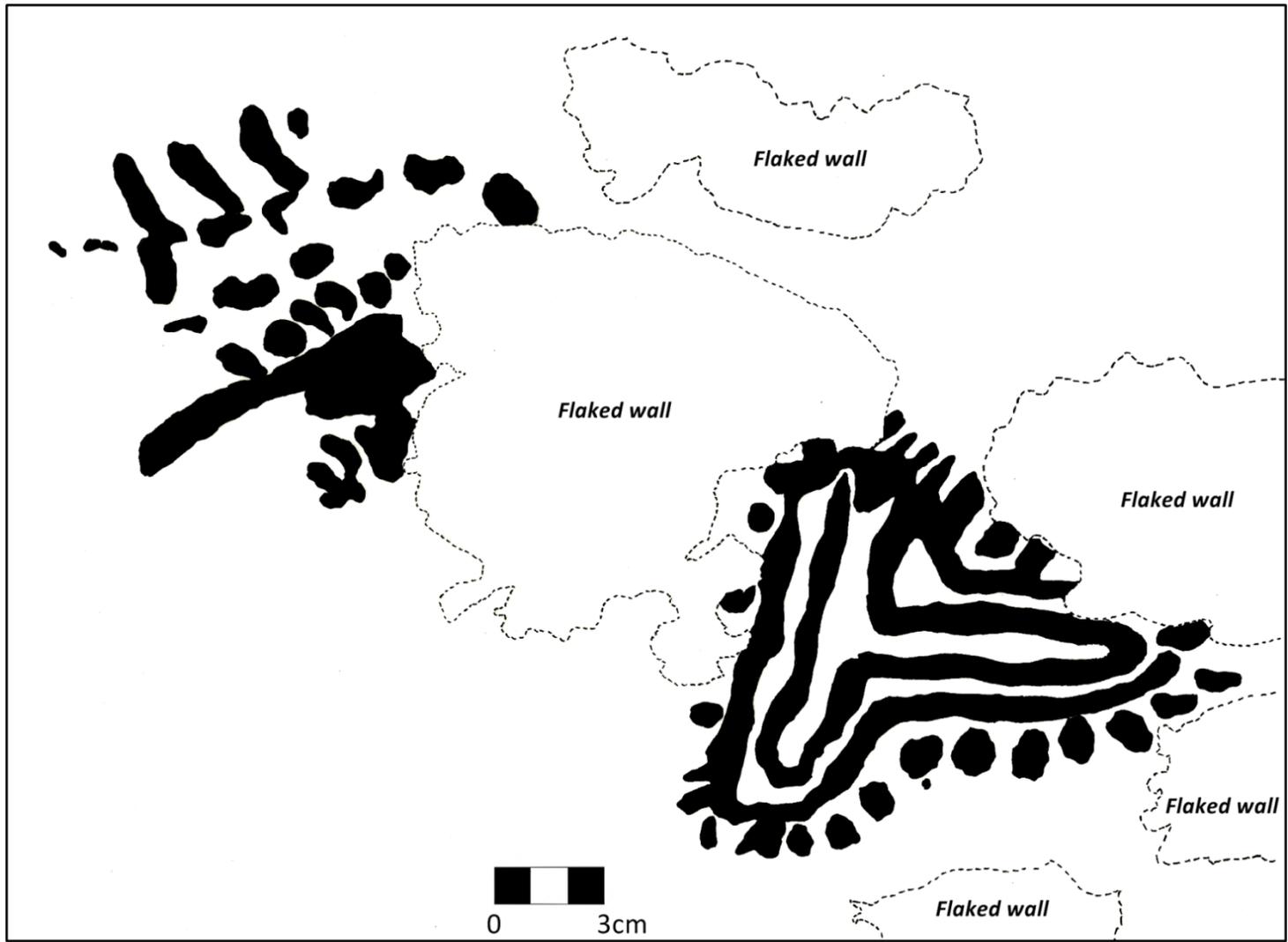


Figure 5.6: Tracing of so-called Khoekhoe herder aprons in JB Shelter behind Dzombo Shelter.

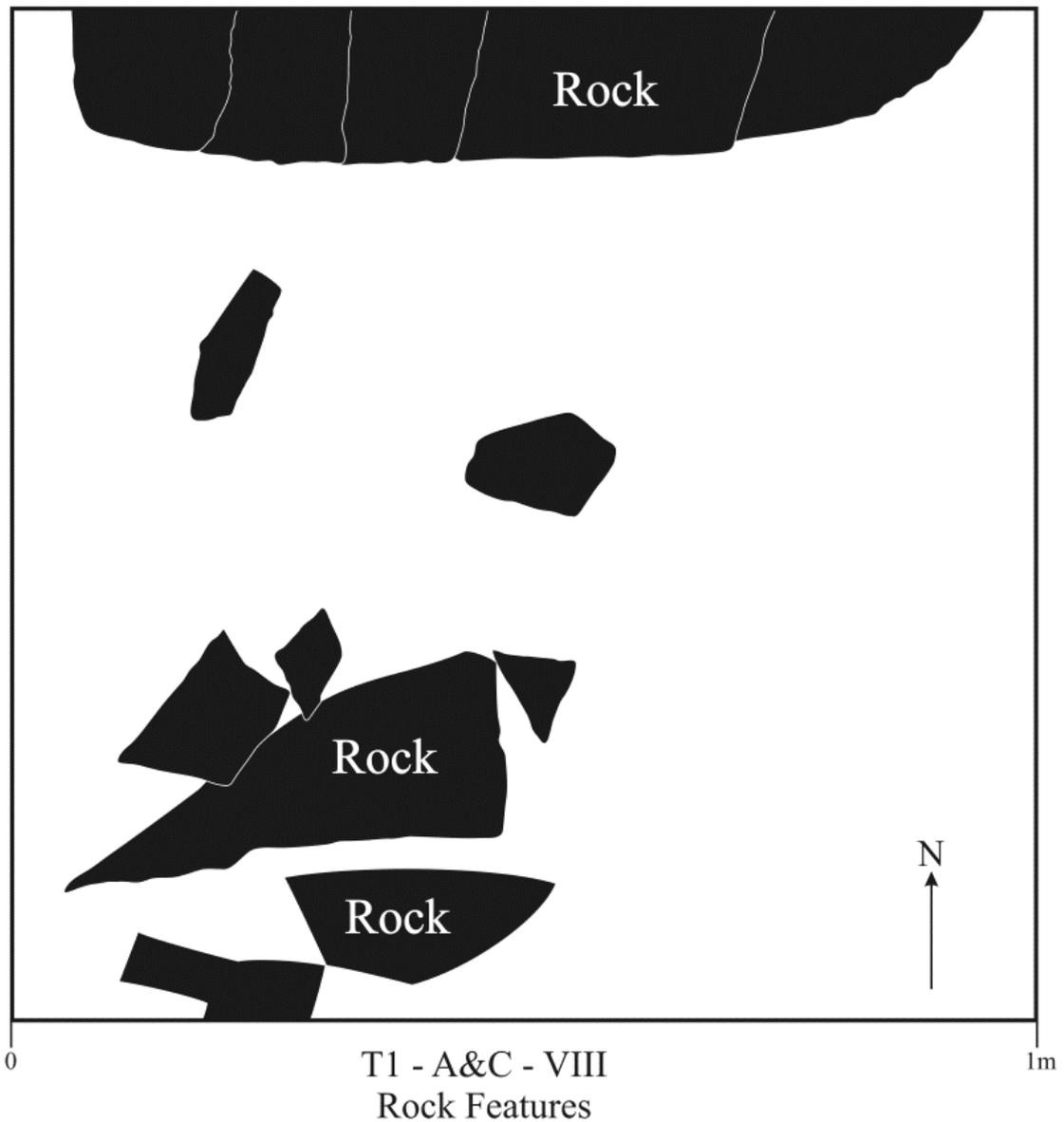
Dzombo closely resembles Little Muck in terms of its size and its proximity to farmers; the Mmamagwa complex but also homesteads identified in the survey. Such contextual similarities and, possibly, a contemporaneous occupation would allow for an accurate comparison between the two assemblages. In this way, van Doornum's (2005) model could be tested across the Limpopo River from an inter-site and landscape perspective. The surface of Dzombo also contained a host of artefacts including stone tools, ceramics, beads, a portable grooved stone (Catalogue A.2.5), a grinding stone (Catalogue A.2.6) and stone walling (confirmed after excavating the site). The differences between these two sites may help us better understand forager interactions with agriculturalists and whether the Limpopo River was a cultural boundary.

There are three key features of this site. First, its close proximity to agriculturalist homesteads and the Mmamagwa palace increases the possibility that 'evidence of interaction' is present at the site, based on Sadr (2002b) and van Doornum's (2008) conclusions that sites in closer proximity to homesteads display a greater degree of exchange. Second, its extensive deposit may contain a complete forager sequence from prior to, and including, the last 2000 years, allowing for a comparison with other excavated assemblages spread across the regional landscape and more generally in southern Africa. Lastly, the site is similar to Little Muck (Hall & Smith 2000) and seemed likely to offer a comparative assemblage and test three principles: the comparability of single context sites over the landscape; whether the effect of proximity between forager and farmer sites is equally influential at different forager camps and, in conjunction with information collected at other excavations at forager occupied sites, the boundary effect of the Limpopo River. In this final instance, if the Dzombo and Little Muck assemblages are similar, the Limpopo River may not have played a role in defining territories at the time that both sites were occupied.

#### **5.2.3.2 Excavation method**

Two trenches were established off a central baseline: Trench 1 was inside the rockshelter and Trench 2 in the front outside living area. A rock shelf raises the rockshelter's floor-level from the outside floor-level, which has contributed to preserving the deposit within the rockshelter. There is, however, a talus cone of erosion on the eastern edge of the rockshelter and deposit has spilled through a gap in the rocks that form the terrace, exposing a large number of stone artefacts. Trench 1 was placed at the centre back of the rockshelter, chosen based on the secure nature of the deposit and lack of interference in this zone, and two squares (D and E) were excavated here. There is a rock feature in the rockshelter that was discovered to be a wall since it protruded into Square E (Figure 5.7; Catalogue A.2.7). It was found that large roof collapse covered the floor beginning from about 25cm below the surface (Catalogue A.2.8). The result was that by the latter

spits very small volumes of the deposit were being excavated due to extensive rock coverage. The excavation ceased in this context at 60cm in Square D, which was stepped down from Square E stopping at 40cm below the surface. If time had permitted, the large rock obstructing the excavations would have been removed and, if possible, digging continued below it.



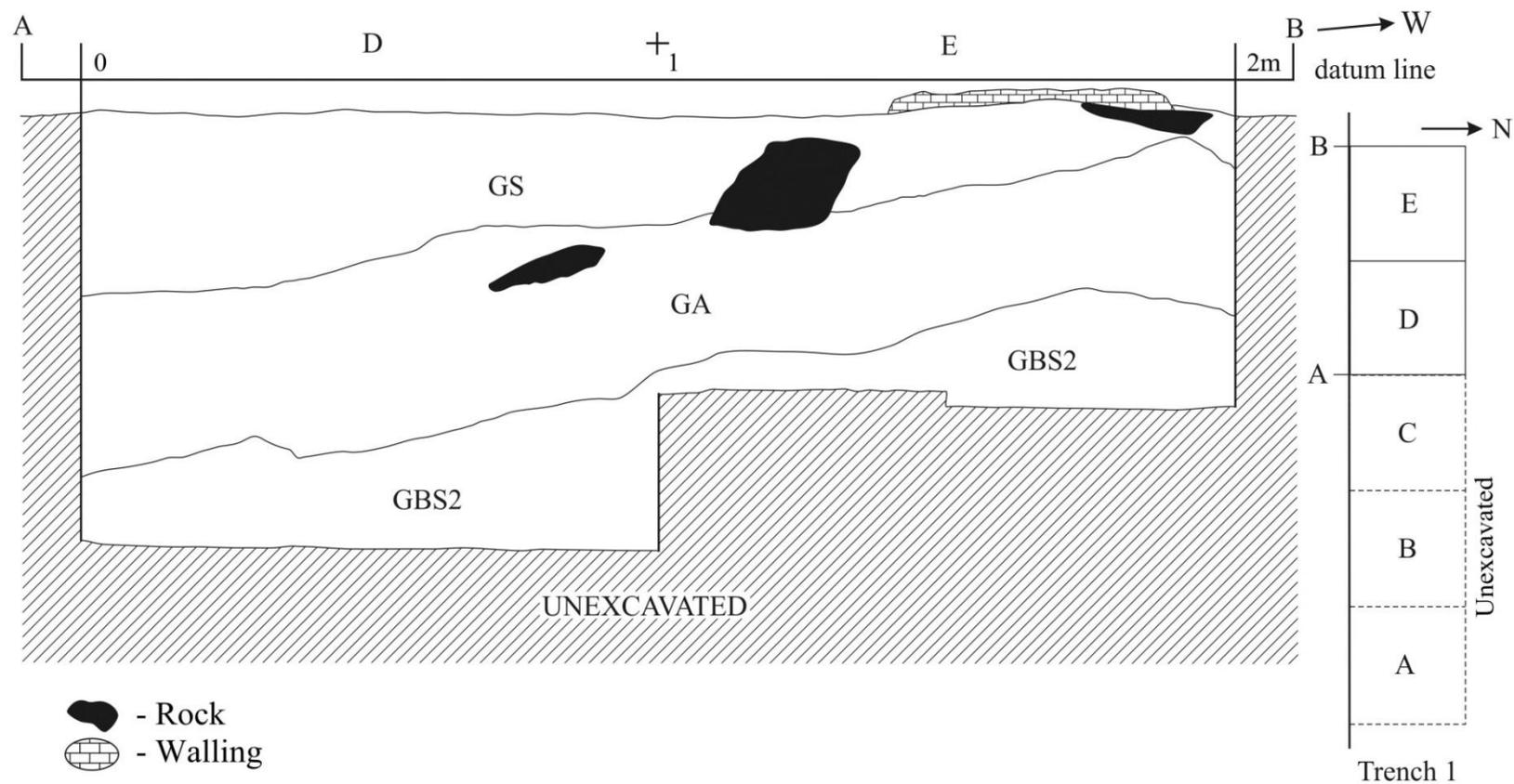
**Figure 5.7: Dzombo Shelter: plan view of Trench 1, Square E, Spit VIII: large rocks appear and continue to the terminal Spit XIX. Rocks near the southern wall are related to the walling inside the rockshelter and the base of those on the northern wall was not reached.**

Trench 2 is situated in the front outside living area. Three squares were excavated in this trench (D, F and G), with Square G alongside the natural shelf edge. It was decided to excavate squares nearer to the koppie where there may be a greater amount of artefacts. In this zone there is a grey brown (GB) layer that is succeeded by the Kalahari Sands, Red brown sand (RBS), sometime after Square D. In Square D, the Kalahari Sands almost immediately dominated the square and excavations were stopped after a further 10cm of digging into the sterile deposit. At this stage it was decided to level off on top of RBS in Squares F and G, yet this level was never reached. A drop in artefact frequency in both squares was concerning and so in Square G digging ceased at 21cm and in Square F only Quadrant D was excavated further. Here, Spits XI to XIV were dug as a single unit, 12cm thick, but thereafter, from Spit XV, 9cm spits were excavated. Artefacts did increase from 63cm below the surface to the base of the trench which appeared to be bedrock. No RBS layer was found in Square F.

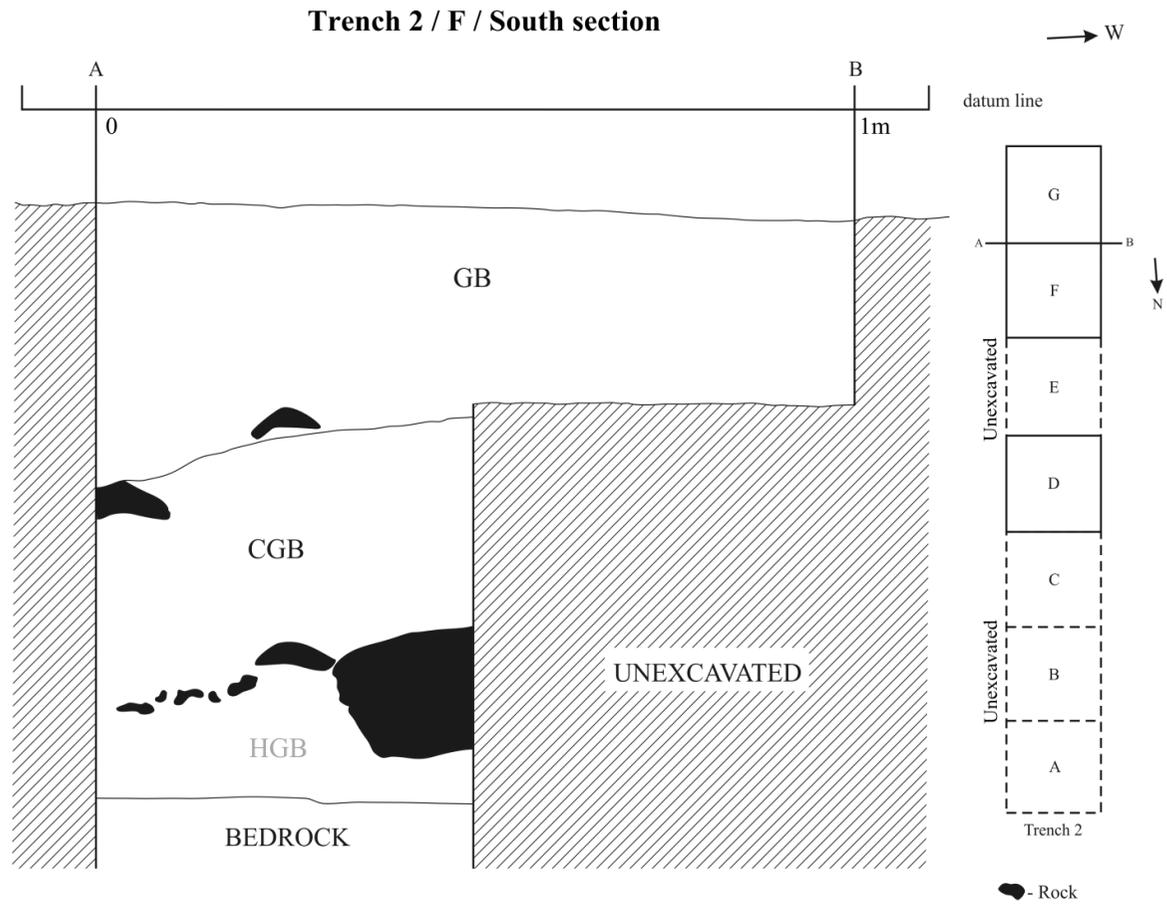
### **5.2.3.3 Stratigraphy**

The appearance of particular stratigraphic units in certain spits between Squares D and E, and the dip of the major units (Figure 5.8), suggests that erosion has occurred on the eastern edge of the rockshelter, indicated by the talus cone in this zone. The deposit is likely to have filled in from the western edge and the majority of human activity, based on the build-up of the hearth layer Grey ash (GA), may have been in the western portion of the rockshelter. From this zone the deposit eroded eastwards towards Square D and, possibly, eventually out of the rockshelter altogether. It also seems likely that the bedrock is higher in the western section; large boulders in the trench may have represented bedrock and not roof collapse as is thought (Catalogue A.2.8). This is suggested by layer Grey compact brown 2 (GCB2) at the base of Square E, Spit XIX and in Square D, Spit XXVII. The trench is characterised by a series of micro-layers within the main GA level. Trench 2 is less confusing in that three levels existed, one of which is only present in Square D (RBS). The two other layers vary in thicknesses, decreasing further away from the koppie to disappear at least by Square D (Figure 5.9; Table 5.4).

**Trench 1 / D & E / South section**



**Figure 5.8: Dzombo Shelter: section of Trench 1, Squares D and E, south wall. Note the general west-east dip in the units. Micro-units were not visible in the wall as they existed within the layer GA.**



**Figure 5.9: Dzombo Shelter: section of Trench 2, Square F, Quadrant D, south wall.**

**Table 5.4: Dzombo Shelter: stratigraphic units.**

Layer	Code	Spits	Thickness (cm)	Colour	Compaction	Composition	Notes
Trench 1							
Grey soil	GS	2 - 5	±6	Grey with light brown tint	Unconsolidated	Fine sand mostly but some pebbles (<10cm) included	A large amount of organic items are present
Compact GS	CGS	3 - 8	15	Grey with light brown tint	Loosely consolidated	More rocks (>10cm) than GS and roof spall	Broadly similar to GS but compact suggesting a more fixed stratigraphy; gives way to GA irregularly across the squares
Grey ash	GA	4 - 27	54	Ash grey	Loosely consolidated	Rocks and pebbles as well as roof spall	Possible hearth levels and interspersed with other units
Compact GA	CGA	8	<3	Ash grey	Soft	Rocks and roof spall	Restricted Square D; probably localised compacted GA
Grey soil 2	GS2	9 - 12	12	Organic brown	Soft	Large rocks	Loamy texture similar to GS
Grey brown soil 2	GBS2	9 - 15	15	Brownish grey	Loosely consolidated	Few small rocks present and some root activity; large rocks	Larger rocks begin to appear; interspersed with GA; restricted to Square E, Quad D, Spits 9 – 15, and Quad C, Spit 15

Compact GS2	CGS2	10 - 11 & 20 (isolated)	<6	Grey with light brown tint	Loosely consolidated	More rocks (>10cm) than GS and roof spall	Very similar to CGS but in a different area; may be the same
Grey brown soil 3	GBS3	D: 18 - 19; E: 15 - 17	D: 6; E: 9				Restricted to small areas in D and E
Grey compact brown 2	GCB2	19 & 27	±3	Organic brown	Soft with hard inclusions	A range of rock sizes present	Only in 1D-D-XXVII and 1E-C-XXI the terminal levels of both squares
Trench 2							
Grey brown	GB	G: 1 - 7; F: 3 - 14; D: 8	Variable but max. 39	Grey brown	Unconsolidated	Quartz pieces (<2mm) and CCS pebbles	Discolouration may be due to erosion of koppie since it is only found around the rockshelter but also may be due to erosion from the rockshelter; disappears 4m from the koppie
Compact GB	CGB	F: 15 - 21	63	Grey brown	Consolidated; hard	Rocks (>10cm) and roots	May be compacted due to flooding in the floodplain
Red brown sand	RBS		NA	Red/light brown	Unconsolidated	Sand grains with quartz crystals	Kalahari Sands

## 5.2.4 Mafunyane Shelter: TL383-MS

### 5.2.4.1 Site details

Mafunyane (22° 12' 30.38" S; 29° 6' 17.05" E), about 460m north of the Limpopo River (Catalogue A.3.1), was initially excavated under the name Tuli Lodge (Walker 1994). It is renamed here because it was not initially certain whether it was indeed Tuli Lodge: there was no record of the excavation at the lodge, the shareholders and the manager, Francois du Toit, did not know of it, there was no evidence of an excavation at the site (expectedly so as it was dug prior to 1994) and in Walker's (1994) only paper on the site no GPS co-ordinate was supplied, possibly because he would not have had one at this time. Unfortunately, the rock art described by Walker (1994) was no longer discernible at the site and the manager said that it was from 2006 that it had suddenly begun to fade at a rapid rate (Catalogue A.3.2). Only once the excavations had begun and the upper surface layer had been removed was Walker's (1994) excavation observed and thereafter avoided.

The initial decision to excavate Mafunyane was because of the extensive outside living area (Catalogue A.3.3). This zone is often neglected and was indeed ignored when Walker (1994) excavated inside the rockshelter. He did mention a large area with a high density of artefacts outside of the rockshelter and argued that it suggests the site was used regularly. It was also decided that in addition to excavating the outside area, a square would be placed inside the rockshelter. The purpose of excavating both zones was to compare assemblages from outside and within a rockshelter and between different zones of the same settlement in order to observe occupation patterns and how the inhabitants utilised their space. Unfortunately, when setting up the trench it was found that in the outside living area, the artefacts were widely distributed in a sandy, shallow substrate, increasing the probability of disturbances. As such, only the rockshelter was excavated (Figure 5.10).

Mafunyane is ideally situated on the landscape to offer greater insights into our understanding of late-Holocene interactions and the forager record. Its comparison to Little Muck may be significant because of the extensive amount of copper slag found at Mafunyane (Walker 1994). In addition, it was felt that comparing it to Shawu, Dzombo and João would be of particular interest, as well as with the not-too-distant Tshisiku. Furthermore, Bambata ceramics were found on the surface when the site was first visited during the survey and Walker (1994) identified them in his excavations, making it the only excavated site in the area with Bambata sherds. Increasing the sample size of this facies would aid in our understanding of the ware's arrival into southern

Africa, or its local development and placement in the Greater Mapungubwe Landscape's sequence. Lastly, if the forager sequence is cyclical, as suggested by Wadley (1987 and elsewhere) in her aggregation and dispersal dichotomy, one wonders how Mafunyane would fit considering its extensive metal assemblage.

#### **5.2.4.2 Excavation method**

The site was divided into a grid with 1x1m squares and Trench 3 (designated south to north), Square C (designated west to east) was selected for excavations (Figure 5.10). It was primarily chosen because it was felt that if Walker had excavated this site, Square C would miss his trench. The small living surface (Catalogue A.3.4) was, alas, too small for this to be possible. Nevertheless, the square did reveal a somewhat deep deposit nearing 30cm. Had time allowed, an additional two quadrants would have been opened on the northern wall of the square nearer to the dripline in what would have been Trench 4, Square C, but due to the massive number of artefacts in the square and the highly fragmented faunal assemblage it took sometimes more than a full day to dig and sieve a single 3cm spit. The single square revealed the greatest density of artefacts when compared to all other excavations conducted for this research even though, in the end, only three quadrants of the square were excavated: Quadrant C was excluded from the excavation as it was found to be in Walker's (1994) trench, confirming that Mafunyane is indeed Tuli Lodge.

#### **5.2.4.3 Stratigraphy**

Three stratigraphic units were recorded with a fourth being from Walker's dig (FAS) and not discussed further since it is his backfill (Table 5.5). The top layer seems to be mixed and is very sandy. Following from this is an ash-grey sand level (AS), which appears to be a hearth. At its base there is an increase in pebbles and rocks yet no real change in colour or compaction; this level was labelled Stony AS (SAS). Although AS and SAS have been separated, this might only be an imagined distinction since the only differences are depth and the appearance of pebbles in SAS (Figure 5.11; Catalogue A.3.5).

# Mafunyane Shelter TL383-MS

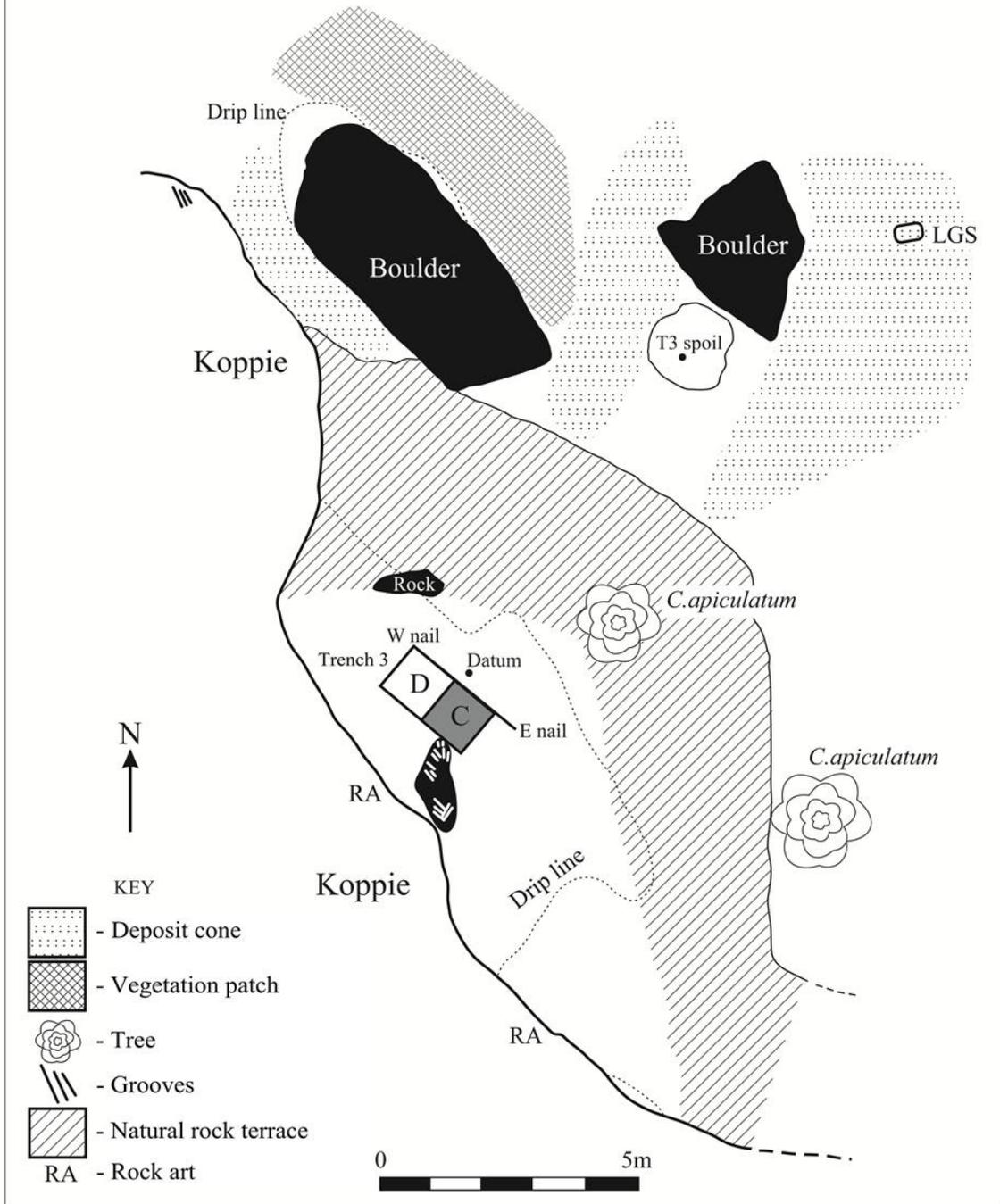


Figure 5.10: Mafunyane Shelter: site plan.

**Table 5.5: Mafunyane Shelter: stratigraphic units.**

Layer	Code	Spits	Thickness (cm)	Colour	Compaction	Composition	Notes
Trench 3							
Pale brown sand	PBS	1 - 3	±6	Pale brown with grey	Very loose and sandy	Many sandstone pebbles	Loose surface deposit; decay of sandstone may give deposit its colour and would explain large amount of pebbles
Ashy sand	AS	2 - 3	±3	Ash grey	Loosely consolidated	Less sandstone pebbles	Hearth
Fine AS	FAS	From spit 2 in Quad C	NA	Grey with light brown	Soft	Few to no sandstone pebbles	Exclusively found in 3C-C and clear indication of disturbance; near lack of artefacts; Walker's (1994) trench
Stony AS	SAS	4 - 7	>12	Ash grey	Loosely consolidated	Massive increase in sandstone pebbles	Nearer to bedrock; increased in pebbles; roots appear

### Trench 3 / C / North section

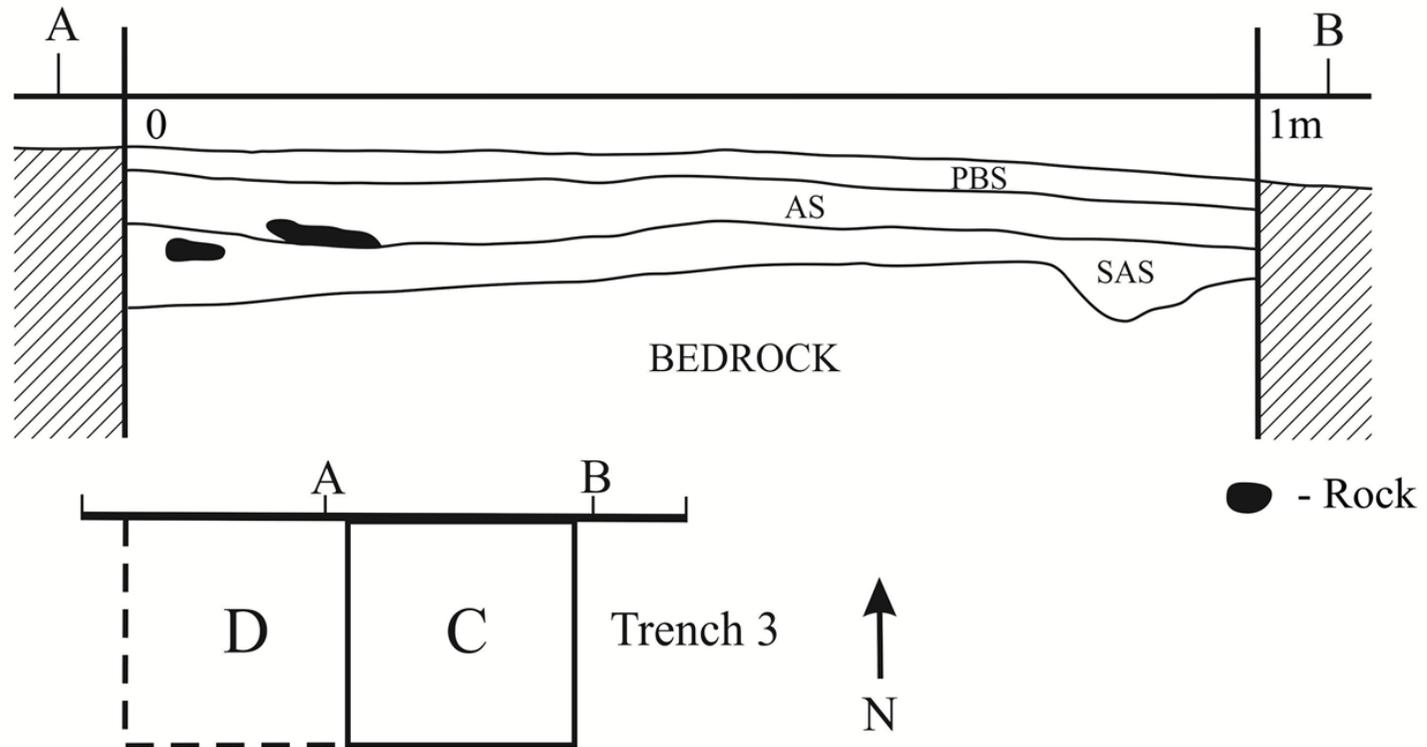


Figure 5.11: Mafunyane Shelter: section of Trench 3, Square C, north wall.

## 5.2.5 João Shelter: MGR297-JS

### 5.2.5.1 Site details

João (22° 12' 55.88" S; 29° 0' 12.34" E) is about 1.2km southeast from Dzombo. The Mmamagwa valley is about 400m in the same direction and the hilltop occupation is a further 200m away. However, João has very different contextual attributes. For example, immediately outside the rockshelter there is a homestead that was occupied between AD 1000 and 1300 (Figure 5.12; Catalogue A.4.1 – A.4.4), which is the primary reason that the rockshelter was excavated. If the rockshelter was occupied at the same time as the outside homestead, it would indicate that some foragers were living alongside agriculturalists from possibly AD 1000. If so, this could change the way we view the forager sequence, suggesting that at least some foragers assimilated with farmers. Our lack of knowledge in this respect is mostly due to the fact that no other forager occupation is as tethered to an agriculturalist homestead as is the case with João. To test this, trenches were excavated within and immediately outside of the rockshelter and in two key features of the homestead – at a grainbin foundation and in a midden – and radiocarbon dating samples were submitted.

Other features found at the site include rock art inside the rockshelter (Catalogue A.4.5), but all that remain is a single female kudu and a partial antelope image; at one stage the panel may have been more extensive (Catalogue A.4.6). There are also at least 15 grooves in two distinct areas of the rockshelter's back wall. Dry-packed stone walling is also present extending away from the back wall and curving westwards along the dripline, and there is walling creating a rudimentary enclosure further along the koppie away from the rockshelter. There are also possibly two human burials indicated by packed rock mounds (Catalogue A.4.7) in the northern part of the homestead in what may have been the hut zone based on the presence of grainbin foundations (N=4; Figure 5.12). The burials were deliberately avoided and left untouched.

The key characteristics of the site are its proximity to both a major agriculturalist centre and to neighbouring homesteads, including one immediately outside of the rockshelter. If shown to be contemporaneous, with regard to the latter point, this indicates that at least some foragers and farmers were in fact living together at some stage. This, in turn, would have broader ramifications over the landscape, particularly in the way that archaeologists view interaction in the area. The extensive surface assemblage at the site includes stone tools, ceramics and beads suggesting that there may be a large assemblage below the surface. Lastly, João's proximity to and possible

contemporaneity with Dzombo, but very different social and cultural context, was expected to result in a highly informative comparison from a material culture perspective.

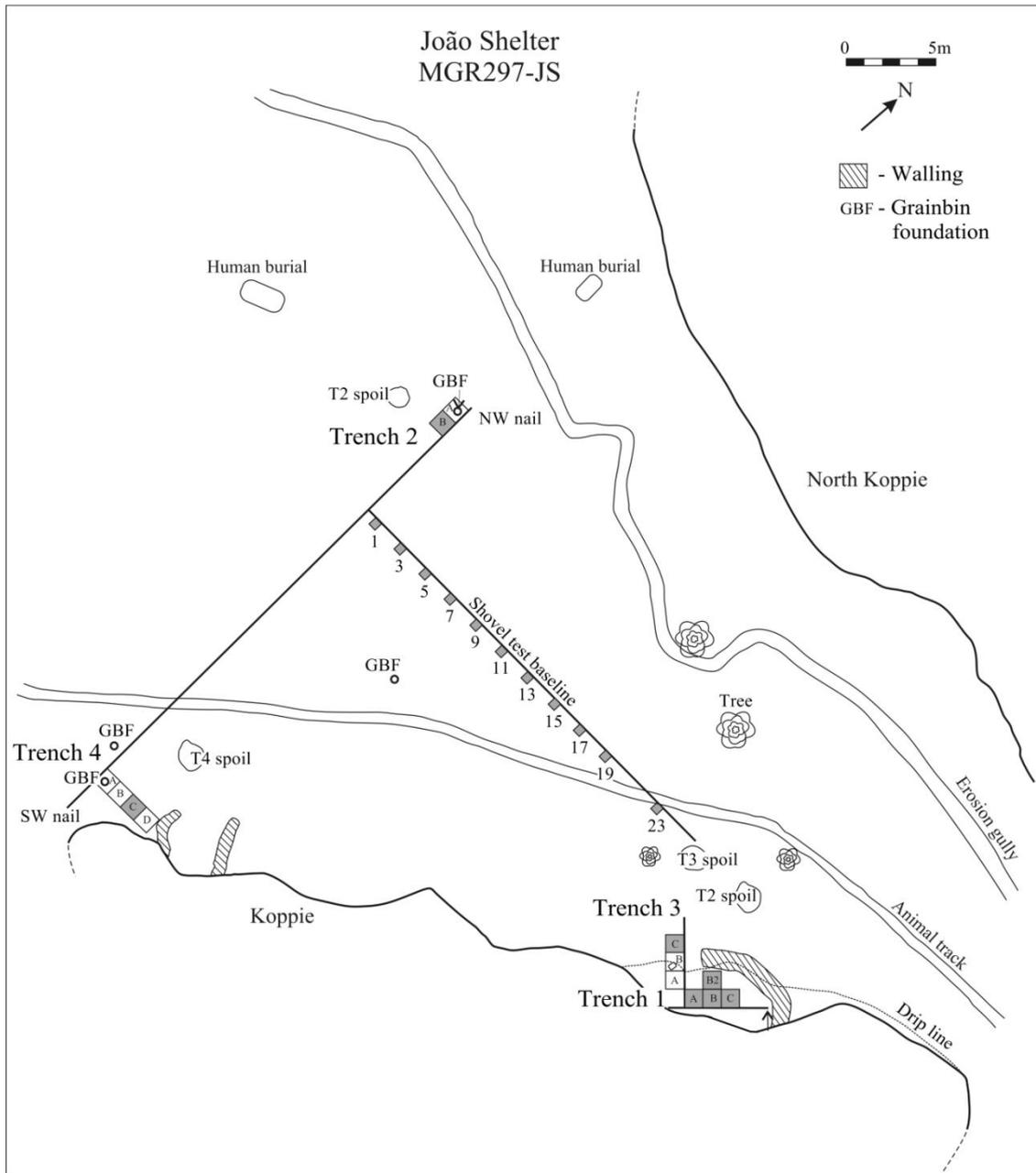


Figure 5.12: João Shelter: site plan.

### **5.2.5.2 Excavation method**

Four trenches were set up at the site. Within the rockshelter a trench was placed east-west running longitudinally along the rockshelter's floor (Catalogue A.4.2). Three squares were excavated (A – C) at first. It was noted that the deposit was shallow, but seemed to deepen away from the rockshelter's wall. Therefore, Square B2 was established north of Square B where it was thought the deposit would be deeper, proving to be the case. Trench 3 was set up perpendicular to the main rockshelter baseline. In it, Square C was excavated outside of the rockshelter and on the opposite side of the dry-packed stone walling, to test whether there was a difference in the assemblages on either side of the wall. Unfortunately, the deposit here was incredibly shallow and only three spits were excavated, to a maximum depth of 9 cm below the surface. A second baseline was set up outside the rockshelter near the western boundary of the homestead between two grainbin foundations. Trench 2 was set up around the northern grainbin foundation and a single square (B) was excavated here. Around grainbin foundations there is usually a large amount of debris and they are normally situated inside a hut's courtyard. The hope was that excavating this area would reveal diagnostic ceramics that could place the site into a single chronological period (see Huffman 2007). At the opposite end of the baseline on the western side of the rudimentary enclosure is a midden, which Trench 4 was set up to include and one square was excavated here (C). Middens are useful because they contain a large amount and great diversity of debris. It was hoped that diagnostic ceramics and glass beads would be recovered from this excavation. A series of shovel tests at two metre intervals were excavated beginning at the outside baseline moving towards the rockshelter. The aim of these tests was to establish the presence, size and perimeters of the central cattle kraal and to obtain diagnostic artefacts for relative dating.

### **5.2.5.3 Stratigraphy**

There was very little stratigraphic differentiation at the site (Table 5.6). Inside the rockshelter only two levels existed, Pale brown soil (PBS) and Pebbled sandstone level (PSL), and it seems that PSL is a combination of PBS and the decaying sandstone bedrock (Figure 5.13; Catalogue A.4.8); although the formation of PSL has not yet been tested in a laboratory. Trench 2 consisted of two levels clearly differentiated from one another (Figure 5.14; Catalogue A.4.9) and Trench 4 contained a midden level (MG) and a mixed zone of midden deposit and the underlying sands (Figure 5.15; Catalogue A.4.10). The deposit in Trench 3 seemed to be a combination of BS and PBS.

**Table 5.6: João Shelter: stratigraphic units.**

Layer	Code	Spits	Thickness (cm)	Colour	Compaction	Composition	Notes
<b>Trench 1</b>							
Pale brown soil	PBS	2 - 14	B2: 36; A-C: ±24	Pale brown	Soft	Few to no large rocks	Most prominent in B2; becomes PSL in all other squares; hard base
Pebbled sandstone level	PSL	A: 8 - 9; B: 9 - 10; C: 6 - 10	A-B: 6; C: 15	Pale to light brown	Loosely consolidated	Pebbles of sandstone and PBS	Appears to be decaying bedrock mixed with PBS; PSL indistinguishable from PBS in B2
<b>Trench 2</b>							
Brown soil	BS	1 - 4	<20	Faded brown	Very hard	Lacked rocks except for one area with small sandstone pebbles	Compacted surface soil; maybe due to trampling - it is in a human traffic zone
Compact brown level	CBL	4 - 5	±10	Orange/brown	Fairly compact	Gravel	Slight change in colour and compaction
<b>Trench 3</b>							
Grey brown soil	GBS	7 - 9	9	Grey/brown	Loosely consolidated	Pebbles but few to no rocks	Possibly caused by erosion from the rockshelter and mixing with outside unit
<b>Trench 4</b>							
Midden grey	MG	1 - 4	<20	Ash grey	Soft with patches of variable hardness	Some rocks (>10cm) but mostly smaller stones	Midden; a large accumulation of artefacts mixed in with ash
Rocky midden grey	RMG	4 - 6	±15	Ash grey	Loosely consolidated	Very rocky with sandstone pebbles of variable size	Probably rocky because it is the base of MG

### Trench 1 / B & B2 / West section

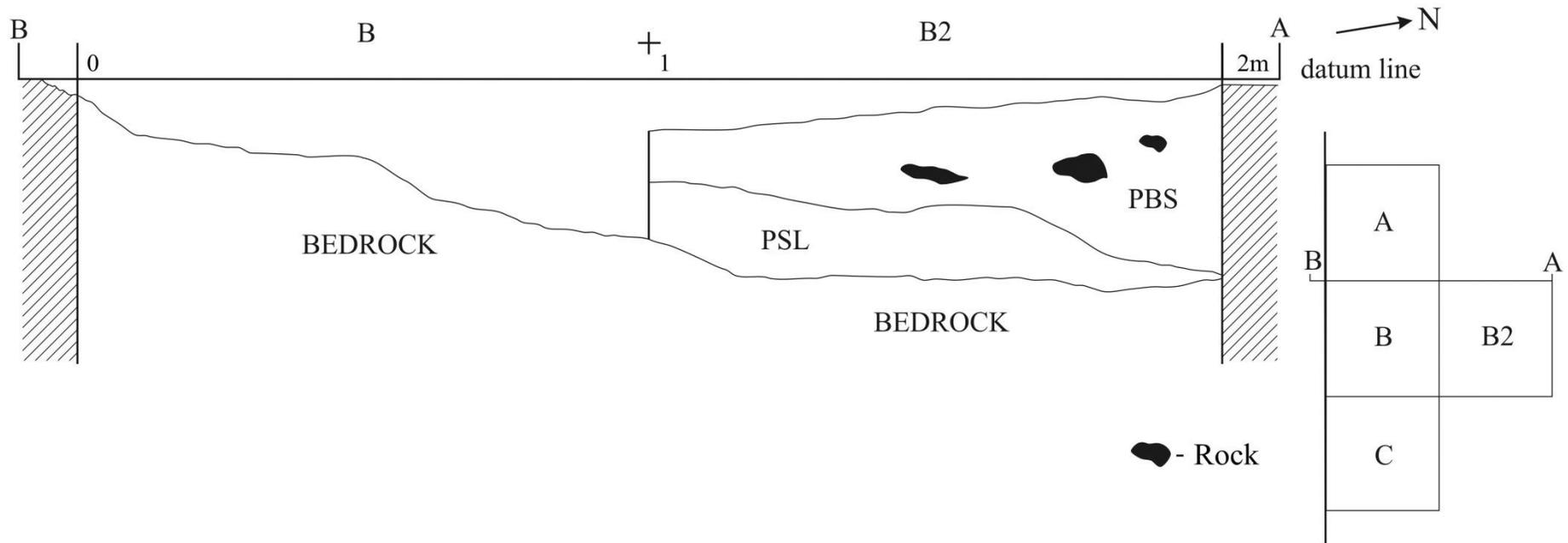
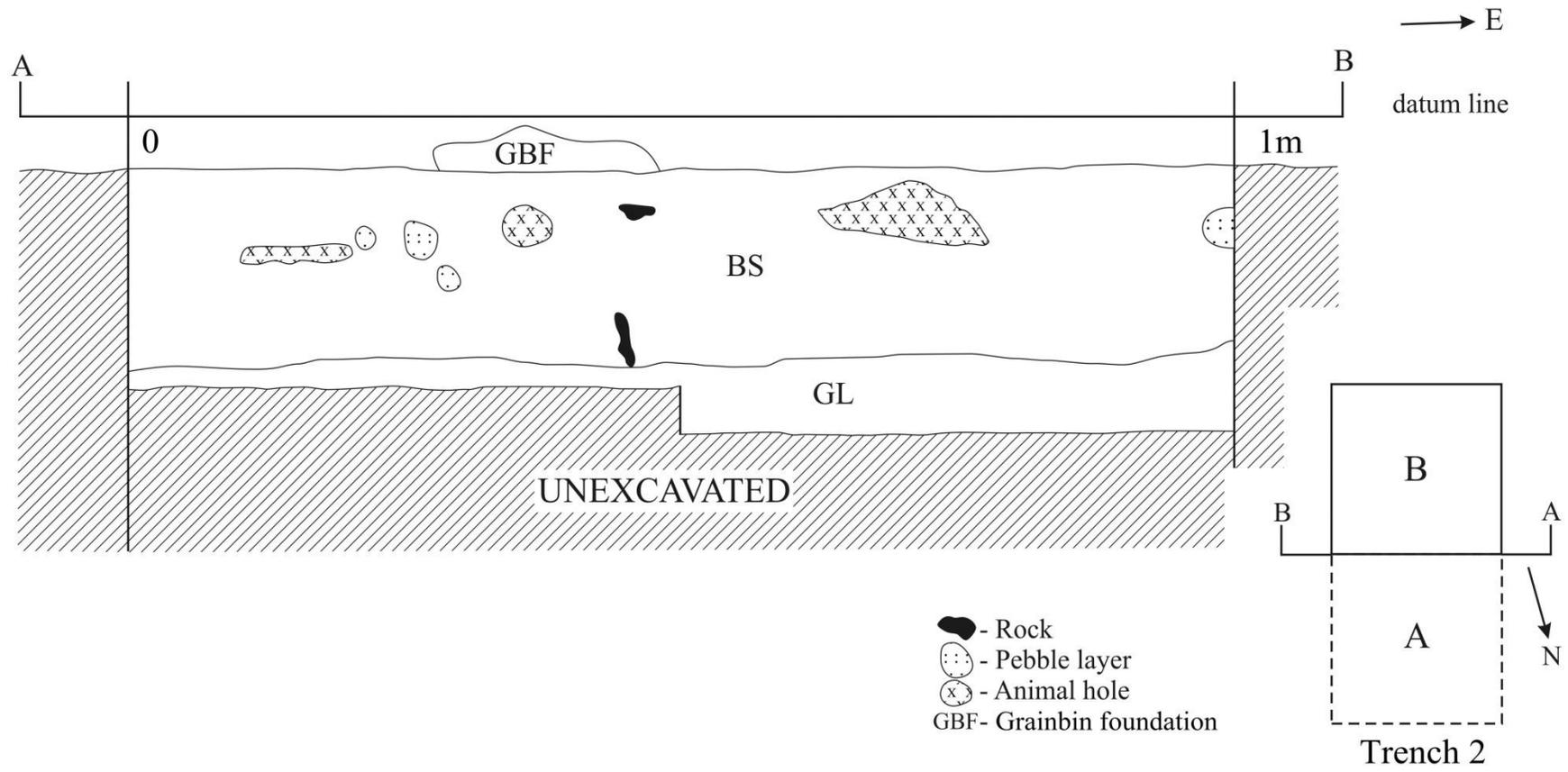


Figure 5.13: João Shelter: section of Trench 1, Square B and B2, west wall.

**Trench 2 / B / North section**



**Figure 5.14: João Shelter: section of Trench 2, Square B, north wall.**



## **5.2.6 Shawu Camp: MGR102-SC**

### **5.2.6.1 Site details**

The northern basalt area, where Shawu is situated (22° 6' 36.28" S; 29° 6' 34.67" E), is characterised by widespread deflation, an undulating landscape with basalt ridges running roughly east-west and numerous CCS and quartz raw material outcrops (G. Alexander 1984). These outcrops were found to contain stone tools from LSA and, to a lesser extent, possibly MSA assemblages. In my previous research in northern South Africa I postulated that assemblages with different dominant raw materials may be due to access to such material outcrops (Forssman 2010). Thus, Shawu is an ideal candidate to test this as it is one of the few sites in the northern area with excavation potential and is on top of a low lying koppie, known as Agate Koppie, surrounded by a massive CCS outcrop, mostly composed of agate.

The Matabole River is the nearest water source and lies approximately 500m to the northwest followed by the Majale River, situated 1.5km southeast of the camp. Occurring nearby but in low numbers, and restricted to the floodplains of the Majale, Matabole, Njaswe and Pitsani Rivers, are agriculturalist homesteads. The relative isolation of Shawu and the low density assemblage in an open-air context near to a raw material source is a unique feature and unlike any other excavated site in the region. It was thought possible that the contextual attributes of this site might demonstrate the need for considering a variety of site types in order to obtain a better understanding of the forager record.

The site itself covers most of the koppie top, an area of about 924m<sup>2</sup> (44x21m; Catalogue A.5.1), which has an oblong shape (Catalogue A.5.2). There is very little protection on top of the koppie in the form of permanent structures such as rock forms, but trees are present and presumably would have been in the past as well, offering some respite from the elements. There is not a large amount of living space on Agate Koppie, but the ample space below could have been used to set up camp if foragers were living at the site. Two features of concern are the road running through the centre of the koppie top and the modern fire pit. The road is poorly maintained and rarely used at present and the fire pit is from guests using the hill to watch the sunset. It is not thought that these activities have severely impacted on the integrity of the entire site and deposit (Figure 5.16).

### **5.2.6.2 Excavation method**

Shawu is a low density stone tool scatter and so in order to obtain the greatest sample the excavation needed to be in the area with the highest frequency of artefacts. This was deemed to

be in between the road and modern fire pit. Here, the greatest number of stone tools appeared on the surface and the area was thought to be relatively undisturbed. Due to time constraints, only 1.5 squares were excavated, comprising six quadrants: Trench 1, Square B (Quadrants A-D) and Trench 2, Square B (Quadrants C & D).

### 5.2.6.3 Stratigraphy

Two stratigraphic units were observed and it is thought that they are likely to be a single unit differing from one another in their degree of compaction (Table 5.7). Both units are particularly hard, with the lower unit noticeably more so, and there is no evidence on the surface or below indicating that erosion has affected the site.

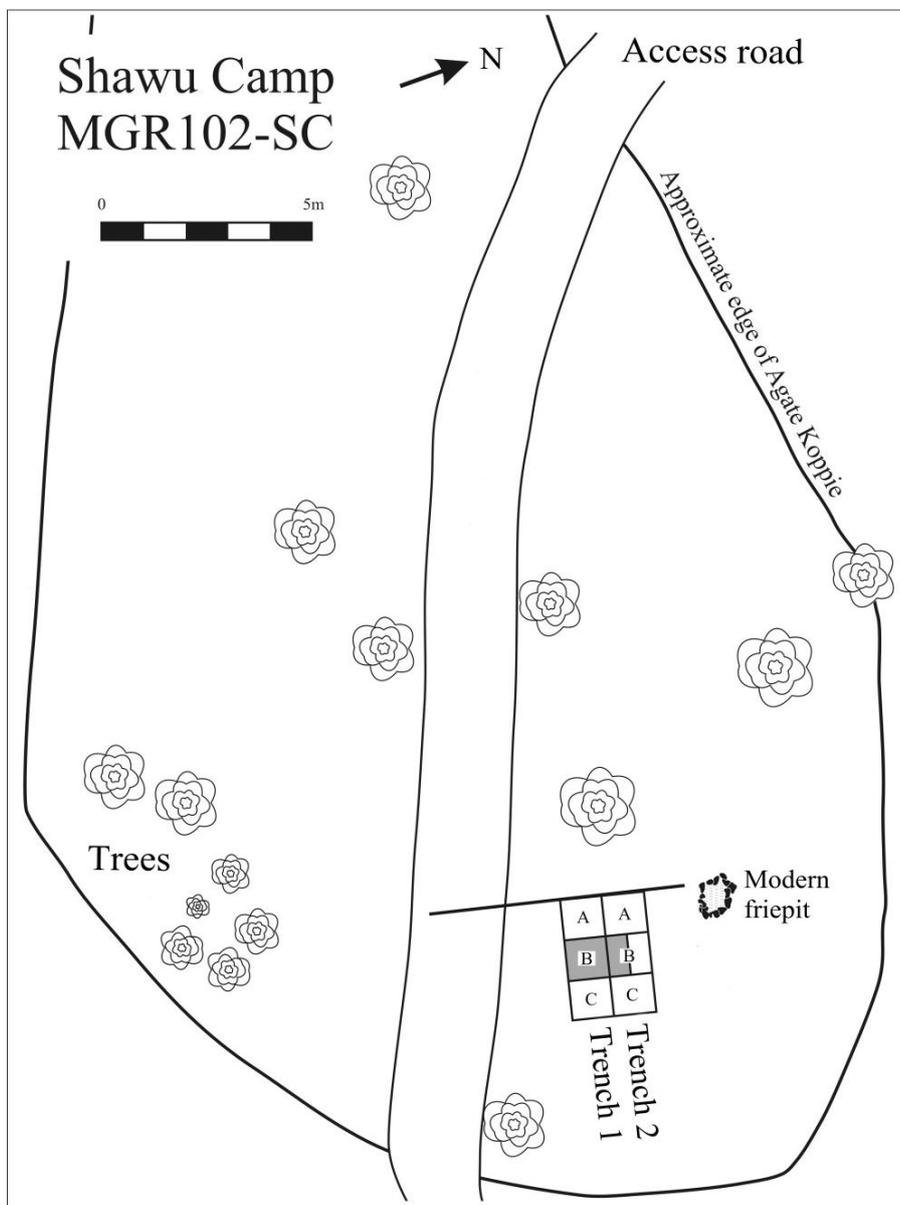


Figure 5.16: Shawu Camp: site plan.

**Table 5.7: Shawu Camp: stratigraphic units.**

Layer	Code	Thickness (cm)	Colour	Compaction	Composition	Inclusions	Notes
Compact brown	CB	3	Rust brown	Compact but easily dug	Stones and pebbles	Insect burrows	Little erosion
Hard brown	HB	6	Rust brown	Extremely hard	Stones and pebbles	Insect burrows	Increase in rocks

## 5.2.7 Kambaku Camp: MGR252-KC

### 5.2.7.1 Site details

Kambaku (22° 12' 57.46'' S; 29° 1' 50.22'' E) is composed of two distinct areas and both were excavated in order to determine their relationship (Figure 5.17 & 5.18). The lower homestead is situated in a small valley within the sandstone belt and the upper kraal is located on top of an adjacent koppie above the camp (Catalogue A.6.1). It was thought that the two were occupied at the same time based on the fact that Khami ceramics were found in both sites. In the homestead a poorly preserved kraal was found, but the size of the kraal at the upper kraal portion of the site is much larger and also contains a smaller one on its north-western boundary.

The camp comprises a large living area running up against a small overhang (Catalogue A.6.2). In the overhang there are a series of dry-packed stone walls and immediately outside a possible human burial, marked by packed rock. The overhang is too small to live in, but there does seem to be some deposit (Catalogue A.6.3). The kraal in the lower homestead, which seems to be heavily eroded, is fairly large – about 23m in diameter – and it borders an erosional gully, or donga, to its north where on the opposite side of the donga is a midden. Continuing north, over the midden, the edge of the small valley rises up to a flat-topped koppie. It is here where the two kraals are found. Separating the kraals is a natural rock barrier (Catalogue A.6.4), likely a small dyke caused by localised uprising of dolerite (see G. Alexander 1984). Around the kraal there is little space for huts, but grainbin foundations and a small midden were noted suggesting that huts had been present (see Huffman 2000).

The primary reason for excavating Kambaku was because of the occurrence of forager stone tools and the relatively late date of the ceramics as well as two glass beads found at the site. Huffman (pers. comm. 2011) identified Icon (c. AD 1400) and Khami (AD 1450 onwards) sherds, as well as an earlier TK2 sherd (AD 1200 – 1250), from images sent to him. A blue hexagonal faceted bead was also found at Kambaku during the survey and originated in Bohemia, Czech Republic,

between 1820 and 1900. The association between the stone tool assemblage and agricultural use of the site may thus be significant as it post-dates the abandonment of Mapungubwe and the disappearance of the forager material record in rockshelters.

#### **5.2.7.2 Excavation method**

The primary goals of the excavations were to test whether the stone tools at the site were produced by foraging people, based on the presence of formal tools, and whether they could be associated with the farmer occupation of the homestead, as well as to test the association between the upper and lower occupations. Unfortunately, no hut remains were identified in the lower homestead, only a kraal, midden, stone walling and two grainbin foundations. Trench 1 was set up to begin in the small overhang of the camp behind the walling in what appeared to be a midden deposit, extending into the kraal (Catalogue A.6.5). Four squares were excavated in Trench 1: A, inside the rockshelter's midden deposit; E and G, in the zone between the rockshelter and kraal and T, inside the kraal. It was hoped that in the rockshelter-to-kraal zone artefacts associated with huts would be found, including ceramics and beads as well as possibly stone tools. Nearby and within this zone is a possible human burial, left untouched, making this an optimal area to excavate. Excavating Square T in the kraal was simply done to extract a decent ceramic sample for identification purposes. The goal of the excavations in the upper kraal was of a similar nature: to recover a large ceramic sample in order to associate the occupation with a ceramic facies and thus date the site. Two squares in Trench 2 were excavated initially and Trench 3 (Catalogue A.6.6) was only dug because very few artefacts were found in Trench 2. Shovel tests were placed in the kraal to see whether there was an area of higher density of ceramics yet this was not found. Trench 3 did, in fact, produce a large ceramic sample. A large scale surface collection was undertaken at the upper kraal to increase the sample size across the entire site. Nine transects were walked from the western edge of the kraal along the natural wall through to the opposite end of the site and back. All diagnostic ceramics, beads and stone tools were collected for identification purposes.

#### **5.2.7.3 Stratigraphy**

Very few stratigraphic units are present at the site (Table 5.8). In Trench 1, Square A, two units were differentiated yet it seems that they are in fact the same; the only difference was the degree of compaction. In that same trench, Squares E and G contained the same unit and Square T a compacted sand deposit that seemed to be Kalahari Sands in nature, but may be a mixture of the sands and localised sandstone erosion. At the upper kraal a single unit was excavated, being

the kraal itself, but was separated into Kraal (KR) and Brown KR (BKR), the latter simply being the more compacted base of the kraal (Figure 5.19 shows Trench 3 but Trench 2 was much the same). The surrounding deposit on the koppie was likely due to erosion and there was a midden deposit in the eastern portion of the site, yet neither was excavated because a large enough ceramic sample had been collected from the site and time did not permit the opening of new trenches.

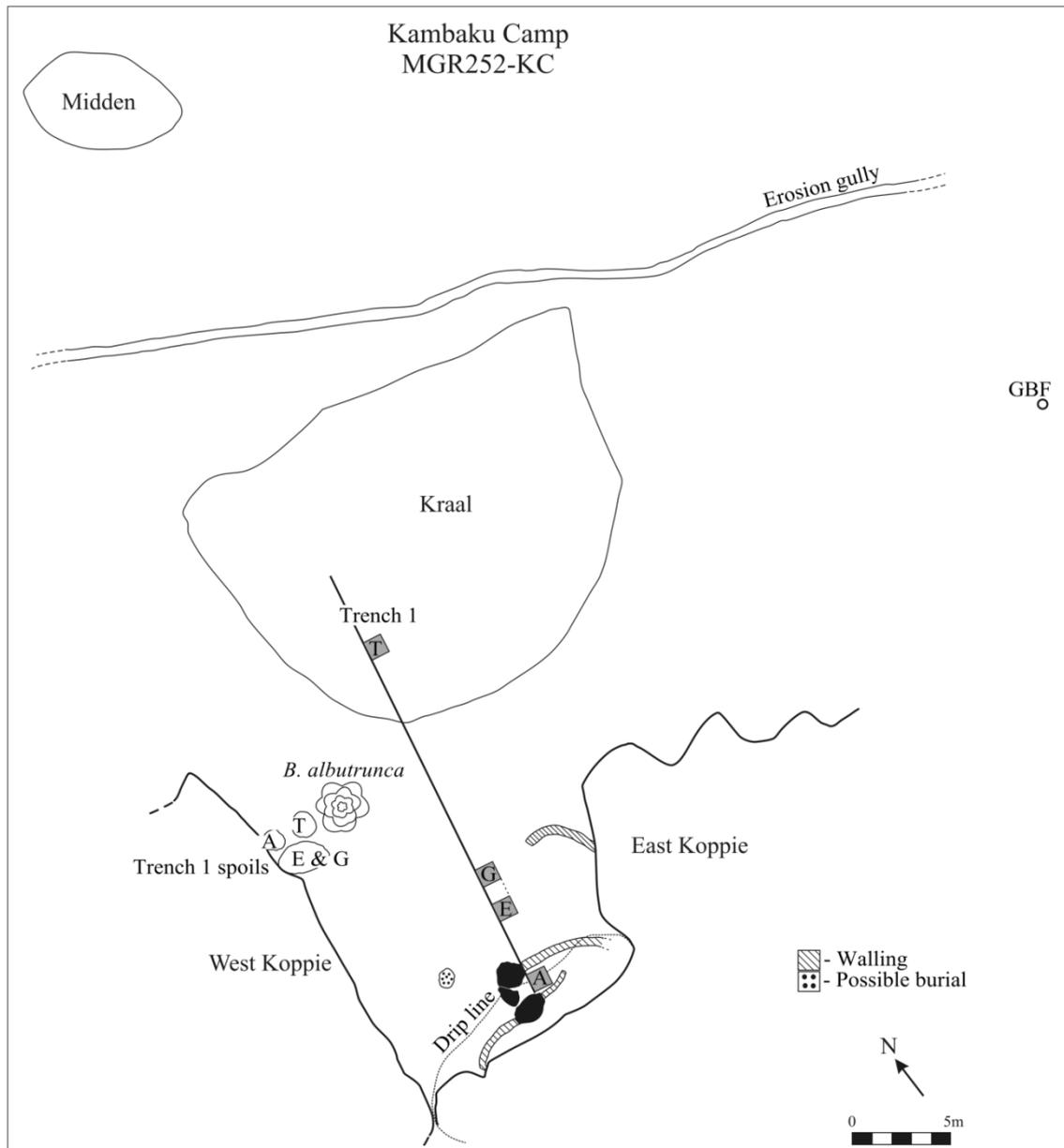


Figure 5.17: Kambaku Kraal: site plan of the homestead.

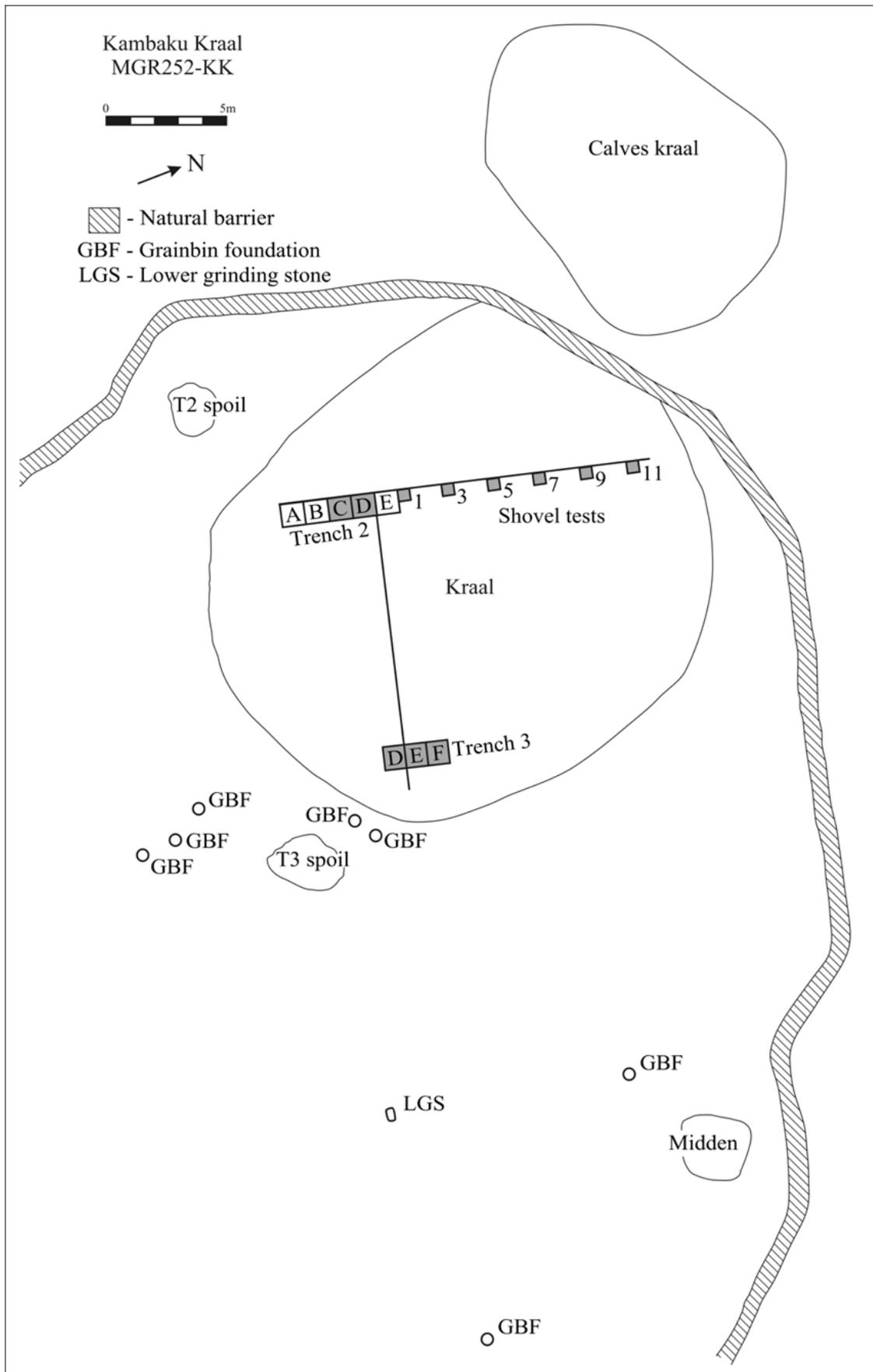


Figure 5.18: Kambaku Kraal: site plan of upper kraal.

**Table 5.8: Kambaku Kraal: stratigraphic units.**

Layer	Code	Spits	Thickness (cm)	Colour	Compaction	Composition	Notes
Trench 1							
Ashy layer	AL	1 - 3	±6	Midden grey	Soft	Sandstone pebbles and larger rocks (>10cm)	This seems to be a midden deposit
Compact grey	CG	2 - 4	±6	Midden grey	Slightly more compact	Sandstone pebbles and larger rocks (>10cm)	Same as AL but compacted
Grey brown soil	GBS	NA	17	Grey/brown	Loosely consolidated	Sands	Only found in T; eroded outside sands possibly akin to Kalahari Sands or due to localised sandstone erosion; no definite kraal
Grey soil	GS	NA	±9	Grey	Hard	Rocks (>10cm) present	
Trench 2 and 3							
Kraal	KR	NA	T3: 18 - 31	Light brown/grey	Loosely consolidated	Rocks only appeared near to the base	Typical kraal level; lower portion slightly more compacted since it was the original walking surface
Basal KR	BKR	NA	T3: 3 - 6	Brown/grey	Slightly more compacted	Rocks and bedrock present	

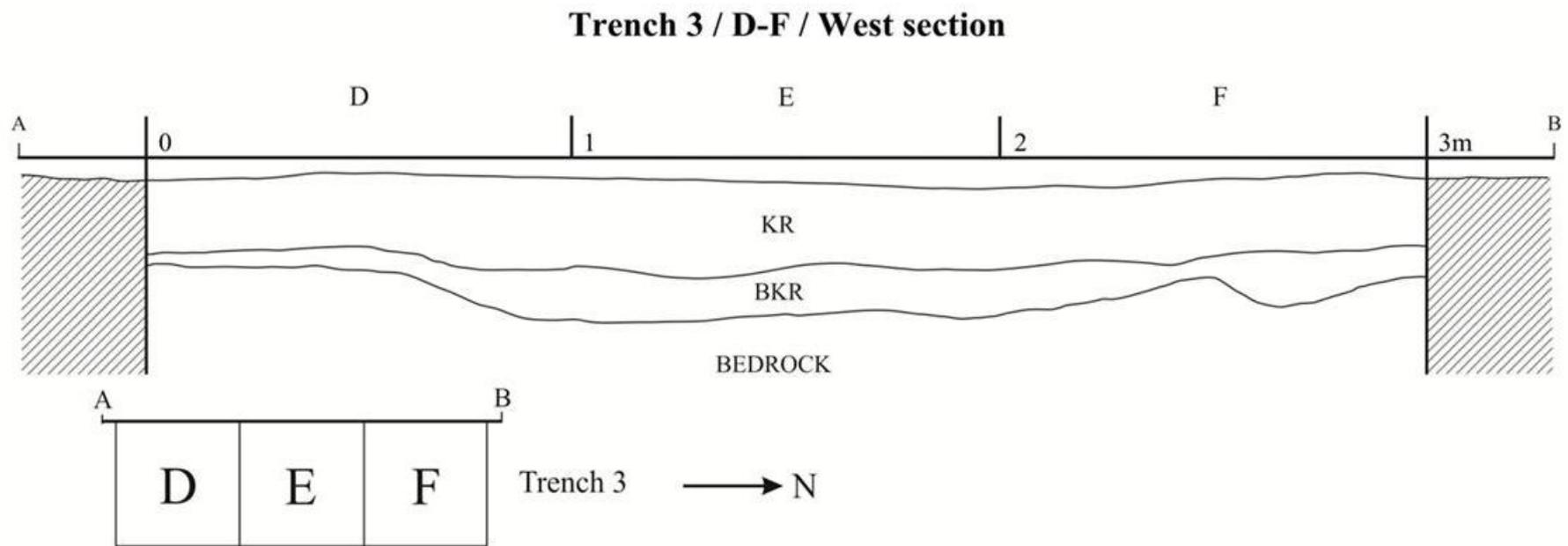


Figure 5.19: Kambaku Kraal: Trench 3, Squares D-F, west wall.

## **5.2.8 Ndlulamithi Kraal: MGR154-NK**

### **5.2.8.1 Site details**

Most of the forager stone tool scatters identified in the northern basalt zone could be considered ephemeral, but a number of agriculturalist homesteads were found, mostly in or near to floodplain zones along the river networks. Ndlulamithi (22° 7' 38.79" S; 29° 7' 18.01" E) is such a site located near to other homesteads, floodplains and standing water. The site is located on a koppie cutaway by the Majale River (Catalogue A.7.1) and looks over a floodplain on the opposite bank (Catalogue A.7.2). Two kraals, an upper and lower, were identified at the site but only the upper kraal was excavated due to time constraints (Catalogue A.7.3). It may be that the second kraal indicates that the occupants were of a lower status or that they simply had two kraals. It is also possible that they were not occupied at the same time. In the northern portion of the site an extensive surface scatter of stone tools was identified, hence the reason for the excavations.

### **5.2.8.2 Excavation method**

The site was divided into a grid of 1x1m squares named alphabetically (designated east to west) and numerically (designated north to south). Two squares were excavated in the upper kraal, both in Trench 15, Squares L and R (Catalogue A.7.4), and one outside the kraal in Trench 3, Square I (Figure 5.20). The reason for excavating the latter trench was due to the extensive stone tool assemblage found in this zone. The two kraal squares were aimed at recovering a diagnostic ceramic assemblage, for dating purposes, and stone tools, if present. The kraal itself is formed over a single occupation by a single group of people and so, if there are stone tools here, it is possible that foragers were living or using the homestead at the same time as the agriculturalists.

### **5.2.8.3 Stratigraphy**

The kraal was excavated in spits because there was a concern that there were multiple occupations at the site. However, this turned out not to be the case and no distinguishable layers were noted other than a lower compacted layer (Figure 5.21), which is likely the original walking surface when the kraal was first established. In Trench 3, only one stratigraphic unit was present in the 6cm of deposit above bedrock (Table 5.9).

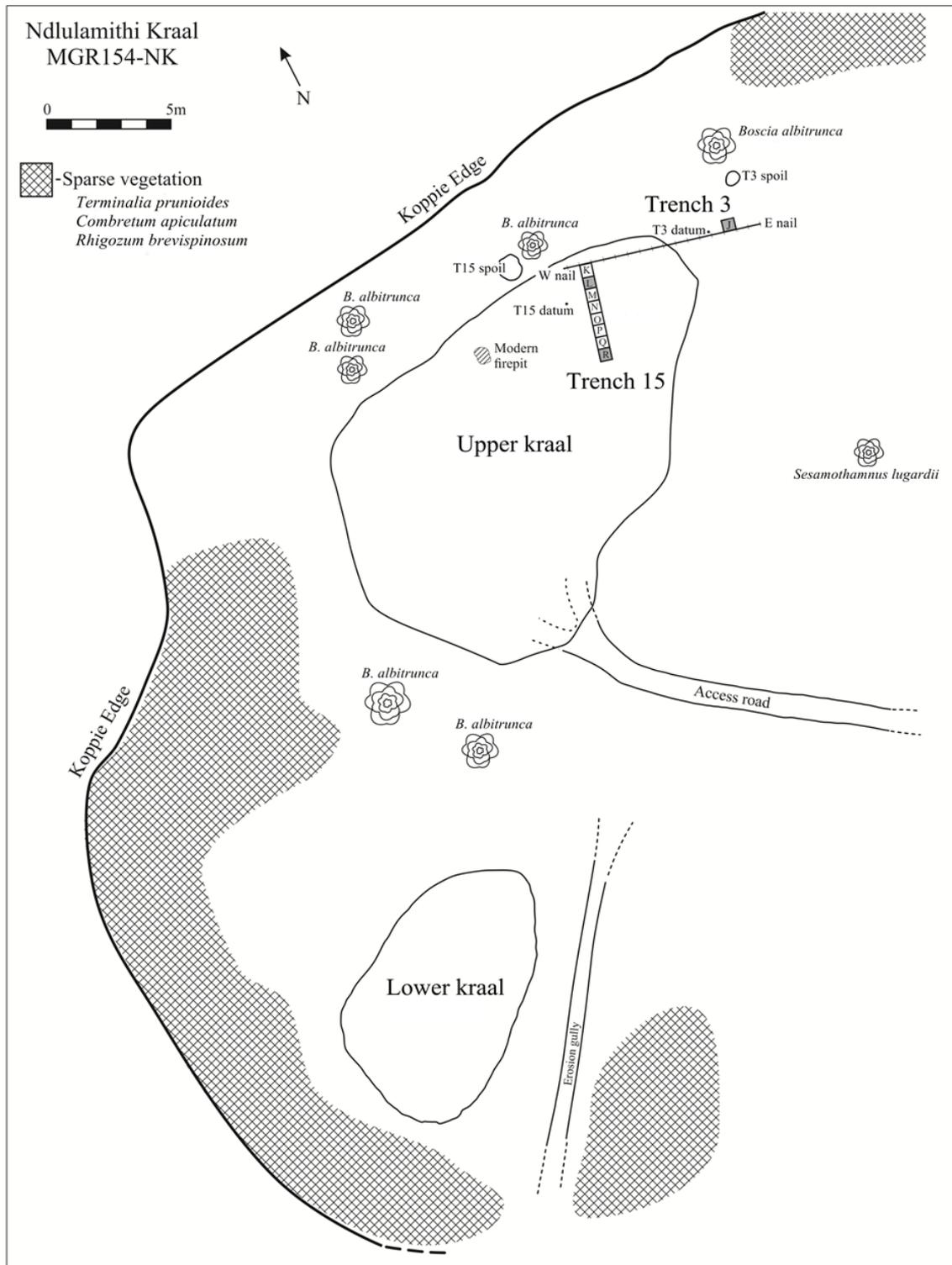


Figure 5.20: Ndlulamithi Kraal: site plan.

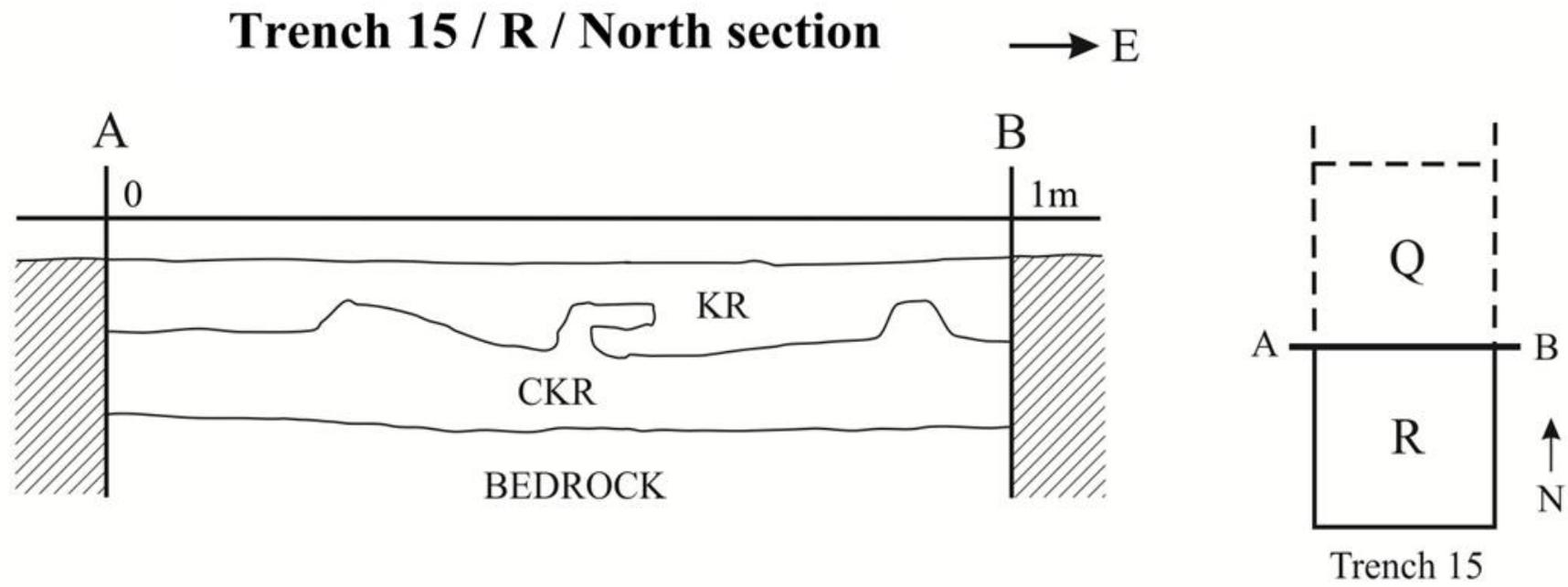


Figure 5.21: Ndlulamithi Kraal: Trench 15, Square R, north wall.

**Table 5.9: Ndlulamithi Kraal: stratigraphic units.**

<b>Layer</b>	<b>Code</b>	<b>Spits</b>	<b>Thickness (cm)</b>	<b>Colour</b>	<b>Compaction</b>	<b>Composition</b>	<b>Notes</b>
Trench 3							
Fine pale brown	FPB	1 - 2	±6	Pale brown	Consolidated	Small pebbles	May have a kraal component
Trench 15							
Kraal	KR	L: 4 - 6; R: 1 - 5	L: 9; R: 12	Grey/light brown	Soft	Very fine dung and few to no pebbles	Hard top but soft immediately below; cattle dung
Compact KR	CKR	L: 7 - 8; R: 5 - 9	L: ±6; R: >12	Grey/light brown	Compacted into blocks	Extremely fibrous	Walking surface; dung quite compacted; does not break easily

### **5.2.9 Shingwedzi Shepherd Tree: MGR131-SST**

Shingwedzi (22° 5' 40.96" S; 29° 7' 7.01" E; Catalogue A.8.1) is an ephemeral site located northeast of Shawu. On the surface a forager stone tool scatter was identified and was broadly confined to a large break in the vegetation not far from a *Boscia* sp. A baseline was placed running through the centre of the site and a square was excavated in the area where the most stone tool artefacts were found. No artefacts were recovered during the excavation; whilst they were present on the surface none had been buried. The reasons why this might have occurred are not explored in this dissertation without additional data such as a soil micromorphology assessment. The excavations proceeded until bedrock was reached.

### **5.3 SUMMARY OF METHODS**

In order to perform a landscape study, a firm understanding of survey methods needs to be achieved. If done correctly, a well-structured survey that acknowledges the shortcomings of the method can be performed. The data collected can then be used in a meaningful way to interpret the archaeological landscape, which includes settlement patterns, ecological and cultural diversity and political or social boundaries. For this research, a survey method has been developed that is designed to cover as large an area as possible in a systematic way in order to maximise the identification of all site types, including ephemeral scatters, and obtain a representative sample of archaeological features on the landscape. The data from the survey are presented in the following chapter. Following the survey, archaeological excavations were conducted and are based on the methods used by other researchers working on forager studies in the region. These data are presented in Chapter 7.

## CHAPTER 6: SURVEY RESULTS

Most of Tuli (2143.3 ha) and Uitspan (793.7 ha) were surveyed, along with 7331.2 ha (29.3%) of Mashatu on foot. In addition, 10,423.5 ha of Northern Tuli was surveyed in a vehicle. The total area covered in both foot and vehicle surveys was 20,691.7 ha, representing 28.7% of Northern Tuli (total = 72,000 ha). In this area, a total of 428 archaeological features were identified (Catalogue C.1.1). They represent Early Stone Age (ESA), MSA and LSA assemblages, painted and engraved rock art sites, agriculturalist homesteads and discrete collections or scatters of agriculturalist items such as ceramics, grinding stones or larger finds in the form of walling or human burial grounds. Some European period sites were also identified. Many of the features identified are of little value to archaeologists due to their disturbed context or lack of deposit, but many represent large artefact accumulations with little disturbance. From these data a number of patterns are evident. Presented below is a breakdown of these findings with the appropriate data, but I first compare transects as an alternative survey method to planned surveys.

### 6.1 TRANSECT VERSUS PLANNED SURVEY

During the transect survey, the team of five covered approximately 9.2km in an area of 1.2km<sup>2</sup> over approximately 12 hours, recording 33 archaeological features. In a nearby (3km east) routed survey I covered a distance of 10.6km alone on 20/05/2012 – approximately 8 hours – and 24 archaeological features were identified in an area of approximately 3.2km<sup>2</sup>. Therefore, the transect survey revealed 3.6 features every kilometre walked and 2.8/hour, while the routed survey produced 2.3 features in the same distance and 3/hour. Although one cannot account for environmental differences in the two locations since they were not recorded, this shows that using transects may produce greater resolution of the archaeological landscape, but it would require a greater amount of time and a larger team of surveyors to do so. Since neither of these were available to me, planned surveys covering large areas and allowing me to exclude locations such as floodplains or steep slopes were favoured. In future, with the availability of a larger team, more thorough transects should be performed revisiting areas covered in this project to record sites missed in the planned survey.

### 6.2 ESA AND MSA ASSEMBLAGES

Both ESA and MSA assemblages occur across the landscape, with MSA features being more frequent (Figure 6.1). The ESA is only represented by nine low density stone tool scatters all situated in the open. The highest density of ESA stone tools was at MGR26 where more than ten were found. Handaxes from the ESA were found at both MGR277 and João in agriculturalist

homesteads, but are not associated chronologically; the ESA begins about 2.4 million years ago and ceases around 250 000 BP (Mitchell 2002: 64). Succeeding the ESA is the MSA and 63 assemblages were identified in the survey area. They are found in a diversity of locations but mostly in the open (N=59; 93.7%), with the greatest proportion being in the flats (N=16; 25.3%) and around koppies (N=12; 19.1%). Erosion has affected most sites, with 17 (27%) being severely impacted and 36 (57.1%) only slightly. At nine features (14.3%), no erosion was visible. The ESA and MSA are beyond the scope of this project and so will not be discussed in detail.

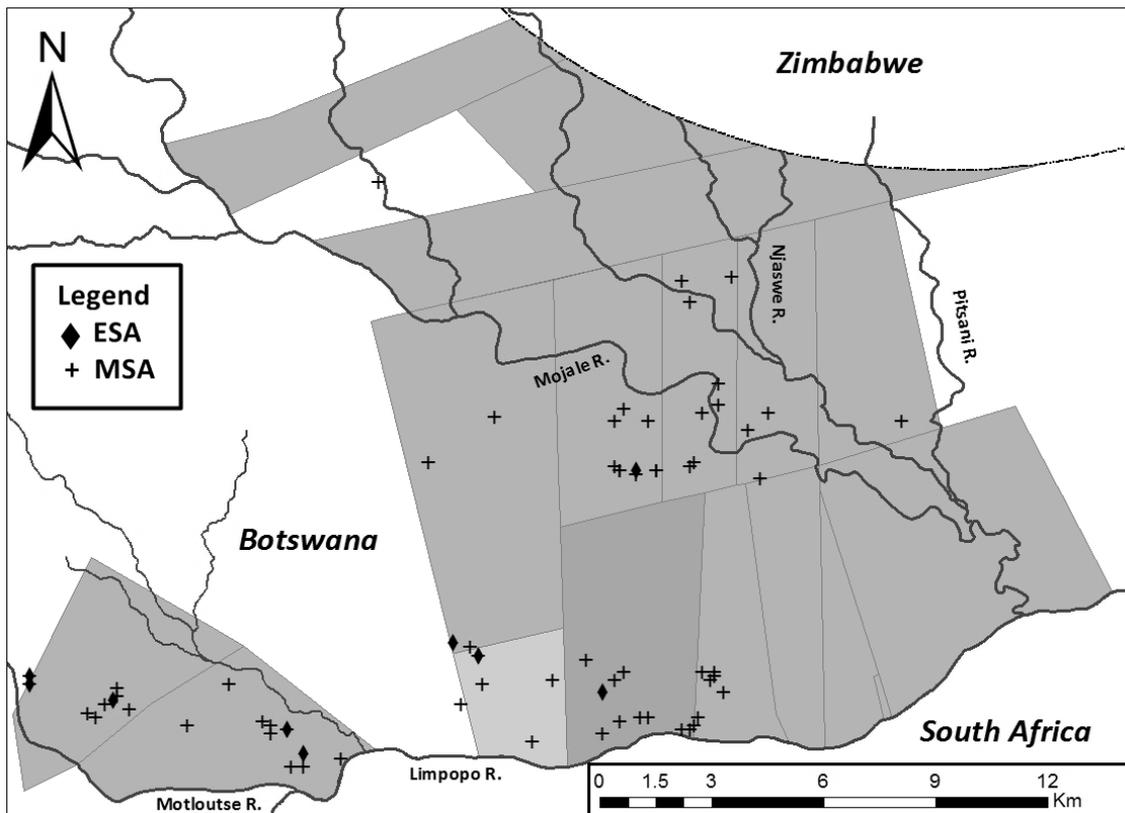


Figure 6.1: The location of ESA and MSA features.

### 6.3 FORAGER ASSEMBLAGES

A total of 186 forager features were identified in the field survey (Catalogue C.1.2). Just over half of the forager assemblages were found in deposit estimated to be less than 20cm thick (N=108; 58.1%) with 51 (27.4%) in deposit between 20 and 50cm thick and at 15 (8.1%) features the deposit was estimated to be greater than 50cm in thickness. These figures represent estimates and excavations may show that the deposits are deeper or shallower than expected. Many of the forager features have been subjected to some form of erosion. Most have been influenced by slight erosion (N=91; 48.9%), referring to low impact colluvial action, whereas others have been subject to considerable erosion (N=51; 27.4%) in which case a donga has developed through a

portion of the site. One site has extensive erosion (0.5%) and is severely damaged and another appears to have been seriously affected by erosion but is at present stable (0.5%). No erosion was recorded at a number of forager features (N=31; 16.7%), and these appear to be in their primary context. One might expect that the latter category is located in a protected context yet only one (3.2%) was found in a rockshelter. The other forager features where no erosion was recorded were found in the flats (N=14; 45.2%), around hills (N=6; 19.4%) and koppies (N=4; 12.9%), on top of koppies (N=3; 9.7%) and hills (N=2; 6.5%) and one feature at a rock outcrop (3.2%). In addition, one of these features has an expected deposit of 50 to 100cm deep (3.2%), ten features between 20 and 50cm (32.3%), 15 between 5 and 20cm (48.4%) and five features with less than 5cm of deposit (16.1%). These sites, which are in primary context and are apparently undisturbed, offer potential for excavations, indicating that there are open-air sites with suitable contexts for such archaeological work in the area. Whether they contain organic material or are palimpsests will need to be assessed upon excavation.

A number of forager assemblages were also identified at agriculturalist kraals (N=32; 17.2%). At this stage it is not possible to associate these assemblages with the agriculturalist use of the site because there have been no excavations. Even if associated, it cannot be said that foragers and agriculturalists occupied these sites together because the artefacts could have been obtained through trade in the last 2000 years (cf. Lombard *et al.*'s 2012 ceramic final LSA); for example, a few potsherds does not necessarily mean that farmers were present since foragers could have obtained these items from farmers and returned them to their own camp. The presence of forager stone tools at homesteads, however, indicates that the possibility of such an association exists. Excluding sites where a kraal and forager assemblage existed, there were 28 forager features identified with earthenware ceramics (15.1%), five features which contained middens (2.7%), three with lower grindstones (1.6%) and at two features grainbin foundations and walling were found together (1.1%), two contained upper grinding stones and grooves (1.1% each) and a single forager feature with either a grainbin foundation, walling or a *mankala* board (each 0.5%).

The presence of ceramics at some kraals enabled them to be relatively dated (discussed further below). In 12 instances (6.5%) a forager assemblage was found within a so-called Middle Iron Age homesteads (AD 900 – 1300; Huffman 2007: xi). Of these, six homesteads contained Zhizo ceramics (3.2%), three K2 (1.6%), two Leokwe and Mapungubwe (each 1.1%) and one TK2 (0.5%). Figure 6.2 shows the distribution of these sites. At nine so-called Late Iron Age homesteads forager assemblages were found (4.8%). These separate into five forager assemblages at Khami (2.7%) and two at Venda homesteads (1.1%), of which two are unspecified – identified using

broader chronological signifiers such as glass beads or spindle whorls. Their distribution is presented in Figure 6.3. As stated above, this may be a pattern of preferential site use or agriculturalist activities, for example construction, incorporating forager stone tools into the site unintentionally (e.g. S. Hall 2000), yet it might too indicate trade or exchange that has been occurring on the landscape since AD 900 (Hall & Smith 2000).

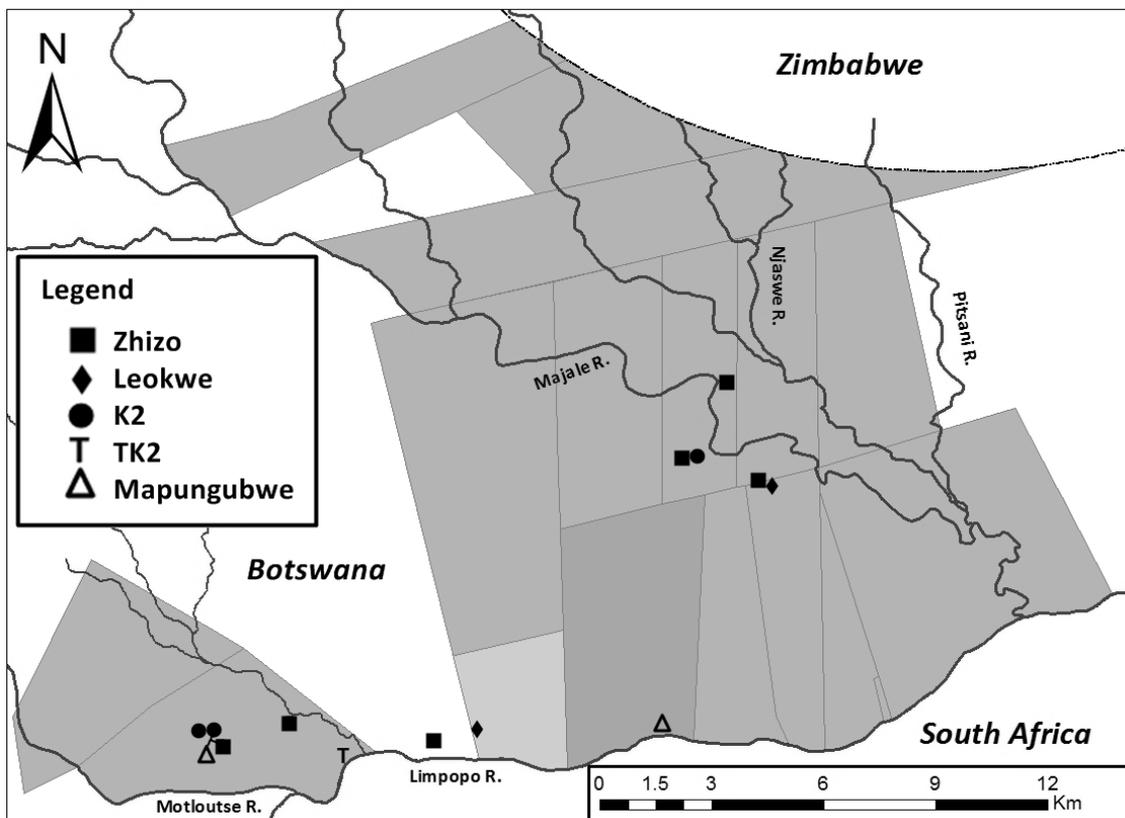
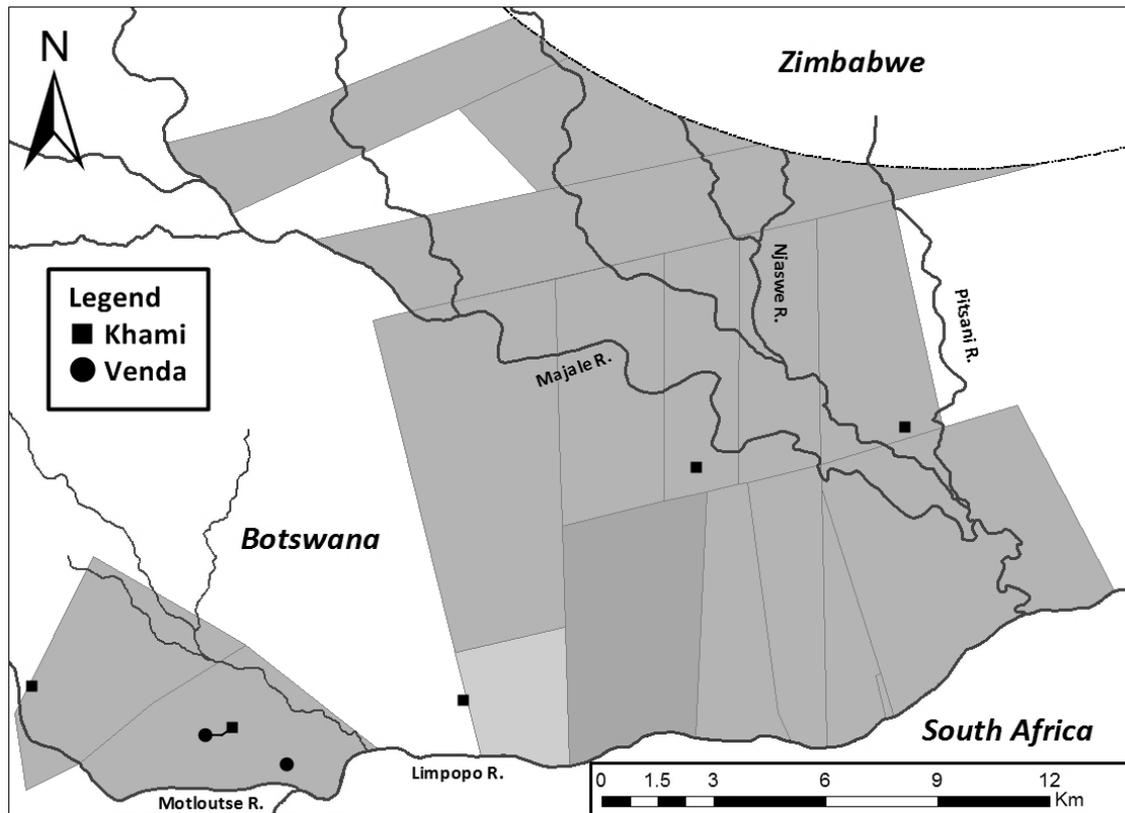


Figure 6.2: Forager assemblages in so-called Middle Iron Age homesteads.



**Figure 6.3: Forager assemblages in so-called Late Iron Age homesteads.**

### 6.3.1 Distribution

Forager artefacts are widely distributed across the research area (Figure 6.4), but a large portion of them was found in the central zone. Here, in an area of 80km<sup>2</sup>, surveys revealed 105 forager features (56.5% of total) and a low density of agriculturalist homesteads (N=14; 12%; 0.2/km<sup>2</sup>), eight of which contained forager stone tools (included in the 105 forager features; Figure 6.5). Also found in this area is the highest concentration of raw material outcrops (N=88; 73.3%; 1.1/km<sup>2</sup>; Figure 6.6), composed of unknown quantities of CCS, agate and quartz, with forager stone tools found at 25 of them (28.4%), but it is expected that on closer inspection this figure might increase. In total, 30 forager features (16.1%) were found in raw material outcrops throughout the survey zone (25% of total raw material outcrops; N=119). Raw material outcrops are mostly concentrated in the central zone, but were found in varying densities across the entire survey area (Figure 6.7). All identified forager features are within 7km of a raw material outcrop in Northern Tuli. No equivalent survey has been performed in South Africa in which such outcrops were recorded and so these data cannot be correlated with South African surveys.

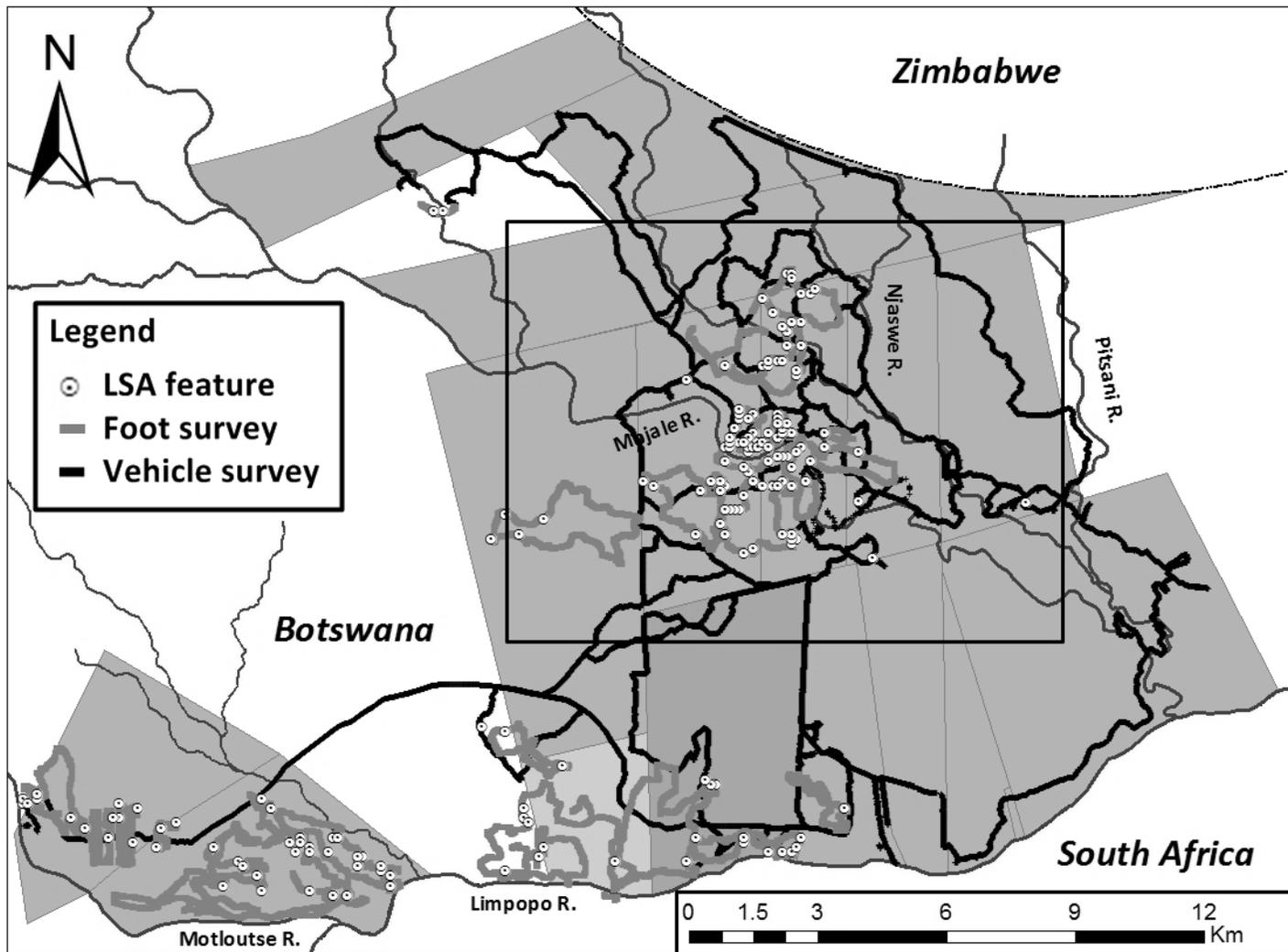


Figure 6.4: The basic distribution of forager features and survey tracklogs.

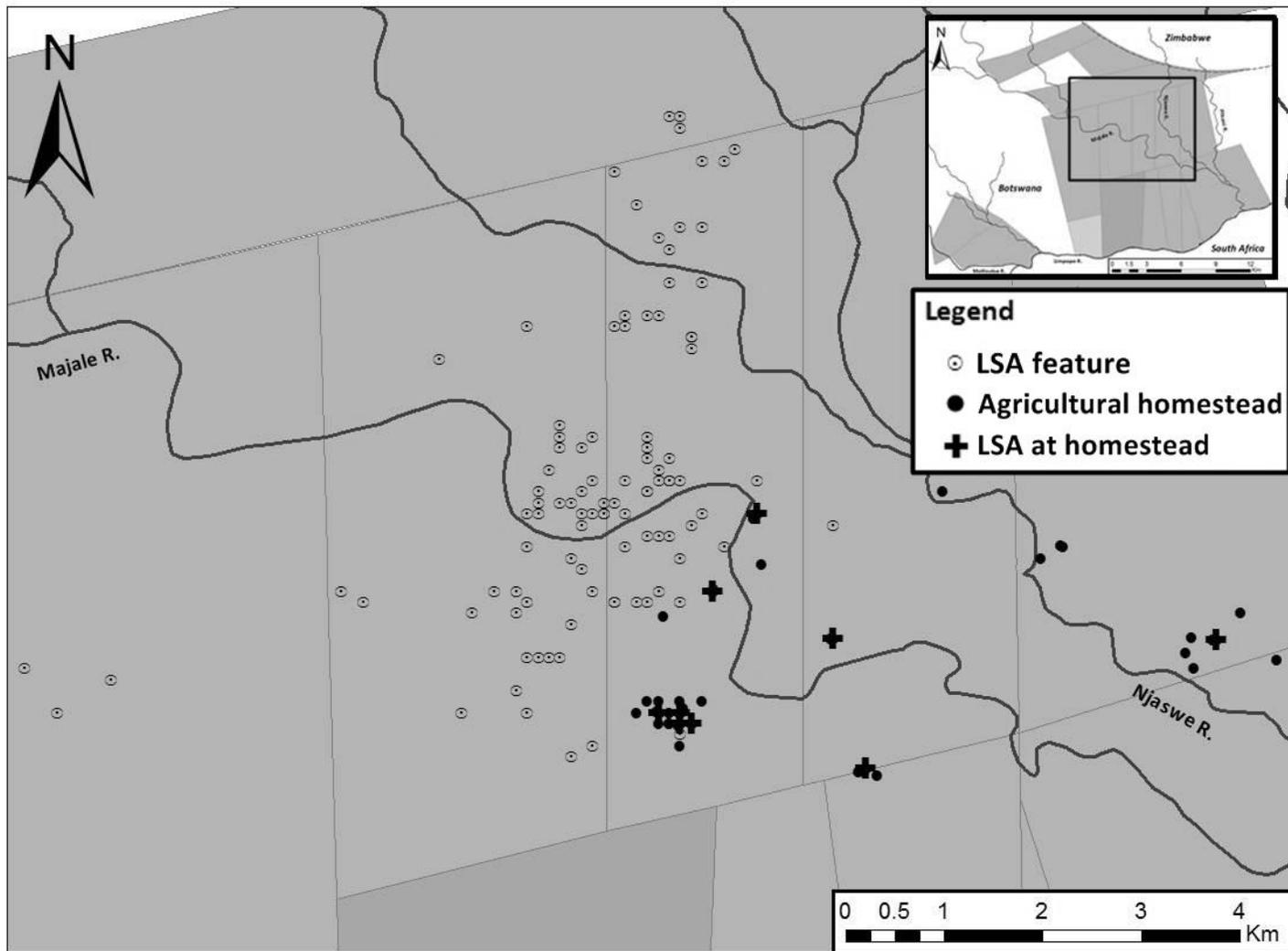


Figure 6.5: Agriculturalist camps in the central zone of the survey area.

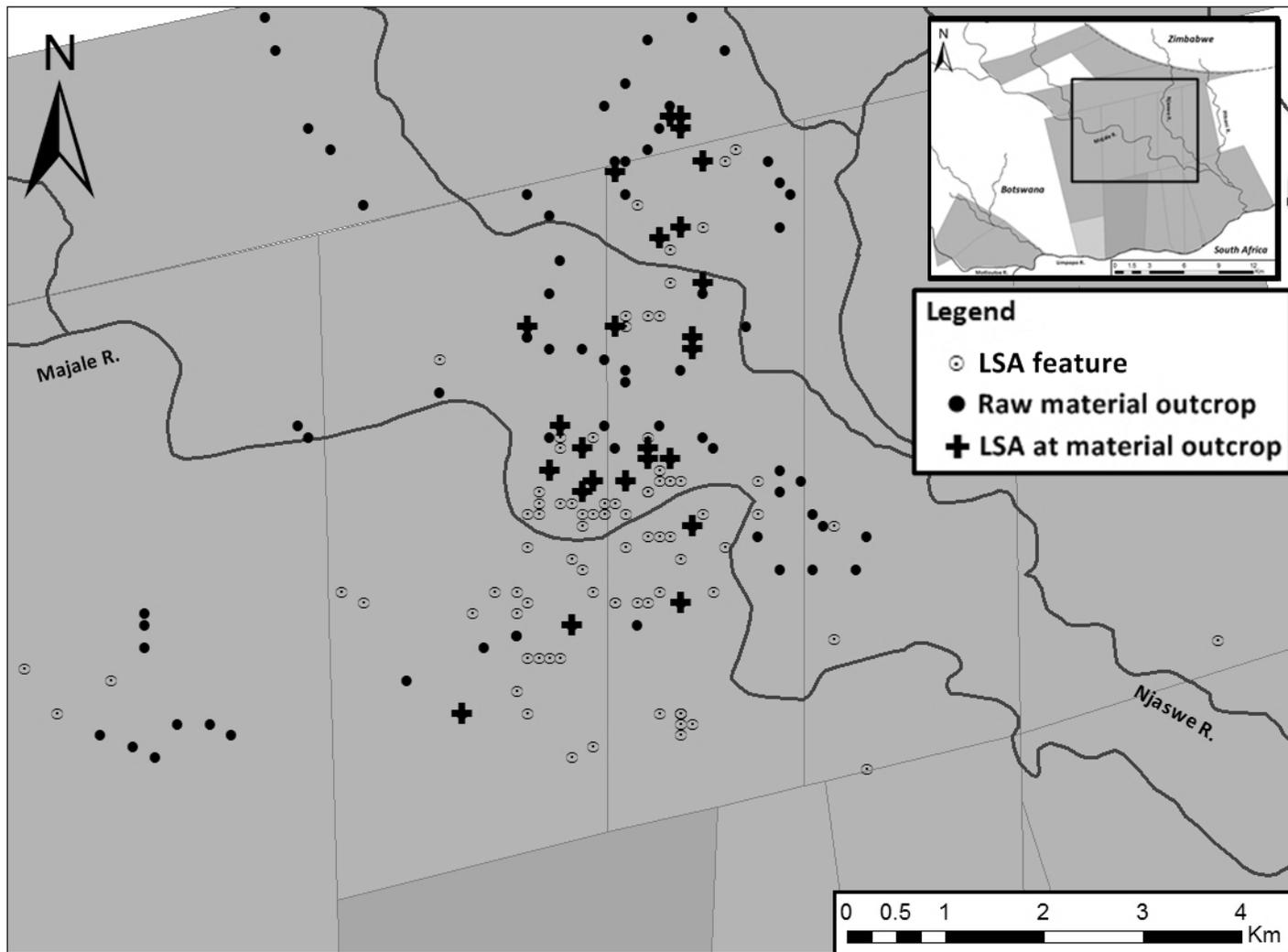


Figure 6.6: Raw material outcrops and those where forager artefacts are present in the central zone of the survey area.

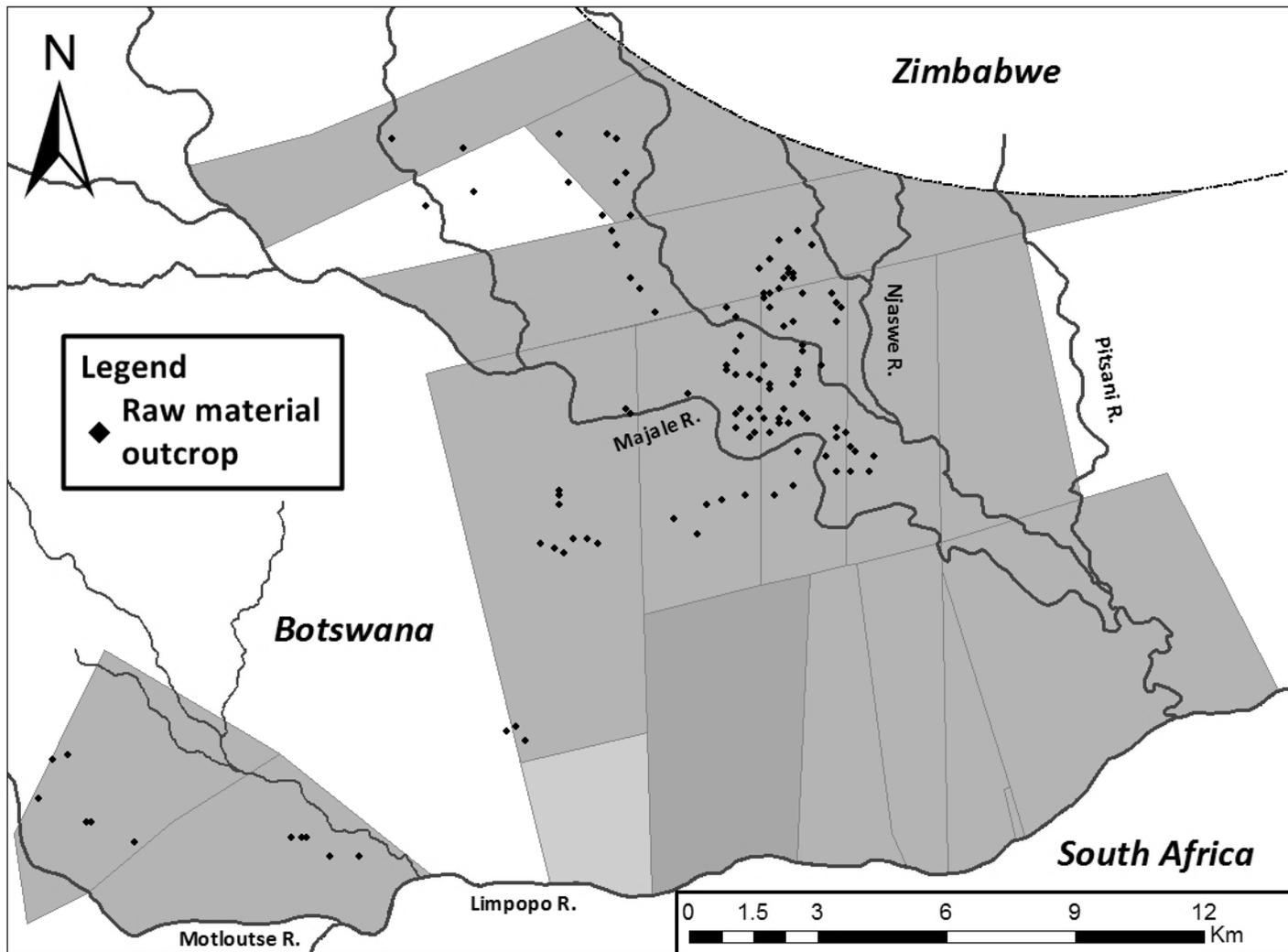


Figure 6.7: Raw material outcrops.

### 6.3.2 Ecology and context

The geology of most of the survey area is basalt. Along the Limpopo and Motloutse Rivers shear deformation, coupled with fluvial erosion, has exposed the underlying sandstone and formed koppies. Ridges running east-west are found in both the basalt and sandstone zones and are composed of the dominant rock type. Rockshelters only occur in the sandstone zone. Of the total number of identified forager features, 120 (64.5%) are in the basalt zone and 66 (35.5%) in the sandstone area (Figure 6.8). Calculating site density is not an accurate measure of the number of actual sites, but does help compare findings in the two areas. A total of 33.9km<sup>2</sup> in the basalt zone was surveyed and 3.5 forager features were identified every square kilometre whereas in the sandstone zone, 39.2km<sup>2</sup> were surveyed and 1.7 forager features were found every square kilometre. Therefore, a greater density of forager assemblages was identified in the basalt area. There are a number of possible reasons why the difference between the two zones may exist, discussed in later chapters, but one linked to geology is soil type (G. Alexander 1984). There are four different soil types present in the survey zone: clay, coarse loam, fine loam and fine loam to clay (Figure 6.9). Fine loam to clay (46 forager features) and coarse loam soils (38 forager features) are mostly restricted to the floodplains along the Limpopo and Motloutse Rivers respectively, and coarse loam occurs along the Shashe River floodplain outside the survey zone. Clay soils are restricted to the southern side of the Limpopo River with a limited portion in Botswana at the confluence of the Limpopo and Motloutse Rivers; these contain no forager features. Fine loam soil is the most prevalent soil type on the landscape and is found mostly in the basalt zone (102 forager features). Other factors that influence the detectability of archaeological features are vegetation cover, erosion and visibility, which are represented differently in the two zones due to the geological substrates and soils (Codron *et al.* 2013). Since these have not been assessed quantitatively, site density results must be viewed with considerable caution.

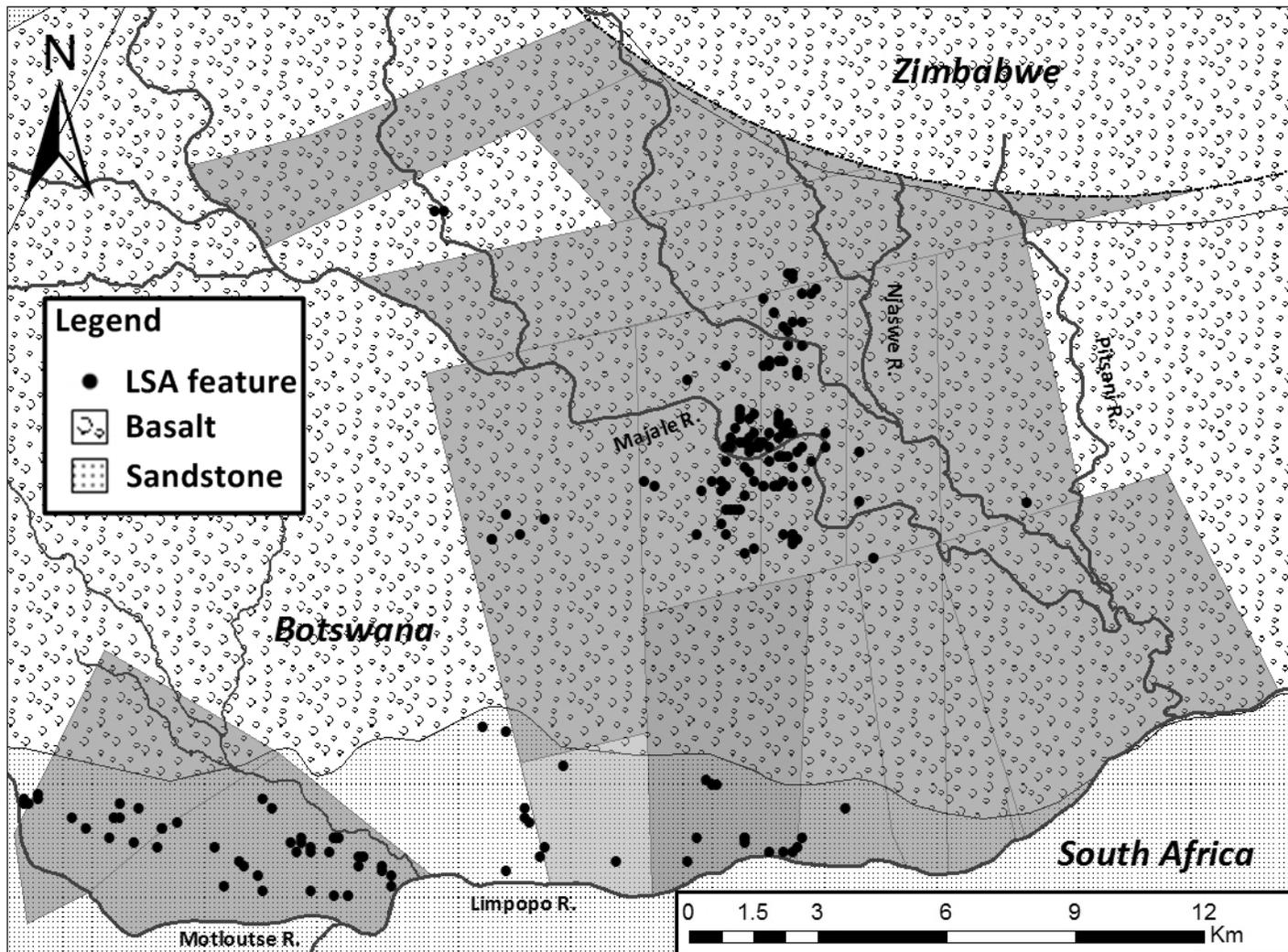


Figure 6.8: Forager assemblages relative to the local geology.

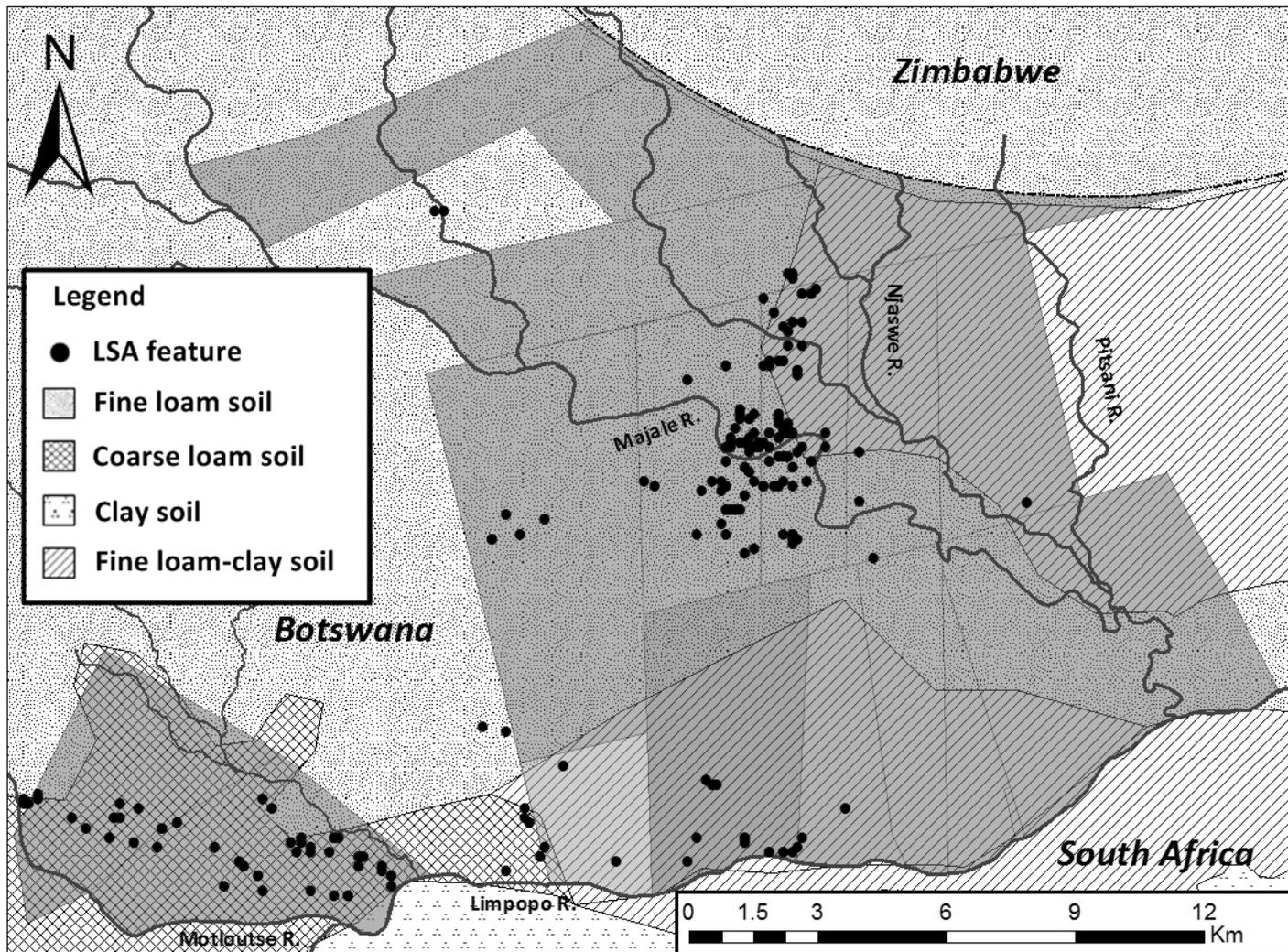


Figure 6.9: Forager assemblage distribution and soil types.

### 6.3.3 Landscape patterns and density clusters

Forager features were found in a variety of locations, habitat types and around different natural features (Table 6.1), which were only recorded at 175 of the total 186 forager features; 11 were at raw material outcrops and only GPS co-ordinates and a list of artefacts was recorded. Most sites were found in the open flats (N=49; 28%), not including those found at raw material outcrops which are all in the open, followed by features around koppies (N=28; 16%) and hills (N=22; 12.6%), on top of koppies (N=17; 9.7%) and at rockshelters (N=16; 9.1%). The habitat type refers to the local ecology around the archaeological feature. The majority of sites are found in a woodland setting (N=162; 92.6%), which is not surprising as most of the area is characterised by mopane veld. The topography of the region is also fairly uniform with the northern basalt zone mostly undulating because of the east-west ridges (undulating: N=82; 46.9% and hill ridge/hills: N=21/2; total = 13.1%) and the southern sandstone belt punctuated by koppies and ridges (N=70; 40%). The location details of the identified forager features show that they are found in a variety of contexts and not excluded to specific areas on the landscape or places such as rockshelters.

**Table 6.1: Forager features and their location, habitat type and natural features.**

Location		Habitat type		Natural features	
Flats	49	Shrub woodland	83	Undulating	82
Koppie	28	Open shrub woodland	38	Punctuated kopjes	70
Hill	22	Mixed woodland	29	Hill ridge	21
Koppie top	17	Dense shrub woodland	8	Hills	2
Rockshelter	16	Sandstone hills	6		
River side/bed	13	Open woodland	4		175
Hilltop	10	Abandoned cropping lands	4		
Drainage area	8	Woodland on disturbed land	1		
Rock outcrop	5	Water pan	1		
Between koppies	5	Riverine bush	1		
Boulder	1				
Tree	1		175		

175

The only main cluster of forager features on the landscape is in the central zone. One might expect to find a cluster near to the Mmamagwa complex, but this is not the case; it has been shown elsewhere that foragers lived near to major agricultural centres (Reid & Segobye 2000) and it has also been suggested that Little Muck was used for its proximity to Leokwe Hill (Hall & Smith 2000). Figure 6.10 shows the surveyed area around the agriculturalist complex and a buffer

zone with a radius of 3km (area = 28.3km<sup>2</sup>). The size of the buffer zone was based on van Doornum's (2008) finding that forager sites more than 3km away from a farmer homestead contained little evidence of interaction; it was decided that if foragers occupied sites specifically to interact with agriculturalists they would live as close as possible but definitely within about 3km. Within the buffer zone around Mmamagwa there are 33 forager features (1.2/km<sup>2</sup>) and 34 agriculturalist homesteads (1.2/km<sup>2</sup>), 11 of which contain a forager assemblage (0.4/km<sup>2</sup>). The only agriculturalist complex that this is comparable to where there has been a large amount of surveying is Leokwe Hill on the Little Muck farm in northern South Africa, approximately 7km south of the Limpopo River (Forssman 2010; Eastwood pers. comm.; Figure 6.11). Here, 23 forager features (0.8/km<sup>2</sup>) and six rock art sites (0.2/km<sup>2</sup>) are present in the same sized buffer zone, making a total of 29 forager features in all (1/km<sup>2</sup>). In addition, there are 98 agriculturalist homesteads (3.5/km<sup>2</sup>), four of which contain a forager assemblage (0.1/km<sup>2</sup>). Regarding the presence of forager features, neither of these compare to the density of sites in the central part of the survey zone which in the same size area is 2.8/km<sup>2</sup>. While these figures cannot be viewed as definitive because of survey bias – the areas differ environmentally and so the ability to find sites varies – and different erosional conditions between the three areas, they suggest that on the landscape foragers may not have been clustering within 3km of major agricultural settlements.

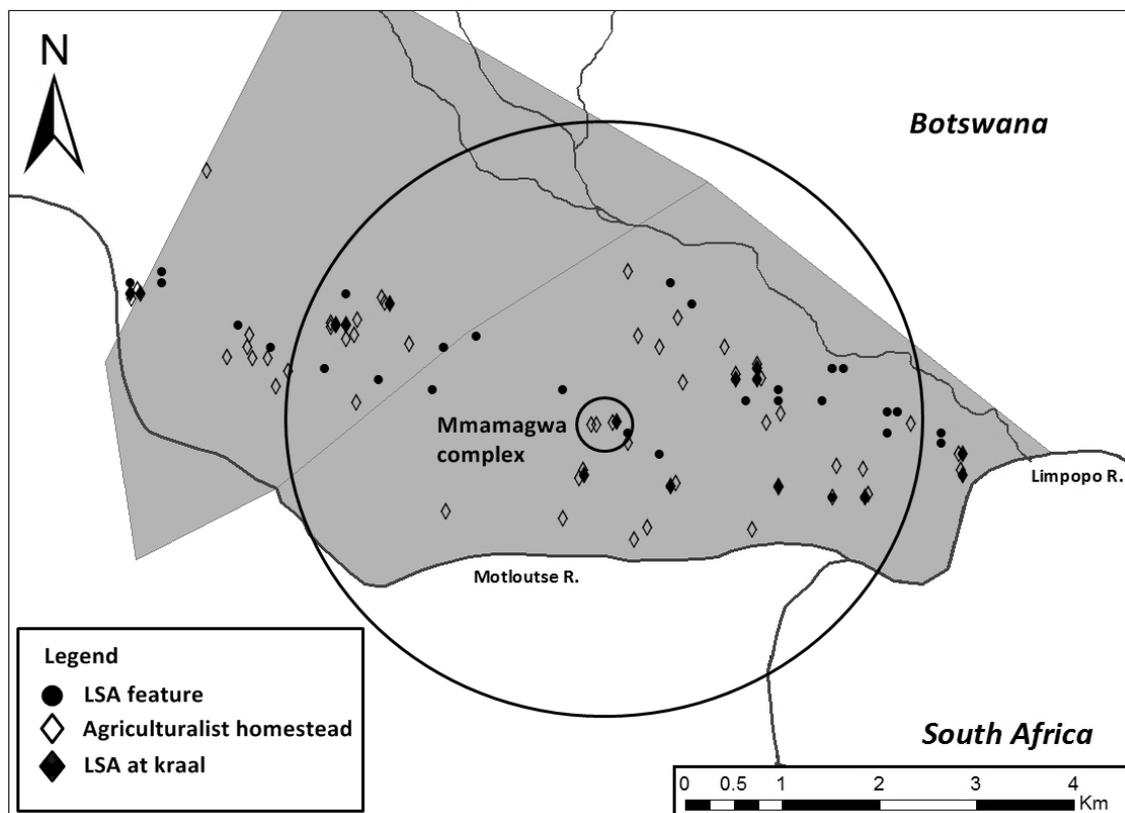
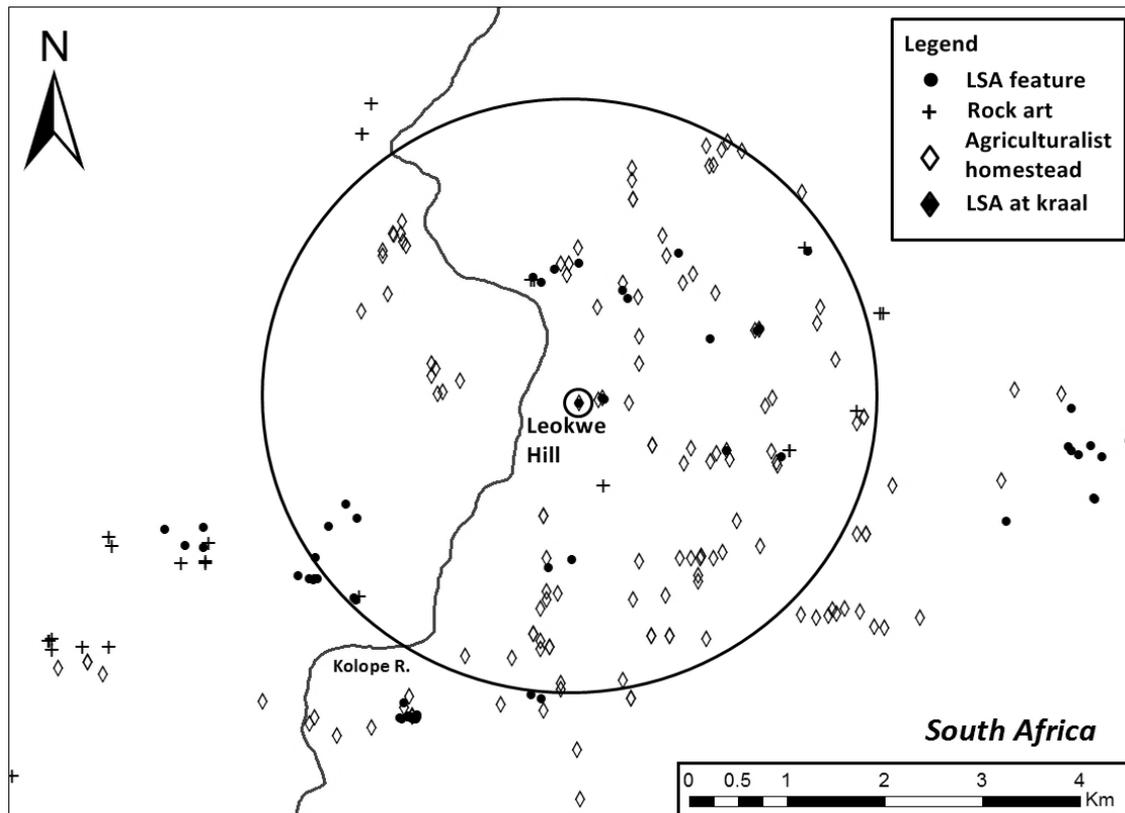


Figure 6.10: The Mmamagwa complex and a buffer zone with a 3km radius.



**Figure 6.11: Leokwe Hill and its surrounding sites in a buffer zone with a 3km radius.**

#### **6.4 ROCK PAINTING AND ENGRAVING SITES**

There is a relatively low number of rock art sites in the survey area (N=30; Figure 6.12; Catalogue C.1.2), all occurring in the sandstone belt where rockshelters exist. Even though there are many forager and agriculturalist occupation sites and features in the basalt zone, no rock markings were found there. Identified rock art sites include fine-line painted rock art (N=7), associated with foragers or Bushman who also authored a single engraved site found in the survey zone; finger-painted sites (N=2), argued as being authored by Khoekhoe herders (Eastwood & Smith 2005); and engraved markings (N=25). Some sites contained evidence of more than one art tradition (N=5). Of the 30 sites, nine are painted and the rest are engraved markings that include an animal footprint at one site, grooves, *mankala* boards, cupules and one site where over 60 hollows were engraved on a rock floor at a natural spring in the Mmamagwa complex (see MGR298). Each art tradition is presented separately below.

##### **6.4.1 Painted rock art and forager engravings**

Previously, three forager rock art sites were known in the survey zone, with an additional four in Northern Tuli. Two of these sites, João and Mafunyane, were excavated as part of this project and

their results are presented in the following chapter along with information regarding the rock art. The third known site could not be relocated and is a solitary engraved animal track, the only known example in Northern Tuli but similar finds have been made in northern South Africa (e.g. Eastwood & Eastwood 2006; van Doornum 2008). During the survey a single new painted rock art site was found that contained fine-line antelope images raising the total known sites in the area to eight. There does not seem to be a clear pattern regarding the location of rock art sites other than that they are all in the sandstone zone (Figure 6.13). A second painted tradition has also been identified in Northern Tuli that has been associated to Khoekhoe herders by some researchers (e.g. Smith & Ouzman 2004) and is finger-painted as opposed to the fine-line images of forager art (Eastwood & Smith 2005). One of the so-called Khoekhoe sites is at what has here been referred to as JB Shelter. It is situated on the southern side of a small koppie with Dzombo on its northern front. The other site, 7.2km east, is at Cut Line Rock, which was excavated by Mosothwane (2011); in her report no mention of the art was made (Figure 6.14; see Catalogue A.4.5 for an example of a Bushman painting from João). The site is situated on the boundary of the survey zone, but still within it.

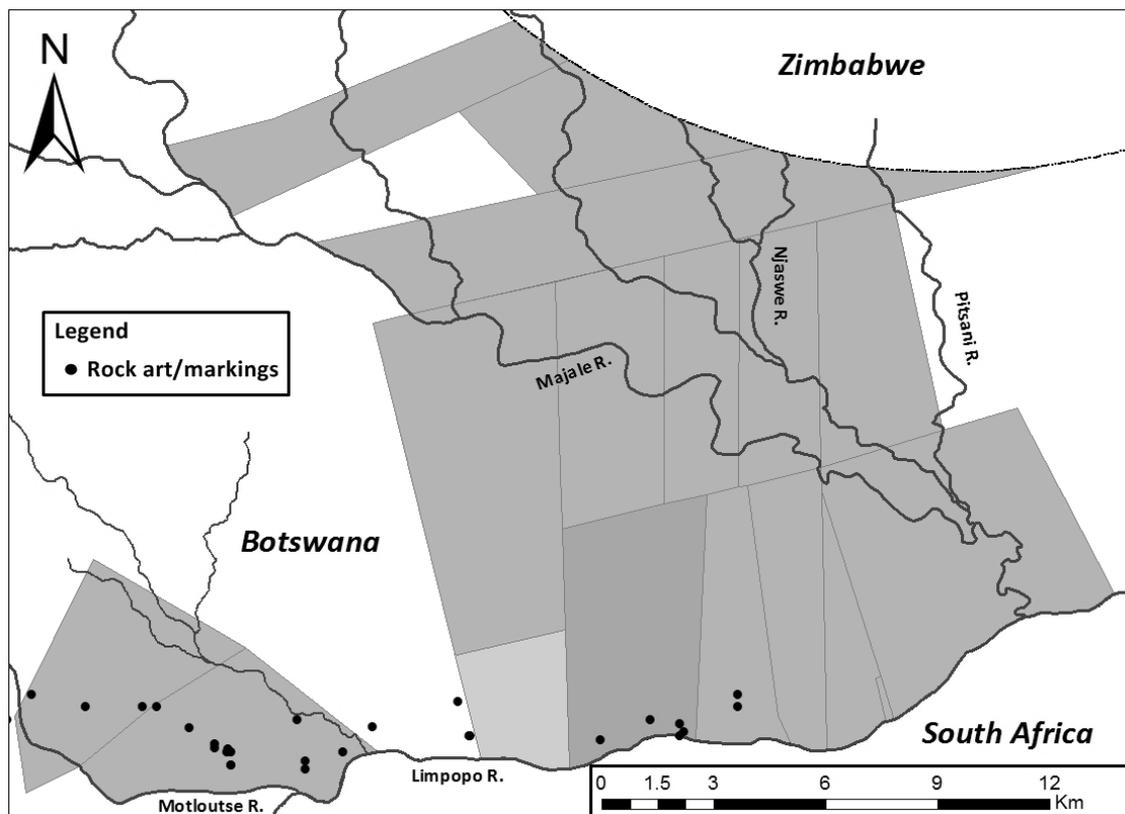


Figure 6.12: The distribution of painted art and engraved markings over the landscape.

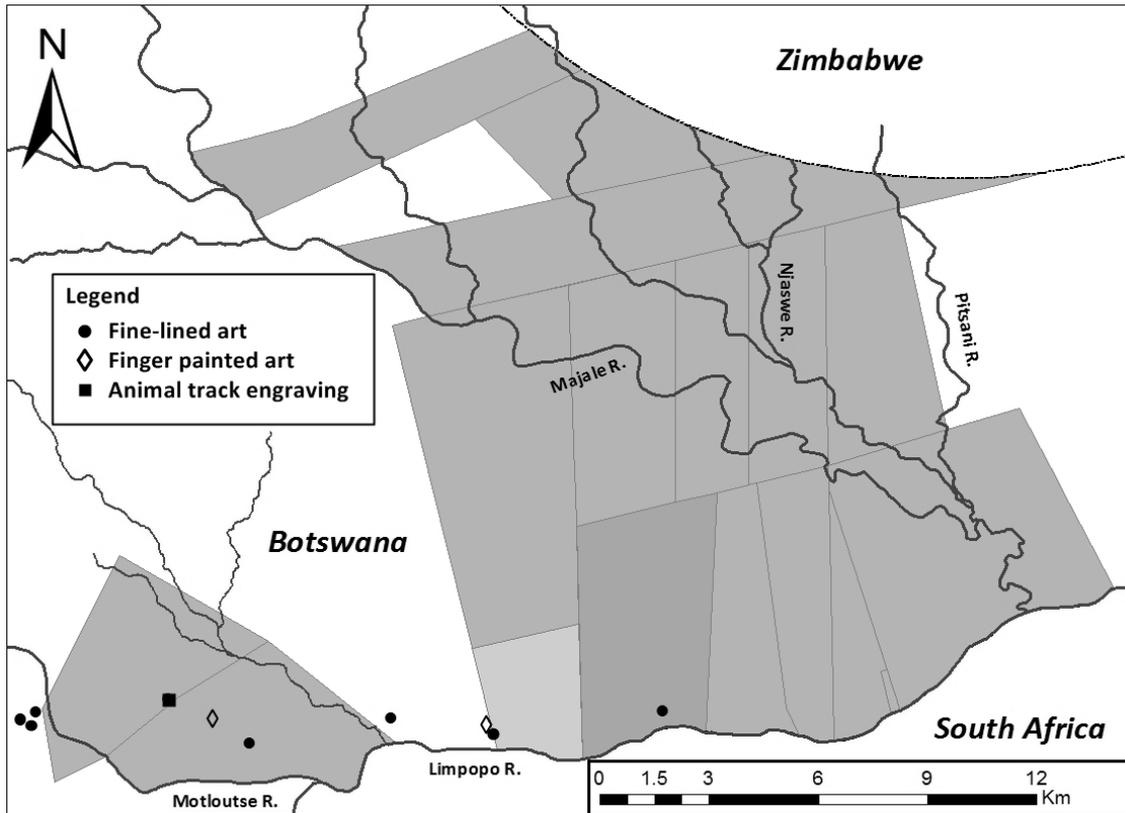


Figure 6.13: Rock art sites containing Bushman and finger-painted art.



Figure 6.14: So-called Khoekhoe herder art from Cut Line Rock.

### 6.4.2 Engraved markings

Engraved marking is an ambiguous term that refers to *mankala* boards, hollows and cupules all of which could be authored by foragers, herders or farmers. This category is the most numerous (N=25), but its authorship cannot be ascertained. Nevertheless, there are 19 sites with cupules, five with *mankala* boards, a further five with grooves and two sites with hollows which resemble lower grinding stones (Figure 6.15). All of these engraved forms are on immovable objects, such as bedrock, and possibly have a practical function, as well as a spiritual link. Some of the sites contain multiple markings.

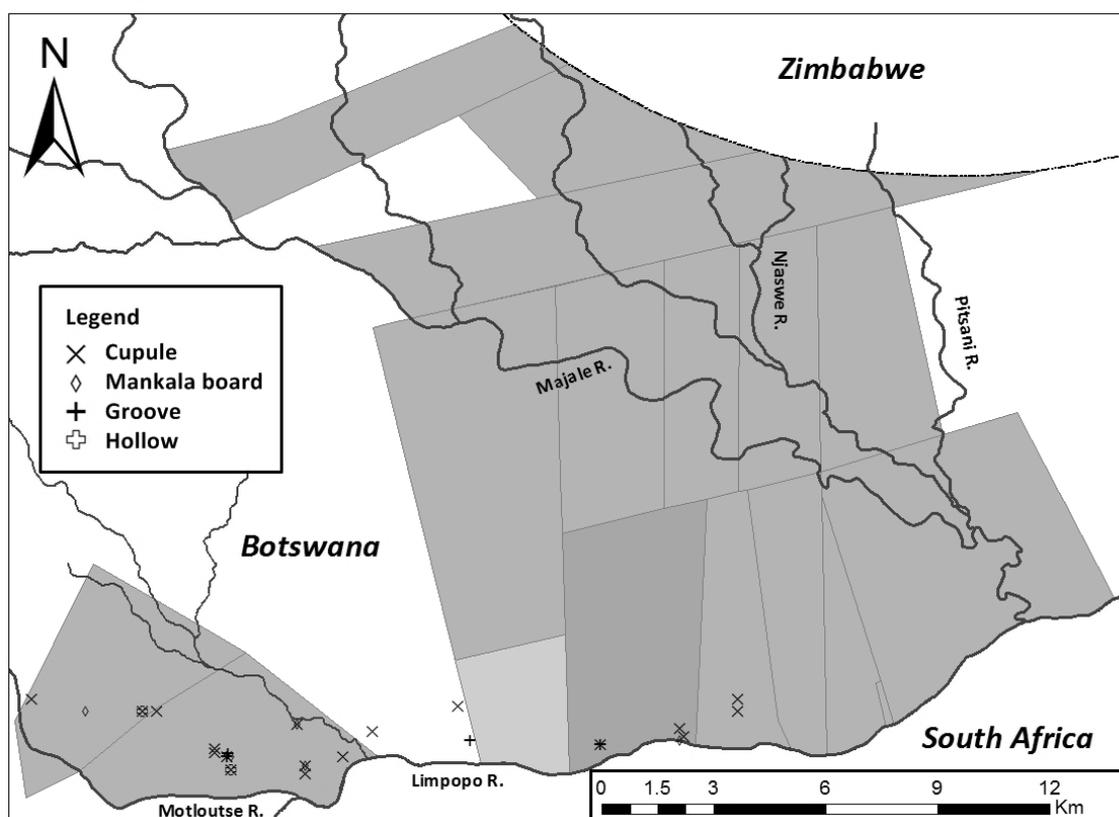


Figure 6.15: Engraved markings are widely spread across in the sandstone belt of the survey zone.

### 6.4.3 Northern Tuli rock art density

The findings in Northern Tuli can be compared to those in northern South Africa where Ed Eastwood and colleagues have identified about 150 Bushman sites (e.g. Eastwood & Cnoops 1999; Eastwood & Eastwood 2006). Here, too, all the sites are located in the sandstone belt of which approximately 381km<sup>2</sup> (40.4x9.4km) has been surveyed, identifying a site every 2.5km<sup>2</sup>. In Northern Tuli 71.8 km<sup>2</sup> (24.2x3km) has been surveyed with a Bushman rock art site every 9km<sup>2</sup>.

Although only based on a cursory investigation, this calculation shows that there is a far greater density of sites in northern South Africa, separated from Northern Tuli only by the Limpopo River. Reasons pertaining to this difference are explored in Chapter 9.

### 6.5 AGRICULTURALIST: HOMESTEADS AND OTHER FINDS

In total, 124 agriculturalist homesteads have been identified in the survey zone. Before the survey, a total of 46 homesteads had been recorded by G. Hall and Huffman (G. Hall 2003) and an additional 79 were identified in the survey (Catalogue C.1.4). The Mmamagwa complex, which comprises an unknown number of homesteads, was only recorded in terms of the hilltop palace and the valley settlement. A thorough study of this large complex is beyond the scope of this project. There are also a number of archaeological features that contained agriculturalist items, such as ceramics or walling, but with no discernible kraal (N=75; Catalogue C.1.5); some of these features contained more than one form of agricultural item. Figure 6.16 presents a summary of these findings. Most of the features contained earthenware ceramics (N=64; 85.3%), which are distributed across the survey zone (Figure 6.17), and many have forager stone tools (N=32; 42.7%; Figure 6.18). Walling (N=17; 22.7%) and middens (N=11; 14.7%) are somewhat frequent. While these discrete assemblages do not form part of a recognised homestead, they are important features of the archaeological record and will contribute significantly to its interpretation.

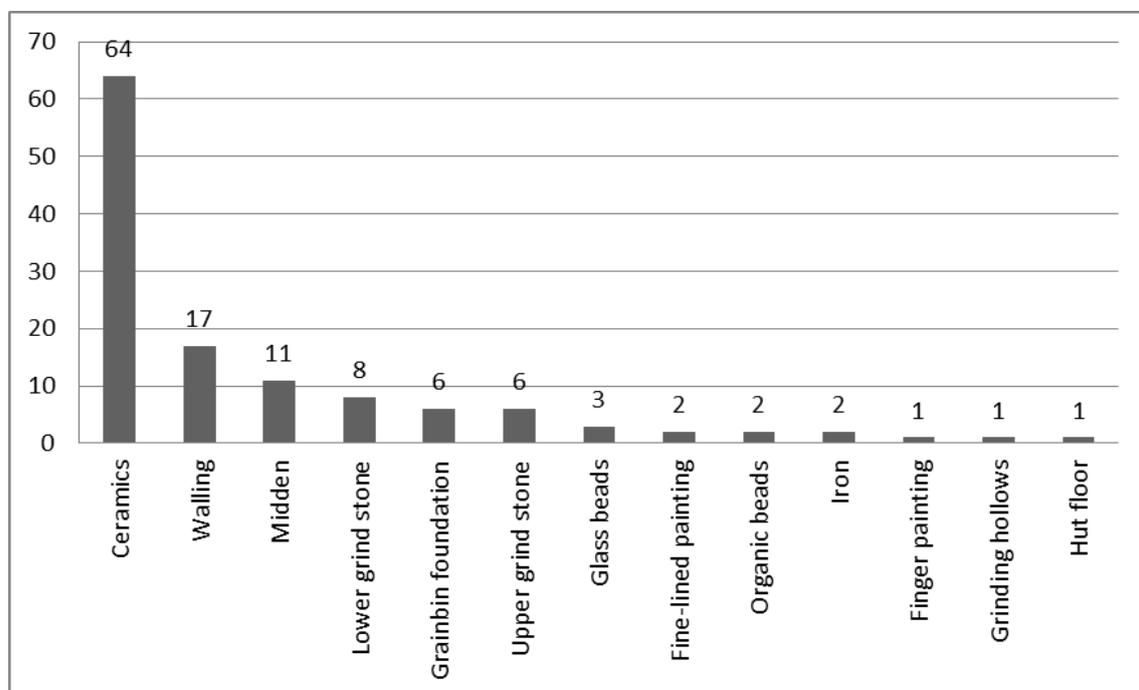


Figure 6.16: Summary of agriculturalist items found with no kraal.

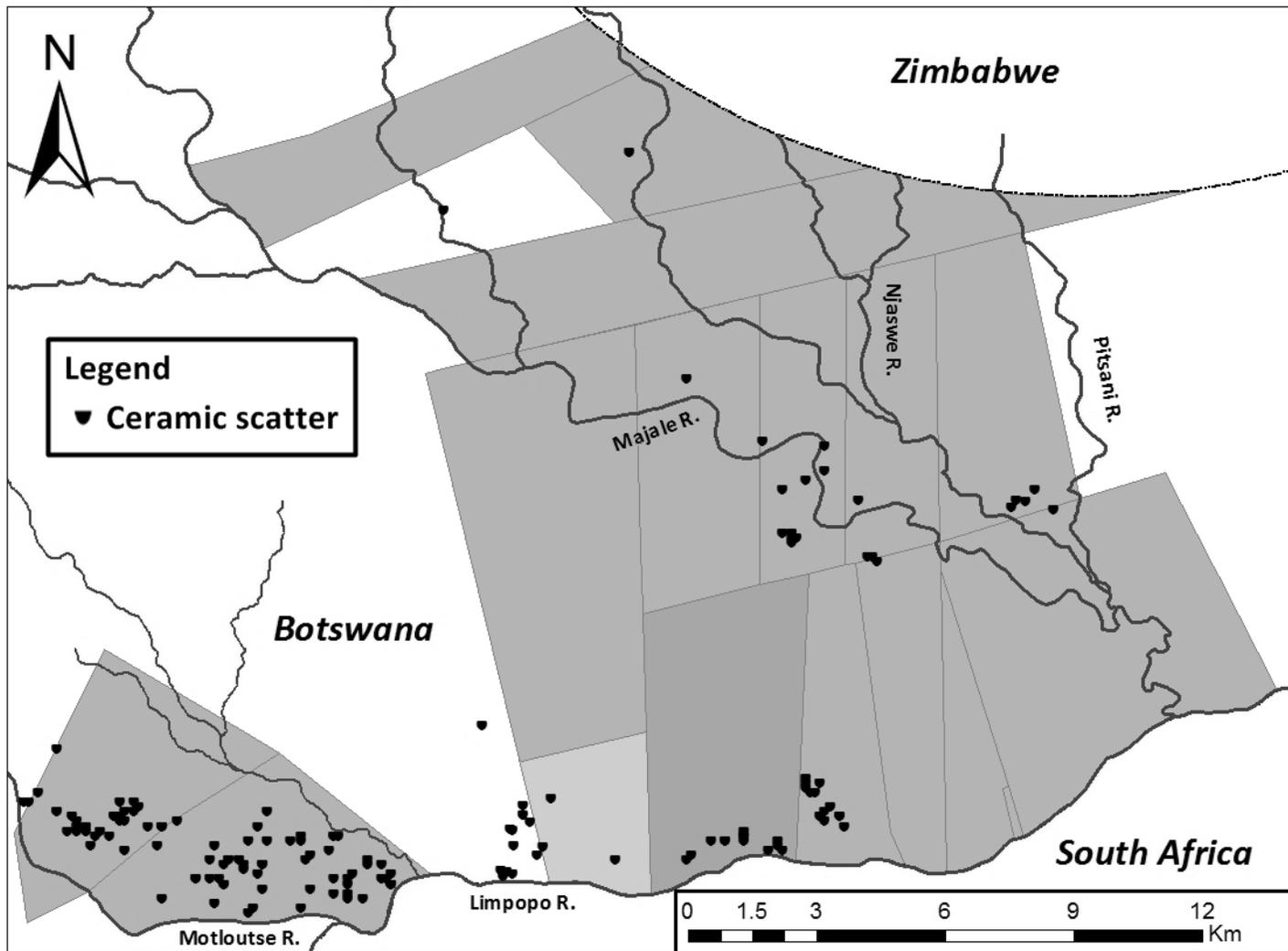


Figure 6.17: Ceramic scatter distribution.

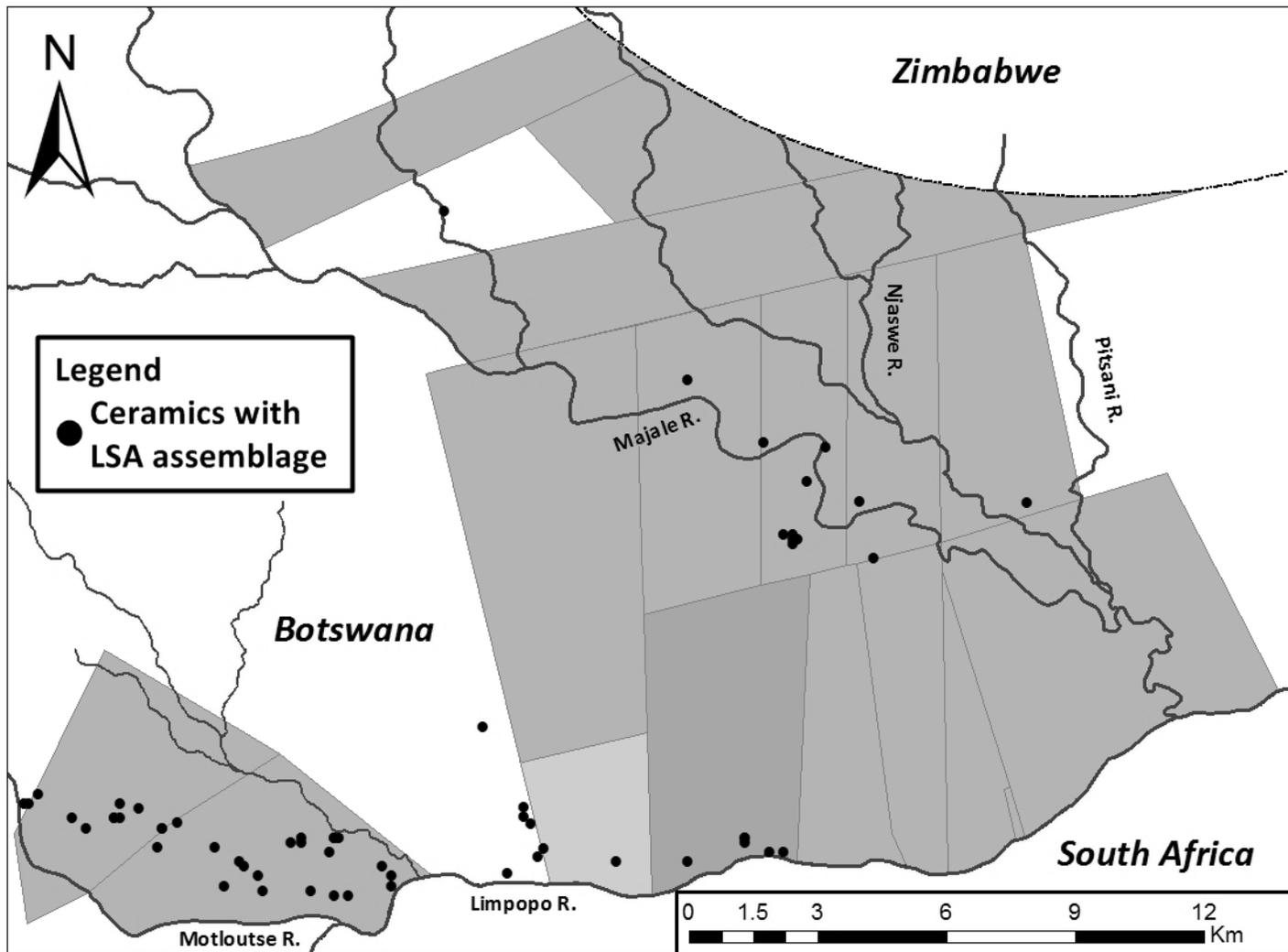


Figure 6.18: Ceramic scatter where forager stone tools are present.

### 6.5.1 Homestead distribution and chronology

Using chronological indicators, such as diagnostic ceramics or glass beads, homesteads can be placed into date brackets. This was possible at 61 of the 124 identified homesteads (48.8%). The majority have Khami ceramic facies (N=30) followed by K2 (N=10), Zhizo (N=7) and Mapungubwe (N=6; Table 6.2). Middle Iron Age homesteads (Zhizo, Leokwe, K2, TK2 and Mapungubwe; Huffman 2007: xiii) are primarily located in three areas: along the Limpopo River, near the confluence of the Limpopo and Motloutse Rivers where Mmamagwa is located, and in the floodplains of the Majale, Njaswe and Pitsani Rivers in the central area (Figure 6.19). In all locations floodplain, and, significantly, open fields presumably cleared for agriculture are found nearby and often the settlements are situated on the edge of these zones. No identified Middle Iron Age site is found away from the river networks. The Late Iron Age (Icon, Khami and Venda; Huffman 2007: xiii) settlement pattern appears, for the most part, to be similar (Figure 6.20), with the only exception being four Khami homesteads situated in the northern portion of Mashatu along the Matabole River, a tributary of the Pitsani River. The same pattern is noted with regard to ceramic scatters that were dated based on decorated pieces in the assemblage (Figure 6.21). The location of the 124 homesteads indicates that local agriculturalists were dependent on water courses for their fertile floodplains and probably access to water for their livestock. It is therefore possible to predict where the settlements will occur, ignoring possible exceptions such as settlements used as cattle posts and rain-control sites that required distinctive koppies; neither are tethered to cultivatable fields.

**Table 6.2: Identified homesteads: AH, all homesteads; and IH, identified homesteads.**

<b>Ceramic facies</b>	<b>No.</b>	<b>AH %</b>	<b>IH %</b>
Zhizo	8	6.40	12.90
Leokwe	2	1.60	3.23
K2	10	8.00	16.13
Transitional K2	3	2.40	4.84
Mapungubwe	6	4.80	9.68
Icon	1	0.80	1.61
Khami	30	24.00	48.39
Venda	2	1.60	3.23
Unknown	62	50.40	NA
<b>Total:</b>	<b>124</b>	<b>124</b>	<b>61</b>

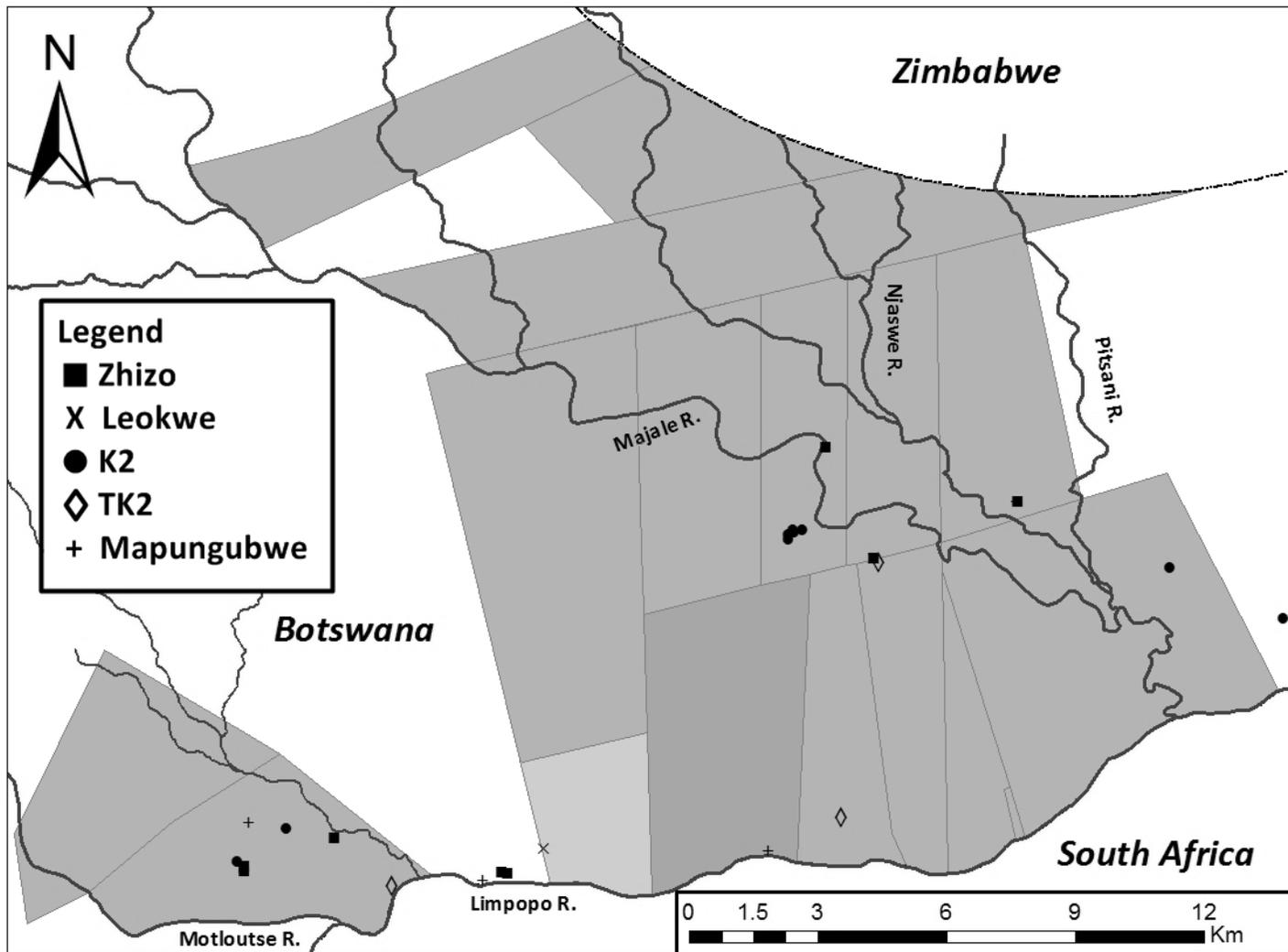


Figure 6.19: The distribution of Middle Iron Age homesteads.

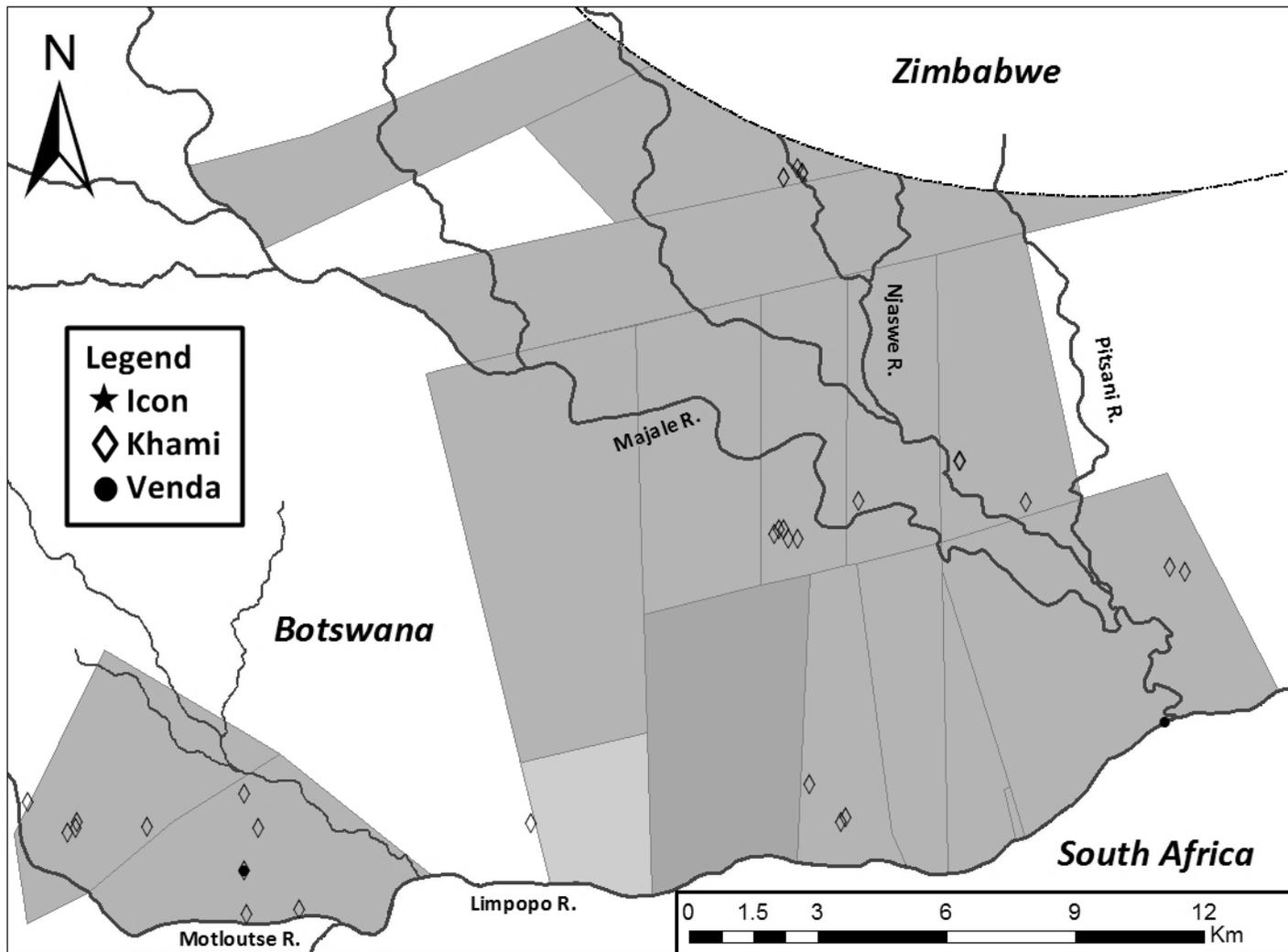


Figure 6.20: The distribution of Late Iron Age homesteads.

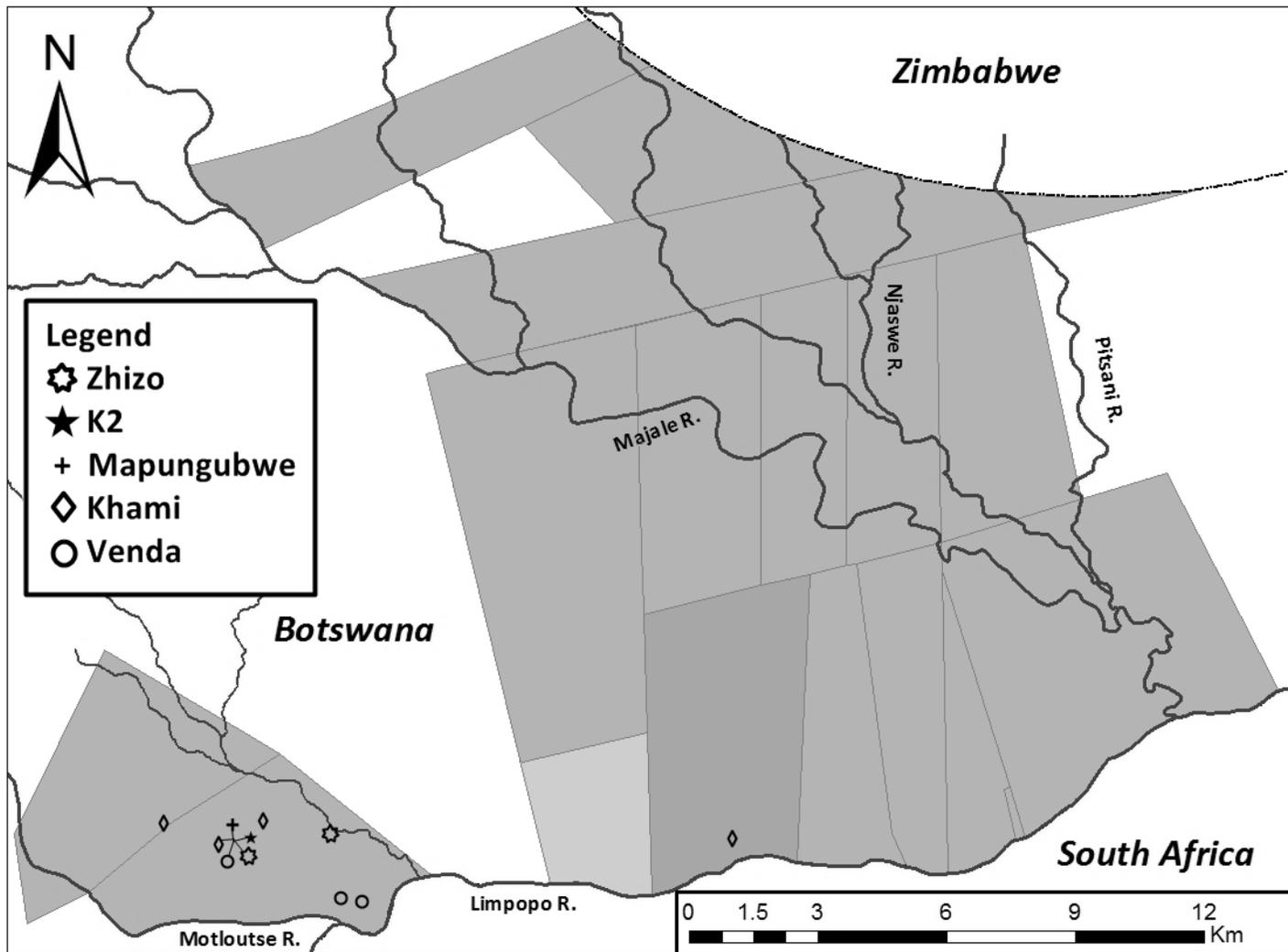


Figure 6.21: Relatively dated ceramic scatter distribution.

## 6.6 SUMMARY OF SURVEY RESULTS

The archaeological survey of Northern Tuli revealed a large amount of features; in total 20,691.7 ha were surveyed and 428 archaeological features were identified (1 feature/48.4 ha). If this is an indication of the density of archaeological features over the whole of Northern Tuli, there may be around 1500 features in the entire 72,000 ha area. The area is clearly dense with archaeology, including large settlements such as Mmamagwa as well as ephemeral sites similar to Shawu. There are many forager features in the basalt zone, yet their context cannot be firmly established and it is possible that local erosion has affected the sites. In the sandstone zone, however, the large complement of forager features in a variety of contexts is found alongside both rock art sites and a diversity of agriculturalist homesteads dating from AD 900 into the last century. It is in this part of the landscape that foragers and farmers interacted most frequently based on the number of sites and their proximity. Here, also, a large amount of identified forager assemblages contained agricultural items including ceramics and glass beads, suggesting that, if associated, the two groups were engaged in cultural exchange. Assessing, understanding and interpreting this can best be done through excavations at selected sites and fortunately the survey revealed a number of such sites with excavation potential. The following chapter presents the results from six excavations, revealing information that makes it possible to observe the local forager sequence, forager settlement patterns and their interactions with agriculturalists.

## CHAPTER 7: EXCAVATION RESULTS

### 7.1 INTRODUCTION

The purpose of this chapter is to present the data collected at six of the excavations (for a summary see Table 7.1). It has already been mentioned that at Shingwedzi Shepherd Tree there were no artefacts found below the surface. For this reason, the site is not presented here. The goal of this chapter is not to present an interpretation, but rather to describe the collected material, such as the stone tools, ceramics, organic and glass beads, metal finds and the faunal record, at each site in isolation. Also presented, where applicable, are the results of radiocarbon dating and the analysis of miscellaneous finds, including figurines, raw material, such as specularite, and European items.

### 7.2 DZOMBO SHELTER

#### 7.2.1 Regional context

Dzombo Shelter is located in the sandstone belt in a coarse loam soil horizon. The area around the koppie is part of a palaeo-floodplain which was at one stage fed by the nearby Motloutse River, 1.8km south of the site, as well as by smaller tributaries (G. Alexander 1984). In between the koppies the area is mostly flat, characterised by mopane veld to the north and, close to the site, open *Vachellia* shrubland. For Dzombo, and at each site, a circular buffer zone was created, with a radius of 4km and an area of 50.3km<sup>2</sup>, in order to measure sites within close proximity to the excavated site. The distance of 4km as the buffer zone is based on van Doornum's (2005) finds. Around Dzombo, 20.9km<sup>2</sup> (41.6%) was surveyed and 37 forager features were identified, 13 of which were located within agriculturalist settlements (Figure 7.1), along with 49 homesteads occupied between AD 900 and the mid-twentieth century (Figure 7.2; Table 7.2). Many of these sites, as it will be shown, are contemporaneous with the Dzombo occupation and the inhabitants of the rockshelter would no doubt have come into contact with the people living at these neighbouring sites. Thus, Dzombo is placed in amongst a multifaceted cultural landscape filled with forager and agriculturalist sites, and the so-called Khoekhoe artwork near to Dzombo might indicate herders were in the area at some point as well.

Table 7.1: Excavation summary: DS, Dzombo Shelter; MS, Mafunyane Shelter; JS, João Shelter; SC, Shawu Camp; KC, Kambaku Camp; and NK,

Ndlulamithi Kraal.

	DS	%	MS	%	JS	%	SC	%	KC	%	NK	%
<b>Buckets (13lt)</b>	129.5		10.3		121.7		8.1		NA		33.1	
<b>m<sup>3</sup></b>	1.7		0.1		1.6		0.1		NA		0.4	

**Stone tools**

Chips	6210	53.6	3391	53.4	3351	51.4	295	37.4	65	22.8	240	74.5
Chunks	814	7	411	6.5	454	7	197	25	43	15.1	44	13.7
Cores	128	1.1	82	1.3	88	1.4	65	8.2	5	1.8	2	0.6
Flakes	883	7.6	378	6	287	4.4	23	2.9	20	7	2	0.6
Broken flakes	3270	28.2	1934	30.5	2001	30.7	53	6.7	102	35.8	23	7.1
Formal tools	202	1.7	107	1.7	66	1	9	1.1	5	1.8	0	0
MSA stone tools	17	0.1	0	0	0	0	0	0	0	0	0	0
Other	61	0.5	46	0.7	270	4.1	147	18.6	45	15.8	11	3.4

<b>Total:</b>	<b>11585</b>	<b>89.5</b>	<b>6349</b>	<b>617.6</b>	<b>6517</b>	<b>53.5</b>	<b>789</b>	<b>97.2</b>	<b>285</b>		<b>322</b>	<b>9.7</b>
<b>Total exc. chips:</b>	<b>5375</b>	<b>41.5</b>	<b>2958</b>	<b>287.7</b>	<b>3166</b>	<b>26.0</b>	<b>494</b>	<b>60.8</b>	<b>220</b>		<b>82</b>	<b>2.5</b>

Waste	11376	98.2	6142	96.7	6379	97.9	776	98.4	279	97.9	320	99.4
Tools	216	1.9	207	3.3	138	2.1	17	2.2	6	2.1	2	0.6

<b>Total:</b>	<b>11592</b>		<b>6349</b>		<b>6517</b>		<b>793</b>		<b>345</b>		<b>322</b>	
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<b>Fauna (g)</b>	<b>2783.3</b>	<b>21.5</b>	<b>845.8</b>	<b>82.3</b>	<b>667</b>	<b>5.5</b>	<b>0</b>		<b>346.1</b>		<b>217.5</b>	<b>6.6</b>
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	DS	%	MS	%	JS	%	SC	%	KC	%	NK	%
<b>Plain ceramics</b>												
Plain ceramic	199	93.9	28	90.3	1037	92.8	0	0	559	92.5	372	93.9

<b>Diagnostic ceramics</b>												
Decorated ceramic	5	2.4	2	6.5	43	3.8	0	0	10	1.7	7	1.8
Plain rim	8	3.8	1	3.2	29	2.6	0	0	34	5.6	16	4
Decorated rim	0	0	0	0	7	0.6	0	0	1	0.2	1	0.3
Spout	0	0	0	0	1	0.1	0	0	0	0	0	0

**Total:**    212                    31                    1117                    0                    604                    396

<b>Organic beads</b>												
Ostrich eggshell	24	22.6	16	29.6	54	22.9	0	0	0	0	6	35.3
Ostrich eggshell preform	9	8.5	6	11.1	5	2.1	0	0	0	0	0	0
Broken ostrich eggshell	14	13.2	6	11.1	5	2.1	0	0	0	0	0	0
Broken ostrich eggshell preform	5	4.7	12	22.2	11	4.7	0	0	0	0	0	0
Bone	27	25.5	6	11.1	7	3	0	0	0	0	4	23.5
Broken bone	6	5.7	1	1.9	2	0.8	0	0	0	0	0	0
<i>Achatina</i>	1	0.9	0	0	2	0.8	0	0	0	0	0	0
Broken <i>Achatina</i>	0	0	3	5.6	1	0.4	0	0	0	0	3	17.6
<b>Glass beads</b>	20	18.9	3	5.6	150	63.6	0	0	1	100	3	17.6

<b>Metal beads</b>												
Copper	0	0	1	1.9	0	0	0	0	0	0	0	0
Iron	0	0	0	0	0	0	0	0	0	0	1	5.9

**Total:**    106                    54                    236                    0                    1                    17

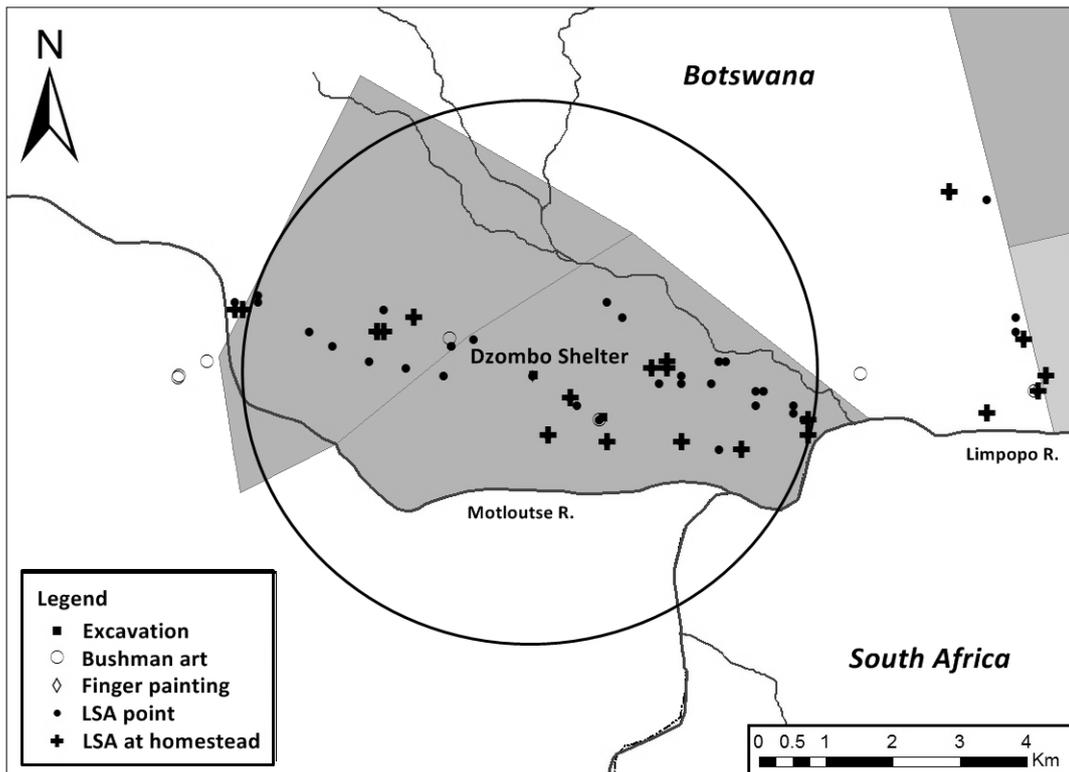


Figure 7.1: Dzombo Shelter: forager related features within the 4km buffer.

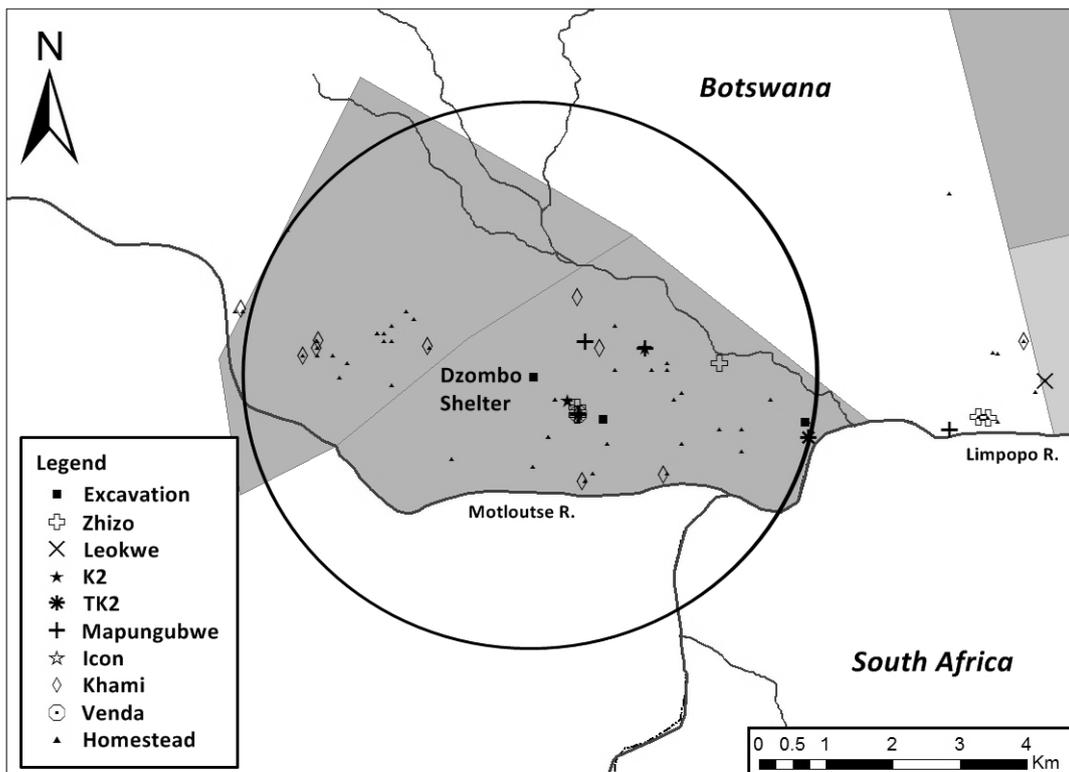


Figure 7.2: Dzombo Shelter: agriculturalist homesteads within the 4km buffer zone.

**Table 7.2: Dzombo Shelter: archaeological sites and features within the buffer zone.**

Feature/site type	No.	Density (/km <sup>2</sup> )	% of total
Forager	37	1.8	19.9
in a homestead	13	0.6	40.6
Fine-lined art	2	0.1	25
Finger-painting	1	0.1	50
Homestead	49	2.4	39.5
Zhizo	3	0.1	4.9*
K2	4	0.2	14.8*
TK2	1	0.1	1.6*
Mapungubwe	3	0.1	4.9*
Khami	9	0.4	14.8*
Venda	1	0.1	1.6*

\* of total identified homesteads

### 7.2.2 Chronology

Four charcoal samples from the excavations at Dzombo were submitted for radiocarbon dating to the Oxford Radiocarbon Accelerator Unit (ORAU) and an additional sample to Beta Analytic (Table 7.3). Each of the samples submitted to ORAU were identified to species level by Dr Debra Costen (Bournemouth University). All the results were calibrated using OxCal 4.1 and the Southern Hemisphere calibration curve, SHCal04, was preferred to IntCal 09 (see Hogg *et al.* 2009). The GA stratigraphic unit was found throughout Trench 1 with various units such as CGS, CGA and GS2 contained within it. The dates in GA vary with the upper units inverted probably due to the samples filtering downward because contamination is unlikely and the results post-date the securely dated ceramic assemblage (discussed further in Chapter 8; Hood pers. comm. 2012). DGS is the lowest stratigraphic unit in Trench 1 and the oldest radiocarbon date is from this level. The chronology, for each of the excavated sites, is discussed in further detail in Chapter 8.

### 7.2.3 Stone tool assemblage

Of the six excavations that I conducted for this research project, the largest assemblage is from Dzombo both in terms of the stone tool assemblage size, which is made up of 11,585 stone artefacts, and excavated volume; 1.7m<sup>3</sup> was excavated with 108.2 stone tools per cubic metre being recovered (Catalogue D.1.1 – D.1.2). CCS materials dominate the assemblage, as a whole, followed in frequency by quartz. Agate, quartzite and dolerite are all present in low densities (Figure 7.3). Petrologists consider agate to be a CCS material, but van Doornum (2005) itemises it

separately and the same is done here for comparative purposes. If agate is combined with CCS, over half of the assemblage is made from these materials (51.2%). The two trenches yielded different results with regard to raw material utilisation and are discussed separately below (Table 7.4). Raw material outcrops occur within 2km of the site and the Limpopo and Motloutse Rivers are two other locations where material could be sourced. Quartzite can be collected in the koppies and there are also isolated dolerite outcrops in the region; the nearest known source is about 2.5km southeast from Dzombo. This means that there is no need to import materials from far away, or travel great distances to source them, but does not exclude the possibility that this did occur.

**Table 7.3: Dzombo Shelter: radiocarbon dating results.**

Square	Spit	Stratigraphy	Species	BP	Calibration	%	Code
E	IV	GA	<i>C. mopane</i>	190±26	<b>AD 1666-1815</b>	<b>66.3</b>	OxA-27136
					AD 1830-1892	17.9	
E	XIX	DGS	<i>C. mopane</i>	2165±30	347-319 BC	4	OxA-27137
					<b>207-42 BC</b>	<b>91.4</b>	
E	XI	GA	<i>C. mopane</i>	982±28	<b>AD 1029-1162</b>	<b>95.4</b>	OxA-27138
D	VIII	CGA	<i>C. mopane</i>	114±26	AD 1697-1725	13.3	OxA-27139
					<b>AD 1807-1950</b>	<b>82.1</b>	
D	VII	NA	40±30	AD 1706-1723	5.2	BETA-342860	
				AD 1809-1839	33		
				AD 1845-1868	3.4		
				<b>AD 1877-1931</b>	<b>53.8</b>		

As a whole, in Trench 1, excavated inside the rockshelter, CCS dominates the assemblage in most of the spits (43.7%; Figure 7.4) and stratigraphic units (Figure 7.5). However, when viewed through the spits, CCS only dominates from the surface (SUR) to Spit VI and in Spits IX, X, XIII, XV, XVII and XXII to XVI. In Spits VIII, XI, XIV and XVI, CCS is more frequent than quartz but by less than 5%. Using a difference of 5% is an arbitrary number applied in my previous work (Forssman 2010) and maintained here. Quartz only dominates the assemblage in Spit XXVII, but is more frequent than CCS by less than 5% in Spits XII, XVIII to XXI and XXVI (Tables 7.5 – 7.6). The significance of CCS or quartz dominating a stone tool assemblage has been used to explain the difference between forager and herder assemblages, social practices or access to raw material sources (e.g. Bradfield *et al.* 2009; Sadr & Gribble 2010), discussed in the following chapter.

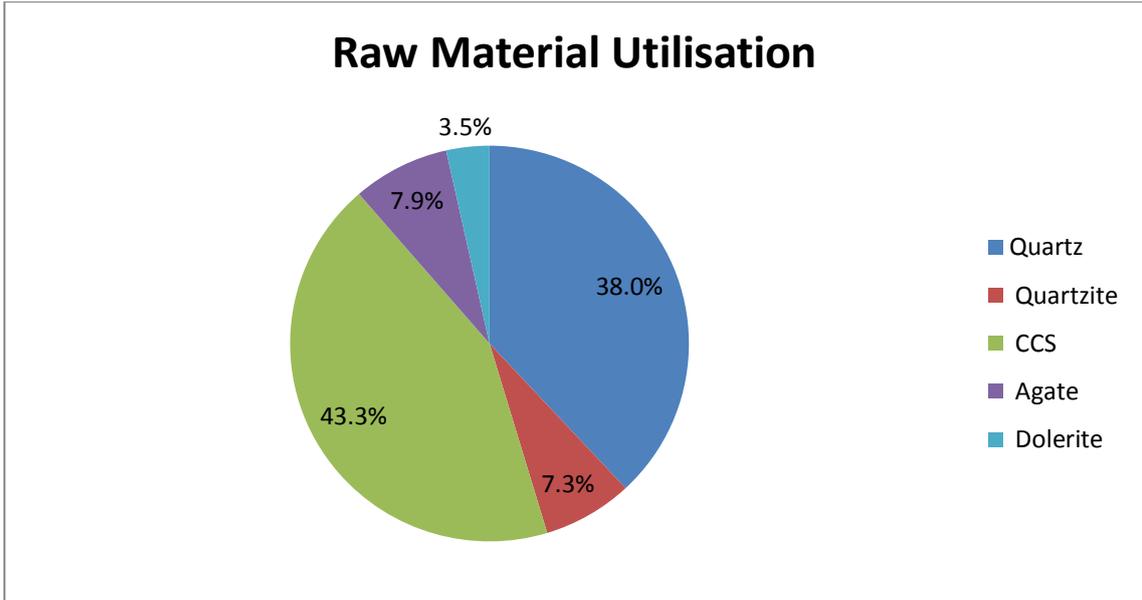


Figure 7.3: Dzombo Shelter: raw material utilisation.

Table 7.4: Dzombo Shelter: total raw material utilisation in Trenches 1 and 2.

Trench	Quartz		Quartzite		CCS		Agate		Dolerite		Total
1	3818	37.8%	689	6.8%	4418	43.7%	831	8.2%	356	3.5%	10112
2	589	40%	155	10.5%	600	40.7%	80	5.4%	49	3.3%	1473
<b>Total:</b>	<b>4407</b>	<b>38%</b>	<b>844</b>	<b>7.3%</b>	<b>5018</b>	<b>43.3%</b>	<b>911</b>	<b>7.9%</b>	<b>405</b>	<b>3.5%</b>	<b>11585</b>

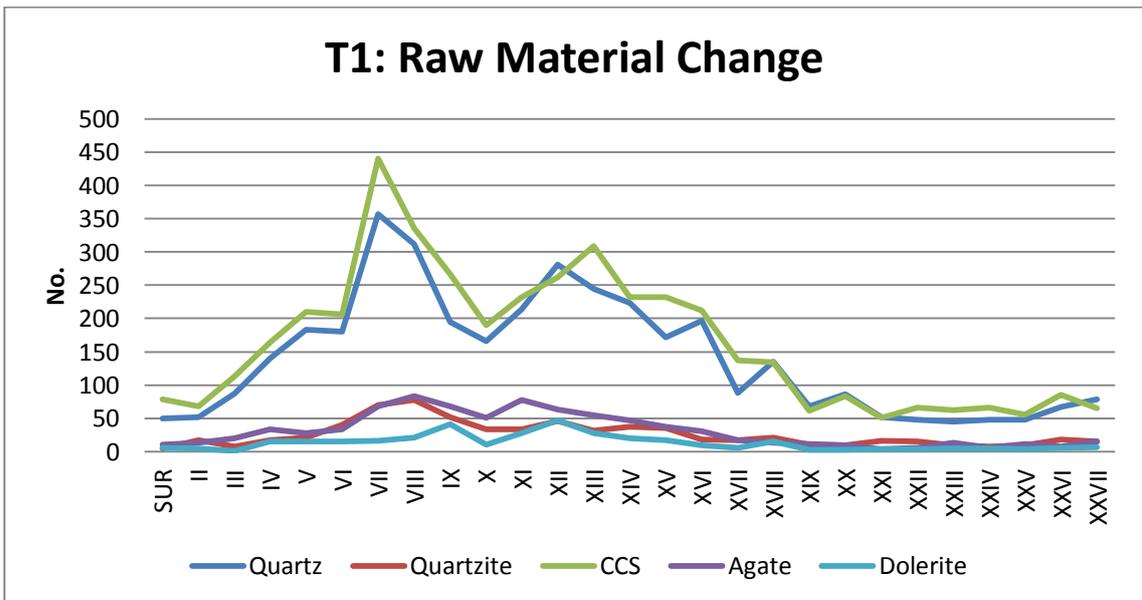
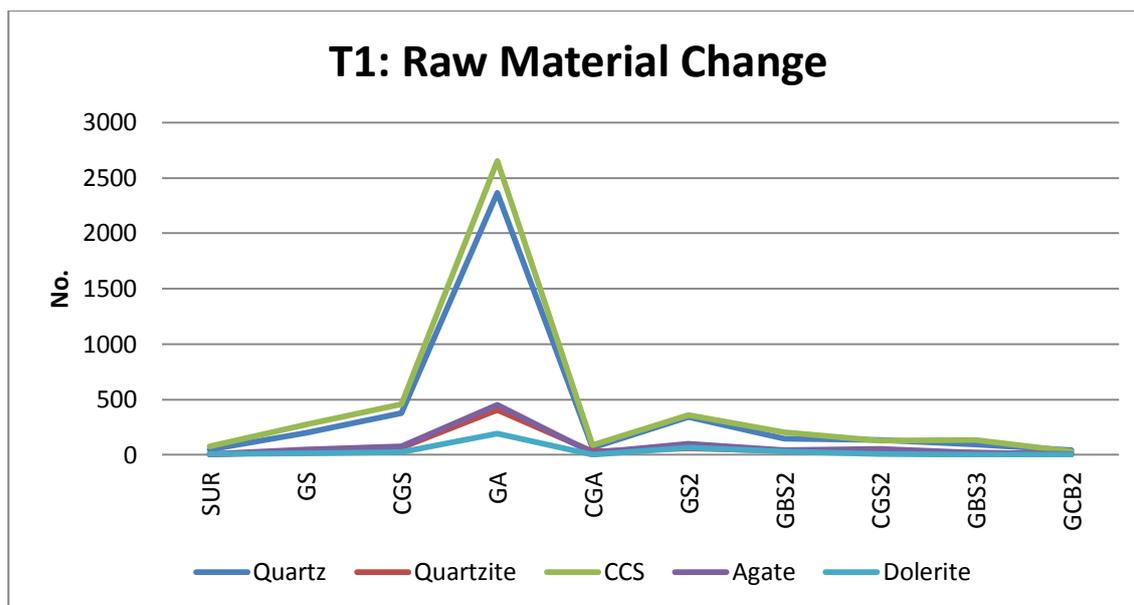


Figure 7.4: Dzombo Shelter: raw material change in Trench 1.



**Figure 7.5: Dzombo Shelter: raw material change between stratigraphic units in Trench 1.**

Trench 2, excavated in the front living area, is very different from Trench 1 because through much of the assemblage quartz is clearly dominant, beginning at the surface and ending in Spit VII. Below this, however, CCS dominates except in Spit IX, where the same number of CCS and quartz stone tools were found, and in Spit X where there are no stone tools (Figure 7.6; Tables 7.75 – 7.76). No dates were obtained for the outside trench and so it is not discussed in as much detail as Trench 1, although diagnostic ceramics were present.

In Trench 1, the artefacts are concentrated between Spits VII and XVIII (Figure 7.7) in which there are peaks in Spits VII and XII and a trough in Spit X. When density is calculated, based on the number of stone tools recovered and the volume of each spit, this pattern becomes less distinct although still present (Figure 7.8). There is a higher density of artefacts between Spits VII and XVIII when compared to other levels, and the density of artefacts below Spit XVIII is high. In both cases there is an increase in stone tools that begins in Spit XVIII, immediately above the c. 200 BC (OxA-27137) date. There does, therefore, seem to be a point at which stone tool numbers increase, but then the artefact density changes between the levels and no pattern is noticed; without a detailed understanding of site formation processes this cannot be explored fully (cf. Jerardino 1995).

**Table 7.5: Dzombo Shelter: raw material distribution within the spits in Trenches 1 and 2.**

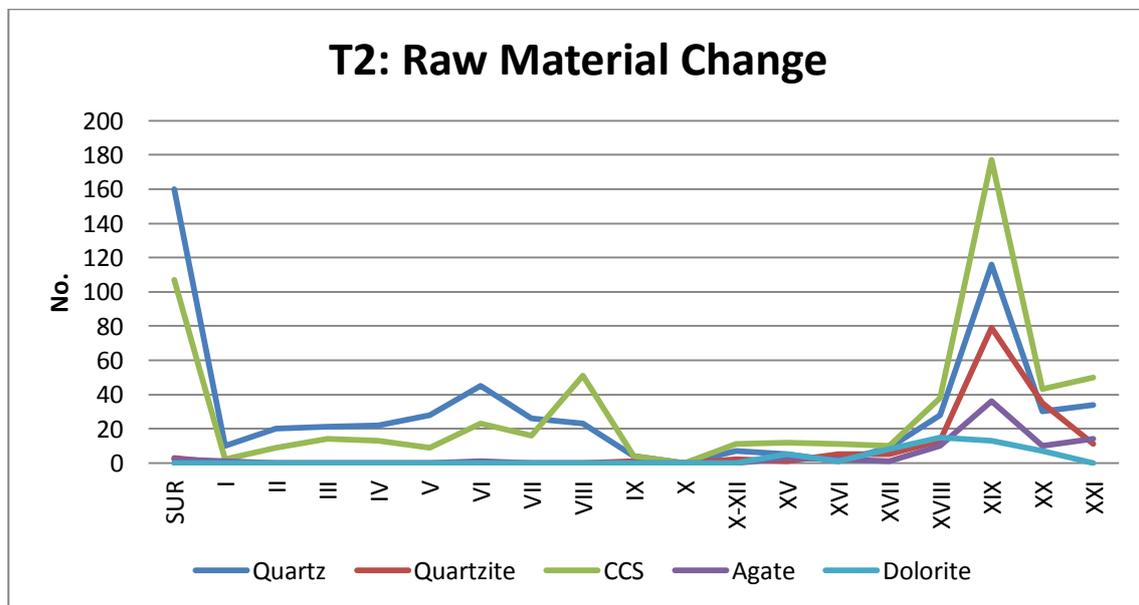
Spit	Total quartz	Total quartzite	Total CCS	Total agate	Total dolerite	Total	Spit	Total quartz	Total quartzite	Total CCS	Total agate	Total dolerite	Total
SUR	50	5	79	10	6	150	SUR	160	3	107	2	0	272
II	52	17	68	13	5	155	I	10	0	2	1	0	13
III	87	8	113	20	1	229	II	20	0	9	0	0	29
IV	140	17	164	33	15	369	III	21	0	14	0	0	35
V	183	21	210	28	15	457	IV	22	0	13	0	0	35
VI	180	40	206	33	15	474	V	28	0	9	0	0	37
VII	357	70	440	68	16	951	VI	45	0	23	1	0	69
VIII	312	78	336	83	21	830	VII	26	0	16	0	0	42
IX	195	52	267	68	41	623	VIII	23	0	51	0	0	74
X	166	33	190	51	10	450	IX	4	1	4	0	0	9
XI	214	33	232	78	28	585	X	0	0	0	0	0	0
XII	281	46	262	63	47	699	X-XII	7	2	11	0	0	20
XIII	245	32	309	55	28	669	XV	5	1	12	3	5	26
XIV	223	37	232	47	20	559	XVI	1	5	11	2	1	20
XV	172	35	232	37	17	493	XVII	9	5	10	1	8	33
XVI	197	18	212	31	9	467	XVIII	28	13	38	10	15	104
XVII	88	17	137	17	6	265	XIX	116	79	177	36	13	421
XVIII	135	21	134	13	15	318	XX	30	35	43	10	7	125
XIX	68	10	61	11	3	153	XXI	34	11	50	14	0	109
XX	86	9	83	9	3	190							
XXI	52	16	51	4	4	127	<b>Total:</b>	<b>589</b>	<b>155</b>	<b>600</b>	<b>80</b>	<b>49</b>	<b>1473</b>
XXII	48	15	66	6	4	139							
XXIII	45	9	62	13	5	134							
XXIV	48	8	66	6	5	133							
XXV	48	9	56	11	4	128							
XXVI	67	18	85	8	6	184							
XXVII	79	15	65	15	7	181							

**Total: 3818 689 4418 831 356 10112**

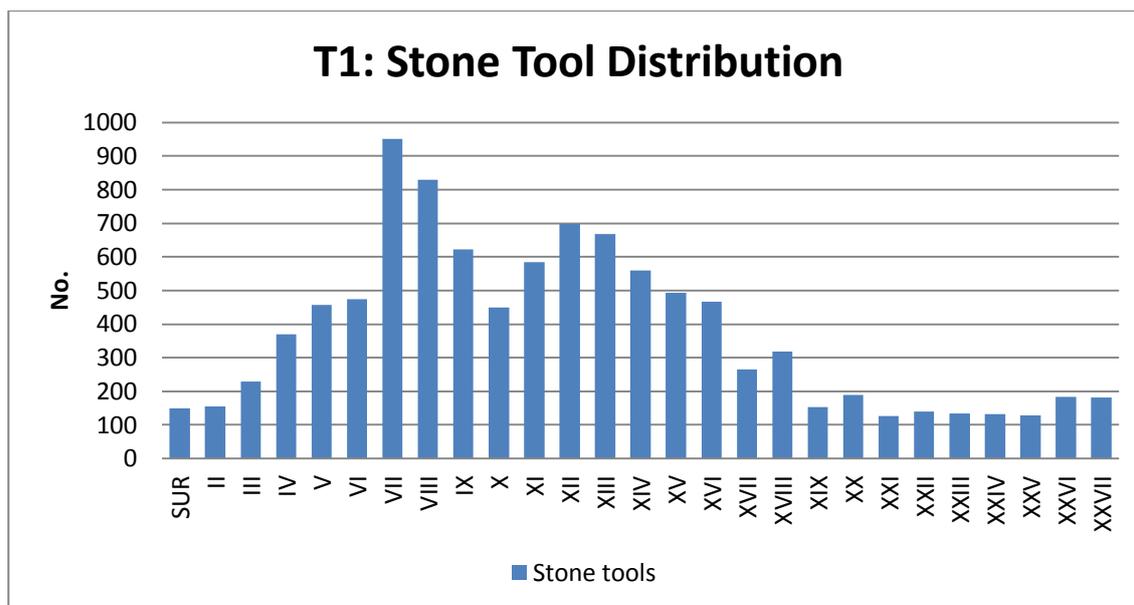
**Table 7.6: Dzombo Shelter: raw material distribution within the stratigraphic units in Trenches 1 and 2.**

Stratigraphy	Total quartz	Total quartzite	Total CCS	Total agate	Total dolerite	Total	Stratigraphy	Total quartz	Total quartzite	Total CCS	Total agate	Total dolerite	Total
	Trench 1							Trench 2					
SUR	50	5	79	10	6	150	SUR	160	3	107	2	0	272
GS	200	32	276	48	12	568	GB	206	3	148	2	0	359
CGS	379	65	460	78	25	1007	CGB	223	149	341	76	49	838
GA	2363	403	2656	450	195	6067	RBS	0	0	4	0	0	4
CGA	63	32	87	21	3	206	<b>Total:</b>	<b>589</b>	<b>155</b>	<b>600</b>	<b>80</b>	<b>49</b>	<b>1473</b>
GS2	343	58	359	102	67	929							
GBS2	144	37	204	42	29	456							
CGS2	137	29	132	57	11	366							
GBS3	97	18	135	17	5	272							
GCB2	42	10	30	6	3	91							

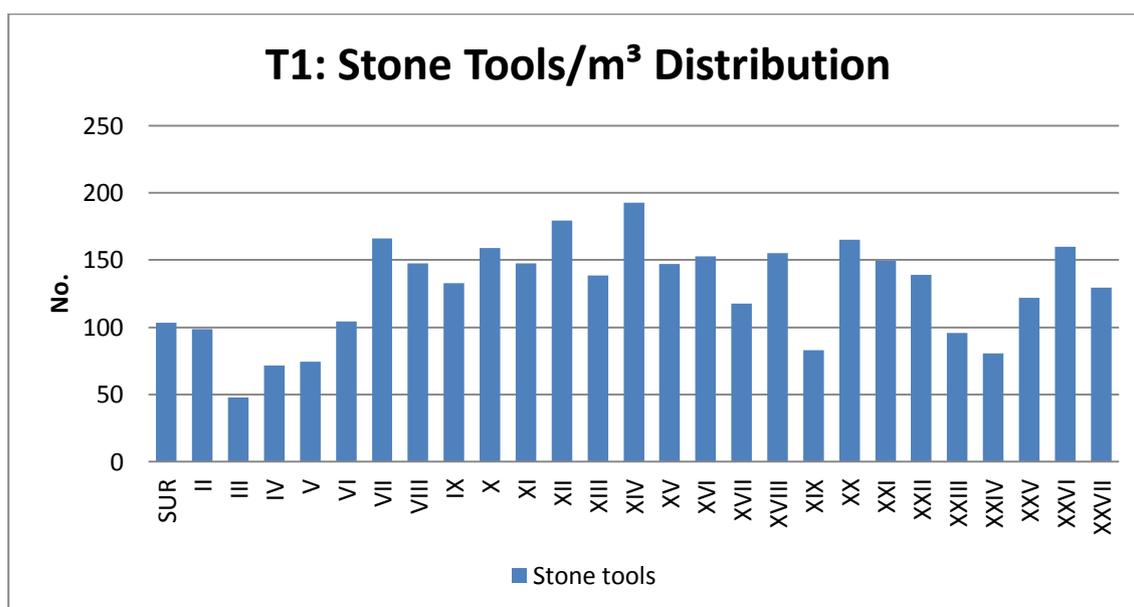
**Total: 3818 689 4418 831 356 10112**



**Figure 7.6: Dzombo Shelter: raw material change in Trench 2.**



**Figure 7.7: Dzombo Shelter: stone tool distribution in Trench 1.**



**Figure 7.8: Dzombo Shelter: stone tool density in Trench 1.**

In Trench 2, there are some stone artefacts in the upper levels between the surface and Spit XVII, but it is only after this point that they increase dramatically (Figures 7.9 – 7.10). There is a clear trend in their density; stone tools decrease or remain relatively low in numbers from the surface to Spit VIII, and only properly increase from Spit XVIII.

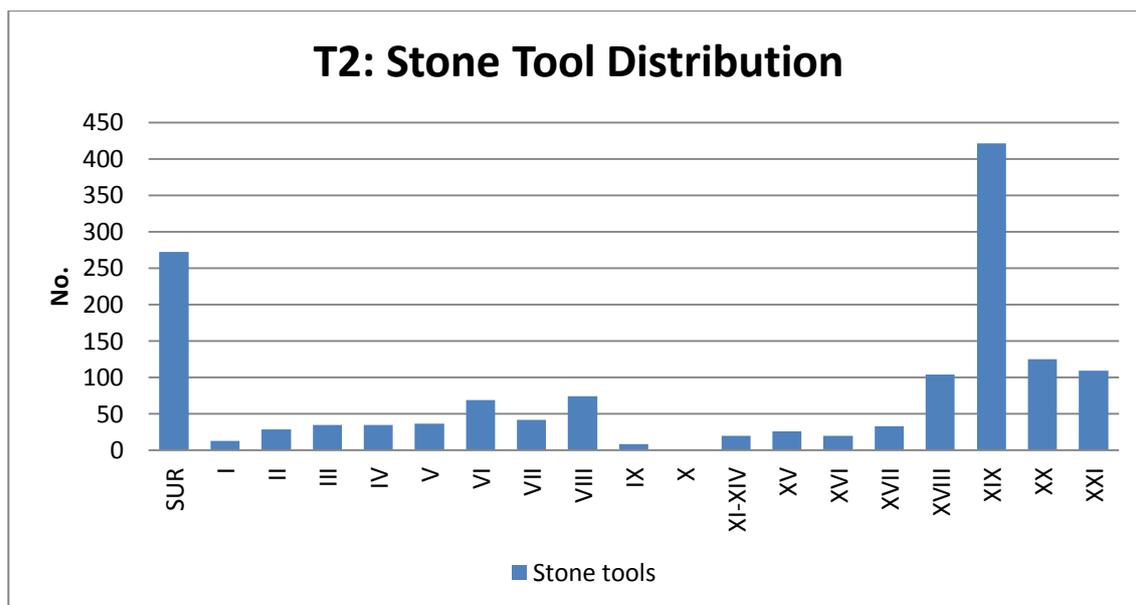


Figure 7.9: Dzombo Shelter: stone tool distribution in Trench 2.

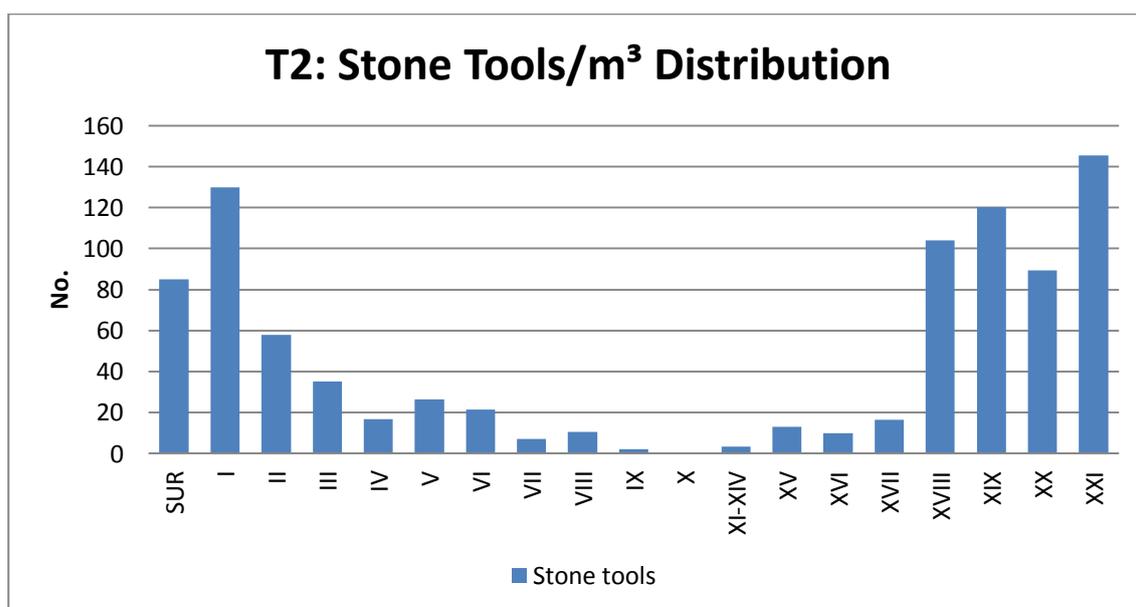


Figure 7.10: Dzombo Shelter: stone tool density in Trench 2.

#### 7.2.3.1 Cores

The stone tool assemblage from both trenches revealed 128 cores, represented by 11 different categories. In total, cores account for 1.1% of the assemblage, but when chips are removed they make up 2.4%. In Trench 1, 122 cores were found, making up 1.2% of the assemblage. Their distribution is much like that of the stone tool assemblage in that they appear to be concentrated between Spits IV and XIV but with three peaks in Spits IV, VII and XII (Figure 7.11). When the density of cores is calculated the pattern is less distinct but there is still a decrease towards Spit

XVIII (Figure 7.12). Trench 2 contained six cores, accounting for 0.4% of the assemblage from the trench, but no distribution pattern was noticed in terms of numbers (Figure 7.13) or density (Figure 7.14). Irregular cores are the most frequent core type followed by single platform, preliminarily flaked and bladelet cores (Table 7.7). The core types suggest that the primary percussion technique used was bipolar flaking.

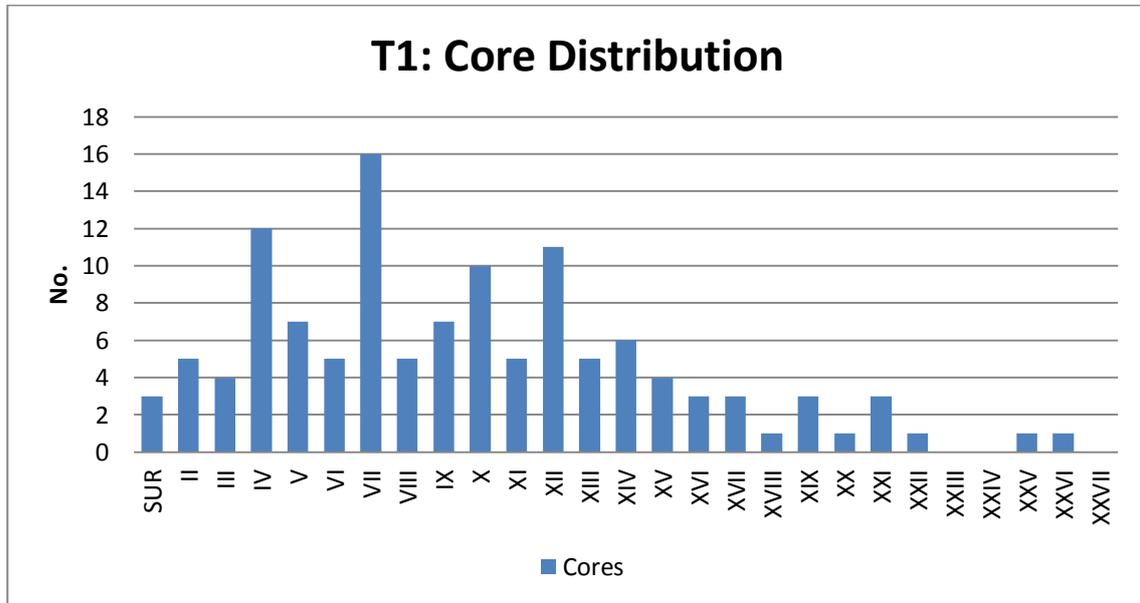


Figure 7.11: Dzombo Shelter: core distribution in Trench 1.

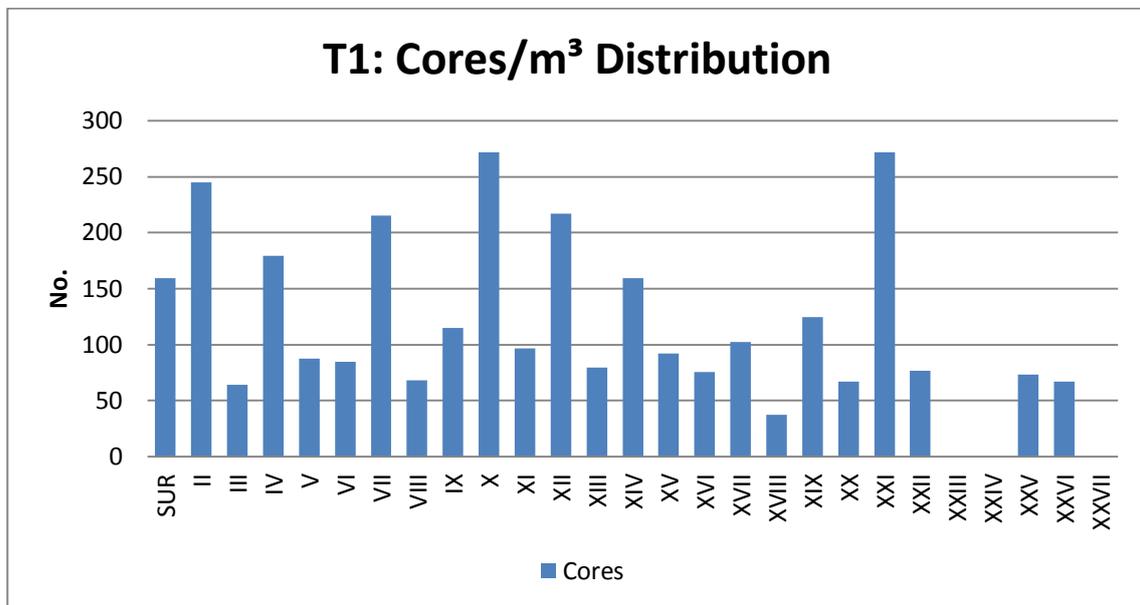


Figure 7.12: Dzombo Shelter: core density in Trench 1.

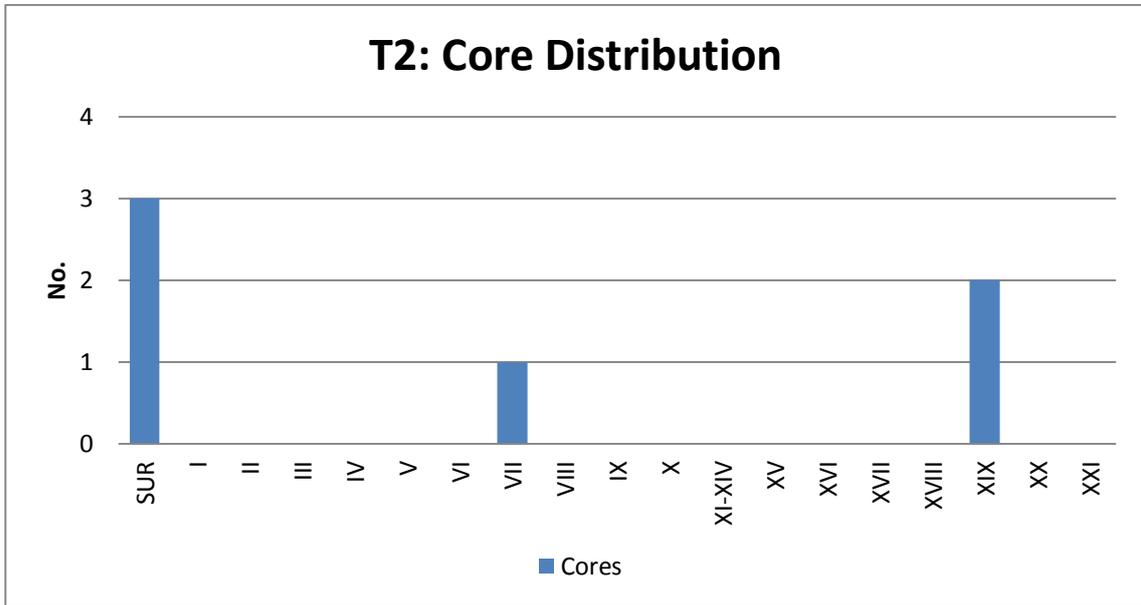


Figure 7.13: Dzombo Shelter: core distribution in Trench 2.

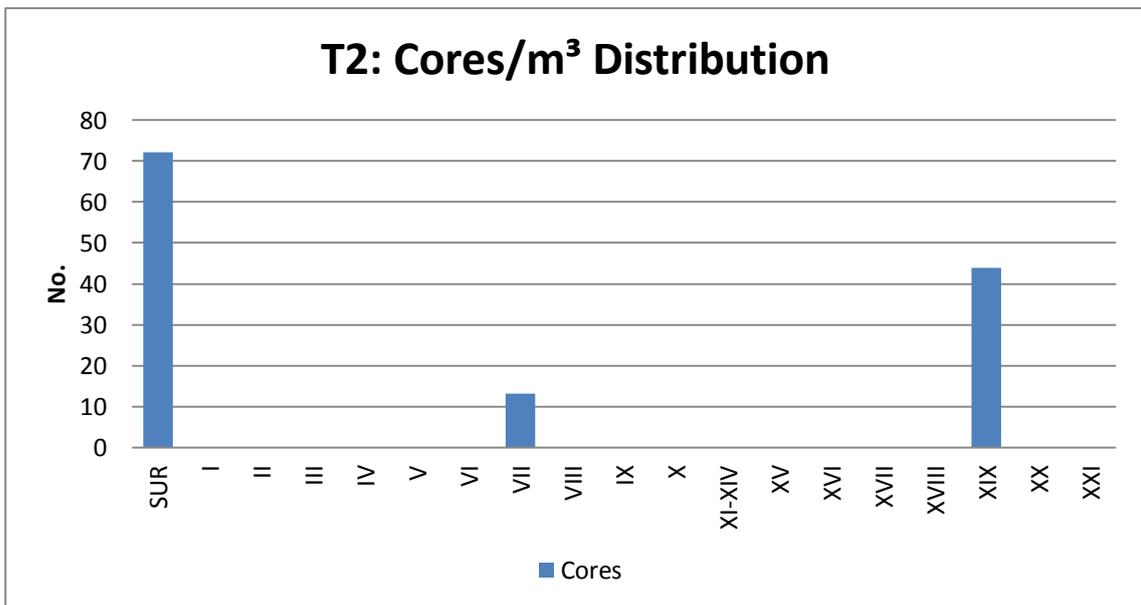


Figure 7.14: Dzombo Shelter: core density in Trench 2.

**Table 7.7: Dzombo Shelter: core type frequencies.**

Core type	Trench 1		Trench 2	
	No.	%	No.	%
Irregular	63	51.6	4	66.7
Bladelet	9	7.4	0	0
Radial	4	3.3	0	0
Radial bladelet	3	2.5	0	0
Bipolar bladelet	4	3.3	0	0
Blade	1	0.8	0	0
Single platform	20	16.4	1	16.7
Rice seed	2	1.6	0	0
Preliminary flakes	13	10.7	0	0
Opposed platform	3	2.5	1	16.7

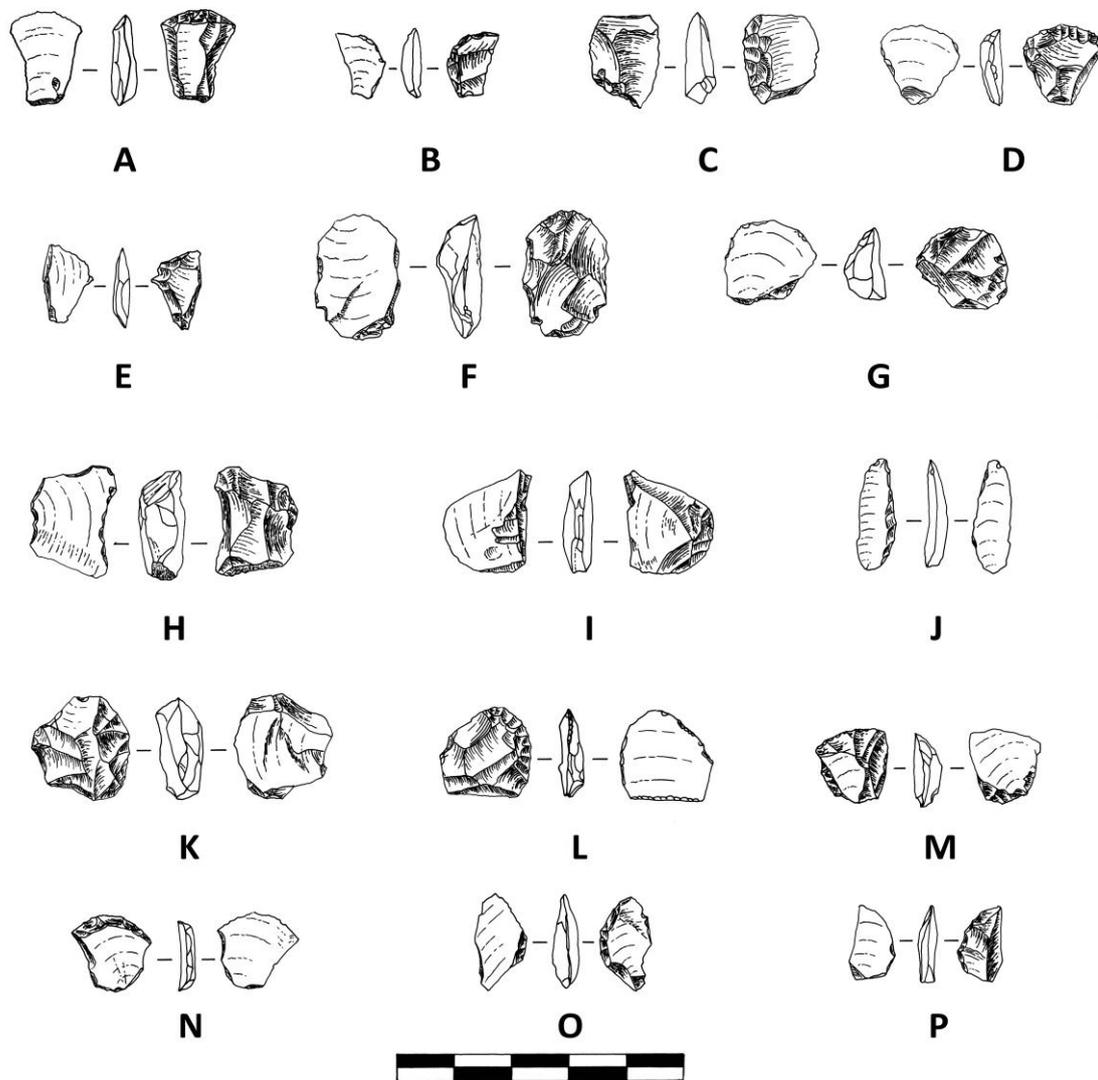
**Total:**    122                      6

### 7.2.3.2 Formal tools

The formal tools identified in the stone tool assemblage are summarised in Table 7.8 (Catalogue D.1.3). They resemble final LSA or ceramic LSA assemblages, which are found in the area (e.g. van Doornum 2005), and in other parts of southern Africa (see J. Deacon 1984a; Lombard *et al.* 2012; Figures 7.15 – 7.18). The assemblage is dominated by scraping tools (45.5%), which are composed of a diversity of forms further divided into small (34.7%), medium (8.4%) and large scrapers (1.5%) with two broken scrapers of an indeterminable size class. Similarly, backed microliths (36.1%), which follow scrapers in frequency, are also represented by different tool types, including segments and backed bladelets (each 6.9%), miscellaneous backed pieces (MBP; 4%) and backed flakes (1%). Other tools (25.7%) are the least frequent tool form and represent a diversity of tools unrelated to one another in form, unlike scrapers and backed stone tools. Of them the most frequent are miscellaneous retouched pieces (MRP; 15.3%) followed by adzes and awls (each 1%) and a plane and faceted piece (each 0.5%). There are 17 different scraper forms, 12 backed stone tool types and five other tools.

**Table 7.8: Dzombo Shelter: formal tools.**

Tool type	Size				Total
	NA	S	M	L	
<b>Scrapers</b>	<b>92</b>				
End scraper		33	15	1	49
Broken end scraper		4			4
End scraper + bladelet core		1			1
End + side scraper		7	1	1	9
End, side + side scraper		2		1	3
Broken and, side + side scraper		1			1
End scraper + adze		1			1
Side scraper		19	1		20
Broken side scraper		2			2
Broken scraper	2				2
<b>Backed stone tools</b>	<b>73</b>				
Segment					26
Incomplete segment					2
Broken segment					3
Backed bladelet					11
Backed bladelet/awl					1
Utilised backed bladelet					1
Broken backed bladelet					6
Backed flake					2
Segmented backed bladelet					13
MBP					8
<b>Other tools</b>	<b>37</b>				
Adze					2
Awl					2
Facetted flake					1
MRP					31
Plane					1
<b>Total:</b>					<b><u>202</u></b>



**Figure 7.15: Dzombo Shelter: formal tools: A, D & L-N, small end scraper; B, incomplete segment; C, small side scraper; E, MBP; F, medium end scraper; G, broken small end scraper; H, adze; I, broken small side scraper; J, backed bladelet; K, medium side scraper; and O & P, segment.**

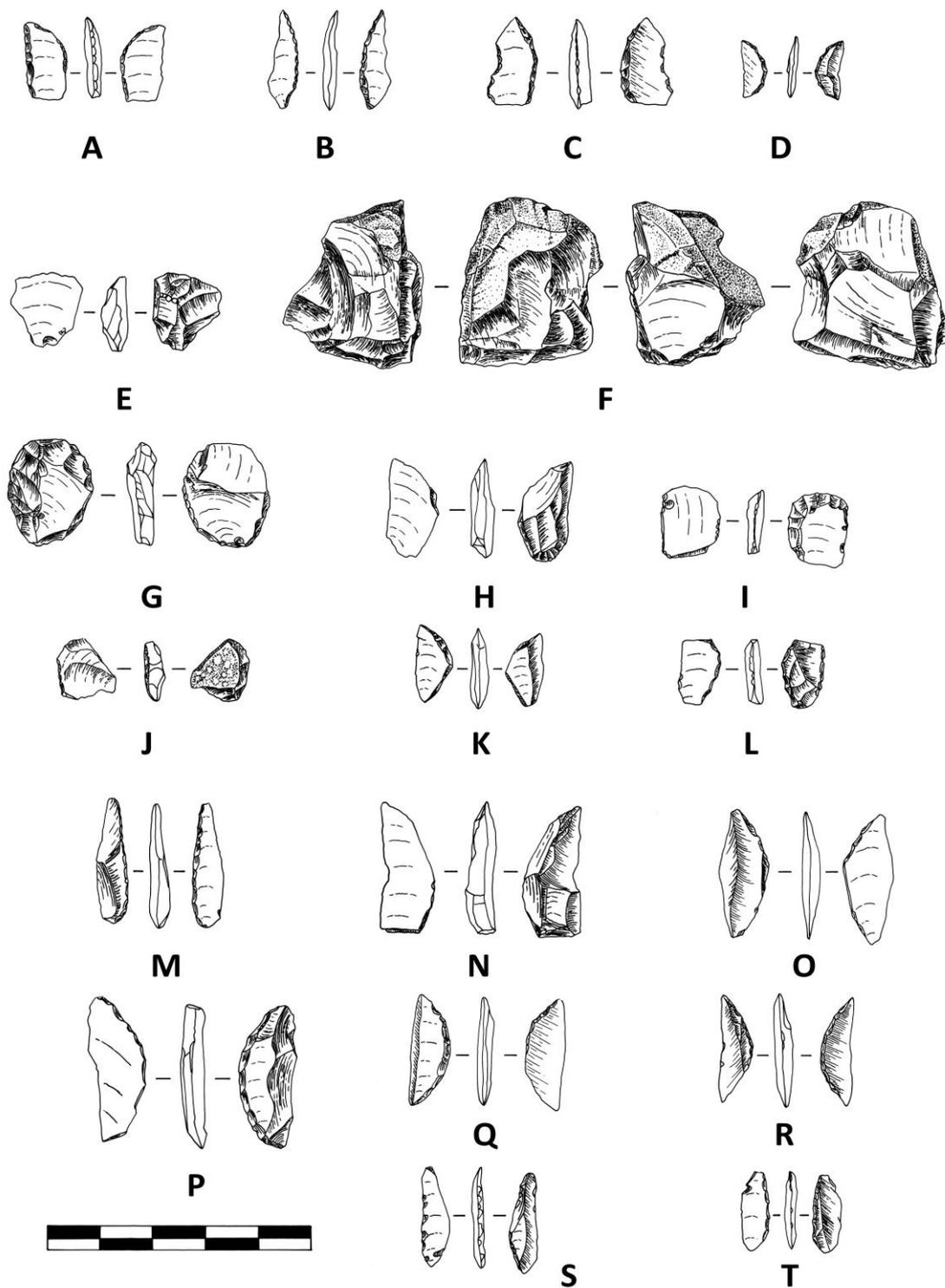
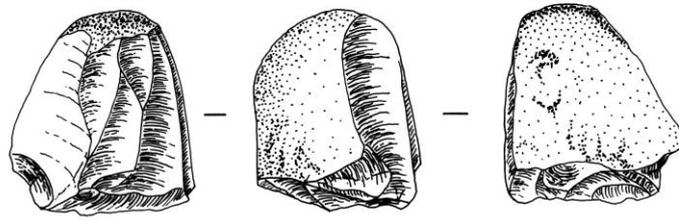
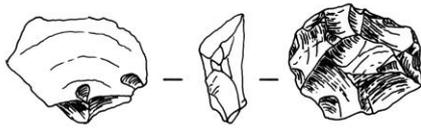


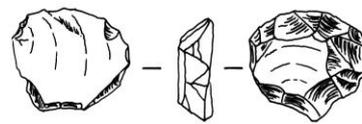
Figure 7.16: Dzombo Shelter: formal tools and cores: A, C, H & N, segmented backed bladelet; B, M, S & T, backed bladelet; D, K & O-R, segment; E & J, small end scraper; F, irregular core; G, small side scraper; I, small end-side scraper; and L, broken backed bladelet.



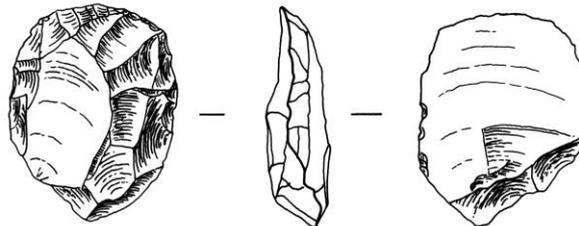
**A**



**B**



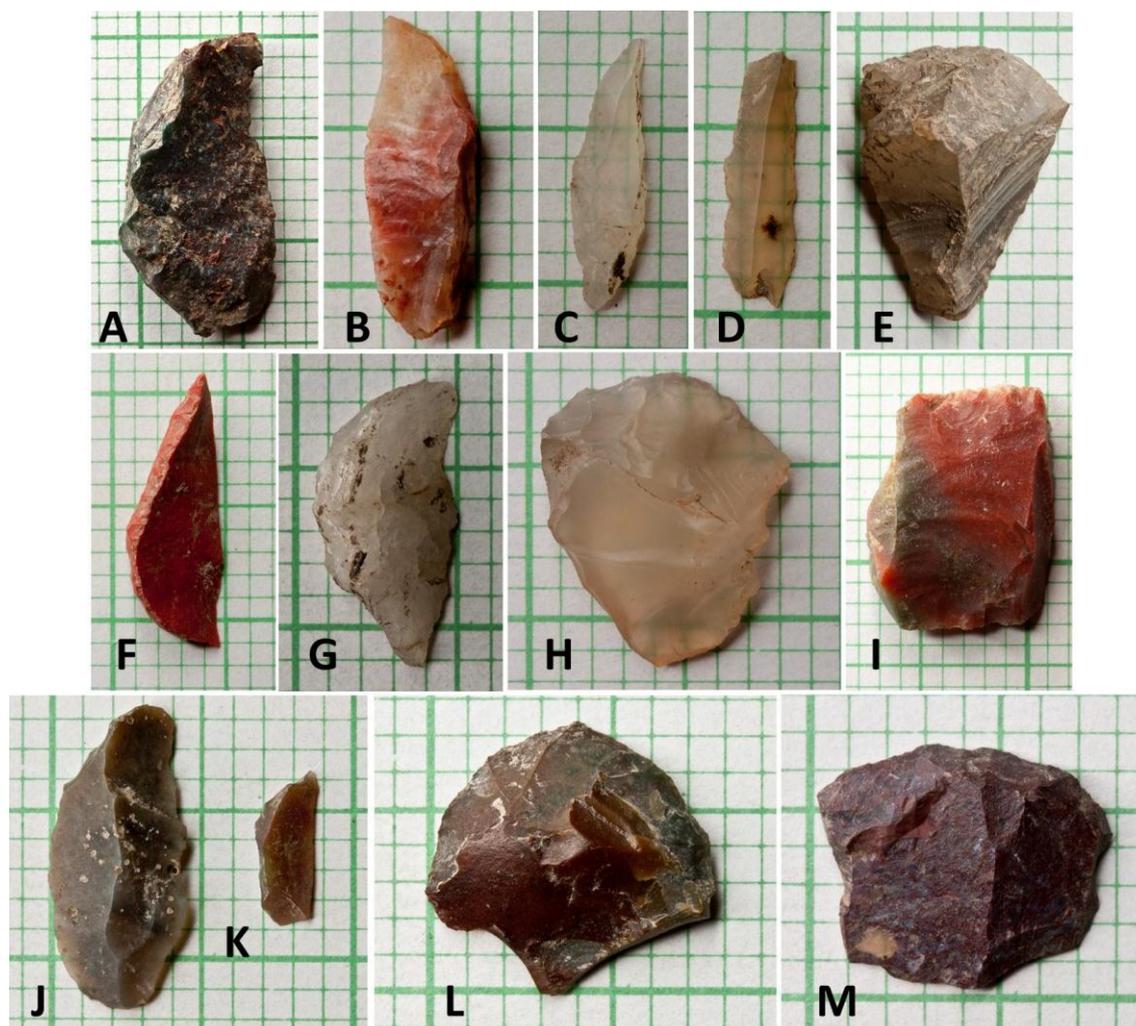
**C**



**D**



**Figure 7.17: Dzombo Shelter: formal tools and a core: A, single platform core; B & C, small side scraper; and D large end-side scraper.**



**Figure 7.18: Dzombo Shelter: formal tool examples: A, MBP; B, F & J, segmented backed bladelet; C, backed bladelet; D, bladelet; E, medium end scraper; G & K, segment; H, small end scraper; I, MRP; L, small end and double side scraper; and M, small side scraper.**

Most of the formal tools were recovered from Trench 1 (91.6%), accounting for 1.8% of the assemblage from inside the rockshelter. Excluding the chips, as van Doornum (2005) does, the formal tool component represents 3.9% of the assemblage. Most of the formal tools are made on CCS materials (74.6%) followed by agate and quartz (each 10.3%), dolerite (3.2%) and quartzite (1.6%; Figure 7.19; Table 7.9). In both trenches, CCS formal tools dominate throughout the spits (for Trench 1 see Figure 7.20). In fact, only a small portion of formal tools were produced using other materials in Trench 1 (N=47). Regarding their distribution, most of the tools came from between Spits IV and XVII (Figure 7.21), but when density is calculated, a peak in Spit XXIII is revealed, followed by a drop in artefacts that only increases from Spit XVIII and then drops off from Spit VI (Figure 7.22).

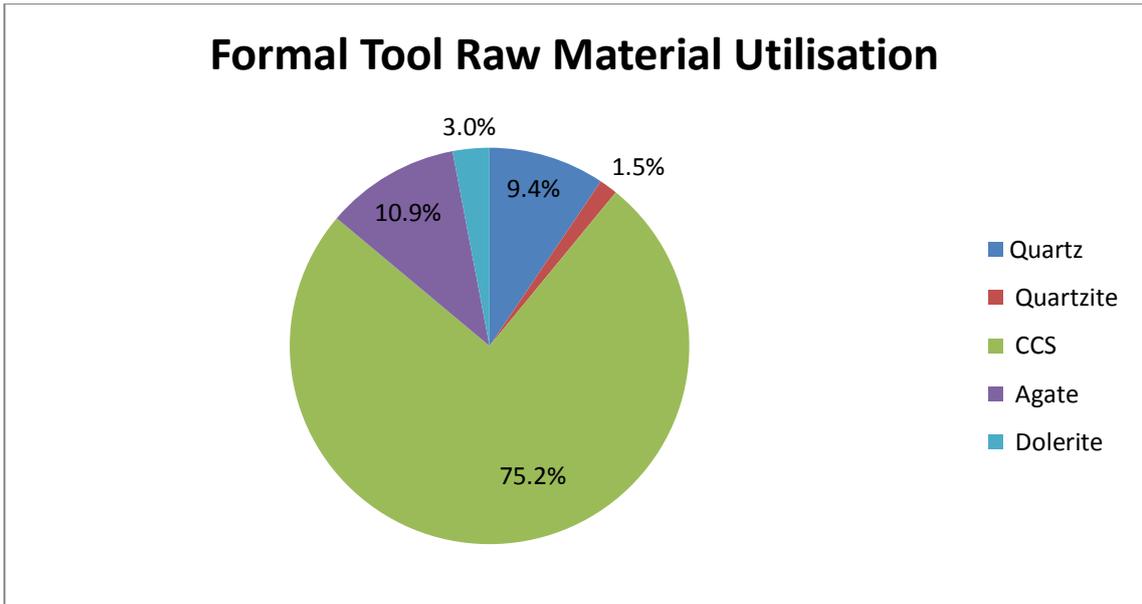


Figure 7.19: Dzombo Shelter: formal tool raw material utilisation.

Table 7.9: Dzombo Shelter: formal tool raw material change in Trenches 1 and 2.

Trench	Quartz	Quartzite	CCS	Agate	Dolerite	Total
1	19	3	138	19	6	185
2	0	0	14	3	0	17

Total: 19      3      152      22      6

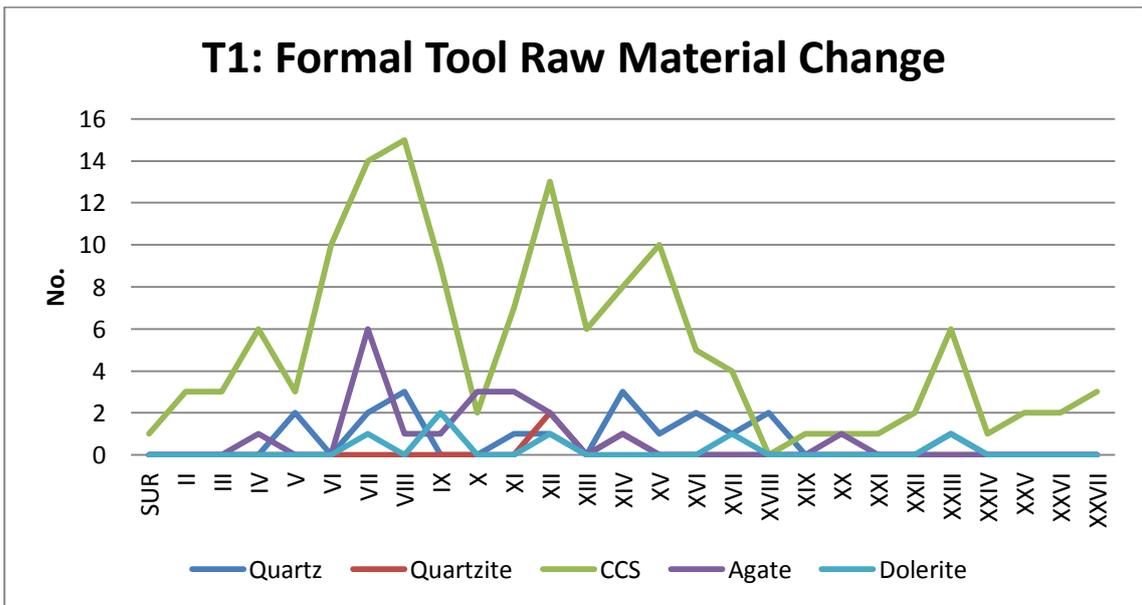
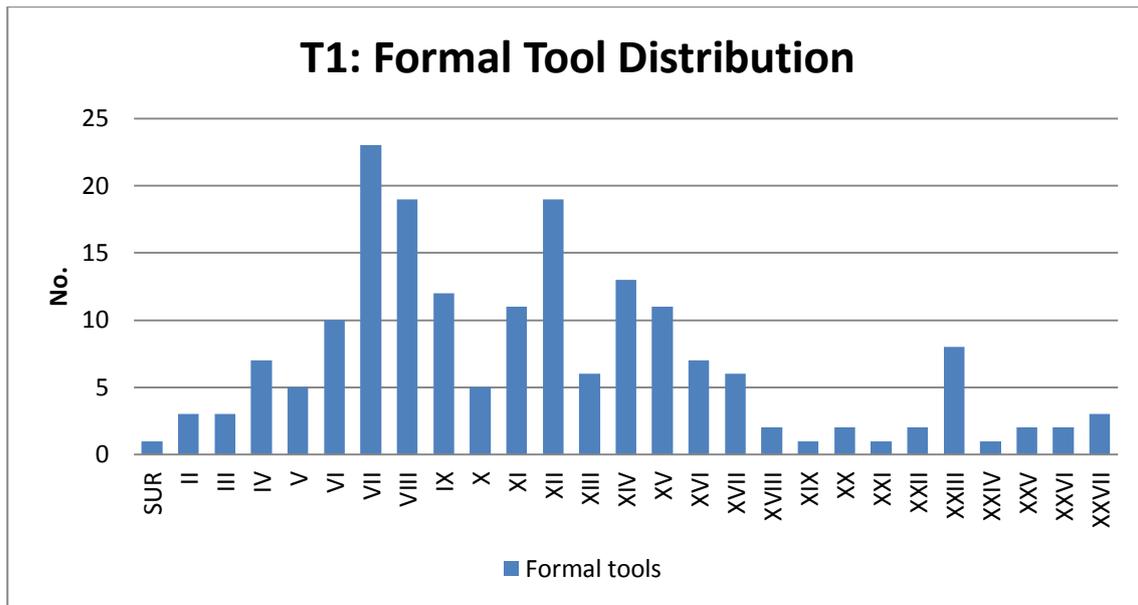
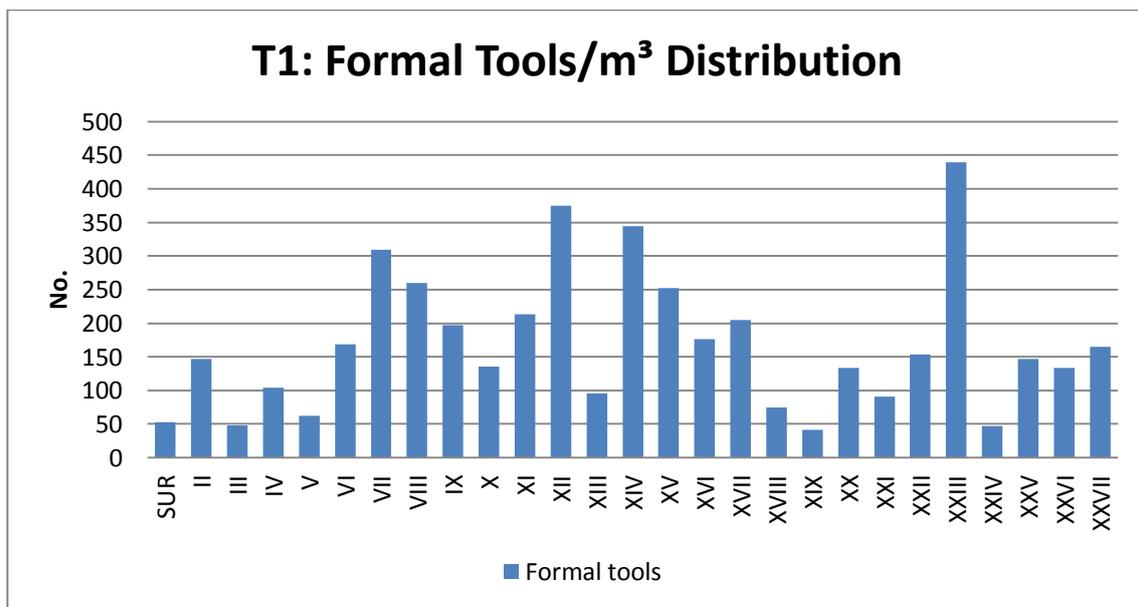


Figure 7.20: Dzombo Shelter: Trench 1 formal tool raw material change through the spits.



**Figure 7.21: Dzombo Shelter: formal tool distribution in Trench 1.**



**Figure 7.22: Dzombo Shelter: formal tool density in Trench 1.**

A lower frequency of formal tools was found in Trench 2, comprising 8.4% of the total formal tool assemblage recovered from the site. However, of the stone tool assemblage from Trench 2, only 1.2% are formal tools and when chips are excluded this number increases to 2.7%. CCS dominates the formal tools in all spits (82.4%; Figure 7.23), with a small agate component (17.6 %) and no other materials. The sample size is small and with additional excavations, this might change; quartz, quartzite and dolerite tools, for example, might be found. The formal tools are mostly located in the lower levels (Figure 7.24) and in varying densities (Figure 7.25).

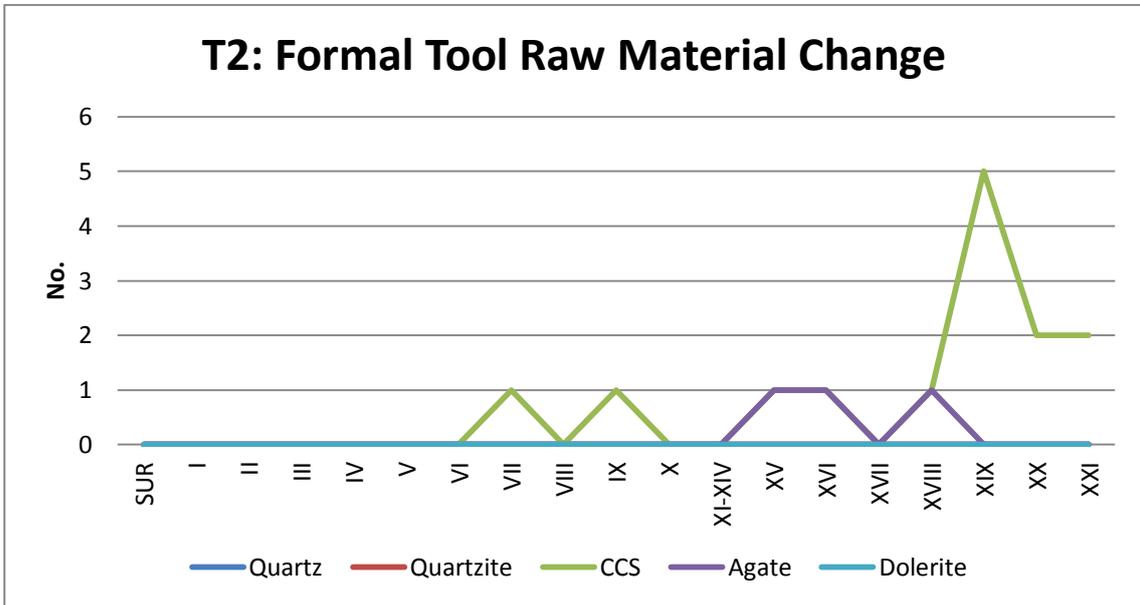


Figure 7.23: Dzombo Shelter: Trench 2 formal tool raw material change through the spits.

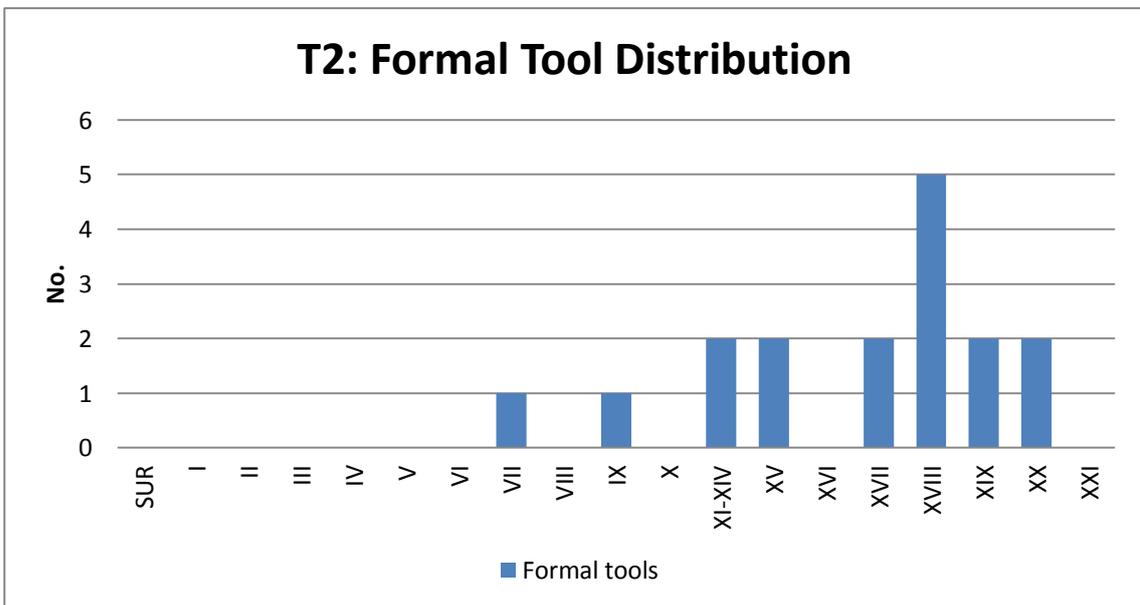
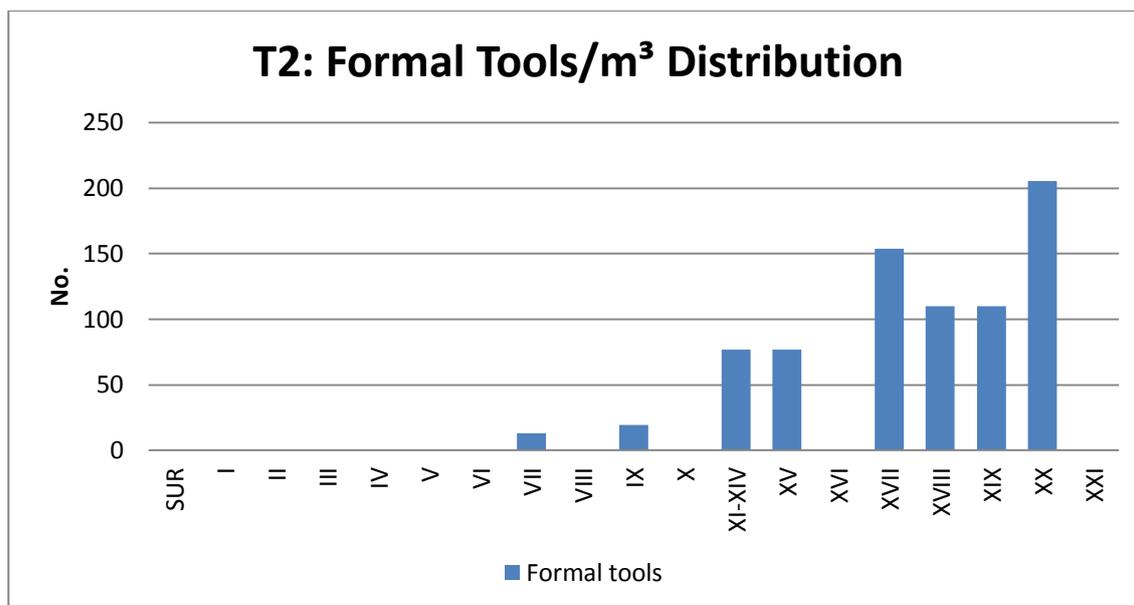


Figure 7.24: Dzombo Shelter: formal tool distribution in Trench 2.



**Figure 7.25: Dzombo Shelter: formal tool density in Trench 2.**

#### 7.2.3.2.1 Scrapers and backed stone tools

The most significant pattern in the formal tool component, as noted across southern Africa (J. Deacon 1984a) and on the Greater Mapungubwe Landscape (van Doornum 2007, 2008), is the relationship between scrapers and backed microliths. In Trench 1, scrapers are more frequent in Spits III-IX, XIV and XVII whereas backed artefacts are more frequent in SUR-II, X-XIII, XV, XVI, XIX and XXV-XXVII (Figure 7.26); a similar pattern is noted with regard to stratigraphy (Figure 7.27). The density of scrapers and backed stone tools remains high throughout the trench (Figure 7.28). However, below Spit XIV there is no regular pattern; the frequency of scrapers and backed stone tools changes between the spits, as does the ratio between them. There seems to be a trend towards scraping tools as one progresses from the lower to the upper levels. In Trench 2, scrapers dominate in all of the levels where they are present except for Spit XX, in which an equal number of each formal tool type was found (Figures 7.29 – 7.30).

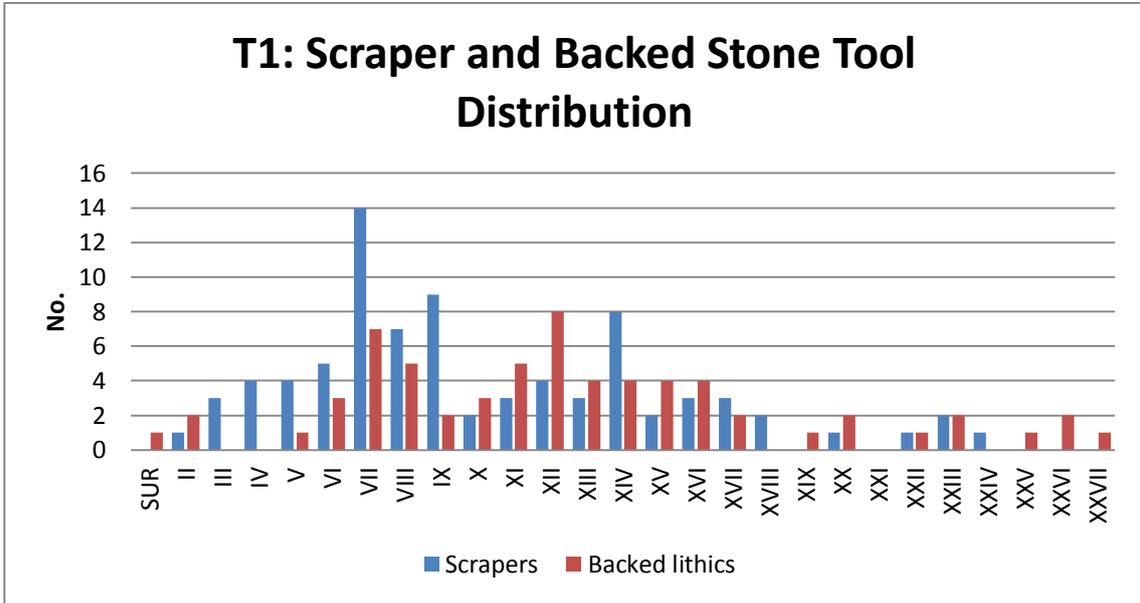


Figure 7.26: Dzombo Shelter: scraper and backed stone tool distribution in Trench 1.

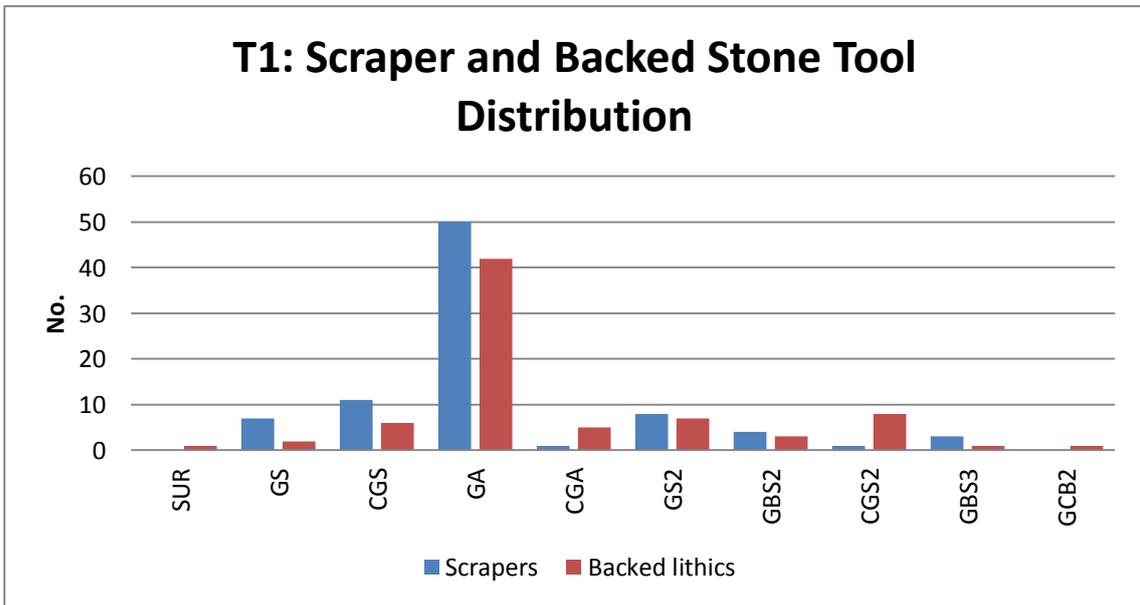


Figure 7.27: Dzombo Shelter: stratigraphic scraper and backed stone tool distribution in Trench 1.

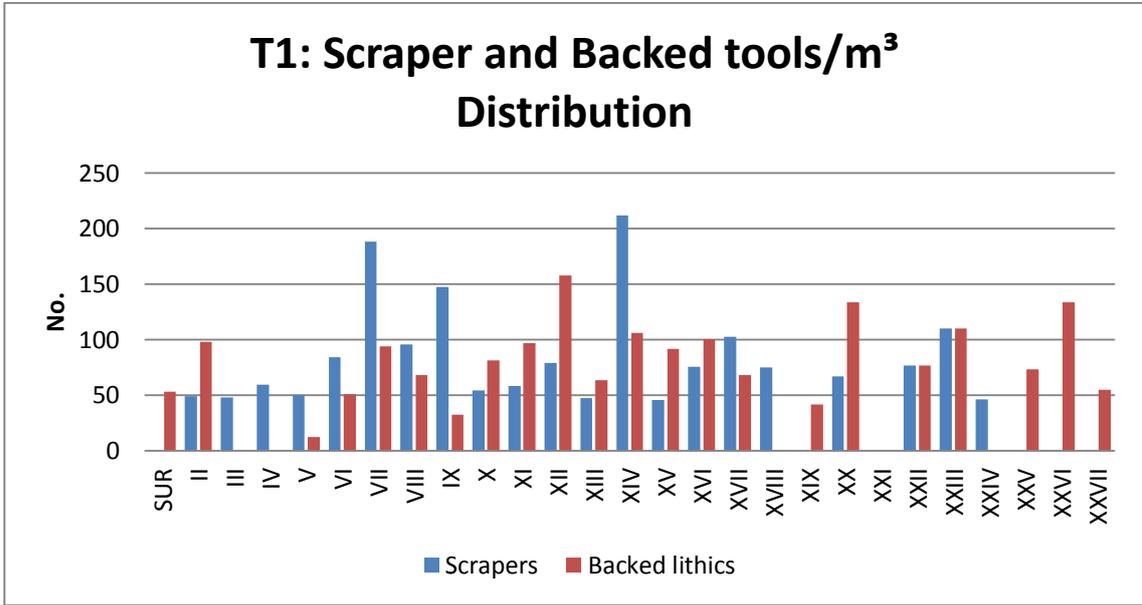


Figure 7.28: Dzombo Shelter: scraper and backed stone tool density in Trench 1.

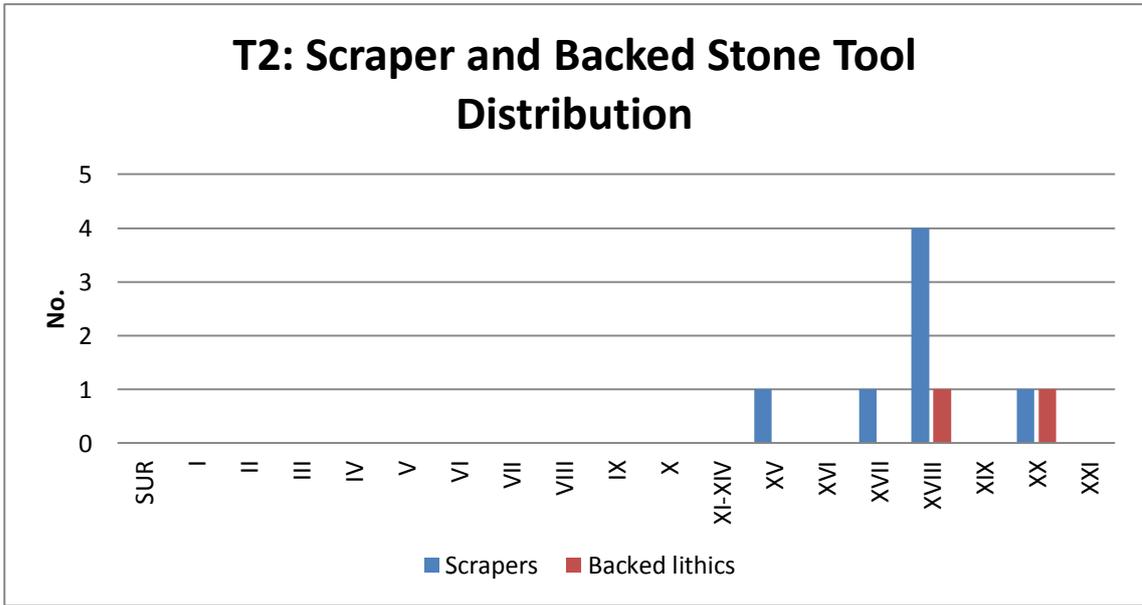


Figure 7.29: Dzombo Shelter: scraper and backed stone tool distribution in Trench 2.

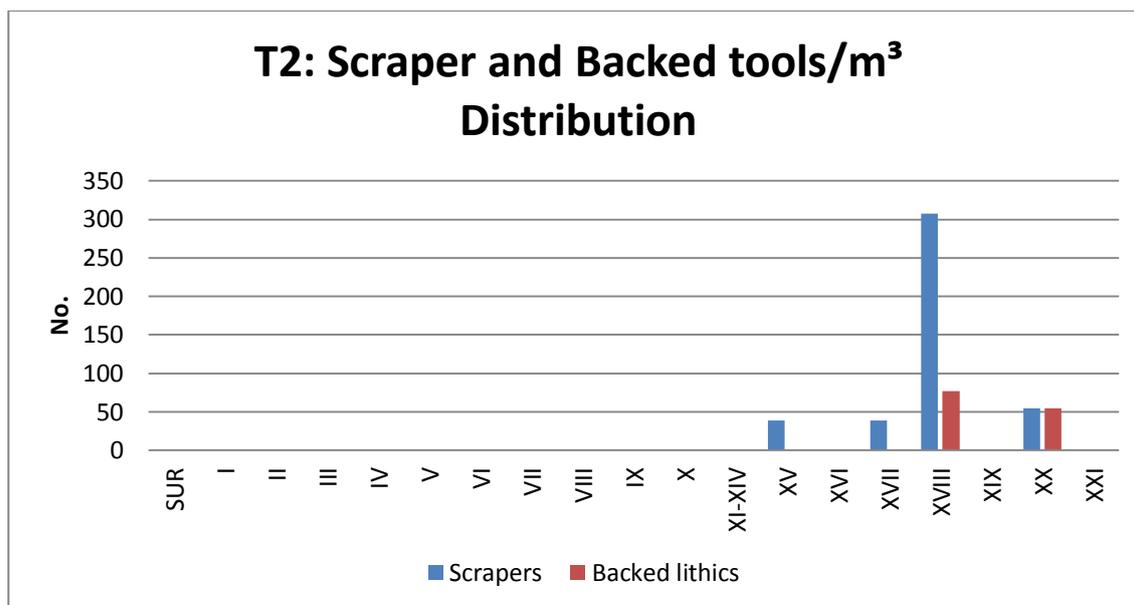


Figure 7.30: Dzombo Shelter: scraper and backed stone tool density in Trench 2.

#### 7.2.4 Ceramic assemblage

Of the 213 ceramic sherds found at Dzombo, only 14 (6.6%) are diagnostic; eight have been drawn and are presented in Figure 7.31 (Catalogue D.1.4). From Trench 1, there was only one sherd, 1DA V, that could be placed into the so-called Middle Iron Age and belongs to either the Zhizo facies, from AD 750 to 1050 (Huffman 2007: 143), or the K2 or TK2 facies dating to between AD 1000 to 1200 and AD 1200 to 1250, respectively (Huffman 2007: 279). However, radiocarbon dates from a similar level – Square E, Spit IV – date to about 190 BP (OxA-27136), which is incongruent with the known dates for the Middle Iron Age, beginning around AD 900 and ending at the abandonment of Mapungubwe AD 1300 (Huffman 2007: xi). Darden Hood (pers. comm.), from Beta Analytic, believes this is most likely because of the charcoal filtering into the upper levels of the deposit and not from contamination, which would have been identified in the laboratory.

In Trench 1, 61 ceramic sherds were found, five of which are diagnostic with the majority being plain (91.8%; Table 7.10). The density of ceramics in Trench 1 (Figure 7.32) is notably lower than in Trench 2 (Figure 7.33) where 143 plain ceramics were found along with nine diagnostic sherds (Table 7.11). Of interest is the distribution of ceramics in Trench 1 (Figure 7.34); a total of 83.6% were found between the surface and Spit VII, below which ceramic finds become infrequent. Therefore, the ceramic assemblage only really increases from above Spit VII, a point from which the stone tool assemblage begins to decrease significantly. Looking at the distribution of sherds in

Trench 2, it is clear that the majority of sherds are found near to the base of the trench with a peak in Spit XV (44.7%; Figure 7.35).

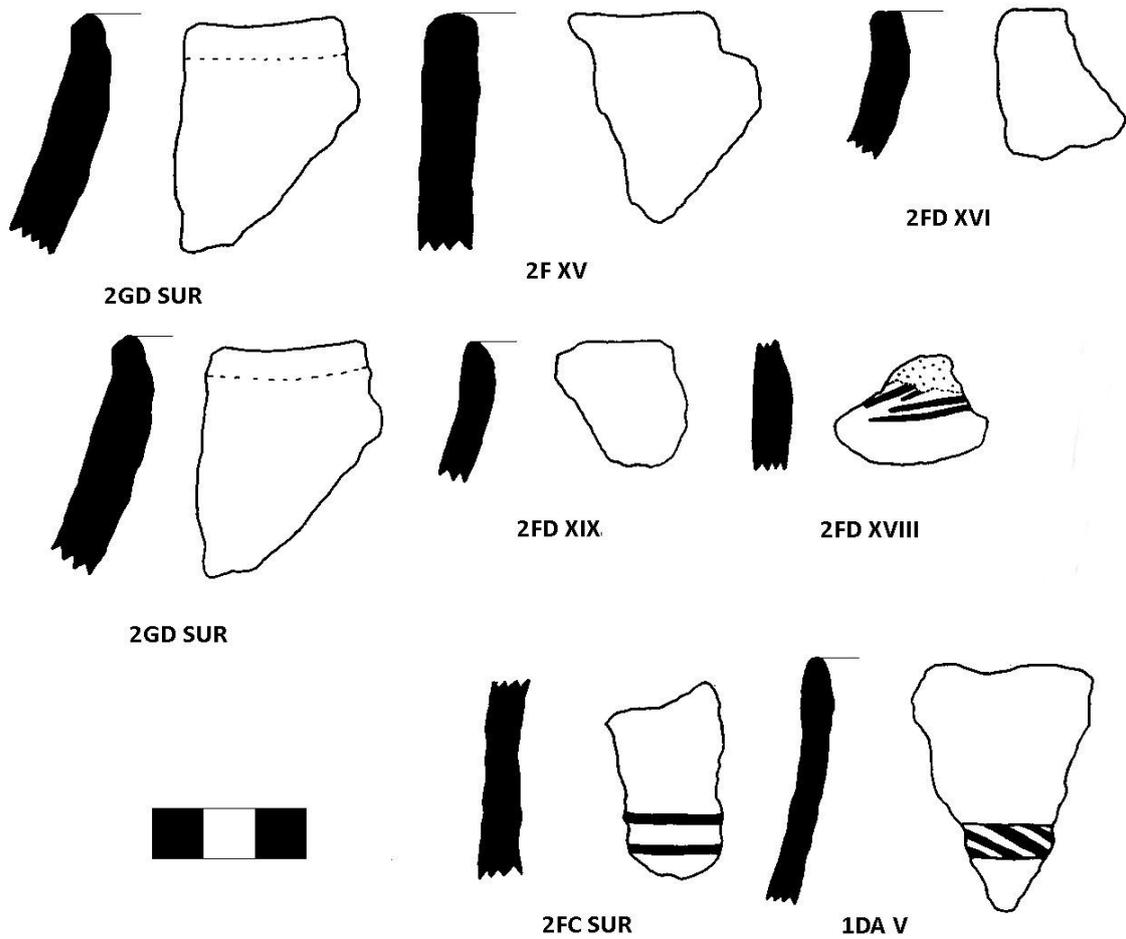


Figure 7.31: Dzombo Shelter: diagnostic ceramics.

**Table 7.10: Dzombo Shelter: ceramic distribution in Trench 1.**

Spit	Ceramics total	Total ceramics/m <sup>3</sup>	Total % of ceramics	Trench 1							Plain ceramics/m <sup>3</sup>	Diagnostic ceramics/m <sup>3</sup>
				Plain	Decoration	Plain rim	Decorated rim	Plain ceramics	Diagnostic ceramics			
SUR	7	371.4	11.5	6	0	1	0	6	1	318.3	53.1	
II	3	147	4.9	3	0	0	0	3	0	147	0	
III	8	128.2	13.1	8	0	0	0	8	0	128.2	0	
IV	2	29.9	3.3	2	0	0	0	2	0	29.9	0	
V	13	162.9	21.3	12	0	0	1	12	1	150	12.5	
VI	10	169.2	16.4	9	0	1	0	9	1	152	16.9	
VII	8	107.6	13.1	6	2	0	0	6	2	81	26.9	
VIII	1	13.7	1.6	1	0	0	0	1	0	13.7	0	
IX	2	32.8	3.3	2	0	0	0	2	0	32.8	0	
X	1	27.2	1.6	1	0	0	0	1	0	27.2	0	
XI	0	0	0	0	0	0	0	0	0	0	0	
XII	2	39.4	3.3	2	0	0	0	2	0	39.4	0	
XIII	0	0	0	0	0	0	0	0	0	0	0	
XIV	0	0	0	0	0	0	0	0	0	0	0	
XV	0	0	0	0	0	0	0	0	0	0	0	
XVI	1	25.1	1.6	1	0	0	0	1	0	25.1	0	
XVII	0	0	0	0	0	0	0	0	0	0	0	
XVIII	2	75	3.3	2	0	0	0	2	0	75	0	
XIX	0	0	0	0	0	0	0	0	0	0	0	
XX	0	0	0	0	0	0	0	0	0	0	0	
XXI	0	0	0	0	0	0	0	0	0	0	0	
XXII	0	0	0	0	0	0	0	0	0	0	0	
XXIII	0	0	0	0	0	0	0	0	0	0	0	
XXIV	0	0	0	0	0	0	0	0	0	0	0	
XXV	1	66.9	1.6	1	0	0	0	1	0	73	0	
XXVI	0	0	0	0	0	0	0	0	0	0	0	
XXVII	0	0	0	0	0	0	0	0	0	0	0	
<b>Total:</b>	<b>61</b>	<b>58.4</b>		<b>56</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>56</b>	<b>5</b>	<b>53.6</b>	<b>4.8</b>	

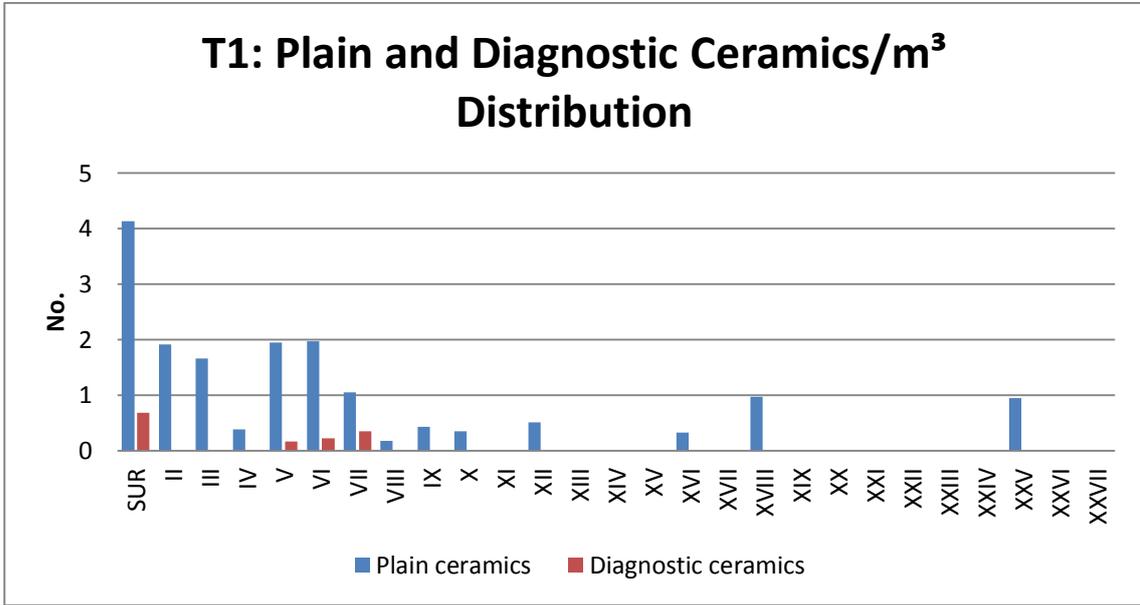


Figure 7.32: Dzombo Shelter: ceramic density in Trench 1.

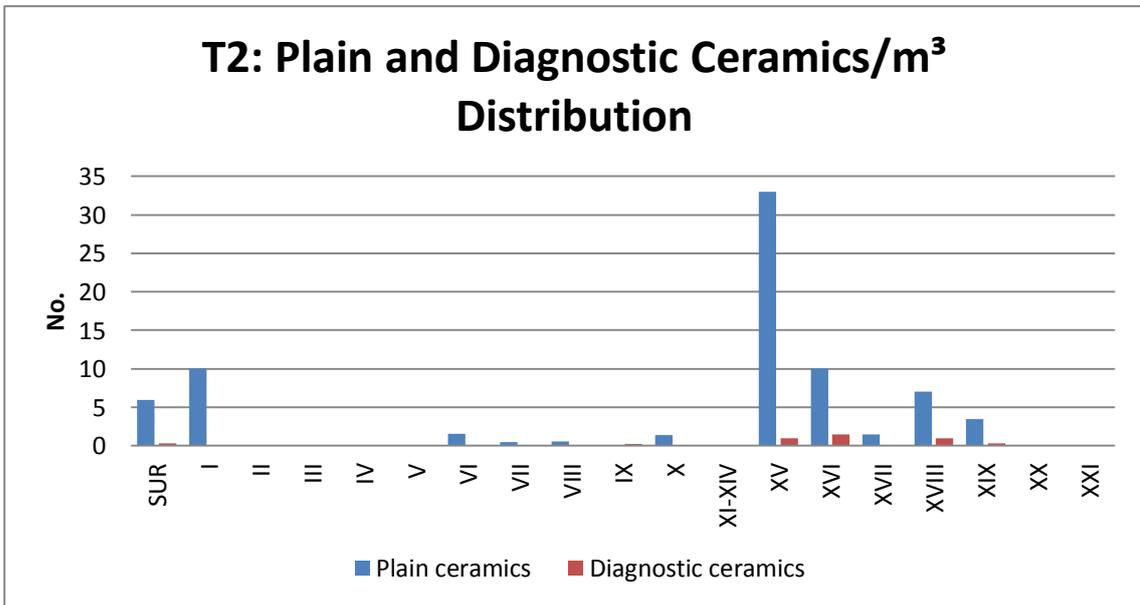


Figure 7.33: Dzombo Shelter: ceramic density in Trench 2.

**Table 7.11: Dzombo Shelter: ceramic distribution in Trench 2.**

Spit	Ceramics total	Total ceramics/m <sup>3</sup>	Total % of ceramics	Trench 2							
				Plain	Decoration	Plain rim	Decorated rim	Plain ceramics	Diagnostic ceramics	Plain ceramics/m <sup>3</sup>	Diagnostic ceramics/m <sup>3</sup>
SUR	20	480.8	13.2	19	0	1	0	19	1	456.7	24
I	1	769	0.7	1	0	0	0	1	0	769	0
II	0	0	0	0	0	0	0	0	0	0	0
III	0	0	0	0	0	0	0	0	0	0	0
IV	0	0	0	0	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0	0	0	0	0
VI	5	120.2	3.3	5	0	0	0	5	0	120.2	0
VII	3	39.8	2	3	0	0	0	3	0	39.8	0
VIII	4	44.1	2.6	4	0	0	0	4	0	44.1	0
IX	1	19.2	0.7	0	1	0	0	0	1	0	19.2
X	3	104.9	2	3	0	0	0	3	0	104.9	0
XI-XIV	0	0	0	0	0	0	0	0	0	0	0
XV	68	2615.4	44.7	66	1	1	0	66	2	2538	77
XVI	23	884.6	15.1	20	0	3	0	20	3	769	115.4
XVII	3	115.4	2	3	0	0	0	3	0	115.4	0
XVIII	8	615	5.3	7	1	0	0	7	1	538	77
XIX	13	285.7	8.6	12	0	1	0	12	1	263.7	22
XX	0	0	0	0	0	0	0	0	0	0	0
XXI	0	0	0	0	0	0	0	0	0	0	0
<b>Total:</b>	<b>152</b>	<b>238</b>		<b>143</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>143</b>	<b>9</b>	<b>224</b>	<b>14.1</b>

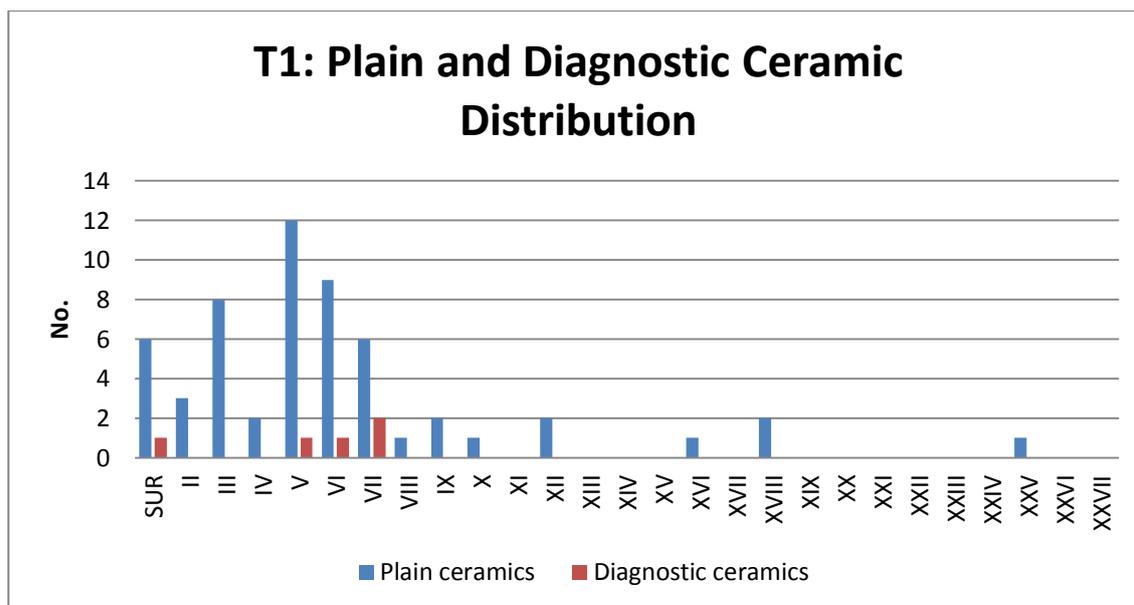


Figure 7.34: Dzombo Shelter: ceramic sherds from Trench 1.

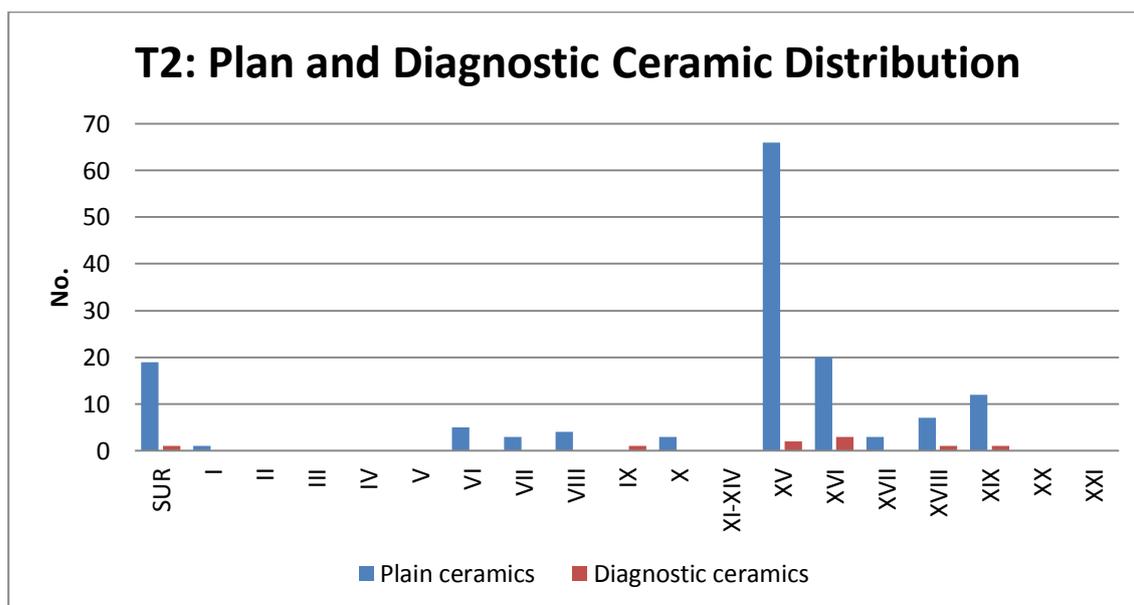


Figure 7.35: Dzombo Shelter: ceramic sherds from Trench 2.

#### 7.2.5 Bead assemblage

Ostrich eggshell, bone and *Achatina* beads, referred to here as organic beads, and glass beads were found in both trenches and, regarding the organic beads, in various stages of production (Catalogue D.1.4). They occur in most spits throughout Trench 1 (Figure 7.36) but in Trench 2 they are concentrated in the lower levels (Figure 7.37). In total 106 beads were found at Dzombo, over 90% of which were in Trench 1, and of these, ostrich eggshell beads are the most frequent followed by bone, glass and lastly *Achatina* (Table 7.12). In Trench 1, the glass beads are mostly

from between Spits III and IX (N=17); one found in Spit XV is likely to have filtered down the deposit, a common issue with glass bead assemblages (Wood pers. comm.). The beads are in a variety of colours and have preliminarily been placed into Wood's (2005) typology (Table 7.13; Figure 7.38). Trench 2 contained only two glass beads.

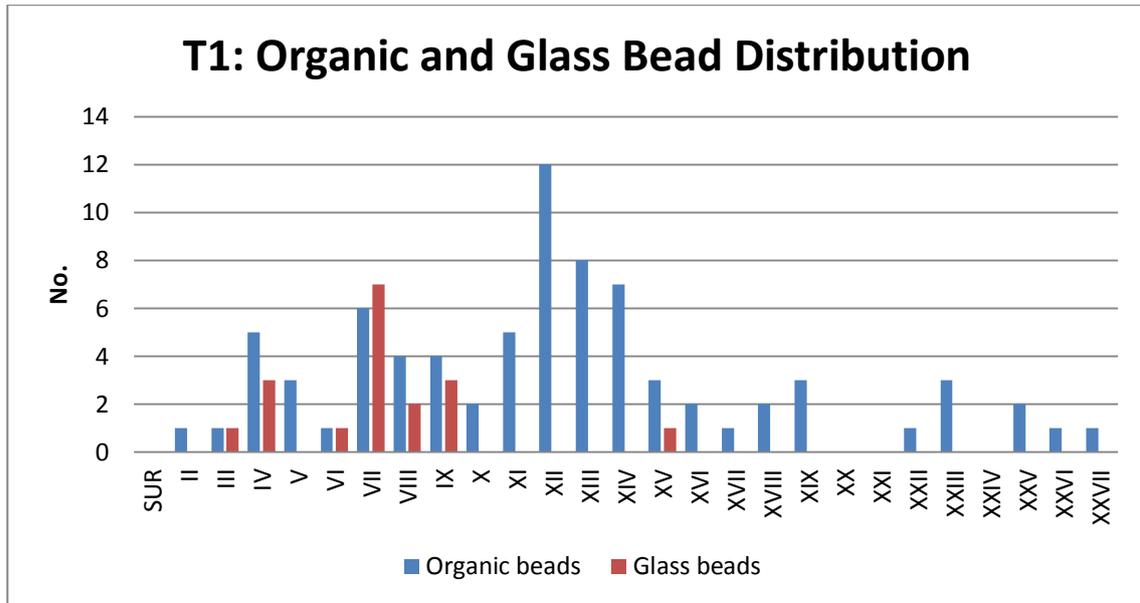


Figure 7.36: Dzombo Shelter: organic and glass beads in Trench 1.

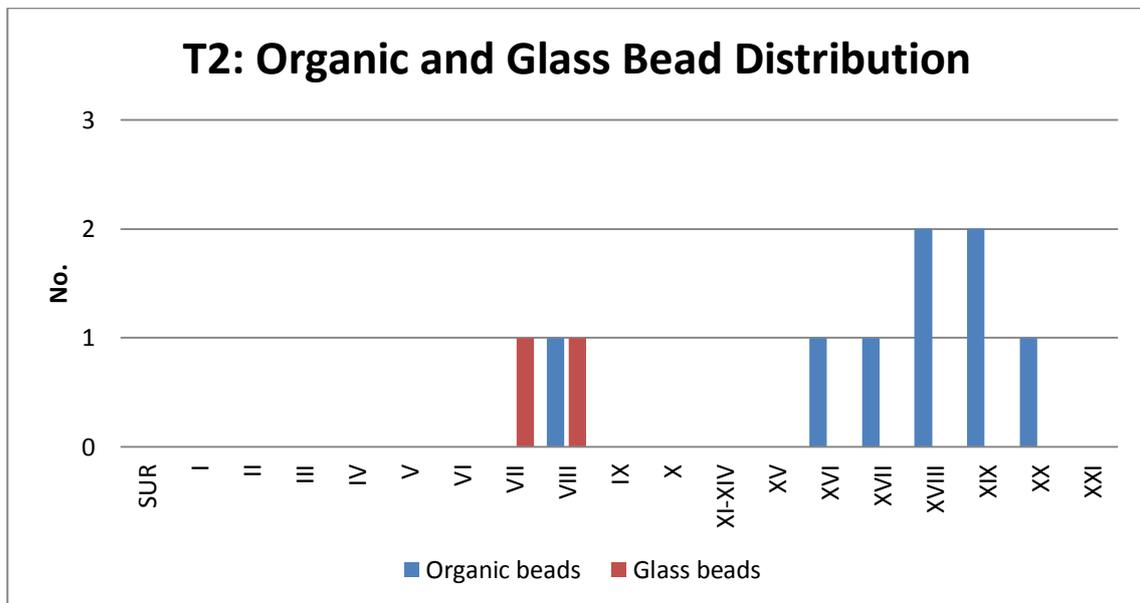


Figure 7.37: Dzombo Shelter: organic and glass beads in Trench 2.

**Table 7.12: Dzombo Shelter: organic and glass bead breakdown.**

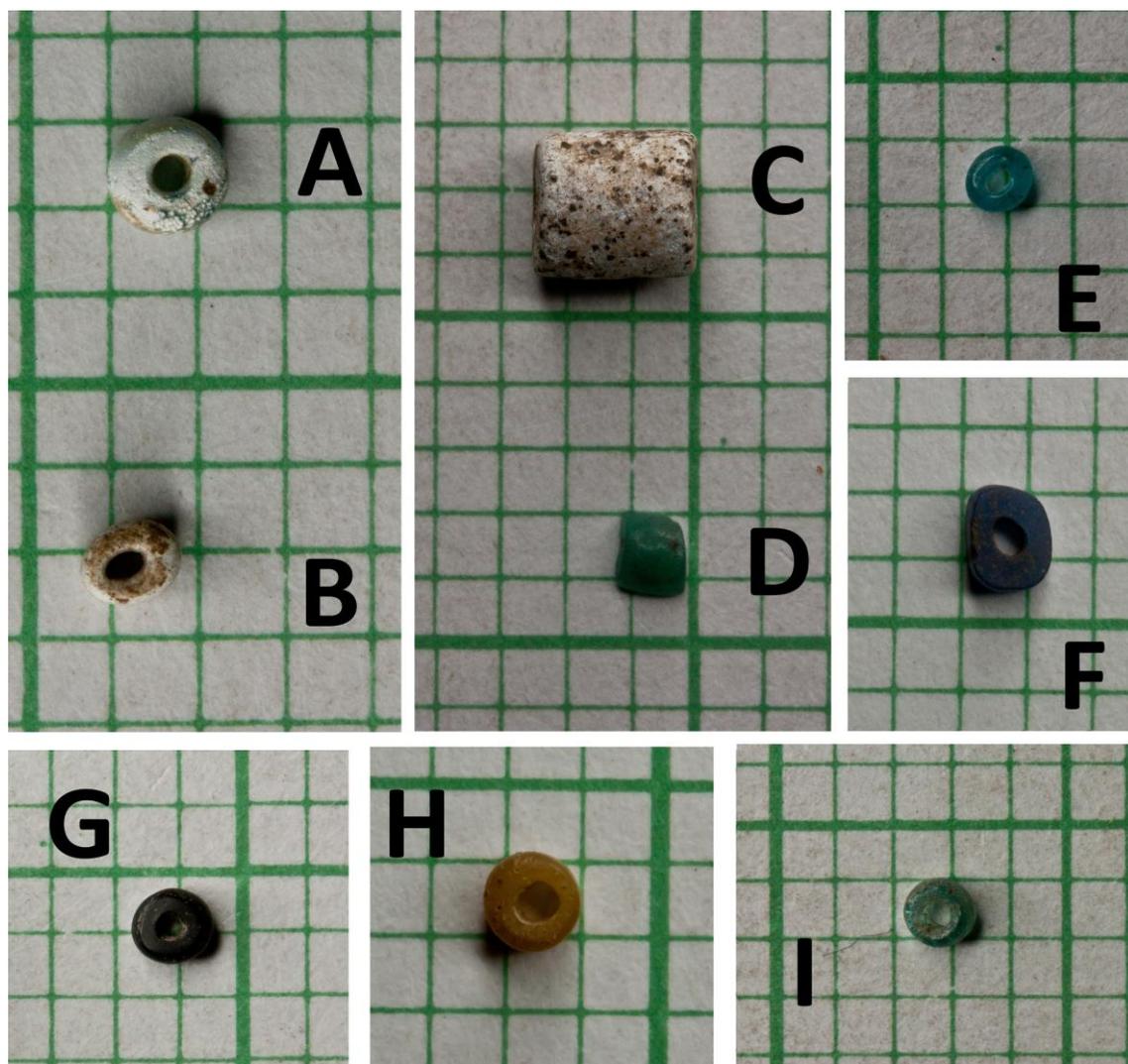
Bead type	Trench 1			Trench 2			Total		
	No.	%	/m <sup>3</sup>	No.	%	/m <sup>3</sup>	No.	%	/m <sup>3</sup>
Ostrich eggshell	20	20.8	19.2	4	40	6.3	24	22.6	14.3
Ostrich eggshell preform	9	9.4	8.6	0	0	0	9	8.5	5.3
Broken ostrich eggshell	14	5.2	13.4	0	0	0	14	13.2	8.3
Broken preform ostrich eggshell	5	14.6	4.8	0	0	0	5	4.7	3
Bone	24	25	23	3	30	4.7	27	25.5	16
Broken bone	6	6.3	5.7	0	0	0	6	5.7	3.6
Achatina	0	0	0	1	10	1.6	1	0.9	0.6
Glass	18	18.8	17.2	2	20	3.1	20	18.9	11.9
<b>Total</b>	<b>96</b>			<b>10</b>			<b>106</b>		

Ostrich eggshell	48	50	46	4	40	6.3	52	49.1	30.9
Bone	30	31.3	28.7	3	30	4.7	33	31.1	19.6
Achatina	0	0	0	1	10	1.6	1	0.9	0.6
Glass	18	18.8	17.2	2	20	3.1	20	18.9	11.9

**Table 7.13: Dzombo Shelter: a preliminary itemising of the glass bead assemblage.**

Trench	1	%	2	%	Total	%
Unclassified glass	1	5.6	0	0	1	5
Zhizo	1	5.6	0	0	1	5
K2	9	50	1	50	10	50
Mapungubwe	2	11.1	0	0	2	10
Khami	1	5.6	0	0	1	5
Indo-Pacific	4	22.2	1	50	5	25

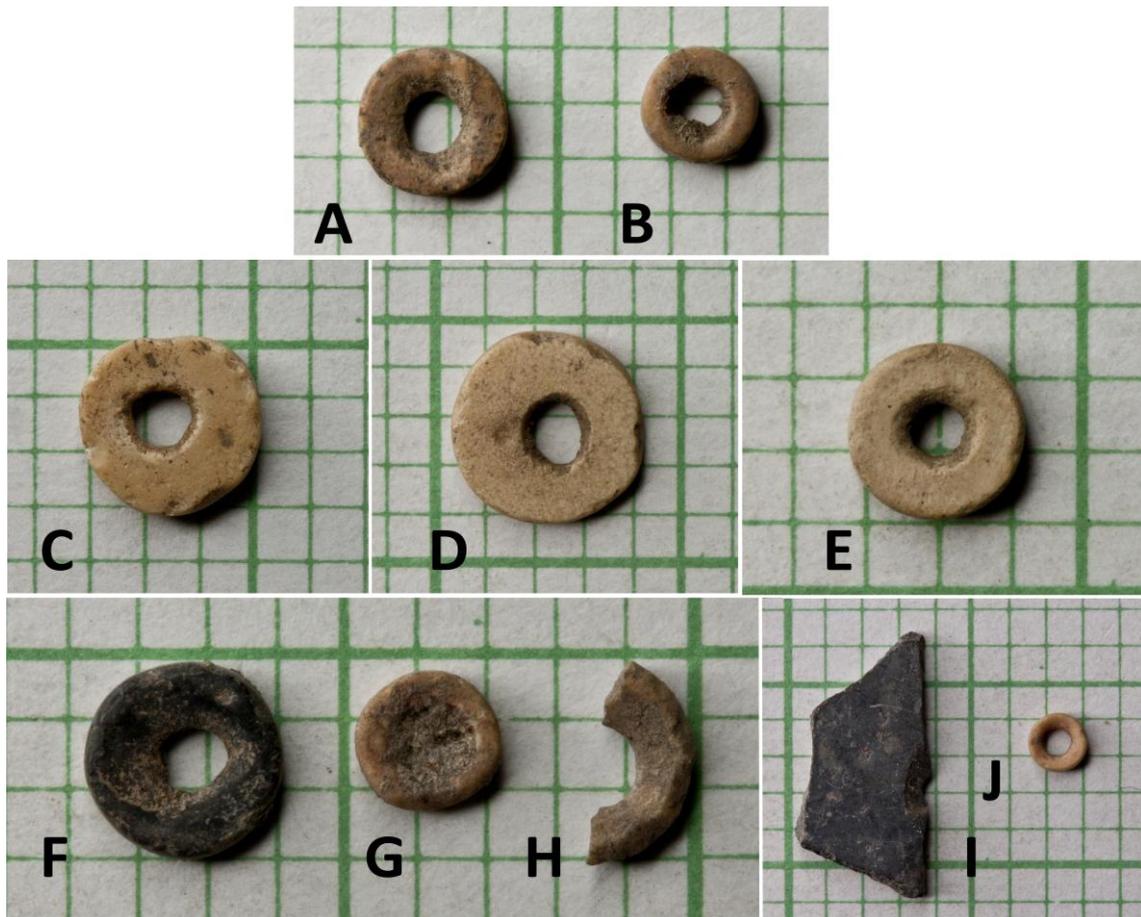
**Total:** 18      2      20



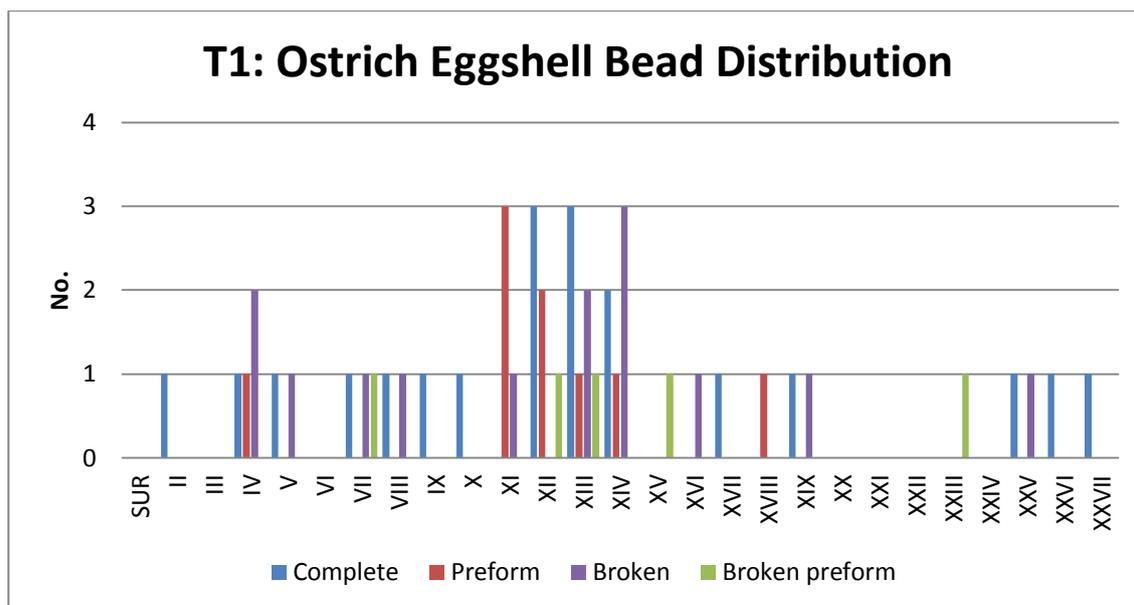
**Figure 7.38: Dzombo Shelter: glass bead examples: A-C, corroded forms of glass beads; D, possibly Khami (1D-9); E (1D XV) & F (2G VII); K2 series; G (1E IV), Mapungubwe oblate; H (2F VIII), unidentified and I (1E III), Indo-Pacific.**

The ostrich eggshell beads were found in two phases of production – complete and incomplete – and some were broken versions of these phases (see Figure 7.39 for examples; see Orton 2008). There are no clear trends in frequency and relationship between complete and incomplete beads (Figure 7.40). Generally, the bulk of the beads were found between Spits VII and XIV. Thereafter, ostrich eggshell beads are present, but are less consistent in their numbers and frequency. Comparing complete beads with incomplete beads and using this as an indication of production can be problematic as ostrich eggshell beads may have been broken *in situ*. Nevertheless, it can be used as an indication of possible change of activities that occurred at the rockshelter. The frequency of ostrich eggshell preforms vary prior to Spit XIV. Between Spits XI and XIV, all bead forms exist: eight complete, seven preforms, six broken and two broken preforms. It appears that

it was during this time that bead production, indicated by the presence of preforms, increased. From Spit XI, ostrich eggshell bead numbers decrease but they peak once again, albeit to a lesser degree, in Spit IV. The early decline of beads from Spit XI differs to the decline of stone tools, which only begins from Spit VII, and will be discussed in the following chapter.



**Figure 7.39: Dzombo Shelter: examples of organic beads in various stages of production: A, B & G, complete bone; C, E & J, complete ostrich eggshell; D, complete *Achatina*; F, burnt complete ostrich eggshell; H, broken ostrich eggshell; and I, burnt broken ostrich eggshell preform.**



**Figure 7.40: Dzombo Shelter: ostrich eggshell complete and preform beads in Trench 1.**

### 7.2.6 Bone point assemblage

A small bone point assemblages found in Trench 1 is composed of bone needles and linkshafts (each N=4; 44.4%; Figure 7.41), one being a possible awl, and a nondescript item, possibly jewellery. While the tools have been placed into a typology, it is acknowledged that without a proper macro- or micro-fracture analysis this cannot be done with great certainty (Bradfield 2012). Therefore, they will not be referred to in terms of these categories but rather by the general term, bone points. Like the beads, bone points were found mostly in the upper levels with an isolated find in Spit XVII (Figure 7.42) and altogether their density is very low (8.6/m<sup>3</sup>), peaking in Spit IX (Figure 7.43).

### 7.2.7 Metal artefacts

Only a few metal items were found. They include 11 pieces of bangle (probably copper; Figure 7.44) in Trench 1 from Spits III, VII and two pieces in Spits V and VI, and in Trench 2 they were found in Spits XI-XIV, XVII and XIX. In addition, two pieces of slag occurred in Trench 1, Spit VI, and Trench 2, Spit XIX, along with one broken arrowhead from Trench 1, Spit VII (Figure 7.45). It is not known whether the metal artefacts are made from copper or iron because no metallurgical analysis was conducted.

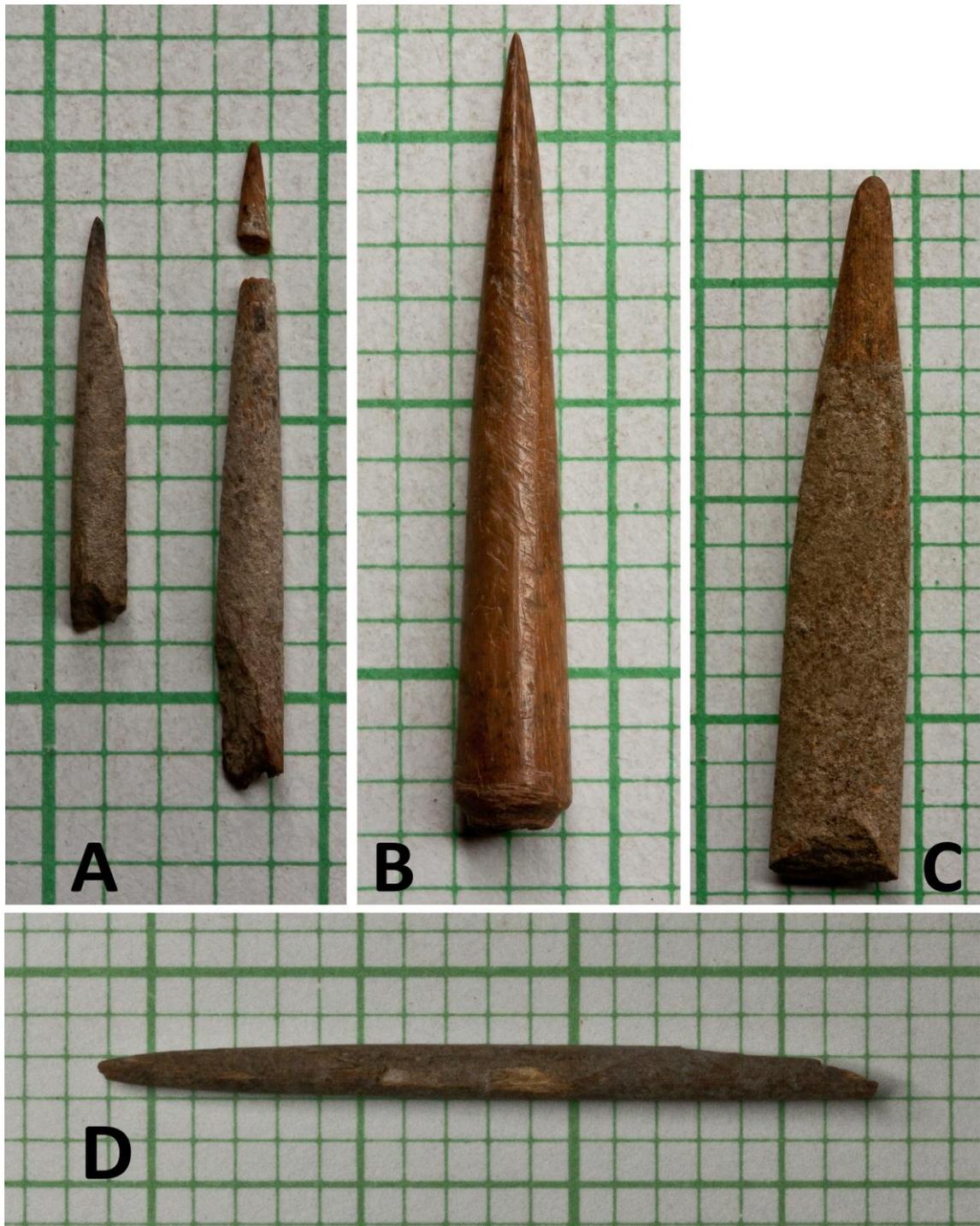


Figure 7.41: Dzombo Shelter: bone point examples: A & D, bone needles; and B & C, linkshafts but C may also be an awl.

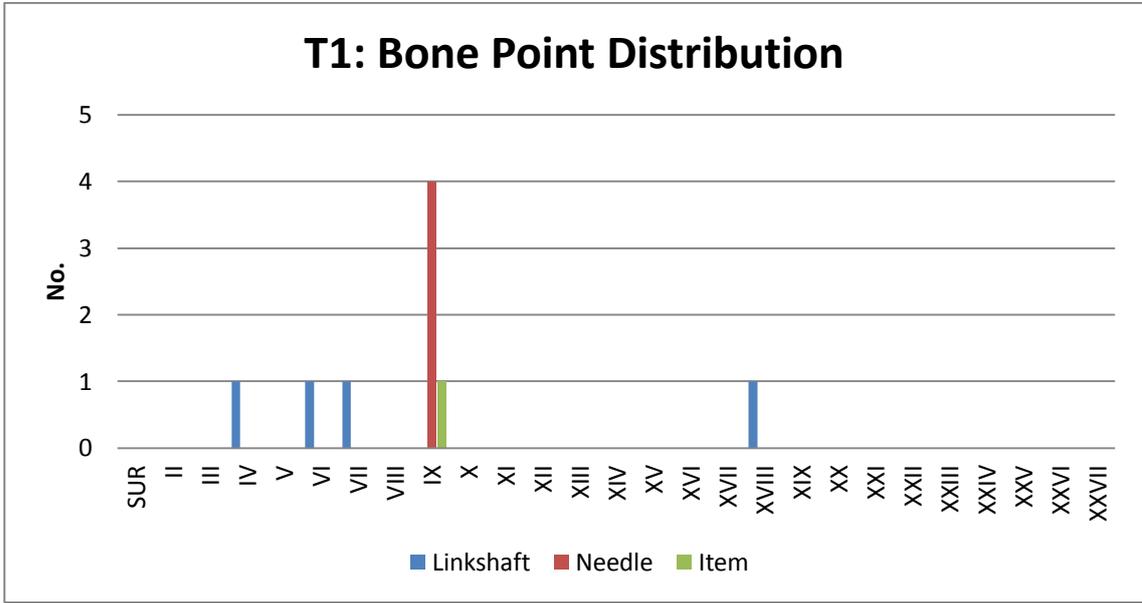


Figure 7.42: Dzombo Shelter: bone point distribution in Trench 1.

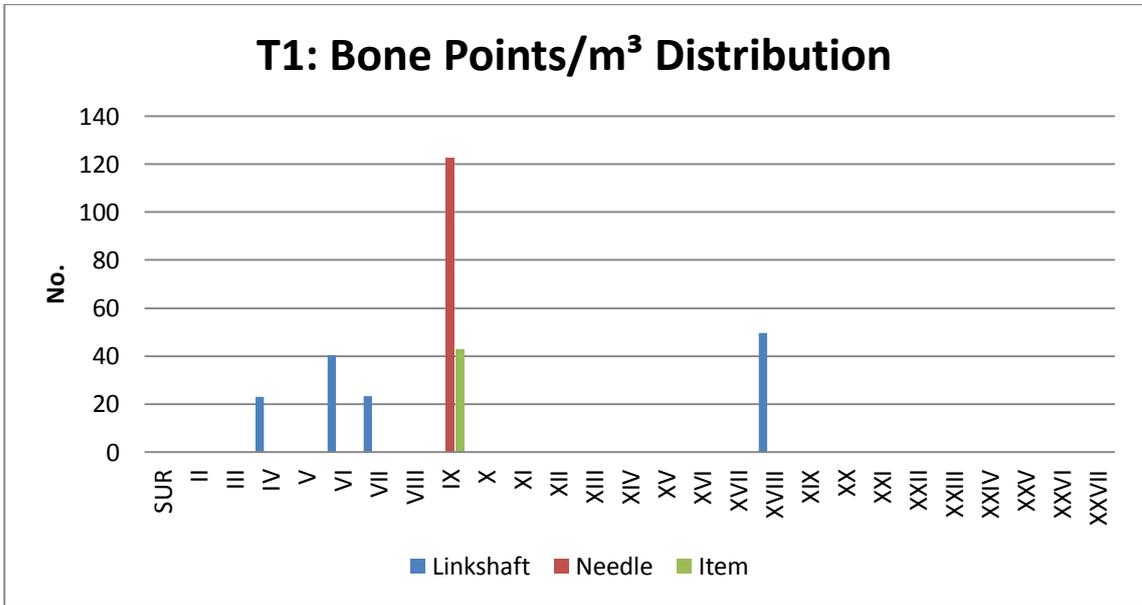
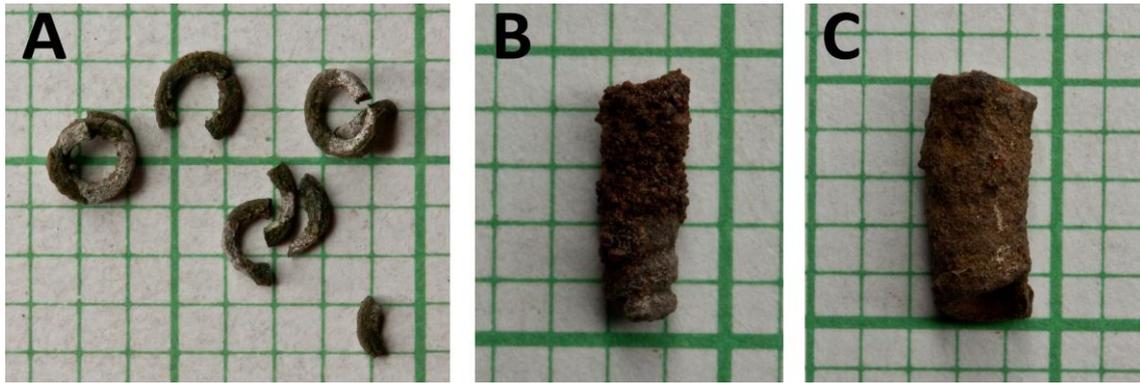


Figure 7.43: Dzombo Shelter: bone point density in Trench 1.



**Figure 7.44: Dzombo Shelter: bangle examples: A, copper rings separated and B & C rings attached.**



**Figure 7.45: Dzombo Shelter: broken arrowhead from Trench 1, Square D, Quadrant D, Spit VII and stratigraphic unit CGS.**

### **7.2.8 Miscellaneous artefacts**

Nine pieces of specularite, presumably for pigment or body decoration, were found in Trench 1 on the surface of Square D and in Spits III (N=2), IV (N=1) and V (N=5).

### **7.2.9 Faunal analysis**

A total mass of 2763.5g of bone was recovered from Dzombo: 2596g from Trench 1 (2485.7g/m<sup>3</sup>) and 167.5g from Trench 2 (262.2g/m<sup>3</sup>). In Trench 1, the faunal remains are concentrated between Spits V and XVIII (Figure 7.46), and a similar pattern is noted with regard to the faunal density in the trench (Figure 7.47). In Trench 2, as with the rest of the assemblage, the majority of the fauna is located nearer to the base of the excavation (Figures 7.48 – 7.49). In both trenches there were also a number of identifiable samples (NISP; see Table 7.14). However, some could only be placed into broad categories such as birds, the various bovid classes (see Brain 1981), crabs, fish, lizards, mammals, mice, rats, rodents, snakes, suids and tortoises. Of the NISPs, the most frequent in

both trenches are tortoise remains, followed in Trench 1 by lizards, bovids and fish. The bovid class can be divided into five sub-categories of which the most common is the uncategorised bovid, followed by bovid class I, bovid class II, bovid class III and, lastly, bovid class IV. Other notable species are sheep in Trench 2, Spit XX, and a possible sheep/goat patella in Trench 1, Spit XII. A spotted or brown hyaena specimen was also found in Trench 2, Spit XX, and the unusual finds from Trench 1 include a chacma baboon and honey badger. The majority of the faunal finds from Trench 1 include a chacma baboon and honey badger. The majority of the faunal assemblage represents animals that can be easily collected, such as tortoises, or snared, including rodents, mice, birds and other reptiles, some of which may have been naturally introduced and were not food sources, yet there too are larger animals, bovid classes II to IV, which would have required active hunting. When NISP distribution is calculated for Trench 1, it is clear that the majority are found between Spits IV and XVIII (Figure 7.50), and predictably so since it is here that most of the faunal remains were found. It is interesting to note the change in faunal distribution when particular species are used. For example, tortoises (Figure 7.51), birds, bovids, crabs, fish and snakes show a changing distribution pattern (Figure 7.52). The tortoise NISP distribution is very similar to the overall faunal NISP distribution, to be expected since tortoise is the major contributor, but most of the bird, crab, fish and snake specimens are situated between Spits IV and XVII, whereas bovid specimens are found in most spits. There seems to have been an increase in the diversity of species subsisted upon at the site between Spits IV and XVII, reflected also in other identified species, and an increase in all other NISPs such as tortoise and bovid, reflected also in the total weight and density of faunal remains found in the trench. It is also in these levels that the majority of other artefacts were found.

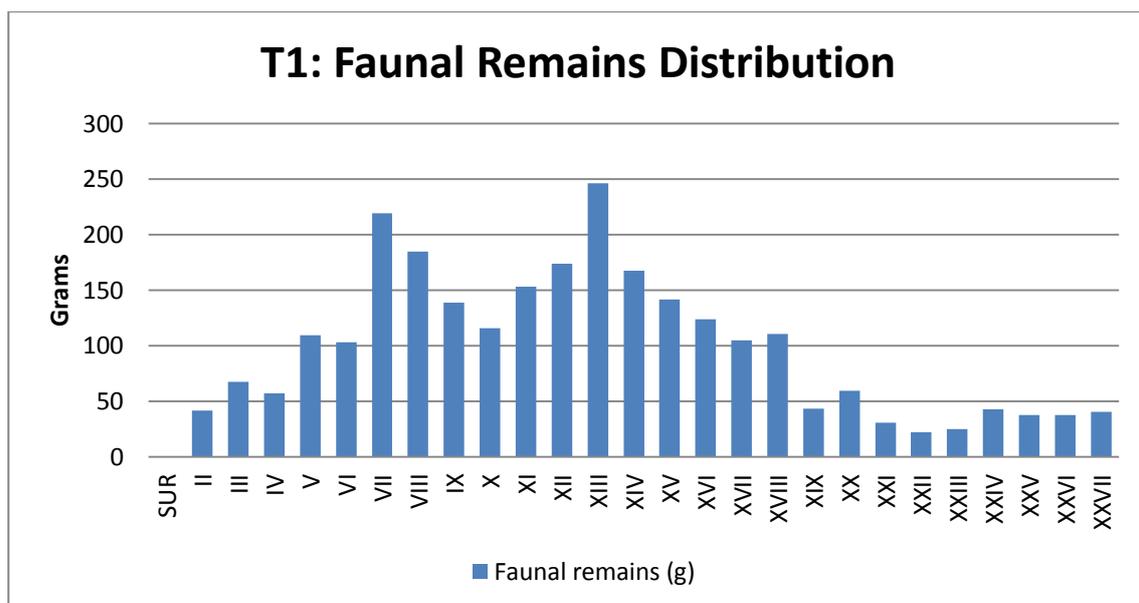


Figure 7.46: Dzombo Shelter: faunal distribution in Trench 1.

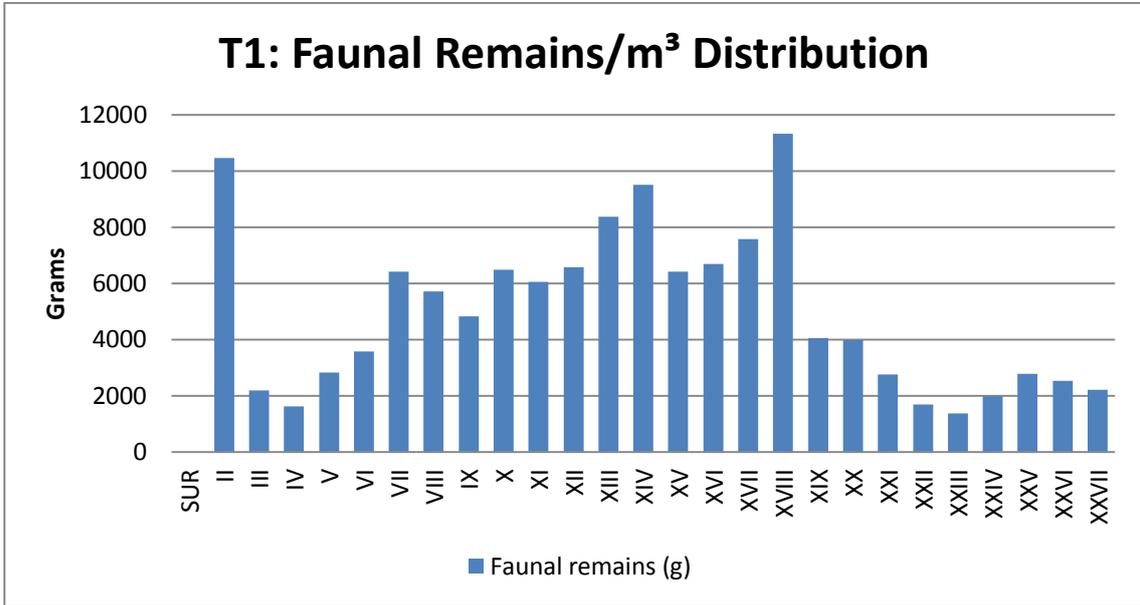


Figure 7.47: Dzombo Shelter: faunal density in Trench 1.

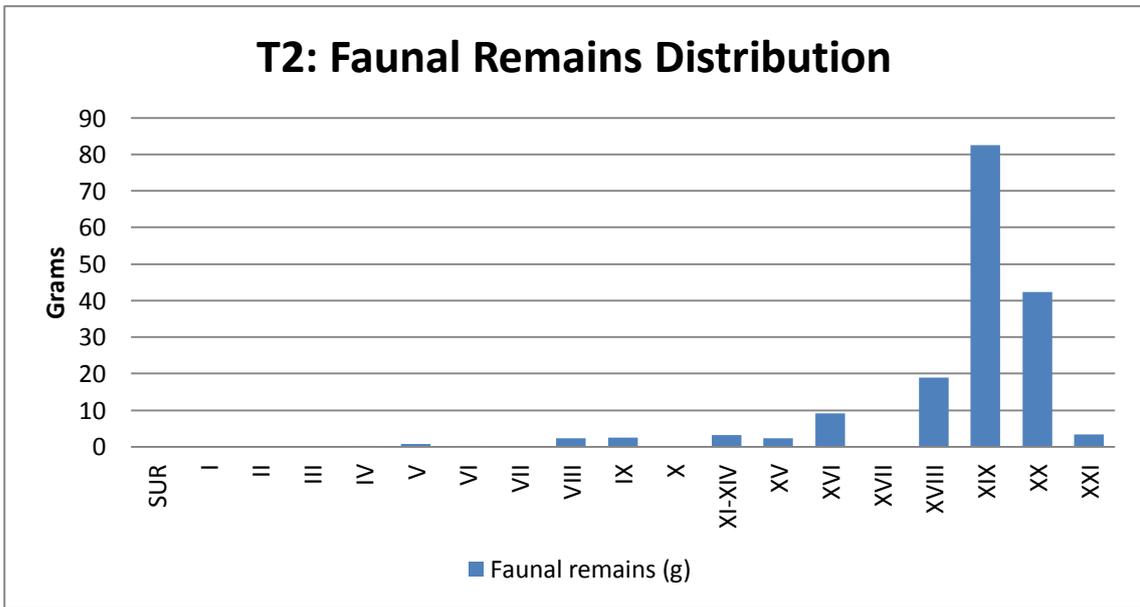
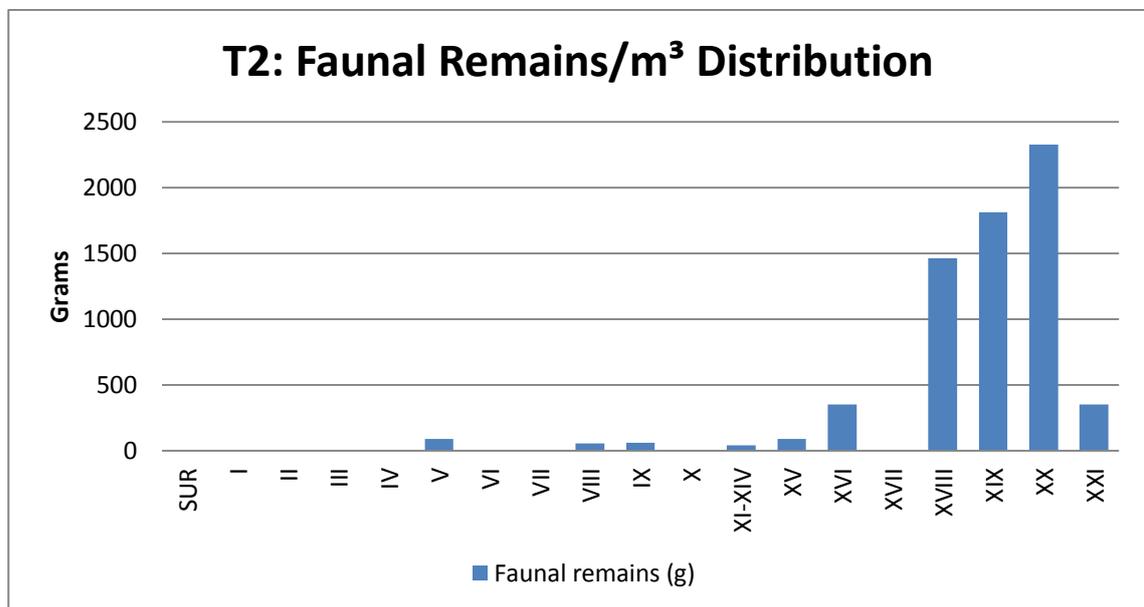


Figure 7.48: Dzombo Shelter: faunal distribution in Trench 2.



**Figure 7.49: Dzombo Shelter: faunal density in Trench 2.**

Table 7.14: Dzombo Shelter: identified faunal remains.

Species	Body part	SUR	I	II	III	IV	V	VI	VII	VIII	IX
<b>Birds</b>											
Birds	Long bone fragment	0	0	0	0	0	0	0	0	0	0
	Rib fragment	0	0	0	0	0	0	0	0	0	0
Birds (finch size)	Beak	0	0	0	0	0	1	0	0	0	0
	Femur	0	0	0	0	1	0	0	0	0	0
	Tarsometatarsus	0	0	0	0	0	1	0	0	0	0
	Ulna	0	0	0	0	0	1	0	0	0	0
Total birds (finch size)		0	0	0	0	1	3	0	0	0	0
Birds (pigeon size)	Corocoid (left)	0	0	0	0	0	0	0	0	0	0
	Tarsometatarsus	0	0	0	0	0	0	0	0	0	0
Total birds (pigeon size)		0	0	0	0	0	0	0	0	0	0
Total birds		0	0	0	0	1	3	0	0	0	0
cf. Cape white-eye <i>Zosterops virens</i>	Femur (left)	0	0	0	0	1	0	0	0	0	0
	Pelvic girdle	0	0	0	0	0	0	1	0	0	0
Total cf. Cape white-eye		0	0	0	0	1	0	1	0	0	0
cf. Francolin <i>Pternistes</i> sp.	Phalanx	0	0	0	0	0	0	0	0	0	0
cf. Sparrow <i>Passer</i> sp.	Femur (right)	0	0	0	0	0	0	1	0	0	0
<b>Crustaceans</b>											
Crab <i>Potamonautidae bayonianus?</i>	Carapace	0	0	0	0	0	1	0	1	1	0
	Pincer/claw	0	0	0	0	0	0	0	1	0	0
Total crab		0	0	0	0	0	1	0	2	1	0
<b>Fish</b>											
Fish Cyprinidae	Vertebra	0	0	0	0	2	7	2	2	0	6
	Vertebra (medium)	0	0	0	0	0	0	0	0	0	0
	Vertebra (small)	0	0	0	0	0	0	3	0	0	0

Total fish		0	0	0	0	2	7	5	2	0	6
<b>Mammals</b>											
Bovid	Caudal vertebra	0	0	0	0	0	0	0	0	0	0
	Enamel	0	0	4	3	9	8	0	1	0	0
	Mandibular ramus	0	0	0	0	0	0	0	0	0	0
	Rib fragment	0	0	0	0	0	0	0	0	1	0
	Tibia	0	0	0	1	0	0	0	0	0	0
	Tooth fragment	0	0	0	2	0	0	0	2	0	0
Bovid class I	Astragalus (left)	0	0	1	0	0	0	0	0	0	0
	Calcaneum (left)	0	0	0	0	0	0	0	0	0	1
	Carpal	0	0	0	0	0	0	0	0	0	0
	Femur (left)	0	0	0	0	0	1	0	0	0	0
	Mastoid process	0	0	0	0	0	0	0	0	0	0
	Metapodial	0	0	1	0	0	0	0	0	0	0
	Metatarsal	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	0	0	0	0	0
	Phalanx (left)	0	0	0	0	0	0	0	0	0	0
	Phalanx (right)	0	0	0	0	0	0	0	0	0	0
	Scaphoid	0	0	0	0	0	0	0	0	0	0
	Ulna (right)	0	0	0	0	0	1	0	0	0	0
	Ulna (right)	0	0	0	0	0	0	0	0	0	0
Total bovid class I		0	0	2	0	0	2	0	0	0	1
Bovid class II	Accessory carpal	0	0	0	0	0	0	1	0	0	0
	Humerus (distal trochanter)	0	0	0	0	0	0	0	0	0	0
	Metapodial	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	1	0	0	0	0	1	0	1
	Phalanx (left)	0	0	0	0	0	0	0	2	0	0
	Tarsal	0	0	0	0	0	0	0	0	0	0

Total bovid class II		0	0	1	0	0	0	1	3	0	1
Bovid class III	Cranial fragment	0	0	0	0	0	0	0	1	0	0
	Lunar	0	0	0	0	0	0	0	0	0	0
	Metatarsal (left)	0	0	0	0	0	0	0	0	0	0
	Phalanx (left)	0	0	0	0	0	0	0	0	0	0
Total bovid class III		0	0	0	0	0	0	1	0	0	
Bovid class IV	Cranial fragment	0	0	0	0	0	0	0	1	0	0
Bovid: neonate	Phalanx	0	0	0	0	1	0	0	0	0	0
Total bovid		0	0	7	6	9	10	1	7	1	2
cf. Impala <i>Aepyceros melampus</i>	Incisor	0	0	0	1	0	0	0	0	0	0
	Phalanx	0	0	1	0	0	0	0	0	0	0
Total cf. impala		0	0	1	1	0	0	0	0	0	0
cf. Lagomorph	Astragalus (left)	0	0	0	0	0	1	0	0	0	0
	Metatarsal	0	0	0	0	0	0	0	0	2	0
	Phalanx	0	0	0	0	0	0	0	0	1	0
Total cf. lagomorph		0	0	0	0	0	1	0	0	3	0
cf. Rabbit <i>Lagomorpha</i> sp.	Phalanx	0	0	0	0	0	0	0	0	0	1
cf. Sheep/goat <i>Ovi/capra</i>	Patella	0	0	0	0	0	0	0	0	0	0
cf. Steenbok <i>Raphicerus campestris</i>	Humerus	0	0	0	0	0	0	0	1	0	0
Chacma baboon <i>Papio hamadryas</i>	Phalanx	0	0	0	0	0	0	0	1	0	0
Duiker <i>Cephalophini</i> sp.	Navicular-cuboid	0	0	0	0	0	0	1	0	0	0
Honey badger <i>Mellivora capensis</i>	Deciduous first molar	0	0	0	0	1	0	0	0	0	0
Hyrax <i>Provavia capensis</i>	Humerus (left)	0	0	0	0	0	0	0	0	0	0
	Tooth (milk)	0	0	0	0	0	0	0	0	0	0
Total hyrax		0	0	0	0	0	0	0	0	0	0
Impala <i>Aepyceros melampus</i>	Incisor	0	0	0	0	0	0	0	0	0	0
Jameson's red rock rabbit <i>Pronolagus randensis</i>	Astragalus	0	0	0	0	0	0	0	0	0	0
	Maxilla	0	0	0	0	0	1	0	0	0	0

Jameson's red rock rabbit	Metatarsal	0	0	0	0	0	0	0	0	0	0
	Molar	0	0	0	0	0	1	0	0	0	0
Total rabbit		0	0	0	0	0	2	0	0	0	0
Klipspringer <i>Oreotragus oreotragus</i>	Maxilla fragment	0	0	0	0	0	0	0	0	0	0
Mammalian	Epiphysis (unfused)	0	0	0	0	0	0	0	1	0	0
	Humerus (shaft)	0	0	0	0	0	0	0	0	0	0
	Rib fragment	0	0	0	1	0	0	0	0	1	0
	Vertebra	0	0	0	0	0	0	0	0	0	0
	Vertebra fragment	0	0	0	0	0	0	0	0	0	0
Total mammalian		0	0	0	1	0	0	0	1	1	0
Microfauna	Humerus	0	0	0	1	0	0	0	0	0	0
	Vertebra	0	0	0	1	0	0	0	0	0	0
Total microfauna		0	0	0	2	0	0	0	0	0	0
Mouse	Femur (left)	0	0	0	0	0	0	0	0	0	0
Mus	Humerus (right)	0	0	0	0	0	0	0	0	0	0
Total mouse		0	0	0	0	0	0	0	0	0	0
Porcupine	Enamel	0	0	1	0	0	0	0	0	0	0
<i>Hystix africae australis</i>	Incisor	0	0	0	0	0	0	0	0	0	0
Total porcupine		0	0	1	0	0	0	0	0	0	0
Rat Murinae	Caudal vertebra	0	0	1	0	0	0	0	0	0	0
	Incisor	0	0	1	0	0	0	0	0	0	0
	Mandible fragment	0	0	0	0	0	0	0	0	0	0
	Maxilla (right)	0	0	0	0	0	0	0	0	0	0
	Tibia (right)	0	0	0	0	0	1	0	0	0	0
Total rat		0	0	2	0	0	1	0	0	0	0
Rodent Rodentia	Femur	0	0	0	0	0	0	0	0	0	0
	Femur (right)	0	0	0	0	0	2	0	0	0	0
	Humerus	0	0	0	1	0	0	0	0	0	0

Rodent	Humerus (left)	0	0	0	0	0	2	0	0	0	0
	Humerus (right)	0	0	0	0	0	0	0	0	0	0
	Iliac	0	0	0	0	0	0	0	0	0	0
	Incisor	0	0	0	0	0	0	0	0	0	0
	Pelvis	0	0	0	0	0	0	0	0	0	0
	Pelvis (left)	0	0	1	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	1	0	0	0	0
	Scapula	0	0	0	0	0	0	0	0	0	0
	Vertebra (juvenile)	0	0	0	0	0	0	0	0	0	0
Total rodent		0	0	1	1	0	5	0	0	0	0
Suid <i>Suiformes</i> sp.	Metatarsal	0	0	0	0	0	0	0	0	0	0
Suid (not domestic)	Tooth	0	0	0	0	0	0	0	0	0	0
Total suid		0	0	0	0	0	0	0	0	0	0

### Reptiles

Lizard Sauria	Clavicle (large)	0	0	0	0	0	0	0	0	0	0
	Cranial fragment	0	0	0	0	1	0	0	0	0	0
	Femur (small)	0	0	1	0	0	0	0	0	0	0
	Furcula (left)	0	0	0	0	0	0	0	0	0	1
	Humerus	0	0	0	0	0	0	0	0	0	0
	Ilium (large)	0	0	1	0	0	0	0	0	0	0
	Mandible fragment	0	0	0	0	2	0	2	0	0	0
	Maxilla	0	0	0	1	0	1	0	0	0	0
	Maxilla (medium)	0	0	0	0	0	0	0	0	0	0
	Maxilla (small)	0	0	0	0	0	0	0	0	1	0
	Maxilla (small)	0	0	0	0	0	0	0	0	0	0
	Metatarsal	0	0	0	0	1	0	0	0	0	0
	Metatarsal (large)	0	0	0	0	1	0	0	0	0	0
	Pelvis	0	0	0	0	0	0	0	0	0	0

Lizard continued	Pelvis (small)	0	0	0	0	0	0	0	0	0	0
	Pubis fragment	0	0	1	0	0	0	0	0	0	1
	Rib fragment	0	0	0	0	1	1	0	1	0	0
	Tibia	0	0	0	0	0	0	0	0	0	0
	Vertebra	0	0	0	0	0	0	2	0	0	0
	Vertebra (large)	0	0	0	0	1	0	1	5	2	0
	Vertebra (medium)	0	0	0	0	0	1	0	0	2	0
	Vertebra (small)	0	0	0	3	0	0	1	0	2	1
	Vertebra (very large)	0	0	1	0	0	0	0	0	0	0
Total lizard		0	0	4	4	7	3	6	6	7	3
Reptile Reptilia	Cranial fragment	0	0	0	0	0	0	0	0	1	0
	Humerus	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	0	0	0	1	0
	Tibia	0	0	0	0	0	0	0	0	0	0
Total reptile		0	0	0	0	0	0	0	0	2	0
Rock monitor <i>Veranus niloticus</i>	Cranial fragment	0	0	0	0	0	0	0	0	0	0
	Ilium	0	0	0	1	0	0	0	0	0	0
	Rib fragment	0	0	0	0	0	0	0	0	0	0
	Vertebra	0	0	0	0	0	0	0	0	0	0
Total rock monitor		0	0	0	1	0	0	0	0	0	0
Snake Serpentes	Vertebra	0	0	0	0	3	2	2	0	0	1
Tortoise Testudines	Carapace	0	0	9	4	5	28	18	36	32	34
	Femur (left, juvenile)	0	0	0	0	0	0	0	0	0	0
	Femur (right)	0	0	0	0	0	0	0	0	0	0
	Humerus	0	0	0	0	0	0	0	0	0	0
	Tibia	0	0	0	0	0	0	0	0	0	0
	Ulna	0	0	1	0	0	0	0	0	0	0
	Vertebra	0	0	0	0	0	1	0	0	0	0

Tortoise continued	Vertebra/carapace	0	0	0	0	0	0	0	0	0	0
Total tortoise		0	0	10	4	5	29	18	36	32	34

**Total:** 0 0 26 20 30 64 35 57 47 47

**Indeterminate**

Cranial fragment	0	0	0	0	0	3	0	0	0	0
Enamel	0	0	2	3	2	6	5	4	4	1
Maxilla	0	0	0	0	0	0	0	0	0	1
Metapodial	0	0	0	0	0	1	0	0	0	0
Rib fragment	0	0	0	0	0	0	4	0	0	1
Tibia (juvenile)	0	0	0	0	0	0	0	0	0	0
Tooth fragments	0	0	0	0	0	0	0	2	0	0
Vertebra	0	0	0	0	0	1	0	0	0	0
Vertebra (medium)	0	0	0	0	0	0	0	0	1	0
Vertebral body	0	0	0	0	0	0	1	0	0	0
Vertebral spine	0	0	0	0	0	0	0	0	0	0
Vertebral spine (thoracic)	0	0	0	0	0	0	0	0	0	0

**Total:** 0 0 2 3 2 11 10 6 5 3

**Grand total:** 0 0 28 23 32 75 45 63 52 50

Species	Body part	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
<b>Birds</b>											
Birds	Long bone fragment	0	0	0	0	0	0	0	1	0	0
	Rib fragment	0	0	0	1	0	0	0	1	0	0
Birds (finch size)	Beak	0	0	0	0	0	0	0	0	0	0
	Femur	0	0	1	0	0	0	0	0	0	0
	Tarsometatarsus	0	0	0	0	0	0	0	0	0	0
	Ulna	0	0	0	0	0	0	0	0	0	0
Total birds (finch size)		0	0	1	0	0	0	0	0	0	0
Birds (pigeon size)	Corocoid (left)	0	0	0	0	0	1	0	0	0	0
	Tarsometatarsus	1	0	0	0	0	0	0	0	0	0
Total birds (pigeon size)		1	0	0	0	0	1	0	0	0	0
Total birds		1	0	1	1	0	1	0	2	0	0
cf. Cape white-eye <i>Zosterops virens</i>	Femur (left)	0	0	0	0	0	0	0	0	0	0
	Pelvic girdle	0	0	0	0	0	0	0	0	0	0
Total cf. Cape white-eye		0	0	0	0	0	0	0	0	0	0
cf. Francolin <i>Pternistes</i> sp.	Phalanx	0	1	0	0	0	0	0	0	0	0
cf. Sparrow <i>Passer</i> sp.	Femur (right)	0	0	0	0	0	0	0	0	0	0
<b>Crustaceans</b>											
Crab <i>Potamonautidae bayonianus?</i>	Carapace	0	0	0	0	0	1	0	0	0	0
	Pincer/claw	0	0	0	0	0	0	0	0	0	0
Total crab		0	0	0	0	0	1	0	0	0	0
<b>Fish</b>											
Fish Cyprinidae	Vertebra	2	4	2	8	5	2	4	2	0	4
	Vertebra (medium)	0	0	0	0	2	0	1	0	0	0
	Vertebra (small)	0	0	0	0	1	0	1	0	0	0
Total fish		2	4	2	8	8	2	6	2	0	4

**Mammals**

Bovid	Caudal vertebra	0	1	0	0	0	0	0	0	0	0
	Enamel	0	1	5	0	0	3	4	0	6	0
	Mandibular ramus	0	0	0	1	0	0	0	0	0	0
	Rib fragment	0	0	0	0	0	0	0	0	0	0
	Tibia	0	0	0	0	0	0	0	0	0	0
	Tooth fragment	0	0	0	0	0	0	0	0	0	0
Bovid class I	Astragalus (left)	1	0	0	0	0	0	0	0	0	0
	Calcaneum (left)	0	0	0	0	0	0	0	0	0	0
	Carpal	0	0	0	0	0	1	0	0	0	0
	Femur (left)	0	0	0	0	0	0	0	0	0	0
	Mastoid process	0	0	0	0	0	0	0	0	1	0
	Metapodial	0	0	0	0	0	0	0	0	0	0
	Metatarsal	0	0	1	0	0	0	0	0	0	1
	Phalanx	0	0	0	1	1	0	0	0	0	0
	Phalanx (left)	0	0	0	1	0	0	0	0	0	0
	Phalanx (right)	0	0	0	1	0	0	0	0	0	0
	Scaphoid	0	0	1	0	0	0	0	0	0	0
	Ulna (right)	0	0	0	0	0	0	0	0	0	0
Ulna (right)	0	0	0	0	1	0	0	0	0	0	
Total bovid class I		1	0	2	3	2	1	0	0	1	1
Bovid class II	Accessory carpal	0	0	0	0	0	0	0	0	0	0
	Humerus (distal trochanter)	1	0	0	0	0	0	0	0	0	0
	Metapodial	0	0	1	0	0	0	1	0	0	0
	Phalanx	0	0	1	0	0	0	0	0	0	0
	Phalanx (left)	0	0	0	0	0	0	0	0	0	0
	Tarsal	0	0	0	0	0	0	0	0	0	0
Total bovid class II		1	0	2	0	0	0	1	0	0	0

Bovid class III	Cranial fragment	0	0	0	0	0	0	0	0	0	0
	Lunar	0	0	0	1	0	0	0	0	0	0
	Metatarsal (left)	0	0	0	1	0	0	0	0	0	0
	Phalanx (left)	0	0	0	1	0	0	0	0	0	0
Total bovid class III		0	0	0	3	0	0	0	0	0	0
Bovid class IV	Cranial fragment	0	0	0	0	0	0	0	0	0	0
Bovid: neonate	Phalanx	0	0	0	0	0	0	0	0	0	0
Total bovid		2	2	9	7	2	4	5	0	7	1
cf. Impala <i>Aepyceros melampus</i>	Incisor	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	0	0	0	0	0
Total cf. impala		0	0	0	0	0	0	0	0	0	0
cf. Lagomorph	Astragalus (left)	0	0	0	0	0	0	0	0	0	0
	Metatarsal	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	0	0	0	0	0
Total cf. lagomorph		0	0	0	0	0	0	0	0	0	0
cf. Rabbit <i>Lagomorpha</i> sp.	Phalanx	0	0	0	0	0	0	0	0	0	0
cf. Sheep/goat <i>Ovi/capra</i>	Patella	0	0	1	0	0	0	0	0	0	0
cf. Steenbok <i>Raphicerus campestris</i>	Humerus	0	0	0	0	0	0	0	0	0	0
Chacma baboon <i>Papio hamadryas</i>	Phalanx	0	0	0	0	0	0	0	0	0	0
Duiker <i>Cephalophini</i> sp.	Navicular-cuboid	0	0	0	0	0	0	0	0	0	0
Honey badger <i>Mellivora capensis</i>	Deciduous first molar	0	0	0	0	0	0	0	0	0	0
Hyrax <i>Provavia capensis</i>	Humerus (left)	0	0	0	0	0	0	0	1	0	0
	Tooth (milk)	0	0	1	0	0	0	0	0	0	0
Total hyrax		0	0	1	0	0	0	0	1	0	0
Impala <i>Aepyceros melampus</i>	Incisor	0	0	0	0	0	0	1	0	0	0
Jameson's red rock rabbit <i>Pronolagus randensis</i>	Astragalus	0	0	0	0	0	0	0	0	1	0
	Maxilla	0	0	0	0	0	0	0	1	0	0
	Metatarsal	0	0	0	0	1	0	0	0	0	0

Jameson's red rock rabbit continued	Molar	0	0	0	0	0	1	0	0	0	0
Total rabbit		0	0	0	0	1	1	0	1	1	0
Klipspringer <i>Oreotragus oreotragus</i>	Maxilla fragment	0	1	0	0	0	0	0	0	0	0
Mammalian	Epiphysis (unfused)	0	0	0	0	0	0	0	0	0	0
	Humerus (shaft)	0	0	0	0	1	0	0	0	0	0
	Rib fragment	0	0	0	0	0	0	0	0	0	0
	Vertebra	0	0	0	1	0	0	0	0	0	0
	Vertebra fragment	0	0	0	0	0	0	0	0	0	0
Total mammalian		0	0	0	1	1	0	0	0	0	0
Microfauna	Humerus	0	0	0	0	0	0	0	0	0	0
	Vertebra	0	0	0	0	0	0	0	0	0	0
Total microfauna		0	0	0	0	0	0	0	0	0	0
Mouse	Femur (left)	0	0	0	0	0	0	0	0	2	0
Mus	Humerus (right)	0	0	0	0	0	0	0	0	1	0
Total mouse		0	0	0	0	0	0	0	0	3	0
Porcupine	Enamel	0	0	0	0	0	0	0	0	0	0
<i>Hystix africae australis</i>	Incisor	0	0	0	0	0	1	0	0	0	0
Total porcupine		0	0	0	0	0	1	0	0	0	0
Rat Murinae	Caudal vertebra	0	0	0	0	0	0	0	0	0	0
	Incisor	0	0	0	0	0	0	0	0	0	0
	Mandible fragment	1	0	0	0	0	0	0	0	0	0
	Maxilla (right)	0	0	0	1	0	0	0	0	0	0
	Tibia (right)	0	0	0	0	0	0	0	0	0	0
Total rat		1	0	0	1	0	0	0	0	0	0
Rodent Rodentia	Femur	0	0	0	0	0	1	0	0	0	0
	Femur (right)	1	0	0	0	0	0	0	0	0	0
	Humerus	0	0	0	0	0	1	0	0	0	0
	Humerus (left)	0	0	0	0	0	0	0	0	0	0

Rodent continued	Humerus (right)	0	0	0	0	0	0	0	0	0	0
	Iliac	0	0	0	0	0	0	0	0	0	0
	Incisor	0	0	1	0	0	0	0	0	0	0
	Pelvis	0	0	0	0	0	0	0	0	0	1
	Pelvis (left)	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	0	0	0	0	0
	Scapula	0	0	0	0	1	0	0	0	0	0
	Vertebra (juvenile)	1	0	0	0	0	0	0	0	0	0
Total rodent		2	0	1	0	1	2	0	0	0	1
Suid <i>Suiformes</i> sp.	Metatarsal	0	0	1	0	0	0	0	0	0	0
Suid (not domestic)	Tooth	0	0	0	0	0	0	0	0	0	0
Total suid		0	0	1	0	0	0	0	0	0	0

#### Reptiles

Lizard Sauria	Clavicle (large)	0	0	0	0	0	0	0	0	0	0
	Cranial fragment	1	0	0	1	0	1	0	0	0	0
	Femur (small)	0	0	0	0	0	0	0	0	0	0
	Furcula (left)	0	0	0	0	0	0	0	0	0	0
	Humerus	0	0	0	0	0	1	0	0	0	0
	Ilium (large)	0	0	0	0	0	0	0	0	0	0
	Mandible fragment	0	0	0	0	0	0	0	0	0	0
	Maxilla	0	0	0	0	1	0	0	0	0	0
	Maxilla (medium)	0	0	0	0	0	0	0	0	0	0
	Maxilla (small)	0	0	0	0	0	0	0	0	0	0
	Maxilla (small)	0	0	0	1	0	0	0	0	0	0
	Metatarsal	0	0	0	0	0	0	0	0	0	0
	Metatarsal (large)	0	0	0	0	0	0	0	0	0	0
	Pelvis	0	0	0	0	0	0	0	0	0	0
	Pelvis (small)	0	0	0	0	0	0	0	0	0	0

Lizard continued	Pubis fragment	0	0	0	0	1	0	0	0	0	0
	Rib fragment	0	0	0	0	0	0	0	1	0	1
	Tibia	0	0	0	0	0	0	0	0	0	0
	Vertebra	0	0	1	4	0	0	1	1	0	0
	Vertebra (large)	0	0	1	0	1	0	0	0	0	0
	Vertebra (medium)	0	1	1	0	3	0	0	0	0	0
	Vertebra (small)	0	0	0	0	18	0	1	0	0	0
	Vertebra (very large)	0	0	0	0	0	0	0	0	0	0
Total lizard		1	1	3	6	24	2	2	2	0	1
Reptile Reptilia	Cranial fragment	0	0	0	0	0	0	0	0	0	0
	Humerus	0	0	0	0	0	0	0	0	0	0
	Phalanx	0	0	0	0	0	0	0	0	0	0
	Tibia	0	0	0	0	0	0	0	0	0	0
Total reptile		0	0	0	0	0	0	0	0	0	
Rock monitor <i>Veranus niloticus</i>	Cranial fragment	0	0	0	0	0	0	1	0	0	0
	Ilium	0	0	0	0	0	0	0	0	0	0
	Rib fragment	0	0	0	1	0	0	1	0	0	0
	Vertebra	0	0	0	2	0	0	1	0	0	0
Total rock monitor		0	0	0	3	0	0	3	0	0	
Snake Serpentes	Vertebra	0	0	0	2	0	1	1	1	0	0
Tortoise Testudines	Carapace	12	16	15	59	26	15	17	9	21	2
	Femur (left, juvenile)	0	0	0	1	0	0	0	0	0	0
	Femur (right)	0	0	1	0	0	0	0	0	0	0
	Humerus	0	0	0	1	0	0	0	0	0	0
	Tibia	0	0	0	0	0	0	0	0	0	0
	Ulna	0	0	0	0	0	0	0	0	0	0
	Vertebra	0	0	0	0	0	1	2	0	0	0
	Vertebra/carapace	0	0	0	1	0	0	0	0	0	0

Total tortoise		12	16	16	62	26	16	19	9	21	2
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**Total:** 21 25 35 91 63 31 37 18 32 9

**Indeterminate**

Cranial fragment	0	0	0	0	0	1	0	0	0	0
Enamel	2	10	5	10	11	0	0	7	2	1
Maxilla	0	0	0	0	0	0	0	0	0	0
Metapodial	0	0	0	0	0	0	0	0	0	0
Rib fragment	1	0	0	5	0	1	0	0	0	0
Tibia (juvenile)	0	0	0	0	0	1	0	0	0	0
Tooth fragments	0	0	0	0	0	0	0	0	0	0
Vertebra	0	0	0	4	0	0	0	0	0	0
Vertebra (medium)	0	1	0	0	0	0	0	0	0	0
Vertebral body	0	0	0	0	0	0	0	0	0	0
Vertebral spine	0	0	0	0	0	1	0	0	0	0
Vertebral spine (thoracic)	0	0	0	0	0	0	1	0	0	0

**Total:** 3 11 5 19 11 4 1 7 2 1

**Grand total:** 24 36 40 110 74 35 38 25 34 10

Species	Body part	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	XXVII	Total
<b>Birds</b>										
Birds	Long bone fragment	0	0	0	0	0	0	0	0	1
	Rib fragment	0	0	0	0	0	0	0	0	2
Birds (finch size)	Beak	0	0	0	0	0	0	0	0	1
	Femur	0	0	0	0	0	0	0	0	2
	Tarsometatarsus	0	0	0	0	0	0	0	0	1
	Ulna	0	0	0	0	0	0	0	0	1
Total birds (finch size)		0	0	0	0	0	0	0	0	5
Birds (pigeon size)	Corocoid (left)	0	0	0	0	0	0	0	0	1
	Tarsometatarsus	0	0	0	0	0	0	0	0	1
Total birds (pigeon size)		0	0	0	0	0	0	0	0	2
Total birds		0	0	0	0	0	0	0	0	10
cf. Cape white-eye <i>Zosterops virens</i>	Femur (left)	0	0	0	0	0	0	0	0	1
	Pelvic girdle	0	0	0	0	0	0	0	0	1
Total cf. Cape white-eye		0	0	0	0	0	0	0	0	2
cf. Francolin <i>Pternistes</i> sp.	Phalanx	0	0	0	0	0	0	0	0	1
cf. Sparrow <i>Passer</i> sp.	Femur (right)	0	0	0	0	0	0	0	0	1
<b>Crustaceans</b>										
Crab <i>Potamonautidae bayonianus?</i>	Carapace	0	0	0	0	0	0	0	0	4
	Pincer/claw	0	0	0	0	0	0	0	0	1
Total crab		0	0	0	0	0	0	0	0	5
<b>Fish</b>										
Fish Cyprinidae	Vertebra	0	0	0	0	0	1	0	1	54
	Vertebra (medium)	0	0	0	0	0	0	0	0	3
	Vertebra (small)	0	0	0	0	0	0	0	0	5
Total fish		0	0	0	0	0	1	0	1	62

**Mammals**

Bovid	Caudal vertebra	0	0	0	0	0	0	0	0	1
	Enamel	0	0	0	0	1	0	0	0	45
	Mandibular ramus	0	0	0	0	0	0	0	0	1
	Rib fragment	0	0	0	0	0	0	0	0	1
	Tibia	0	0	0	0	0	0	0	0	1
	Tooth fragment	0	0	0	0	0	0	0	0	4
Bovid class I	Astragalus (left)	0	0	0	0	0	0	0	0	2
	Calcaneum (left)	0	0	0	0	0	0	0	0	1
	Carpal	0	0	0	0	0	0	0	0	1
	Femur (left)	0	0	0	0	0	0	0	0	1
	Mastoid process	0	0	0	0	0	0	0	0	1
	Metapodial	0	0	0	0	0	0	0	0	1
	Metatarsal	0	0	0	0	0	0	0	0	2
	Phalanx	1	0	0	0	0	0	0	0	3
	Phalanx (left)	0	0	0	0	0	0	0	0	1
	Phalanx (right)	0	0	0	0	0	0	0	0	1
	Scaphoid	0	0	0	0	0	0	0	0	1
	Ulna (right)	0	0	0	0	0	0	0	0	1
	Ulna (right)	0	0	0	0	0	0	0	0	0
Total bovid class I		1	0	0	0	0	0	0	0	17
Bovid class II	Accessory carpal	0	0	0	0	0	0	0	0	1
	Humerus (distal trochanter)	0	0	0	0	0	0	0	0	1
	Metapodial	1	0	0	0	0	0	0	0	3
	Phalanx	0	0	0	0	0	0	0	0	4
	Phalanx (left)	0	0	0	0	0	0	0	0	2
	Tarsal	0	0	0	0	0	1	0	0	1
Total bovid class II		1	0	0	0	0	1	0	0	12

Bovid class III	Cranial fragment	0	0	0	0	0	0	0	0	1
	Lunar	0	0	0	0	0	0	0	0	1
	Metatarsal (left)	0	0	0	0	0	0	0	0	1
	Phalanx (left)	0	0	0	0	0	0	0	0	1
Total bovid class III		0	0	0	0	0	0	0	0	4
Bovid class IV	Cranial fragment	0	0	0	0	0	0	0	0	1
Bovid: neonate	Phalanx	0	0	0	0	0	0	0	0	1
Total bovid		2	0	0	0	1	1	0	0	86
cf. Impala <i>Aepyceros melampus</i>	Incisor	0	0	0	0	0	0	0	0	1
	Phalanx	0	0	0	0	0	0	0	0	1
Total cf. impala		0	0	0	0	0	0	0	0	2
cf. Lagomorph	Astragalus (left)	0	0	0	0	0	0	0	0	1
	Metatarsal	0	0	0	0	0	0	0	0	2
	Phalanx	0	0	0	0	0	0	0	0	1
Total cf. lagomorph		0	0	0	0	0	0	0	0	4
cf. Rabbit <i>Lagomorpha</i> sp.	Phalanx	0	0	0	0	0	0	0	0	1
cf. Sheep/goat <i>Ovi/capra</i>	Patella	0	0	0	0	0	0	0	0	1
cf. Steenbok <i>Raphicerus campestris</i>	Humerus	0	0	0	0	0	0	0	0	1
Chacma baboon <i>Papio hamadryas</i>	Phalanx	0	0	0	0	0	0	0	0	1
Duiker <i>Cephalophini</i> sp.	Navicular-cuboid	0	0	0	0	0	0	0	0	1
Honey badger <i>Mellivora capensis</i>	Deciduous first molar	0	0	0	0	0	0	0	0	1
Hyrax <i>Provavia capensis</i>	Humerus (left)	0	0	0	0	0	0	0	0	1
	Tooth (milk)	0	0	0	0	0	0	0	0	1
Total hyrax		0	0	0	0	0	0	0	0	2
Impala <i>Aepyceros melampus</i>	Incisor	0	0	0	0	0	0	0	0	1
Jameson's red rock rabbit <i>Pronolagus randensis</i>	Astragalus	0	0	0	0	0	0	0	0	1
	Maxilla	0	0	0	0	0	0	0	0	2
	Metatarsal	0	0	0	0	0	0	0	0	1

Jameson's red rock rabbit continued	Molar	0	0	0	0	0	0	0	0	2
Total rabbit		0	0	0	0	0	0	0	0	6
Klipspringer <i>Oreotragus oreotragus</i>	Maxilla fragment	0	0	0	0	0	0	0	0	1
Mammalian	Epiphysis (unfused)	0	0	0	0	0	0	0	0	1
	Humerus (shaft)	0	0	0	0	0	0	0	0	1
	Rib fragment	0	0	0	1	0	0	0	2	5
	Vertebra	0	0	0	0	0	0	0	0	1
	Vertebra fragment	0	0	0	0	0	0	0	1	1
Total mammalian		0	0	0	1	0	0	0	3	9
Microfauna	Humerus	0	0	0	0	0	0	0	0	1
	Vertebra	0	0	0	0	0	0	0	0	1
Total microfauna		0	0	0	0	0	0	0	0	2
Mouse	Femur (left)	0	0	0	0	0	0	0	0	2
Mus	Humerus (right)	0	0	0	0	0	0	0	0	1
Total mouse		0	0	0	0	0	0	0	0	3
Porcupine	Enamel	0	0	0	0	0	0	0	0	1
<i>Hystix africae australis</i>	Incisor	0	0	0	0	0	0	0	0	1
Total porcupine		0	0	0	0	0	0	0	0	2
Rat Murinae	Caudal vertebra	0	0	0	0	0	0	0	0	1
	Incisor	0	0	0	0	0	0	0	0	1
	Mandible fragment	0	0	0	0	0	0	0	0	1
	Maxilla (right)	0	0	0	0	0	0	0	0	1
	Tibia (right)	0	0	0	0	0	0	0	0	1
Total rat		0	0	0	0	0	0	0	0	5
Rodent Rodentia	Femur	0	0	0	0	0	0	0	0	1
	Femur (right)	0	0	0	0	1	0	0	0	4
	Humerus	0	0	0	0	0	0	0	0	2
	Humerus (left)	0	0	0	0	0	0	0	0	2

Rodent continued	Humerus (right)	0	0	0	0	1	0	0	0	1
	Iliac	1	0	0	0	0	0	0	0	1
	Incisor	0	0	0	0	0	0	0	1	2
	Pelvis	0	0	0	0	0	0	0	0	1
	Pelvis (left)	0	0	0	0	0	0	0	0	1
	Phalanx	0	0	1	0	0	0	0	0	2
	Scapula	0	0	0	0	0	0	0	0	1
	Vertebra (juvenile)	0	0	0	0	0	0	0	0	1
Total rodent		1	0	1	0	2	0	0	1	19
Suid <i>Suiformes</i> sp.	Metatarsal	0	0	0	0	0	0	0	0	1
Suid (not domestic)	Tooth	0	1	0	0	0	0	0	0	1
Total suid		0	1	0	0	0	0	0	0	2

#### Reptiles

Lizard Sauria	Clavicle (large)	0	0	0	0	0	1	0	0	1
	Cranial fragment	0	0	0	0	0	0	0	0	4
	Femur (small)	0	0	0	0	0	0	0	0	1
	Furcula (left)	0	0	0	0	0	0	0	0	1
	Humerus	0	0	0	0	0	0	0	0	1
	Ilium (large)	0	0	0	0	0	0	0	0	1
	Mandible fragment	0	1	1	0	0	0	0	0	6
	Maxilla	0	0	0	0	0	0	0	0	3
	Maxilla (medium)	0	0	0	0	0	1	0	0	1
	Maxilla (small)	0	0	0	0	0	0	0	0	1
	Maxilla (small)	0	0	0	0	0	0	0	0	1
	Metatarsal	0	0	0	0	0	0	0	0	1
	Metatarsal (large)	0	0	0	0	0	0	0	0	1
	Pelvis	0	0	0	0	0	0	0	1	1
	Pelvis (small)	0	0	0	0	1	0	0	0	1

Lizard continued	Pubis fragment	0	0	0	0	0	0	0	0	3
	Rib fragment	0	0	0	0	0	0	0	0	5
	Tibia	0	0	0	0	0	0	1	0	1
	Vertebra	0	0	0	0	0	1	0	0	10
	Vertebra (large)	0	0	0	0	0	0	0	0	11
	Vertebra (medium)	0	0	0	0	0	0	1	0	9
	Vertebra (small)	0	0	0	1	0	0	0	0	27
	Vertebra (very large)	0	0	0	0	0	0	0	0	1
Total lizard		0	1	1	1	1	3	2	1	92
Reptile Reptilia	Cranial fragment	0	0	0	0	0	0	0	0	1
	Humerus	1	0	0	0	0	0	0	0	1
	Phalanx	0	0	0	0	0	0	0	0	1
	Tibia	0	0	0	0	1	0	0	0	1
Total reptile		1	0	0	0	1	0	0	0	4
Rock monitor <i>Veranus niloticus</i>	Cranial fragment	0	0	0	0	0	0	0	0	1
	Ilium	0	0	0	0	0	0	0	0	1
	Rib fragment	0	0	0	0	0	0	0	0	2
	Vertebra	0	0	0	0	0	0	0	0	3
Total rock monitor		0	0	0	0	0	0	0	0	7
Snake Serpentes	Vertebra	0	0	0	0	0	0	0	0	13
Tortoise Testudines	Carapace	8	1	3	3	3	1	5	2	384
	Femur (left, juvenile)	0	0	0	0	0	0	0	0	1
	Femur (right)	0	0	0	0	0	0	0	0	1
	Humerus	1	0	0	0	0	0	0	0	2
	Tibia	1	0	0	0	0	0	0	0	1
	Ulna	0	0	0	0	0	0	0	0	1
	Vertebra	0	0	0	0	0	0	0	0	4
	Vertebra/carapace	0	0	0	0	0	0	0	0	1

Total tortoise		10	1	3	3	3	1	5	2	395
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**Total:** 14    3    5    5    8    6    7    8    744

**Indeterminate**

Cranial fragment	0	0	0	0	0	0	0	0	4
Enamel	1	3	4	0	1	0	2	1	87
Maxilla	0	0	0	0	0	0	0	0	1
Metapodial	0	0	0	0	0	0	0	0	1
Rib fragment	0	0	0	0	0	0	0	0	12
Tibia (juvenile)	0	0	0	0	0	0	0	0	1
Tooth fragments	0	0	0	0	0	0	0	0	2
Vertebra	1	0	0	0	0	0	0	0	6
Vertebra (medium)	0	0	0	0	0	0	0	0	2
Vertebral body	0	0	0	0	0	0	0	0	1
Vertebral spine	0	0	0	0	0	0	0	0	1
Vertebral spine (thoracic)	0	0	0	0	0	0	0	0	1

**Total:** 2    3    4    0    1    0    2    1    119

**Grand total:** 16    6    9    5    9    6    9    9    863

Table 7.14: continued.

Trench 2										
Species	Birds (finch size)	Bovid	Bovid class I	cf. Hyaena <i>Hyaenidea</i> sp.	Impala <i>Aepyceros melampus</i>	Sheep <i>Ovis aries</i>	Tortoise Testudines			
Bone	Corocoid	Premolar	Phalanx	Caudal vertebra	Phalanx	Tibia	Carapace	Cranial fragment	Tooth root	Total
SUR	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0
II	0	0	0	0	0	0	0	0	0	0
III	0	0	0	0	0	0	0	0	0	0
IV	0	0	0	0	0	0	0	0	0	0
V	1	0	0	0	0	0	0	0	0	1
VI	0	0	0	0	0	0	0	0	0	0
VII	0	0	0	0	0	0	0	0	0	0
VIII	0	0	0	0	0	0	0	0	0	0
IX	0	0	0	0	0	0	0	0	0	0
X	0	0	0	0	0	0	0	0	0	0
XI-XIV	0	0	0	0	0	0	2	0	0	2
XV	0	0	0	0	0	0	1	0	0	1
XVI	0	0	0	0	0	0	0	0	0	0
XVII	0	0	0	0	0	0	0	0	0	0
XVIII	0	1	1	0	1	0	0	0	0	3
XIX	0	0	0	0	0	0	23	0	2	25
XX	0	0	0	1	0	1	19	1	0	22
XXI	0	0	0	0	0	0	0	0	0	0
<b>Total:</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>45</b>	<b>1</b>	<b>2</b>	<b>54</b>

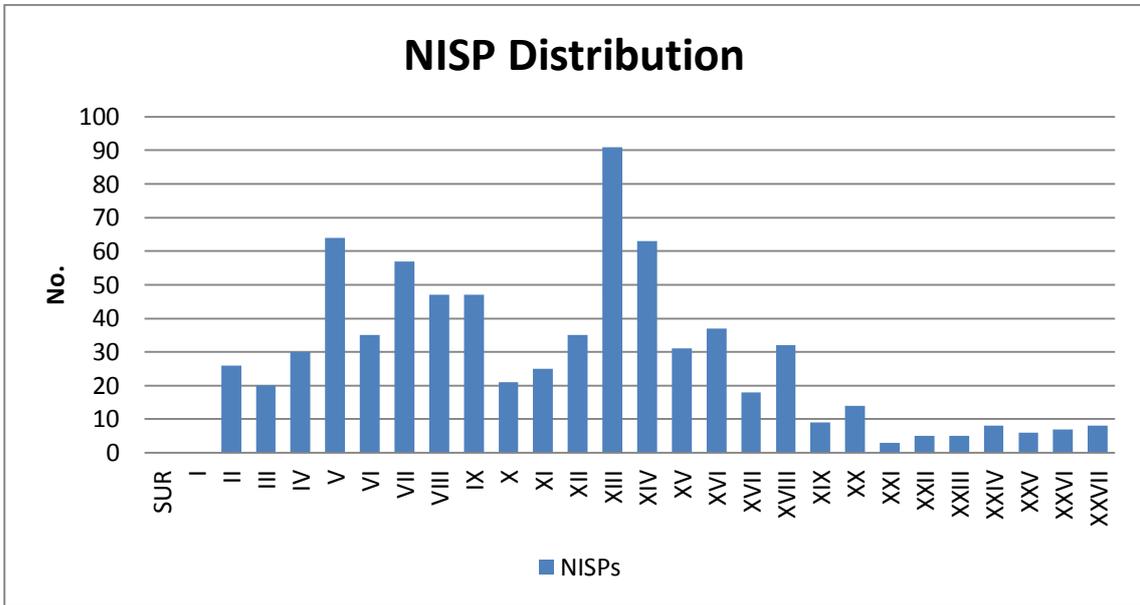


Figure 7.50: Dzombo Shelter: NISP distribution for Trench 1.

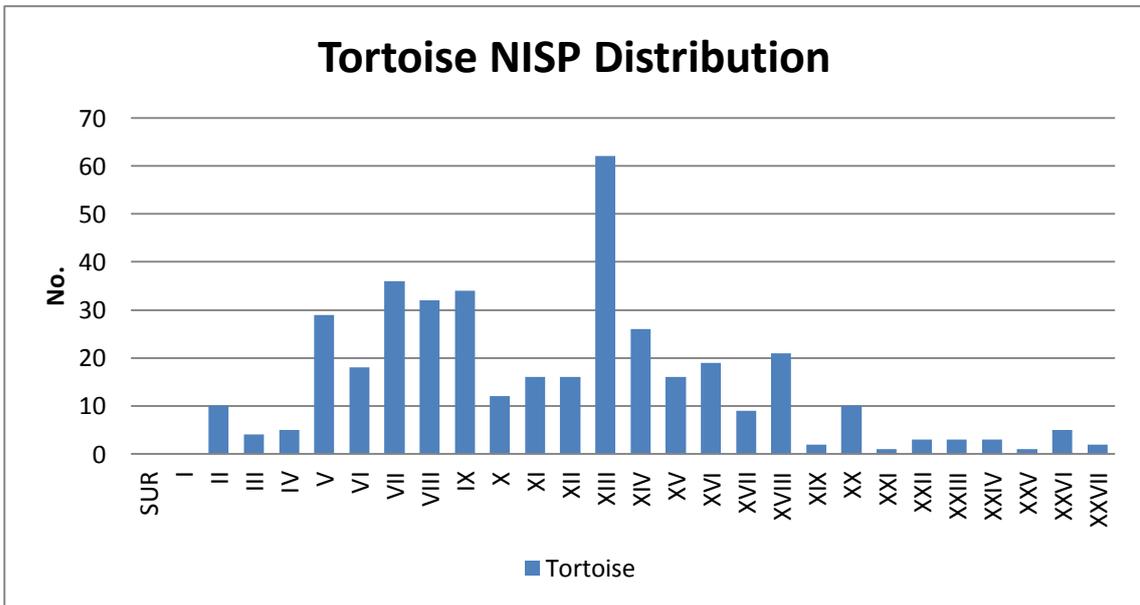


Figure 7.51: Dzombo Shelter: distribution of tortoise NISPs in Trench 1.

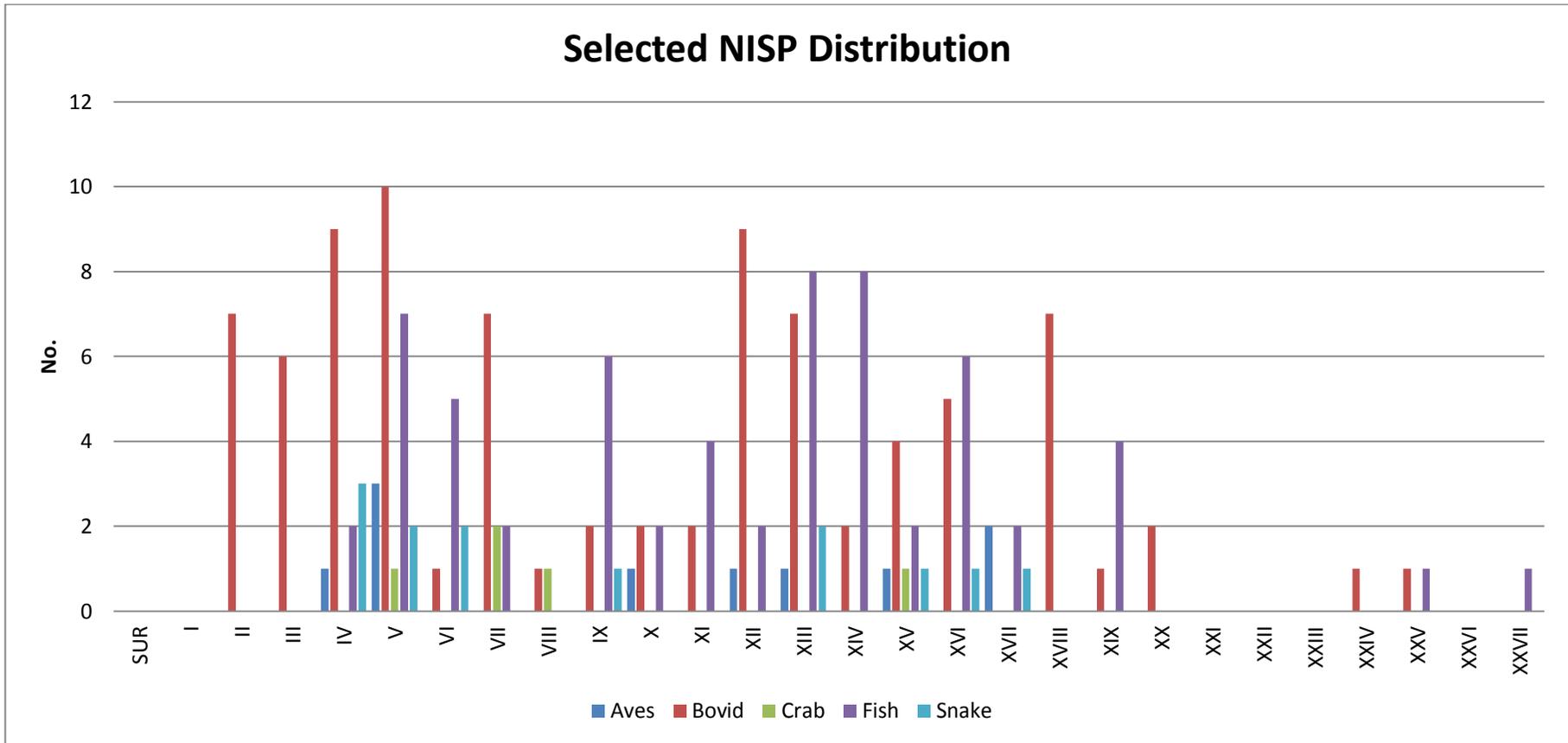


Figure 7.52: Dzombo Shelter: distribution of selected faunal NISPs in Trench 1.

### **7.2.10 Dzombo's sequence**

Dzombo was occupied by at least the first millennium AD until the mid- to late second millennium AD. However, over this time there is evidence of multiple phases present at the rockshelter. With the available information and the radiocarbon dates it is possible to discuss the site in terms of the different chronological phases described in Chapter 4. Figure 7.53 presents a combined graph which includes, in order from the top graph to the bottom, stone tools, ceramics, organic (blue bar) and glass (red bar) and bone points demonstrating the shift in artefact densities. The overall assemblage can be separated into five phases based on chronological markers and artefact changes. They are presented below and all density figures referred to in the text can be found in Table 7.15, but all density analyses should be viewed with caution as no geoarchaeological study has been conducted at the site (see Jerardino 1995); they remain, nonetheless, a useful measure in gauging changes in the archaeological deposit since it still can be used to show the change in artefact preferences between different phases. At this stage I refer to the phases in terms of Phases A to E but in the following chapter I will use J. Alexander's (1984) terminology.

#### **7.2.10.1 Phase A**

The assemblage from these levels date to the last few centuries before the arrival of agriculturalists and so has not undergone the processes of change that accompanied contact with farmers; I am not suggesting that there were no changes before the arrival of farmers but because a lengthy pre-2000 BP sequence was not recovered from Dzombo it is not possible to determine these changes. The stone tool assemblage is fairly large (N=1369) but of interest is the emphasis on quartz, which is still less frequent than CCS but is the highest here when compared to any of the other phases. Formal tools comprise 2.9% of the assemblage when chips are excluded, which is fairly low. There are eight formal tool categories and the most common is backed bladelets (N=7) followed by segments and MRPs (each N=5), medium scrapers (N=3), small scrapers (N=2) and a broken scraper (size indeterminate) and MBP. There are 11 organic and no glass beads, a single bone tool and one ceramic sherd. There are two sherds in Spit XVIII, hence the cut-off for the final LSA phase in Spit XIX, and one sherd in Spit XXV, well below the c. 200 BC (OxA-27137) date suggesting it, or the date, may have moved down the deposit.

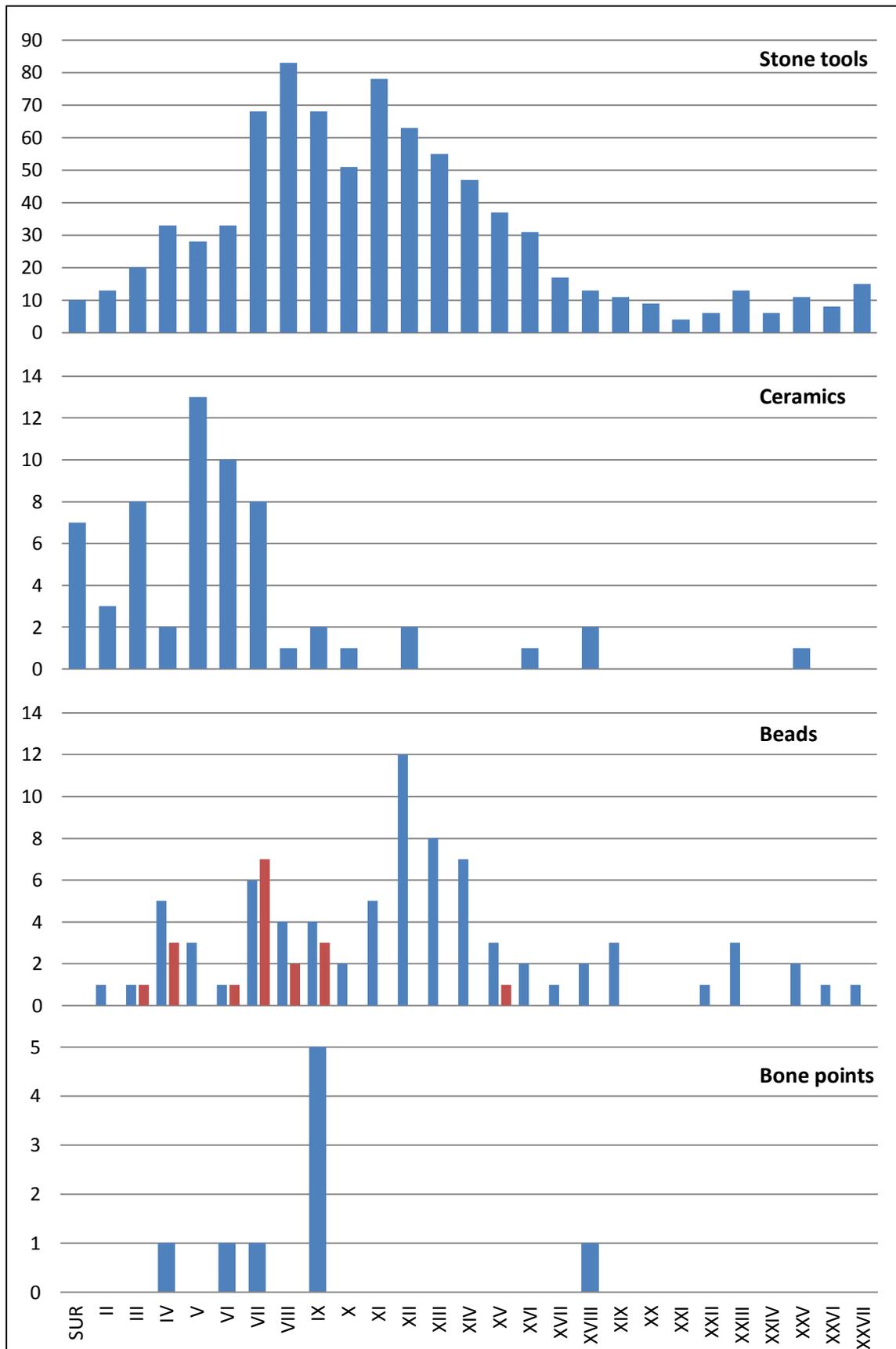


Figure 7.53: Dzombo Shelter: stone tools, ceramics, organic (blue bar) and glass (red bar) beads and bone point.

**Table 7.15: Dzombo Shelter: summarised phases (bold indicates maximum in each category where applicable).**

	Phase E	Phase D	Phase C	Phase B	Phase A	Total
Spits	Surface - III	IV - X	XI - XIII	XIV - XVIII	XIX - XXVII	
M <sup>3</sup>	0.1	0.45	0.17	0.18	0.15	
Stone tools						
No.	534	<b>4739</b>	1368	2102	1369	10112
% of total	5.3	46.9	13.5	20.8	13.5	
/m <sup>3</sup>	5252.8	10506.2	8281	<b>11878.7</b>	9157.2	
Quartz	189	1747	526	815	541	
%	35.4	36.9	<b>38.5</b>	38.8	<b>39.5</b>	
Quartzite	30	344	78	128	109	
%	5.6	7.3	5.7	6.1	8	
CCS	260	2045	571	947	595	
%	<b>48.7</b>	<b>43.2</b>	<b>41.7</b>	<b>45.1</b>	<b>43.5</b>	
Agate	43	442	118	145	83	
%	8.1	9.3	8.6	6.9	6.1	
Dolerite	12	161	75	67	41	
%	2.2	3.4	5.5	3.2	3	
Chips						
No.	335	<b>2596</b>	757	1082	605	5375
% of total	6.2	48.3	14.1	20.1	11.3	
% of within phase	62.7	54.8	55.3	51.5	44.2	
/m <sup>3</sup>	3295.3	5755.2	4582.4	<b>6114.5</b>	4046.8	
Formal tools						
No.	10	<b>95</b>	27	39	22	193
% of total	5.2	49.2	14	20.2	11.4	
% of assemblage	1.9	<b>2</b>	2	1.9	1.6	
% exc. chips	<b>5</b>	4.4	4.4	3.8	2.9	
/m <sup>3</sup>	98.4	210.6	163.4	<b>220.4</b>	147.2	
Scrapers	4	48	7	16	7	
Backed tools	3	26	12	14	10	
Scrapers/backed tools	1.3	<b>1.8</b>	0.6	1.1	0.7	
Cores						
No.	12	<b>67</b>	16	17	10	122
% of total	9.8	54.9	13.1	13.9	8.2	
/m <sup>3</sup>	118	<b>148.5</b>	96.9	96.1	66.9	
Ceramics						
No.	18	<b>37</b>	2	3	1	61
% of total	29.5	60.7	3.3	4.9	1.6	
/m <sup>3</sup>	<b>177.1</b>	82	12.1	17	6.7	

	Phase E	Phase D	Phase C	Phase B	Phase A	
Organic beads						
No.	2	<b>30</b>	20	15	11	78
% of total	2.6	38.5	25.6	19.2	14.1	
/m <sup>3</sup>	19.7	66.5	<b>121.1</b>	84.8	73.6	
Glass beads						
No.	1	<b>16</b>	0	1	0	18
% of total	5.6	88.9	0	5.6	0	
/m <sup>3</sup>	9.8	<b>35.5</b>	0	5.7	0	
Bone tools						
No.	0	<b>8</b>	0	1	0	9
% of total	0	88.9	0	11.1	0	
/m <sup>3</sup>	0	<b>17.7</b>	0	5.7	0	
Faunal remains						
Grams	109.1	<b>1080.7</b>	419.9	648.2	338.1	2596
% of total	4.2	41.6	16.2	25	13	
/m <sup>3</sup>	1073.2	2395.8	2542	<b>3662.9</b>	2261.5	
Metal items						
No.	1	<b>9</b>	0	0	0	10
% of total	10	90	0	0	0	
/m <sup>3</sup>	9.8	<b>20</b>	0	0	0	

### 7.2.10.2 Phase B

Foremost among the changes from Phase A to Phase B, occurring possibly at AD 350, is the increase in artefact densities. The emphasis on CCS materials increases, as does the use of agate and dolerite, while quartz and quartzite frequencies drop. The density of stone tools increases substantially and there is an increase of more than 7% in chips suggesting that there may have been an increase in tool production at the site. There is also a slight rise in formal tools, of which scrapers (N=11) are slightly more frequent than backed bladelets (N=10), followed by medium scrapers and segments (each N=6), MRPs (N=3), large scrapers (N=2) and a flake with a faceted platform and an adze. However, as with the earlier phase, there are still eight formal tool categories. Organic beads increase by only a small amount and there is a single glass bead, three potsherds – one of which is of a K2 type and probably moved down the deposit – a bone tool and an increase in the faunal remains. In summary, all of the artefact categories increased in density.

### 7.2.10.3 Phase C

During Phase C, between AD 900 and 1000, there are only two ceramic sherds present, which is much lower than at Tshisiku (N=67; 230/m<sup>3</sup>), Balerno Main (N=40; 90/m<sup>3</sup>) and Balerno 2 (N=16;

1600/m<sup>3</sup> – the AD 900 to 1000 phase is only represented on the surface at Balerno 2 and so this density may be inaccurate). There are also no glass beads in the assemblage at this level, but significantly more organic beads in the earlier phase. Most of the artefact densities decrease from the previous phase with only organic beads increasing and cores to a much lesser extent. There are still eight formal tool categories being produced, but slightly fewer than before, yet now backed bladelets dominate by nearly 3:1. An additional point of interest is the increase in the use of quartz, which is, as in the final LSA phase, within 5% of CCS. The use of agate and dolerite continue to increase and quartzite decreases further. At the same time at Balerno 3 and Little Muck, CCS and dolerite increase and quartz diminishes (van Doornum 2005: 170) and at Tshisiku CCS decreases with quartzite remaining constant (van Doornum 2007) while at Balerno Main CCS increases and agate drops (van Doornum 2008). It seems that changes in raw material utilisation between the sites are unrelated and must be due to the specific opportunities or problems facing the occupants at each site.

#### **7.2.10.4 Phase D**

There is a general increase in artefact densities from Phase C into Phase D, beginning around AD 1000, followed by a rapid drop in Spit VII. Noteworthy changes are that the use of CCS as a raw material is favoured once again and there are increases in agate and quartzite while the use of quartz and dolerite diminishes. The density of stone tools and the chip component decreases from the previous phase but the frequency of cores is still comparatively high. Bead and faunal remains both drop substantially while ceramics peak to their greatest density at the site. It is also during this phase that the highest frequency of glass beads and bone tools occurs; bone linkshafts were linked directly to trade by Hall and Smith (2000) and may indicate that foragers were obtaining metal inserts during this period. This may be the case at Dzombo, but very few metal items were found. Of these, nine are from Phase D levels comprising of seven copper bangle pieces, one piece of slag or bloom and an arrowhead shaft.

#### **7.2.10.5 Phase E**

The only evidence of an occupation of after AD 1300 is a single Khami sherd, walling that likely dates to after the abandonment of Mapungubwe as no commoners used walling before this point in time and the late radiocarbon dates. It seems likely that at these levels, up to Spit III, the deposit has been mixed and it cannot be said what the association between the various artefacts is. As such, not much can be said about this phase at Dzombo.

### **7.2.11 Summary: Dzombo Shelter**

Dzombo contained a large and diverse archaeological assemblage. Further excavations will increase the sample size significantly and may aid in better understanding certain trends, such as the ceramic assemblage, of which only a few of the diagnostic sherds could be placed into facies, and resolve the dating issue in the upper levels. However, the overall assemblage is sufficiently large in order to address a number of key issues, such as the changing cultural sequence evident at Dzombo from the beginning of the first century AD, a critical point in time due to the arrival of agriculturalists. It also contributes to the aggregation and dispersal debate as well as the impact that being in near proximity to farmers has had on the forager record.

### **7.3 MAFUNYANE SHELTER**

Mafunyane Shelter was excavated by Walker (1994) as part of a larger project to demonstrate forager material variability within Botswana. In his excavations he recovered 14,379 stone tools along with 21 bone points, a small number of tortoise and ostrich eggshell bowl and container pieces, 67 ostrich eggshell beads, 64 potsherds, a pipe and crucible, six glass beads and 16 metal implements as well as large amounts of copper prills. He concluded that, based on the prevalence of scrapers in the assemblage, the site was occupied quite late, probably from the first few centuries AD, but that the foragers using the site were in contact with agriculturalists. In addition, he states that the site was 'clearly a major living site' that 'was probably seasonally occupied, but it was later used by metal-working people to smelt copper' (Walker 1994: 10); he did not mention whether these metal-working people were foragers or agriculturalists.

#### **7.3.1 Regional context**

Mafunyane is located in the sandstone belt in a fine loam to clay soil horizon, which is due to depositional processes occurring in the area by the Limpopo River, 460m away, and a nearby seasonal stream. The area is characterised by low lying sandstone koppies and ridges interspersed with seasonal streams and small floodplains, which may have been cultivated at one stage; on the opposite side of the seasonal stream from Mafunyane is a homestead and series of grainbin foundations with Khami ceramics that date to between AD 1450 and the 1820s. The vegetation around the site is broadly consistent with that of other areas in the sandstone belt and is characterised by dense pockets of mopane veld and more widespread *Vachellia* open shrubland. The site's near proximity to the Limpopo River suggests that in the past the immediate area may have been a riverine woodland, which today is restricted to the banks of major rivers due to the receding water table (G. Alexander 1984).

The rockshelter is surrounded by a number of archaeological sites (Table 7.16). Within the 4km radius buffer zone, 15.4km<sup>2</sup> (30.7%) was surveyed; much of the buffer zone is in South Africa. Nevertheless, in the surveyed portion, 13 forager features were identified, two of which were inside of agriculturalist homesteads (Figure 7.54). In addition, there are also 18 agriculturalist homesteads, which includes three Khami and one TK2, Mapungubwe and Icon homestead each (Figure 7.55). It is not possible to say whether the identified sites and archaeological features around Mafunyane are a true representative sample of Mafunyane’s context because only a small area was surveyed. Considering that there is a high density of sites in northern South Africa (see Huffman 2009b), and that Mafunyane is less than half a kilometre from the Limpopo River, one wonders what interaction was occurring between these two landscapes and across the river. Had adequate surveying been conducted in the neighbouring portion of northern South Africa, more could be said on the topic.

### 7.3.2 Chronology

Two charcoal samples were submitted to Beta Analytic for radiocarbon dating (Table 7.17). The samples came from Spits II and VII, in the stratigraphic units Ashy sand (AS; Spits II-III) and Stony ashy sand (SAS; Spits IV-VII), respectively. Although the two stratigraphic levels are labelled as distinct from one another the only difference other than the depth is that in SAS pebbles appear. The samples were selected because the assemblage density increases sharply from Spit II, suggesting the final occupation may have been at this level, and Spit VII is directly on top of bedrock, offering a terminal date. The results, however, are inverted, with the older sample in Spit II and younger in Spit VII. Calibration was calculated using IntCal09 by Beta Analytic, but I have recalibrated the dates using SHCal04 via OxCal 4.1, which is preferred for southern African samples (Hogg *et al.* 2009).

**Table 7.16: Mafunyane Shelter: archaeological sites and features within the buffer zone.**

Feature/site type	No.	Density (/km <sup>2</sup> )	% of total
Forager	13	0.8	7
in a homestead	2	0.1	6.3
Homestead	18	0.4	14.5
TK2	1	0.1	1.6*
Mapungubwe	1	0.1	1.6*
Icon	1	0.1	1.6*
Khami	3	0.2	4.9*

\* of total identified homesteads

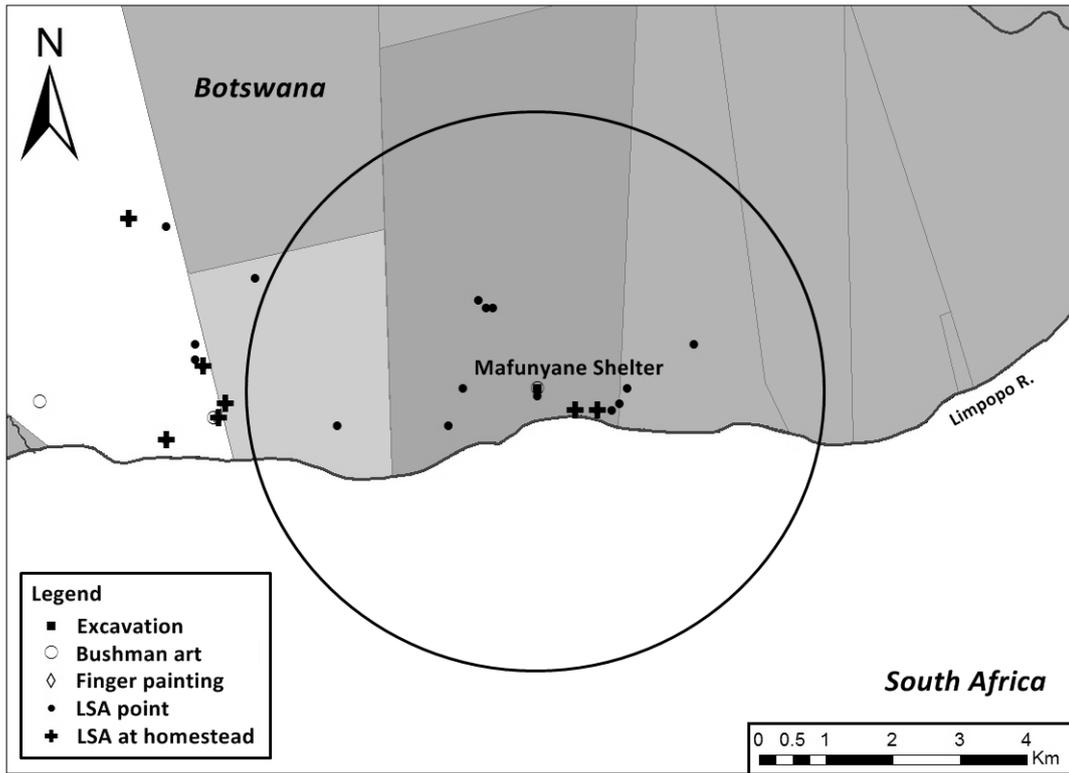


Figure 7.54: Mafunyane Shelter: forager related features within the 4km buffer.

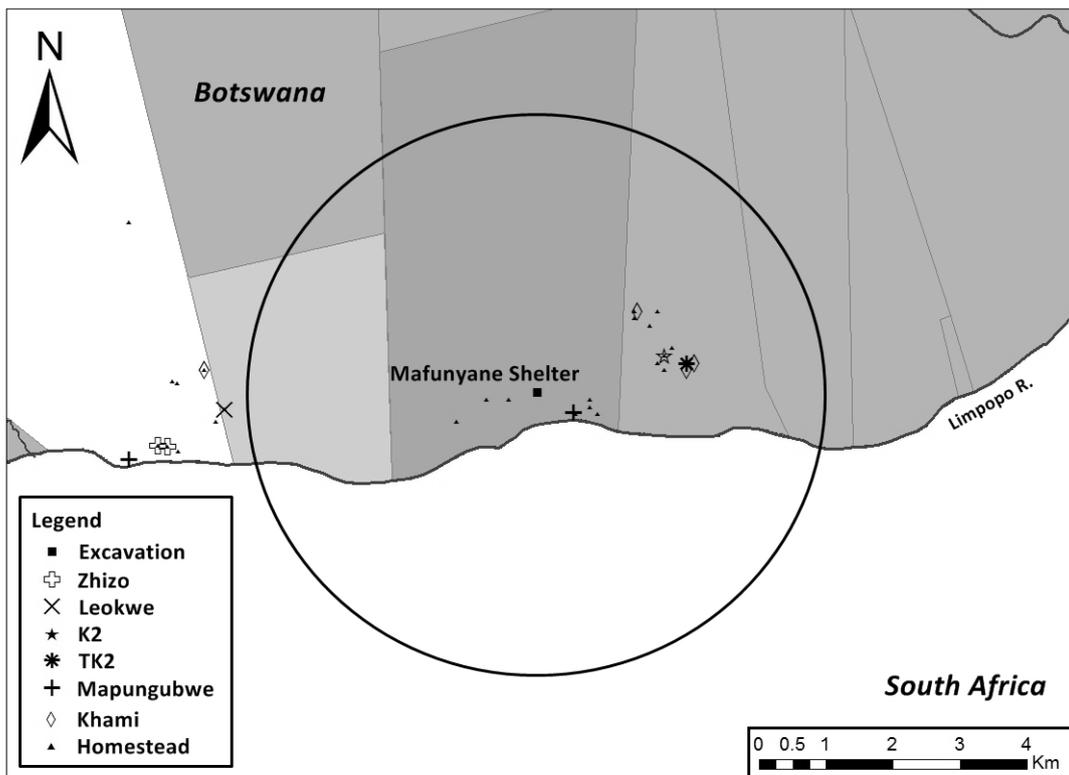


Figure 7.55: Mafunyane Shelter: agriculturalist homesteads within the 4km buffer.

**Table 7.17: Mafunyane Shelter: radiocarbon dating results.**

Trench	Square	Spit	Stratigraphy	Date BP	Calibration	%	Code
3	C	2	AS	1120±30	897 - 923 Cal AD	14.2	Beta-339425
					<b>941 - 1027 Cal AD</b>	<b>81.2</b>	
3	C	7	SAS	900±30	1050 - 1079 Cal AD	6	Beta-339426
					<b>1146 - 1235 Cal AD</b>	<b>85.4</b>	
					1243 - 1265 Cal AD	4	

### 7.3.3 Stone tool assemblage

A total of 6349 stone tools were recovered from Trench 3, Square C (Catalogue D.2.1), which includes 3391 chips, all from 0.1m<sup>3</sup> (Catalogue D.2.2). Mafunyane has the highest density of stone tools when compared to the other sites excavated for this project, which contributed to Walker's (1994) conclusions that it was a major living site. The assemblage is also, as with other rockshelter excavations in the area (here and see van Doornum 2005), dominated by CCS after which quartz follows, then quartzite, agate and dolerite (Figure 7.56). Throughout the spits (Figure 7.57) and in each stratigraphic unit (Figure 7.58), CCS dominates and is in all cases followed by quartz. There is no clear pattern with regard to quartzite, agate and dolerite, all of which vary in their frequency but remain low. Cobbles of a variety of raw material types may have been collected at the nearby seasonal stream or from the Limpopo River. There are also a number of rock outcrops nearby, but compared to the other excavations Mafunyane is relatively far away from an outcrop; the nearest is about 5.3km northwest of the site.

The stone tool frequency at Mafunyane follows a general double bell curve (Figure 7.59). The greatest number of stone artefacts is between Spits II and V, after which it diminishes until bedrock is reached in Spit VII (Table 7.18). A similar pattern is noted with regard to the stone tool density except that on the surface and in Spit I, a higher degree of stone tools per cubic metre of deposit exists and, as with the stone tool distribution, there is a peak in Spit V (Figure 7.60). If the peak on the surface represents a forager use of the rockshelter it was, likely, after AD 1200 since K2 ceramics were found in the upper levels of the excavation, also noted by Walker (1994). However, surface movement of artefacts was noted at the entrance to the site where a Bambata sherd, dating to between AD 150 and 650 (Huffman 2007: 213), was also found. It, therefore, seems likely that the stone tools here may be the result of post-depositional disturbances.

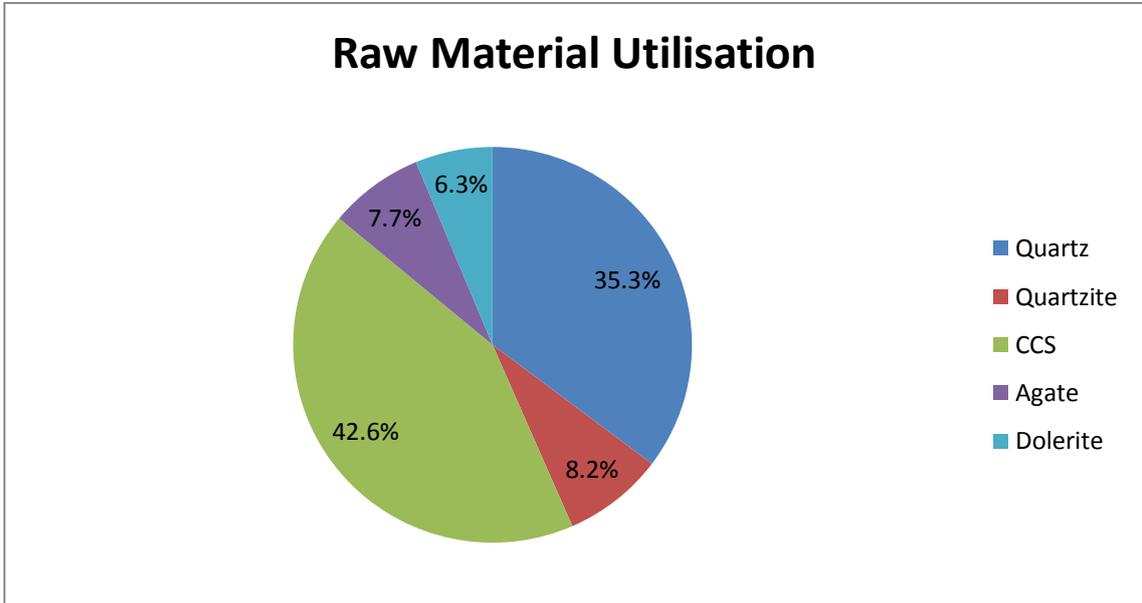


Figure 7.56: Mafunyane Shelter: raw material utilisation.

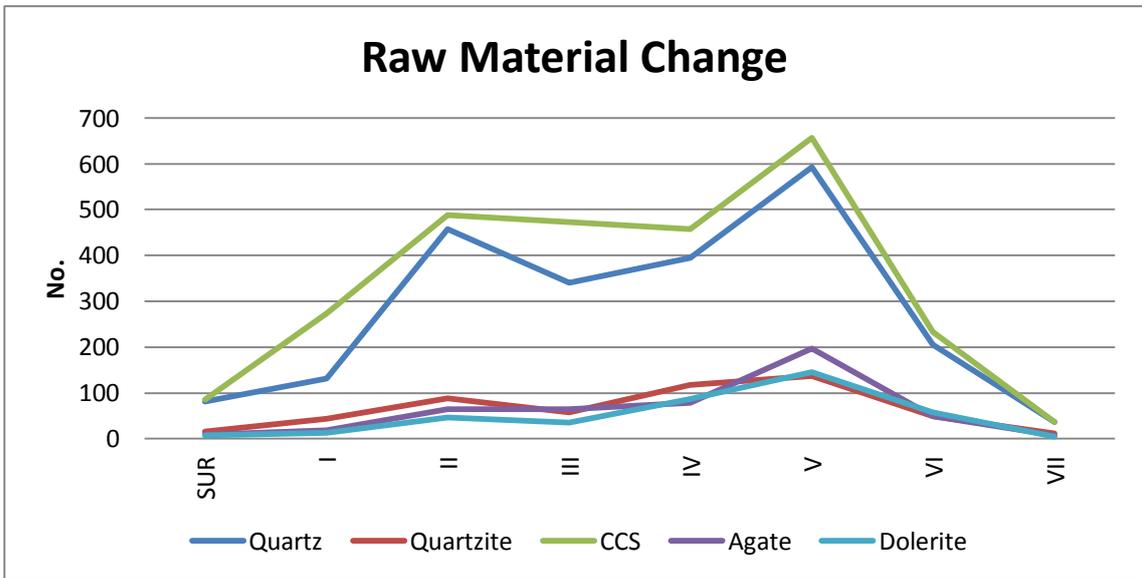


Figure 7.57: Mafunyane Shelter: raw material change.

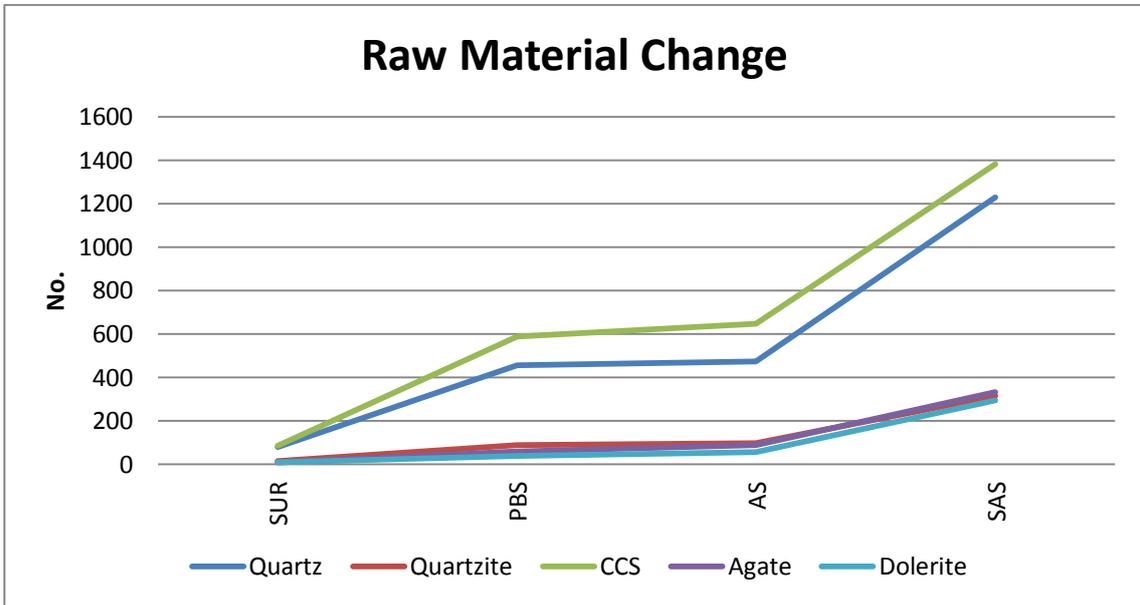


Figure 7.58: Mafunyane Shelter: raw material change between the stratigraphic units.

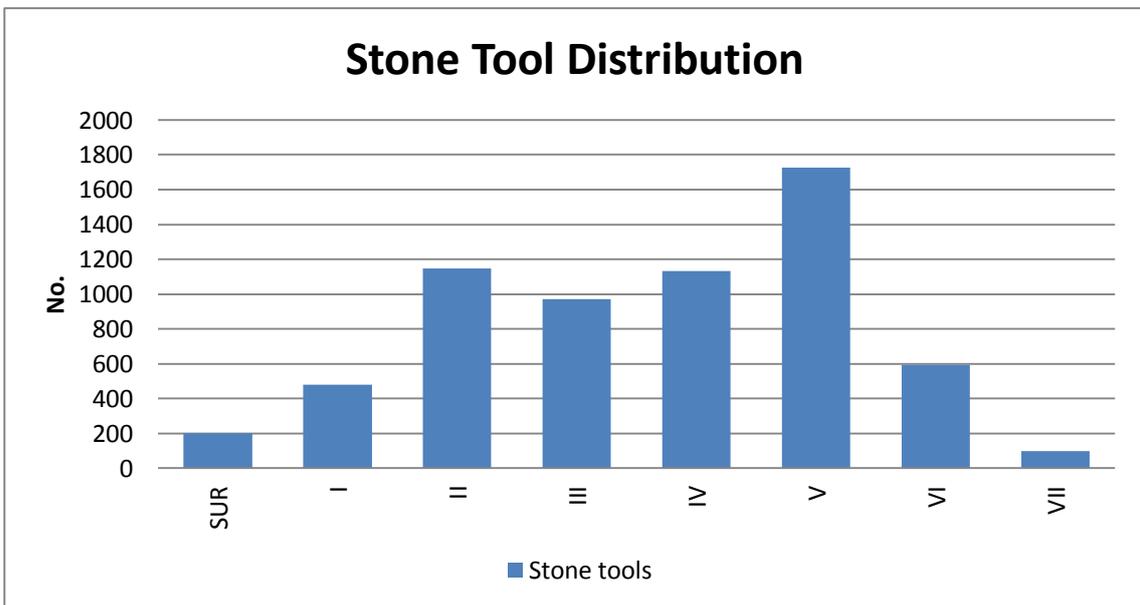
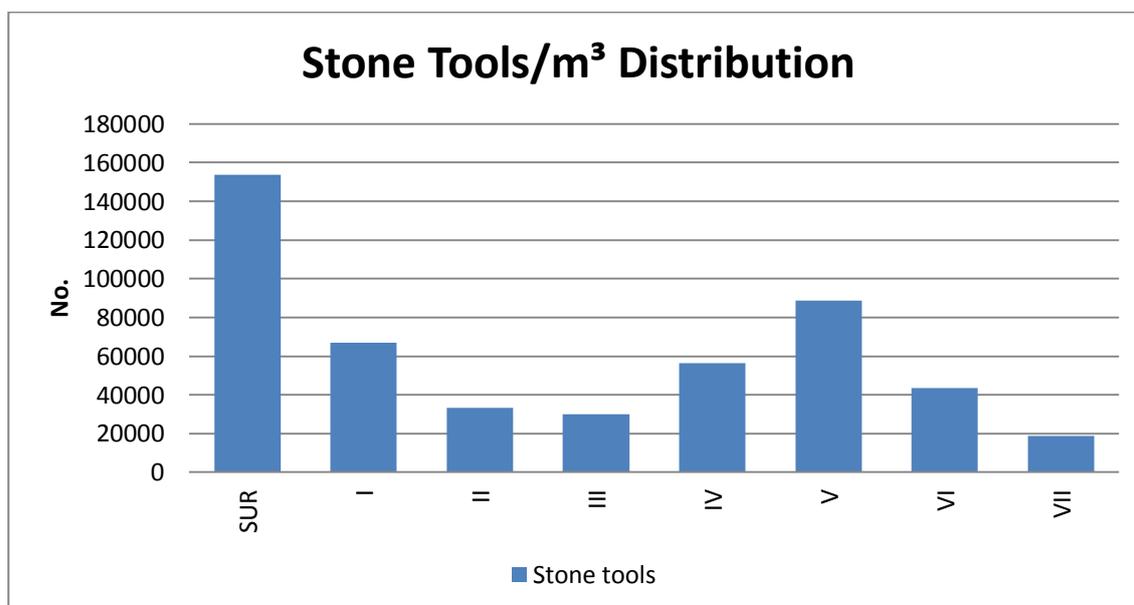


Figure 7.59: Mafunyane Shelter: stone tool distribution.

**Table 7.18: Mafunyane Shelter: stone tool distribution.**

Spit	Quartz	%	Quartzite	%	CCS	%	Agate	%	Dolerite	%	Total
SUR	81	40.5	16	8	86	43	9	4.5	8	4	200
I	131	27.3	43	9	274	57.2	18	3.8	13	2.7	479
II	458	40	88	7.7	488	42.6	65	5.7	47	4.1	1146
III	341	35.2	57	5.9	473	48.8	64	6.6	35	3.6	970
IV	394	34.7	117	10.3	457	40.3	79	7	87	7.7	1134
V	592	34.3	137	7.9	656	38	197	11.4	146	8.4	1728
VI	205	34.5	49	8.2	233	39.2	49	8.2	58	9.8	594
VII	37	37.8	12	12.2	37	37.8	8	8.2	4	4.1	98
<b>Total:</b>	<b>2239</b>	<b>35.3</b>	<b>519</b>	<b>8.2</b>	<b>2704</b>	<b>42.6</b>	<b>489</b>	<b>7.7</b>	<b>398</b>	<b>6.3</b>	<b>6349</b>



**Figure 7.60: Mafunyane Shelter: stone tool density.**

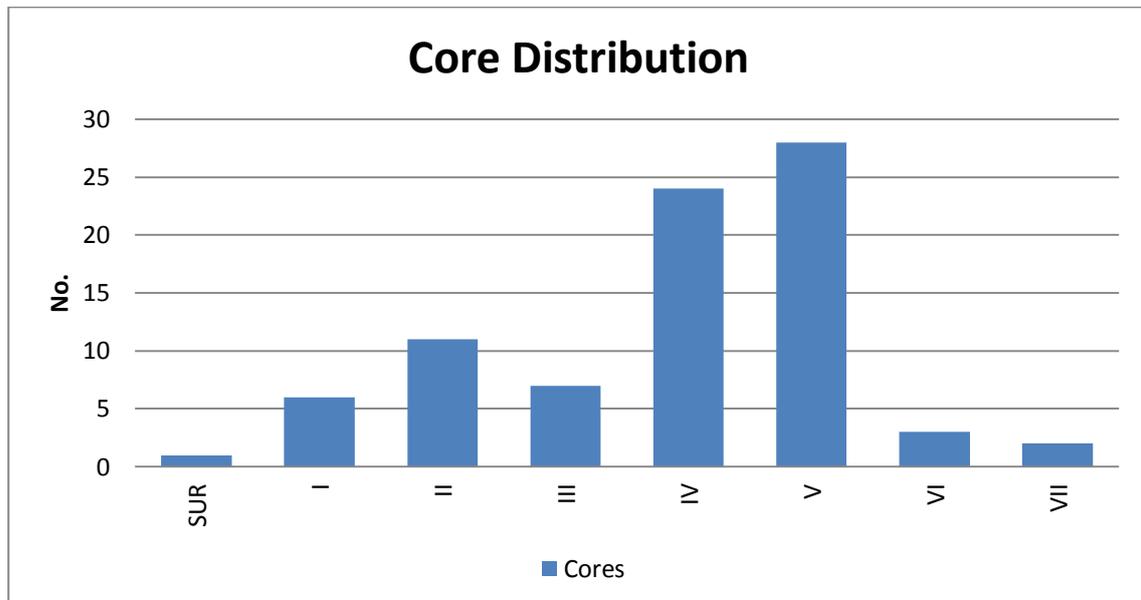
### 7.3.3.1 Cores

There are 82 cores in the assemblage, making up 1.3% of the total assemblage and 2.8% when chips are excluded. All of the cores fall into ten core types (Table 7.19), of which irregular cores are the most common followed by single platform and rice seed (bipolar-flaked oblong cores), casual and preliminary flaked cores. They follow the general assemblage distribution trend at the site, with the majority of cores coming from Spits IV and V, below which core frequencies drop until bedrock is reached (Figure 7.61). An average of 8 cores per cubic metre was removed from

the site. Coupled with a large chip assemblage, this suggests that there was a greater emphasis on stone tool production at the site, more so than at nearby forager sites. Based on these core types it seems that the primary flaking technique was bipolar percussion.

**Table 7.19: Mafunyane Shelter: cores.**

Trench	Square	Spit	Irregular core	Casual core	Bipolar core	Bipolar bladelet core	Bipolar radial core	Radial core	Single platform core	Opposed platform core	Rice seed core	Preliminary flaked core	Total
3	C	SUR	1	0	0	0	0	0	0	0	0	0	1
3	C	I	3	0	0	1	0	1	0	0	1	0	6
3	C	II	7	0	0	0	0	0	2	0	0	2	11
3	C	III	1	0	0	0	0	0	3	0	2	1	7
3	C	IV	11	0	1	2	0	1	3	1	4	1	24
3	C	V	14	7	0	0	1	0	2	0	1	3	28
3	C	VI	0	1	0	0	0	0	0	0	1	1	3
3	C	VII	0	1	0	0	0	0	0	0	1	0	2
<b>Total:</b>			<b>37</b>	<b>9</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>10</b>	<b>1</b>	<b>10</b>	<b>8</b>	<b>82</b>



**Figure 7.61: Mafunyane Shelter: core distribution.**

### 7.33.2 Formal tools

The formal tool assemblage is dominated by scraping tools (57%), of which there are 11 different forms (see Catalogue D.2.3 for details). Backed stone tools are also frequent (35.5%), and include segments in various stages of completion, MBPs, segmented backed bladelets and broken backed bladelets. The only other tools found at Mafunyane were adzes and awls. Scrapers are significantly more frequent than all other tool types and of these small scrapers are the most common (46.8%), followed by medium (5.5%) and then large scrapers (3.7%; Table 7.20). The formal tool assemblage is not unlike other forager assemblages from the area (van Doornum 2005) and in other parts of southern Africa (see J. Deacon 1984a; Figures 7.62 – 7.63). Of the entire assemblage the formal component amounts to 1.7% and 3.6% when chips are excluded.

**Table 7.20: Mafunyane Shelter: formal tools.**

Tool type	Size				Total
	NA	S	M	L	
<b>Scrapers</b>	<b>61</b>				
End scraper		25	3	4	32
End + end scraper		1			1
End + side scraper		1			1
End scraper + adze			1		1
Broken end scraper		4			4
Side + side scraper		1			1
Broken side scraper		2			2
Side scraper		17	2		19
<b>Backed stone tools</b>	<b>38</b>				
Segment		14			14
Incomplete segment		1			1
Broken segment		1			1
Broken backed bladelet		2			2
Segmented backed bladelet		8			8
MBP		12			12
<b>Other tools</b>	<b>8</b>				
Adze		6			6
Awl		2			2
<b>Total:</b>		<b>107</b>			

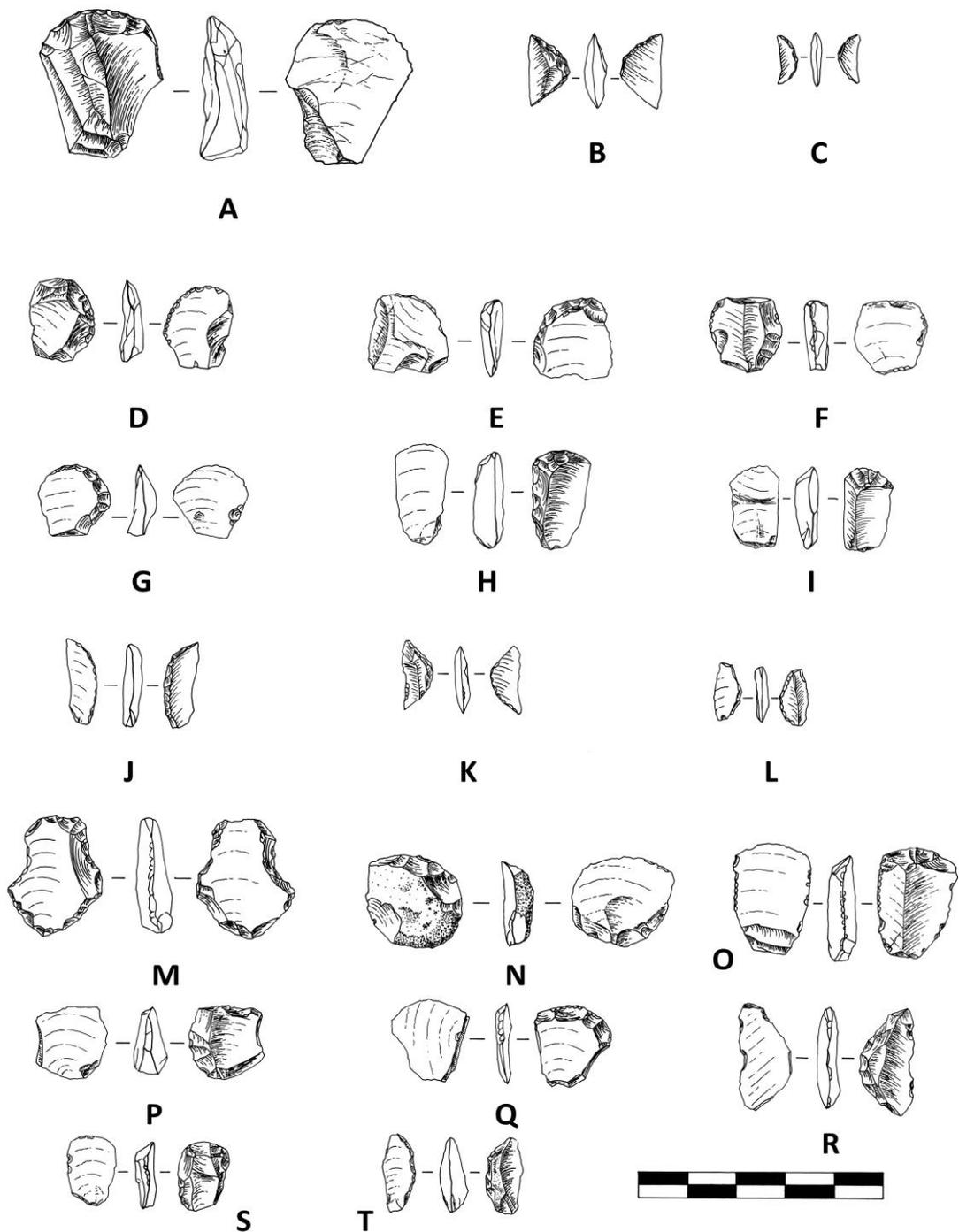
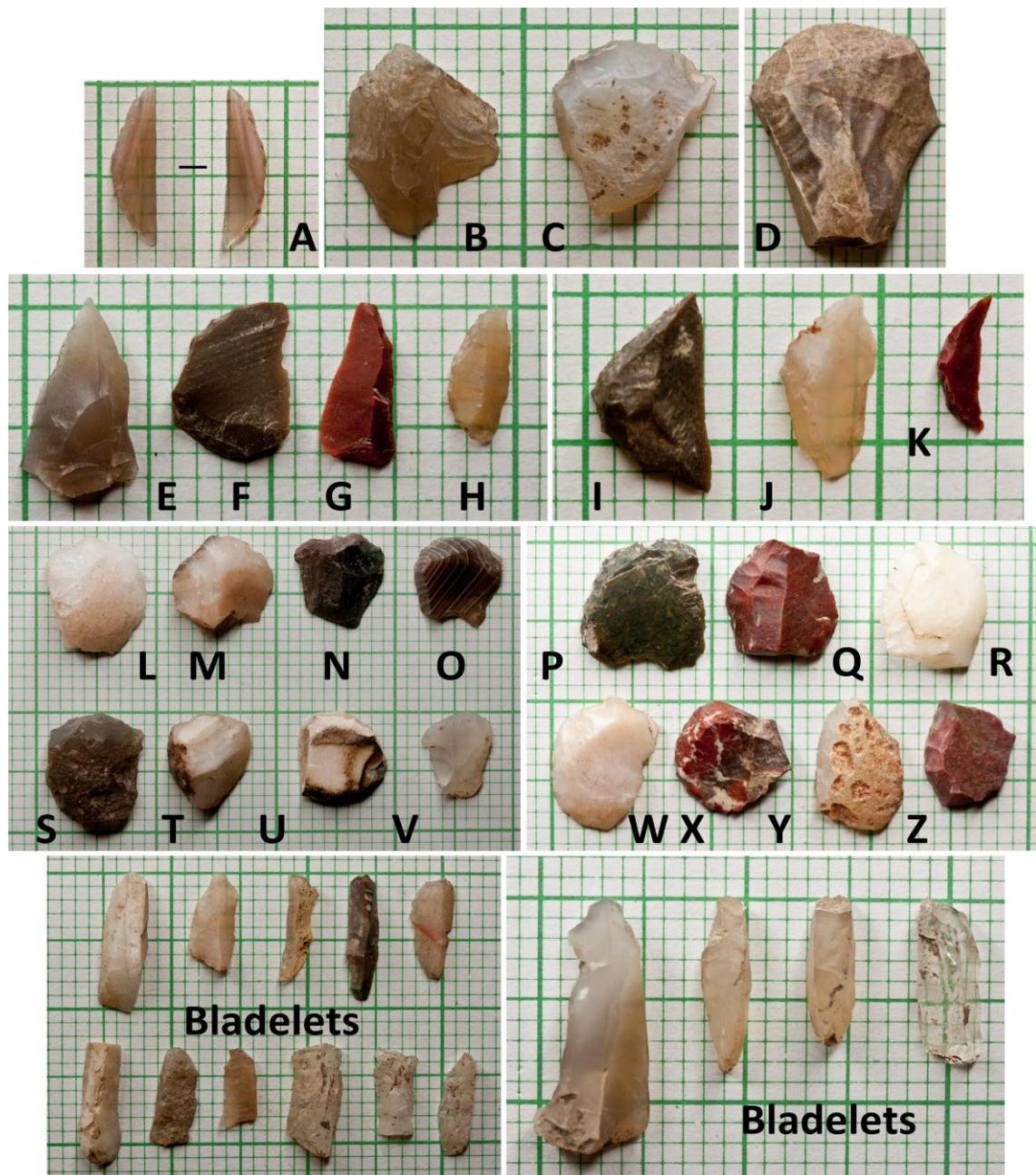


Figure 7.62: Mafunyane Shelter: formal tool examples: A & O, medium end scarpers; B, C, K & R, segment; D, F & S, small side scraper; E, G-I, N, P & Q, small end scraper; J, L & T, segmented backed bladelet; and M, adze.



**Figure 7.63: Mafunyane Shelter: formal tool examples: A & I-K, segment; B, P-R & W-Z, small side scraper; C, L-O & S-V, small end scraper; D, large end scraper; E-H, segmented backed bladelets; and bladelets in the bottom two images.**

The majority of the formal tools were produced using CCS materials followed by agate, quartz and one tool each using quartzite and dolerite (Figure 7.64). Tools produced using CCS materials also dominate in every spit (Figure 7.65) and in each stratigraphic unit. Regarding the distribution of the formal tools, most were found in Spits IV and V, after which, as with the entire stone tool assemblage, they drop off until bedrock is reached in Spit VII (Figure 7.66); stratigraphically it is the lowermost unit, SAS, that contains the majority of the formal tools (Figure 7.67).

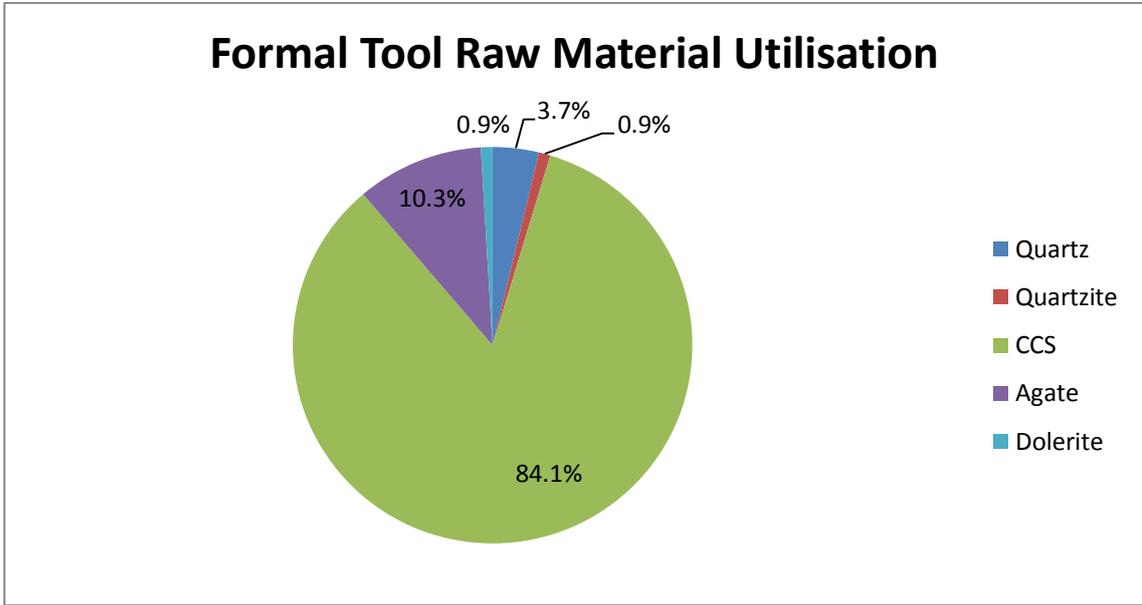


Figure 7.64: Mafunyane Shelter: formal tool raw material utilisation.

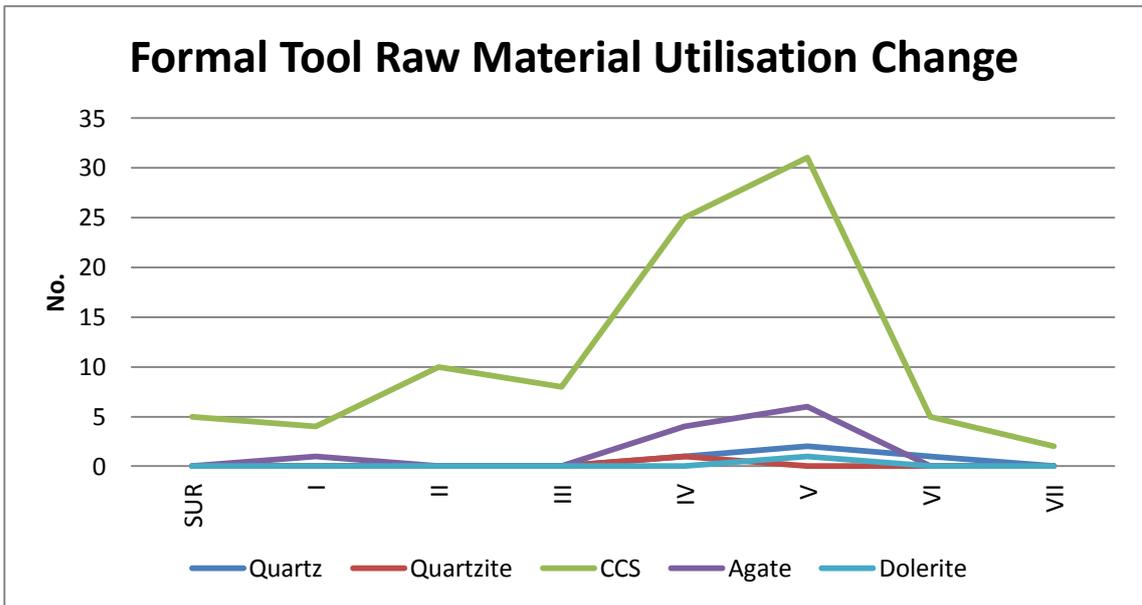


Figure 7.65: Mafunyane Shelter: formal tool raw material distribution.

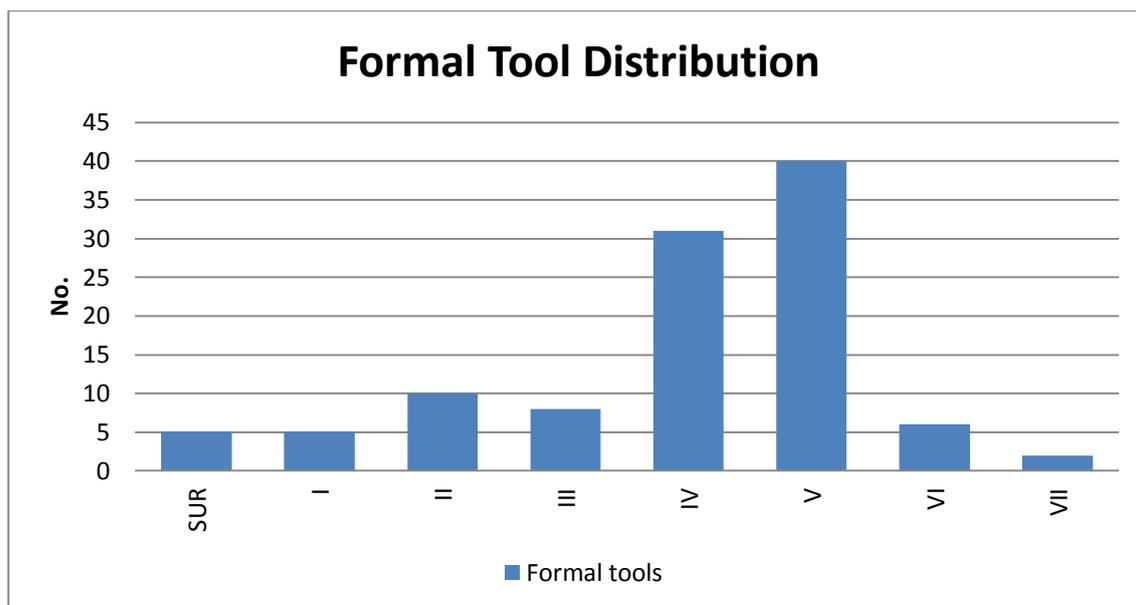


Figure 7.66: Mafunyane Shelter: formal tool distribution.

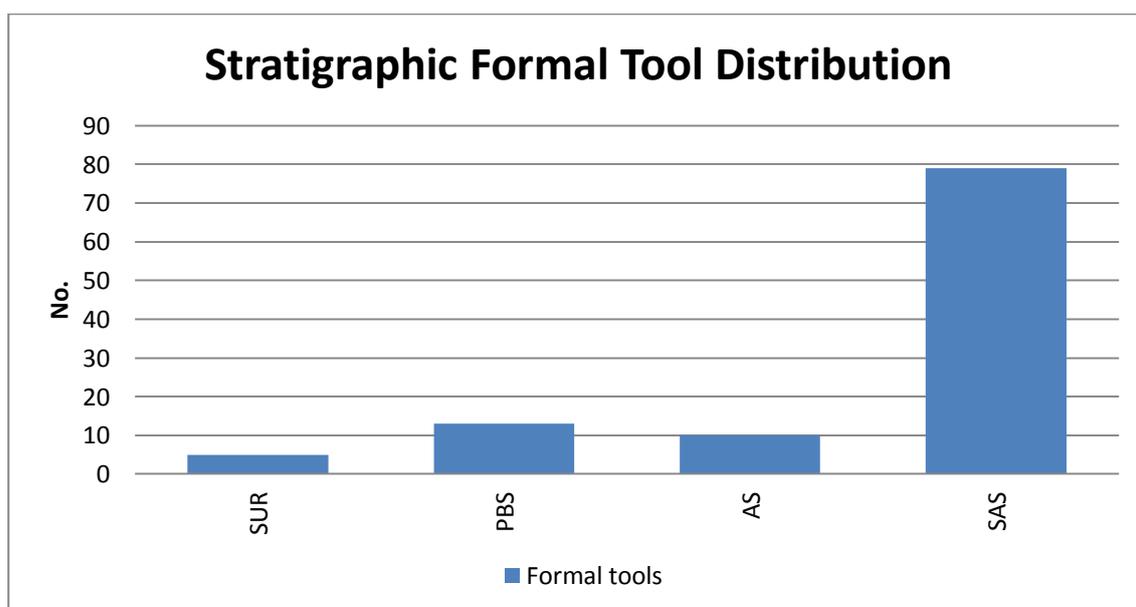


Figure 7.67: Mafunyane Shelter: stratigraphic distribution of formal tools.

#### 7.3.3.2.1 Scrapers and backed stone tools

As has already been mentioned, scrapers dominate the formal tool assemblage. These, along with backed stone tools, are found in all levels (Figure 7.68) and in each stratigraphic unit (Figure 7.69). In Spits I, III and IV, backed stone tools are more frequent than scrapers but in all but one stratigraphic unit scrapers dominate; in AS there are five scrapers and five backed stone tools (Table 7.21). It appears that there is a trend towards small scraping tools throughout the trench, but there is no definite pattern, making it impossible to say whether one formal tool type

increases to the detriment of another, as recorded elsewhere in southern Africa for the late Holocene with regard to scrapers and backed tools (J. Deacon 1984a).

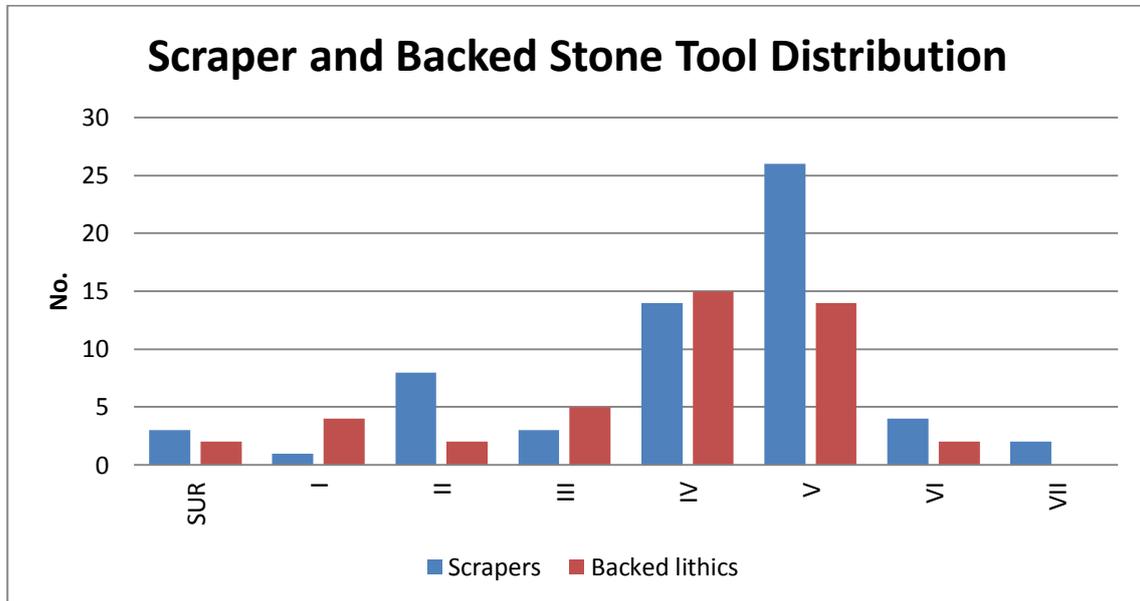


Figure 7.68: Mafunyane Shelter: scraper and backed stone tool distribution.

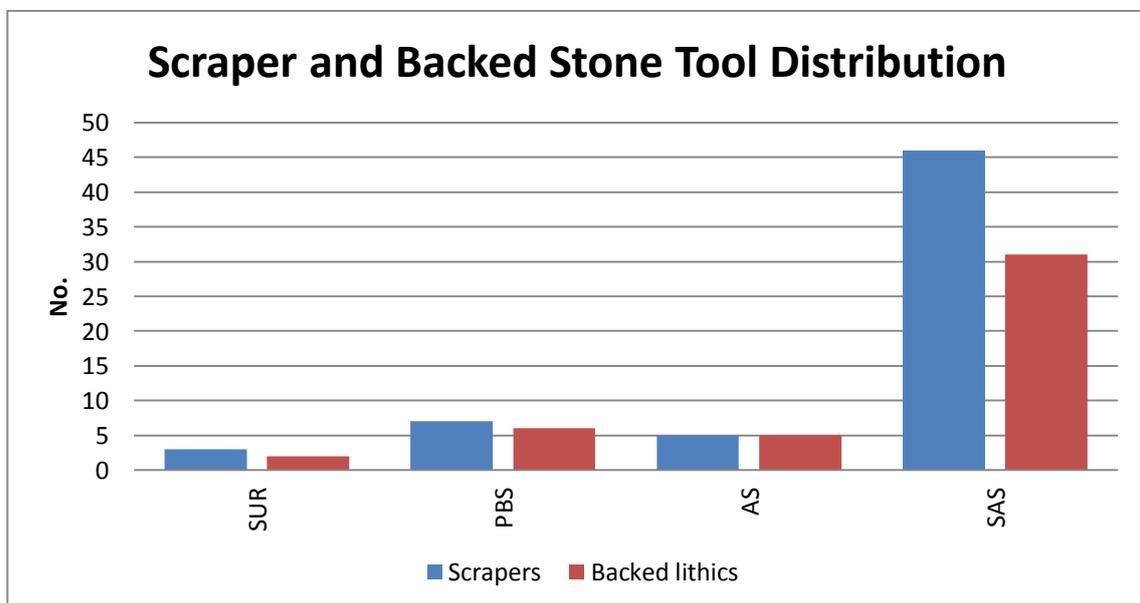


Figure 7.69: Mafunyane Shelter: stratigraphic scraper and backed stone tool distribution.

**Table 7.21: Mafunyane Shelter: scraper and backed stone tool distribution.**

Trench	Square	Spit/stratigraphic unit	Scrapers	Backed tools	M <sup>3</sup>	Scrapers/m <sup>3</sup>	Backed tools/m <sup>3</sup>	Combined/m <sup>3</sup>
3	C	SUR	3	2	0.001	2308	1538	3846
3	C	I	1	4	0.01	139.9	559.4	699.3
3	C	II	8	2	0.03	232	58.1	290.3
3	C	III	3	5	0.03	93.1	155	248.1
3	C	IV	14	15	0.02	695	744.4	1439.2
3	C	V	26	14	0.02	1333.3	717.9	2051.3
3	C	VI	4	2	0.01	293	146.5	439.6
3	C	VII	2	0	0.01	384.6	0	385

**Total: 61 44 0.13 456.5 329.2 785.7**

3	C	SUR	3	2	0.001	2308	1538	3846
3	C	PBS	7	6	0.03	236.2	202.4	438.6
3	C	AS	5	5	0.04	113.1	113.1	226.2
3	C	SAS	46	31	0.1	786.3	529.9	1316.2

**Total: 61 44 0.13 456.5 329.2 785.7**

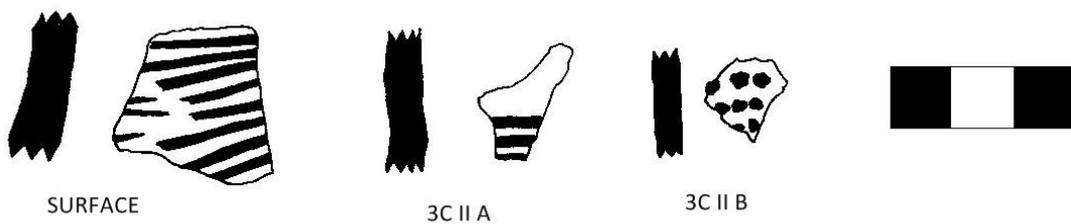
### 7.3.4 Ceramic assemblage

In total, 31 ceramic sherds were identified in the excavations; over 90% are plain and only two are decorated; one is a plain rim (Table 7.22). Another decorated rim was found outside the excavation on the surface and appears to belong to the Bambata facies (Figure 7.70). Unfortunately, the decorated sherds from the excavation are too small to be categorised into a ceramic facies with certainty, but 3C II B has a series of punctates suggesting that it may be Zhizo or Leokwe, in which case it dates to between AD 900 and 1200. The radiocarbon dates at this depth indicate an occupation of between AD 941 and 1027 (Beta-339425), in agreement with the dates suggested by the decorated sherd, but making it impossible to determine whether it is a Zhizo or Leokwe piece because AD 1000 is accepted as the boundary between these two facies (see Huffman 2000).

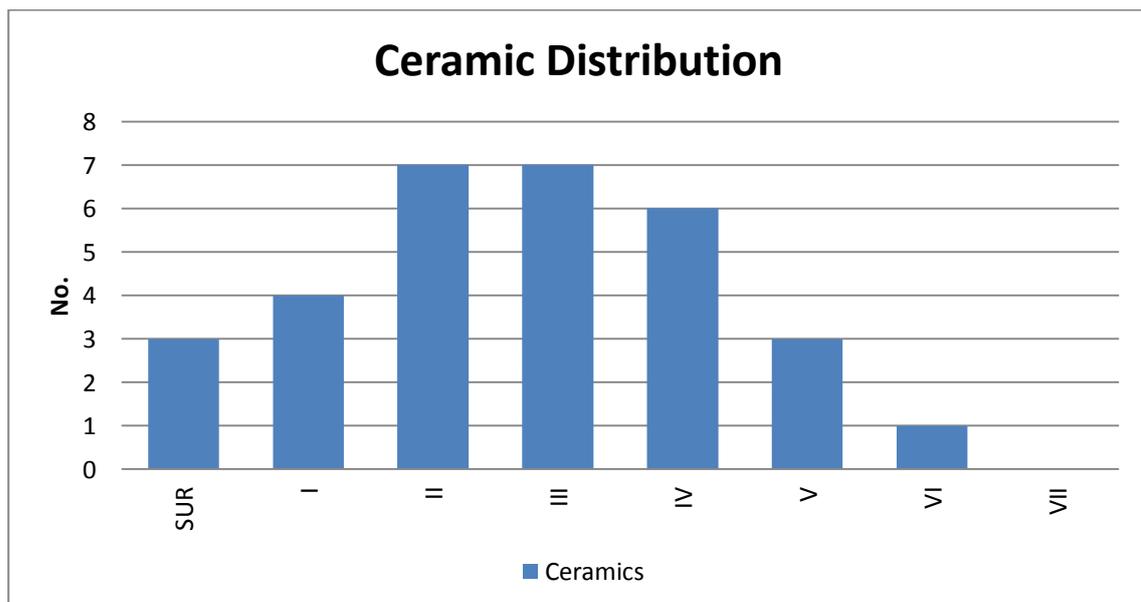
Ceramics were found in all levels except for Spit VII, directly above bedrock (Figure 7.71). In all the spits in which ceramics occur, they are found in a low density. On the surface there is a high density of sherds, but, because it is believed to be a mixed or disturbed assemblage as mentioned above, this is not considered an accurate measure (Figure 7.72). Diagnostic sherds are only found on the surface and in Spit II (Figure 7.73), which stratigraphically are the two top units as well as the surface (Figure 7.74).

**Table 7.22: Mafunyane Shelter: ceramics.**

Type	No.	%	/m <sup>3</sup>
Plain	28	90.3	209.5
Decorated	2	6.5	15
Plain rim	1	3.2	0.01
<b>Total:</b>	<b>31</b>		<b>3</b>



**Figure 7.70: Mafunyane Shelter: decorated ceramics: surface, possibly Bambata; and 3C II, possibly Zhizo or Leokwe.**



**Figure 7.71: Mafunyane Shelter: ceramic distribution.**

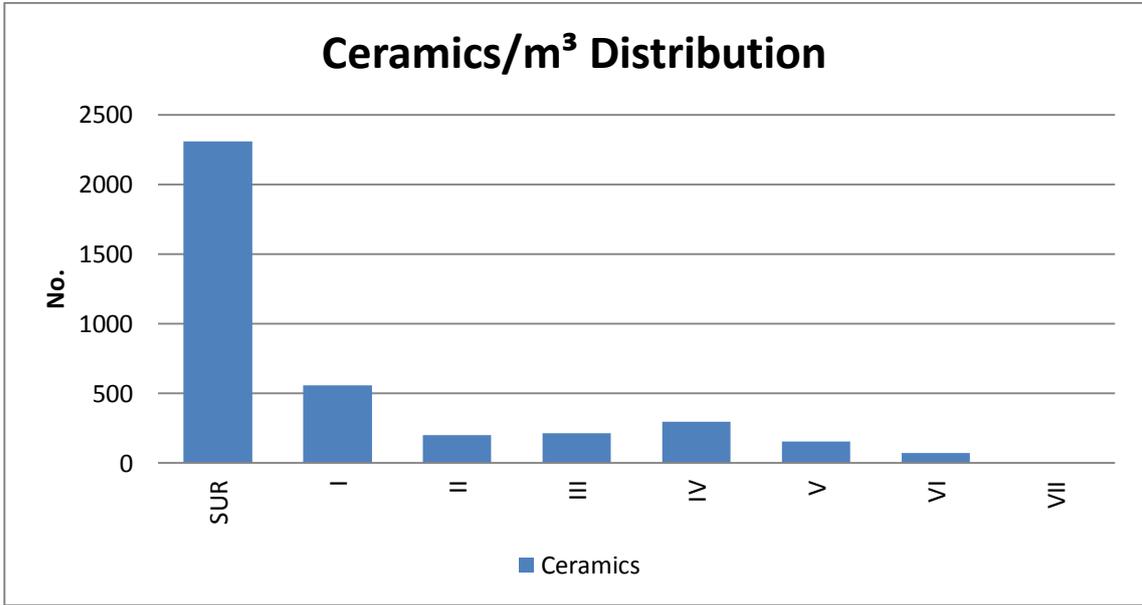


Figure 7.72: Mafunyane Shelter: ceramic density.

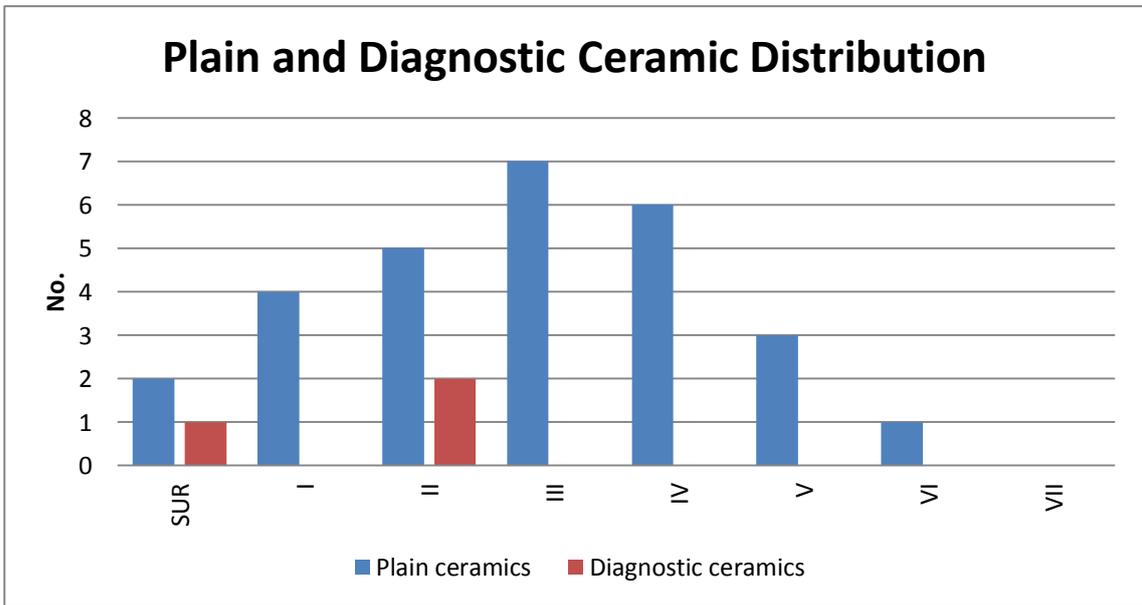
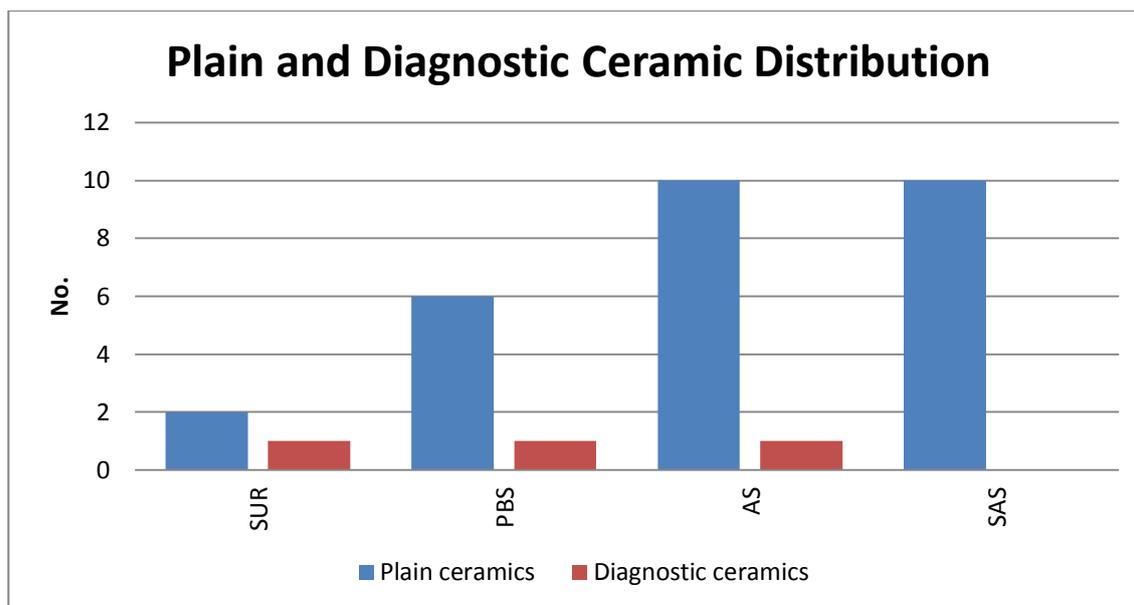


Figure 7.73: Mafunyane Shelter: plain and diagnostic ceramic distribution.



**Figure 7.74: Mafunyane Shelter: stratigraphic distribution of plain and diagnostic ceramics.**

### 7.3.5 Bead assemblage

A total of 54 beads were recovered from the excavation, of which 50 are organic (92.6%; Figure 7.75), three are glass (5.6%; Figure 7.76) and one is metal (1.9%; Table 7.23). All the glass beads are European, two possibly dating to the eighteenth and nineteenth centuries and one from the seventeenth century onwards. These must have arrived at the site after it was abandoned by foragers as no radiocarbon date indicates such a late occupation. Furthermore, the radiocarbon date from Spit II of c. AD 900 (Beta-339425), the same level as two of the glass beads, indicates that they have filtered into the assemblage. Walker (1994), however, found six glass beads and all but one were in the top unit – he did not place them into a typology. It cannot be said whether the metal bead from Spit I is from a later phase and is due to mixing or is associated with the assemblage. Walker (1994) found 16 metal beads at the site throughout the levels, but they are mostly in the upper unit and cannot be securely associated with the assemblage. Other than Spit VII, in which no beads were found, organic beads are found throughout the spits, but glass beads are only present in Spits II and III, while the metal bead is from Spit I (Figure 7.77).



Figure 7.75: Mafunyane Shelter: examples of ostrich eggshell beads: A-C, complete; D, broken complete; E-F, broken preform; and G, preform.

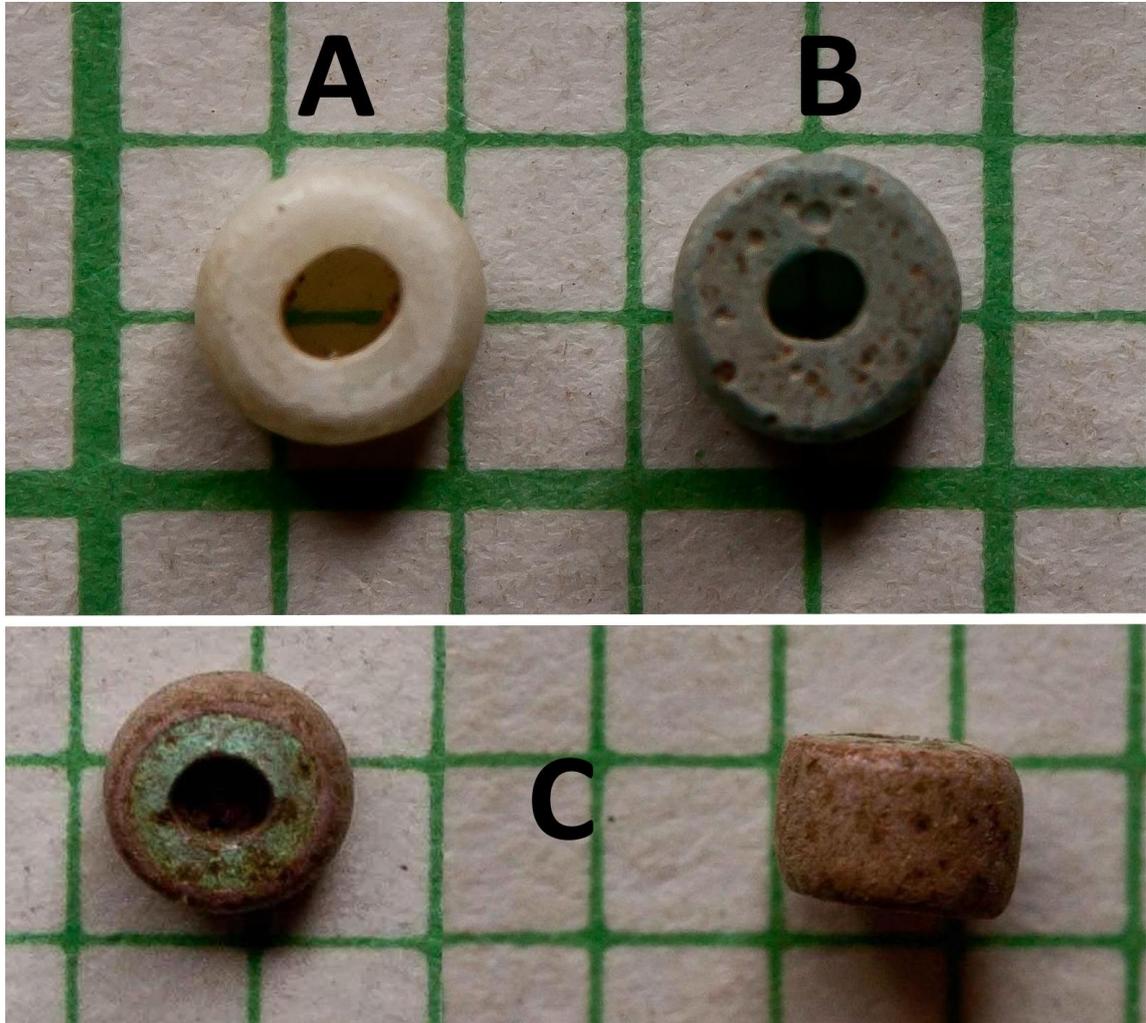
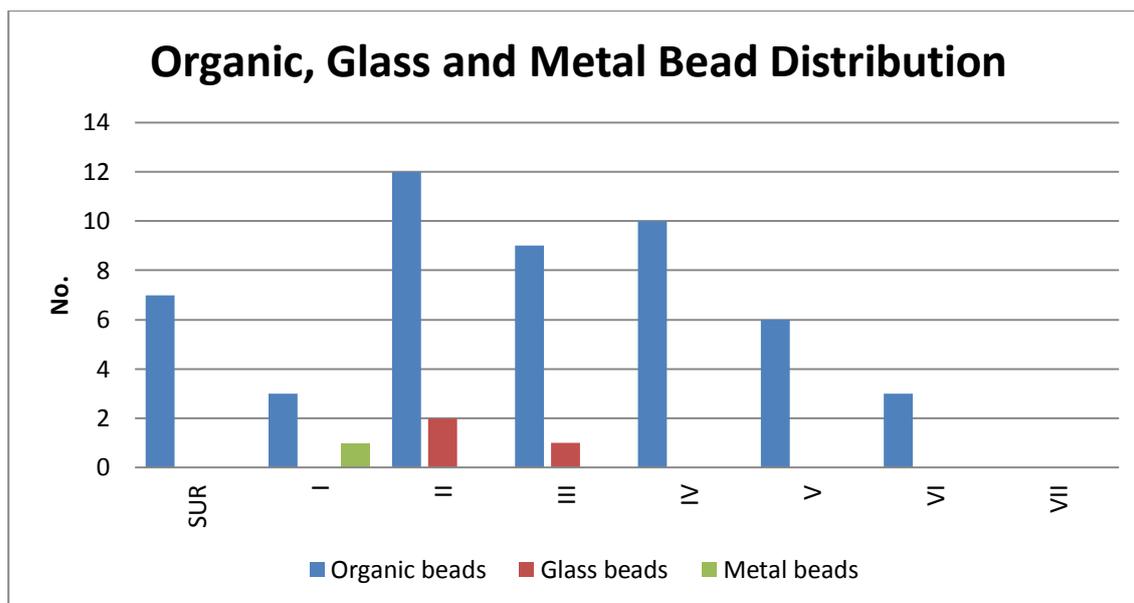


Figure 7.76: Mafunyane Shelter: glass beads examples: A & B, European possibly dating from the eighteenth century; and C, European red-on-green (AD 1600 – 1800s).

**Table 7.23: Mafunyane Shelter: beads.**

Spits	SUR	I	II	III	IV	V	VI	VII	Total
<b>Total beads</b>	7	4	14	10	10	6	3	0	54
<b>Total beads/m<sup>3</sup></b>	5384.6	559.4	406.4	310.2	496.3	307.7	219.8	0	404.1
<b>Ostrich eggshell</b>	3	0	4	3	3	3	0	0	16
<b>Broken ostrich eggshell</b>	1	1	1	1	0	1	1	0	6
<b>Ostrich eggshell preform</b>	1	0	0	0	2	1	2	0	6
<b>Broken preform ostrich eggshell</b>	2	2	0	3	5	0	0	0	12
<b>Bone</b>	0	0	4	1	0	1	0	0	6
<b>Broken bone</b>	0	0	1	0	0	0	0	0	1
<b>Broken achatina</b>	0	0	2	1	0	0	0	0	3
<b>Glass: European</b>	0	0	2	1	0	0	0	0	3
<b>Copper</b>	0	1	0	0	0	0	0	0	1
<b>Organic beads</b>	7	3	12	9	10	6	3	0	50
<b>Glass beads</b>	0	0	2	1	0	0	0	0	3
<b>Metal beads</b>	0	1	0	0	0	0	0	0	1
<b>Organic beads/m<sup>3</sup></b>	5384.6	419.6	348.3	279.2	496.3	307.7	219.8	0	374.1
<b>Glass beads/m<sup>3</sup></b>	0	0	58.1	31	0	0	0	0	22.4
<b>Metal beads/m<sup>3</sup></b>	0	139.9	0	0	0	0	0	0	7.5



**Figure 7.77: Mafunyane Shelter: organic, glass and metal bead distribution.**

The density of all bead categories is low (Figure 7.78). The organic beads are separated into three material categories: ostrich eggshell (80%), bone (14%) and *Achatina* (6%). Ostrich eggshell beads can be further divided into four categories: complete (40%), broken (15%), incomplete or preform (15%) and broken preform (30%). The different variations appear throughout the trench, barring in Spit VII, and no pattern is discernible (Figure 7.79). The fact that each category is present at the site indicates that during its occupation, ostrich eggshell bead manufacture was occurring at the site, yet this does not appear to be on a large scale since there is a low density of beads. There is also a single broken bone bead.

### 7.3.6 Metal and miscellaneous artefacts

A broken piece of a tuyère was found in Spit IV and would have been used in the iron smelting or smithing process (D. Miller 2002). There are also 13 pieces of worked copper (Figure 7.80), excluding the metal bead, which were found in every level from Spits I to IV (Figure 7.81). The samples were not chemically analysed but are believed to be copper based on their comparison with D. Miller's (2001, 2002) work at K2 and on an around Mapungubwe. Walker (1994) also believed the metal items he excavated to be copper. There is a possibility that they are bronze yet the implications, with regard to interaction, remain the same, even though bronze was more prestigious (D. Miller 2001). Copper prills (Figure 7.82; see D. Miller 2001), too, were found in these levels as well as in Spit V, totalling 134.2g (Figure 7.83). The prills occur in varying densities but were found mostly between Spits II and V (Figure 7.84). A clay figurine was also found at Mafunyane in Spit II. The figurine is highly fragmented and only a single piece was found and

appears to include a portion of the back leg, the stomach and the rump (Figure 7.85). The association of the tuyère piece, copper items and prills and the clay figurine are significant, and the presence and amount of these items in a forager context is unusual; it has not been discovered in any of the previous excavations or at the other sites presented here.

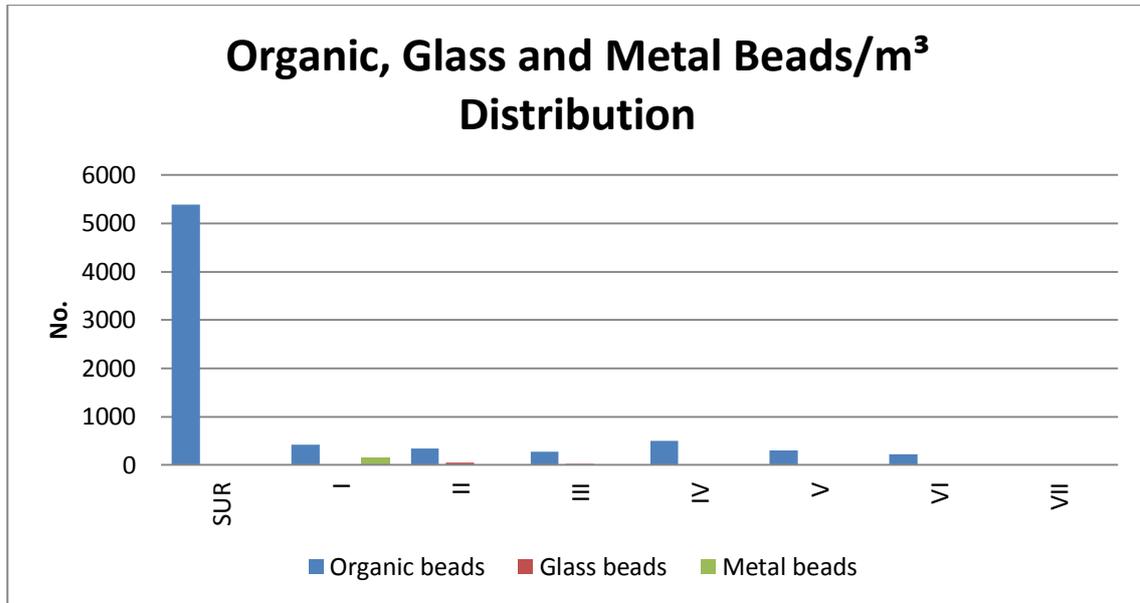


Figure 7.78: Mafunyane Shelter: organic, glass and metal bead density.

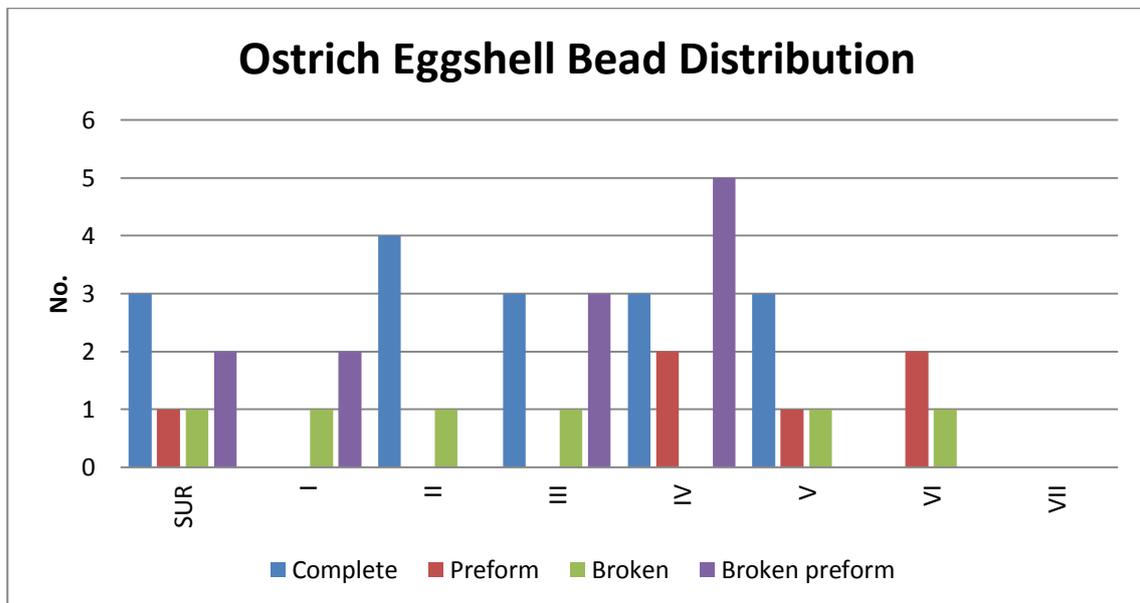


Figure 7.79: Mafunyane Shelter: ostrich eggshell bead distribution.

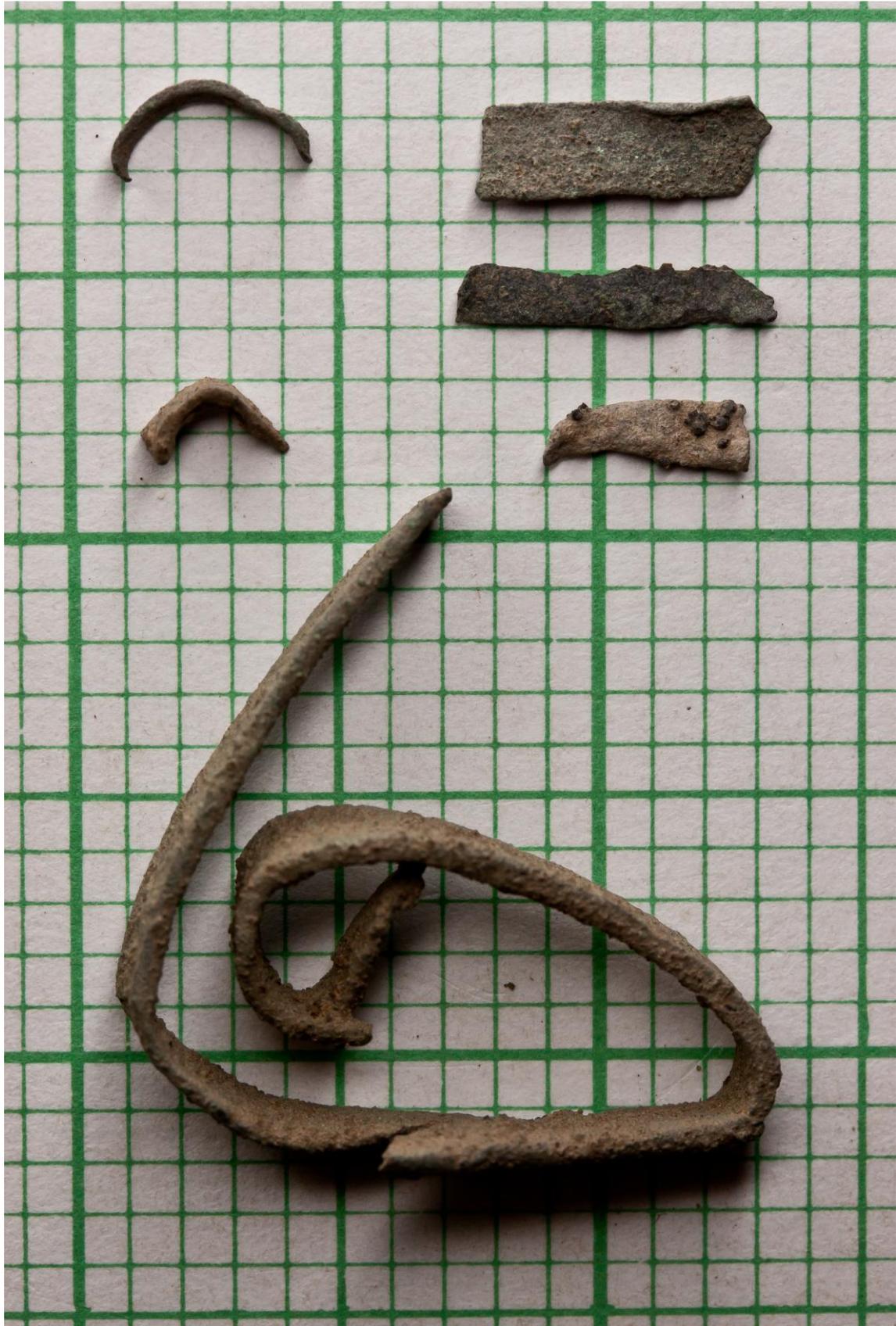


Figure 7.80: Mafunyane Shelter: examples of copper pieces.

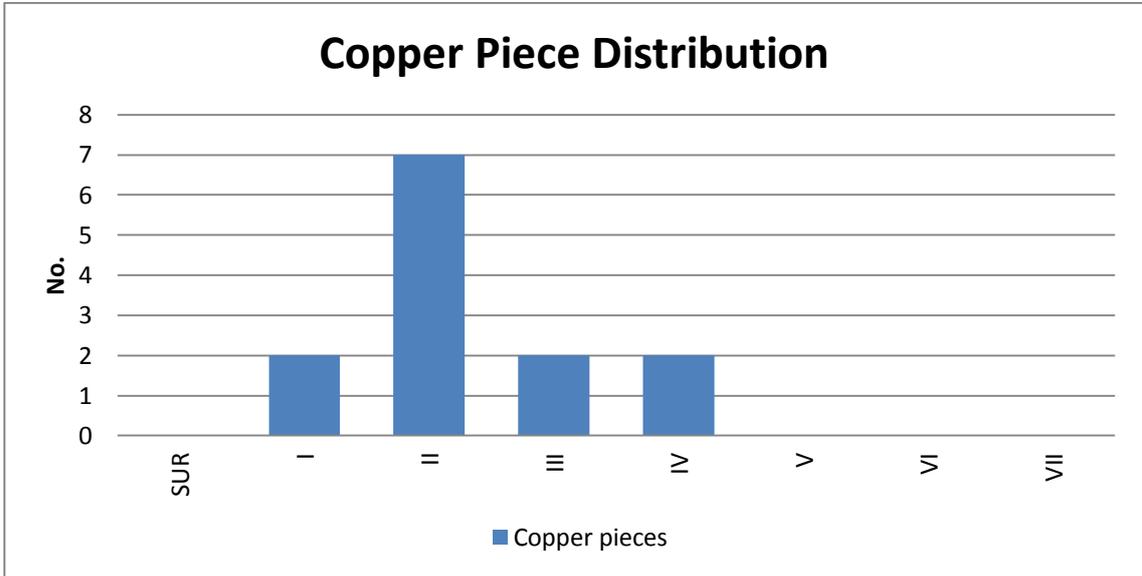


Figure 7.81: Mafunyane Shelter: distribution of copper pieces.



Figure 7.82: Mafunyane Shelter: examples of the copper prills.

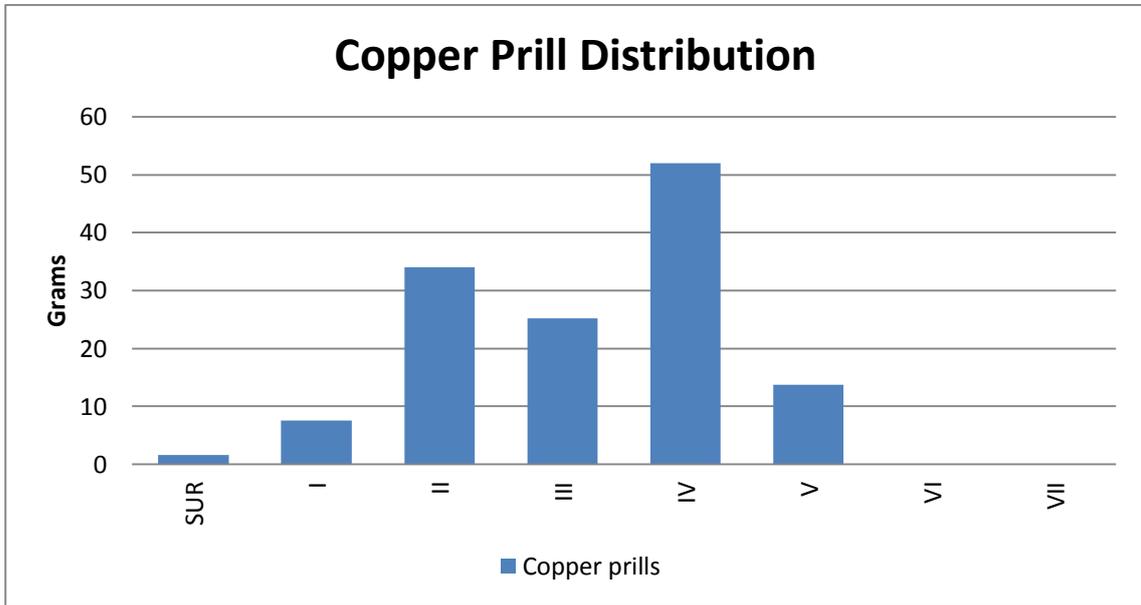


Figure 7.83: Mafunyane Shelter: distribution of copper prills.

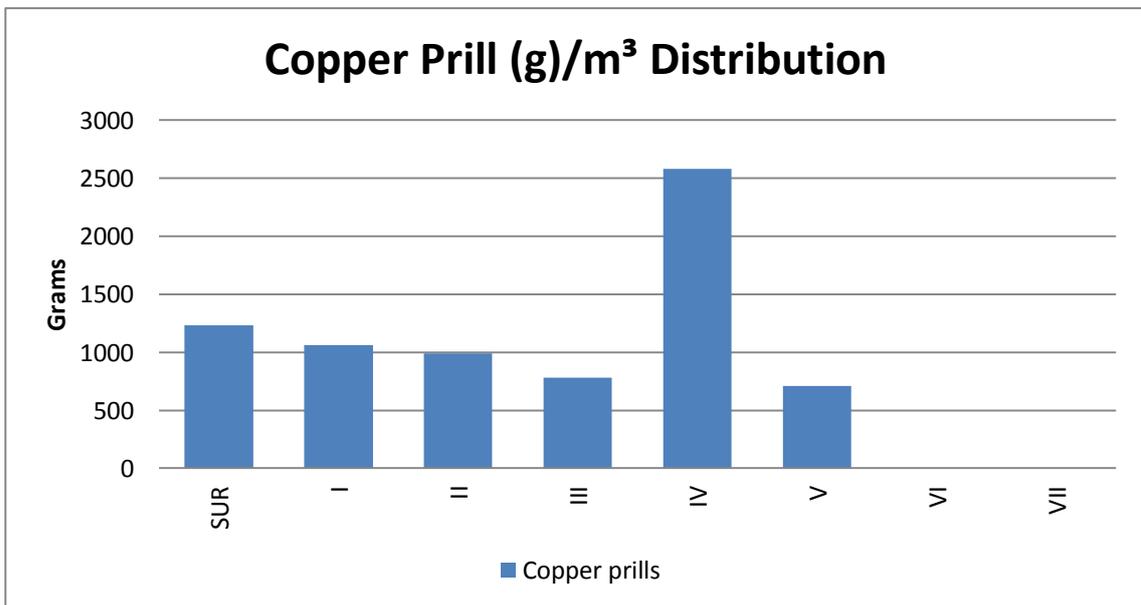


Figure 7.84: Mafunyane Shelter: density of copper prills.



**Figure 7.85: Mafunyane Shelter: clay figurine piece.**

### **7.3.7 Faunal analysis**

The faunal assemblage has a combined mass of 845.8g (6328.6g/m<sup>3</sup>). It is mostly concentrated in Spits IV and V (Figure 7.86), which, barring the surface, is also where the highest density occurs (Figure 7.87). The most frequent faunal remains at the site are tortoise carapace followed by lizard, bovid class I and fish (Table 7.24). Walker's (1994) faunal analysis, however, produced a greater diversity of species summarised in Table 7.25. His analysis was not based on the entire assemblage, but only a small portion of it, and he was not specific about exactly how much was analysed. The results show an emphasis on smaller meat packages, either collected or caught in snares and traps, with only a single antelope of bovid class III (see Brain 1981).

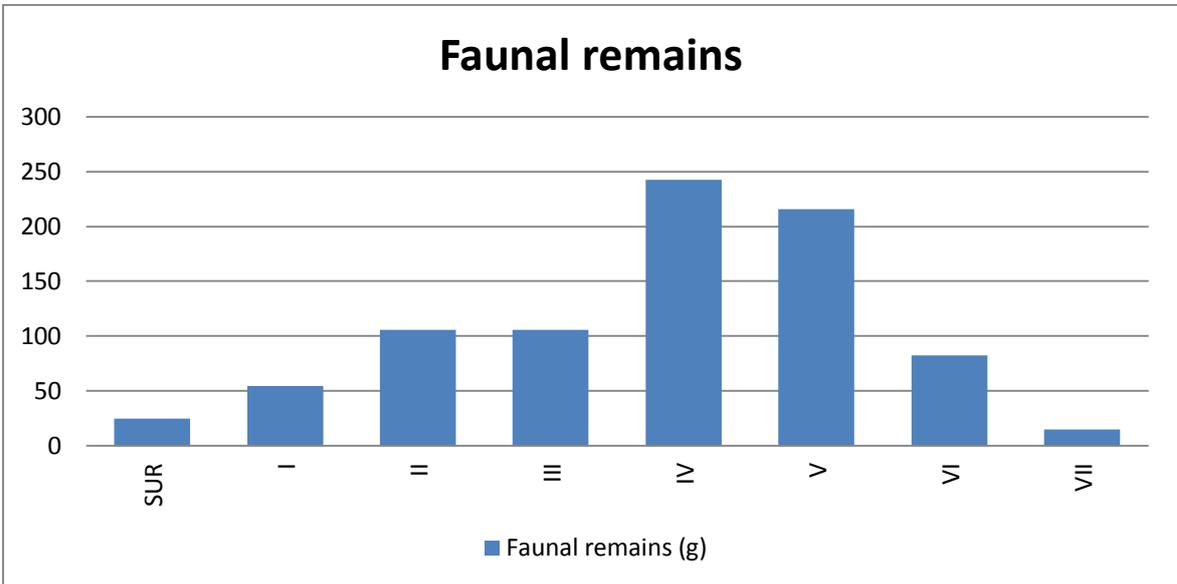


Figure 7.86: Mafunyane Shelter: faunal distribution.

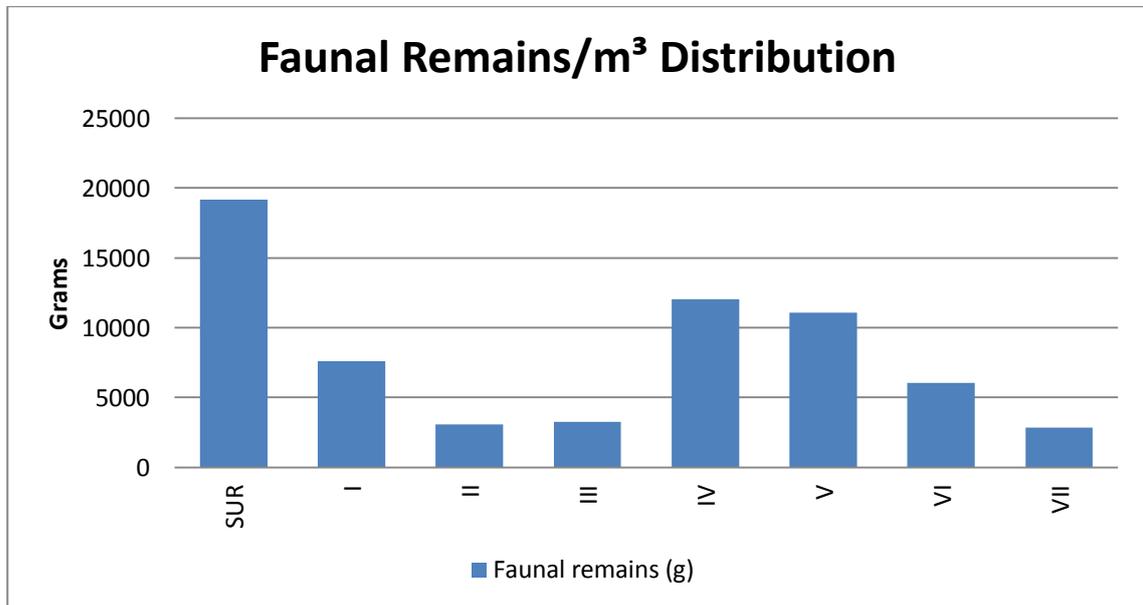


Figure 7.87: Mafunyane Shelter: faunal density.

Table 7.24: Mafunyane Shelter: number of identified specimens.

Species	Body part	SUR	I	II	III	IV	V	VI	VII	Total
<b>Mammals</b>										
Bovid class I	Lunate	0	0	0	1	0	0	0	0	1
	Metapodial	0	0	0	0	0	0	1	0	1
	Patella	0	0	0	0	0	0	1	0	1
Total class bovid I		0	0	0	1	0	0	2	0	3
<b>Fish</b>										
Fish	Vertebra	0	0	1	0	0	1	0	0	2
<b>Mammals</b>										
Rock hyrax? <i>Provavia capensis</i>	Femoral head	0	0	0	0	1	0	0	0	1
Mammalian	Vertebra	0	0	0	0	0	1	0	0	1
Rodent Rodentia	Astragalus	0	0	0	1	0	0	0	0	1
Suid <i>Suiformes</i> sp.	Tusk fragment	0	0	1	0	0	0	0	0	1
<b>Reptiles</b>										
Lizard Sauria	Vertebra	0	0	0	1	4	7	3	0	15
Tortoise	Carapace	1	0	7	5	16	14	3	3	49
Testudines	Vertebra	0	0	0	0	1	0	0	0	1
Total tortoise		1	0	7	5	17	14	3	3	50
<b>Total:</b>		<b>1</b>	<b>0</b>	<b>9</b>	<b>8</b>	<b>22</b>	<b>23</b>	<b>8</b>	<b>3</b>	<b>74</b>
<b>Indeterminate:</b>										
	Enamel	2	8	8	0	6	2	1	0	27
	Long bone fragment	0	0	0	1	0	0	0	0	1
	Rib fragment	0	0	0	0	1	2	0	0	3
	Mandible fragment	0	0	0	0	0	0	1	0	1
<b>Total:</b>		<b>2</b>	<b>8</b>	<b>8</b>	<b>1</b>	<b>7</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>32</b>
<b>Grand total:</b>		<b>3</b>	<b>8</b>	<b>17</b>	<b>9</b>	<b>29</b>	<b>27</b>	<b>10</b>	<b>3</b>	<b>106</b>

**Table 7.25: Mafunyane Shelter: list of faunal NISPs from Walker's (1994) excavation.**

Common name	Latin name	Samples
Birds		1
Barbel	<i>Barbus barbus</i>	1
Freshwater mussel	Bivalvia	1
Fish	Cyprinidae	1
Bovid - large		1
Bovid - small		2
Mammal - small		?
Rodent	Muridae	5
Springhare	<i>Pedetes capensis</i>	1
Plated lizard	<i>Gerrhosaurus sp.</i>	1
Reptile	Reptilia	?
Snake	Serpentes	1
Tortoise	Testudines	2

### 7.3.8 Mafunyane's sequence

Developing the sequence for Mafunyane was based on stratigraphic changes. Pale brown sand (PBS) is found in Spits I to III but in Spits II and III ashy sand (AS) was also found. It seems that PBS is associated with dates of between AD 1000 and 1300 and AS of between AD 900 and 1000. Spits IV to VII are most likely associated with the period AD 350 to 900, however, Spit VII lacks ceramics and copper, and artefacts begin to increase from Spit VI, peaking in Spit V. Therefore, erring on the side of caution, Spit VII is not considered as part of Phase B, but instead of Phase A (see Figure 7.88 and Table 7.26 for details referred to below); it will not be discussed below because of this uncertainty. As with Dzombo, I refer to these different sections as phases, but will use a different terminology in the following chapter once they have been discussed.

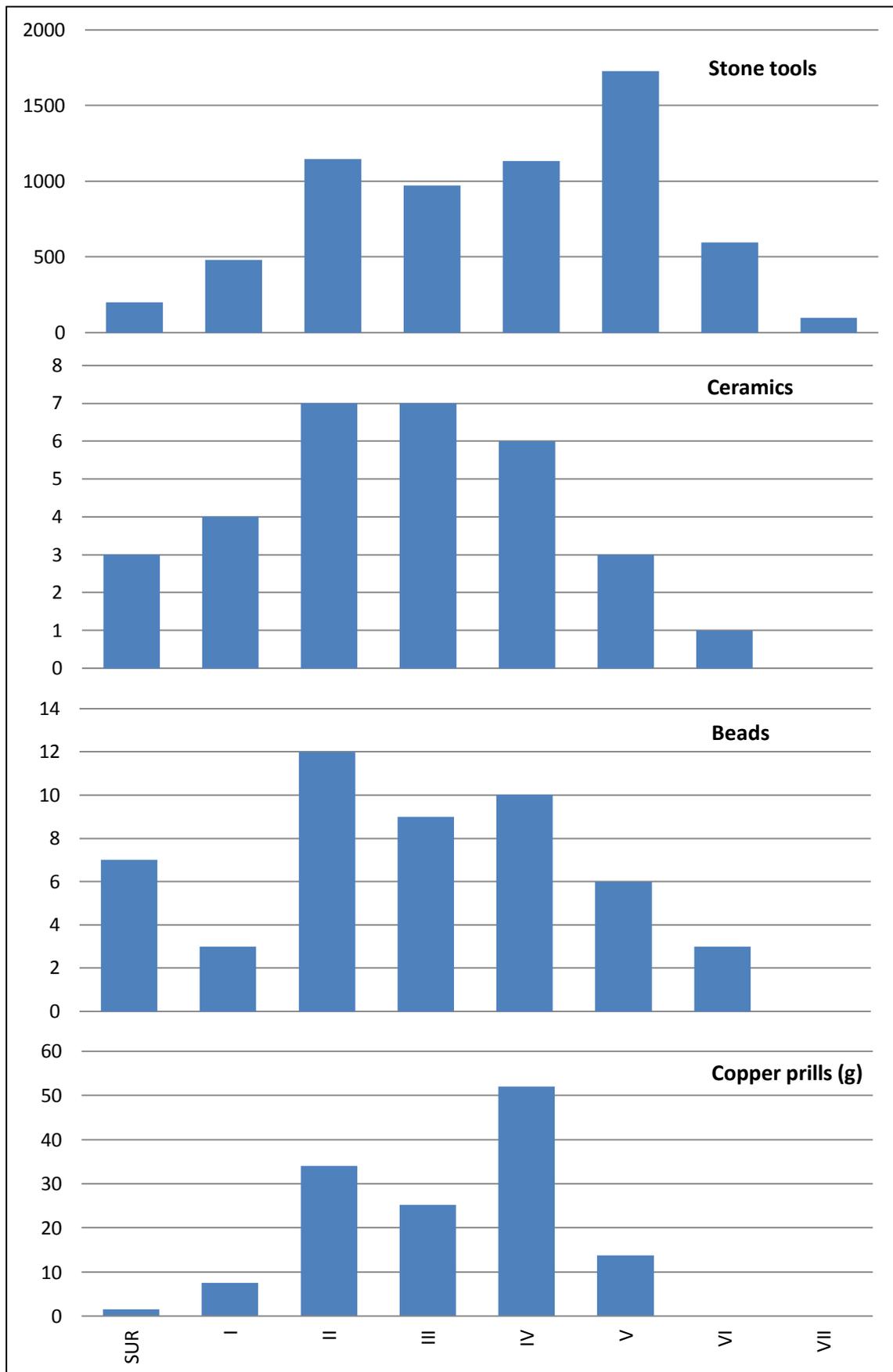


Figure 7.88: Mafunyane Shelter: stone tools, ceramics, organic beads and copper prills.

**Table 7.26: Mafunyane Shelter: summarised phases (bold indicates maximum in each category where applicable).**

	Phase D	Phase C	Phase B	Phase A	Total
Spits (stratigraphy)	SUR - III (PBS)	II - III (AS)	IV - VI (SAS)	VII (SAS)	
M <sup>3</sup>	0.03	0.04	0.1	0.01	
Stone tools					
No.	1434	1361	<b>3456</b>	98	6349
% of total	22.6	21.4	54.4	1.5	
/m <sup>3</sup>	46347.8	30791.9	<b>64840.5</b>	18846	
Quartz	538	473	1191	37	
%	37.5	34.8	<b>34.5</b>	<b>37.8</b>	
Quartzite	105	99	303	12	
%	7.3	7.3	8.8	12.2	
CCS	675	646	1346	37	
%	<b>47.1</b>	<b>47.5</b>	<b>38.9</b>	<b>37.8</b>	
Agate	68	88	325	8	
%	4.7	6.5	9.4	8.2	
Dolerite	48	55	291	4	
%	3.3	4	8.4	4.1	
Chips					
No.	1076	1029	<b>1252</b>	34	3391
% of total	31.7	30.3	36.9	1	
% within phase	75	75.6	36.2	34.7	
/m <sup>3</sup>	<b>34777</b>	23280.5	23489.7	6538	
Formal tools					
No.	18	10	<b>77</b>	2	107
% of total	16.8	9.3	72	1.9	
% of assemblage	1.3	0.7	<b>2.2</b>	2	
% exc. chips	<b>5</b>	3	3.5	3.1	
/m <sup>3</sup>	581.8	226.2	<b>1444.7</b>	385	
Scrapers	10	5	44	2	
Backed tools	8	5	31	0	
Scrapers/backed tools	1.3	1	<b>1.4</b>	NA	
Cores					
No.	17	8	<b>55</b>	2	82
% of total	20.7	9.8	67.1	2.4	
/m <sup>3</sup>	549.5	181	<b>1031.9</b>	385	
Ceramics					
No.	10	<b>11</b>	10	0	31
% of total	32.3	35.5	32.3	0	
/m <sup>3</sup>	<b>323.2</b>	248.9	187.6	0	

	Phase D	Phase C	Phase B	Phase A	
Organic beads					
No.	18	13	<b>19</b>	0	50
% of total	36	26	38	0	
/m <sup>3</sup>	<b>581.8</b>	294.1	356.5	0	
Glass beads					
No.	<b>2</b>	1	0	0	3
% of total	66.7	33.3	0	0	
/m <sup>3</sup>	<b>64.6</b>	22.6	0	0	
Metal beads					
No.	<b>1</b>	0	0	0	1
% of total	100	0	0	0	
/m <sup>3</sup>	<b>32.3</b>	0	0	0	
Faunal remains					
Grams	143.2	147.5	<b>540.4</b>	14.8	845.8
% of total	16.9	17.4	63.9	1.7	
/m <sup>3</sup>	4627	3336	<b>10138.3</b>	2840.4	
Copper prills					
Grams	26.9	41.5	<b>65.8</b>	0	134.2
% of total	20	30.9	49	0	
/m <sup>3</sup>	869.4	938.9	<b>1235</b>	0	
Copper items					
Grams	<b>8</b>	3	2	0	13
% of total	61.5	23.1	15.4	0	
/m <sup>3</sup>	<b>258.6</b>	67.9	37.5	0	
Figurine					
Grams	<b>1</b>	0	0	0	1
% of total	100	0	0	0	
/m <sup>3</sup>	<b>32.3</b>	0	0	0	
Tuyère					
Grams	0	0	<b>1</b>	0	1
% of total	0	0	100	0	
/m <sup>3</sup>	0	0	<b>18.8</b>	0	

### 7.3.8.1 Phase B

During this phase ceramics appear, as do copper prills, and the single tuyère piece also occurs here; Walker (1994) also recorded a ceramic pipe sherd at this depth. The ceramics are found in their lowest frequency, whereas the prills are at their highest density during this phase. The stone tool assemblage, too, is large (N=3456) and at its greatest density. CCS dominates, but by less than 5% over quartz. Dolerite doubled in frequency from Spit VII, CCS and agate both increased and quartz and quartzite dropped. Chip and core frequencies are high and suggest that primary

and secondary production may have been occurring at the site – the raw material nodules may have been collected from the nearby river and easily carried to the site, hence the high degree of waste. Formal tools are frequent, their density is high and they comprise 2.3% of the total assemblage. Scrapers (N=44) dominate at this phase with 1.4 scrapers per backed tool (N=31), the highest of all the levels. Most of the faunal assemblage was recovered from this phase and it is at its greatest density here too.

#### **7.3.8.2 Phase C**

Major drops in artefact frequencies are observed in the stone tool category, with less than half the amount per cubic metre than in the previous phase. CCS materials are emphasised, quartz increased and agate, dolerite and quartzite drop in frequency. The number of chips also drops slightly, but they comprise a much larger component of the assemblage in this phase, possibly indicating that a greater degree of tool production occurred at the site; primary production was probably happening elsewhere as there is a considerable drop in core density. Formal tools decrease massively and scraper and backed tool numbers are equal (each N=5), and occur only in small numbers making it difficult to draw any conclusions. The faunal record also drops significantly, as do organic beads and copper prills, although the latter to a lesser extent. There are some increases, notably in ceramics, but also in copper items. A single glass bead was also found in this phase.

#### **7.3.8.3 Phase D**

There is an increase in all artefact categories in this phase, except tuyères, and a figurine piece was also found. The surface component of the assemblage is clearly disturbed since there seems to be erosion in the northern portion of the rockshelter and a Bambata sherd, dating to between AD 150 and 650, was found here.

#### **7.3.9 Summary: Mafunyane Shelter**

Mafunyane has a distinctive forager record. Radiocarbon dates indicate that the site was occupied between AD 900 and 1100, but certain artefacts, namely the Bambata sherd found by Walker (1994) and the European glass beads, suggest a use of the site possibly as early as AD 150 and again within the last 400 years, respectively. The most interesting finds are the large amounts of copper prills and items and the tuyère and figurine pieces, all associated with the forager stone tool assemblage. In addition, the large number of artefacts and faunal specimens indicates that the site was not a transit camp but a major living site, a sentiment first expressed by Walker (1994).

## 7.4 JOÃO SHELTER

### 7.4.1 Regional context

João is situated 1.2km southeast of Dzombo and is in the same basic ecological context. Whereas Dzombo is found at a koppie in the palaeo-floodplain, João is located in the sandstone complex, surrounded by ridges running east-west both to the north and south of the site. In the immediate area of the site the lower sandstone bedrock is exposed except for in isolated areas where deposit exists; João is located in one of these deposit-rich zones. In the rockshelter, bedrock is exposed near to the back wall but the deposit deepens towards the opening of the rockshelter. Outside, where the agriculturalist homestead is located, the deposit is deeper in the eastern portion of the site and becomes shallower towards the west where soon after Trench 4, bedrock is exposed.

In the 4km buffer zone, 18.9km<sup>2</sup> (37.6%) was surveyed and 37 forager features were identified. Of them 13 are located in agriculturalist homesteads. There are three fine-line rock art sites, including the rock art panel in João, and one so-called herder site at JB Shelter located behind Dzombo (Table 7.27; Figure 7.89). About 300m northwest is the Mmamagwa complex with an indeterminate number of agriculturalist homesteads; excluding these, there are an additional 47 within the buffer zone and of those seven are Khami, two Mapungubwe and there is one Zhizo, Leokwe and TK2 settlement each (Figure 7.90).

**Table 7.27: João Shelter: archaeological sites and features within the buffer zone.**

Feature/site type	No.	Density (/km <sup>2</sup> )	% of total
Forager	37	2	19.9
in a homestead	13	0.6	40.6
Fine-lined art	3	0.2	37.5
Finger-painting	1	0.1	50
Homestead	47	2.5	37.9
Zhizo	1	0.1	1.6*
Leokwe	1	0.1	1.6*
TK2	1	0.1	1.6*
Mapungubwe	2	0.1	3.3*
Khami	7	0.4	11.5*

\* of total identified homesteads

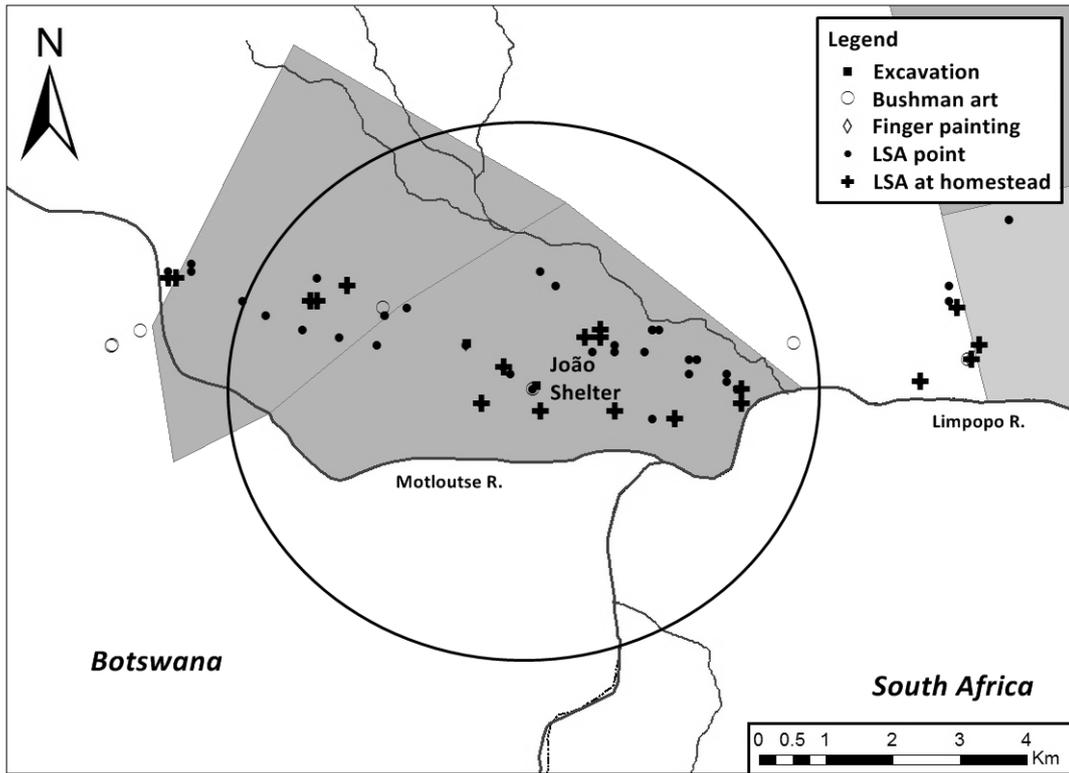


Figure 7.89: João Shelter: Forager related features within the 4km buffer zone.

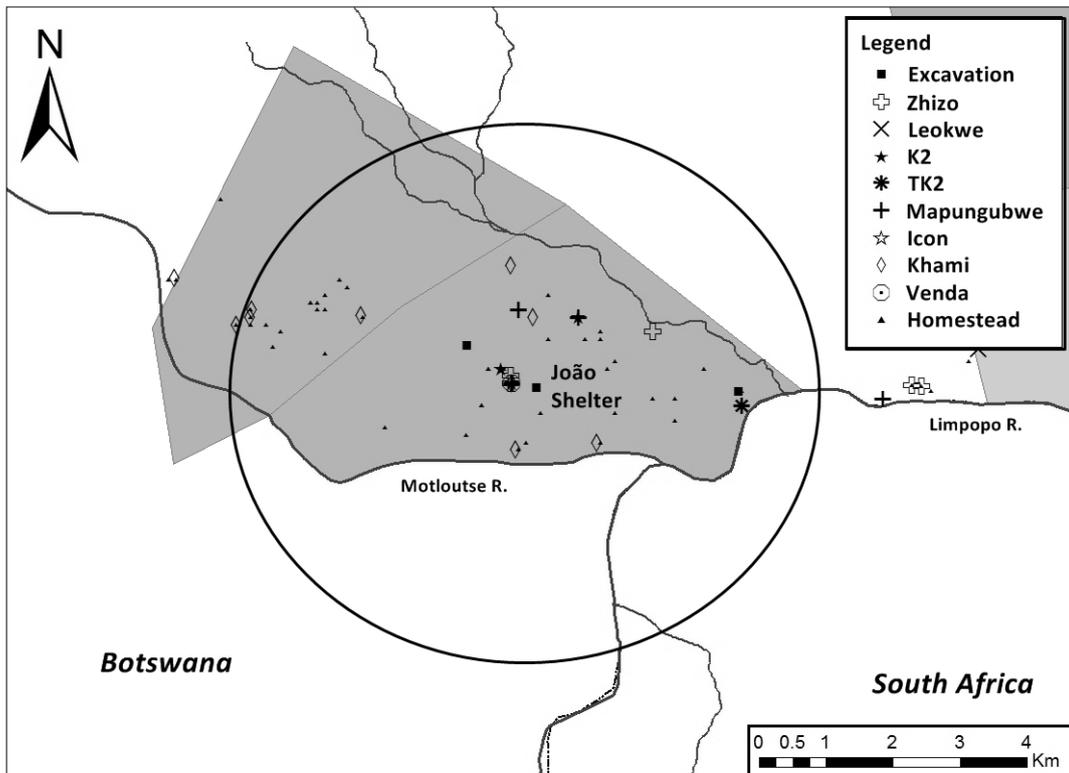


Figure 7.90: João Shelter: agriculturalist homesteads within the 4km buffer zone.

### 7.4.2 Chronology

The results from the four submitted charcoal samples are presented in Table 7.28. As with Dzombo, the species of the samples was identified by Dr Debra Costen and ORAU dated the samples and I calibrated them using the calibration programs OxCal 4.1 and SHCal 04. Generally, the dates are quite young, with the oldest being OxA-27142, which most probably calibrates to 1719 to 1813. The three dates from Trench 1 are all from the same stratigraphic unit. This unit contained glass beads from within the last 400 years as well as European items. Thus, it seems that there has been some mixing and the dates are likely applicable to this use of the site and not that of the agriculturalists occupying the homestead outside the rockshelter, with diagnostic ceramics and glass beads from between AD 900 and 1300, or the foragers.

**Table 7.28: João Shelter: radiocarbon dating results.**

Trench	Square	Spit	Stratigraphy	Species	BP	Calibration	%	Code
4	C	3	MG	<i>C. imberbe</i>	139±27	AD 1689-1728 <b>AD 1805-1952</b>	18.9 <b>76.5</b>	OxA-27140
1	B	3	PBS	<i>S. lancea</i>	147±27	AD 1684-1730 <b>AD 1803-1952</b>	21.8 <b>73.6</b>	OxA-27141
1	B	6	PBS	<i>C. imberbe</i>	201±28	AD 1653-1712 <b>AD 1719-1813</b> AD 1836-1884 AD 1923-1954	23.8 <b>53.4</b> 10.6 7.6	OxA-27142
1	B	8	PBS	<i>C. mopane</i>	170±26	AD 1671-1745 AD 1755-1764 AD 1771-1780 <b>AD 1796-1954</b>	31.8 1.1 1.4 <b>61.1</b>	OxA-27143

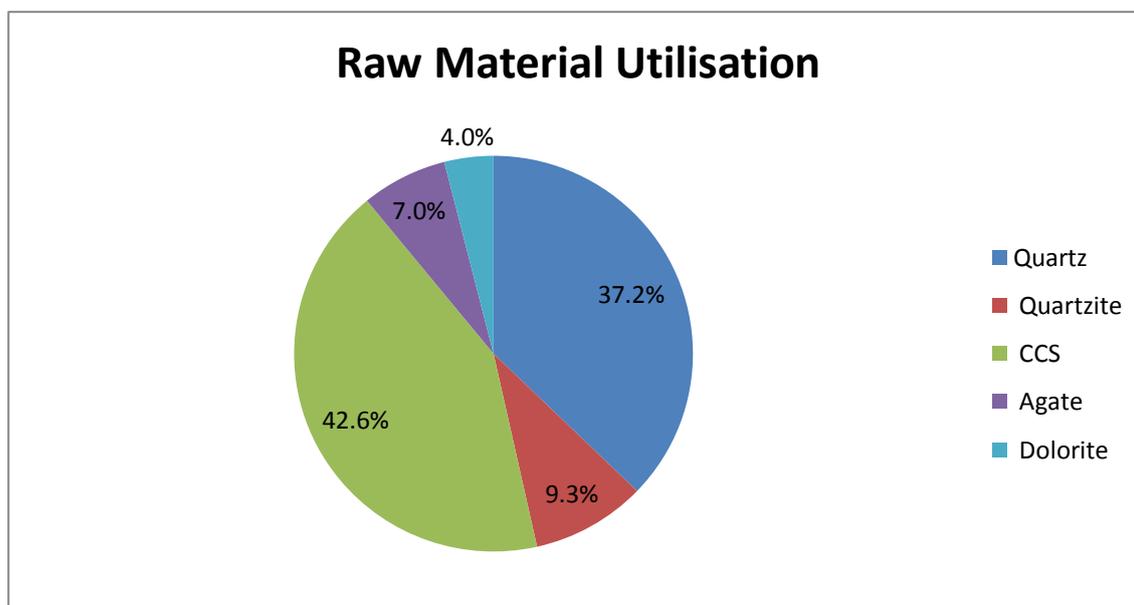
### 7.4.3 Stone tool assemblage

The site can be divided into two zones: the rockshelter and homestead. To determine the association between the two zones, squares were excavated in both: Trenches 1 and 3 in the former and Trenches 2 and 4 in the latter. Stone tools were found in every square (Catalogue D.3.1), even though stratigraphically the squares are unrelated. In total, 6517 stone tools were recovered at João, of which 3166 (51.4%) are chips. The majority of the stone tools came from the rockshelter, and mostly so from Trench 1, followed by a much smaller number from the homestead zone. Overall the assemblage is dominated by CCS, followed by quartz, quartzite,

agate and, lastly, dolerite (Table 7.29; Figure 7.91). However, CCS does not convincingly dominate the assemblage but does so when combined with agate (49.5%).

**Table 7.29: João Shelter: raw material distribution in the trenches.**

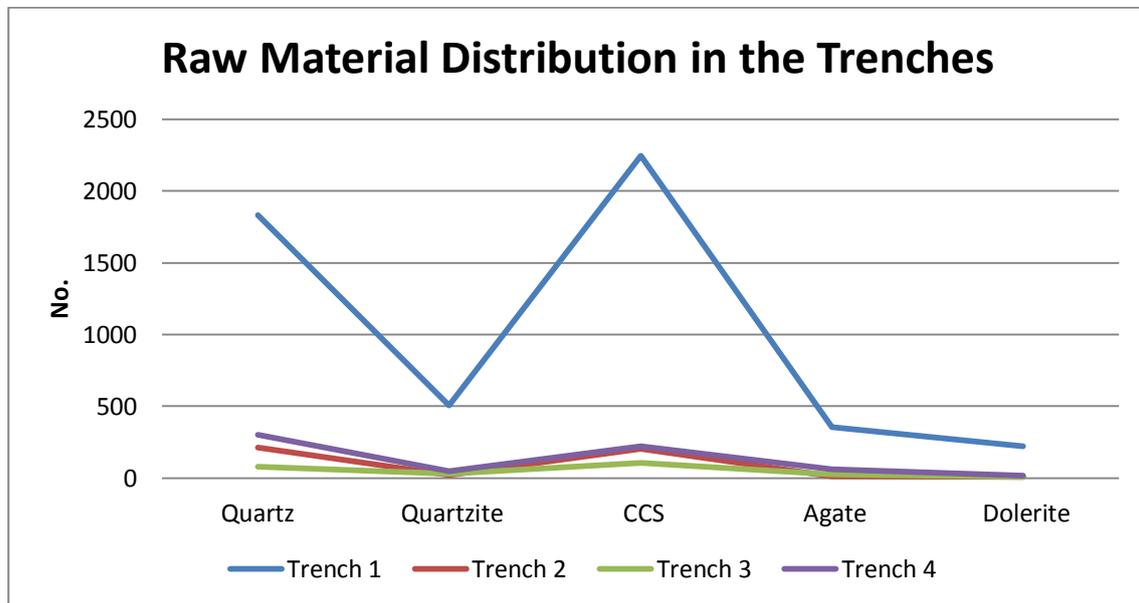
Trench	Quartz	%	Quartzite	%	CCS	%	Agate	%	Dolerite	%	Total
1	1831	35.5	505	9.8	2246	43.6	354	6.9	221	4.3	5157
2	214	46.5	20	4.3	203	44.1	13	2.8	10	2.2	460
3	79	31.9	31	12.5	104	41.9	25	10.1	9	3.6	248
4	301	46.2	49	7.5	221	33.9	62	9.5	19	2.9	652
<b>Total:</b>	<b>2425</b>	<b>37.2</b>	<b>605</b>	<b>9.3</b>	<b>2774</b>	<b>42.6</b>	<b>454</b>	<b>7</b>	<b>259</b>	<b>4</b>	<b>6517</b>



**Figure 7.91: João Shelter: raw material utilisation.**

Using the overall figures from João for comparison with other sites is not entirely accurate because of the two distinctive zones at the site; each contains a different stone tool assemblage. In Trenches 1 (43.6%) and 3 (41.9%), CCS dominates the assemblages, whereas in Trenches 2 (46.5%) and 4 (46.2%), quartz is the most frequent material type. Quartzite, agate and dolerite frequencies are consistently low except for in Trench 3, where quartzite (12.5%) and agate (10.1%) are high compared to the other trenches. This pattern may change with a larger sample size as only a single square was excavated in Trench 3 and the deposit here is fairly shallow, only about 15cm deep (Figure 7.92). All material types can be sourced from the vicinity of the camp

and so the difference in the dominant raw material type does not relate to sourcing. Therefore, one needs to look more specifically at human choices and the desirability of the materials; quartz, for example, does not need secondary production to produce sharp edges and so it is often used in expedient stone tool assemblages (Orton 2004: 1).



**Figure 7.92: João Shelter: raw material distribution in the trenches.**

In Trench 1, the stone tool distribution follows a basic bell curve (Figure 7.93; see Catalogue D.3.2 for excavated volume). The greatest frequency of tools is between Spits IV and VIII, with the peak in Spit VI. When the stone tool density is taken into account, however, this pattern changes and it shows that they drop off significantly from Spit VIII (Figure 7.94). At this level it was felt that bedrock had in fact been reached, but due to natural processes the bedrock was a decayed and friable sandstone level that had been broken apart, allowing artefacts to enter the deposit. No soil morphological assessment has been conducted and so this is a preliminary summation. In Trenches 2 and 3, no significant patterns are noticed with regard to stone tool distribution (Figures 7.95 – 7.96), but in Trench 4 the stone tool numbers increase to a peak in Spit IV, after which they drop off (Figure 7.97); this pattern is not noticed with regard to stone tool density where a double bell curve appears (Figure 7.98). It is likely, however, that the density figure is more accurate as the midden was formed over a single occupation of the site, evidenced by finding Leopard's Kopje ceramics throughout. The stone tools would probably have been discarded here only during the period in which the homestead was occupied.

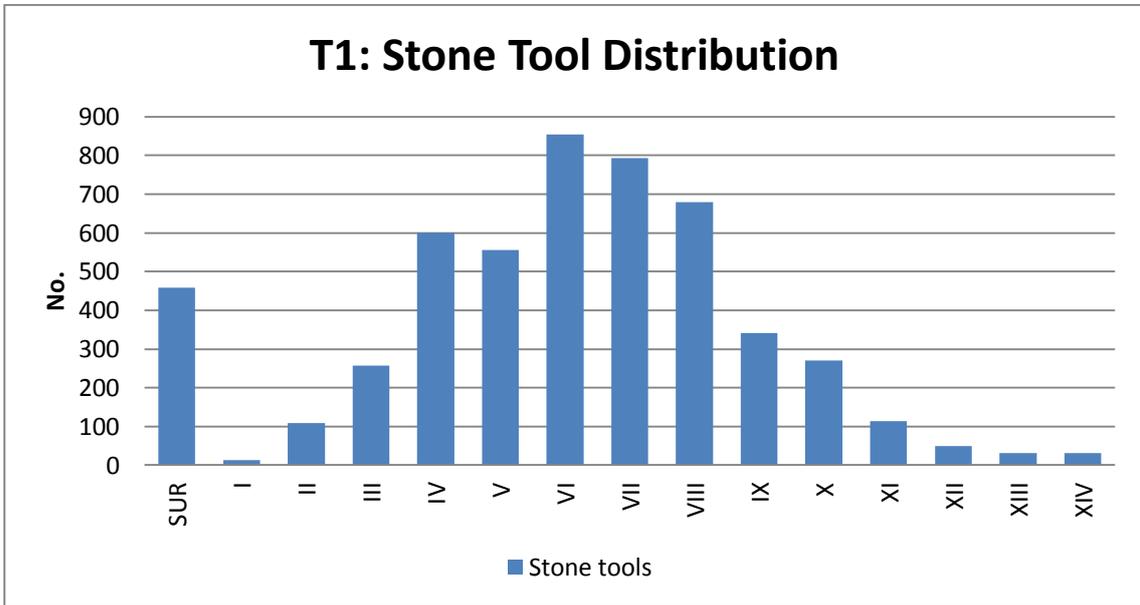


Figure 7.93: João Shelter: stone tool distribution in Trench 1.

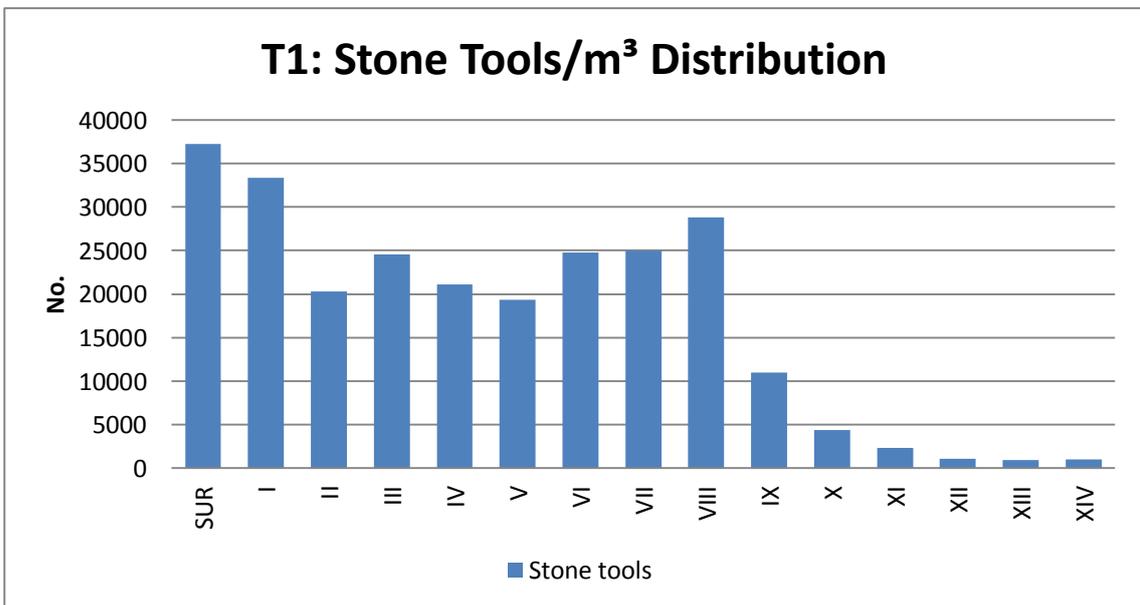


Figure 7.94: João Shelter: stone tool density in Trench 1.

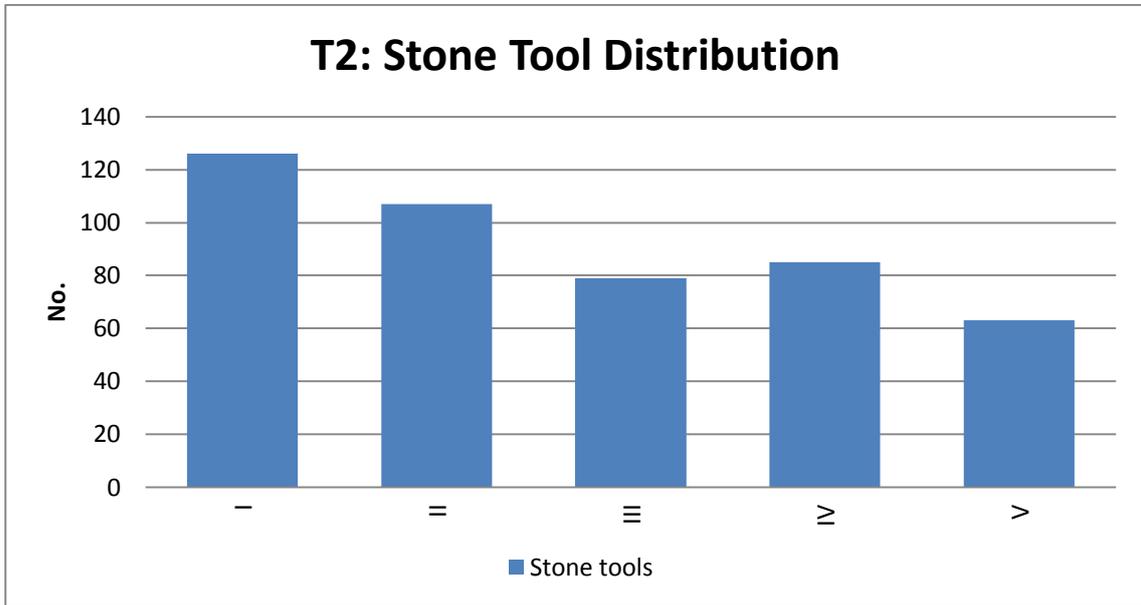


Figure 7.95: João Shelter: stone tool distribution in Trench 2.

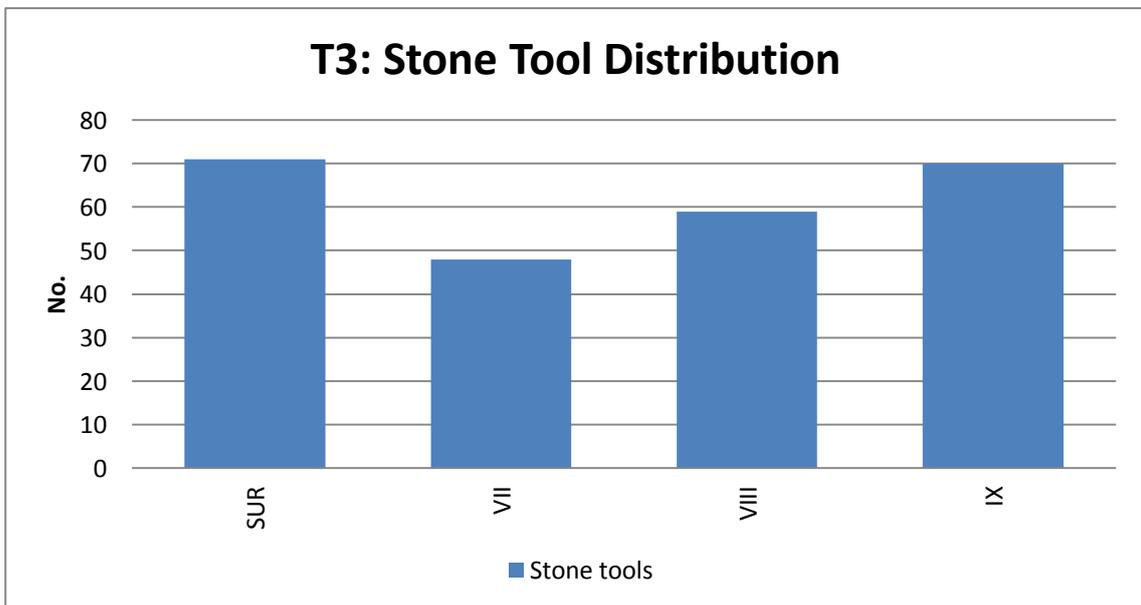


Figure 7.96: João Shelter: stone tool distribution in Trench 3.

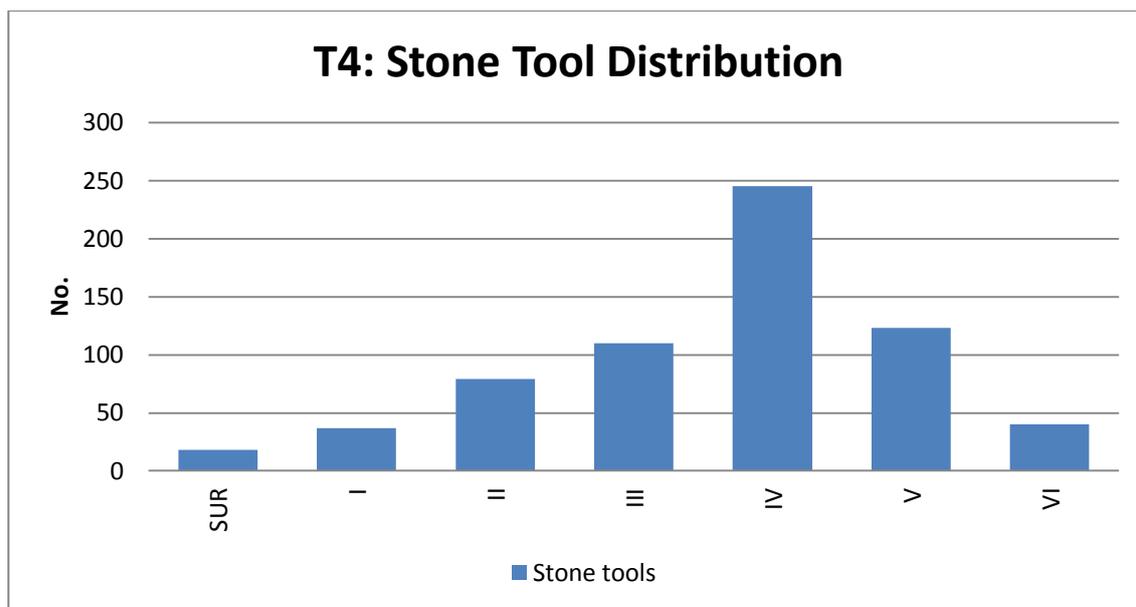


Figure 7.97: João Shelter: stone tool distribution in Trench 4.

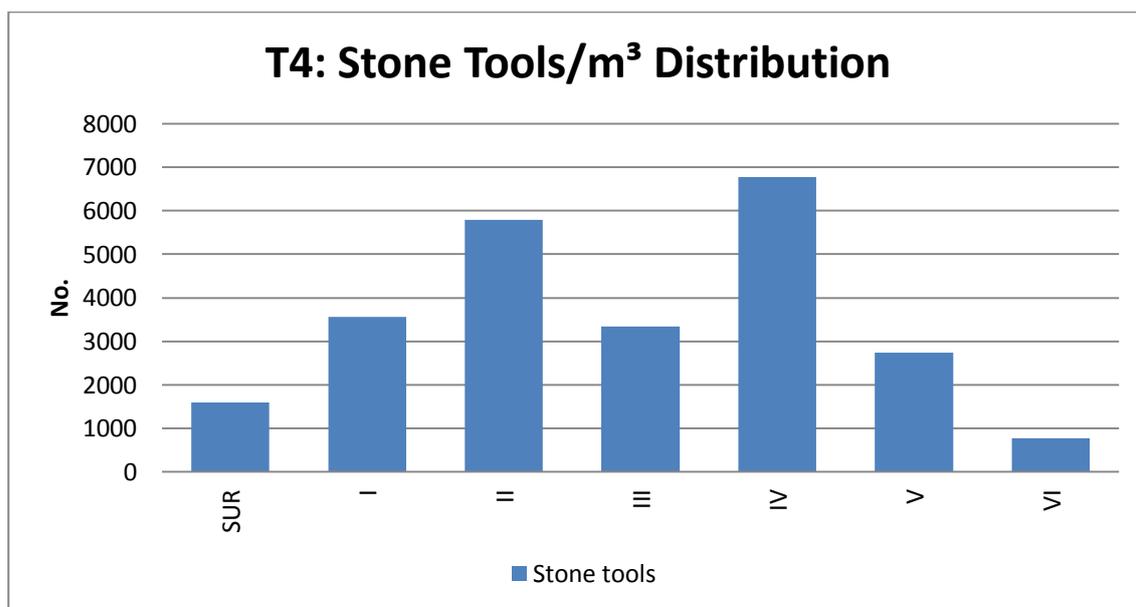


Figure 7.98: João Shelter: stone tool density in Trench 4.

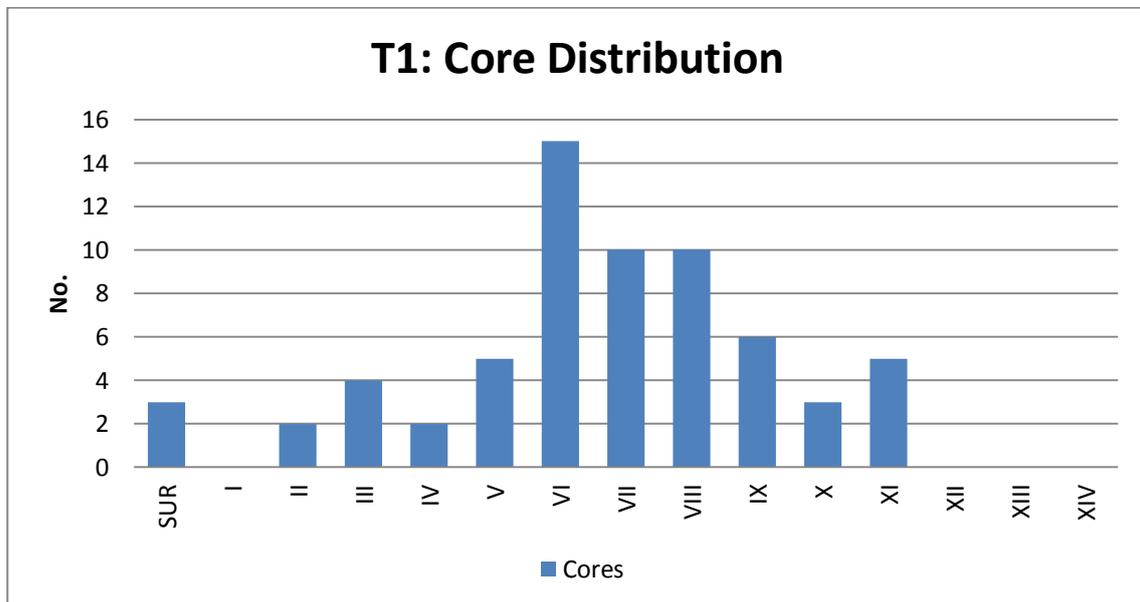
#### 7.4.3.1 Cores

A total of 88 cores were recovered from João (1.4%; Table 7.30). Most are from Trench 1 (Figure 7.99 – 7.100), but the highest density of cores is from Trench 3. In total, eight different core categories are present at the site, but not all occur in each trench. In the four trenches, however, irregular cores were the most frequent core type. Based on the present core categories, as with the other sites, a bipolar flaking technique was favoured and primary production was occurring at the site, mostly, it appears within the rockshelter. Tool manufacture is unlikely to have occurred

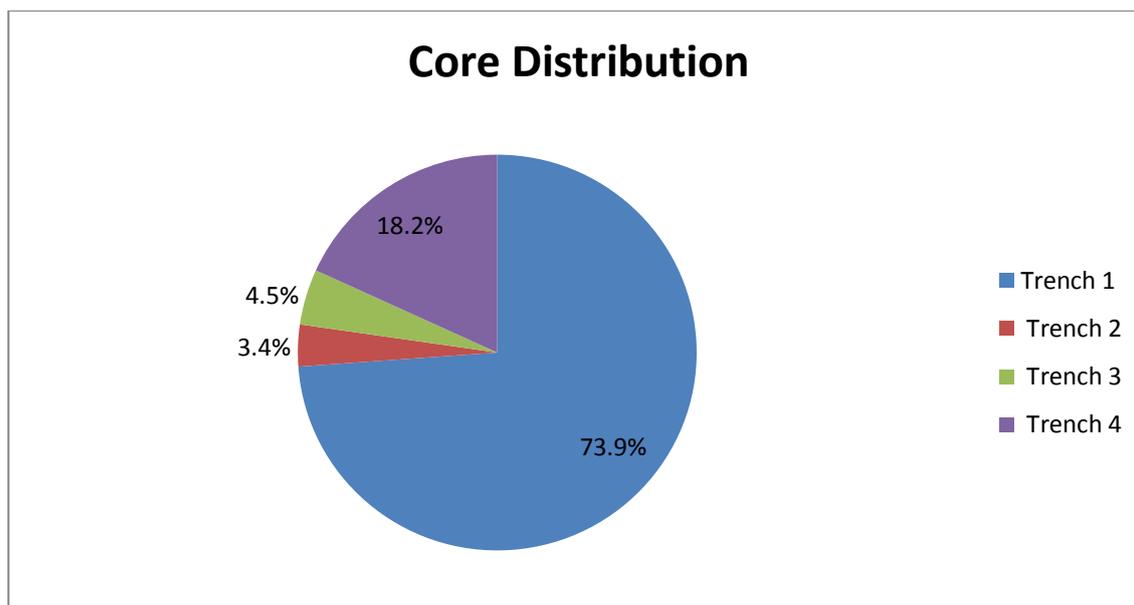
at the midden as this is a refuse deposit and the waste disposed of here includes broken ceramics and stone tools.

**Table 7.30: João Shelter: core types and distribution.**

Trench	Irregular core	Bladelet core	Bipolar bladelet core	Single platform core	Preliminary flaked core	Opposed platform	Radial core	Rice seed core	Total	Cores/m <sup>3</sup>
1	31	1	2	18	6	2	1	4	65	62
2	2	0	0	1	0	0	0	0	3	11.9
3	2	0	0	0	2	0	0	0	4	91.1
4	10	0	1	1	2	1	0	1	16	74.1
<b>Total:</b>	<b>45</b>	<b>1</b>	<b>3</b>	<b>20</b>	<b>10</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>88</b>	<b>55.6</b>



**Figure 7.99: João Shelter: core distribution in Trench 1.**



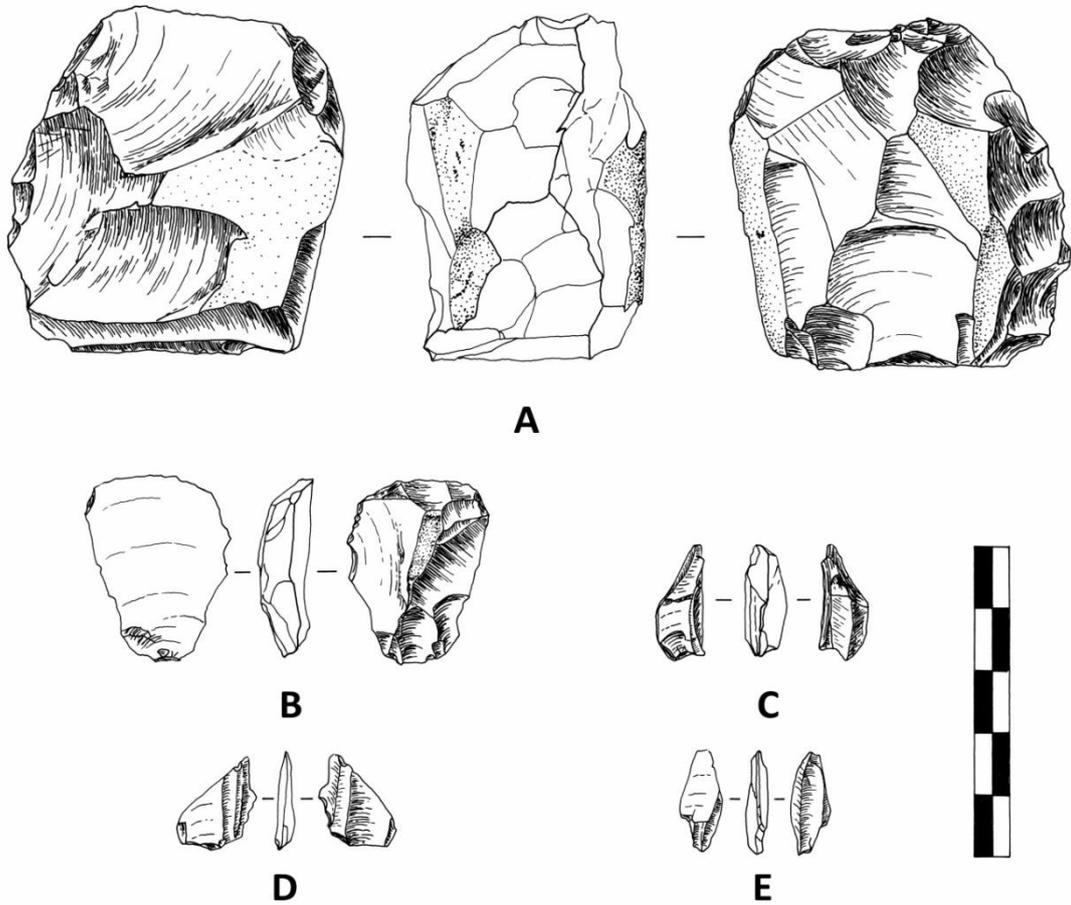
**Figure 7.100: João Shelter: core distribution.**

#### **7.4.3.2 Formal tools**

In total, 66 formal tools were identified. They represent 20 categories, totalling 1% of the assemblage, or 2.1% when chips are excluded (Table 7.31; Catalogue D.3.3). Most of the formal tools were found in Trench 1, yet the greatest density was from Trench 3. The formal tools exhibit features very similar to assemblages from the final LSA, such as scrapers and backed tools (Figures 7.101 – 7.105). The frequency of these two tool types are fairly similar, followed by other tools, which includes MBPs and planes. The most common tool type is small end scrapers (19.2%), then MRPs (13.7%), segments (11%) and medium end scrapers (6.9%; figures based on data in Table 7.31). CCS is used to make the majority of the formal tools followed by agate then quartz, quartzite and dolerite (Figure 7.106). In Trenches 1 and 3, the overall assemblage is dominated by CCS as is the formal tool assemblage (N=57; 86.4%), whereas only 3 (4.6%) quartz tools were found here and all within the rockshelter (Trench 1). In Trenches 2 and 4, where quartz is more frequent, 9 tools were found and all were produced using CCS (Figure 7.107).

**Table 7.31: João Shelter: formal tools.**

	<b>28</b>	<b>Trench 1</b>	<b>Trench 2</b>	<b>Trench 3</b>	<b>Trench 4</b>	<b>Total</b>
<b>Scrapers</b>						
End scraper (s)	10			1	3	14
End, side + side scraper (s)				1		1
Side scraper (s)	1					1
End scraper (m)	5					5
End + side scraper (m)	1					1
End scraper (l)				2		2
Broken scraper	3				1	4
<b>Backed stone tools</b>	<b>26</b>					
Segment	6	1			1	8
Broken segment	4					4
Backed bladelet	3					3
Broken backed bladelet	4					4
Incomplete backed bladelet	1					1
Segmented backed bladelet	5					5
MBP		1				1
<b>Other</b>	<b>17</b>					
Plane	2					2
MRP	7			1	2	10
<b>Total:</b>	<b>52</b>	<b>2</b>	<b>5</b>	<b>7</b>	<b>66</b>	
<b>%:</b>	<b>78.8</b>	<b>3</b>	<b>7.6</b>	<b>10.6</b>		



**Figure 7.101: João Shelter: formal tools and cores: A, irregular core (MSA?); B, medium end scraper; C & E; rice seed core; and D, segment.**

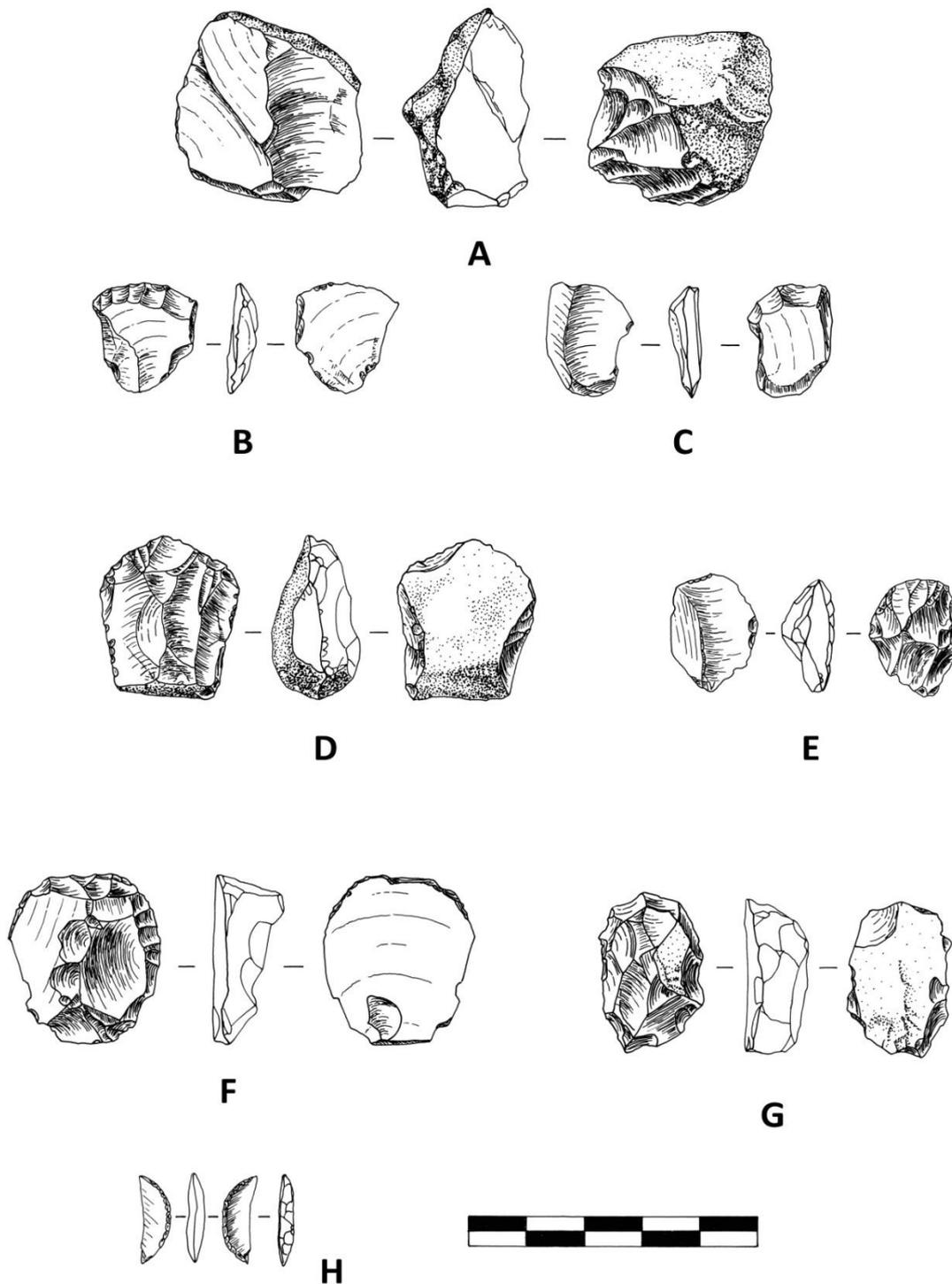


Figure 7.102: João Shelter: formal tools and cores: A, opposite platform core; B, C & E, small end scraper; D, bipolar bladelet core; F & G, medium end scraper; and H segment.

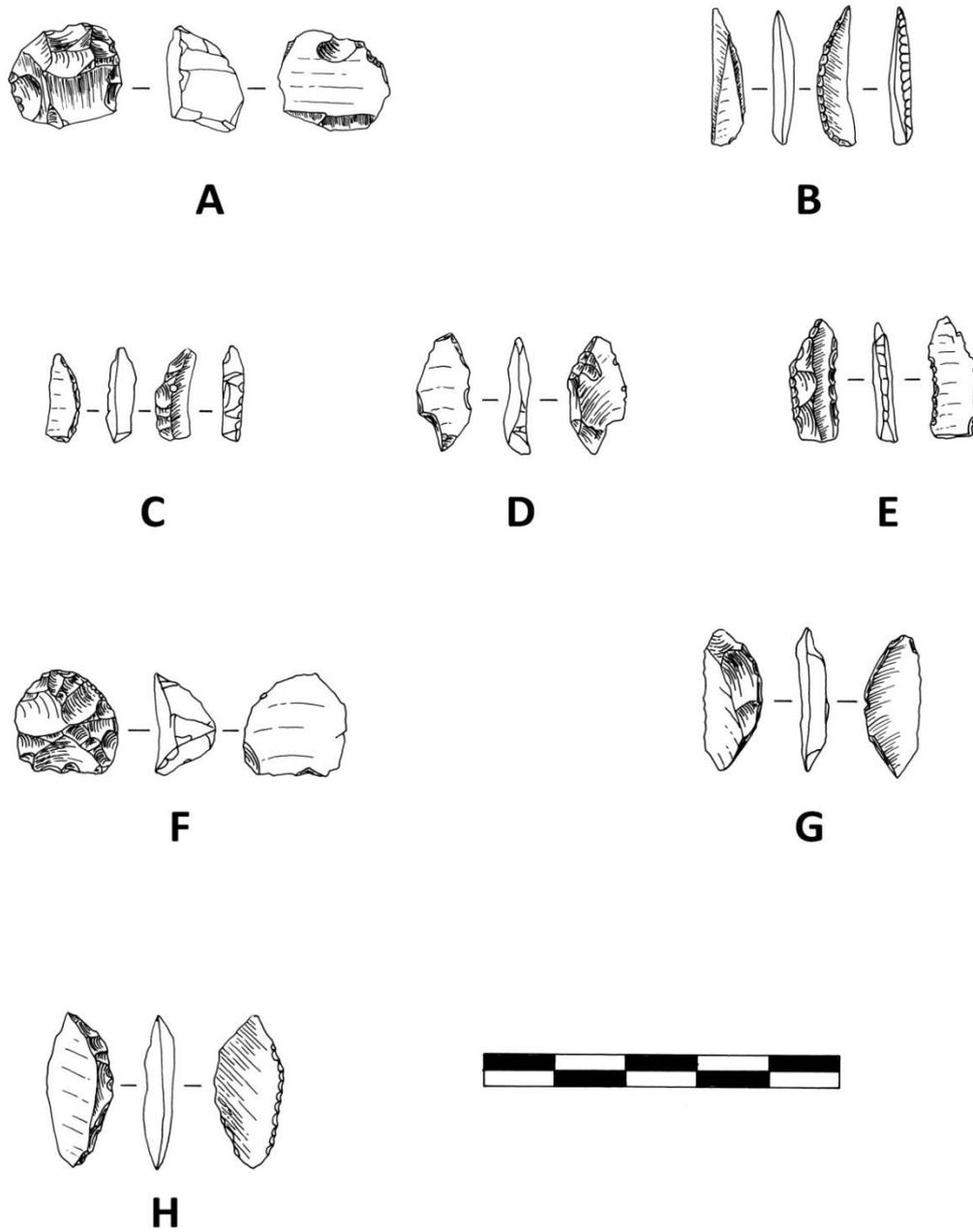


Figure 7.103: João Shelter: formal tools and cores: A, single platform core; B, segmented backed bladelet; C & D, broken segment; E, broken backed bladelet; F, small side scraper; and G & H, segment.

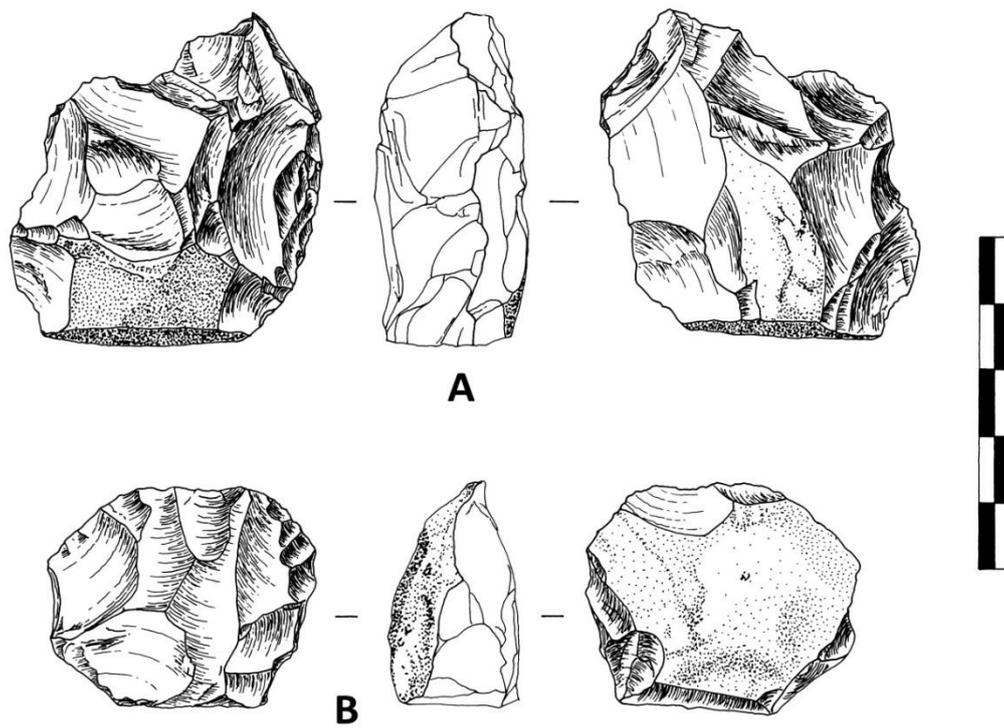


Figure 7.104: João Shelter: cores: A, single platform core; and B, radial core.

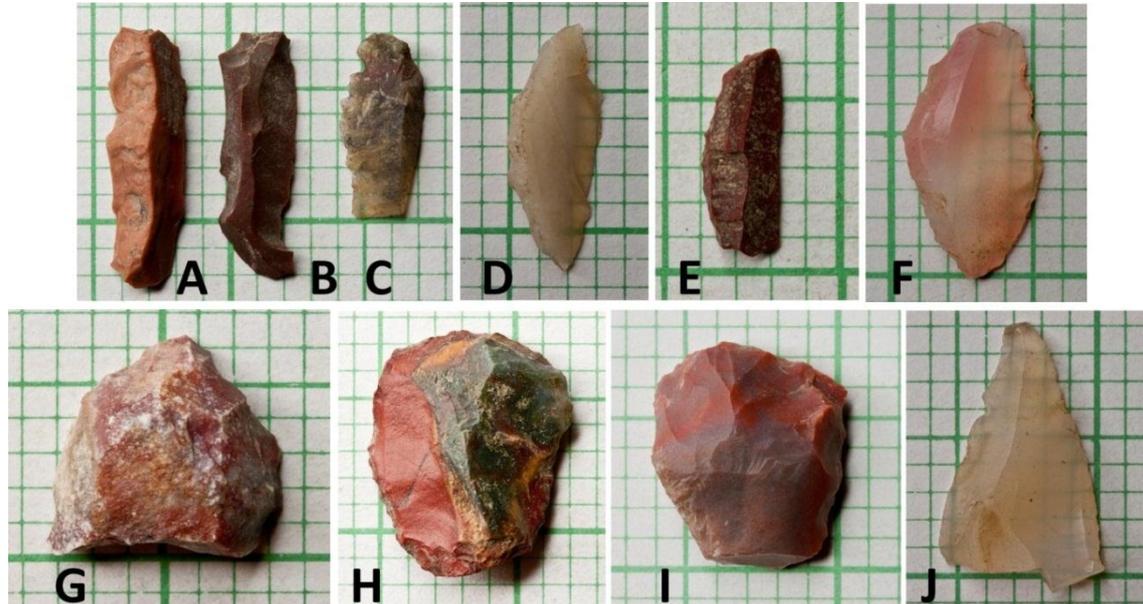


Figure 7.105: João Shelter: formal tool examples: A-C, bladelet; D & F, segment; E, segmented backed bladelet; G, small end and side scraper; H & I, small end scraper; and J, utilised flake.

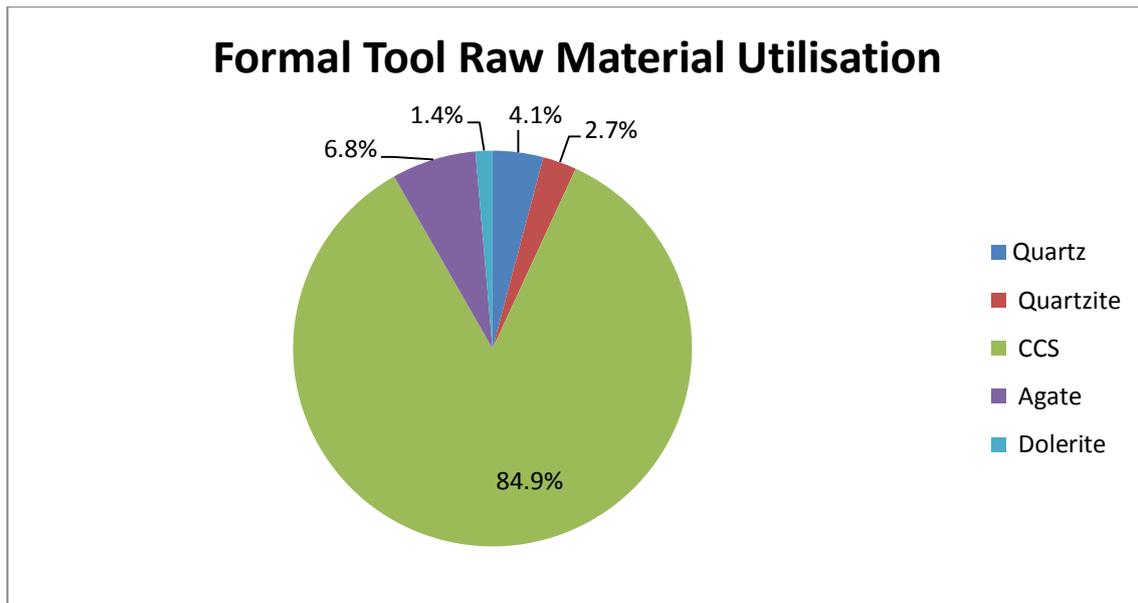


Figure 7.106: João Shelter: formal tool raw material distribution.

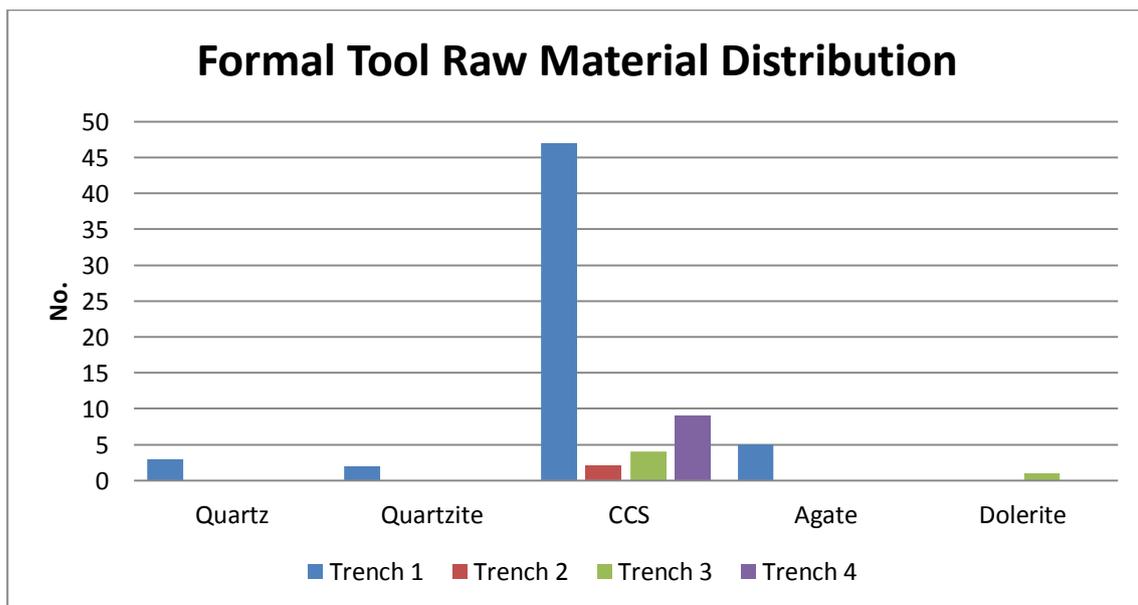


Figure 7.107: João Shelter: formal tool raw material types between the different trenches.

#### 7.4.3.2.1 Scrapers and backed stone tools

With regard to the distribution of scrapers and backed stone tools, in Trench 1 there are 57 formal tools, 23 of which are backed (40.4%) and 20 are scrapers (35.1%; Figure 7.108). Two backed stone tools and no scrapers were found in Trench 2, while in Trench 3 four scrapers were recovered but no backed stone tools. In Trench 4, in the agriculturalist midden, there were nine formal tools including four scrapers (44.4%) and a backed bladelet (11.1%). Unlike the other sites on the Greater Mapungubwe Landscape, there is no distinctive pattern between the ratio of

scrapers and backed stone tools throughout the levels at João. The small sample size from Trenches 2 to 4 might also be an issue. In Trench 1, however, the higher number of backed stone tools is unusual for such a late date, namely after AD 1000, with scrapers dominating at all other sites dating to within the last 2000 years. If this is accurate, it displays yet another degree of variability in the archaeological record distributed across the Greater Mapungubwe Landscape. However, due to the late radiocarbon dates and the possibility of mixing, it cannot be excluded that this assemblage is in fact a palimpsest and that the difference between the numbers of scrapers versus backed stone tools is inaccurate; mixing of assemblages may have levelled the difference between the two tool types.

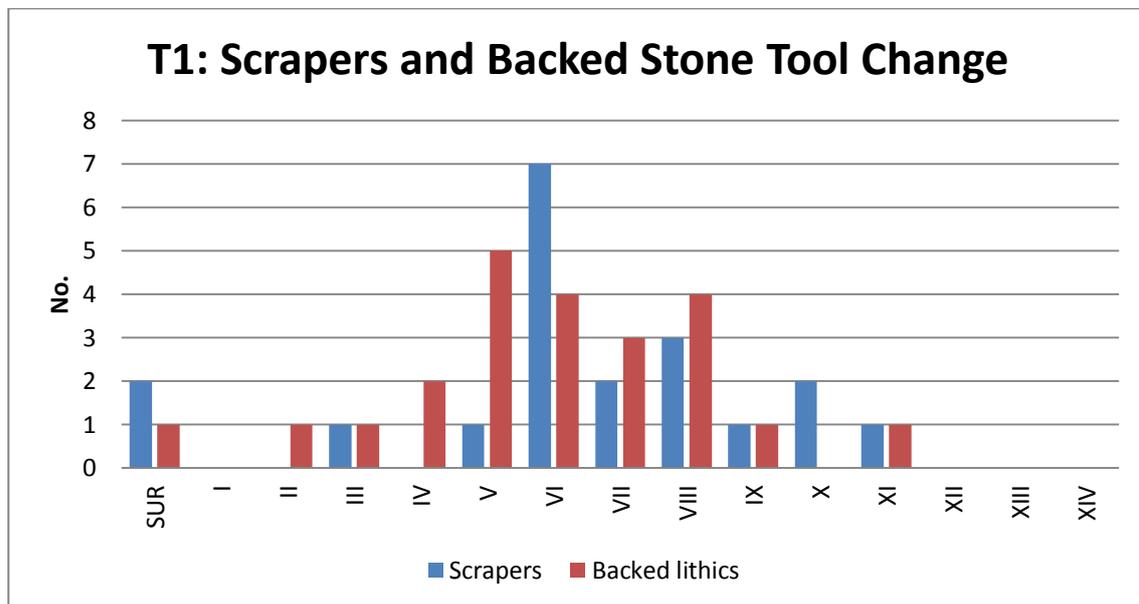


Figure 7.108: João Shelter: scraper and backed stone tool distribution in Trench 1.

#### 7.4.4 Ceramic assemblage

A large ceramic assemblage, of over 1000 sherds, was recovered from João. Of these, 1037 are plain (92.8%) and 80 are diagnostic (7.2%). The diagnostic ceramics can be further separated into decorated (N=43), plain rim (N=20), decorated rim (N=7) and spout (N=1) sherds. Plain ceramics are considerably more frequent than diagnostic sherds, but both categories were found in all four trenches. Most of the ceramics came, unsurprisingly, from the midden – a refuse deposit – and most were plain (93.2%), though some were decorated (3.8%) and there were also plain rims (2.2%), decorated rims (0.7%) and a single spout (0.1%). Trench 2 contained 156 ceramics, 139 of which are plain (89.1%), plus eight decorated and plain rim pieces (each 5.1%) and a decorated rim (0.6%). Trench 1 contained the next highest number of ceramics, totalling 84 sherds made up of 80 plain sherds (95.2%) and two decorated and plain rim pieces each (2.4%). Trench 3 contains

the lowest number of ceramics, but the second highest density of sherds. As with the other trenches, in Trench 3 most sherds are plain (96.3%) and only one was decorated (3.7%; Table 7.32).

**Table 7.32: João Shelter: ceramics.**

Trench	Total	Spit	Plain	Decoration	Plain rim	Decorated rim	Spout	Total	Plain ceramics	Diagnostic ceramics
1	80	2	80	2	2	0	0	84	80	4
2	139	8	139	8	8	1	0	156	139	17
3	26	1	26	1	0	0	0	27	26	1
4	792	32	792	32	19	6	1	850	792	58

**Total: 1037 43 29 7 1 1117 1037 80**

Trench	Total	Spit	/m <sup>3</sup>							
1	80	2	75.6	1.9	1.9	0	0	79.4	75.6	3.8
2	139	8	525.7	30.3	30.3	3.8	0	590	525.7	64.3
3	26	1	592.3	22.8	0	0	0	615.1	592.3	22.8
4	792	32	3667.9	148.2	88	27.8	4.6	3936.5	3667.9	268.6

**Total: 655.3 27.2 18.3 4.4 0.6 705.9 655.3 50.6**

Unfortunately, most of the diagnostic ceramics are too small to be accurately identified (Figure 7.109), but some could tentatively be placed into facies. The identifiable ceramics are two K2 sherds, A 4C III and D 4C IV, a Toutswe or K2 sherd, B 2B II, both dating to between AD 1000 and 1220 and a possible Toutswe and TK2 sherd, B 4C III and 2BB+D V, respectively. The results indicate that the site was occupied by agriculturalists between AD 1000 and 1250. Ceramic identification is a judgement decision and so is problematic especially since none of the samples could be accurately placed into a single facies, but the results are promising since they all fall within a narrow chronological bracket. However, this does not concur with the radiocarbon dates, which came from the same levels and indicate that the site was probably used within the last 300 years. The extensive dated sequence of Greater Mapungubwe Landscape ceramics (see Huffman 2007) casts doubt on the association between the ceramics and radiocarbon dates and the number of ceramic sherds does not indicate recycling of earlier artefacts by the site's occupants.

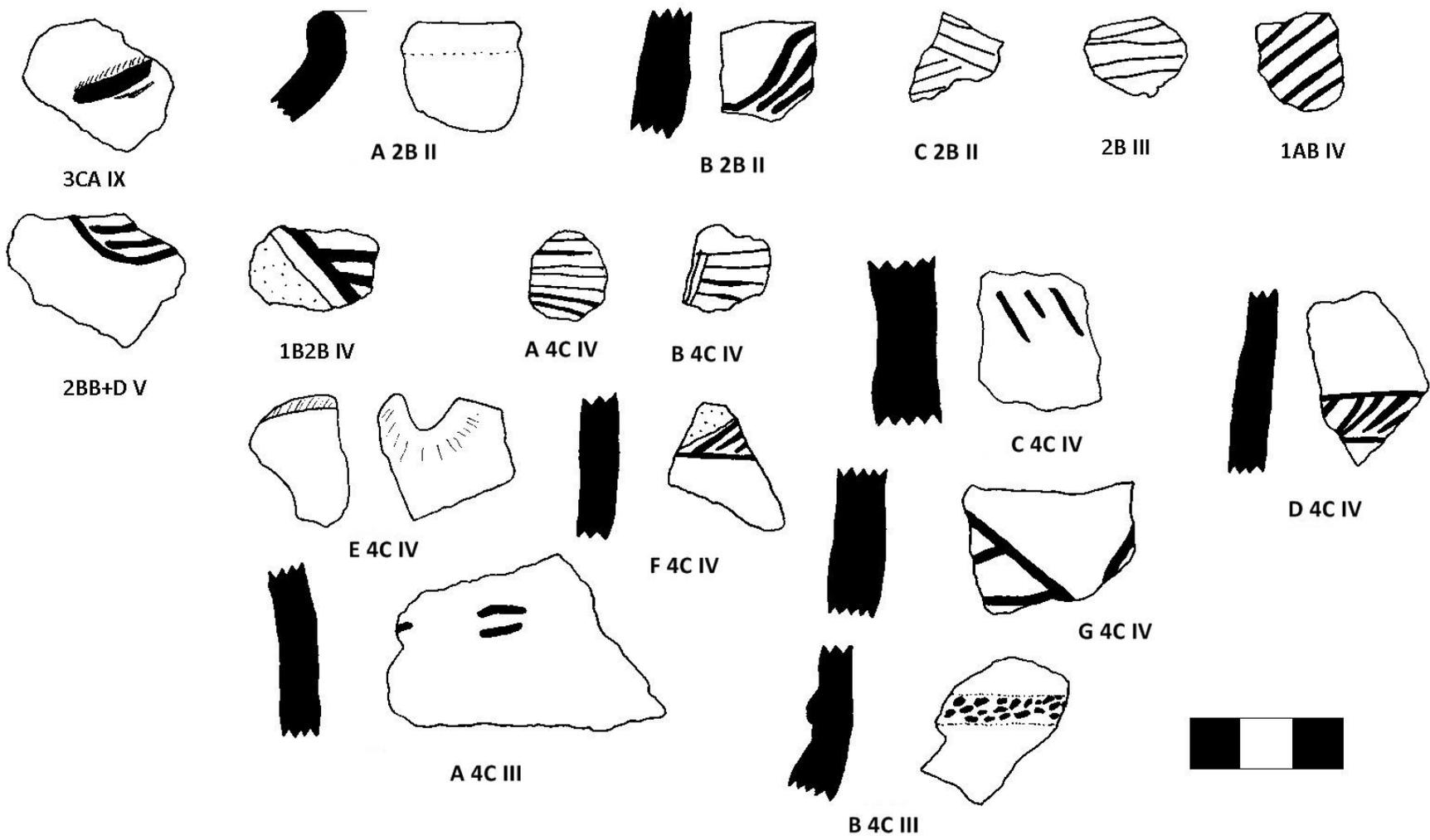


Figure 7.109: João Shelter: diagnostic ceramics.

#### 7.4.5 Bead assemblage

A large bead assemblage was recovered from João, totalling 237 beads: 150 are glass (63.3%) and 87 are organic (36.7%). Most of the beads come from Trench 1 (N=207; 72.1%), of which 131 (63.3%) are glass and 76 are organic (36.7%). Trench 1 is followed in frequency by Trench 4, which contained 20 beads (7%): 12 being glass (60%) and eight organic (40%). Fewer beads were found in Trench 2, with six glass beads and an organic bead and two organic beads and a glass bead were found in Trench 3.

In the organic bead category, ostrich eggshell beads are the most frequent, followed by bone and lastly *Achatina*. The various stages of ostrich eggshell bead production are present at the site but most are complete (72%) or broken (14.7%). Some of the beads are partially made or are broken preforms (each 6.7%; Figure 7.110), suggesting that some bead manufacturing did occur at the site (Table 7.33).

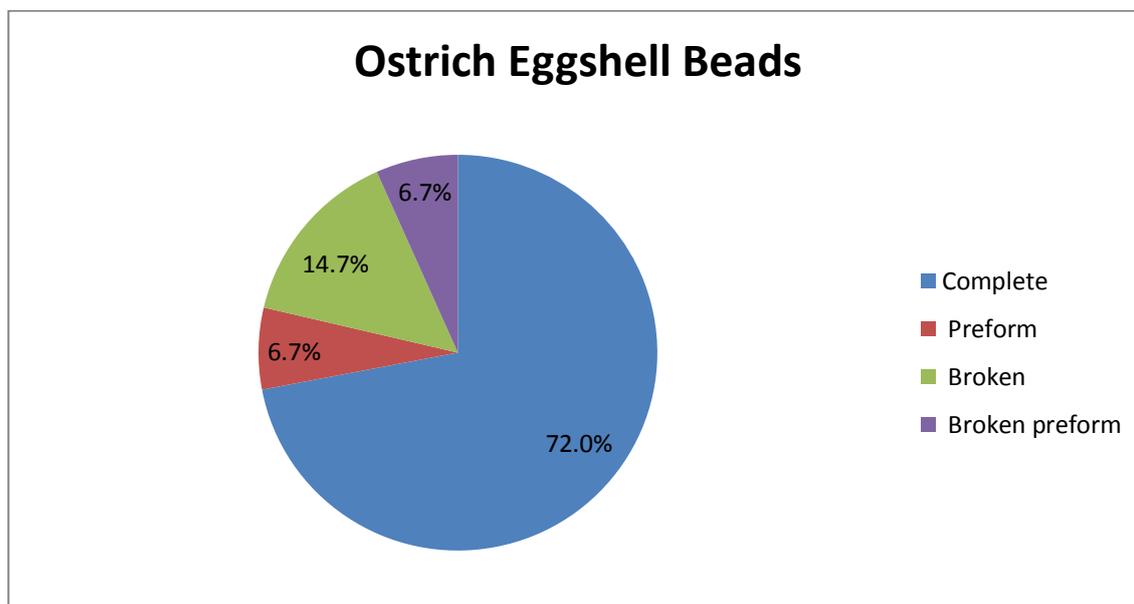


Figure 7.110: João Shelter: ostrich eggshell beads in different stages of production.

Table 7.33: João Shelter: organic beads.

Trench	Square	Spit	OES	OES preform	Broken OES	Broken preform OES	Bone	Broken bone	Achatina	Broken Achatina	Total	Organic/m <sup>3</sup>
1		SUR	3	1	1	2	1	0	0	0	8	146.5
1		I	0	0	1	0	0	0	0	0	1	2564.1
1		II	3	0	0	0	0	0	0	0	3	288.5
1		III	3	0	0	1	0	0	0	0	4	84.6
1		IV	5	0	1	0	0	1	0	0	7	59.5
1		V	6	1	2	0	0	0	0	0	9	75.7
1		VI	5	2	5	2	2	1	0	0	17	125.3
1		VII	8	1	0	0	0	0	0	0	9	77.9
1		VIII	6	0	0	0	1	0	0	0	7	76.2
1		IX	1	0	1	0	1	0	0	0	3	28.5
1		X	5	0	0	0	1	0	0	0	6	58.1
1		XI	1	0	0	0	0	0	0	0	1	20.8
1		XII	0	0	0	0	0	0	0	0	0	0
1		XIII	1	0	0	0	0	0	0	0	1	29.6
1		XIV	0	0	0	0	0	0	0	0	0	0
2	B	I	0	0	0	0	0	0	0	0	0	0
2	B	II	1	0	0	0	0	0	0	0	1	15.3
2	B	III	0	0	0	0	0	0	0	0	0	0
2	B	IV	0	0	0	0	0	0	0	0	0	0
2	B	V	0	0	0	0	0	0	0	0	0	0
3	C	SUR	1	0	0	0	0	0	0	0	1	96.2
3	C	VII	0	0	0	0	0	0	0	0	0	0
3	C	VIII	1	0	0	0	0	0	0	0	1	76.9
3	C	IX	0	0	0	0	0	0	0	0	0	0
4	C	SUR	0	0	0	0	0	0	0	0	0	0
4	C	I	0	0	0	0	0	0	0	0	0	0
4	C	II	0	0	0	0	0	0	0	0	0	0
4	C	III	1	0	0	0	1	0	0	0	2	55.3
4	C	IV	1	0	0	0	0	0	1	0	2	44.6
4	C	V	1	0	0	0	0	0	1	1	3	57.7
4	C	VI	1	0	0	0	0	0	0	0	1	38.5
<b>Total:</b>			<b>54</b>	<b>5</b>	<b>11</b>	<b>5</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>87</b>	<b>0.7</b>

**Table 7.33: continued**

Trench 1	47	5	11	5	6	2	0	0	76	71.8
Trench 2	1	0	0	0	0	0	0	0	1	3.8
Trench 3	2	0	0	0	0	0	0	0	2	45.6
Trench 4	4	0	0	0	1	0	2	1	8	37

Glass beads from the site are particularly diverse with nine categories, including an unidentified component (15.3%; Table 7.34; Figure 7.111). The glass bead assemblage is, however, unusual as the beads date from a wide chronological period. For example, the site contains, in chronological order, a single Zhizo series bead (0.7%), 20 K2 beads (13.3%), eight K2 Indo-Pacific (5.3%) and nine Mapungubwe beads (6%), all of which date to between AD 900 and 1300, and at least ten European beads (6.7%), including two white hearts (1.3%), dating from the eighteenth and nineteenth centuries. There are also over 70 Indo-Pacific beads (51.3%), which date from about AD 1000 until recent centuries and represent the largest category of beads at the site. These beads, however, are quite diverse and some may in fact be from the period of European contact, dating from roughly 1600 until the early twentieth century (Wood 2011). Glass beads are particularly small artefacts, sometimes less than 2mm wide, and are known to move down the deposit (see Wood 2005). Therefore, the presence of European beads in a pre-European level does not mean that intense mixing has occurred, but rather that there was a European period use of the site and that the beads have filtered down the deposit. In addition, identifying bead types based on observable traits is a judgement call and many could not be placed into a specific type (N=23). Of those that could, at least 25.3% fall within the AD 900 to 1300 period, also indicated by the ceramic assemblage.

#### **7.4.6 Metal artefacts**

The most significant metal finds are the pieces of copper bangle, 11 of which were found in Trench 4 and one in Trench 1, Square A, Spit VII (Figure 7.112). Eight pieces of iron were found, seven coming from various levels in Trench 1 (see Catalogue D.3.1); the other piece came from Trench 3 immediately outside the rockshelter. In Trench 4, a broken arrowhead and a piece of slag were found in Spits III and IV, respectively. On the surface of the site various metallic objects were found, including an item with an unknown function but which appears similar to a bronze/copper alloy find from Mapungubwe (Figure 7.113; D. Miller 2001: 87 & 102). The metal is likely associated with the agriculturalist homestead and may have been acquired by foragers living at the site.

Table 7.34: João Shelter: glass beads.

Trench	Square	Spit	Glass	Zhizo glass	K2 glass	K2 Indo-pacific glass	Mapungubwe glass	Indo-pacific glass	White heart (EU bead)	European glass	Total	M <sup>3</sup>	Beads/m <sup>3</sup>	Glass/m <sup>3</sup>
1		SUR	3	0	3	0	3	14	0	3	26	0.05	2698.7	421.2
1		I	0	0	0	0	0	0	0	0	0	0.0004	2564.1	0
1		II	1	0	0	0	1	3	0	0	5	0.01	1641	480.8
1		III	2	1	0	2	1	7	0	0	13	0.05	1485.5	274.8
1		IV	9	0	3	1	0	10	0	2	25	0.12	1140.1	195.5
1		V	3	0	2	1	0	10	1	2	19	0.12	1062.5	134.5
1		VI	3	0	1	1	0	15	1	0	21	0.14	1147.1	147.4
1		VII	0	0	0	3	2	7	0	0	12	0.12	700.1	103.9
1		VIII	0	0	0	0	0	6	0	0	6	0.09	570.7	65.3
1		IX	0	0	0	0	0	2	0	0	2	0.11	120.2	19
1		X	0	0	0	0	0	1	0	0	1	0.10	114.9	9.7
1		XI	0	0	0	0	0	0	0	0	0	0.05	20.8	0
1		XII	0	0	0	0	0	0	0	0	0	0.05	0	0
1		XIII	0	0	0	0	0	0	0	0	0	0.03	29.6	0
1		XIV	0	0	0	0	0	1	0	0	1	0.03	33	33
2	B	I	0	0	1	0	0	0	0	0	1	0.05	20.8	20.8
2	B	II	0	0	3	0	0	0	0	0	3	0.07	61.1	45.8
2	B	III	0	0	2	0	0	0	0	0	2	0.07	29.6	29.6
2	B	IV	0	0	0	0	0	0	0	0	0	0.06	0	0
2	B	V	0	0	0	0	0	0	0	0	0	0.02	0	0
3	C	SUR	0	0	0	0	0	0	0	1	1	0.01	192.3	0
3	C	VII	0	0	0	0	0	0	0	0	0	0.01	0	0
3	C	VIII	0	0	0	0	0	0	0	0	0	0.01	76.9	0
3	C	IX	0	0	0	0	0	0	0	0	0	0.01	0	0
4	C	SUR	0	0	0	0	0	0	0	0	0	0.01	0	0
4	C	I	1	0	0	0	1	0	0	2	4	0.01	293	146.5
4	C	II	0	0	0	0	0	0	0	0	0	0.03	0	0
4	C	III	1	0	0	0	1	0	0	0	2	0.04	110.7	55.3
4	C	IV	0	0	2	0	0	0	0	0	2	0.04	89.2	44.6
4	C	V	0	0	1	0	0	1	0	0	2	0.05	96.2	38.5
4	C	VI	0	0	2	0	0	0	0	0	2	0.03	115.4	76.9
<b>Total:</b>			<b>23</b>	<b>1</b>	<b>20</b>	<b>8</b>	<b>9</b>	<b>77</b>	<b>2</b>	<b>10</b>	<b>150</b>	<b>1.582</b>	<b>149.8</b>	<b>87.2</b>

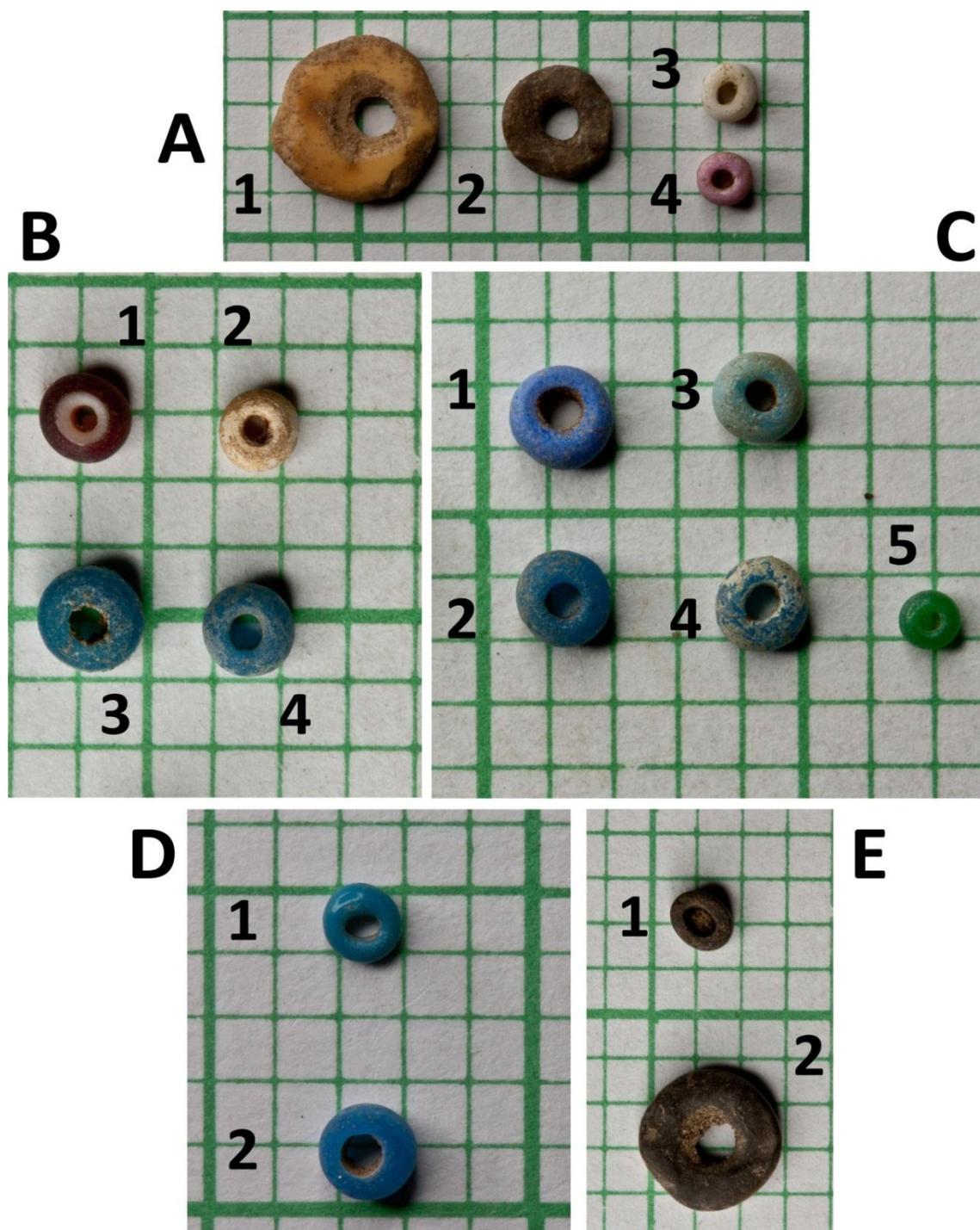


Figure 7.111: João Shelter: glass bead examples: A1 & A2, ostrich eggshell bead; A3-A4, B2-B4, C1-C5 & D1-D2, most likely European but some may have a broad date range; B1, white-heart; E1, Mapungubwe oblate; and E2, burnt ostrich eggshell bead.



**Figure 7.112: João Shelter: examples of copper bangle fragments from Trench 4.**



**Figure 7.113: João Shelter: bronze/copper alloy item and a piece of sheet metal found on the surface.**

#### **7.4.7 Miscellaneous artefacts**

Five pieces of broken upper grinding stones were found: three in Trench 1, Square A with one coming from Spit III and two from Spit IV, and one piece each in Trench 4 from Spits III and IV. Modern glass was also found in Trench 1, Square B, Spits IV and VI, and a button was found in Spit

V of the same square. A rusted safety pin and metal clip were found in Trench 1, Square A, Spit IV. Lastly, a bullet fragment was found in the top level of Trench 3, Square C, Spit VIII. In addition, two pieces of a broken glass bottle were found on the surface (Figure 7.114). One bottle piece has embossed lettering indicating a possible late nineteenth century or twentieth century date (Jones & Sullivan 1989). Since some of these finds occurred within the deposit, mixed with the stone tool assemblage, some degree of post-depositional movement has occurred.



**Figure 7.114: João Shelter: glass bottle fragments found in the rockshelter.**

#### **7.4.8 Faunal analysis**

In total, João contained 667g (422.5g/m<sup>3</sup>) of faunal remains. Most of the remains were found in Trench 1 (N=298.2; 282.9g/m<sup>3</sup>; Figures 7.115 – 7.116), but the highest density of fauna is perhaps unsurprisingly from Trench 4 (N=297; 1375.4g/m<sup>3</sup>; Figures 7.117 – 7.118). Trench 2 contained 48.9g (184.8g/m<sup>3</sup>) and in Trench 3 there was 22.9g (522.4g/m<sup>3</sup>).

Unfortunately, not many faunal specimens were identifiable. Of the samples that are diagnostic, the most frequent occurrence is of tortoise (N=24), but the only specimens found are carapace. Bovids of size class II (N=21) are also frequent, but 18 of those pieces are tooth enamel. There are a few lizard specimens, what is probably Jameson's red rock rabbit (*Pronolagus randensis*), fish, bovid class I, an unidentified bird, a bovid class IV (possibly cow, eland or buffalo), rock hyrax, rat and a microfauna specimen (Table 7.35). Little can be said from the faunal remains, but what is of interest is the almost lack of domesticates, barring perhaps the single bovid class IV specimen, though this cannot be identified to species. In Trench 1, most of the fauna was found between the Spits IV and X, which is also where the greatest diversity of NISPs was found. Most of the

faunal species that were identifiable, such as the fish, rodents, amphibians, rabbit and reptiles, could be trapped or snared and easily collected.

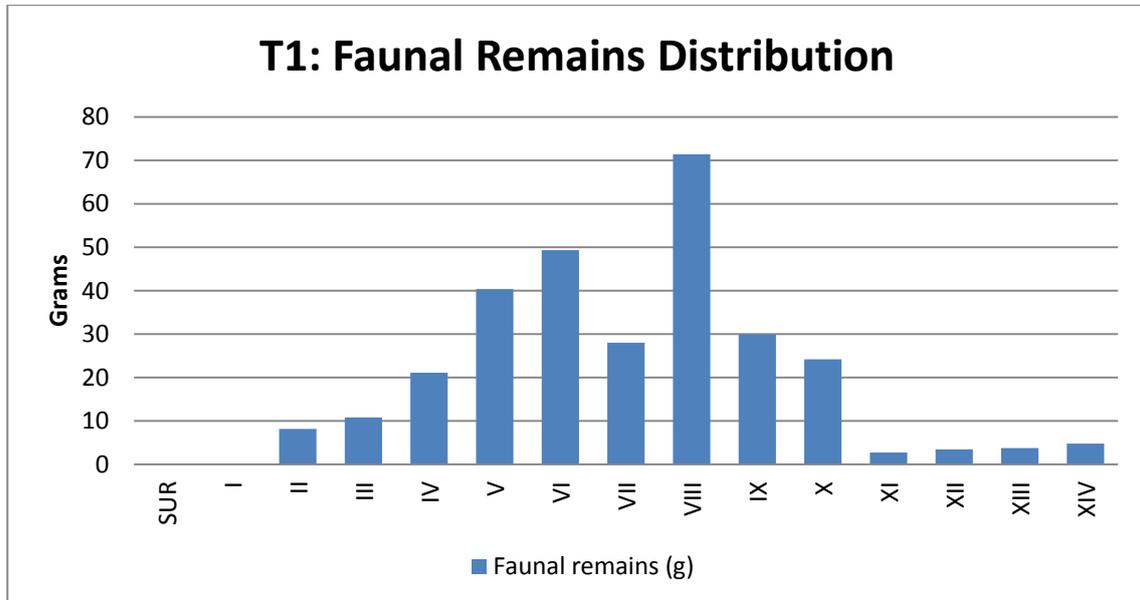


Figure 7.115: João Shelter: faunal assemblage distribution in Trench 1.

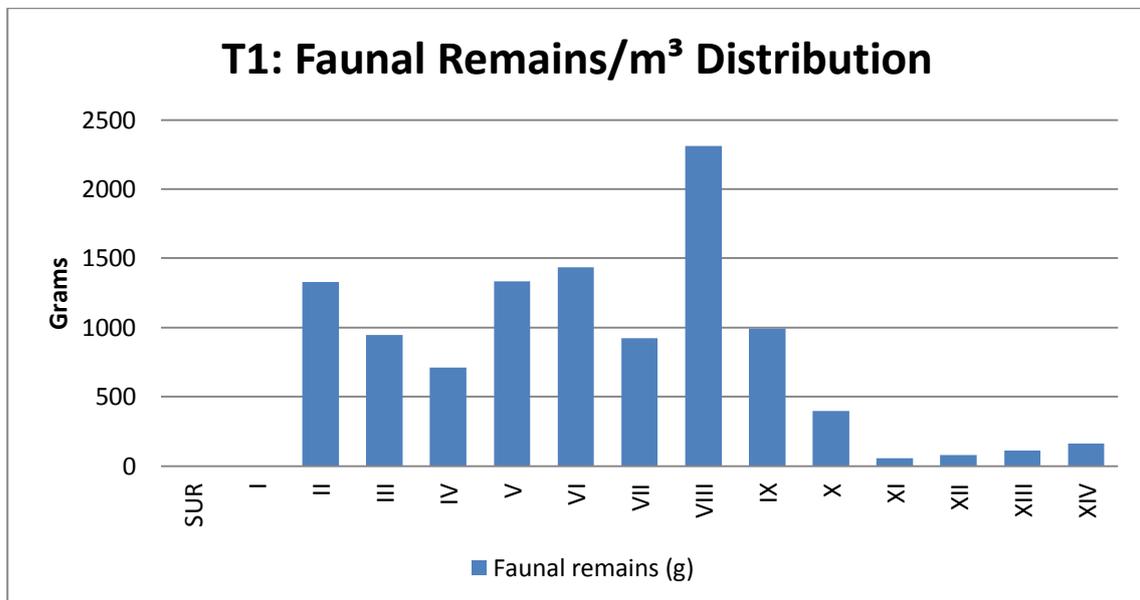


Figure 7.116: João Shelter: faunal assemblage density in Trench 1.

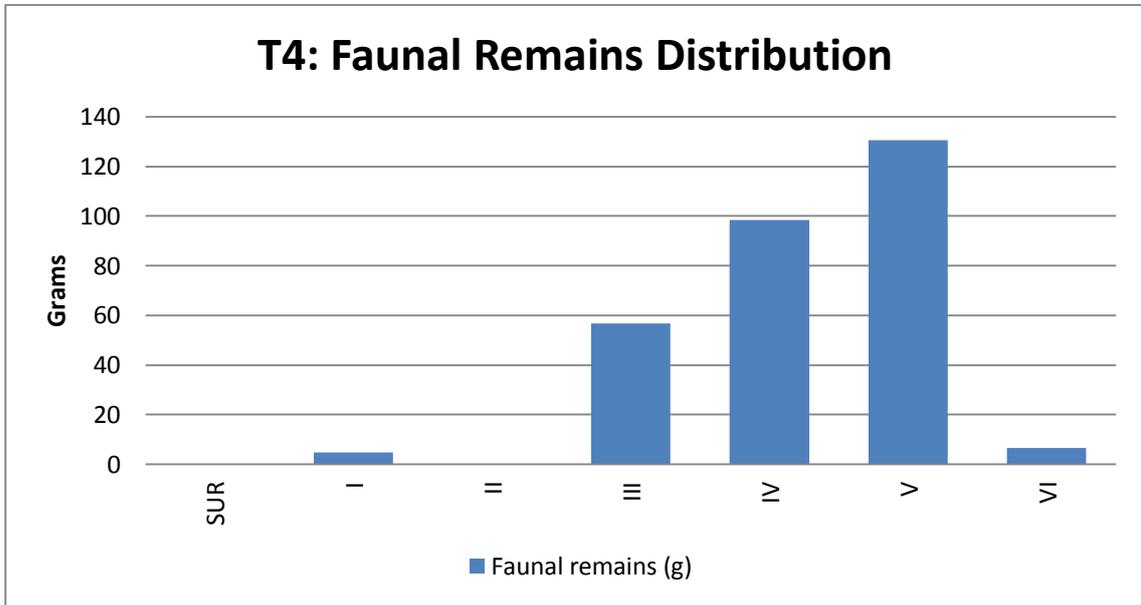


Figure 7.117: João Shelter: faunal assemblage distribution in Trench 4.

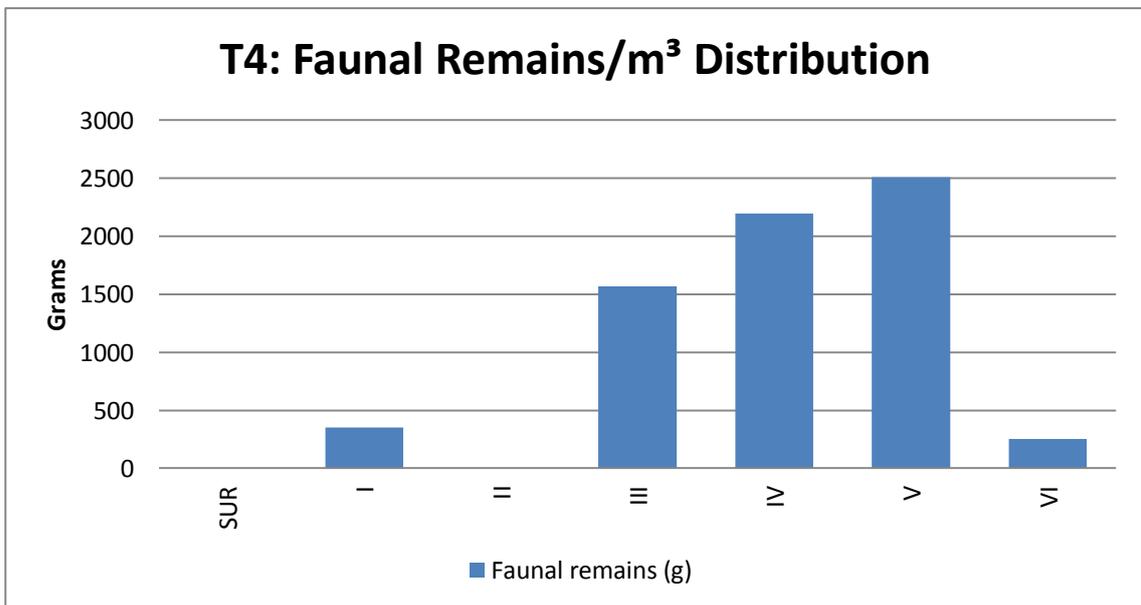


Figure 7.118: João Shelter: faunal assemblage density in Trench 4.

Table 7.35: João Shelter: number of identifiable specimens.

		Trench 1															
Species	Body part	SUR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	Total
<b>Birds</b>																	
Birds	Tarsometatarsus	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
<b>Fish</b>																	
Fish Cyprinidae	Vertebra	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
<b>Mammals</b>																	
Bovid class I	Ulna	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Bovid class IV	Tibia	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Hyrax <i>Proavia capensis</i>	Incisor	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Jameson's red rock rabbit <i>Pronolagus randensis</i>	Molar	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Astragalus	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total rabbit		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Rat Muridae	Pelvis (right)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Reptiles</b>																	
Lizard Sauria	Femur	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	Humerus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Phalanx	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Vertebra	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total Lizard		0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	4
Tortoise Testudines	Carapace	0	0	0	1	7	1	4	2	1	4	7	1	0	0	0	28
<b>Indeterminate</b>																	
	Enamel	0	0	0	2	9	5	6	4	8	2	1	0	0	0	0	37
	Metatarsal	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Rib fragment	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	<b>Grand total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>16</b>	<b>6</b>	<b>10</b>	<b>9</b>	<b>19</b>	<b>14</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>95</b>

Table 7.35: continued.

Trench 4									
Species	Body part	SUR	I	II	III	IV	V	VI	Total
<b>Mammals</b>									
Bovid class I	Calcaneum (left)						1		1
Bovid class II	Astragalus (left)						2		2
	Enamel				18				18
	Tooth				1				1
Total bovid class II		0	0	0	19	0	2	0	21
Microfauna	Femur							1	1
<b>Reptiles</b>									
Lizard Sauria	Vertebra				1				1
Tortoise Testudines	Carapace		1			2	1		4
<b>Total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>20</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>27</b>
<b>Indeterminate</b>									
	Enamel		1			5	13	1	20
	Rib fragment							1	1
<b>Total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>13</b>	<b>2</b>	<b>21</b>
<b>Grand total:</b>		<b>0</b>	<b>2</b>	<b>0</b>	<b>20</b>	<b>7</b>	<b>17</b>	<b>2</b>	<b>48</b>

#### **7.4.9 João's sequence**

There is a concern that mixing has affected the João assemblage. While there is not enough evidence, such as soil morphological assessments or a full sequence of dating, to be sure, the available radiocarbon dates and the presence of European items at the same level as the stone tools and Leopard's Kopje ceramics indicate that mixing has occurred. For this reason, establishing a chronology of the site based on changes between the spits is avoided. Instead, the differences between Trenches 1 and 3 and Trenches 2 and 4 are explored (Table 7.36). The former are located in the rockshelter (Trench 1) and immediately outside it (Trench 3), while the latter are in the homestead alongside a grainbin foundation (Trench 2) and in a midden (Trench 4). A number of other questions need to be addressed, and will be in the following chapter, such as the reasons behind the different assemblages, whether the homestead and rockshelter occupations are contemporaneous and, if so, what are the implications of foragers living in a homestead alongside agriculturalists?

##### **7.4.9.1 Trenches 1 and 3: rockshelter assemblage**

The greatest volume of deposit excavated was from these two trenches, as well as the largest stone tool assemblage and greatest density thereof. CCS dominates the assemblage, followed by quartz, while quartzite, agate and dolerite frequencies are all low. The majority of chips and cores also came from this zone, suggesting that some degree of primary stone tool production was occurring here. Formal tools also mostly came from inside the rockshelter, but constituted less of the assemblage than in other excavations in the region, such as Balerno Main (4.4%; van Doornum 2005: 231), Tshisiku (3.4%; van Doornum 2005: 211) and Balerno 2 (2.9%; van Doornum 2005: 250), though more than in the outside homestead assemblage. The organic bead assemblage found here pales in comparison to the large number of glass beads at the site, unusual for forager assemblages. Ceramics are present at a low density; interestingly this is lower than the neighbouring excavations even though the homestead is immediately outside the rockshelter, but the ceramics may not have been used here. Lastly, there is a small faunal assemblage again at low density. In summary, the only exceptions to this assemblage when compared to van Doornum's (2005) sites and those excavated for this project are the large number of glass beads, the small faunal assemblage and the close spatial relationship between the rockshelter and homestead, which contains a very different archaeological record.

**Table 7.36: João Shelter: rockshelter and homestead assemblages (bold indicates maximum in each category where applicable).**

	Trench 1 & 3	Trench 2 & 4	Total		Trench 1 & 3	Trench 2 & 4	Total
M <sup>3</sup>	1.1	0.48					
Stone tools							
No.	<b>5405</b>	1112	6517	Cores			
% of total	82.9	17.1		No.	<b>69</b>	19	88
/m <sup>3</sup>	4904.2	2315		% of total	78.4	21.6	
Quartz	1910	515		/m <sup>3</sup>	<b>62.6</b>	39.6	
%	35.3	<b>46.3</b>		Ceramics			
Quartzite	536	69		No.	111	<b>1006</b>	1117
%	9.9	6.2		% of total	9.9	90.1	
CCS	2350	424		/m <sup>3</sup>	100.7	<b>2094.3</b>	
%	<b>43.5</b>	38.1		Organic beads			
Agate	379	75		No.	<b>78</b>	9	87
%	7	6.7		% of total	89.7	10.3	
Dolerite	230	29		/m <sup>3</sup>	<b>70.8</b>	18.7	
%	4.3	2.6		Glass beads			
Chips				No.	<b>132</b>	18	150
No.	<b>2853</b>	498	3351	% of total	88	12	
% of total	85.1	14.9		/m <sup>3</sup>	<b>119.8</b>	37.5	
% of phase tools	52.8	44.8		Faunal remains			
/m <sup>3</sup>	<b>2588.7</b>	1036.7		Grams	321.2	<b>345.8</b>	667
Formal tools				% of total	48.1	51.9	
No.	<b>57</b>	11	68	/m <sup>3</sup>	291.4	<b>720</b>	
% of assemblage	<b>1.1</b>	1					
% exc. chips	<b>2.2</b>	1.8					
/m <sup>3</sup>	<b>51.7</b>	22.9					
Scrapers	24	4					
Backed tools	23	3					
Scrapers/backed tools	1	<b>1.3</b>					

#### 7.4.9.2 Trenches 2 and 4: homestead assemblage

The homestead assemblage is far smaller than the rockshelter's and is dominated by quartz, followed by CCS and a drop in agate, quartzite and dolerite. The number of chips drops, yet they make up just under 45% of the homestead's assemblage. Combined with a drop in core numbers

and a slight drop in density, this might suggest less primary production was occurring in this zone. Formal tools, too, have dropped in number and density and, as mentioned, represent less of the homestead's assemblage than the rockshelter's. The change in the organic and glass bead categories represents a significant drop and the frequency of glass compared to organic beads increased slightly. Ceramics increased massively and the faunal assemblage increased somewhat and while the density also increased, it nevertheless remains very low.

#### **7.4.10 Summary: João Shelter**

The greatest interest with regard to João is the relationship between the forager assemblage and agriculturalist homestead. Van Doornum (2005: 183) suggested that from AD 1000 until 1300 foragers may have become more reliant on farmers and spent more time at or in their homesteads, leading to the eventual abandonment of the rockshelters, amongst other reasons. Her hypothesis lacked data, but seemed logical as a total abandonment of the region is unlikely. João, thus, poses great interest from this point of view; it might demonstrate a shift in settlement patterns on behalf of the foragers who, from this point, became more dependent on local agriculturalists.

### **7.5 SHAWU CAMP**

#### **7.5.1 Regional context**

The northern terrain of Northern Tuli, which makes up the majority of the survey area, is characterised by basalt rock and undulating ridges running east-west, intersected only by river systems. The region is dominated by mopane shrubland, but in the river floodplains there is riparian woodland and stands of *Croton* sp. The soil type changes here to what is probably a silt and clay horizon, which would have been ideal for cultivation. There are a large amount of stone tool scatters in the area even though there is a total absence of rockshelters. The context of the assemblages, however, may be disturbed as there is little soil in the area and much of it appears to have been eroded away by colluvial flooding. As a result, we cannot be sure whether the number of forager assemblages in this zone is a true reflection of the number of actual sites or due to taphonomic process. Excavating the assemblages is problematic for this reason, as well as due to a lack of deposit. As a result, finding forager sites with excavatable potential is difficult, yet there was clearly a significant amount of activity in the area.

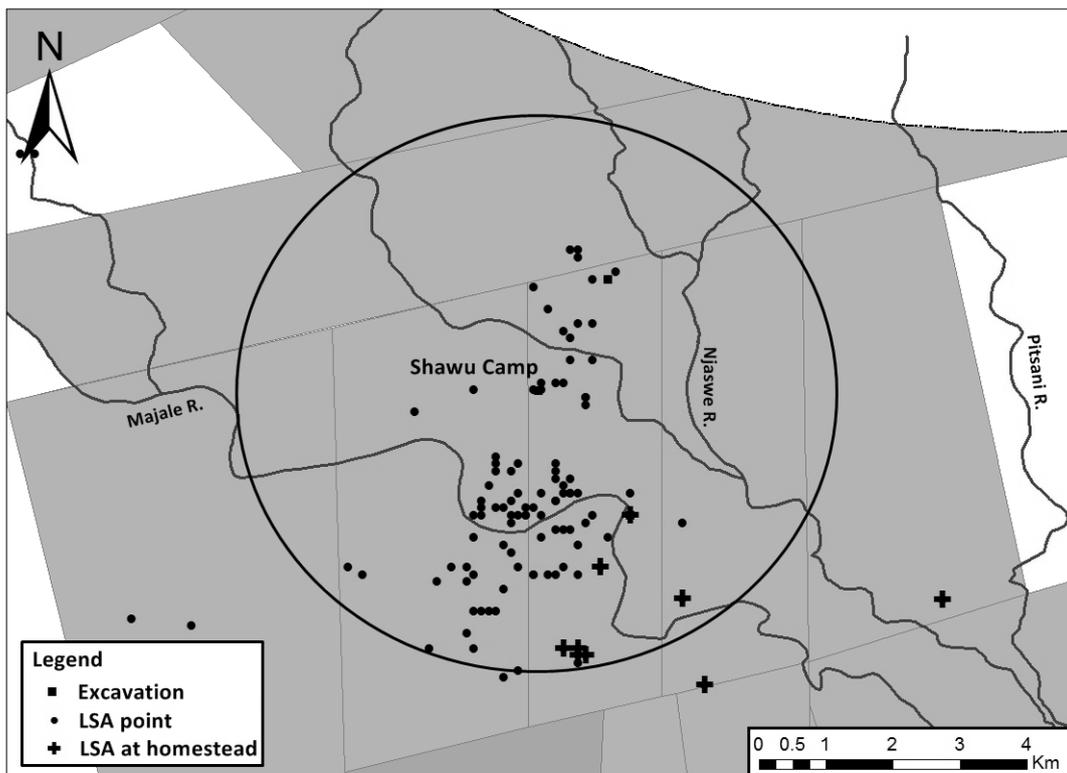
In total, 31.8km<sup>2</sup> (63.2%) of the 4km buffer zone around Shawu was surveyed and 97 forager features were identified, of which seven are in homesteads (Table 7.37). Of the forager features, 25 are in raw material outcrops, posing various excavation problems, notably due to the potential

of mixing between multiple visits to the outcrops, the post-production removal of artefacts to living areas and the lack of deposit at most of these sites (Figure 7.119). There are also 20 homesteads in the buffer zone, mostly near to floodplains and along river courses, and six contained Khami ceramics, five with TK2 and one with Zhizo facies (Figure 7.120).

**Table 7.37: Shawu Camp: archaeological sites and features within the buffer zone.**

Feature/site type	No.	Density (/km <sup>2</sup> )	% of total
Forager	97	3.1	52.2
in a homestead	7	0.2	21.9
in material outcrops	25	0.7	20.8
Homestead	20	0.6	16.1
Zhizo	1	0.03	1.6*
TK2	5	0.2	8.2*
Khami	6	0.2	9.8*

\* of total identified homesteads



**Figure 7.119: Shawu Camp: Forager related features within the 4km buffer zone.**

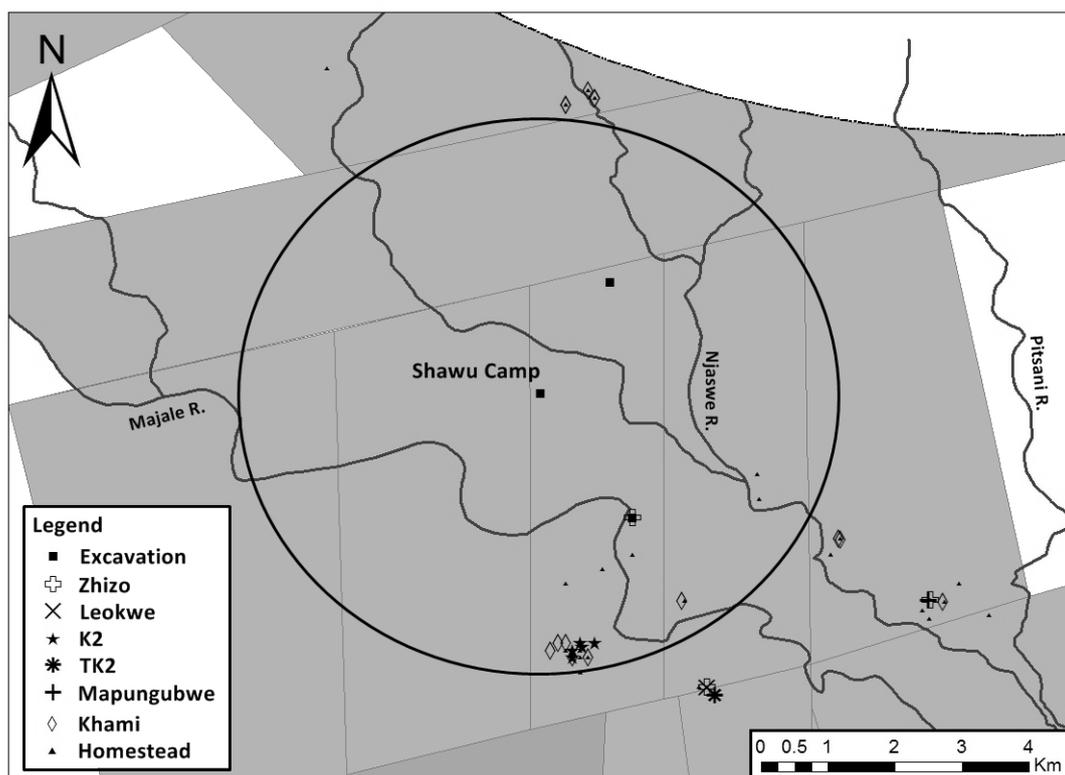


Figure 7.120: Shawu Camp: agriculturalist homesteads within the 4km buffer zone.

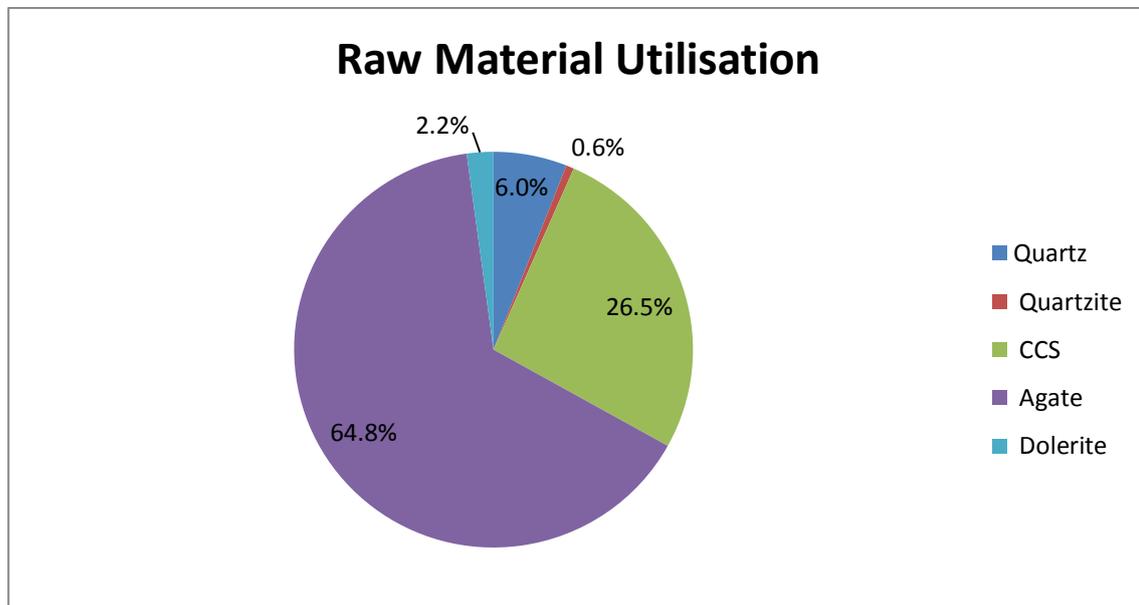
### 7.5.2 Chronology

Unfortunately, no dates were obtained for Shawu. One charcoal sample was submitted to Beta Analytic for radiocarbon dating, but after processing and washing, too little charcoal remained in the sample, which was mostly composed of sediment. Dating was possible, but due to the high chance of contamination, it was not followed through with. No other charcoal samples were suitable for dating and no other organic material was found. The only other way to date the assemblage given the lack of datable material other diagnostic artefacts such as ceramic, is by using typological cross-referencing (Gelfand 1971).

### 7.5.3 Stone tool assemblage

A small stone tool assemblage was recovered from Shawu (N=789; Catalogue A.4.1), albeit in a high density (7471.6/m<sup>3</sup>). Chips accounted for 37.7% of the assemblage, a small amount compared to Dzombo (53.6%), Mafunyane (53.4%), João (51.4%) and especially Ndlulamithi (74.5%; discussed below). The assemblage is also largely dominated by agate followed by CCS, which together comprise 91.3% of the assemblage. Quartz, dolerite and quartzite are poorly represented at the site (Figure 7.121). The dominance of CCS materials is not surprising considering that the site is surrounded by a CCS outcrop, most of the nodules of which are agate.

Not much can be said about the stone tool distribution as the site is particularly shallow, with bedrock between 9 and 12cm below the datum (approximately 7 to 10cm below the surface); only two spits were excavated.



**Figure 7.121: Shawu Camp: raw material utilisation.**

#### **7.4.3.1 Cores**

In total, 33 cores were recovered from Shawu, represented in nine categories (Table 7.38). Irregular cores are the most frequent core type followed by preliminary flaked, single platform and rice seed, bladelet and bifacial bladelet, flake bladelet, opposed platform and radial cores. The density of cores is higher at Shawu than at any of the other excavations indicating a greater degree of manufacture occurring at the site, even though there are fewer chips. The cores also indicate that the bipolar technique was the primary flaking technique used by the manufacturers at the site.

#### **7.5.3.2 Formal tools**

A small number of formal tools were recovered from the site (N=9), comprising only 1.1% of the assemblage, 1.8% if chips are excluded, and represented by five categories. All of the tools were produced on CCS materials, four of which are agate. The tools resemble forager stone tools (Figure 7.122) and include MBPs (44.4%), end scrapers and awls (each 22.2%) and a MRP (11.1%; Table 7.39). No backed bladelets or segments were found.

Table 7.38: Shawu Camp: core distribution.

Spit	Irregular core	Bladelet core	Bifacial bladelet core	Flake bladelet core	Single platform core	Rice seed core	Preliminary flaked core	Opposed platform core	Radial core	Total	M <sup>3</sup>	Cores/m <sup>3</sup>
SUR	5	0	0	0	0	0	1	1	1	8	0.02	512.8
I	9	1	1	1	0	1	2	0	0	15	0.05	333.3
II	3	1	0	0	3	2	1	0	0	10	0.05	222.2
<b>Total:</b>	<b>17</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>33</b>	<b>0.11</b>	<b>312.5</b>

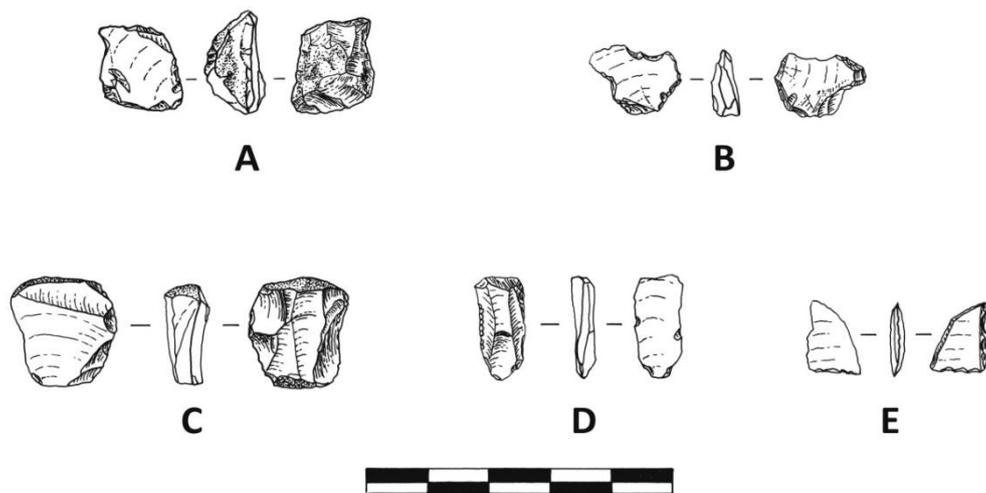


Figure 7.122: Shawu Camp: formal tools and a core: A & B, awl; C, irregular core; D, broken bladelet; and E, broken utilized flake.

**Table 7.39: Shawu Camp: formal tools.**

<b>Scrapers</b>	<b>2</b>
End scraper (s)	2
<b>Backed stone tools</b>	<b>4</b>
MBP	4
<b>Other tools</b>	<b>4</b>
Awl	2
MRP	1
<b>Total:</b>	<b><u>9</u></b>

#### **7.5.4 Summary: Shawu Camp**

Shawu is a small camp in the northern reaches of the survey zone. It was used by stone tool-producing people and based on the similarities between this assemblage and others in the region they were likely LSA foragers. The lack of formal tools and abundance of cores is of interest and the evidence of manufacturing and association to the nearby CCS outcrop is likely significant.

### **7.6 KAMBAKU CAMP**

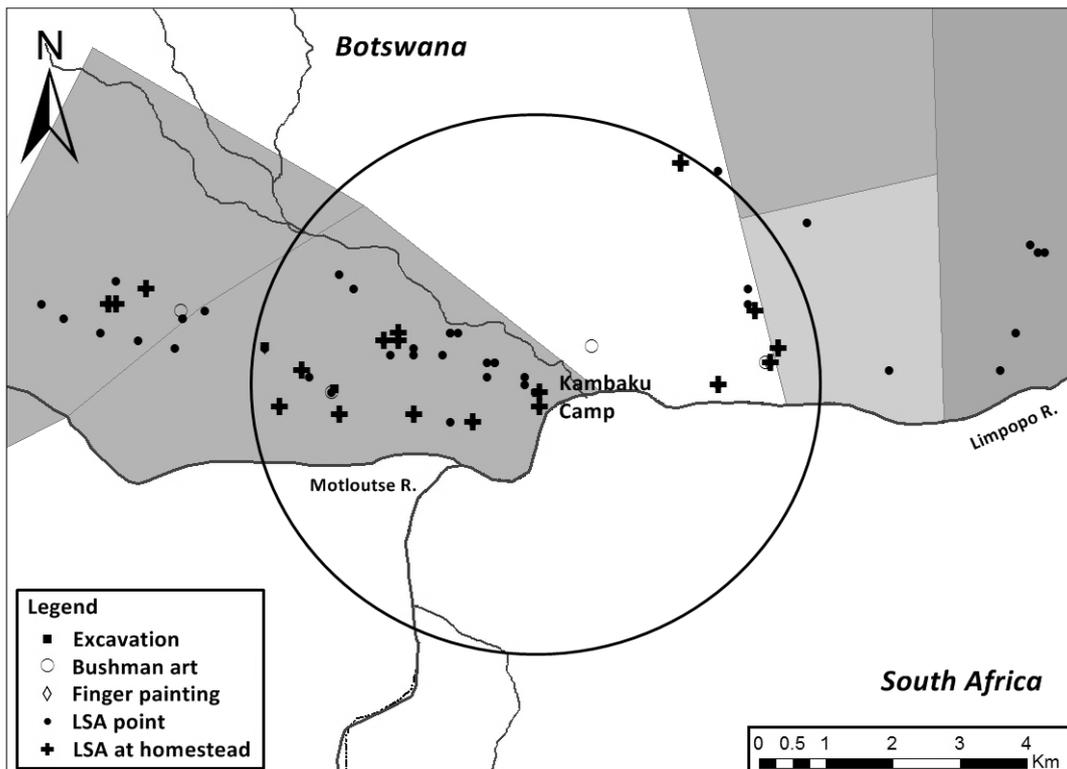
#### **7.6.1 Regional context**

Kambaku is located 3.8km southeast of Dzombo and 2.8km in a similar direction from João. The site is situated in the sandstone belt, 350m from the Limpopo River, and is composed of two areas: the upper kraal and lower homestead. On the north-eastern side of the koppie, in which Kambaku is located, there is a large fertile floodplain alongside a seasonal stream that drains into the Limpopo River. In terms of the local vegetation, succulents are present within the koppie, while in the sandy surroundings are marula and mopane trees and along the rivers, riparian forest. Around the site, and within the 4km buffer zone of which 16.7km<sup>2</sup> (33.2%) were surveyed, there are as many as 34 forager features with 14 being in homesteads (Table 7.40; Figure 7.123). In addition, two fine-line and two finger-painted rock art sites fall into this zone. Regarding agriculturalist homesteads, 36 were identified, six being Khami, four Zhizo and four Mapungubwe, three K2 and a Leokwe, TK2 and Venda homestead each. However, as will be shown, only the Khami period sites are contemporaneous with Kambaku (Figure 7.124).

**Table 7.40: Kambaku Camp: archaeological sites and features within the buffer zone.**

Feature/site type	No.	Density (/km <sup>2</sup> )	% of total
Forager	34	2	18.3
in a homestead	14	0.8	43.8
Fine-lined art	2	0.1	25
Finger-painting	2	0.1	100
Homestead	36	2.2	29
Zhizo	4	0.2	6.6*
Leokwe	1	0.1	1.6*
K2	3	0.2	4.9*
TK2	1	0.1	1.6*
Mapungubwe	4	0.2	6.6*
Khami	6	0.4	9.8*
Venda	1	0.1	1.6*

\* of total identified homesteads



**Figure 7.123: Kambaku Camp: Forager related features within the 4km buffer zone.**

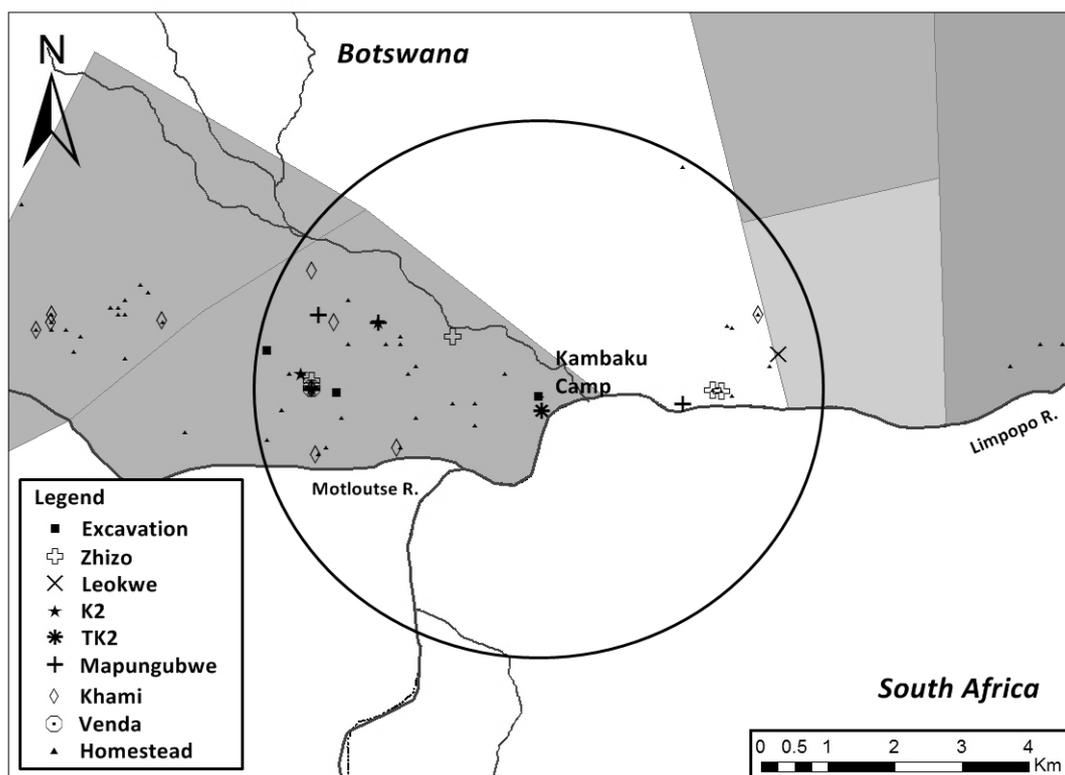


Figure 7.124: Kambaku Camp: agriculturalist homesteads within the 4km buffer zone.

### 7.6.2 Chronology

A single charcoal sample was submitted to Beta Analytic for radiocarbon dating. The sample was taken from Trench 1, Square A, Spit III and dates to  $310 \pm 30$  BP (Beta-339428), which when calibrated using SHCal 04 places it at AD 1502 to 1594 or 1613 to 1668. Diagnostic ceramic sherds were found in Trenches 1 and 3 and are from the Icon (AD 1300 – 1450) and Khami (AD 1450 – 1800s) periods. Thus, the radiocarbon date and ceramic sequence fall into the same period. The late radiocarbon date and Icon sherds suggest that the site was probably occupied in the late fifteenth and seventeenth centuries.

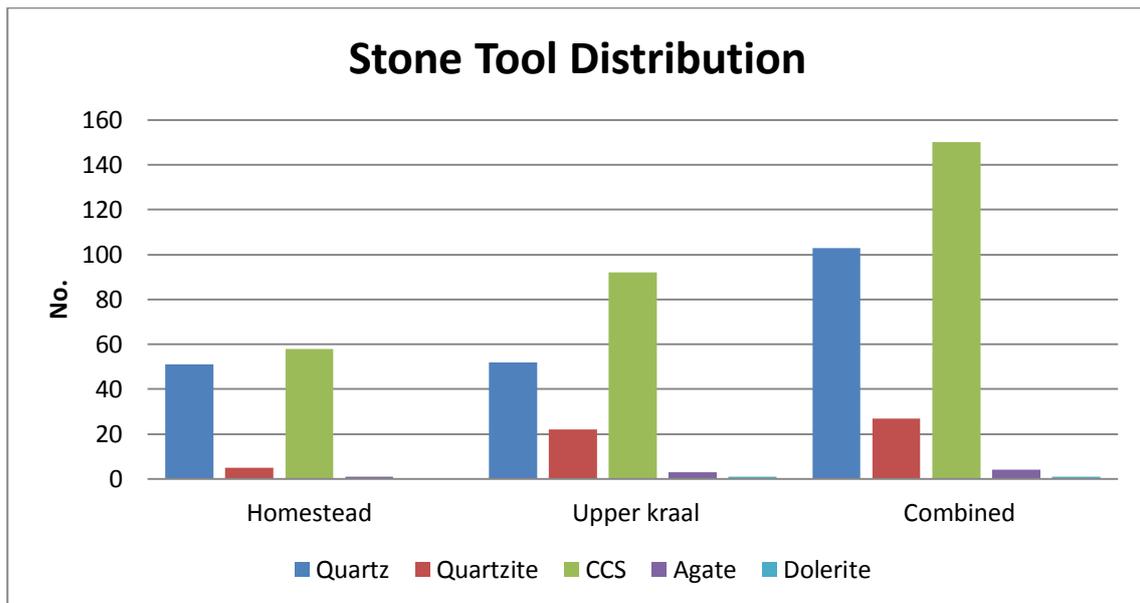
### 7.6.3 Stone tool assemblage

Kambaku was primarily excavated in order to assess the relationship between forager stone tools found on the surface of the site and the homestead occupation. In the excavations, however, very few stone tools were recovered ( $N=285$ ; due to time constraints the volume of buckets removed was not recorded), and most were found in the upper kraal, Trenches 2 and 3, but also in Trench 1 located in the homestead (Table 7.41; Figure 7.125; Catalogue D.5.1). The majority of the stone tools were produced using CCS materials, followed by quartz, quartzite, agate and dolerite (Figure 7.126). There is a difference in the raw material distribution between the homestead and upper

kraal. In the homestead, CCS is more frequent than quartz by just more than 5% (Figure 7.127), whereas in the upper kraal, CCS clearly dominates over quartz, while quartzite is more frequent here than it is in the homestead (Figure 7.128).

**Table 7.41: Kambaku Camp: distribution of stone tools between the homestead and upper kraal.**

Zone	Quartz		Quartzite		CCS		Agate		Dolerite		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
Homestead	51	44.3	5	4.3	58	50.4	1	0.9	0	0	115
Upper kraal	52	30.6	22	12.9	92	54.1	3	1.8	1	0.6	170
<b>Total:</b>	<b>103</b>	<b>36.1</b>	<b>27</b>	<b>9.5</b>	<b>150</b>	<b>52.6</b>	<b>4</b>	<b>1.4</b>	<b>1</b>	<b>0.4</b>	<b>285</b>



**Figure 7.125: Kambaku Camp: stone tool distribution between the homestead (Trench 1) and upper kraal (Trenches 2 and 3).**

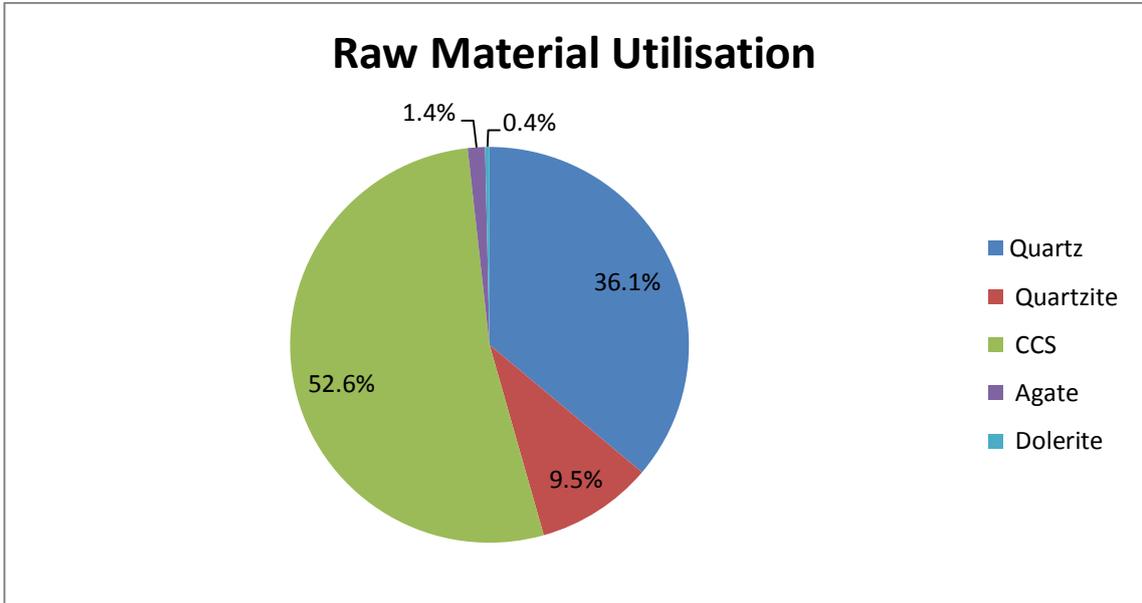


Figure 7.126: Kambaku Camp: raw material utilisation.

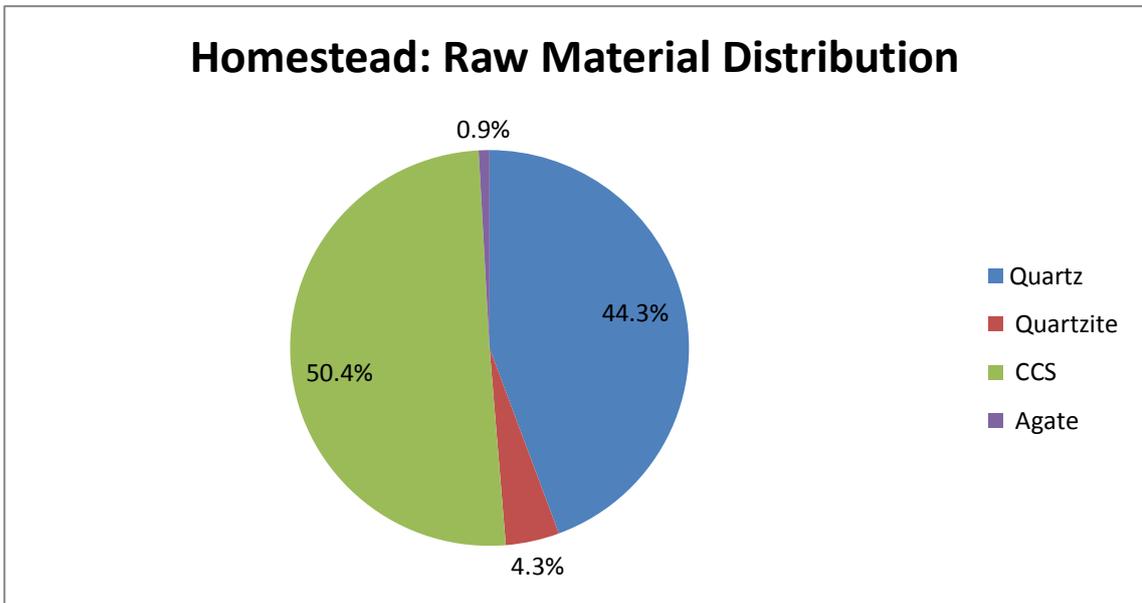
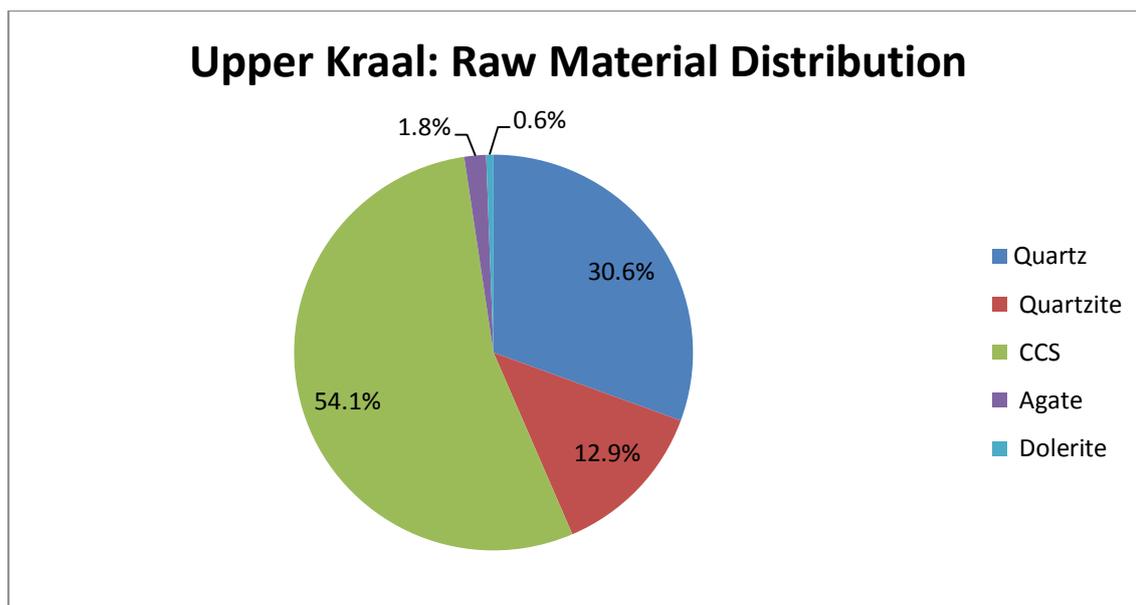


Figure 7.127: Kambaku Camp: raw material utilisation in the homestead.



**Figure 7.128: Kambaku Camp: raw material utilisation in the upper kraal.**

### 7.6.3.1 Cores

A total of five cores were identified, making up 1.8% of the assemblage (Table 7.42). Together, there are three core categories: irregular, preliminary flaked and bladelet cores. Three of the cores were found in the homestead and both preliminary flaked cores are from the upper kraal. The preliminary flaked cores and an irregular core were made using quartz and the bladelet core and remaining irregular core were made using CCS.

### 7.6.3.2 Formal tools

Five formal tools were recovered from the excavations, representing 1.8% of the entire assemblage and 2.3% when chips are excluded. The tools are similar to those from other forager excavations and include two end scrapers (33.3%) and a broken backed bladelet, segment and MRP (each 16.7%; Figure 7.129; Table 7.43). There is an equal number of scrapers and backed stone tools (each N=2), and three of the formal tools were found in the homestead, with the two remaining tools coming from the upper kraal. All the tools were produced on CCS materials.

**Table 7.42: Kambaku Camp: cores.**

Trench	Square	Spit	Stratigraphic unit	Irregular core	Bladelet core	Preliminary flaked core	Total
1	A	I	AL	0	0	0	0
1	A	I	CG	0	0	0	0
1	A	II	AL	0	0	0	0
1	A	II	CG	0	0	0	0
1	A	III	AL	0	0	0	0
1	A	III	CG	1	1	0	2
1	A	IV	CG	1	0	0	1
1	E	SUR	SUR	0	0	0	0
1	E		GS	0	0	0	0
1	G		GS	0	0	0	0
1	T		GBS	0	0	0	0
2	C	I	KR	0	0	0	0
2	D	I	KR	0	0	0	0
3	D		KR	0	0	1	1
3	E		KR	0	0	1	1
3	F		KR	0	0	0	0

**Total:** 2    1    2    5

Homestead	2	1	0	3
Upper kraal	0	0	2	2

**Total:** 2    1    2    5

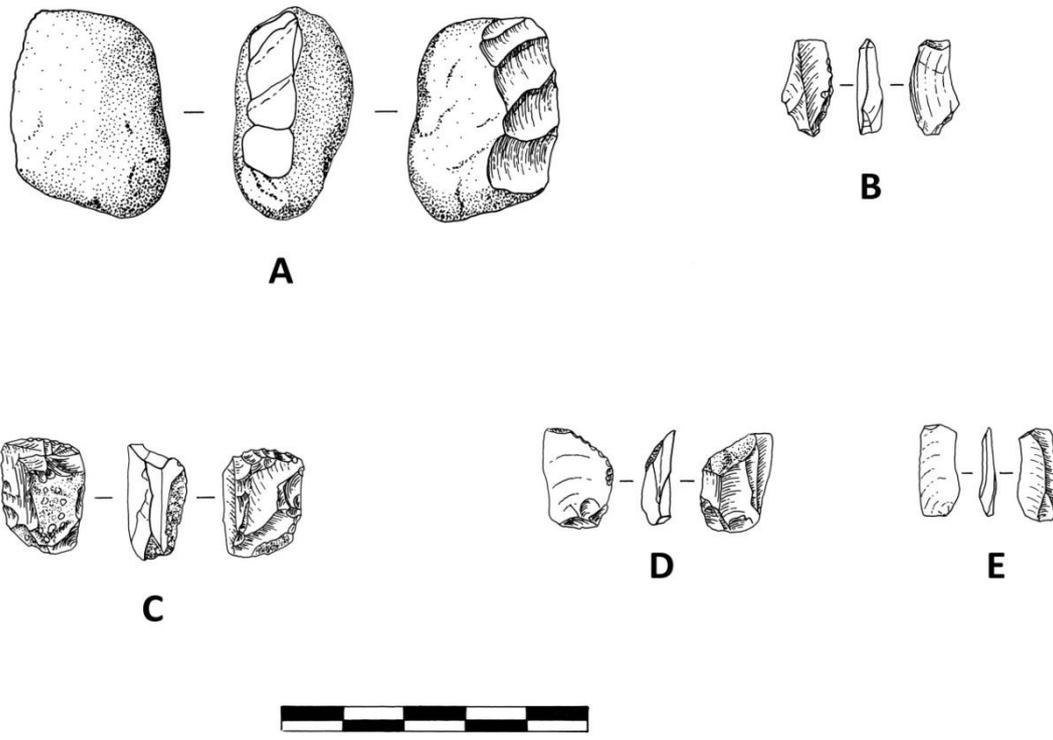


Figure 7.129: Kambaku Camp: formal tools and cores: A, preliminary flaked core; B, broken backed bladelet; C: bladelet core and small end scraper; D segment; and E, broken bladelet.

Table 7.43: Kambaku Camp: formal tools.

<b>Scrapers</b>	<b>2</b>
End scraper (s)	2
<b>Backed stone tools</b>	<b>2</b>
Broken backed bladelet	1
Segment	1
<b>Other</b>	<b>2</b>
MRP	1
<b>Total:</b>	<b>5</b>

#### 7.6.4 Ceramic assemblage

An assemblage of 571 ceramics was recovered from Kambaku. Most are plain sherds (94.4%), followed by plain rims (4%), decorated sherds (1.4%) and a single decorated rim (0.2%). The majority of the pottery was found in the homestead (61.5%) and are mostly plain sherds with a small number of plain rims and decorated pieces. In the upper kraal, 220 ceramic sherds were found (38.5%), of which 205 are plain and there is a greater frequency of rims and decorated pieces found here than in the homestead (Table 7.44).

**Table 7.44: Kambaku Camp: ceramic distribution.**

Trench	Square	Spit	Stratigraphic unit	Plain	Decoration	Plain rim	Decorated rim	Total	%
1	A	I	AL	0	0	0	0	0	0
1	A	I	CG	0	0	0	0	0	0
1	A	II	AL	1	0	0	0	1	0.2
1	A	II	CG	2	0	0	0	2	0.4
1	A	III	AL	0	0	0	0	0	0
1	A	III	CG	74	1	0	0	75	13.1
1	A	IV	CG	44	0	1	0	45	7.9
1	E	SUR	SUR	4	0	0	0	4	0.7
1	E		GS	88	3	7	0	98	17.2
1	G		GS	100	2	3	0	105	18.4
1	T		GBS	21	0	0	0	21	3.7
2	C	I	KR	1	0	0	0	1	0.2
2	D	I	KR	0	0	0	0	0	0
3	D		KR	75	0	3	0	78	13.7
3	E		KR	68	1	5	0	74	13
3	F		KR	61	1	4	1	67	11.7

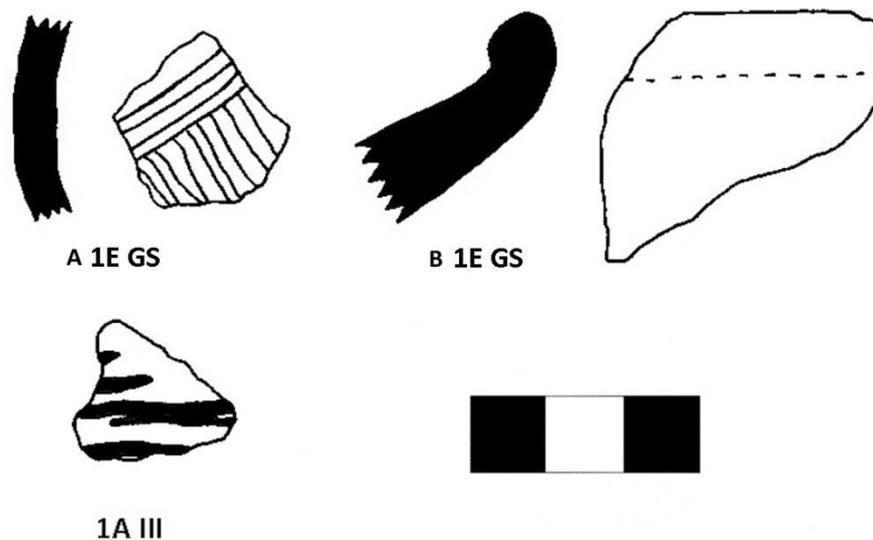
**Total: 539 8 23 1 571**

Homestead	334	6	11	0	351	61.5
Upper kraal	205	2	12	1	220	38.5

**Total: 539 8 23 1 571**

**%; 94.4 1.4 4 0.2**

A number of the diagnostic ceramics (N=32; 5.6%), which include plain and decorated rims and decorated sherds, could be placed into cultural facies. In the homestead a K2 sherd was found along with a Khami rim in Square E (Figure 7.130) and in the upper kraal an Icon and possible Icon sherd was identified in Square F. Rims found here also appear to be Khami based on their rolled lip, a diagnostic feature of the facies (Figure 7.131). The single K2 sherd is not strong enough evidence to suggest an occupation at the site between AD 1000 and 1220 and could have arrived at the site due to a number of reasons, which will not be explored here. However, the Icon and Khami ceramics indicate that the site was occupied at the earliest around AD 1300, but certainly by AD 1450, until possibly the 1820s. The radiocarbon dates, at 2 sigma calibration, show that this was likely between AD 1480 and 1650.



**Figure 7.130: Kambaku Camp: diagnostic ceramics from the homestead: A 1E GS, K2; and B 1E GS, Khami.**

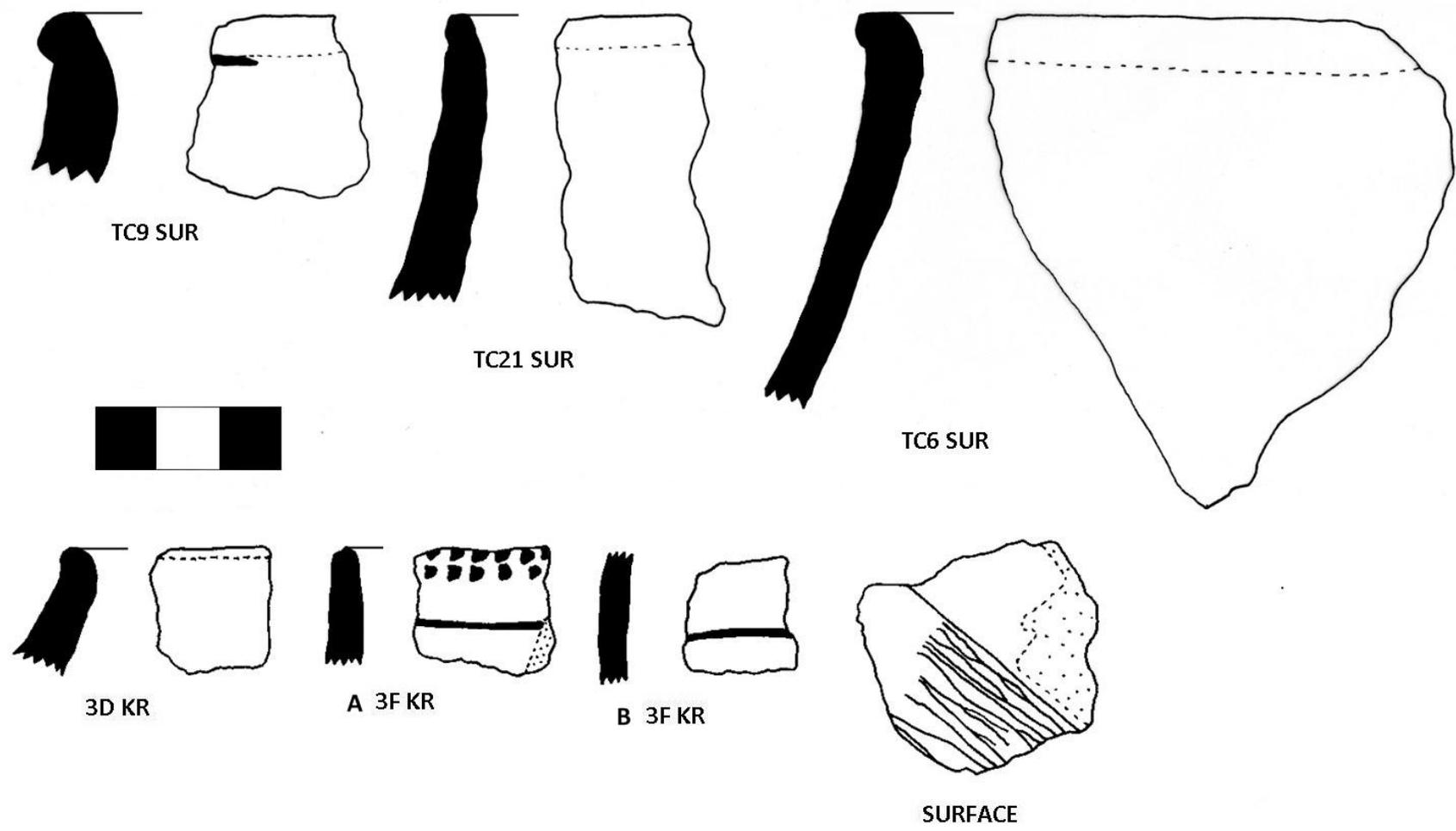


Figure 7.131: Kambaku Camp: diagnostic ceramics from the upper kraal: TC9 SUR, TC6 SUR & 3D KR, possibly Khami; A 3F KR, Icon; B 3F KR, possibly Icon.

In A and B 3F KR below the black incision a red slick has been applied.

### 7.6.5 Bead assemblage

One bead was found at the site and it came from Square A in the homestead midden. It is a white bead, approximately 1.6x1.5mm, with an unusually large perforation and is probably European in origin, dating to within the last three centuries and within the latter portion of the Khami phase. A Dutch bead made in Germany in the nineteenth century, and a Bohemian bead, appearing in southern Africa in the nineteenth century but used into the beginning of the twentieth century, were also found on the surface of the site and both date to a similar period as the excavated bead (Wood 2000; Figure 7.132). The radiocarbon date range, however, does not suggest a European period occupation and so the beads may have been introduced to the site after the homestead was abandoned.

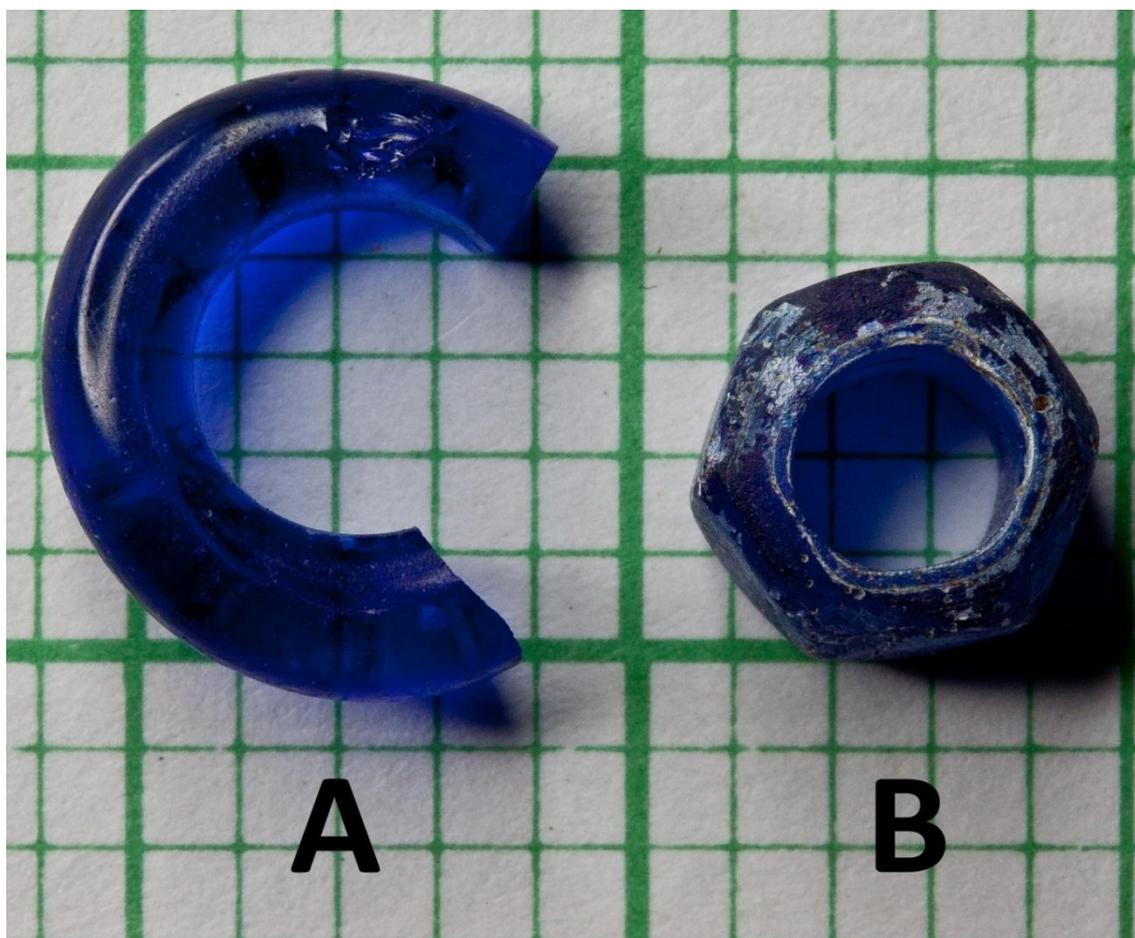


Figure 7.132: Kambaku Camp: two 19<sup>th</sup> century beads found on the surface: A, Dutch single-wound; and B, Bohemian hexagonal glass bead.

### **7.6.6 Miscellaneous artefacts**

An upper grindstone was found in Trench 3, Square D, in the upper kraal and a bullet casing was found on the surface of Trench 1, Square A. The casing could have arrived at the site via a number of possibilities including modern hunting in the area, which still occurs.

### **7.6.7 Faunal analysis**

A small faunal assemblage of 346g was recovered from the excavations: 300g from the upper kraal and 46g from the homestead. Most of the NISPs are from the upper kraal, with four samples from the homestead that could be identified and, even so, only to the fairly broad category of bovid. The upper kraal contained a number of bovid class II specimens, unclassified bovid and bovid class III. Other identified samples included a bovid class I, a possible impala and a vervet monkey specimen, lizard, a mammal that could not be further identified, steenbok and tortoise (Table 7.45).

### **7.6.8 Summary: Kambaku Camp**

Kambaku was occupied primarily from the late AD 1400s and into the mid-seventeenth century based on the radiocarbon date from the site. The ceramic sequence concurs with this date but the glass beads, including the surface finds, suggest a much later use of the site, within the last 400 years. Of particular interest is the association between the stone tool assemblage and the agriculturalist occupation of the site, suggesting that foragers were living at the homestead during its occupation. The late date on the site, dating to after the abandonment of the Mapungubwe capital, and the stone tool assemblage, makes this the latest known forager assemblage in the area.

## **7.7 NDLULAMITHI KRAAL**

### **7.7.1 Regional context**

Ndlulamithi is located in the northern basalt zone of the research area, approximately 2.2km southeast of Shawu. The local ecology at the two sites is very similar. Ndlulamithi is, however, located on the edge of a basalt ridge, cutaway by the Majale River forming a steep western cliff dropping into the river itself. Access to the summit is easiest along the southern boundary or from the eastern edge of the ridge. Of the 4km buffer zone, 32.5km<sup>2</sup> (64.6%) were surveyed and within it 99 forager features were identified with seven being in homesteads (Table 7.46; Figure 7.133). There are also 19 homesteads in the area with eight Khami, five K2 and a TK2 settlement, mostly situated in floodplains and near to river networks (Figure 7.134).

**Table 7.45: Kambaku Camp: number of identified specimens.**

Trench 1 / Square A							
Species	Body part	SUR	I	II	III	IV	Total
Bovid	Incisor	0	0	0	0	1	1
	Enamel	0	0	0	0	3	3

**Total:** 0 0 0 0 4 4

**Indeterminate**

Phalanx	0	0	1	0	0	1
Tooth fragment	0	0	2	0	0	2
Enamel	0	0	2	0	4	6

**Total:** 0 0 5 0 4 9

**Grand total:** 0 0 5 0 8 13

Trench 3		
Species	Body part	No.
<b>Mammals</b>		
Bovid	Cranial fragment	3
Bovid	Humerus	1
Bovid	Molar	1
Total bovid		5
Bovid class I	Humerus	3
Bovid class II	Premolar 4	1
Bovid class III	Premolar 2	1
cf. Impala <i>Aepyceros melampus</i>	Metacarpal	1
Mammalian	Rib fragment	1
Jameson's red rock rabbit	Astragalus	1
<i>Pronolagus randensis</i>	Humerus	1
Total rabbit		2
<b>Reptiles</b>		
Lizard Sauria	Vertebra	1
Tortoise Testudines	Carapace	1

**Total:** 15

Table 7.46: Ndlulamithi Kraal: archaeological sites and features within the buffer zone.

Feature/site type	No.	Density (/km <sup>2</sup> )	% of total
Forager	99	3	53.2
in a homestead	7	0.2	21.9
Homestead	19	0.6	15.3
K2	5	0.2	8.2*
TK2	1	0.03	1.6*
Khami	8	0.3	13.1*

\* of total identified homesteads

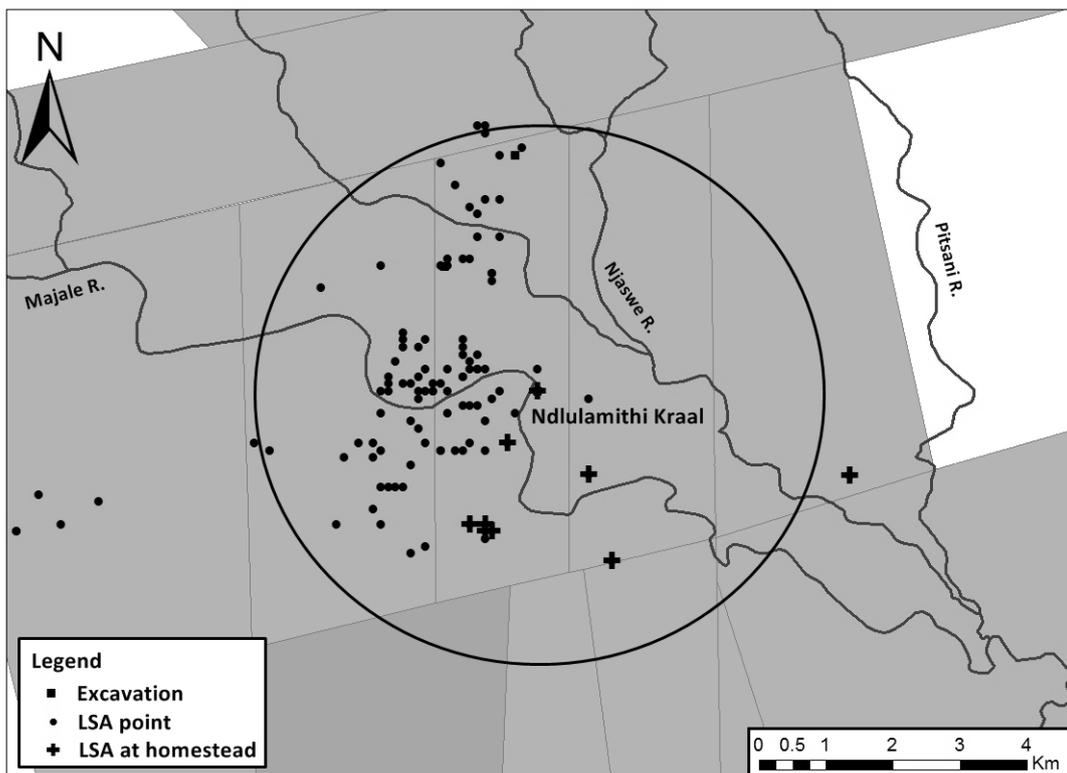


Figure 7.133: Ndlulamithi Kraal: Forager related features within the 4km buffer zone.

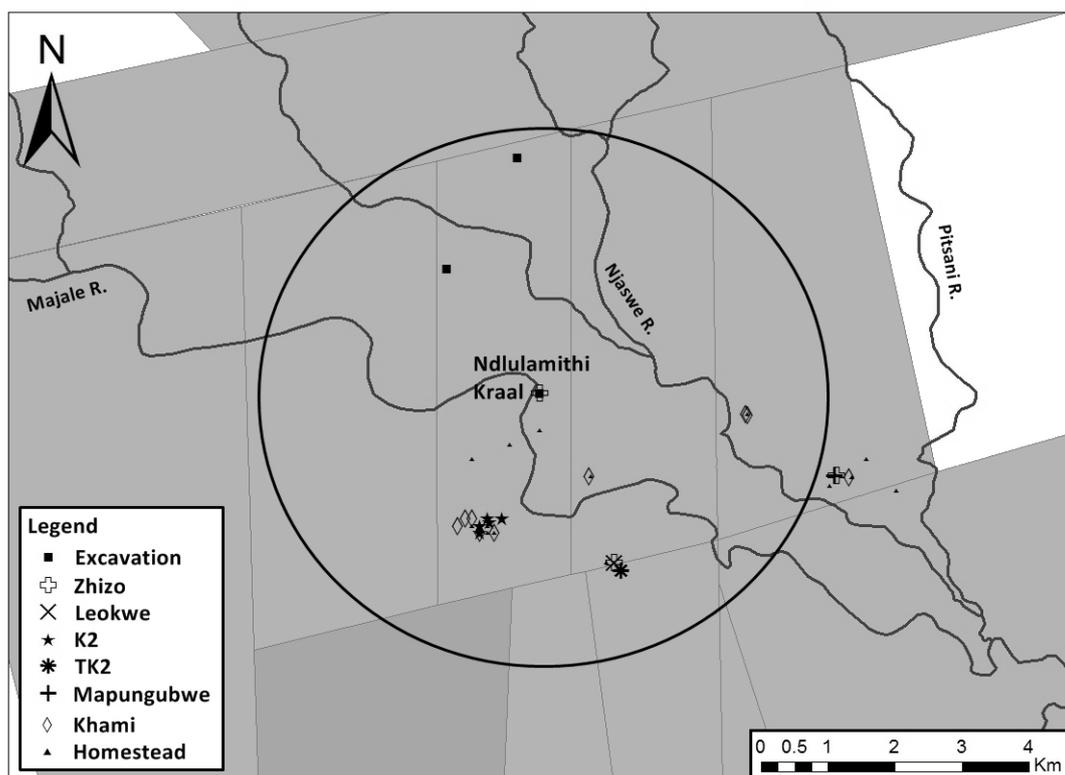


Figure 7.134: Ndlulamithi Kraal: agriculturalist homesteads within the 4km buffer zone.

### 7.7.2 Chronology

No radiocarbon dates were submitted for Ndlulamithi because relative dating was sufficient. Based on diagnostic ceramics, it appears that the site was occupied by agriculturalists between AD 1000 and 1220 with a possible later use between AD 1400 and the 1820s based on a single sherd found on the surface of the lower kraal that may be Khami. However, a single sherd, and one not securely associated with the Khami facies, is not a robust measure of a site's chronology, whereas the numerous K2 sherds clearly indicate an early second millennium AD occupation.

### 7.7.3 Stone tool assemblage

Very few stone artefacts were recovered in the three excavated squares. In total, 322 stone tools were found (Catalogue D.6.1), of which chips comprised the majority of the assemblage (N=240; 74.5%). Of the two trenches the majority of the stone tools were found in Trench 3 (70.2%) and only a few came from Trench 15 (29.8%), inside the cattle kraal. Excluding chips, 56 (68.3%) stone tools were found in Trench 3 and in Trench 15 there were 26 (31.7%; Table 7.47). Quartz is the most frequent material type in the assemblage, no formal tools were identified and two irregular cores were found (Figure 7.135). There is no strong evidence to indicate that the stone tools were produced by foragers and it cannot be ruled out that agriculturalists were flaking stone.

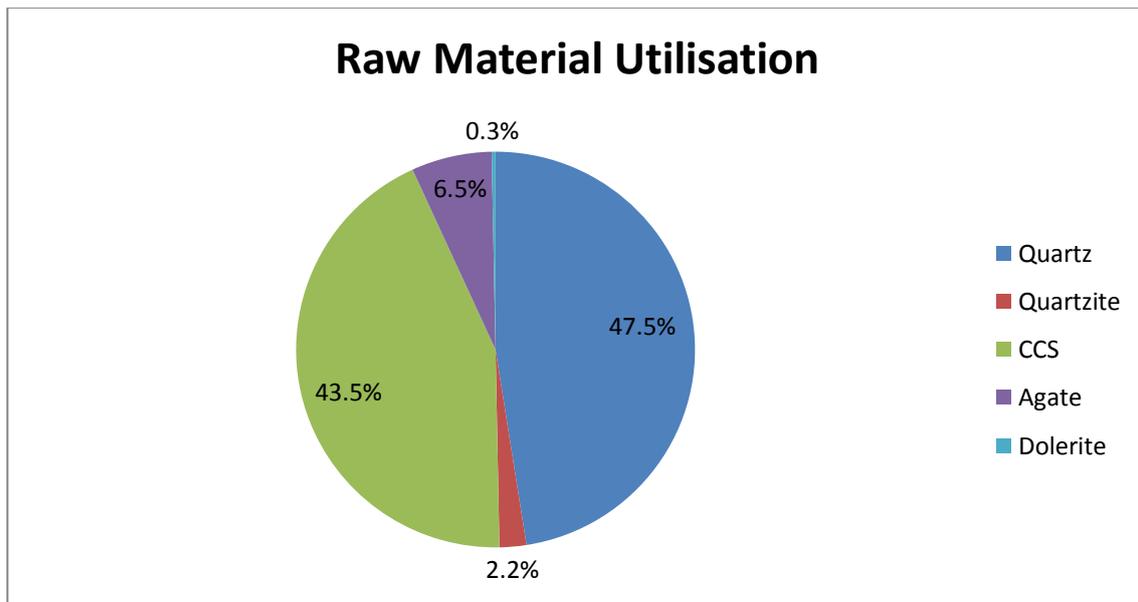
**Table 7.47: Ndlulamithi Kraal: stone tool distribution.**

Trench	Square	Spit	m <sup>3</sup>	Total quartz	Total quartzite	Total CCS	Total agate	Total dolerite	Total	Stone tools/m <sup>3</sup>
3	J	SUR	0.003	24	0	11	6	0	41	15769
3	J	I	0.03	38	4	58	10	0	110	3254
3	J	II	0.03	40	3	27	5	0	75	2564

**Total: 0.06 102 7 96 21 0 226 3442**

15	R	SUR	0.02	5	0	0	0	0	5	260
15	R	I	0.02	7	0	6	0	0	13	769
15	R	II	0.01	3	0	0	0	0	3	288
15	R	III	0.02	0	0	2	0	1	3	192
15	R	IV	0.06	12	0	16	0	0	28	503
15	R	V	0.07	2	0	4	0	0	6	88
15	R	VI	0.07	3	0	6	0	0	9	131
15	R	VII	0.07	6	0	2	0	0	8	116
15	R	VIII	0.04	10	0	6	0	0	16	424
15	R	IX	0.02	5	0	0	0	0	5	279

**Total: 0.38 53 0 42 0 1 96 253**



**Figure 7.135: Ndlulamithi Kraal: raw material utilisation.**

#### 7.7.4 Ceramic assemblage

A total of 396 ceramic sherds were found, 372 (93.3%) of which are non-diagnostic. The diagnostic component of the ceramic assemblage (6.1%) includes 16 plain rims (4%), seven decorated sherds (1.8%) and one decorated rim (0.3%). Most of the ceramics were found in Trench 15 and distributed throughout the nine spits but concentrated between the surface and Spit VI, with a peak in Spit IV (Table 7.48; Figure 7.136). The density of the ceramics is, however, fairly consistent between the spits until Spit V, after which they drop off (Figure 7.137). There are two stratigraphic levels in the kraal and in the Kraal (KR) unit there are 242 (82.6%) ceramic sherds and 25 (8.5%) in Compact KR (CKR); the surface contained 26 (8.9%) sherds. CKR is considered the walking surface of the kraal and is likely its base, hence the lower density of ceramics. In Trench 3, a higher density of ceramics was found but no other patterns were noted.

Not many of the diagnostic ceramics could be placed into date brackets based on ceramic facies. Unfortunately, many of them are from the surface, indicated by SUR in Figure 7.138 (also see Figure 7.139): 15R IV is possibly a Leokwe sherd, dating between AD 1000 and 1220, while B, D and G LKR SUR are all K2 sherds from the same time period. The only identified piece that may be an anomaly is H LKR SUR, which may be a K2 or Khami sherd, in the latter case dating to between AD 1400 and the 1820s. Unfortunately, neither A and B 15R II nor C, E and F LKR SUR could be placed into a single facies.

**Table 7.48: Ndlulamithi Kraal: ceramic distribution.**

Trench	Spit	Total ceramics	Total ceramics/m <sup>3</sup>	Total % of ceramics	Plain	Decoration	Plain rim	Decorated rim	Total plain ceramics	Total diagnostic ceramics	Plain ceramics/m <sup>3</sup>	Diagnostic ceramics/m <sup>3</sup>
3	SUR	19	7307.7	18.4	19	0	0	0	19	0	7307.7	0
3	I	66	1952.7	64.1	65	0	1	0	65	1	1923.1	29.6
3	II	18	615.4	17.5	16	0	2	0	16	2	547	68.4
<b>Total:</b>		<b>103</b>	<b>1568.9</b>	<b>26</b>	<b>100</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>100</b>	<b>3</b>	<b>1523.2</b>	<b>45.7</b>

Table 7.48: continued.

Trench	Spit	Total ceramics	Total ceramics/m <sup>3</sup>	Total % of ceramics	Plain	Decoration	Plain rim	Decorated rim	Total plain ceramics	Total diagnostic ceramics	Plain ceramics/m <sup>3</sup>	Diagnostic ceramics/m <sup>3</sup>
15	SUR	26	11538.5	8.9	26	0	0	0	26	0	15769.2	0
15	I	45	2662.7	15.4	40	1	3	1	40	5	2366.9	295.9
15	II	16	1538.5	5.5	11	2	3	0	11	5	1057.7	480.8
15	III	21	1346.2	7.2	20	0	1	0	20	1	1282.1	64.1
15	IV	129	4305.3	44	121	3	5	0	121	8	4021.8	283.5
15	V	31	1201.2	10.6	30	0	1	0	30	1	1162.7	38.5
15	VI	14	424.2	4.8	14	0	0	0	14	0	424.2	0
15	VII	6	169.2	2	5	1	0	0	5	1	134.6	34.7
15	VIII	5	273.6	1.7	5	0	0	0	5	0	273.6	0
15	IX	0	0	0	0	0	0	0	0	0	0	0

Total: **293**    **804.7**    **74**    **272**    **7**    **13**    **1**    **272**    **21**    **747**    **57.7**

Total: **396**    **921.4**    **372**    **7**    **16**    **1**    **372**    **24**    **865.6**    **55.8**

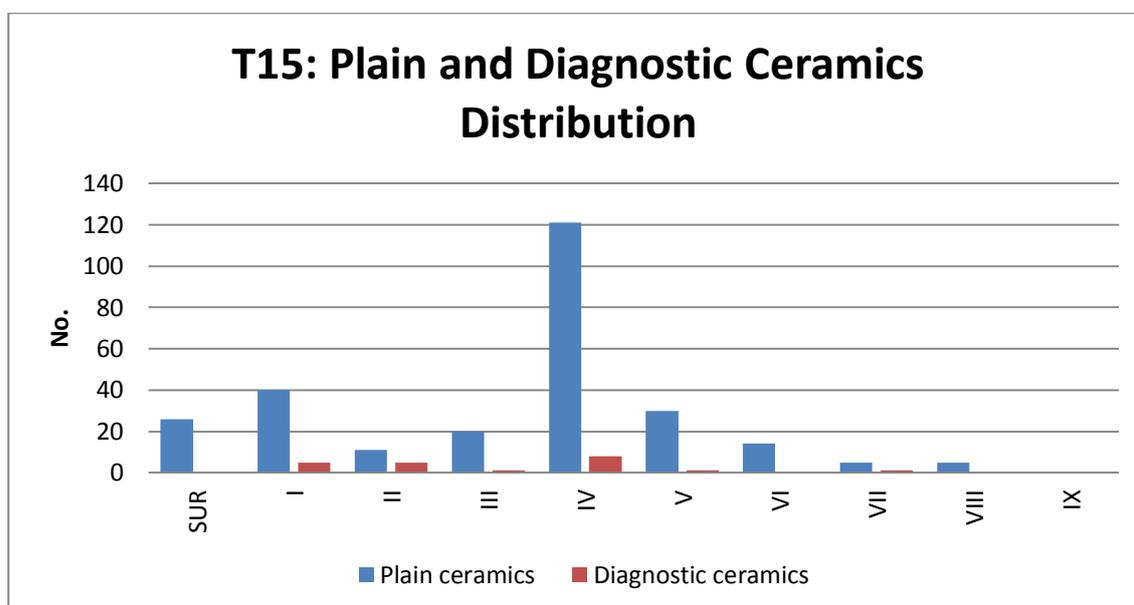
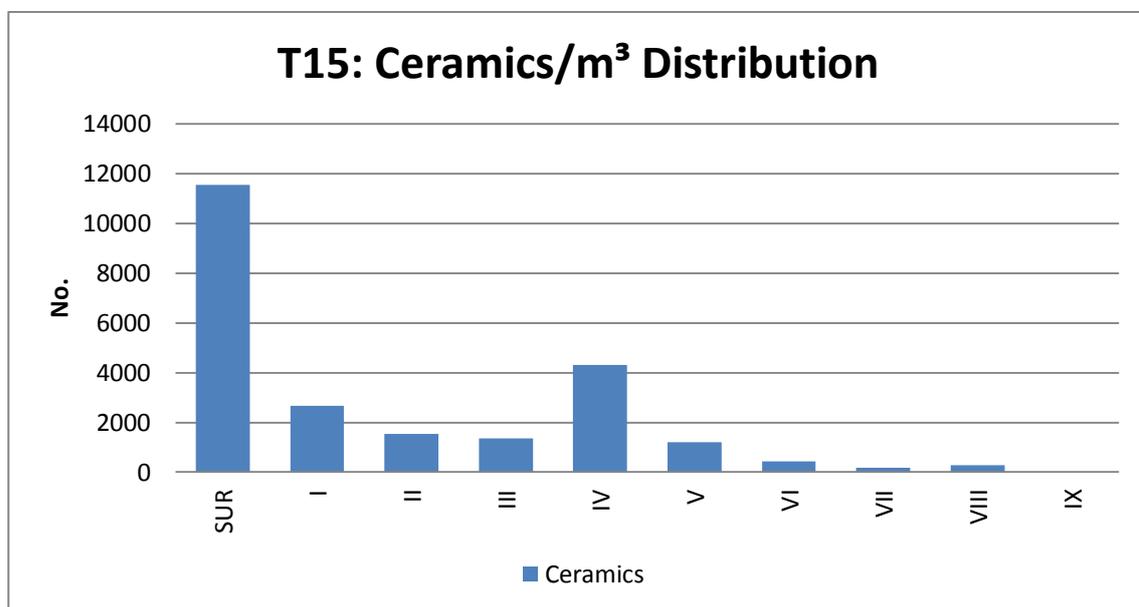


Figure 7.136: Ndlulamithi Kraal: ceramic distribution in Trench 15.



**Figure 7.137: Ndlulamithi Kraal: ceramic density in Trench 15.**

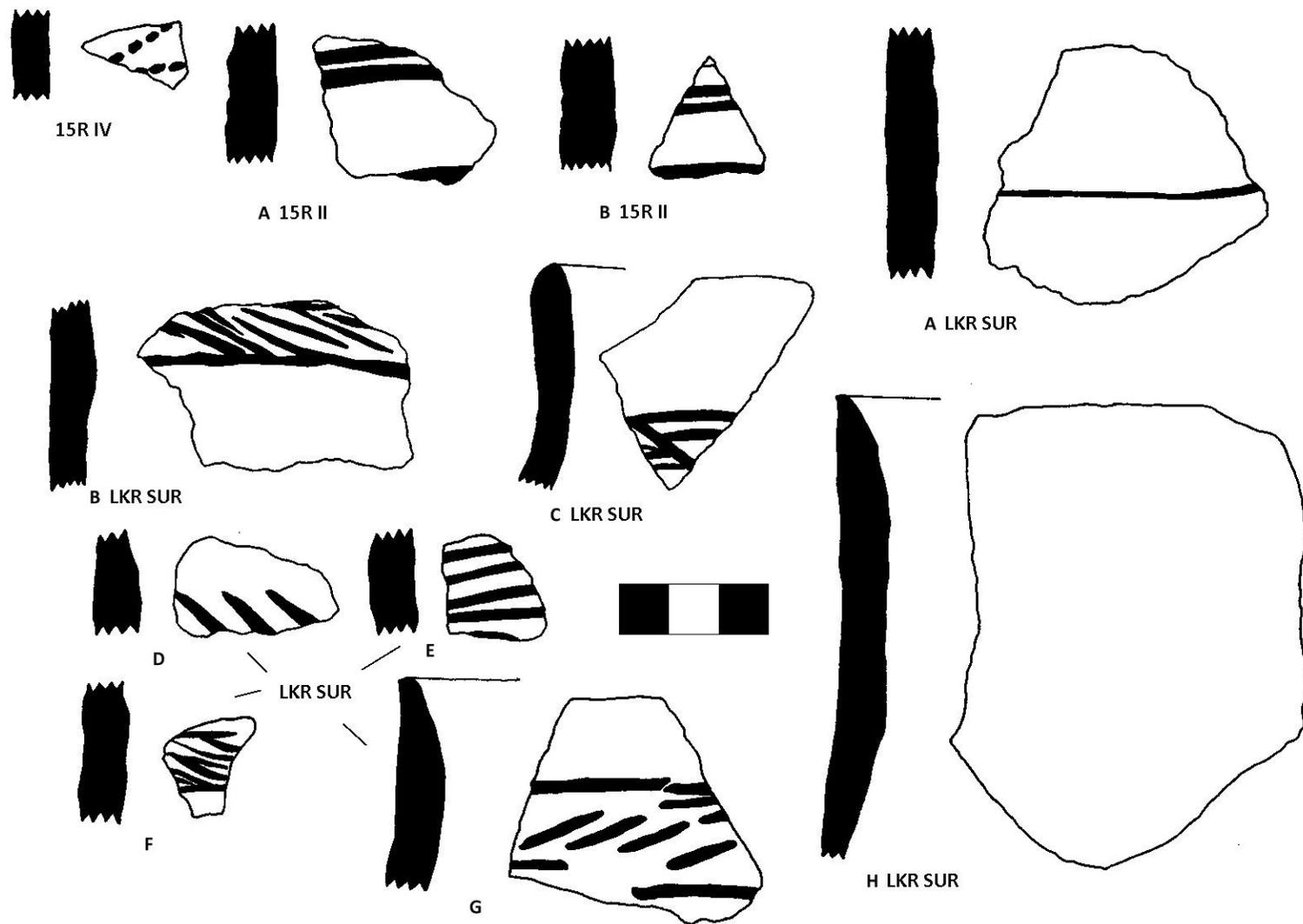


Figure 7.138: Ndlulamithi Kraal: diagnostic ceramics: 15R IV, possibly Leokwe; B, D & G LKR SUR, K2; and H LKR SUR, possibly K2 or Khami.



**Figure 7.139: Ndlulamithi Kraal: diagnostic ceramics: A, possible Khami beaker; B-D, F (?), K2; and E, Leokwe.**

#### 7.7.5 Bead assemblage

A total of 17 beads were identified at Ndlulamithi. The majority are organic beads followed by three glass beads and a metal bead. Most of the beads were found in Trench 15, which comprises of nine organic (69.2%), three glass (23.1%) and a metal bead (7.7%). The highest density of beads, however, was from Trench 3 and all of them are organic (Table 7.49). The organic beads can be separated into six complete ostrich eggshell (46.2%), four complete bone (30.8%) and three broken *Achatina* beads (23.1%). Thus, based on the organic bead assemblage, albeit small, it does not seem that bead manufacturing was occurring in the areas where the trenches were set up, but it cannot be ruled out that it was occurring in other parts of the homestead.

The three glass beads are two Indo-Pacific beads and what appears to be a K2 bead and all were found in Trench 15 (Figure 7.140). A fourth bead was found on the surface and is possibly K2. The dates associated with these bead types correspond with the ceramic sequence of the site. The metal bead (Figure 7.141) was also found in Trench 15, but no further analysis has been conducted.

Table 7.49: Ndlulamithi Kraal: bead distribution.

Spit	Total beads	Total beads/m <sup>3</sup>	Total % of beads	Ostrich eggshell	Bone	Achatina	Glass	Indo-pacific glass	Iron	Organic beads/m <sup>3</sup>	Glass beads/m <sup>3</sup>	Metal beads/m <sup>3</sup>
<b>Trench 3</b>												
SUR	0	0	0	0	0	0	0	0	0	0	0	0
I	3	89	75	1	0	2	0	0	0	88.8	0	0
II	1	34	25	1	0	0	0	0	0	34.2	0	0
<b>Total:</b>	<b>4</b>	<b>61</b>	<b>24</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60.9</b>	<b>0</b>	<b>0</b>
<b>Trench 15</b>												
SUR	0	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0	0
II	0	0	0	0	0	0	0	0	0	0	0	0
III	2	128	15	1	0	1	0	0	0	128.2	0	0
IV	4	136	31	1	1	0	0	1	1	74	30.8	30.8
V	3	107	23	0	2	0	1	0	0	76.9	29.6	0
VI	1	31	7.7	1	0	0	0	0	0	30.8	0	0
VII	2	50	15	1	1	0	0	0	0	50	0	0
VIII	1	41	7.7	0	0	0	0	1	0	0	40.9	0
IX	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total:</b>	<b>13</b>	<b>30</b>	<b>77</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>24.7</b>	<b>8.2</b>	<b>2.7</b>
<b>Total:</b>	<b>17</b>	<b>40</b>		<b>6</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>30.2</b>	<b>7</b>	<b>2</b>

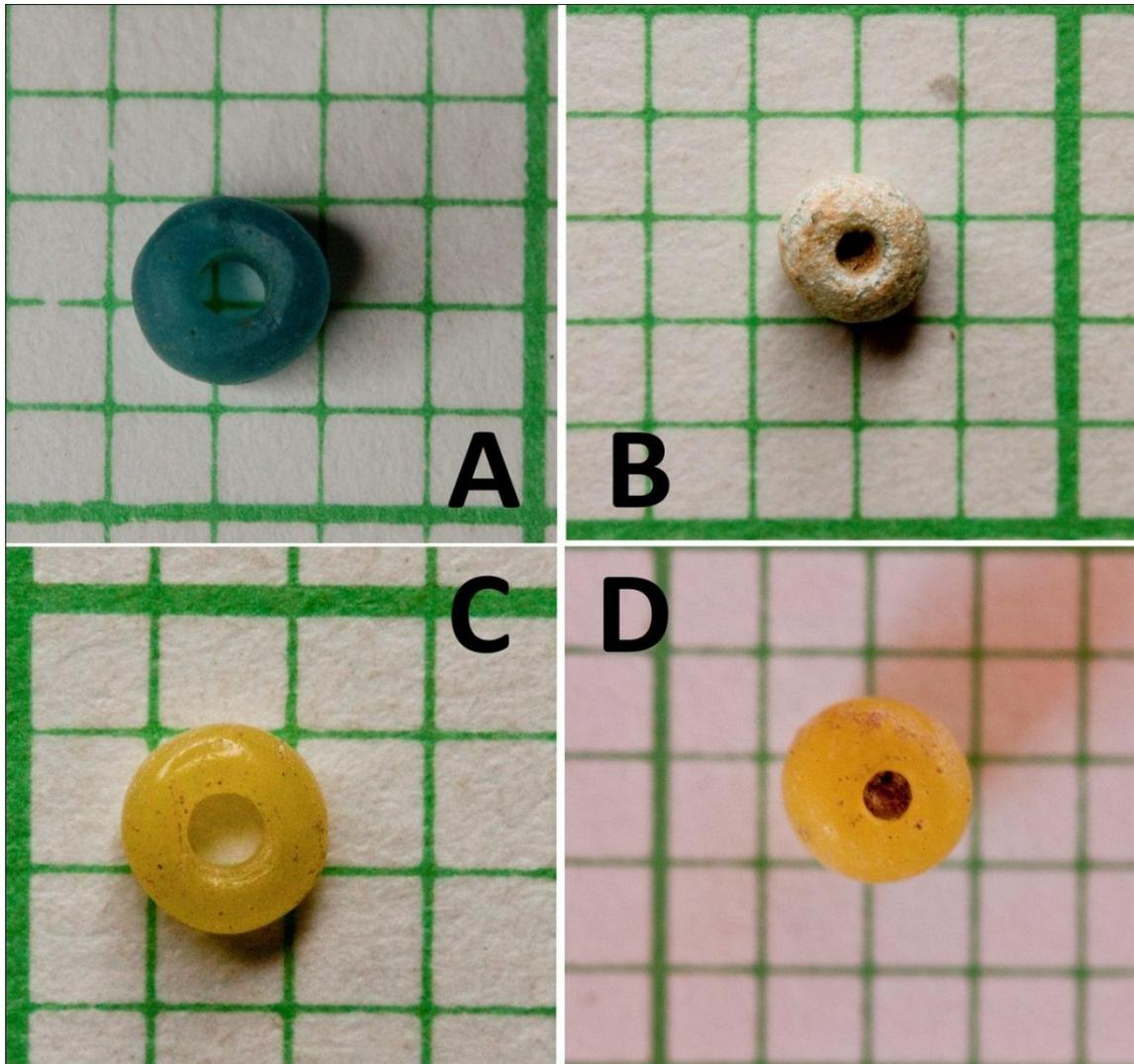


Figure 7.140: Ndlulamithi Kraal: glass bead examples: A, possibly K2 (found on the surface); B, possibly K2; and C & D, Indo-Pacific beads.



**Figure 7.141: Ndlulamithi Kraal: metal bead.**

#### **7.7.6 Miscellaneous artefacts**

Four pieces of iron were found, one in Trench 3 and three in Trench 15. The provenience of two items from the surface of Trench 15 is uncertain, but two were found in the deposit; one at the base of Trench 3 and the other in Trench 15, Spit VIII, Square R.

#### **7.7.7 Faunal analysis**

In total, 217.9g of faunal remains were found at the site. Most of this came from Trench 15, but as with other parts of the assemblage, the highest density of remains came from Trench 3. In Trench 15 most of the remains were recovered from between Spits III and VI (Figure 7.142 – 7.143), which is similar to the provenance of the highest density of ceramics.

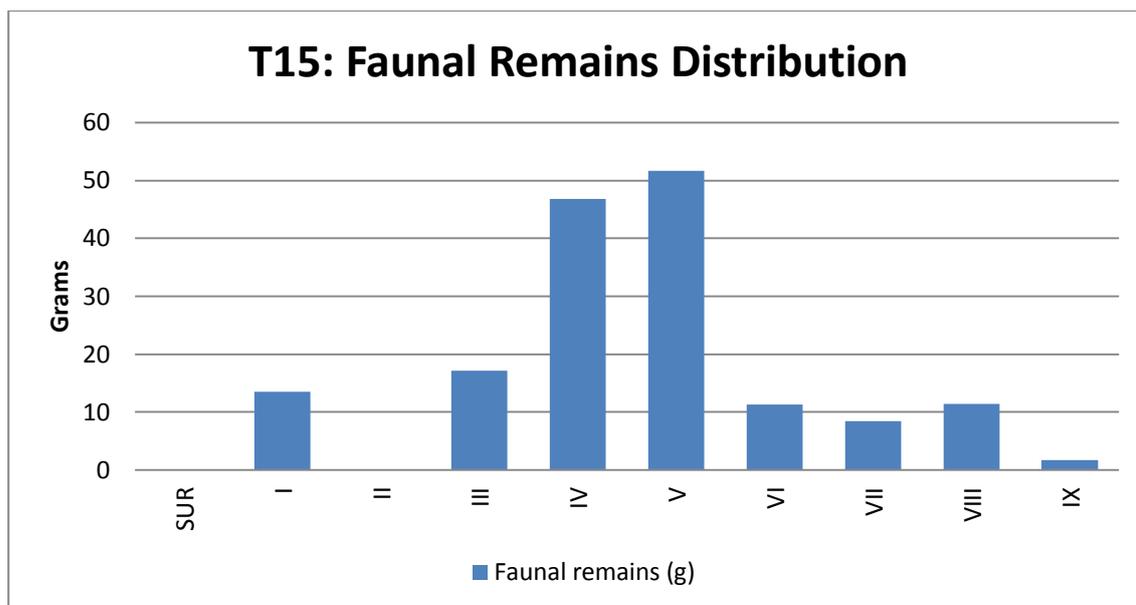


Figure 7.142: Ndlulamithi Kraal: faunal remains distribution in Trench 15.

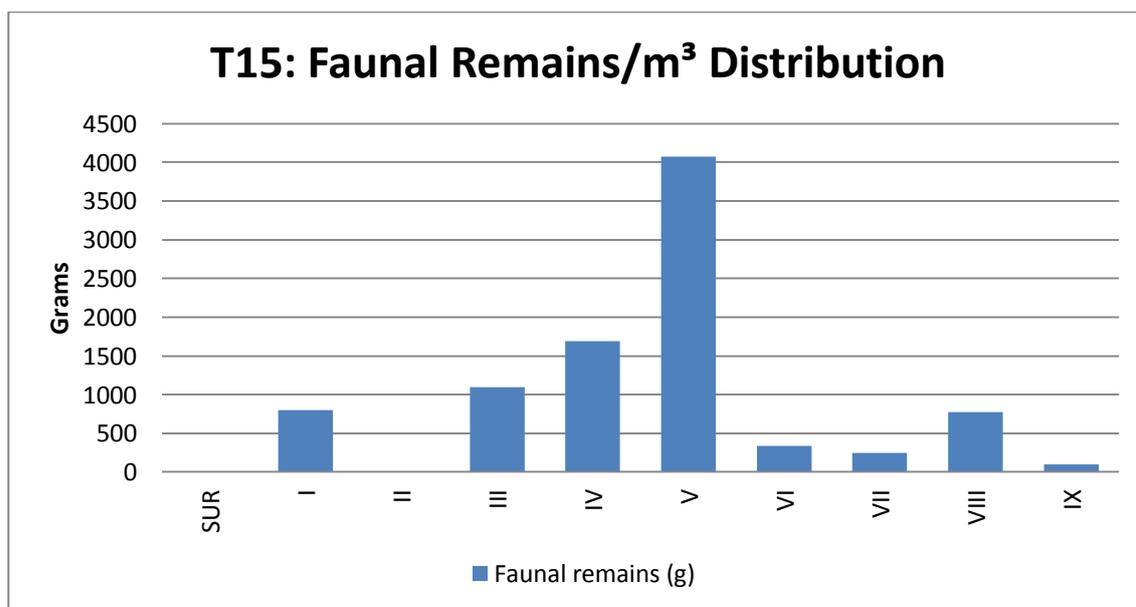


Figure 7.143: Ndlulamithi Kraal: faunal remains density in Trench 15.

There are only a few NISPs from Ndlulamithi. Trench 3 contained a single bird, bovid class II and tortoise specimen that could be identified (Table 7.50). In Trench 15, however, a greater degree of the faunal assemblage was identifiable and most common amongst them were bovid class I (N=3) and a specimen each of unclassified bovid, possible crab, rock hyrax, lizard, mammal and porcupine (Table 7.51). The fact the no identified domesticate remains were found, for this site in particular but also the scarce finds made at the previous excavations, is unusual.

### 7.7.8 Summary: Ndlulamithi Kraal

The stone tool finds at Ndlulamithi are inconclusive. They contained no formal tools or other indicators that suggest foragers produced the assemblage. The site itself is typical of other agricultural homesteads in the region dating to between AD 1000 and 1300 in that it is situated near to a fertile floodplain, contains what appears to be a central cattle kraal – although no cattle or any other domesticated remains were found – and a number of artefacts typically associated with farmers such as ceramics, glass beads and grainbin foundations.

**Table 7.50: Ndlulamithi Kraal: number of identified specimens from Trench 3.**

Trench 3						
Species	Body part	SUR	I	II	III	Total
Birds (finch size)	Humerus	0	0	0	1	1
Bovid class II	Enamel	0	1	0	0	1
Tortoise Testudines	Carapace	0	0	0	1	1
<b>Total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>3</b>
Indeterminate						
	Enamel	0	0	0	1	1
	Humerus fragment	0	0	0	4	4
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>
<b>Grand total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>7</b>

Table 7.51: Ndlulamithi Kraal: number of identified specimens from Trench 15.

		Trench 15										
Species	Body part	SUR	I	II	III	IV	V	VI	VII	VIII	IX	Total
<b>Mammals</b>												
Bovid	Tooth fragment						1					1
Bovid class I	Astragalus (left)					1						1
	Astragalus (right)					1						1
	Phalanx							1				1
Total bovid class I		0	0	0	0	2	0	1	0	0	0	3
Rock hyrax <i>Provavia capensis</i>	Humerus							1				1
Mammalian	Vertebra fragment									1		1
Porcupine <i>Hystix africae australis</i>	Tooth fragment						1					1
<b>Crustacean</b>												
Crab <i>Potamonautidae bayonianus?</i>	Shell							1				1
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>
<b>Indeterminate</b>												
Enamel			1			1				1		3
Long bone fragment							1					1
Rib fragment					1	1		1				3
<b>Total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>
<b>Grand total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>12</b>

## **7.8 SUMMARY OF THE EXCAVATION RESULTS**

In this chapter, I have laid out all the data collected at each of the excavated sites. This has been done so in such a way that each feature of the site can easily be understood and, when in the next chapter a discussion on each site is presented, referred back to. There are a number of trends that are worth noting before addressing each site. What is quite clear is the variability in the archaeological forager sequence. This is even more visible when one considers van Doornum's (2005) study sites. For example, Dzombo displays a number of features that are similar to Balerno Main, such as the variety of artefact types, yet it is not a very large rockshelter and does not have the same density of artefacts. Mafunyane contains a large number of copper items and artefacts associated with smithing. This is a very unusual find, and coupled with the extensive forager record, it is unlike most sites. João and Kambaku, on the other hand, are intrinsically related to the homestead occupation that they are attached to and indicate that by AD 1000, foragers may have begun living alongside farmers and that possibly from the collapse of the Mapungubwe state, they lived within homesteads practicing mostly an agriculturalist economy. All these points are meted out in the following chapter and a full understanding of each site, its place and context is achieved.

## CHAPTER 8: READING 'PLACE' IN THE EXCAVATED SITES: SITE-SPECIFIC INTERPRETATIONS

Finding the place of a site is essentially finding its context. Establishing a site's context is critical in a landscape study, such as this, which compares forager cultural expressions from different site types. In doing so, it is clear that there is variability on the Greater Mapungubwe Landscape and any study here needs to take this into consideration. Accounting for this, I present my interpretation from a perspective that emphasises the variable nature of the forager record. In this way I am able to comment on differences in occupation types and interaction with agriculturalists; all of these aspects feature differently at the various sites but together fall within the overarching LSA framework for the region. In this chapter I establish an understanding of each site as a unit of analysis with its own attributes before turning, in the following chapter, to the broader landscape sequence, considered as the regional unit (see Foley 1981a).

### 8.1 DZOMBO SHELTER

A number of patterns noticed at Dzombo are worthy of comment before discussing the cultural sequence and place of the site.

#### 8.1.1 Chronology

Charcoal samples were taken from levels where changes in the assemblage were noted (Table 8.1). Between Spits IV and VII, K2 and Mapungubwe ceramics and glass beads were found and stone tool frequencies dropped noticeably. Thus, this may be a critical point in Dzombo's occupation and dates from Spits VIII and XI would be able to place a maximum date on the interaction occurring at the site because agriculturalist artefacts diminish and disappear in these levels. Both the dates from Spits IV (OxA-27136) and VIII (OxA-27139), submitted to ORAU, and the sample submitted to Beta Analytic (Beta-342860) came out within the last 400 years, much later than expected considering the ceramic and glass bead dates of between AD 1000 and 1300. The question, then, is whether these dates are associated with the surrounding deposit, are contaminated or have moved after being deposited. Firstly, during pre-treatment there was no indication of contamination and so acid-base-wet oxidation (ABOX), a procedure developed to replace the standard acid-base-acid (ABA) pre-treatment, and is more capable of dealing with contaminated samples (see Bird *et al.* 1999), was not used. However, it is possible that the samples' integrity was compromised. Second, the ceramic and glass bead assemblages from these levels have been securely dated across the region (see Huffman 2000, 2007) and there are no grounds to question these dates or suggest that those obtained in the upper levels of Dzombo

indicate that revision is required; the discrepancy is simply too large to qualify the Dzombo dates as a possible outlier from the accepted sequence. Therefore, it seems most likely that the charcoal samples are not associated to the surrounding deposit, and so shall be viewed as having moved after deposition.

Fortunately, the dates submitted from Spits XI (OxA-27138) and XIX (OxA-27139) concur with ceramic and glass bead chronological indicators, strengthening their association with the assemblage. Therefore, the site appears to have been occupied from within the last three centuries BC until at least AD 1300 and possibly again thereafter, as indicated by the late radiocarbon dates all falling within the Khami period (Table 8.2). Based on these findings, it is possible to place the site's sequence into J. Alexander's (1984) frontier model (Table 8.3), discussed in Chapter 4. While I have tried to establish a chronological sequence at Dzombo that changes between the spits, it cannot be said with certainty that these changes did occur at these depths due to the possibility of mixing and the problematic dates. I do feel, however, that it is a useful indication of what may have occurred at the site, but shall not be relied on due to the issues already mention.

**Table 8.1: Dzombo Shelter: radiocarbon dating results and justification.**

Spit	Code	BP	Calibration	Justification
IV	OxA-27136	190±26	AD 1666-1815	Stone tool assemblages increase in density from Spit IV
VII	BETA-342860	40±30	AD 1877-1931	To obtain a more accurate date for the upper levels after OxA-27136 and OxA-27139
VIII	OxA-27139	114±26	AD 1807-1950	Ceramic and bead frequencies decrease significantly from here
XI	OxA-27138	982±28	AD 1029-1162	Agricultural items disappear with only isolated finds in some spits below this point
XIX	OxA-27137	2165±30	207-42 BC	The lowest charcoal sample found offering a maximum age

**Table 8.2: Dzombo Shelter: chronological sequence based on radiocarbon dates, ceramics and glass beads.**

Spit	C <sup>14</sup> cal.	Ceramic		Glass bead	
	BC/AD	Facie	BC/AD	Type	BC/AD
SUR	No dates				
I					
II					
III					
IV	<b>AD 1666-1815</b>			Mapungubwe	AD 1220-1300
	AD 1830-1892				
	AD 1921-1954				
V		K2	AD 1000-1220		
VI				Zhizo	AD 900-1000
				Mapungubwe	AD 1220-1300
VII	AD 1706-1723			K2	AD 1000-1220
	AD 1806-1839				
	AD 1845-1868				
	<b>AD 1877-1931</b>				
VIII	AD 1697-1725				
	<b>AD 1807-1950</b>				
IX					
X	No dates				
XI	<b>AD 1029-1162</b>				
XII	No dates				
XIII					
XIV					
XV				K2	AD 1000-1220
XVI	No dates				
XVII					
XVIII					
XIX	347-319 BC				
	<b>207-42 BC</b>				
XX	No dates				
XXI					
XXII					
XXIII					
XXIV					
XXV					
XXVI					
XXVII					

**Table 8.3: Dzombo Shelter: chronology.**

Spit	BC/AD	Period	Frontier
SUR			
I	AD 1300 - 1820	Icon, Khami and Venda?	Consolidating frontier?
II			
III			
IV	AD 1220 - 1300	Mapungubwe	
V			
VI			Static frontier
VII			
VIII	AD 1000 - 1220	K2	
IX			
X			
XI			
XII	AD 900 - 1000	Zhizo	Second moving frontier
XIII			
XIV	Pre-AD 1000	Ceramic final & final LSA	First moving frontier succeeds the final LSA
XV			
XVI			
XVII	c. AD 350		
XVIII			
XIX	207 - 42 BC	Final LSA	Final LSA to mid-Holocene LSA
XX			
XXI			
XXII			
XXIII		Undated (pre-42 BC)	
XXIV			
XXV			
XXVI			
XXVII			

### **8.1.2 Raw material**

The most interesting points regarding raw material utilisation have to do with the relationship between CCS materials and quartz. In my previous work in the area, I recorded three stone tool assemblage types in northern South Africa in a study conducted exclusively on surface assemblages: CCS- and quartz-dominated assemblages, where either one of these two material types was greater than the others by 5% or more, and a third type in which the two materials were within 5% of one another (Forssman 2010). In van Doornum's (2000, 2005) excavations, and in all levels but the basal level at Little Muck (Hall & Smith 2000), CCS dominates. No surface assemblage from a rockshelter is dominated by quartz, but Schoeman (2006a) found quartz assemblages in rain-control sites in northern South Africa. There are two primary reasons why specific raw materials were selected: geologic or geographic locations (access to resources) and human factors (for example, travel time, material quality and social restrictions); inferring which of these played a role and to what degree is not always possible (Wilson 2007). Both CCS and quartz outcrops occur within 2km of Dzombo and nodules could be collected from the nearby Limpopo and Motloutse Rivers; access to either resource is equivalent. Therefore, either interactions with agriculturalists, raw material preferences or human factors, such as the formalised use of space in which different and spatially distinct activities occurred in different parts of a site, led to differences in assemblage composition. Comparing Trenches 1 and 2 demonstrate the different utilisation of CCS and quartz.

#### **8.1.2.1 The two trenches and CCS versus quartz assemblages**

The first distinction to make is within Trench 2 where there are two clear assemblages, separated by a brief hiatus in Spit X. Both assemblages are differentiated by the dominance of quartz and CCS in the upper and lower units, respectively. The outside area is part of a palaeo-floodplain, and the deposit is not likely from erosion from the rockshelter. The upper level is unconsolidated grey brown deposit and was only found around the koppie and near to the rockshelter. If the deposit was from within the rockshelter this does not explain why the assemblage is dominated by quartz because in the assemblage from Trench 1, CCS is more frequent (43.7%), whereas the quartz component is nearly 6% lower (37.8%). With this in mind, it does not seem as though the upper quartz assemblage has undergone significant post-depositional movement and has not eroded out from the rockshelter; it appears relatively intact and can thus be viewed as a distinct cultural unit.

The lower unit is also worth noting because the sheep specimen (see Vogel *et al.* 1997 for dates), copper bangle pieces (N=3) and the ceramics all date to within the last 2000 years. With regard to the latter, a Khami sherd was found below a K2 sherd indicating some movement has occurred and together suggesting dates of between AD 1000 and 1220 and AD 1450 and 1820. Isolated potsherds are, however, poor indicators of chronology: their classification is based on judgement determinations and it is possible that the ceramics were introduced to the site. It is likely that either one or both of the identified sherds are associated with some part of the assemblage since a large ceramic sample (N=152) was excavated, mostly coming from below Spit XV. The single sheep specimen, even though positively identified as a sheep's tibia, could have sunk into the deposit or have been introduced at a later stage and so it is not a strong marker.

Whether or not the lower CCS assemblage has been mixed, the hiatus between it and the upper quartz assemblages implies that the two are distinct from one another and that the quartz assemblage is younger, but by how many years is unknown, and was also produced within the last 2000 years. The reason that two assemblages occur at the site is not obvious. Below I make various suggestions, but it may be that a combination of these is involved:

- At some point, after AD 1300, the front living area was favoured rather than the rockshelter, and those living there required a different or expedient stone tool assemblage. This may have been the case because the inhabitants possessed livestock in the form of goats or sheep, explaining the faunal specimen of either one of these species in Trench 2 and the walling in the rockshelter, which may have been used to kraal the animals;
- Foragers may have turned to producing a more expedient technology in general. The necessity in later centuries to produce well-worked tools may have fallen away because foragers were now relying more on a farming economy or on iron tools;
- Access to local resources may have changed due to the impact of agriculturalists settling on the landscape (e.g. Moore 1985), resulting in a shift in stone tool production;
- The quartz assemblage may have been produced by Khoekhoe herders who, based on rock art studies (Eastwood & Smith 2005), are argued to have been present in the area; examples of paintings attributed to them exist about 20m away in JB Shelter. This has been argued to be the case in the Western Cape (e.g. Parsons 2007; Sadr & Gribble 2010) due to the vast difference between known forager stone tool assemblages and those dominated by quartz. However, there is no other evidence of a herder presence on the

landscape and it is contested whether they did, in fact, produce southern Africa's finger-painted images (Sadr 2008b). Furthermore, Bradfield and Sadr (2012) identified a quartz assemblage in the Makgabeng, discussed below, that predates the arrival of herders. Therefore, quartz alone cannot reliably be used to indicate whether foragers or herders produced the assemblage; and,

- The lack of formal tools in the quartz assemblage – only two MRPs and an unmodified bladelet were found – might indicate that agriculturalists produced the assemblage. Simply because stones were knapped cannot be justification for concluding that it was foragers who did so, especially in the absence of distinctive LSA tools, such as backed bladelets or segments.

Identifying these patterns and whether, in the case of Khoekhoe herders they are distinguishable from forager assemblages, is unknown and cannot be addressed in full without accurate dates and a larger sample size including quartz assemblages from different sites. Nevertheless, the quartz issue presents a number of problems that in future may be resolved with additional excavations and firm dating; the latter is key to resolving this debate and is at present absent.

### **8.1.3 Dzombo Shelter's archaeological sequence**

#### **8.1.3.1 Mid-Holocene LSA to Final LSA**

Unfortunately, due to time constraints and what appeared to be a collapsed roof slab in Trench 1, digging ceased in Spit XXVII in Square D and Spit XIX in Square E, which is dated to c. 200 BC (OxA-27137). Bedrock was not reached and deposit continues below the final spits excavated; it is expected that it too contains artefacts that might date to the mid-Holocene or earlier. Thus, the maximum age of the rockshelter's occupation cannot at present be determined. Nevertheless, by Spit XVIII, in which two ceramic sherds were found, the ceramic final LSA succeeds the final LSA.

At all of the sites excavated by van Doornum (2005) and at Little Muck, which was excavated by Hall and Smith (2000), final LSA assemblages are characterised by high formal tool frequencies and mostly scrapers. At Tshisiku the stone tool density decreases over time – at 1220 BC formal tool frequencies are higher than later in the phase – and at Balerno 2 formal tools are intermittent. The assemblages are dominated by CCS materials except for at Little Muck where quartz is slightly more frequent than CCS. There was, at this time, an increase in the use of sites on the landscape, such as smaller rockshelters like Balerno 2 and 3 that were previously unoccupied, and van Doornum (2005: 165) links this to an increase in the forager population on

the landscape. However, this is only recorded at the excavated sites and it cannot be said whether this was the case in all site types and in all contexts.

#### **8.1.3.2 First moving frontier**

During the first moving frontier, forager people interacted with Khoekhoe herders – although this is disputed (e.g. Sadr 2008b) – and agriculturalists. The nature of their interaction on the Greater Mapungubwe Landscape is unknown: Huffman (2009a) believes that the presence of rainmaking sites indicate that early farmers did occupy the region between at least AD 500 and 750, while Hall and Smith (2000) suggest that interactions may have been with agriculturalists who passed through the area or with those living further south in the Soutpansberg, settling there around AD 350. If Huffman (2009a) is correct, interactions may have been regular and possibly institutionalised in terms of agreements, exchange practices and roles, whereas if Hall and Smith (2000) are correct it was sporadic and unregulated. Whatever the degree of interaction between foragers and farmers, at all of the excavated sites occupied during this time, forager assemblages increased in density and there are changes in the faunal record. At Dzombo Shelter, this trend appears to be the same and begins in Spit XVIII. It is felt that this marks the beginning of the first moving frontier, which would probably have concluded in Spit XIV, based on a sudden increase in the density of the assemblage. Van Doornum (2005: 168) refers to this increase, which she identified at her sites dating to the first centuries AD, as evidence of forager intensification in the area in terms of numbers and activities, and this may also have occurred at Dzombo.

A shift in formal tool ratios has also been recorded on the Greater Mapungubwe Landscape and can be used to indicate a date within the last 2000 years. Van Doornum (2008) found that at Balerno Main, even though few changes in the forager sequence occurred when agriculturalists appeared, there was an increase in scraping tools. At Tshisiku the stone tool assemblage was decreasing in numbers, but at the onset of interaction, all artefact densities increased and scrapers began to dominate (van Doornum 2007). Balerno 2 (van Doornum 2005: 170) and Little Muck (Hall & Smith 2000; van Doornum 2000) both experienced significant increases of scrapers to the detriment of backed tools beginning around AD 350, and at Balerno 3 (van Doornum 2000) scrapers began to dominate the formal tool assemblage, even though the total assemblage was decreasing in numbers. At Dzombo, from Spit IX scrapers begin to dominate the assemblage. This is somewhat later than expected considering that charcoal from Spit XI is dated to c. AD 1100 (OxC-27138), after the initial occupation of the area by agriculturalists. However, an increase in scrapers cannot be accurately used to date an assemblage since foragers may have avoided farmers at first and their stone tool assemblage may only have change later when they began

actively interacting, possibly in a specific way such as trading processed hides in return for agricultural produce.

It is clear that there are changes from the final LSA into the first moving frontier in terms of artefact density at the site, formal tool production and faunal remains. The reasons for this are either environmental, due to an increase in the local forager population, or spurred on by meeting agriculturalists. In the former case, stalagmite evidence from Makapansgat Cave suggests a cool episode between 800 and 200 BC and a warm interval at about 550 BC and between 100 and 900 BC, with a pronounced episode at AD 900 (Holmgren *et al.* 2001), with the possible fluctuations occurring for 100 to 200 years (see Scott 1996; Scott *et al.* 2003). From this, it is not possible to say whether changes in the forager sequence correspond to those in the local climate. However, Van Doornum (2005: Chapter 7), instead, argues that it was interactions with agriculturalists that led to changes in the forager record, and believes that due to interactions elsewhere, specifically in the Soutpansberg, the forager population on the Greater Mapungubwe Landscape grew from AD 100, further driving the increasing density of their assemblages, a point first put forward by Hall and Smith (2000). I am not convinced that this can be argued strongly based on a handful of excavations; simply because densities increase at some rockshelters, does not indicate an increase in the local population but that foragers became more archaeologically visible in the places archaeologists excavate. It might be that foragers living in the area began using rockshelters more intensely at this point because agriculturalists were occupying space in the open. More information is required from across the region before these conclusions can be made. It may also be that the onset of favourable climatic conditions attracted more foragers into the area, which coincided with the appearance of farmers.

### **8.1.3.3 Second moving frontier**

The beginning of the second moving frontier in Spit XIII is marked by a drop in the number and density of most artefact categories, possibly due to a decrease in the rockshelter's use or a movement of foragers towards agriculturalist homesteads, since it was during this time that the Zhizo ceramic producing agriculturalists settled on the landscape. This phase is marked by an increase in forager assemblage densities at some sites, such as Little Muck (Hall & Smith 2000) and Balerno Main (van Doornum 2008), while like at Dzombo, at Balerno 2 and 3 and Tshisiku there is a decrease (van Doornum 2005: 175). Little Muck is perhaps most alike Dzombo in that both sites are in close proximity to major contemporaneous agricultural centres, Leokwe Hill and Mmamagwa respectively, and are surrounded by homesteads, yet at this time the forager expressions at each site are different.

Hall and Smith (2000) argue that key to the changes in the forager sequence at Little Muck is its proximity to Leokwe Hill, 1.5km away, and other agriculturalist homesteads. Due to their closeness in space, the degree of interaction and exchange was greater and this is observable in the archaeological record. However, this neat picture is not very well represented at Dzombo, most notably because there are few exchange items present at the rockshelter. At this time, backed bladelets are more frequent and not scrapers, unlike all other sites in the area where scrapers dominate (see Hall & Smith 2000; van Doornum 2005). Ceramic frequencies are also low when compared to van Doornum's (2005) sites. Interaction and exchange between foragers and agriculturalists seems to have affected foragers living at Dzombo, but did not dramatically alter their technology or subsistence habits since there is no change in the faunal assemblage. It does not appear that foragers acquired much during this time, unless of course it was either not returned to the rockshelter and was deposited elsewhere or was intangible. In this case, we need to question the value of using the few signs of interaction at single sites as indicative of the degree of interaction when in fact it may have been deposited at a number of different sites, not transported once acquired or not represented materially.

#### **8.1.3.4 Static frontier**

At Dzombo, and to some degree all of the previous excavations in the area, this is the most significant phase in the forager sequence. The social processes occurring at Dzombo and over the landscape at this time rendered significant changes in the LSA economy. For example, it is believed that Little Muck was appropriated by K2 ceramic producing agriculturalists (Hall & Smith 2000) and the Balerno sites and Tshisiku were abandoned (van Doornum 2008). Either way, by the end of the static frontier the forager record ceased, suggesting that they either vacated the landscape or changed their technology or settlement patterns to such a degree that we have as of yet been unable to identify them in the archaeological record; it does not necessarily mean they went extinct. The difference between Dzombo and the other excavated sites (see van Doornum 2005), is that during this phase there is an increase in artefacts until Spit VII, late in the phase, after which most drop off except for ceramics, which increase substantially. However, excluding ceramics and glass beads, all other artefact densities, not numbers, are lower than during the previous phase but stone tools do not disappear entirely and were found in the succeeding phase.

#### **8.1.3.5 Consolidating frontier**

The surface and first three spits at Dzombo likely represent a post-Mapungubwe phase and may thus equate to what I have termed the consolidating frontier phase. There are stone tools present

in these levels but their dating cannot be certain and the levels might also be mixed. The only evidence of a later occupation at the site is stone-packed walling; a construction method that post-dates Mapungubwe (Huffman 2000), yet it cannot alone indicate a later occupation. The question is what was happening at the site during this time? There is a large number of ceramics, but even when combined with the lower grinding stone from the surface and the walling, this cannot clearly suggest that agriculturalists used the site – especially in the absence of other items such as burnt grainbins and domestic fauna – since foragers could have acquired these artefacts themselves. Furthermore, the stone tools found between the surface and Spit III contain a higher density of formal tools and cores than during each of the initial two occupation phases, the final LSA and first moving frontier, even though all artefact categories decrease from the static frontier. Thus, there are two possibilities provided the upper levels are not due to mixing: either foragers were living at Dzombo post-AD 1300 and still practised at least part of a hunting and gathering lifestyle while incorporating agriculturalist material elements into their cultural record, or both foragers and agriculturalists used the site.

#### **8.1.4 Summary: Dzombo Shelter**

Dzombo's archaeological sequence is, in many ways, similar to the finds made across the Limpopo River in South Africa. There are marked changes that appear to correspond with the changing agriculturalist sequence, as indicated by radiocarbon dates from Spits XI and XIX and the appearance of ceramics and glass beads (although there may have been post-depositional movement). The assemblage generally increases in density into the first moving frontier after which there is a decrease until a point, Spit VII, where all categories, except for ceramics, suddenly drop. It seems that the proximity factor between Dzombo and its neighbouring agriculturalist homesteads did not have as great an effect on the cultural assemblage as it did at Little Muck. Furthermore, there is a possibility that at Dzombo, rather than seeing the disappearance of the forager economy and culture, we are seeing foragers integrating parts of the agricultural economy into their own.

#### **8.2 MAFUNYANE SHELTER**

One of the most interesting features of Mafunyane is the large metal assemblage. This is highly unusual for a forager rockshelter and, while Walker (1994) suggested that it is from a later use of the site by metal-working people, these finds were made throughout the deposit. The association between the extensive forager material assemblage and metal finds, in what appears to be a tightly controlled stratigraphic layout (also see Walker 1994), indicates that metal-working was

occurring at the site during most of its occupation. I first address the chronology of Mafunyane and then the metal assemblage before the site's occupation. Normally, specific artefacts would be discussed after the site's sequence, but since copper prills and other metal implements were found throughout the excavation I want to address these items first because they contribute to understanding the place of Mafunyane and they possess various symbolic associations.

### 8.2.1 Chronology

There are two peaks in artefact numbers in Spits II and V, but artefact density reaches its highest in Spit V. However, all the metal artefacts were found from between the surface and Spit VI, and most of the ceramics between Spits II and IV, although some are present in Spits V and VI. More specifically, a Zhizo or Leokwe sherd found in Spit II dates to between AD 900 and 1220, consistent with the dated charcoal sample of cal. AD 941 to 1027 (Beta-339425) from this level. Based on the association of the date and the charcoal sample, I suggest that the sample from Spit VII, cal. AD 1146 to 1235 (Beta-339426), may have moved downwards from Spits I or II, or is contaminated (as with Dzombo, pre-treatment in the laboratory did not indicate any contamination and ABOX was not used). Lastly, compared to all the other excavations in the region, the initial increase in artefact densities began from AD 350, followed by a gradual decrease through AD 900 to 1300. Based on this, Table 8.4 presents a projected sequence for Mafunyane. Spit VII is not considered part of the first moving frontier because ceramics and copper are absent and from Spit VI artefact densities begin to increase.

**Table 8.4: Mafunyane Shelter: chronology.**

Spit	BC/AD	Period	Frontier
SUR I II	AD 1000 - 1220	K2? Leokwe	Static frontier
III IV	AD 900 - 1000	Zhizo	Second moving frontier
V VI	Pre-AD 900	Ceramic final LSA; Bambata?	First moving frontier
VII	Pre-AD 150	Final LSA	Final LSA?

### 8.2.2 Smelting, smithing or trading?

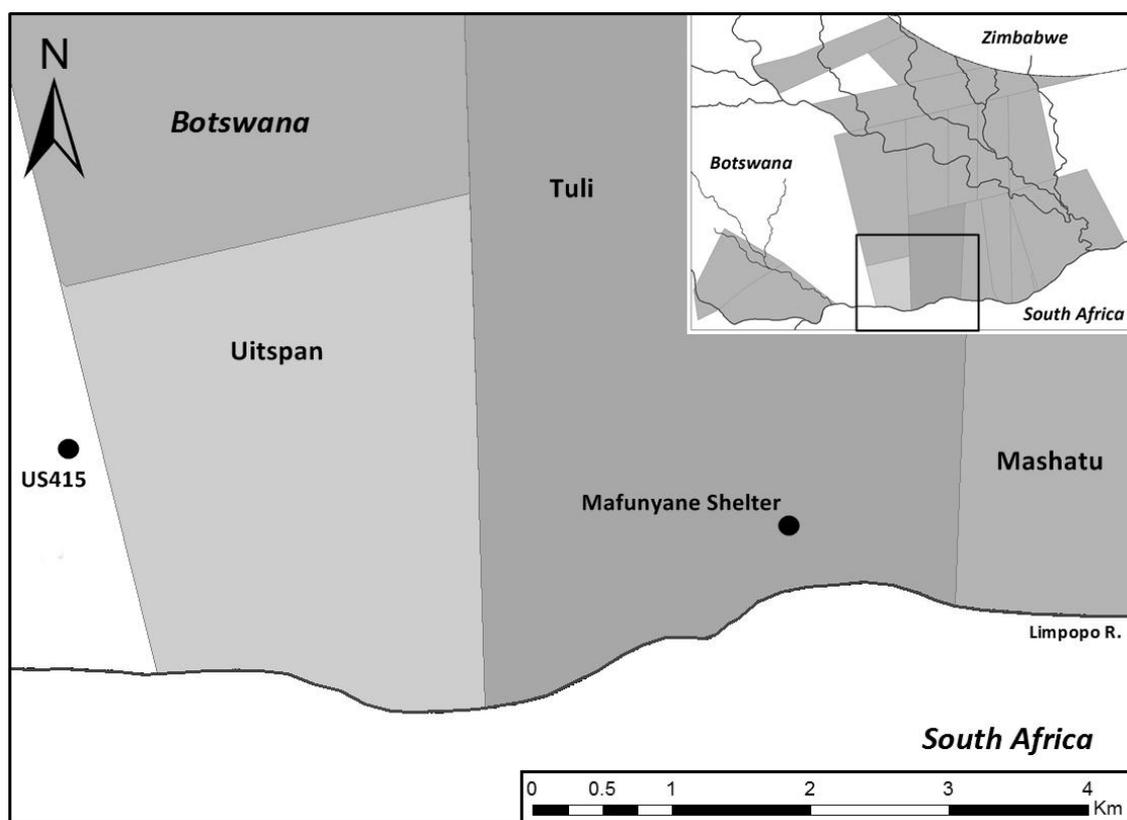
Iron and copper, excluding copper bars and finger ingots, were being smelted in the wider region from the first millennium AD, coinciding with the arrival of agriculturalists into southern Africa (D. Miller 2002). Metal technology played an important role on the Greater Mapungubwe Landscape

(D. Miller 2001) and evidence of iron and copper production has been found at a number of sites including Mapungubwe (Calabrese 2000b). Evidence from Mafunyane seems to suggest that foragers may, at least at this site, have been linked to the production of metals, and in this case probably copper. There are three possibilities that explain the presence of metal at the site: smelting, smithing or trading.

### **8.2.2.1 Smelting**

It is thought, although debated, that smelting was conducted in seclusion because it was ritually tabooed and linked to masculine control (Herbert 1996). Foragers may have been associated with this practice if they were considered First People (Loubser & Laurens 1994) who possessed a degree of power over the landscape (Cashdan 1986; discussed further in Chapter 9). Their perceived power enabled them to enhance ritual processes (S. Hall 1994: 47), which may have resulted in them being included in practices such as rain-control (Schoeman 2006a) or others that may have occurred within the homestead (see S. Hall 2000). In smelting practices this link would have aided the smelting doctor who, during the process, accessed the ancestral or spirit world (Huffman 2007: 82), something that Bushmen foragers did through the trance dance (Marshall 1969). The presence of rock art underscores the forager power inherent at Mafunyane and the site's possible use as a ritual place (see Dowson 1994). Farmers believed that they were able to access forager power through their art and they are said to have appropriated such sites (e.g. Little Muck; Hall & Smith 2000). Unfortunately, the rock art is heavily faded, but it is possible to make out a giraffe, waterbuck, indeterminate animals and a procession of human figures, which, if female, may depict an initiation ceremony (Eastwood & Eastwood 2006: 131-135). Lastly, figurines, a fragment of which was found at the site, are generally linked to girls' initiation (Huffman 2007: 65). At Schroda, Hanisch (1980, 1981b) found a large quantity of figurines in close proximity to a smelting area at the site. A similar pattern was discovered at Ndongonwane (Maggs 1984), KwaGandaganda (Whitelaw 1994) and Wosi (L. Van Schalkwyk 1994) in KwaZulu-Natal. These figurines, Calabrese (2000b) believes, were probably used in initiation rituals and he sees a link between this activity and smelting as indicating male control over female procreation. In addition, figurines have also been found in local rain-control sites (Schoeman 2006b), places that were also imbued with spiritual power and human control. All these ritual practices are overseen by the local chief. It seems, therefore, that figurines as a symbolic device are applicable in multiple ritualistic contexts and, coupled with the metal assemblage and the rock art, suggest that Mafunyane was one of these places.

There is no furnace near the site. The area in the immediate vicinity of the rockshelter was surveyed and if one had been nearby it would almost certainly have been identified. There was an archaeological feature that resembled a natural furnace and outside of it ceramics, glass beads, a grinding stone and cupules were identified (US415; Figure 8.1). However, for smelting to occur the furnace needs to be at the smelting site and not, as in this case, 5km west. It is, nevertheless, possible that smelting was occurring at US415 and the prills were transported to Mafunyane for working. Items are often transported long distances from the smelting site (Huffman 2007: 84), such as the crucible identified by Walker (1994), and many of which are also found at smithing sites.



**Figure 8.1: Mafunyane Shelter and a nearby possible furnace (US415).**

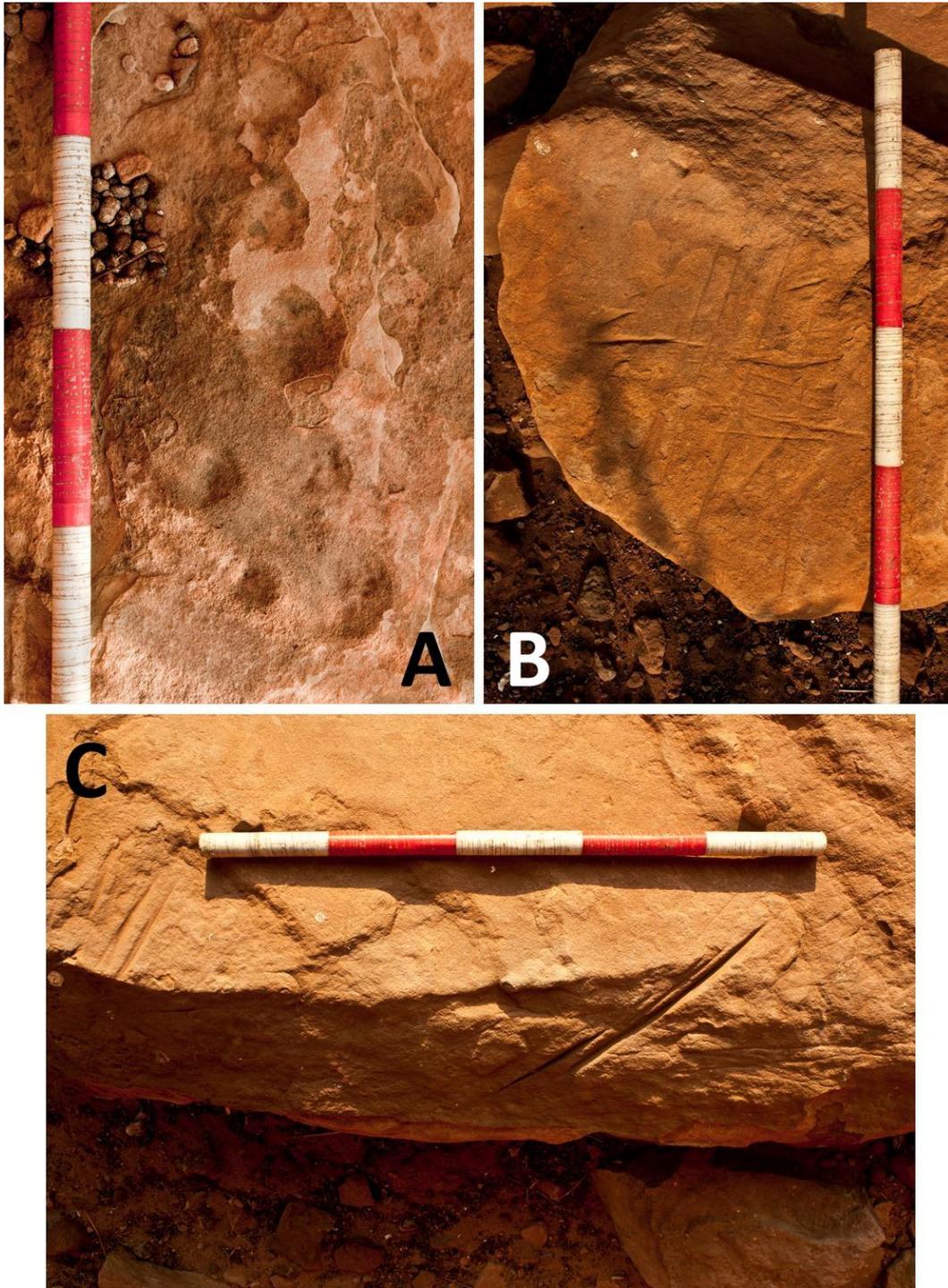
### **8.2.2.2 Smithing**

The ashy deposit, which indicates a hearth was present, the tuyère piece and the crucible found by Walker (1994) suggest that smithing was occurring at Mafunyane. In addition, grooves in the wall of the rockshelter and cupules (which also have a symbolic association [Schoeman 2006b]; Figure 8.2) may have been involved in pounding and sharpening practices, respectively. Other items that were not present but would be expected at a smithing site are stone hammers, iron chisels, knives and various punches for making beads (D. Miller 2002). Well preserved remains of

smithing hearths are seldom found because they are often only used briefly and are insubstantial structures (Friede & Steel 1986). The extensive distribution of copper prills suggests that foragers and metal-working people were using the rockshelter concurrently rather than at different times. Foragers may have taken on a ritual role in smithing practices and their power may have been emphasised by the presence of rock art. If Mafunyane is a smithing site, it is of particular interest that it is not within a homestead; smithing is usually done in public (Huffman 2007: 83). If smithing was occurring at Mafunyane it might indicate a deviation from the norm, something recorded for both smithing and smelting practices in the area (D. Miller 2002). The change is perhaps due to the inclusion of foragers in the smithing practice, restricting them from the homestead, or may indicate that foragers were undertaking smithing themselves. Regarding the latter point, considering that the only agriculturalist items present at the site are ceramics, glass beads and the metal implements, all of which could be and were acquired by foragers, we must ask whether the presence of these items indicates an agriculturalist use of the site? I do not believe this can be said with certainty.

### **8.2.2.3 Trading**

The site's ashy deposit certainly suggests some working of metal products was occurring there, but it might also be possible that foragers brought in the copper prills to trade with agriculturalists before working them at the site. The nearest known copper source is near the modern town of Musina in South Africa (Summers 1969), 96km east of Mafunyane, and foragers may have enabled transport along this route. Supporting this is the relative lack of evidence indicating that smelting occurred in the area; only two inconclusive furnaces have been identified at Schroda and Mapungubwe (Calabrese 2000b), plus a possible natural furnace at US415. Therefore, copper would have needed to be brought into the area and this was probably done in the form of prills as they are smaller and easier to transport than unprocessed ore; if ore had been moved then more furnaces would have been identified locally for processing it. Prills, too, may have been viewed by agriculturalists as ritually 'hot' (see Huffman 2007: 439) and handling them under the incorrect circumstances therefore avoided. Hence, foragers would have been ideal candidates to import these items into the area. However, Mafunyane itself was not a transit camp because the high density of stone tools suggests it was a major settlement, as Walker (1994) felt, rather than a temporary stop-over camp. Therefore, while the site may have been used during phases of increased trade, it was a major living camp for local foragers.



**Figure 8.2: Examples of cupules and grooves found at Mafunyane Shelter: A, cupules; and B – C, grooves.**

#### **8.2.2.4 Summary of Mafunyane's metal assemblage**

The lack of furnaces on the Greater Mapungubwe Landscape may be due to the fact that no iron or copper ore occurs in the area and so must have been brought in from neighbouring regions. Ore, itself, would probably not have been brought in but instead it would have been bloomery

and prills, which are easier to transport. Whether foragers were bringing in the processed ore from Musina, or anywhere else for that matter, cannot be said with any certainty and various chemical studies would need to be conducted along with a number of other excavations to prove this. Regardless, the metals arrived in the area and were smithed into tools and it seems most likely that it was this practice that was occurring at Mafunyane; the presence of artefacts associated with metal production, such as the tuyère, crucible and figurine, all within an ashy deposit, is strongly persuasive. Had it been possible to interpret the function of the metal tools, it may have been possible to understand their role in the forager assemblage but no diagnostic artefacts were found; they may have been removed and brought to the settlement where they were used.

### **8.2.3 Mafunyane Shelter's archaeological sequence**

#### **8.2.3.1 First moving frontier**

None of the radiocarbon dates obtained in this study indicate an occupation during the first moving frontier phase. However, there is material evidence indicating that there was a pre-Zhizo occupation. The date from Spit II, c. AD 950 (Beta-339425), seems to be associated with the surrounding deposit, whereas the early date of c. AD 1100 (Beta-339426) from Spit VII appears to have been displaced after deposition. Thus, I have argued that the calibrated range for Spit II of AD 941 to 1027 is an accurate date for that level and the levels below pre-date this period. However, this does not necessarily indicate a Bambata occupation, between AD 150 and 650 (as in Table 8.4), but considering that the majority of the assemblage is from below Spit II, the possibility of *some* kind of pre-Zhizo occupation certainly exists. Additional and stronger evidence for a Bambata period occupation is the presence of a Bambata sherd in Walker's (1994) excavation at the base of his trench, which also led him to conclude that the site was first occupied at some point in the first centuries AD.

Like other sites in the area, the greatest peak of artefacts at Mafunyane is during the first moving frontier and it has been argued that this should be linked to the onset of interactions with agriculturalists settling around the Soutpansberg, 80km south (Hall & Smith 2000; van Doornum 2005: 168). The increase in the density of forager artefacts in archaeological rockshelter deposits during this time has been linked to an increasing population. The presence of such large amounts of copper prills at Mafunyane during this time contributes to this discussion. First, their presence, below the dated sample of c. AD 950 in Spit II (Beta-339425), and the association between the prills and stone tools at this level, as well as stone tools above, indicates that they were

introduced at this stage and are not from a later use of the site. Second, the metal assemblage seems to suggest that contact during this period may have been intense, at least at this site, and that agriculturalists did indeed settle on the Greater Mapungubwe Landscape; foragers involved in smelting copper would surely not have done so unless agriculturalists were nearby. This suggests, as Huffman (2009a) does, that agriculturalists were living in the area at some stage prior to AD 900, but probably in low numbers, and that foragers may have had regular contact with them.

#### **8.2.3.2 Second moving frontier**

Generally, all artefact categories decrease into the second moving frontier. This is a pattern recorded elsewhere on the landscape (van Doornum 2005) and seems to be a trend in the local forager record and not a consequence of a change in depositional processes. The intensity of activities at Mafunyane decreases, possibly because foragers were either using the site less, more irregularly or in smaller numbers. It does not seem that the site's place, as Parkington (1980: 74) defines it, changed, as argued for at Little Muck by Hall and Smith (2000), as there are no notable changes in the archaeological record other than a decrease in artefact densities.

#### **8.2.3.3 Static frontier**

It is not possible to say whether the forager material record drops off during this phase because the highest density of stone tools was found on the surface, with a smaller peak in Spit I. It is likely that the surface assemblage is the result of post-depositional disturbances. Nevertheless, during this phase all of the artefact categories increase, with copper items reaching their peak. It was also here in Spit I that the figurine fragment and metal bead were found. The only artefact type found at the site that is not represented during this phase is the tuyère piece.

#### **8.2.3.4 European period utilisation**

It cannot be said when the site was completely abandoned or what happened to the foragers using the site. The presence of three European period glass beads indicates that there was some form of activity at the site within the last 400 years. What this entailed cannot be elucidated from these finds alone but it was likely ephemeral as no other evidence for this period was found in this study or in Walker's (1994) excavation.

#### **8.2.4 Summary: Mafunyane Shelter**

Mafunyane has a unique archaeological record. The use of the site as a large forager campsite is supported by the high density of stone tools found inside the rockshelter and observed on the

surface around the site. Walker (1994) even commented on the very large surface assemblage surrounding the site, suggesting that much of its use may have been outside the rockshelter; it was this feature that initially drew my attention to the site. Unfortunately, this zone is unexcavatable due to erosion and the lack of deposit. Excavations in the rockshelter, however, seem to indicate that the site was used in a ritualistic way and that smithing occurred there. These activities imply interaction between foragers and farmers early on in the region's agriculturalist sequence, but at least before AD 900. The site also reflects the dominant forager sequence over the landscape in which, at the beginning of the agriculturalist phase, between AD 350 and 900, there is a steep increase in artefacts followed by a gradual, although inconsistent, decline and eventual disappearance of the forager signature; although at Mafunyane, the site's abandonment is not clear. The place of the site is different to that of the other excavations in that it fulfilled the role of a ritual place, in an agriculturalist ideology, but not necessarily to that of its occupants, local foragers.

### **8.3 JOÃO SHELTER**

#### **8.3.1 Chronology**

There are two phases at João. The latest occupation has been radiocarbon dated and the dates, along with the European glass bead assemblage and other items such as the broken bottle, indicate that the site was used within the last 400 years. This would have spanned the period from the seventeenth century until as late as the turn of the twentieth century. It is, in fact, quite likely that the site was used during this time because the Mmamagwa complex was occupied within the last 200 years and only abandoned in the mid-twentieth century. Not far from João, on a small flat topped hill less than 100m west of the Mmamagwa hilltop site, is an old European construction, now destroyed, which according to local guides and farm managers was either a hunting camp or store used until the area was reconstituted as part of a private reserve (G. Hall 2003). There clearly was European activity near to João, and also to Dzombo for that matter, but there is no evidence to indicate that the site itself was occupied during this time. The earlier phase is indicated only by the ceramic – Toutswe, K2 and TK2 – and glass bead – Zhizo, K2, K2 Indo-Pacific and Mapungubwe – assemblages suggesting occupation between AD 900 and 1300. Regarding the ceramics, none show decorative styles similar to facies post-dating the abandonment of the Mapungubwe capital, namely Icon, Khami or Letaba (Venda), and so the homestead outside of the rockshelter was probably occupied by agriculturalists before then, consistent with the chronology provided by the glass beads and earlier pottery. Once again, the radiocarbon age of the dated charcoal and the dates indicated by the diagnostic cultural material

are at odds with one another. While, as at the other sites, contamination could be to blame, the fact that there are items at João that correspond to the late dates strengthens the possibility that they are associated and that the site was used at different points in time by different people.

### **8.3.2 João Shelter's archaeological sequence**

#### **8.3.2.1 The rockshelter and homestead assemblages**

The obvious distinction between the assemblages from the rockshelter and homestead zones is the dominance of CCS and quartz in each assemblage, respectively, and a higher frequency of formal tools in the rockshelter assemblage. In a previous study I noted these differences between CCS and quartz surface assemblages found in northern South Africa (Forssman 2010). I presented a number of explanations for this, including access to raw materials, the differential use of space, proximity to agriculturalists or forager versus herder assemblages, some of which seem to apply at João (see Forssman 2013). Firstly, the rockshelter and homestead assemblages appear to be contemporaneous with one another based on the associated ceramics and glass beads, favoured over the radiocarbon dates. Second, the proximity of the two assemblages and their spatial differentiation from one another is significant. Lastly, based on the formal tool component, both assemblages were produced by foragers. Considering these factors, only two of the possibilities that I presented in my previous work seem possible and both may apply to João: spatial differentiation and interactions with agriculturalists.

Schoeman (2006a) found quartz-dominated assemblages in K2 rain-control sites on the Greater Mapungubwe Landscape in northern South Africa. She argued that these were produced by forager people, even though the assemblages lacked formal tools, and that the foragers were specialists in the agriculturalist ritual. In quartz assemblages, the formal tool component is typically low (Orton 2004: 38), probably due to the irregular and unpredictable fracturing of the material (Orton 2004: 38), hence it being used in informal tool assemblages (Orton 2004: 112). João, however, contains formal tools (which may not have been produced in the homestead but could have been brought instead from the rockshelter) and it is not a rain-control site. Rather, it more closely resembles the mixed assemblage from Den Staat AB32, where an assemblage was found in an agriculturalist homestead occupied from AD 900 until more recent centuries (Forssman 2010: 83-85). The association between the forager and agriculturalist use of Den Staat AB32 could not be established because of the many aardvark (*Orycteropus afer*) burrows throughout the site; no dates were obtained from the trench in which the stone tool assemblage

was recovered. Until further studies have been conducted at Den Staat AB32, little more can be said about its potential similarity to João.

It seems that at João the relationship between foragers and agriculturalists has led to the spatial differentiation of the two assemblages. The quartz assemblage is clearly restricted to the homestead zone and in both cases found in what would have been the back of the settlement. Foragers living in the homestead may have used these artefacts but relied on farmer tools, hence only needing an expedient technology. However, in the rockshelter the stone tool assemblage is quite different. It may be that the rockshelter was reserved for forager activities or that foragers themselves were restricted to this area when performing daily tasks. If so, the link between foragers, rock art and the rockshelter may have been a symbolic one since farmers often viewed foragers and places, such as rockshelters, as a part of nature and thus as dangerous places (Ingold 2000; Schoeman 2006b).

### **8.3.2.2 The static frontier and European period phases**

It is not possible to distinguish the static and European phases stratigraphically at João or to use spits to show where the European period succeeds the static frontier, yet there are artefacts that give evidence of each. The use of the site during the static frontier is the most distinct. The outside homestead, which contains ceramics and glass beads dating to between AD 900 and 1300, was occupied during this phase. The stone tools found in the site are associated with the agriculturalist occupation, indicating that during this time forager people were active within the João homestead, and possibly others. They may have taken up residence within the settlement (e.g. S. Hall 2000), intermarried with agriculturalists (e.g. Van der Ryst 2006) or worked in the homestead (e.g. Wadley 1996). In the rockshelter, an assemblage more like the one excavated at Dzombo, Mafunyane and elsewhere on the landscape was recovered (see van Doornum 2005). It may be that the rockshelter was an area reserved for foragers who used this space without any restrictions (see S. Hall 2000). This may be the case because of the perceptions that the agriculturalist community had of foragers, possibly including seeing them as First People and spiritually dangerous (Loubser & Laurens 1994). Thus, the rockshelter and homestead zones may have been used differently due to social restrictions.

The European period phase is less distinct. A number of glass beads dating to this period, roughly the last 400 years, were recovered and identified by Dr Marilee Wood and it is possible that more European beads were incorrectly labelled by me as Indo-Pacific beads. The radiocarbon dates, all falling within the last 350 years, further indicate a late use of the site. Other indicators include

glass bottle fragments, a safety pin, a button and a bullet casing. It is not possible to say precisely when in the last 350 years the site was used, or what the extent of this use was, but it does not seem that it was occupied based on a lack of strong evidence, such as kitchen items and other domestic remains.

### **8.3.3 Summary: João Shelter**

João is a site with two distinct zones: one is inside the rockshelter, while the other is in the outside homestead. Both were used together by the occupants of the site, but they were not used in the same way. The rockshelter contains a forager assemblage very similar to those found in other rockshelters in the wider region (see van Doornum 2005), whereas the assemblage from the homestead is more like the quartz-dominated assemblages I have previously described for northern South Africa (Forssman 2010). This indicates that during the static frontier phase, widespread changes occurred that may have resulted in foragers occupying sites in close proximity to farmers or within their homesteads. Foragers may have gradually begun integrating with farmers from this period, resulting in less evidence of their activities in rockshelters. In J. Alexander's (1984) model, it is these changes that distinguish the static frontier from others; considerable change resulting in the disappearance of a technology or culture due to assimilation or abandonment of the landscape.

### **8.4 SHAWU CAMP**

Shawu is unlike any of the other excavations and in spite of a lack of dates, it still offers some useful information, particularly relating to open-air camps and the nature of so-called ephemeral sites. The northern territory of the survey zone is dense with LSA stone tool scatters, although being on the surface they may be in a disturbed context. The area was clearly utilised by foragers, but for what reason it cannot be said. At Shawu, this was to do with the acquisition of workable materials and primary manufacturing. Considering the scarcity of finely worked formal tools at the site, such as scrapers, and the absence of finished backed stone tools, both of which normally dominate the formal component of LSA assemblages in the area (e.g. van Doornum 2005), it seems that part of the assemblage is missing. Foragers on the Greater Mapungubwe Landscape possibly acquired their raw materials locally and conducted experimental off-site knapping, returning to their camps with only items that were favoured by the manufacturer. The lack of organic material, and particularly faunal remains, suggests that the site was not occupied but rather used as an activity area; however, foragers may have lived nearby. This site type is seldom excavated and in the area has been completely ignored, yet it offers us greater insights into the

way foragers used the landscape. We cannot, however, say when this pattern existed and whether it was present prior to the arrival of agriculturalists, during their occupation, or throughout both phases of the LSA sequence.

The site also raises the question of how we define ephemeral camps. Do a handful of artefacts that we may find today on the surface represent an ephemeral occupation in the past? To assess this I conducted an experiment in the region, in which I constructed two surface scatters modelled on ethnographic forager campsites with a known quantity of stone tools produced in a laboratory, as well as ceramics, ostrich eggshell fragments collected from an ostrich farm, modern glass beads and an impala carcass at each site (the bones were collected from Mashatu's butchery; all measurements taken in grams to account for breakages). The artefacts were coloured and placed on the surface into different zones; similar quantities of each artefact were placed in each zone so that the movement across zones could be recorded. One site was excavated after four months and the other after a year of being exposed in the field. At the four month site, 60.2% of the assemblage was found below the surface (Forssman & Pargeter in press). Thus, even in such a short period, the majority of the artefacts had been buried. Sites like Shawu, with an ephemeral surface assemblage, do not, therefore, necessarily represent an ephemeral occupation and this can only be determined once the site is excavated. This experimental study draws attention to the inherent dangers in the classification of surface sites as ephemeral – as at Shawu – where archaeologically, this may be a poor representation of the actual extent of the site. Grading sites as a low density scatter or ephemeral site might bias our view of the archaeological landscape and additional excavations at such sites are needed to determine how they might influence our understanding of the past.

Perhaps the most significant contribution that Shawu makes is to demonstrate that there are open-air sites that are suitable for excavation and can offer us valuable information; in this case, it is the observation that apparently ephemeral surface scatters do not necessarily equate to ephemeral sites. Further research in this respect might reveal open-air sites with datable options, further developing our understanding of landscape patterns.

## **8.5 KAMBAKU CAMP**

Kambaku offers clear evidence that, even though the forager material record disappears in rockshelters, it does not disappear altogether. Van Doornum (2005: 182) hypothesised this, suggesting that foragers either abandoned the landscape or moved to occupy camps alongside or within farmer homesteads. At Kambaku, and also at João, it seems that foragers lived with

agriculturalists and may have been partially assimilated while still maintaining certain aspects of their own culture. The gradual disappearance of forager assemblages in rockshelters might thus indicate a shift in their settlement patterns towards farmer homesteads, beginning in the static frontier. By the consolidating frontier phase this had concluded and the archaeological appearance of foragers was completely altered.

To assess whether foragers lived at Kambaku with agriculturalists the association between forager and agricultural items must be established. The homestead is typically agriculturalist in plan, with a central kraal surrounded by a midden to the north and south, grainbin foundations, dry-packed stone walling and what appears to be a human burial, based on the presence of packed stone. Artefacts found on the surface and in the excavations include ceramic sherds, glass beads and grinding stones. All of these features and artefacts suggest this site was occupied by farmers. The next question is whether foragers were sharing Kambaku with the farmers during its occupation; the stone tools may have been from a preference for the same place or, as S. Hall (2000) cautions, introduced to the site through agriculturalist constructions and activities. Most of the formal tools in the homestead were retrieved from the midden at the edge of the rockshelter, near to the stone walling and in the 'back' of the settlement. Agriculturalists may have placed ash on the midden to ritually 'cool' the deposit and also used it to throw away refuse after sweeping up around their hut (Comaroff 1985). There is no record of them placing stone tools in such dumps, but they could have been conceivably swept up when cleaning the homestead, in which stone tools were produced. Stone tools were also found in Trench 3, excavated in the kraal, which forms as result of the build-up of dung due to cattle being corralled in this location. Cultural material is often discarded in this zone, for example in order to fill storage pits (Huffman 2007: 9). In some cases it might be that the kraal was placed on top of an earlier forager campsite, which is not possible in this case since stone tools were found throughout the excavation. Therefore, the presence of stone tools in two culturally formed areas makes it reasonable to conclude that the stone tools are associated with the agriculturalist use of the site.

### **8.5.1 Kambaku Camp's archaeological sequence**

#### **8.5.1.1 Consolidating frontier: foragers in a post-Mapungubwe world**

A single K2 sherd found at the site is not sufficient evidence to indicate that the site was occupied between AD 1000 and 1200 since it could have arrived through the recycling of ceramic pots or sherds, for example as curiosities, or incidentally, such as by being dropped at the site. As such, little can be said about the sherd and there is far more evidence of an early sixteenth to mid-

seventeenth-century occupation from the single available radiocarbon date (Beta-339428) and the ceramic assemblage, which includes Icon and Khami sherds. The fact that these two facies were found together may indicate an earlier occupation or intermarriage, a common practice between the Sotho-Tswana (Icon) and Shona (Khami) that, in part, contributed to the creation of the Venda (Letaba) people (Huffman 2012). If intermarriage occurred, the site was likely occupied during the late fifteenth and/or early sixteenth centuries.

The presence of stone tools here associated with the agricultural occupation of the site, offers deeper insights into what may have happened to foragers after the collapse of the Mapungubwe state. Van Doornum (2005: 182) found a gradual decline of forager artefact densities in all of the excavated rockshelters in northern South Africa, as did I in the excavations already presented, before it disappeared altogether by AD 1300. She speculates about a number of possibilities and does not believe that the disappearance of the forager material record is linked to the disappearance of foragers themselves, but rather an altering of their technology, such as assimilating with agriculturalists, or the partial abandonment of the area. Historic records (e.g. Elton 1872; Dornan 1917) and anecdotal accounts (Eastwood & Cnoops 1999; Eastwood & Eastwood 2006: 189) indicate this much, and Kambaku seems to be an example of the cultural shifts foragers underwent beginning around AD 900 and ending c. 1300.

It appears that at Kambaku foragers partially assimilated with agriculturalists and continued living on the landscape after AD 1300, indicating an increased reliance on farmers to the point that they could not or did not continue with their own economy beyond the static frontier. If they did continue living as hunter-gatherers we would expect to find evidence of this in rockshelters, yet at present we have not done so on the Greater Mapungubwe Landscape whereas further south, on the Makgabeng Plateau, foragers used rockshelters into the last few centuries (Bradfield *et al.* 2009). As in J. Alexander's (1984) model, the changes experienced during the static frontier result in an altogether different forager signature which continues into the consolidating frontier. It may be that foragers across the landscape either left the area, resulting in a smaller local population, or lived as those at Kambaku did; alongside farmers and, depending on the degree of integration, as farmers from a technological point of view. In such cases, distinguishing between foragers who have been completely assimilated into a farming economy and agriculturalists might be difficult; Little Muck, for example, was appropriated by farmers between AD 1000 and 1200 (Hall & Smith 2000), yet if foragers completely assimilated with the farming technology, this could be what we are seeing rather than an appropriation of the site. In this case, a single site, however informative, is incapable of indicating these patterns across a region and excavations should pursue this

possibility and seek to define the various degrees of assimilation, or integration, and distinguish the difference between assimilated foragers and farmers in an agricultural economy.

### **8.5.2 Summary: Kambaku Camp**

Kambaku is an agricultural homestead that contains a stone tool assemblage. The formal tool component suggests that the assemblage was produced by foragers and compared to assemblages from neighbouring forager campsites there is a clear technological relationship. Kambaku, along with João, Den Staat AB32 (Forssman 2010) and Haakdoring AD168 (Huffman 2009b), are the few excavated homesteads in which stone tool assemblages are present and of these Kambaku is the only site post-dating the decline of Mapungubwe. The late date indicates that at least some foragers did not vacate the landscape post-AD 1300 and lived in a partially assimilated way alongside agriculturalists.

### **8.6 NDLULAMITHI KRAAL**

Little can be said about the appearance of stone tools at Ndlulamithi, a site which has features very typical of agriculturalist homesteads (see Huffman 2007). There are no diagnostic formal tools or cores to indicate that the assemblage was produced by foragers. The assemblage, too, is dominated by quartz. In rain-control sites, Schoeman (2006a) argues that such assemblages were produced by foragers but the same cannot be said for Ndlulamithi; simply because stone has been chipped and flaked surely does not indicate that it was foragers who did the knapping and not agriculturalists. The location of these stone tools, in an agricultural homestead, could mean that agriculturalists used some form of stone tools, even though very basic, if they needed a tool immediately or if iron was in short supply, as Calabrese (2000b) suggests to have been the case at Baobab and other commoner homesteads in the area. Elsewhere in southern Africa, such as at Msuluzi Confluence and Nanda in KwaZulu-Natal, it has been suggested that farmers manufactured stone tools, possibly replacing iron tools, for tasks such as woodworking or to tip projectile weapons (Maggs 1980; Whitelaw 1993). Binneman and van Niekerk's (1986) microwear analysis on a stone tool assemblage which included polished chunks, spalls and unmodified flakes indicates that they were used for hide-working and the authors suggest this was performed by agriculturalists. Their findings are similar to Mason's (1969) at Olifantspoort, an agriculturalist homestead near Rustenberg, dating to the Middle Iron Age. Another possibility at Ndlulamithi is that the assemblage is not associated with the homestead and was deposited prior to the establishment of the settlement. It is, thus, not possible to say for certain who produced these stone tools but the lack of strong evidence seems to indicate an absence of foragers living in

Ndlulamithi when it was being used by agriculturalists, who may have produced the stone tools themselves.

## **8.7 SUMMARY OF THE INTERPRETED DATA**

The excavated sites in the Northern Tuli region differ from one another both in terms of their ecological and social environments. Each site was used by foragers for particular reasons. Shawu, it seems, was used as a manufacturing site, whereas Dzombo was a large camp used on a regular basis. Mafunyane, on the other hand, is a very unusual forager campsite because of the smithing that occurred there. João and Kambaku both represent sites with varying degrees of reliance on or assimilation with farming people, while Ndlulamithi contains no strong evidence of a forager occupation. However, not all the sites were occupied concurrently. Dzombo has an early occupation date and, if we presume it has a somewhat continuous occupation – it must have had to some degree due to the chronological material found at the site spanning the last 2000 years – during its occupation João, Mafunyane and Ndlulamithi were all occupied between at least AD 900 and 1300, with Mafunyane first occupied in the first centuries AD. After the abandonment of the sites, Dzombo, possibly, and Kambaku were occupied after AD 1300 and both João and Mafunyane have evidence of European-derived material culture items, suggesting further use within the last four centuries. Therefore, the context at each site, the site type and the length and period of occupation is different. This allows for an effective landscape study to be performed but also questions the, possibly simplistic, dichotomy between aggregation and dispersal sites.

The following chapter places these findings into the broader cultural sequence primarily from two perspectives: the forager settlement of the Greater Mapungubwe Landscape and foragers from a farming perspective. Ethnography and its applicability on the Greater Mapungubwe Landscape, is assessed through discussing these two points. Landscape archaeology is then argued to offer a way forward because of the method's ability to obtain data over an entire landscape, incorporating various expressions of the forager record and overcoming the interpretative challenges posed by our use of Bushman ethnography.

## CHAPTER 9: AN AGE-LESS VIEW OF THE LATE HOLOCENE

It may not be surprising that, when one considers the social complexity of the last 2000 years, it has been questioned whether our 'Age' tags are appropriate. Sadr (2008a) suggests that creating distinct economies, such as the Later Stone Age and Iron Age, may be misleading due to their considerable chronological overlap. Treating them as 'separate archaeologies', he goes on to argue, does not allow for an accurate understanding of each so-called 'Age' because they 'might be better understood with reference to the other' (Sadr 2008a: 103). In his view, we need to part with our Age-derived terminology for the last two millennia and adopt one that accepts the embroidered relationship between foragers and farmers, a relationship interwoven into the cultural landscape. It is precisely this point that this project has been designed to understand better: how have foragers changed from the mid-Holocene? To what degree have interactions with farmers influenced their culture? What does all of this say about ethnography? And lastly, is observing and studying this best done by using a landscape approach?

Essentially, arguing in favour of an Age-less late Holocene period is based on the notion that there was too much cultural variability during this time for it to be usefully considered as a homogeneous 'Age'. Ideas and material culture were also shared across the economic divide; foragers, for example, obtained agricultural products (e.g. Jolly 1996; Hall & Smith 2000) and offered farmers goods or services in return (e.g. Wadley 1996; Van der Ryst 2006). Foragers were no longer engaged in a purely hunting and gathering economy and were instead now taking part in, for example, patron-client labour arrangements (Guenther 1977), intermarriage with Bantu agriculturalists (J. Van Schalkwyk 1985; Van der Ryst 2006) and even living within homesteads (S. Hall 2000). At times it seems that foragers were living a 'traditional' life, such as at Balerno Main (van Doornum 2008), but they were surrounded by agriculturalists. While during this time they may not have been in direct contact, the presence of agriculturalists must have affected forager lifeways in both tangible and intangible ways (Moore 1985; Guenther 1996). Across the landscape, interaction varied between people, groups, homesteads and landscapes. Can we still view foragers as 'foragers' following this interaction, as Kent (1992) does? Is it time, maybe, that we reconsider how we view not only whether this period can be spoken about in terms of 'Ages', but also the way we view foragers once they were engaging in multiple economies and altering their foraging way of life within and between cultural landscapes? To begin this discussion I turn to ethnography and its applicability in understanding southern Africa's LSA foragers from the perspective of the Greater Mapungubwe Landscape.

## 9.1 ETHNOGRAPHY AS AN ARCHAEOLOGICAL TECHNIQUE

Several scholars have argued that using ethnography to explain the forager record offers us no new information about pre-colonial foraging people (Sadr 2002a), and that we need to use archaeological data to create an ethnography of the past (Jerardino 2001). Sadr (2002a) further argues that our use of ethnography may render archaeological studies redundant; if ethnography is all we use to explain the past then why excavate at all? Is this judgement of the damage caused by ethnography upon archaeological understanding fair? It must be remembered, that it is not ethnography that is at fault, but possibly the way in which archaeologists use ethnography. Our overburdening of the archaeological record with ethnographic data, often a mixture of social features derived from different and culturally diverse Bushman groups, is problematic. I refer specifically to three aspects here: cultural diversity, environmental variability and interaction.

### 9.1.1 Cultural diversity amongst ethnographically studied Bushmen

Barnard (1992) emphasises that while there are a number of similarities between different Bushman groups, there is also considerable diversity, a point further stressed by Guenther (1996) and Silberbauer (1996). Such cultural diversity does not only exist amongst southern African foragers but is also found in other hunter-gatherer communities worldwide. For example, in central Europe, the Neolithic period, in which foragers adopted an agricultural economy, is marked by widespread diversity amongst foraging people in terms of status, competition, social control and spouses (Zvelebil 1986). Australian Aboriginals, too, while less influenced by other people such as agriculturalists (Humphreys 2005), show marked diversity, particularly in their languages; some believe that there were over 500 different dialects indicating, some suggest, little contact and interaction (Clark 1983). Similar findings have been made in North America (Jordan & Shennan 2003) and New Guinea (Diamond 1998: 306). Using ethnography to explain the past risks homogenising ethnography, creating an ethnographic stasis, but also homogenising archaeology with an anthropological record that is fixed in time; the majority of information on modern Bushmen was collected during the last two centuries placing it into a specific historical context. Furthermore, it seems that there is a trend of selecting social features, such as *hxaro* or the trance dance, from different ethnographies to explain archaeological occurrences at a site, even though these features are not necessarily shared between different modern Bushman groups (Mitchell 2003). Thus, we are not comparing archaeological findings to single groups but rather incorporating selected features from multiple Bushman societies, creating an 'academic' or non-realistic Bushman group, which appears similar to our data.

### **9.1.2 Ecological dependence and landscape variability**

Many ethnographers have commented on the dependence that Bushmen had on their environment and how it played a role in their social structure (e.g. Lee 1976; Tanaka 1976; Yellen 1976; 1977), a trait shared with, for example, hunter-gatherers from Europe (Zvelebil 1986) and Australia (Holdaway *et al.* 2002). Flexibility and fluidity, not only in terms of band organisation but also in the way that foragers used their landscape, such as exploiting particular resources, was central to their survival strategies (Zvelebil 1986). Many aspects of Bushman society depended on the local ecology, such as the size of territories or home-ranges (Cashdan 1984), mobility (Brooks & Yellen 1987) and access to subsistence and production resources (Silberbauer 1981), and the ways in which groups adapted to local ecological conditions also differed. Thus, it goes without saying that the yearly cycle amongst Kalahari Bushmen must have differed from that of those in the Drakensberg, Swaziland or the Cape (e.g. Barham 1992). Even between Bushmen in the Ghanzi District of Botswana (e.g. Lee 1976) and the Central Kalahari (Tanaka 1976; Silberbauer 1980) there were different mobility and settlement cycles, social practices and subsistence patterns. Bushmen, in the various biomes of southern Africa, faced different challenges and were confronted with unique or specific opportunities. To cope with these they drew on the general 'LSA package' – the tools and technology – shared amongst foragers, and did so to suit their own environmental stressors, behavioural patterns and decision-making (Parkington 1980), contributing to the regionalisation of the forager record (Wadley 2000). When using ethnography to explain the past, one must take such ecological similarities or differences into account (Mitchell 2012) and seek only to use ethnographies from the same or a similar environment type and regions (J. Deacon 1988).

### **9.1.3 Interaction: politics, social change and economic stressors**

Chapter 2 concluded with a point that must be stressed again here, one that perhaps has the greatest bearing on this debate: interactions that foragers had with farmers changed them in a number of ways and these outcomes vary inter-regionally and even between sites on the same landscape (Blundell 2004). The changes in the forager record are, at times, extreme, leading some researchers to refer to modern Bushmen as aberrant when compared to pre-contact foragers (Humphreys 2007). Kent (1992) might still believe that these post-contact foragers are still foragers but some no longer engaged exclusively in a hunting and gathering economy. For this reason, assuming that their modern behavioural practices are consistent with archaeological finds predating 2000 years ago (e.g. Wadley 1989) or even to the terminal MSA predating 40,000 BP (Robbins 1999), such as has been done at Border Cave c. 43,000 BP (Villa *et al.* 2012), cannot be

entirely justified. This is especially so when one considers the changing archaeological sequence over the past 20,000 years, and more so in the last 2000 years (see J. Deacon 1984a). Bushmen are, as with any other society, the product of their history and using them at the end of their cultural trajectory to explain earlier behavioural practices and social developments cannot be relied upon for developing a robust interpretation of the archaeological record.

#### **9.1.4 Developing a perspective from the Greater Mapungubwe Landscape on the ethnography debate**

We have only fragmentary archaeological data that we can compare with known ethnographies, which themselves are diverse yet related. Through such a comparison, we are able to show that, as an analytical tool, ethnography falls short of explaining regional differences and cultural change that occurred during the forager sequence. The following sections, 'Forager mobility and settlement patterns' and, taking its name from Sadr (2008a), 'Foragers in a farming perspective', uses the data collected in Northern Tuli and other parts of the Greater Mapungubwe Landscape to further develop our understanding of local forager lifeways and the nature of interactions between foragers and farmers, while at the same time contrasting the findings made here with the ethnographic record.

#### **9.2 FORAGER SITE TYPES: MOBILITY AND SETTLEMENT PATTERNS**

*They [settlement patterns] may be described best as an informal and highly flexible method for arranging the population in a workable relation to available resources.*

*Yellen 1976: 54; author's note in parenthesis*

Foragers do not have a regular yearly cycle since it is largely dependent on the availability of resources. Our ability to develop palaeoclimatic models is not always accurate enough to recreate the subsistence opportunities around a site. Even if we could, drawing conclusions based on settlement patterns and resource use is not always possible (Humphreys 1987). However, we are able to draw certain conclusions about archaeological sites based on their chronology and their local social environment and geographic orientation. I turn now to address aggregation and dispersal sites and changing settlement patterns followed by the impact of interaction on foragers and the resulting outcome.

### 9.2.1 Aggregation and dispersal camps

The aggregation and dispersal model has been used to categorise forager sites in southern Africa (e.g. Sampson & Bousman 1985; Wadley 1987; van Doornum 2005, 2008; Van der Ryst 2006), and further abroad (e.g. Conkey 1980). To assess the value of an aggregation and dispersal dichotomy, it is worth attempting to place the sites excavated for this project into this model. If they fit, it strengthens the model and suggests that an expansive landscape study may not be necessary, since foragers primarily lived in two phases, aggregation or dispersal, and excavating each represents the archaeological record fairly. However, if the sites do not fit it indicates that at least on the Greater Mapungubwe Landscape, and by extrapolation possibly elsewhere in southern Africa, the model is too simplistic and cannot account for regional variability between archaeological data and modern ethnographies.

*Dzombo Shelter:* At Dzombo, a variety of formal stone tools were found, as well as bone tools, trade items such as ceramics and glass beads and possible *hxaro* items such as ostrich eggshell beads and linkshafts. The rockshelter itself measures approximately 42m<sup>2</sup>, with a large area immediately outside of the dripline but still on the rockshelter's natural terrace (see Figure 5.6). Below the terrace and at the back of the koppie is a substantial area easily large enough for huts to be constructed and activities performed. Therefore, the size of Dzombo and the diversity of artefacts found here suggest that it may be an aggregation site provided that the artefact density is high enough; at aggregation sites there are always a large number of artefacts due to extended occupations at the site by a large number of people (Wadley 1987). To assess this, Dzombo must be compared to other sites on the landscape, and the only other likely local aggregation site is Balerno Main. When the two assemblages are viewed together it is clear that, other than the ceramics and glass beads, Dzombo has significantly lower artefact densities (Table 9.1). However, densities cannot be reliably used because 'there is no relationship between depositional episodes and occupational episodes' (Binford 1982: 16). Therefore, the unknown deposition rate of Dzombo and Balerno Main means that even though there are remarkably more artefacts at Balerno Main, we cannot be certain that they accumulated at a far greater rate (see Binford 1982; Jerardino 1995).

There are other factors that are important to consider. For example, on the Greater Mapungubwe Landscape there may be less of a need to occupy sites in close proximity to water sources than in the Kalahari Desert because permanent water is readily available (e.g. Elton 1872); the Limpopo River, for example, prior to European settlement, was non-perennial (Huffman 2009a). Furthermore, food was available throughout the year (e.g. Hanisch 1981a; Smith *et al.* 2007) and

the faunal record from Dzombo shows that a wide spectrum of meat packages was utilised, although there was an emphasis on collectable items throughout the sequence. Therefore, the accumulation of artefacts could be because the site was occupied for extended periods of time or repeatedly, rather than because it was an aggregation camp. Regular use increases the likelihood of there being a diversity of activities at the site, observed in the form of artefacts (e.g. Yellen 1976). Also present at aggregation camps are ritualistic items, and there is finger-painted art in JB Shelter, behind Dzombo but not within it, but no quartz crystals, specularite, haematite (Barham 1992), decorated bone or ostrich eggshell and ochre, all of which may have been used in rituals (cf. Watts 2002). The MSA tools (N=17), which Wadley (1987) suggested were shamanistic paraphernalia at Jubilee, may not have held such a role at Dzombo due to the lack of other shamanistic finds or contextual evidence. Thus, there are few ritualistic items in the rockshelter. However, there are some putative *hxaro* items in the form of finished ostrich eggshell beads (N=38), rough-outs (N=14) and bone tools (N=9), which are also, according to Wadley (1987), associated with aggregation. Whether or not these items were used for *hxaro* or personal use, however, is unknown (see Mitchell 2003). Dzombo, therefore, does have a few items associated with aggregation, but it cannot be convincingly argued to be an aggregation site, particularly when compared to Balerno Main. It seems more likely that Dzombo was occupied for lengthy periods, hence the accumulation and diversity of artefacts, and that it was a place where some activities that are thought to characterise aggregation sites occurred.

**Table 9.1: A comparison of selected findings between Dzombo, Balerno Main and Mafunyane (BMS; from van Doornum 2005; \* excludes NISPs).**

Artefacts	DS	MS	BMS
Stone tools	11585	6349	34352
/m <sup>3</sup>	6883.1	<b>47508.2</b>	17082
Formal tools	216	109	1520
/m <sup>3</sup>	128.3	<b>815.6</b>	755.8
Ceramics	212	31	162
/m <sup>3</sup>	126	<b>232</b>	80.6
Ostrich eggshell beads	52	40	1106
/m <sup>3</sup>	30.9	299.3	<b>550</b>
Glass beads	20	3	1
/m <sup>3</sup>	11.9	<b>22.4</b>	0.5
Fauna (g)*	2783.3	845.8	10982.1
/m <sup>3</sup>	1653.7	<b>6328.6</b>	5461

*Mafunyane Shelter:* Mafunyane has a high density of artefacts, greater in fact in each category than both Dzombo and Balerno Main (Table 9.1). In addition, specialist items were found at the site including large amounts of copper prills, copper items and a piece of a tuyère and figurine fragment. The site is also particularly large if one includes the outside living area; the rockshelter itself only covers about 40m<sup>2</sup>. Mafunyane is unlike any site on the Greater Mapungubwe Landscape; no forager assemblages have such a large amount and diversity of items associated with copper artefacts. For this reason, the site is not an aggregation or dispersal camp. It does, however, demonstrate that using density as a factor in determining aggregation camps is, in fact, a poor indicator.

*Shawu Camp:* Both aggregation and dispersal camps are residential sites. At Shawu, while foragers may have been living nearby, there is no evidence of any residential activities on top of the koppie. Thus, as with Mafunyane, it is a struggle to place this site into either phase.

*João Shelter and Kambaku Camp:* Importantly, both sites are situated alongside and within agricultural homesteads, respectively. One might suggest that these are dispersal camps and that foragers used them during certain times of the year (e.g. van Doornum 2005: 180). If this was the case, and the sites were occupied during the so-called dispersal phase, can we equate these sites within agricultural homesteads to dispersal camps in the Kalahari Desert or even those on the landscape that are not associated with agricultural homesteads such as Balerno 2 and 3? I do not believe we can because foragers at sites such as João and Kambaku are tethered to the agriculturalists living in the homestead, unlike ethnographic dispersal camps; we need to make this distinction.

None of the sites can be placed with certainty into either the aggregation or dispersal category, as developed by Wadley (1986). Therefore, as stand-alone data, there is no evidence indicating that this cycle even occurred in Northern Tuli. If we include northern South Africa and view Balerno Main as an aggregation camp and Balerno 2 and 3 as dispersal camps, some might argue that this pattern is indeed occurring locally. But certain questions remain: if the number of artefacts at these sites is thought to be potentially indicative of either an aggregation or dispersal camp, should we not first consider depositional rates before relying so heavily on density analysis? Does the same pattern exist at open-air sites and how do we account for regional and chronological variability? We are well aware that foragers had a variety of site types and so too did modern Bushmen; for example hunting blinds (Crowell & Hitchcock 1978), sedentary camps in rockshelters (e.g. Burchell 1822: 320) or at waterholes (e.g. Yellen & Lee 1976) and living in agricultural homesteads (e.g. Vierich & Hitchcock 1996). The assumption that we can take forager

campsites, regardless of their age, and interpret them with sufficient detail (see Barham 1992) so as to place them into either the aggregation or dispersal categories relies heavily on ethnographic analogy and the integrity of the archaeological record (see Humphreys 1987).

Alternatively, it may be that the aggregation and dispersal cycle was a survival technique specifically designed for desert or arid conditions. If so, categorising sites outside of the Kalahari Desert as either aggregation or dispersal camps may be a misinterpretation of the archaeological record. In addition, by Yellen's (1976) own admission, the structure and appearance of dispersal camps varied and certain tasks associated with aggregation sites, such as the manufacture of gifts, occurred at dispersal camps in anticipation for the aggregation phase. Considering this diversity, are we to lump all the sites that do not fit the aggregation mould into the dispersal category? Arguing in favour of Jerardino's (2001) appeal to make an ethnography of the past, I believe that we need to redress the way we categorise sites, moving beyond simple dichotomies.

#### **9.2.1.1 Rethinking the aggregation/dispersal dichotomy**

*Yet labelling sites as either aggregation or dispersal phase sites also compresses variability into a bipolar opposition that may blind us to other differences: what of look-out stations or locations at which people obtained stone, pigment or other materials, carried out rituals or ambushed game?*

*Mitchell 2002: 218*

As Mitchell (2002: 218) surmises in the quote above, the simple aggregation/dispersal dichotomy may be obscuring other site types and falsely homogenising them. On closer inspection of forager campsites on the Greater Mapungubwe Landscape, we find that little uniformity exists between them and that, in fact, they should be distinguished from one another rather than lumped into either of the two categories. Turning to ethnography and seeking alternative categories might resolve this issue but actually compounds the situation; ethnography is not able to answer all the questions of the past or explain archaeological features. It may be necessary to change our terminology, to adjust the model and develop discussions that incorporate variability into our understanding of the LSA since, as has been shown through these six and the previous excavations in the region, it is certainly a feature of the Greater Mapungubwe Landscape. It is not, however, necessary to completely rid the model of the ethnographic aggregation and dispersal phase sites, provided that they are not used for lumping sites together that cannot be

placed elsewhere. Instead, I incorporate Binford's (1983) residential and special-purpose sites as I feel it is more appropriate because it is possible to place sub-categories within these broader terms, and these carry no ethnographic connotations.

### **9.2.1.2 Residential sites**

The classification of residential sites needs to be done based on the site's features. Either a descriptive title should be used that can be related to other sites or one based on the site's place, such as, for example, manufacture or transit camps. Using artefact density alone to calculate occupation intensity should be avoided unless the rate of deposition is known or dates from the upper and lower level of a stratigraphic unit are obtained. Nevertheless, grading residential camps, in terms of artefact density or diversity, can be problematic because it refers to sites in relation to one another, which has been shown to be an issue when dealing with sites across different landscapes (see Barham 1992; Walker 1995a). Instead, the site complexes share a polythetic range, meaning that while the sites may be related in type, not all of their properties are common (see Lombard *et al.* 2012) nor are they all present at a single site or on a single landscape (Barham 1992).

#### *9.2.1.2.1 Aggregation/core and dispersal/nuclear camps*

There is no need to further detail the requirements for a site to be an aggregation or dispersal camp. My assessment of the available data on the Greater Mapungubwe Landscape is strongly suggestive that aggregation and dispersal cycles did not exist. Balerno Main certainly contains all of the features that Wadley (1987) outlined, yet can we really equate this to modern Bushman aggregation camps (e.g. Barham 1992)? Furthermore, if Balerno Main is an aggregation camp, does that by default mean that dispersal camps must also exist or that Balerno 2 and 3 are such sites? The dispersal category, in this regard, is not very helpful and ends up being a collection of sites that are only related by their *not* being aggregation sites. These sites, in fact, express great cultural diversity between them, as Yellen (1977) and colleagues noted for their own ethnographic data among the Ju/'hoansi. A more appropriate term would be nuclear camps, which, like dispersal camps, are occupied by smaller band groupings but it is not a term that invokes ethnographic associations. In this light, I am more inclined to identify Balerno 2 and 3 and also the lower levels at Dzombo as nuclear camps that fall into the same polythetic range, allowing for cultural diversity.

Following on from this, I propose that aggregation camps be thought of as core camps. Other titles used for these camps are band cluster (Barnard 1992: 65) or nexus (Heinz 1966: 91-94) sites

but these have various social associations similar to aggregation sites (Barnard 1992: 64-66). By changing the name to core camp we acknowledge that sites such as Jubilee (Wadley 1987), Balerno Main (van Doornum 2008) or Olieboomsport in the Waterberg (Van der Ryst 2006) may not have had the same meaning as aggregation sites do amongst some modern Bushmen. However, similar activities that occurred at ethnographic aggregation camps occur here, such as an increased population living at the camp together, feasting on a diversity of species, increased cultural material production and extended periods of occupation which could range from weeks to possibly the entire year depending on environmental factors. Essentially, core camps are visited on a regular basis by foragers who possibly live at the camp permanently and perform activities that have been associated with aggregation sites.

By changing the terminology, the ethnographic associations given to sites are stripped away. The aggregation and dispersal terms should not be totally abandoned because it may be that in some cases these sites, as witnessed amongst modern Bushmen, can be shown to exist with certainty in the archaeological record. Abandoning these terms does not, however, mean that foragers did not aggregate or disperse at certain times; merely that we cannot show that this was culturally the same as in the ethnographic record.

#### 9.2.1.2.2 *Permanent or semi-permanent home camps*

Foragers did not transport their entire tool collection with them at all times. On special-purpose forays, such as hunts or to exploit specific resources, all that was needed are the artefacts required for those tasks. The rest of their assemblage was left behind at a permanent or semi-permanent camp (Bousman 1993), both of which fall under what I have termed the home camp (see Binford 1982). Such camps do not display all the features of core camps, so-called aggregation sites, but may contain some of these items. Thus, Dzombo, for most of its occupation, fits the role of a permanent or semi-permanent home camp. It was a major site from the first moving frontier, beginning about AD 350, through until the static frontier ending around AD 1300, after which it was abandoned during a time when rockshelters throughout the Greater Mapungubwe Landscape were being vacated. Home camps contain elements that are unlike nuclear camps in that they are used over a long period by a large group, possibly not only a single band, and contain many 'aggregation-type' features such as evidence of bead production, ritual items and an extensive faunal record. This is formed from the repeated use of the site and caching of artefacts, increasing the likelihood that a broader spectrum of artefacts will be found at home bases.

#### 9.2.1.2.3 *Trading camp/workshop*

Hall and Smith (2000) demonstrate that Little Muck progressed through a purely camp phase into a camp where trade goods were being produced to a workshop/camp with an emphasis on trade goods to exchange with local agriculturalists before the site was finally appropriated by K2 ceramic producing agriculturalists. From possibly as early as AD 350, when ceramics first appeared on the landscape, Little Muck was used as a trading base, which intensified into the Zhizo period, after AD 900. Key characteristics of a trading camp or workshop are a proliferation of scrapers, organic beads and bone tools such as linkshafts. These sites were occupied in order to trade with neighbouring farming people. The size of the site might vary: Little Muck itself is not a large rockshelter (>25m<sup>2</sup>), though it has a large potential living area beyond the dripline. Little Muck is the only site of this kind that has been excavated, but a number of other smaller sites that might fall under this category have also been found elsewhere in northern South Africa (Forssman 2010).

#### 9.2.1.2.4 *Smithing or smelting site*

Mafunyane is the only site on the Greater Mapungubwe Landscape that falls into this category and I have argued elsewhere that it was a smithing, and not a smelting, camp. From a farmer perspective, and possibly also for the foragers using either of these site types, it might have been perceived as a powerful or ritual place because of the connotations associated with both activities (Huffman 2007: 82-84). However, the extensive stone tool and faunal remains suggest that this site, too, was occupied by foragers who were performing tasks for or in partnership with neighbouring agriculturalists. There may not be other smithing or smelting sites with forager signatures in the area but, if so, they probably only occurred within the last 2000 years. The dates from Mafunyane suggest that foragers were involved in this activity at the site from at least AD 900 and possibly as late as AD 1200. Additional excavations at similar sites must be done in order to develop our understanding of this category and the social and symbolic meaning of these sites.

#### 9.2.1.2.5 *Homestead occupation site*

There have been a number of homestead excavations in which ceramic final LSA assemblages were found (e.g. Maggs 1980; S. Hall 2000), several of which are on the Greater Mapungubwe Landscape (e.g. Huffman 2009b; Forssman 2010). These finds represent an important phase in the forager culture because it is during a time when they adopted a settled way of life and replaced parts of their own material culture with that of agriculturalists. The degree of their assimilation into a farming economy varies, as seen at João and Kambaku. One could also argue

that foragers who have completely assimilated into a farming economy are unrecognisable in the archaeological record if their material culture is consistent with that of local agriculturalists. Both Elton (1872) and Dornan (1917) recorded homesteads that were only occupied by Bushmen living as farmers, providing the grounds for rethinking the proposed K2 appropriation of Little Muck (e.g. van Doornum 2005: 195). Identifying such a degree of assimilation relies on identifying discrete finds, such as S. Hall's (2000) stone tool caches in Madikwe, if it is recognisable at all. In such cases a more appropriate term might be forager homestead, provided that one can then exclude the presence of farmers. The difference between homesteads in which foragers are living in and those that are their own is one of degree but not necessarily of kind, a comment already made by Yellen (1976: 66-67); the degree of assimilation varies, resulting in a variable archaeological signature at these site types.

#### 9.2.1.2.6 *Skulk sites*

Similar to homestead occupation sites are S. Hall's (pers. comm. 2013) 'skulk' sites, which include K2/Mapungubwe period forager camps in the open and located 'in between' agricultural homesteads. A number of these sites have been identified on the Greater Mapungubwe Landscape, some of which I have reported on previously (Forssman 2010). Essentially, these sites were occupied in order to be near to agriculturalists but they are not homestead occupations or refuge sites. They are poorly understood and should be excavated in the future in an attempt to understand the social processes that exist at these sites and those occurring between foragers and the nearby agriculturalists. It is possible that these sites reflect the initial processes of integration that led foragers to occupy homesteads.

#### 9.2.1.3 **Special-purpose sites**

Special-purpose sites fulfil a functional role in the forager sequence and are not used in a residential capacity, although they may have been temporarily occupied.

##### 9.2.1.3.1 *Manufacturing site*

Manufacturing sites are non-residential camps, at which primary stone tool production occurs. Assemblages may be dominated by the surrounding resource base and a component of the assemblage is likely missing, having being removed from the site by the manufacturer and brought to a residential camp. Shawu displays all of these features; the assemblage is dominated by CCS materials most likely collected from the outcrop surrounding the koppie, few finished formal tools and no organic material was recovered from the site suggesting that at least on top of the koppie no residential camp existed. A number of forager assemblages were identified at

raw material outcrops (N=30) in the survey area and are possibly also manufacturing sites but they have not been studied further. No other excavation in the area can be placed into this category.

#### 9.2.1.3.2 *Rain-control site*

Schoeman (2006a) was the first to report on stone tool assemblages within agriculturalist rain-control sites, which she believes were produced by foragers. Her stone tool assemblage from JC Hill is mostly made from chalcedony and completely lacks formal tools, while at M3H and EH Hill she found quartz assemblages. She argues that, based on the presence of K2 ceramics at the hilltop sites, the assemblage dates to between AD 1000 and 1220 and demonstrates the complexity of relations occurring between foragers and agriculturalists at this time. It is possible that foragers were engaged in rain-control activities prior to the arrival of K2 farmers as well as afterwards. No sites of this type were studied in Northern Tuli, but three possible rain-control sites with forager stone tools were identified: MGR257, MGR283 and the Mmamagwa hilltop, MGR295. In my previous research in northern South Africa, I identified four sites (17, 76, 126 and 119) in a rain-control context: on top of koppies, alongside natural cisterns and with agriculturalist items including ceramics and glass beads. Three additional sites (14, 55 and 110) were found in a similar context, but not on koppies that resemble typical rain-control sites. However, these assemblages are not all the same; all the assemblages contained typical LSA formal tools including scrapers and backed stone tools, made mostly of CCS materials even though all but assemblage 14 were dominated by quartz (Forssman 2010: 43-44). Therefore, the assemblages shared a common context but differed from one another. The only question that needs to be addressed, and it is a critical one, is whether all these assemblages were produced by foragers and not by farmers, a topic addressed in more detail later on in this chapter.

### **9.2.2 Summary of rethinking the aggregation/dispersal dichotomy**

Changing how sites are categorised is done from a descriptive approach and only includes sites that have been studied on the Greater Mapungubwe Landscape. It is possible to expand on this and the effort made here should be further added to and developed upon in other forager studies. For example, Binford (1982) was able to show that Nunamuit Inuit in Alaska had a number of camp types in addition to their home camp, such as transient, hunting, trapping, fishing, logistical or observation camps. Whether or not this alternative approach I have proposed is used, what is essential is that we move away from an ethnographic deterministic approach in which cultural features observed in modern Bushmen are projected into the past, possibly

constricting our understanding of prehistory. We need to move beyond our reliance on ethnographic analogies, particularly when referring to a range of different foraging people, and accept site variability in order to better understand foragers, especially those living within the last 2000 years. It is after this point that dramatic change in their cultural make-up begins, resulting in the various modern Bushman groups.

### **9.3 FORAGERS IN A FARMING PERSPECTIVE**

Understanding the result of interactions cannot be done solely by using evidence collected at rockshelters. Doing so assumes that the items acquired through exchange with or as payment from agriculturalists was returned to the rockshelter, when in fact it may not have been. It is possible that foragers occupied camps near agricultural homesteads, or within them, during stages of interaction (e.g. Wadley 1996), and did not return to rockshelters with all the evidence from their contact, such as pots, metal implements, glass beads or subsistence products. Much of what foragers may have received was also intangible, such as their use of farmers as a social resource, or exchange items may have been consumable, neither of which is visible in the archaeological record. To test this, we need to study foragers from a farmer's perspective (e.g. Denbow 1986; Denbow & Wilmsen 1986; S. Hall 2000; Schoeman 2006a, 2006b; Forssman 2010), meaning, more specifically, that we need to excavate homesteads or skulk sites that contain evidence of a ceramic final LSA occupation.

On the Greater Mapungubwe Landscape there is evidence that foragers did take up residency within homesteads. Historical records (e.g. Elton 1872; Dornan 1917) mention foragers living as farmers in sedentary camps with livestock and cultivated fields. There have also been two excavations in homesteads, Den Staat AB32 and Haakdoring AD168, in which ceramic final LSA assemblages were recovered, yet in both cases it could not be firmly associated with the homestead occupation. At João and Kambaku, however, this was not the case and the association between the ceramic final LSA assemblage and the agriculturalist homestead occupation are clear.

During the Leopard's Kopje period, AD 1000 to 1300, forager assemblages in rockshelters diminished in intensity, inferred from artefact density, and disappeared (van Doornum 2005: 196). Thus, as far as all the excavations that have been conducted in rockshelters indicate, the forager record ceases to be recognised from this point onwards. Van Doornum (2005: 195-196) suggests that this might be due to foragers abandoning the landscape or assimilating with farmers, but had no evidence with which to support her statement. João contributes in this

respect by confirming that assimilation did indeed occur on the Greater Mapungubwe Landscape and that at least some foragers maintained parts of their own culture when living in an agriculturalist homestead, archaeologically visible to us in the form of stone tools; how good these are as cultural markers is unknown but debated (e.g. Mazel 1989; Barham 1992). The degree of assimilation that took place cannot be determined because much of what may have changed, including beliefs, ritual practices, subsistence patterns and labour practices, is not always observable archaeologically. Incorporating rock art painted within the last 2000 years into a study such as this might aid in understanding how forager beliefs were affected by farmers (e.g. S. Hall 1994).

Kambaku complements these data and demonstrates the necessity for us to move beyond the confines of a rockshelter. Here, the ceramic final LSA assemblage has been associated with a homestead occupation and dated to the late-fifteenth and late-seventeenth centuries. During this time, there is no evidence in rockshelters of post-Mapungubwe period foragers. By excavating Kambaku it is now clear that not all foragers abandoned the Greater Mapungubwe Landscape and, instead, that some at least occupied open-air camps and, more specifically, agriculturalist homesteads, maintaining parts of their own material record. It would be interesting to determine for how long foragers lived in homesteads and still produced stone tools or held onto their own culture before becoming completely assimilated, if indeed this occurred at all. Of course, as with the forager record before AD 1300, there was cultural variability and one should expect the same to occur afterwards; forager reactions to interaction varied and it is likely that not all integrated into the farming economy, possibly by choice. An example of this variability is the anecdotal accounts of Bushmen living on the Greater Mapungubwe Landscape into historic times (Eastwood & Cnoops 1999; Colin Bristow pers. comm. 2012), which indicates that some assimilated wholly, but others, only partially so. This has also been recorded in other parts of southern Africa such as in the Waterberg where forager settlement patterns shifted resulting in gradual social disintegration, evident in the decrease in all types of cultural material classes (Van der Ryst 2006: iv).

One question worth addressing here is why live in a homestead in the first place? A foraging lifestyle was able to support the incumbent population prior to the arrival of agriculturalists, so why change now? There are a number of possible reasons. Perhaps foragers were forced to live a sedentary life by farmers who restricted access to forager subsistence requirements and affected mobility patterns (e.g. Moore 1985). Coupled with these changes on the landscape was the increasing political complexity of farming communities in the region (see Huffman 2000). Here,

unlike anywhere else in Africa, foragers were part of, or at the very least witnessed, state development. If there are other sites like João, in which by the Mapungubwe phase foragers were living in homesteads alongside agriculturalists, foragers may have been included in state society, such as through elephant hunting (Voigt 1981), as ritual specialists in rain-control practices (Schoeman 2006a) or at smithing sites like Mafunyane, entrenching them further in the agricultural system.

Living as or with farmers afforded foragers a number of opportunities, including subsistence goods, iron implements, protection from the natural elements as well as marriage (e.g. Wadley 1996). Foragers may have had a ritual status (e.g. Brunton *et al.* 2013), and used farmers as a social resource for resolving disputes (see Denbow 1984; Yellen 1984; Moore 1985), which may have been heightened during periods of social and ecological stress. However, did foragers need to live in homesteads in order to have access to all of these resources? Prior to their occupation of homesteads, foragers were acquiring ceramics, glass beads, iron tools and subsistence products from agriculturalists, they partook in ritual activities and possibly also used them as a social resource. The decision to live within homesteads, therefore, does not seem to be one based on access to these resources. Instead, it may have been socially and politically driven and linked to a diminishing resource base which made it difficult to continue with a foraging economy (e.g. Cashdan 1984). Farmers occupied the Greater Mapungubwe Landscape in large numbers and by AD 1000 there were probably about 3500 people living in the area, excluding foragers, which is estimated to have grown to over 11,000 during the Mapungubwe period (Huffman 2008; Table 9.2; based on 2008 data). Unfortunately, we do not have the data needed to estimate the size of the forager population during this period. These populations required plentiful food resources, which meant large-scale cultivation and stock-keeping. Both of these practices would have impacted on the foragers' food base, possibly leading to a decline in natural resources, forcing foragers to rely more on an agricultural economy and, coupled with social and political forces, leading to an increasingly sedentary lifestyle (e.g. Cashdan 1977). It is unlikely that all foragers underwent such change and some may have held onto their own cultural practices longer than others.

**Table 9.2: Population dynamics between AD 900 and 1300 (from Huffman 2008).**

Dates	Period	Sites	Time span	Population
AD 900 - 1300	Zhizo	30	100	1075
	K2	160	200	3500
	TK2	125	50	8750
	Mapungubwe	122	50	11 100

The forager shift in settlement patterns, resulting in them occupying areas near to homesteads, in homesteads and possibly even assimilating entirely into the agriculturalist economy, is a major shift in the forager record. It represents a move away from a mobile life, which was possibly a necessity (e.g. Moore 1985), towards a sedentary, food-producing economy.

### **9.3.1 Shifting settlement patterns: integration and assimilation, reliance and avoidance**

To understand the meaning of foragers shifting into an agricultural economy alongside agriculturalists, we need to understand what this meant to both foragers and farmers. Did foragers fulfil an underclass role of the kind that Wilmsen and Denbow (1990) discuss, or was it a hospitable relationship such as has been found at some sites in the Northern or Western Cape with herders (Sampson 1996; A. Smith 1992a, 1992b) and in KwaZulu-Natal with agriculturalists (A. Campbell 1986; Mazel 1992)? There, too, may have been patterns of avoidance, as in the Eastern Cape where foragers moved into areas not favoured by farmers (S. Hall 1994), or possibly a labour relationship, identified in many parts of southern Africa (e.g. Lee 1976; Guenther 1977; Solway & Lee 1990), as well as trade (e.g. Solway & Lee 1990; Barnard 1992). Of course, a multiplicity of outcomes was likely present on a single landscape; some foragers may have traded with farmers, such as those at Little Muck (Hall & Smith 2000), whereas others, like those at Balerno Main (van Doornum 2008), avoided them, a pattern that may have also been seasonal. In order to interpret the meaning, we need to consider what the shift in fact was. We know foragers lived alongside or within homesteads from sites like João, Kambaku, Dzombo and Little Muck, but what did this represent?

I prefer to think of this shift in terms of integration, which I feel is a more diverse term than assimilation and refers rather to the process leading up to assimilation; foragers are integrated at various levels into the farming economy before becoming farmers themselves, thus completing the assimilation process. Sites like Little Muck, a workshop camp, Mafunyane, a smithing site, and João, a homestead settlement, all display different degrees of integration in which foragers were adopting aspects of the farming economy, but whole-scale change had not yet occurred. Clearly, as a concept, integration covers a range of sites, and can be argued from various levels, but also refers to a difference of degree, but not necessarily, kind; thus, it acknowledges variability within this phase of the forager sequence. Essentially, integration is expressed in various degrees and is a variable package whereas assimilation is a finite resolve; foragers are now 'farmers'.

Based on the available evidence, interaction on the Greater Mapungubwe Landscape was regular and amenable. Foragers likely traded for produce from agriculturalists, as well as avoided them

during other phases (van Doornum 2008). At Dzombo, foragers lived at the site from before the arrival of farmers and into the beginning of the second millennium AD with some observable changes, notably in the stone tool sequence and the appearance of ceramics and glass beads. João and Mafunyane display a far more reliant system, which is even more present at Kambaku, in which foragers interacted on a daily basis with agriculturalists while living at the sites. They may have been working for or with farmers, such as at Mafunyane, and being paid in subsistence goods or metal tools, or living in homesteads and operating within an agriculturalist economy. At each site, even though they are contemporaneous, there is a different outcome.

Foragers may also have been occupying different sites seasonally. Van Doornum (2008) suggests that Balerno Main was not used throughout the year. It was abandoned or occupied by small groups during the so-called dispersal phase, when sites such as Balerno 2 and 3 and Tshisiku, at the end of its sequence, were occupied. Little Muck may also have only been used at certain times, such as when foragers required the amenities that agriculturalists could offer or when they wanted to trade. Broederstroom in the Magaliesberg is an example of a homestead that received periodic visits from foragers (Wadley 1996). If this was occurring on the Greater Mapungubwe Landscape, it may be more appropriate to incorporate a new model that looks at avoidance and reliance. During the agricultural period, foragers chose to live in close proximity to farmers when they needed them as a resource while during other times, for whatever reasons, they returned to isolated camps or rockshelters. Although still near to farmers, such sites offered respite from the encroaching agriculturalists. This trend changed over time and forager activities in rockshelters decreased in intensity from AD 900 until they were eventually abandoned by AD 1300. It may be that at this stage, due to the reasons presented above, forager reliance on agriculturalists developed to such a point that they needed to live nearby or within their villages in order to survive.

However, from an agriculturalist perspective, foragers may have been seen as First People and accordingly considered as lower status and who contained a spiritual power (Pikirayi 2001), often required or desired by farmers (e.g. Loubser & Dowson 1987). It was possible for farmers to harness and use this power in agricultural rituals, like rain-control (see Brunton *et al.* 2013), and enhance their effectiveness (e.g. Kopytoff 1987). The concept of First People is very much a pan-African phenomenon (Kenrick & Lewis 2004), but also exists in other parts of the world (e.g. Asch 1984; Brody 2001; Canessa 2007). For example, and without spending too much time on the topic, the Mbendjele Yaka Pygmies of the Congo have a ritual link to the landscape; they are considered as First People and, depending on the individual's aptitude, have special abilities

through their connection with the forest (Lewis 2002); similar situations are found throughout Central Africa (Kenrick 2005). Kalahari Bushman used their indigenous and spiritual link to the landscape in an attempt, which subsequently failed, to reclaim the land, certain rights and access to resources (Hitchcock 2002). The concept of First People, also problematically referred to as Indigenous People (see Woodburn 2001; Kuper 2003; Barnard 2006), is a connection between identity and landscape (Hitchcock 2002; Kuper 2003), and one that is perpetuated across the continent, linking debates in this field.

The power that First People were perceived to contain led agriculturalists to treat them with caution, and they may have distanced themselves from foragers because of the potential danger they posed (e.g. Mackenzie 1871). As a result, foragers may have only been allowed on the periphery of the agricultural social world and settlement structure, and such movement would have been tightly controlled (S. Hall 2000). Elton (1872: 20-21), in fact, mentions that in the late-nineteenth century the local Bushmen in the Northern Tuli region were viewed as inferior by local Bantu-speaking farmers. While it should not be assumed that these negative perceptions of foragers persisted within agricultural societies across the whole of southern Africa and throughout their occupation of the region, such observations do indicate that there may have been a degree of ambivalence expressed towards foragers, which would undoubtedly have influenced the way in which they fitted into the farming world.

Changes in the foraging way of life led to, at some sites, a close relationship between foragers and local agriculturalists, which for example amongst the Lese and Efe of Central Africa, are at times difficult to distinguish (Grinaker 1994: 2-3) and may have been the case on the Greater Mapungubwe Landscape as well. Locally, this interaction severely influenced the make-up of the forager cultural record and during the static frontier, AD 1000 to 1300, some foragers took up residency within or next to farming homesteads, and by the time of the consolidating frontier, they had abandoned the use of rockshelters altogether. These changes fundamentally affected foragers in the last two millennia until at least c. 1660 when Kambaku was occupied, after which the only evidence for a forager presence on the landscape comes from historical and anecdotal accounts. While there were many changes in the forager record, these differ because foragers now became sedentary and relied more on the farmer's economy, even adopting their technology. The result is an archaeological record that differs markedly from all other LSA periods, pre- or post-2000 BP.

### 9.3.2 Does the LSA still exist after foragers began occupying homesteads?

Creating terms to explain the past always creates closed conception of cultural groups (Green & Perlman 1985), which were in fact open and fluid (Sadr 2008a). The term 'LSA' has been used here and refers to the entire forager sequence. After the arrival of agriculturalists, when the forager record changes to incorporate features of the farming economy, I have attempted to abandon the term in favour of an Age-less system. Using the term 'LSA' is done in this study when I have wanted to discuss the techno-complex as a whole, but it is not appropriate when referring only to foragers within the last 2000 years, for which I have used J. Alexander's (1984) model where possible, or referred to it as the forager sequence or record. However, from AD 1000, the beginning of the static frontier, when foragers started living within homesteads, such as at João, the term 'forager' needs to be reconsidered as it may no longer apply once they had integrated into the farming economy, which would certainly have been the case during the subsequent consolidating frontier phase.

Lombard and colleagues' (2012) updated sequence includes the last 2000 years of the forager record under the titles 'final LSA' or 'ceramic final LSA'. However, I feel that this fails to account for the dramatic changes in settlement patterns, subsistence economy and technology during this time. On the Greater Mapungubwe Landscape, foragers moved into farmer homesteads and lived as agriculturalists at least for the period while living in the settlement, though they may still have been somewhat mobile at other times of the year. Modern Bushmen have also been recorded living in homesteads elsewhere in southern Africa (e.g. Vierich & Hitchcock 1996; S. Hall 2000). While there are many reasons why this shift occurred, such as intermarriage, access to resources and political pressure, the result is the same. In an attempt to contribute to the discussion paper presented by Lombard *et al.* (2012), I propose using the terms homestead stone assemblage, to drop the 'Age' tag, or homestead LSA if preferred, to refer specifically to forager assemblages found in homesteads. These terms indicate that foragers were living at homesteads and not only using them temporarily (e.g. Wadley 1996). On the Greater Mapungubwe Landscape this begins from AD 1000 and only truly affects the ceramic final LSA sequence after AD 1300, after which no forager settlements have been recorded in rockshelters. Thus, from this point, while there may still have been foragers producing assemblages that fit the ceramic final LSA category and were thus still mobile hunter-gatherers, others became sedentary and lived in and subsisted off a farming economy, supplementing their agriculturalist lifestyle with the use of stone tools. During this time forager beliefs, ritual practices and symbolic associations would probably also have altered and deviated from those still living in a ceramic final LSA fashion, and certainly from those

before them. It is for these reasons that I feel that re-labelling these assemblages is warranted and a worthy contribution to on-going efforts to develop a revised nomenclature for the southern African Stone Age.

### **9.3.3 Summary: a method for moving forward**

Across the Greater Mapungubwe Landscape, and probably on all cultural landscapes (e.g. Sampson 1986; Mazel 1989; S. Hall 1994), social, political and cultural homogeneity does not exist. Landscapes are filled with people, sometimes from different groups with dissimilar histories, who give meaning to their social and ecological environment (Bender 1993). As I have shown throughout this dissertation, when this has happened in southern Africa, it is usually the foragers who have been more profoundly affected by interaction than agriculturalists. At times this is to the point where, as I have argued above, we need to stop thinking about them as being strictly part of the 'LSA' but instead as belonging to a more fluid cultural system, which includes cultural borrowing and sharing (see Sadr 2008a). For this reason, using modern Bushmen to explain the past cannot be done with great accuracy. There do seem to be artefact assemblages in contexts that appear consistent with ethnographic data, but even so, we cannot be sure that these carried the same meaning; even if *hxaro* items used today were the same in the past, linking them assumes that they have the same social meaning (see Mitchell 2003).

To understand forager prehistory we need to move beyond our reliance on their contemporary condition and rely on empirical data to make archaeology the ethnography of the past (Jerardino 2001). It is vital that in doing so we draw on a diversity of archaeological sites (Binford 1982) and not only rockshelters that contain a variety of different artefacts. There needs to be a shift to embrace the study of ephemeral sites, open-air camps, small rockshelters in a variety of contexts, all used to bolster findings from the larger excavations that generally dominate LSA archaeology and forager studies. The challenge that archaeology faces is to develop a method for identifying, recording and studying these types of sites. I believe that one way of doing this is by carrying out a landscape study. In so doing, we are able to study the fragmentary record spread across a region, allowing us to weave all the different elements, features and expressions of the past into a tapestry stretching across a greater spectrum of forager responses, settlement patterns, subsistence habits and the outcomes of interactions with agriculturalists. In this way we can place sites that are chronologically or technologically related into social, cultural, political or ecological environments. I now look more specifically at the benefits of landscape archaeology, how it is able to improve our understanding of the past and, importantly, how it can resolve some of the issues that have been raised with regard to the analytical value of ethnography.

#### 9.4 LANDSCAPE ARCHAEOLOGY: DEVELOPING A REPRESENTATIVE LSA RECORD

To develop a more complete archaeological record, and overcome the challenges of using ethnography, we need to understand both residential and special-purpose sites (Binford 1980). Site variability must be taken into consideration and sites across the spectrum of the foraging cycle need to be studied and related to one another within a cultural landscape (Barham 1992). Sites were also occupied seasonally, and so they contain different features of the forager record depending on the available opportunities, all affecting the site's place (Binford 1980). Studying all of these different forager expressions and relating them to one another is at the core of this landscape study. The theory, method and techniques of landscape archaeology and a landscape approach will not be discussed further here, having been addressed in Chapter 4, but instead this section focuses on developing a critique of the topics asking is it effective, how so, what are the challenges, does it benefit southern African archaeology and, if so, should it be incorporated into future studies?

Studying the archaeological record, as it is spread across an entire cultural landscape, and between them, is not something new. Willey (1951, 1953) based his research on these principles in Peru and this was taken up by many other researchers in Africa (e.g. Foley 1981a; Sampson 1985; Sealy 2006; Hallinan 2013), as well as abroad (e.g. Dunnell 1979; Flannery 1976; Dunnell & Dancey 1983; Bevan & Conolly 2002-2004). Such studies are able to show cultural diversity in a landscape's archaeological record. I prefer to think of these as expressions that can be observed in different places. Together, these places (sites) make up the forager cycle (settlement or mobility pattern and utilisation) and the expressions (assemblages) within the places comprise the forager sequence (LSA package). Expressions are seasonally driven (Binford 1980) and depend on the available opportunities and decision-making taken by foragers (Parkington 1980). The landscape itself is very much a part of forager identity (Barnard 1988) and using it as the largest unit of study allows the researcher to explore environmental, economic and demographic variables, such as culture, politics and settlement patterns (Brookes *et al.* 1982), from both a spatial and a temporal perspective (Kent 1992). One of the greatest achievements of any landscape study is its emphasis on incorporating smaller finds into the archaeological record, which contributes to a general understanding of the regional sequence, more so than single-site studies (Kinahan 2004). However, we must ask, does using a landscape approach actually improve the resolution of our research?

In van Doornum's (2005) model, five rockshelters were compared and based on their assemblages she was able to identify five cultural phases that are linked to the changing

agricultural sequence. The main principle of her model is that the forager cultural record becomes tethered to the agricultural sequence from about 2000 years ago and this holds true for my own study. At Dzombo, for example, there does seem to be changes in the assemblage which appear to be related to the changing agricultural sequence. However, van Doornum's (2005) model only partially applies to the site. For example, during the Zhizo period, backed stone tools dominated Dzombo's assemblage while at her sites the assemblages are dominated by scrapers. During the K2 period, in which at all sites except Balerno Main there was a decrease in artefact density, there was a peak at Dzombo before stone tools fell away, in a level where ceramics were at their greatest quantity. This shift possibly indicates that foragers became more reliant and integrated further with an agriculturalist economy or that farmers utilised the rockshelter at this time. While Binford (1980) and Jerardino (2001) warn about relating deposition rate to artefact density, the fact that stone tool numbers drop off at almost every site during this time appears significant and van Doornum (2005: 181-182) relates this to a shift in forager settlement patterns and/or an abandonment of the area on their behalf.

Comparing Dzombo to van Doornum's (2005) model shows that there are some subtle inconsistencies, although to me this does not seem a weighty problem. In fact, if anything, the changes at Dzombo display slight differences in the way Dzombo was used, specifically during the second moving and static frontiers, than being in discord with van Doornum's (2005) model. Turning to some of the other excavations, however, demonstrates the parameters of the model. Firstly, Mafunyane is unique because of its copper assemblage, but even here the stone tool assemblage is very similar to those identified by van Doornum (2005) and it is, of course, also found at Dzombo. João, too, displays parallels in its stone tool assemblage, but the place of the site is, once again, unlike that of others on the Northern Tuli landscape. The association between the forager assemblages and the K2 homestead is significant. At Kambaku, the unusually late date associated with the stone tools indicates that foragers were now integrating more with an agricultural economy while maintaining parts of their own economy, such as the use of stone tools. Had Shawu been dated, it too may have contributed to these findings. Turning to my earlier work in northern South Africa, the quartz-dominated assemblages that I identified, all of which are in the open, currently sit unaccounted for in van Doornum's (2005) model, as do Schoeman's (2006a) rain-control site assemblages. There is therefore ample evidence suggesting that we need to widen our gaze over the archaeological record. These finds, thus, demonstrate both the importance of studying a site-set composed of multiple site types and the need to look beyond the dripline.

This landscape study has contributed to our understanding of the forager record but it has also addressed four key points: the use of ethnography, the need for regional studies, the nature of cultural boundaries and trans-national archaeology.

#### **9.4.1 Making ethnography work for archaeology**

At present we use the modern ethnographic record as a decoder for understanding LSA patterns. It has, I feel, biased our approach to the LSA because of its use to assess the value of archaeological sites. For example, we try to validate ethnography through archaeological research. Humphreys (1987) makes this criticising by looking at the use of settlement patterns to explain site distribution on a landscape. Mitchell (2003) also argues that we are using *hxaro* as a precursor to understanding certain artefact types when in fact we cannot tell if they were used or viewed in similar ways between foragers and modern Bushmen. Perhaps the most provocative examples are in the field of rock art, which relies heavily on ethnographic analogy to interpret paintings (Lewis-Williams 1991). In what is a simplistic – and perhaps provocatively so – interpretation, Smith and Blundell (2004) present the landscape in terms of topography within a phenomenological framework to demonstrate that in so doing we are unable to interpret rock art. Instead, a theoretical perspective beyond our own modern, Western cultural perceptions is required. The conclusion that Smith and Blundell (2004: 259) arrive at, is that without ethnography we are unable to present any contentions with regard to rock art and, specifically, its meaning. With this in mind, ethnography should not be cast aside in rock art or LSA studies but rather, I suggest and certainly in the case of the latter, tempered with an emphasis on data collected across the landscape. In this way, we should view the LSA, including the period after contact with farmers, as laying the cultural foundations to modern ethnographic Bushmen, explaining how they became the people that were studied by anthropologists and not the other way around.

#### **9.4.2 Full landscape coverage: identifying site specific variations**

I have argued that it is imperative that we attempt to understand the cultural landscape in order to overcome various challenges in LSA archaeology. However, this is not easily achieved. First, obtaining a controlled dated sequence is not always possible. As was the case with the upper levels of Dzombo and at João and, to a lesser degree, Mafunyane, stratigraphic mixing is a concern. Dating open-air scatters, which was not done here but should be the focus of future work, should offer deeper insights into settlement history (e.g. I. Parsons 2007; Orton 2012). It is imperative, in such cases, that dates pertain to the target event; it is important to know whether

the actual event or occupation is being dated, or if the dated item was introduced to the surface assemblage post-deposition (Sadr 2009). Second, surface disturbances are perceived to be worse at open-air sites (Lewarch & O'Brien 1981), yet a similar caution should be placed on subsurface finds, which themselves once occupied the surface (Sadr 2009). One may end up dealing with palimpsests, with multiple target dates, or with assemblages with missing components that have been severely disturbed while exposed (but see Mitchell *et al.* 2006). Third, we need to find excavatable sites in the open. Shawu, for example, contained an informative albeit small stone tool assemblage, but could not be dated. Without datable material the site cannot be placed into the overall regional sequence. Finally, identifying archaeological sites varies seasonally and it depends on the survey method used and site types; for example, ephemeral LSA scatters are harder to find than even small agricultural homesteads. Improving field resolution of identified sites can be achieved by repeated surveys, although this is beyond the scope of the current work.

#### **9.4.3 Blurred boundaries: our boundaries are not the 'other's' boundaries**

Central to frontier studies are boundaries. They are not obvious but instead may be formed by natural features such as rivers or mountain ranges. To us, these may simply be a part of nature, but to past foragers, herders or agriculturalists, some of these features contained great power (Tilley 1996). One way to identify such boundaries is by excavating sites across a landscape and its perceived boundaries. For example, studies west and east of the Motloutse River have shown that K2 homesteads are found almost exclusively to the east, along with the K2 capital, while Toutswe homesteads are found to the west (Huffman 2007: 387). The river seems to have acted as a border between these two groups even though it is expected that cultural and material transference occurred across it. Either way, by comparing artefact assemblages from the two landscapes with one another, a boundary was identified. The same can be done for the Stone Age. Sampson (1984a) showed that foragers settled around lower dolerite hills and ridges in the northern Sneeuwberg, where site clusters occurred. He also showed, using ceramic indicators, that foragers lived downstream in the Seacow Valley, while herders occupied the headwaters area (Sampson 1984b, 1986a, 1986b, 1996). Another study by Muianga (2013), explores the Zambezi River as a boundary between southern African forager assemblages, such as the Wilton and final LSA, and the northern Nachikufan industry. He showed that around the boundary, there is transference of beliefs and practices, expressed most vividly in rock art, but as one moves away from the border, the exchange between the landscapes diminishes and eventually disappears.

On the Greater Mapungubwe Landscape, there is no clear indication that cultural boundaries existed in the Stone Age. It is possible that this is the reason why no obvious core forager camps

are present in Northern Tuli; foragers living here had open access to Balerno Main. The closest evidence might only be the lack of evidence. Unfortunately, my previous survey in northern South Africa was done with a very different method and the density of the identified assemblages in relation to the area surveyed cannot be calculated (Forssman 2010). However, density can be calculated for rock art because in Northern Tuli and South Africa a known area of the sandstone belt has been surveyed (Eastwood pers. comm.). In the former, one rock art site every 9km<sup>2</sup> was identified, whereas in South Africa it was every 2.5km<sup>2</sup>, meaning that the density of sites in Northern Tuli is lower than in South Africa (refer to Chapter 5 for details). There are also a number of major agriculturalist centres on the South African side of the Limpopo River, including Schroda (Hanisch 1980), Baobab and Leokwe Hill (Calabrese 2005), K2 and Mapungubwe (Huffman 2009a), as well as a number of lesser known level three centres, defined as such because a regional chief resided at the homestead where he, amongst other things, performed girls' initiations (e.g. Huffman 2008). In Northern Tuli, the only major agricultural centres are Mmamagwa, a walled complex behind Mmamagwa (MGR281), a Khami or Venda walled site west of Kambaku (MGR257) and a homestead (MGR228) with walling in a U-shape that suggests girls' initiations took place there. While by no means definitive, these data do indicate that there are fewer major centres, and by default commoner sites focussed around the centres (Huffman 2009a), in Northern Tuli than there are in South Africa. At present there is no comparable information from Zimbabwe.

If this is the case, in terms of both the rock art and agriculturalist site density, one could argue that the Limpopo River acted as a boundary. To do so, far more evidence is required because foragers with comparable cultural assemblages and agricultural homesteads with the same ceramic facies are located on both sides of the river. Therefore, if the Limpopo River was a boundary, it was not a very effective one. It seems more likely that the difference in site densities is because of ecological differences or sampling bias, since far more work has been done in South Africa. However, until a similar study has been conducted in other parts of the Greater Mapungubwe Landscape it is very difficult to formulate more definitive conclusions. All the major agriculturalist political centres were situated in South Africa, something Huffman (2009a) believes was the case because it was the periphery of their political reach, but this seemingly did not prevent their settlement across the Limpopo River. The forager record, including rock art (see Walker 2009), appears to be the same technologically and stylistically on both landscapes, yet whether foragers were, in fact, moving across the Limpopo River, and how freely or regularly, cannot be said.

#### **9.4.4 Trans-national archaeology**

Perhaps this final point has less of an impact on other LSA or forager studies, but this project does emphasise the need to deconstruct modern boundaries (such as between Botswana and South Africa) and view the landscape as open, fluid and interactive (see Flynn 1997). It seems this may have been what the Limpopo River represented; a point of articulation rather than dislocation. Generally, we conduct our research within political confines, possibly for logistical reasons, yet archaeological landscapes were not bounded in the same way as their modern counterparts and these same 'lines on the ground', or on a map, should not persist in the academic world.

On the Greater Mapungubwe Landscape, even though the Limpopo River might not be a strict archaeological boundary, it does not mean that such trans-national, academic expeditions should be discouraged. If anything, my research here shows that such studies should be encouraged because it supports the archaeological development of two or more countries, and is capable of creating jobs and developing local academia, important factors in African countries. As mentioned above, it also deconstructs our boundaries that were not necessarily present in the past. Of course, the two landscapes around the Limpopo River are only one example when in fact there are likely to have been many more across Africa and further abroad. Even here, the relationship between the Botswanan and South African landscapes with the Zimbabwean one is not understood and additional work can be done on the South African side with regard to LSA surveys involving a more structured and inclusive method. Nevertheless, in other parts of southern Africa, crossing national boundaries will undoubtedly enhance the local archaeological record, for example, in helping us to understand migratory routes or the introduction of herding communities in the Richtersveld (see Orton 2012), rock art and stone tool assemblages from across the Zambezi River (e.g. Muianga 2013) or cross-cultural trade occurring across boundaries in West Africa (Flynn 1997). Relating and understanding boundaries along with the surrounding cultural landscapes can help us understand the past relative to the socio-political environment that local inhabitants dealt with on a daily basis; forming cultural landscapes and then changing them.

#### **9.4.5 Summary: landscape archaeology**

The practice of studying the archaeological record across a landscape, in its variable form, is not new. By using this approach on the Greater Mapungubwe Landscape, it has been shown that there is variability between sites in different regions of the study area and even those in near proximity to one another, such as Dzombo and João. The main bearing is the context, or place, of

a site and it is imperative to excavate across contextual barriers, within a cultural region, to understand the full spectrum of a technological sequence, such as the LSA. The aim of each landscape study is such, and on the Greater Mapungubwe Landscape it has been achieved. By instituting this approach, I have shown that not only are there sites in different contexts that contain different forager expressions, demonstrating the value of a landscape approach, but that it has the capability of crossing cultural and national boundaries and studying the articulation between these zones, integrating multiple landscapes.

#### **9.5 FINAL REMARKS: THE SPACES BETWEEN PLACES**

By using a landscape approach, a variety of different forager expressions can be identified and followed up with excavations. From these data, information regarding settlement patterns, subsistence, cultural change and interaction and exchange can be gleaned. Essentially, in this way, a more complete spectrum of the foraging cycle, as it is preserved archaeologically, can be observed and studied, allowing us to use this evidence to enhance our interpretations of the past, rather than relying on ethnography. It is only through such an inclusive approach, taking into account the variable cultural landscape, that we shall be able to make archaeology the ethnography of the past (Jerardino 2001), not by studying single-site types alone, or just those that contain a large artefact assemblage. We need to understand what is happening and do so in the spaces between places. It is not only the powerful or important sites, usually determined to be so because of their size and large artefact assemblages, but the smaller, discrete camps that do not fit our ethnographic expectations, which are perhaps seeing aggregation or dispersal camps on the landscape, or automatically viewing certain artefacts as *hxaro* items. Studying these in addition to larger camps will improve our understanding of the forager record in southern Africa, just as on other archaeological landscapes elsewhere in the world.

## CHAPTER 10: CONCLUSIONS

Prior to starting this research there had been little effort to develop a regionally representative forager sequence of the Greater Mapungubwe Landscape. In van Doornum's (2005: 196) study in northernmost South Africa, she acknowledged this shortcoming and suggested that future research should endeavour to study a variety of site types including open-air camps and those possibly within or next to agriculturalist homesteads. This study is the first attempt at rectifying this issue by taking a landscape approach. While there are still gaps in our understanding, forming avenues for future research, the updated chronological sequence of the Greater Mapungubwe Landscape's forager record serves to demonstrate the value of such an expansive approach and its ability to enhance our findings on a regional scale.

### 10.1 THE FORAGER SEQUENCE ON THE GREATER MAPUNGUBWE LANDSCAPE

Much of what can be said about the local forager record now derives from studies performed across two cultural landscapes: Northern Tuli, Botswana and northern South Africa. However, in Northern Tuli there is no site of the equivalent size and antiquity as Balerno Main, the basal deposits of which reach back to c. 11,000 BC. At Dzombo, the earliest dated forager site in Northern Tuli, the basal levels date only to c. 200 BC (OxA-27137), although it cannot be said with certainty how far back this site was initially occupied as bedrock was not reached in the excavations. Needless to say, Northern Tuli was occupied by foragers within at least the last few centuries BC, but they were likely present much earlier elsewhere in the region. It is possible that with future work the dates for both Northern Tuli and the Greater Mapungubwe Landscape will be pushed back further, certainly in the case of the former.

From the first centuries AD, forager activity increased on the Greater Mapungubwe Landscape. Dzombo became a home camp and foragers were occupying it semi-permanently or permanently, drawing on a wide variety of mostly collectable food resources, but they also hunted game and were producing stone tools for their daily tasks. It was during this time that they encountered agriculturalists for the first time who passed through the region but also settled in some areas, albeit probably in low numbers. Evidence of an agriculturalist occupation is inferred from local rain-control sites containing Happy Rest ceramics (Huffman 2008) and the smithing activities occurring at Mafunyane from Bambata facies-bearing levels and above (Walker 1994). Had agriculturalists not settled in the area, no rain-control or smithing sites would date to this period; these two features only exist where agriculturalists lived.

Thus, during this time foragers had regular contact with agriculturalists, meaning that they did not interact sporadically but instead much more often because of the close proximity of their settlements. Hall and Smith (2000) and van Doornum (2005) suggest that this was a time of irregular exchange yet this is only measured in terms of the cultural material that, subsequent to its acquisition or use, was deposited at forager-occupied rockshelters. Other forms of exchange or interaction, such as consumables and social resources, produce no archaeologically traceable result. I am also not convinced that all 'evidence of interaction' was returned to rockshelters when it is possible that foragers were using smaller discrete sites, possibly even in the open, and larger sites at other times, possibly containing different forager artefact expression and material traces of interaction. It was also argued that proximity played a role in the degree of exchange (e.g. Hall & Smith 2000; Sadr 2002a). For example, Little Muck is located within 1.5km of Leokwe Hill and contains a large assemblage indicating trade, such as scrapers, linkshafts, ostrich eggshell beads, ceramic sherds and glass beads, whereas Balerno Main, at least 3km from the nearest homestead, contains comparatively fewer agriculturalist-derived artefacts. Applying the same logic to the Northern Tuli landscape, one could hypothesise that Dzombo, 600m from the Mmamagwa site complex, and Mafunyane, which has no agriculturalist homestead nearby that dates to the rockshelter's initial occupation, would demonstrate this same pattern. On the contrary, the place of Mafunyane is strictly bound to its use as a smithing site, possibly in conjunction with agriculturalists, whereas Dzombo contained comparatively fewer agricultural artefacts. It seems that proximity is not always the main factor dictating the degree of exchange between foragers and farmers, although it did play a role.

I have attempted to abandon an 'Age' system and use J. Alexander's (1984) African frontier model as a framework for the last 2000 years of the forager sequence. For the phase that likely began around AD 350, the onset of contact with agriculturalists, and ended around AD 900, all the features of the first moving frontier are met: a time when cultural change began and foragers may have assisted agriculturalists and received goods in return. Alternatively, foragers engaged in traded with, for example, subsistence products to obtain game meat, hides and ostrich eggshell beads.

The subsequent phases can be likened to J. Alexander's (1984) second moving frontier, AD 900 to 1000, in which the impact of interaction with agriculturalists began to change the forager record. During this time agriculturalists established themselves on the landscape, whereas foragers were left to persist with their economy relatively freely. At some of the excavated sites, excluding Balerno Main (van Doornum 2008) and Little Muck (Hall & Smith 2000), the initial changes in the

forager sequence are a decrease in artefacts, possibly relating to a decrease in their local population or activities on the landscape. It is, I believe, during this time that foragers began integrating into the agricultural economy as labourers, merchants, wives or ritual specialists. However, at this stage such integration does not seem to have been widespread and the impact of their interaction during this phase only altered the forager record but did not cause wholesale changes. For example, at most sites, excluding Dzombo, scrapers dominate the record and ostrich eggshell beads and manufacturing debris reached their peak, suggesting an increase in trade with agriculturalists. The dominance of certain artefacts is much like the change from what Lombard *et al.* (2012) term the final LSA into the first moving frontier, albeit to a greater degree and with the inclusion of Zhizo ceramic sherds and glass beads. As a whole, and as mentioned above, the density of assemblages during this time is lower than in the previous phase and, while this could be the result of a change in depositional processes, these changes were observed at every excavated site in Northern Tuli and at most sites across the Greater Mapungubwe Landscape.

During the second moving frontier phase Dzombo and Mafunyane and possibly João were occupied. It was also at this time that major settlements like Balerno Main and Little Muck display an increase in artefact density, whereas at smaller sites, including Dzombo and Mafunyane, stone tool frequencies decreased. This seems to indicate a shift away from small rockshelters with an increase in activities at larger ones possibly because they were being used more regularly. Forager settlement patterns changed and they now lived at skulk sites and in homesteads. We see this shift in the way foragers used their sites and in their material assemblages during this time. João, for example, was occupied from this period indicated by the Zhizo ceramics and glass beads, suggesting that foragers began living in agricultural homesteads at least from between AD 900 and 1000. In the stone assemblage at Dzombo there was a shift towards backed stone tools, possibly indicating an emphasis on hunting, whereas at all the other sites occupied during this time scrapers were more frequent. At Mafunyane, there is a decrease in artefact densities, but they still remain considerably higher than at other sites in the area and the emphasis on copper smithing remained. There seems to be a clear shift in the way foragers settled on the landscape and used their campsites. Noticeably, they began to use rockshelters variably, with little change observed at larger sites, a decrease in artefact densities in smaller ones, and a shift in utilisation patterns at others like Dzombo and Mafunyane. They also began living temporarily within agricultural homesteads during certain times of their annual cycle, or possibly even permanently.

The second moving frontier was succeeded by the static frontier, AD 1000 to 1300, and it is during this phase that the forager material record ceased in rockshelters. At Balerno Main this

happened around AD 1300, whereas elsewhere this may have been earlier (van Doornum 2005: 195). At Dzombo the beginning of this phase is marked by a steep increase in artefacts followed by an almost complete drop off in Spit VII, well into the static frontier, at which point ceramic frequencies peak. Either this indicates that the rockshelter was used by agriculturalists at the end of this phase, something suggested for Little Muck and recorded at Balerno Main and Tshisiku although for much later, or it demonstrates the gradual replacement of one technology with another; the agricultural economy at the expense of the foraging. The persistence of stone tools at the site into this phase suggests that the economic shift did not happen rapidly, nor was it entirely thorough.

It is not surprising that foragers adopted the agriculturalist economic complex. During this phase, agriculturalists firmly established themselves in the valley, using up space for livestock and cultivation, and driving political and social developments that resulted in the establishment of Mapungubwe. The limiting of space, restricting of mobility and destruction of the forager resource base, as well as political and possibly also social pressure, probably forced foragers to take up a farming lifestyle; they could not subsist by hunting and gathering any longer. It may be that this is what João represents, which was occupied between at least AD 1000 and 1220, or possibly until AD 1300; a shift from the forager economy to one more reliant on agricultural practices including living in a homestead for at least part of the year and possibly for those reasons mentioned. Some foragers may have been able to maintain their hunting and gathering lifeways in the spaces that remained, while others may have abandoned the landscape altogether looking for 'free' space.

The relationship between foragers and agriculturalists during this time is unlike any other cultural landscape in Africa and possibly in most parts of the world. Foragers on the Greater Mapungubwe Landscape were involved in state formation (Voigt 1981). The question is what role foragers played during this time? At all forager occupation sites, except for Balerno Main (van Doornum 2008), there is a decreasing density of artefacts dated to between AD 1000 and 1300. Thus, the continuity of the material record at Balerno Main, a site said to be at least 3km from the nearest agriculturalist homestead and the largest excavated rockshelter, and the gradual disappearance of the forager record at other sites, demonstrates additional shifts in the forager settlement pattern. Foragers now moved between sites near to agriculturalists, engaging with the farming economy, and larger rockshelters which are in relative isolation. Viewing this in terms of reliance and avoidance may be more appropriate; foragers used agriculturalists when they needed to, and when not they returned to a foraging lifestyle. Their role in the establishment of the

Mapungubwe state was likely as ritual specialists possibly at rain-control sites (Schoeman 2006b) or Mafunyane, as labourers working as herders or assisting with cultivation and hunting (Voigt 1981), and also perhaps as traders or porters. There is no evidence yet of them controlling wealth or possessing political power, but it is unlikely that they drove social and political change in the region. Instead, they operated within the farming economy and were probably restricted by the controlling elite in terms of their mobility and possibly their practices while living with agriculturalists, such as not relying on hunting and gathering for subsistence. By the conclusion of the static frontier around AD 1300, when the Mapungubwe capital was abandoned, the forager culture as it is typically recognised – in rockshelters with a stone and bone tool technology, an emphasis on hunting and gathering, and the production of ostrich eggshell, bone and land snail jewellery – ceased.

The disappearance of the forager material record does not, however, mean the end of foragers as a cultural group or identity. During the final phase, the consolidating frontier, AD 1300 until European contact, the major changes that foragers instituted had now completely altered their material record. At this stage, most of the foragers adopted the agricultural economy, possibly including their language and beliefs, but may still have held onto features of their now mostly abandoned economy. Identifying these discrete signatures in an otherwise agricultural assemblage has been poorly achieved thus far on the Greater Mapungubwe Landscape. The only excavated homesteads containing forager stone tools that have previously been reported display a weak association with one another (see Huffman 2009b; Forssman 2010). João and Kambaku are thus the first sites where the association between the forager and agriculturalist occupations have been convincingly associated with one another. At Kambaku, the radiocarbon date obtained here indicates an occupation from at least the late-fifteenth to mid-seventeenth centuries, indicating that foragers persisted on the landscape after the abandonment of the Mapungubwe capital, a hypothesis first put forward by van Doornum (2005: 182), and that at least some lived in agricultural homesteads. While this is only observed at one site, it might help explain the disappearance of the forager record in rockshelters; foragers adopted a farming economy. Further evidence is required to bolster these finds yet, coupled with historic reports of foragers living in permanent settlements (Elton 1872; Dornan 1917) and the anecdotal accounts mentioned in Chapter 3, the possibility of there being other sites like Kambaku certainly exists.

Can we consider stone tool assemblages found in homesteads as the same as other and previous 'LSA' assemblages? I believe not and propose that we alter our categorisation of these assemblages to either homestead stone assemblages, casting aside the 'Age' tag, or, if otherwise

preferred, homestead LSA, following Lombard *et al.*'s (2012) categorisation. In both cases, the notion of sedentism is upheld, along with an agricultural economy as farmers are traditionally viewed as living in homesteads. In such cases, the term forager is inappropriate and I feel that we should only use it to refer to people who were previously 'hunter-gatherers'. However, during this time it is entirely likely that some foraging people maintained their traditional values and practices and continued living by hunting and gathering and would fall under the ceramic final LSA, if they exchanged with agriculturalists, or final LSA in which no interaction with agriculturalists occurred. The latter is probably not the case on the Greater Mapungubwe Landscape considering the large local agricultural population and their widespread settlement.

Whereas previously, the apparent disappearance of foragers in the material record was inferred from a lack of data, here it has been shown that they did in fact persist with their lifestyle well after the establishment of the Mapungubwe state before assimilating with farming people. Identifying this in the archaeological record, amongst other finds made in this project, was possible because of the methodological approach that was used in this study, namely landscape archaeology. The theoretical outlook and methods of this approach helped establish a revised sequence for the Greater Mapungubwe Landscape, taking into consideration a diversity of site types and not only those that contained large artefact assemblages with a diversity of forms.

## **10.2 LANDSCAPE ARCHAEOLOGY AND ETHNOGRAPHY ON THE GREATER MAPUNGUBWE LANDSCAPE**

The merits of landscape archaeology have been discussed at length elsewhere and these views have been presented in Chapter 4. The value of using a landscape approach, too, has been addressed and it has been shown that this method aids in better representing past cultural landscapes. By using such an approach, a greater spectrum of sites has been studied, making it possible to observe more of the foraging cycle. While large sites, such as the rockshelters archaeologists tend to favour (cf. Mitchell *et al.* 2011), provide great insights into the foraging world and should not be cast aside, other site types should be used in conjunction to better our archaeological resolution and interpretation. By doing so, it is possible to comment on the various forager cultural expressions spread over a landscape and use archaeological data to understand their cultural sequence, avoiding an over-reliance on the ethnographic record.

Using a landscape approach in this study has allowed me to observe the cultural patterning of the Northern Tuli landscape. For example, almost all of the identified agricultural homesteads are situated near to floodplains and river networks. A concentration of sites was also identified near

Mmamagwa probably to be near to this agriculturalist centre but possibly also because it is in an area characterised by widespread floodplains and a natural vleis, both of which could be cultivated. Thus, future archaeological surveys in the area which aim to identify agriculturalist sites should focus in these areas or challenge this finding. An additional pattern noted for Northern Tuli, is the low density of Bushman rock art when compared to northern South Africa, something that might be linked to forager settlement patterns or the boundary effect of the Limpopo River. Lastly, a high density of forager remains was identified in the northern portion of the survey zone, in the basalt area, but it could not be ascertained whether this was due to activity in the area or geomorphological processes such as deflation, creating the appearance that more sites are present in the area. Nevertheless, there is a considerable forager archaeological record present in all parts of the survey zone and, as Shawu suggests when compared to the other excavations, the different zones were likely used for different purposes. Additional excavations and refined dating of surface finds will better our resolution and allow for more solid conclusions.

Looking once again at the forager record, employing a landscape study has clearly demonstrated the varied nature of their site types. Previously, van Doornum (2005) interpreted the forager sequence as adhering to a five phased model, the changes mostly being due to the impact of agriculturalists. By excavating site types that exist outside those that are traditionally excavated, namely large rockshelters with a variety and great density of artefacts, I have shown that this model fails at accounting for all of the forager expressions on the landscape. Parts of van Doornum's (2005) model, however, do seem to persist. For example, there is a sudden increase in artefact densities at Dzombo in Spit XVIII, which appears to be similar to the peak of forager activity recorded at Balerno Main (van Doornum 2005) and Little Muck (Hall & Smith 2000), dating to around AD 350. At all the sites there is also a gradual decline of forager artefact densities from AD 900 and an eventual disappearance by AD 1300. However, certain intra-phase variations do not fit van Doornum's (2005) model, among them is the predominance of backed tools around AD 900 to 1000 at Dzombo during a period in which scrapers dominate at all of the other excavated sites. Furthermore, the large bead assemblage at João, and its spatial relationship to the external homestead, is unlike any of the other sites excavated in the region. At Mafunyane, the massive copper assemblage and related artefacts found in a hearth deposit indicate that smithing was occurring at the site, suggesting that foragers partook in this activity. Lastly, Kambaku dates to after AD 1300 and is not accounted for at all in van Doornum's (2005) model since no forager assemblage with such a late date has been found by her or others in a rockshelter. Her model certainly has its merits with regard to rockshelter excavations, particularly

those similar in context, but it cannot account for regional variability across the Greater Mapungubwe Landscape, something that is clearly a pronounced characteristic of the local forager sequence.

Importantly, if we want to study and interpret the forager sequence without over-referencing ethnographies, we need to rely on archaeological data. At present, much of our data adheres to what is ethnographically expected, or it is at least interpreted as fitting various ethnographies. The repeated excavation of sites in a similar context, as mentioned above, does not offer us a complete picture of the foraging cycle. To do so, we need to broaden our approach to forager studies and consider smaller, discrete or homestead occupations to aid in developing local sequences. In so doing we are able to challenge ethnography and test whether it is applicable in the study area. I have done so on the Greater Mapungubwe Landscape and it has led me to question whether certain ethnographic features are even present. Notably, I am not convinced that because there are 'large' and 'small' sites we can interpret them as being aggregation or dispersal camps, especially in the absence of geoarchaeological studies. If we are to assume that because a site contains a diversity of artefacts in a high density it is likely to have been an aggregation camp, we then accept all of the ethnographic associations carried by certain artefact types. Whether foragers and ethnographically documented Bushmen, separated by many centuries, placed the same value and meanings on material culture cannot be said, but using ethnography to explain the past assumes this to be the case. Ethnography is also unable to account for cultural diversity, an important feature to consider because both past and present 'hunter-gatherers' are themselves diverse. Drawing on various ethnographies to explain the past creates a false – and falsely homogenised – Bushman group, which I have referred to as 'academic Bushmen', who are unlikely to represent reality. Furthermore, the impact that interaction had on the forager culture is immense and resulted in a number of outcomes including integration, avoidance, subordination and assimilation. Using post-agriculturalist contact Bushmen to interpret the archaeological remains of those who lived before any interaction began negates the cultural altering effects of meeting and engaging with agriculturalists, and then changing the forager economy to suit this relationship. By this I am not suggesting that we completely separate archaeology and ethnography and view them as two separate datasets, but that we at least temper our use of ethnography. We should rely more on archaeological data to understand the past than on modern ethnographies (e.g. Barham 1992).

I have argued that landscape archaeology offers a way forward in southern African LSA or forager record. It enables us to challenge ethnographic information and test its applicability in

interpreting the past. It also demonstrates the varied nature of a cultural landscape; foragers used their landscape in different ways, some of which are regionally confined, and sites contain different expressions of the forager record. To understand the past effectively, we need to understand the various forager expressions that are spread across the landscape. Such a method of considering site distributions and site types displays cultural boundaries and has the ability to overcome them; in this case, the Limpopo River is an example. Moving across national borders is seldom done in archaeological studies, but should be instituted where possible since these boundaries were not present in the past. For example, other locations in which national boundaries affect archaeology are the Richtersveld in South Africa with southern Namibia (Orton 2012), the Maloti Mountains between South Africa and Lesotho (Mitchell 1996b; Hobart 2003), the Thulamela landscape, which includes South Africa, Mozambique and Zimbabwe (S. Miller 1997), and the Zambezi River separating the Wilton and Nachikufan industries (Muianga 2013). Landscape approaches would add value to studies in such borderlands.

In summary, instituting a landscape study on the Greater Mapungubwe Landscape has helped refine the local chronology, improve our understanding of the last 2000 years, demonstrate a way forward for forager research which considers the challenges of ethnography and archaeological representation, and it combines the archaeological record of multiple landscapes. Using this approach has also opened up additional avenues for future research.

### **10.3 SUGGESTIONS FOR FUTURE RESEARCH**

With any study, by its end, there are a number of questions that have been raised. Attempting to study a landscape and develop regional patterns, if they indeed exist, is difficult to achieve in a single project. Even so, with new data there invariably will be additional questions. With this in mind, I should like to suggest possible future research that might better improve the resolution of our understanding of the Greater Mapungubwe Landscape's forager record.

Dzombo could be revisited as it may have a lengthier occupation than was recorded given that the excavations ceased before reaching bedrock. The site may yield critical information in studying the sudden increase in artefacts around 1220 BC and whether foragers moved into the area about 4000 BC, as Walker (1995a) found in the Matopos and van Doornum (2005) suggested as being the case in northern South Africa.

Studying the local rock art may be able to tell us whether the foragers' cosmology changed due to interaction, provided that relevant dates for it can be obtained (see Bonneau *et al.* 2012). Considering the near-absence of rock art sites in Northern Tuli, a stylistic and content study

between this and South African art would be useful in studying whether the Limpopo River was a cultural boundary or interface. In addition, I was told by the Tuli manager, Francois du Toit, that over the past few years the rock art in Mafunyane has noticeably faded and nearly disappeared and some sites have been partially destroyed by graffiti; if this is indeed the case, the surviving rock art needs to be recorded before it disappears altogether.

A greater spectrum of sites should be excavated, particularly in South Africa, along with additional field surveys. We need to study sites that do *not* fulfil our ethnographic expectations such as open-air camps, ephemeral sites and homestead occupations. Furthermore, future research should focus on identifying additional post-AD 1300 sites to better record the changes that occurred after the abandonment of Mapungubwe, addressing how long foragers persisted on the landscape and what their cultural repertoire was at this time. Did they, for example, continue making stone tools into more recent times or did they abandon their economy altogether at some stage? In so doing we might be able to understand the motivation behind abandoning rockshelters in the first place and understand exactly how foragers changed to suit the agricultural economy, which parts of their culture they maintained and which they abandoned.

Both van Doornum (2005: 196) and I (Forssman 2010) have identified dating as a matter of priority. In this project, I had several dating issues, particularly to do with later assemblages such as at Dzombo and Mafunyane, and I was unable to date Shawu. There are many other sites across the entire Greater Mapungubwe Landscape that are discrete, ephemeral or unlikely candidates for research that should be addressed and, if possible, dated as they have the potential of offering valuable information to do with changes in the forager record and in their settlement patterns. ABOX pre-treatment should also be used to reduce the impact of contamination and Bayesian models should be applied.

There are two distinctive stone tool assemblages on the landscape: one dominated by CCS and the other by quartz. Reasons behind these differences have been suggested, yet insufficient data were collected to be able to draw firm conclusions. My work in South Africa has not been dated (Forssman 2010), whereas the basal assemblages at Little Muck (Hall & Smith 2000) and Schoeman's (2006a) rain-control sites are associated with dates of pre-AD 150 and AD 1000 to 1220 respectively. It may be that foragers were producing different assemblages for either environmental or human reasons, but these assemblages at Schoeman's (2006a) rain-control sites could also have been produced by agriculturalists, since many of these lack distinctive markers. I see an interesting avenue for research in this direction.

Van Doornum (2005: 197) also suggested, as I do here, that we need to investigate the presence of herders on the landscape. Even though there have been a number of surveys in the area, including Huffman's (e.g. 2012), my previous work and the work presented here, no definitive herder presence has yet been identified. If indeed the local finger-paintings were authored by herders (see Eastwood & Smith 2005), one would at least expect to find some material evidence of their presence if they had settled for any substantial period in the region, but at present we do not know what this would look like. Likewise, the herder signature in the Western Cape has been long debated (A. Smith 1992a, 1992b; Sadr 2008a; Sadr & Gribble 2010) and yet defining it remains problematic (Fauvelle-Aymar *et al.* 2006). The same might be the case on the Greater Mapungubwe Landscape and it might thus be difficult to distinguish forager and herder artefact assemblages from one another. Pursuing this topic will help in our understanding of the introduction of domesticated stock, the rate at which this occurred, whether it was a distinctive culture when compared to foragers, and possibly the authorship of the art.

Linked to the herding issue, as well as interactions with farmers, is the subsistence base of these three groups; this is a major distinguishing feature between the three cultural groups and its absence in this study has created a gap in our knowledge. While here very few domesticates were found and no botanical study was undertaken, future studies should seek to better understand the differences between forager, herder and farmer subsistence bases from their archaeological representation.

I also feel that determining what exactly happened to local foragers would be better achieved through a genetic study on local Venda and Bobirwa people who may have intermarried with them (cf. Mitchell 2010b). For example, Soodyall (1993) found that amongst Xhosa speaking people as many as 25%, and amongst the Zulu 50% of mitochondrial DNA (mtDNA) lineages derive from Khoisan people. While this might indicate that intermarriage practices existed, it will only offer one possible outcome as some may still have persisted as foragers or abandoned the local landscape to relocate elsewhere. It would, however, demonstrate that a forager identity is still present on the landscape, albeit in the form of individuals of mixed descent. Of further interest would be to also look at whether local people incorporated Bushman cultural practices into their own system.

Lastly, the archaeological record in Zimbabwe has not been included. The impact that the Shashe and Limpopo Rivers had in separating Zimbabwe from Botswana and South Africa is unknown. A comparative study should be conducted in south-western Zimbabwe with urgency in order to better represent all three of the modern political landscapes that make up Mapungubwe's

archaeological landscape. There has been some, although very limited, work in the area (e.g. Cooke 1959; Cooke & Lake 1969), but the nearest comparable work that has been conducted is in the Matopos, where Walker (1983, 1995a) studied the local forager occupation. However, this is some 300km north of the Greater Mapungubwe Landscape in an environment that is very different and without the impact of major political agriculturalist centres. Understanding how foragers on the Zimbabwe portion of the Greater Mapungubwe Landscape reacted to interactions with agriculturalists will shed further light on the complex network of interactions occurring in the area. Furthermore, I expect that if foragers were abandoning the landscape, they would have moved to 'free' space and the Matopos may have been, amongst other places, an ideal location to occupy. Expanding on surveys and excavations performed in Botswana and South Africa should also be pursued.

As when I started this project, the landscape loomed before me with a myriad of research possibilities hidden in its sands, in the shade of the koppies or on rock walls, so now too there are a number of exciting possibilities that may yet be resolved through refined scientific studies in the area. If we are able to address some of these issues raised, the answers may influence studies elsewhere in southern Africa, as I hope some of my own findings and assessments are able to, and improve further on our understanding of southern African LSA archaeology.

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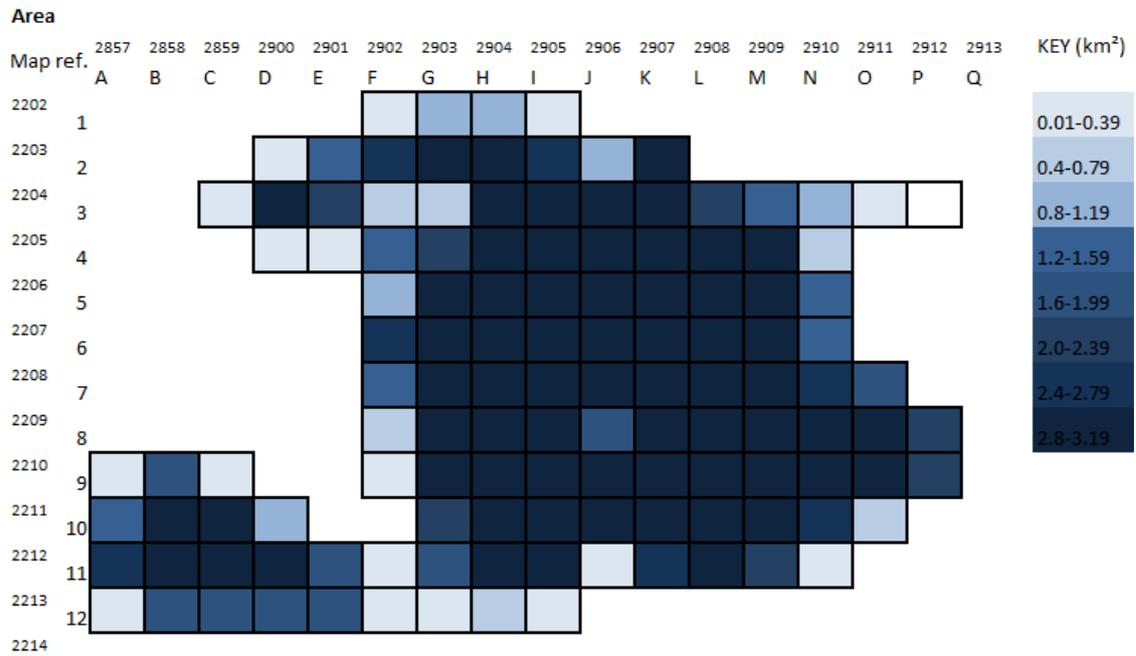
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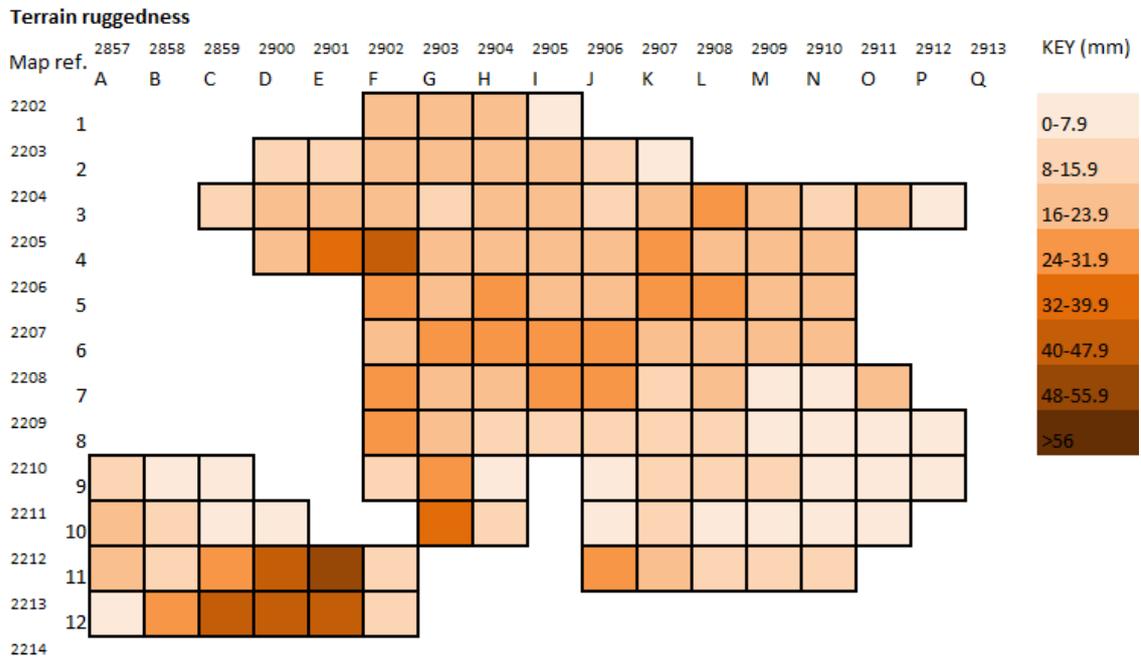
Peace Parks Foundation 2012. <http://www.peaceparks.org/tfca.php?pid=19&mid=1005>

# CATALOGUE A

## 1 SURVEY



Catalogue A.1.1: Graphic representation: area within each minute square in the survey zone.



Catalogue A.1.2: Graphic representation: survey square's terrain ruggedness.

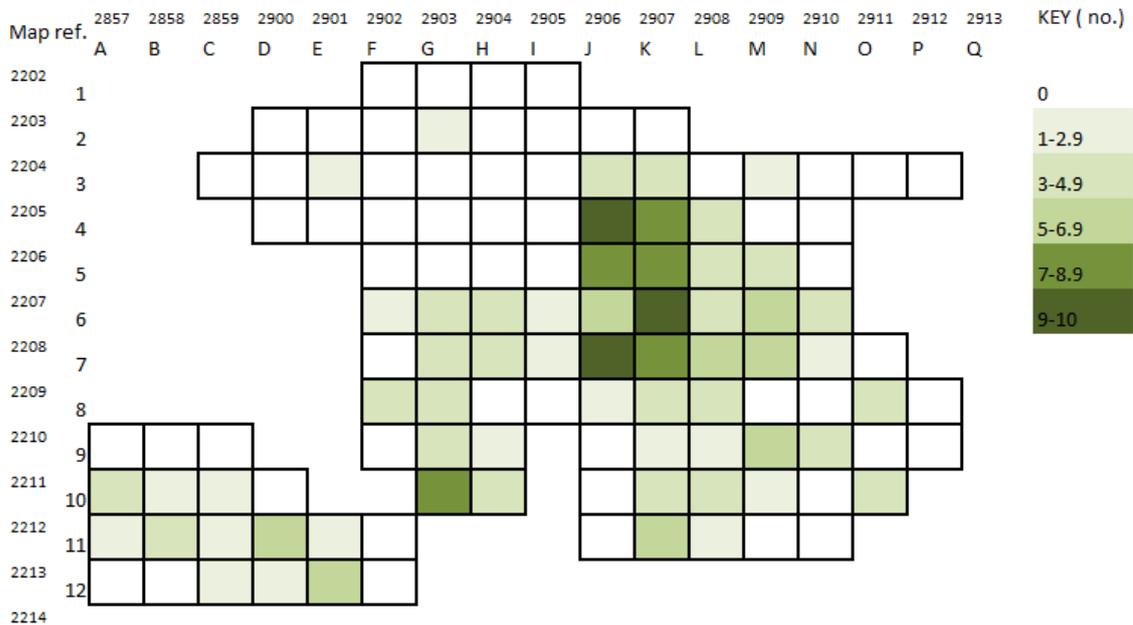
**Catalogue A.1.3: Geology and soil description from Table 5.1.**

Geology		
	A	B
Rock features	Upper Karoo, siliclastic rocks, sandstone and siltstone	Upper Karoo flood basalt (extrusive volcanic rock), sedimentary interbeds
Type	Sedimentary	Igneous
Period	Triassic-Jurassic	Jurassic
Rock	Siliclastic rocks	Basalt (extrusive volcanic rock)

Soil type					
	C	D	E	F	G
Title	Eutric leptosols	Eutric-arenic regosols	Haplic luvisols	Calcari-fluvic cambisols	Calcaris cambisols
Soils	Lpe	Rge	LVh	CMC	CMC
Lithology	IB2	Sc2	Sc3	UF	SC
Litho D	Basalt	Sandstone, greywacke, arkose	Siltstone, mudstone, claystone	Fluvial	Conglomerate breccia
Depth	Shallow to moderately shallow	Shallow to moderately shallow	Moderate	Very deep	Very deep
Description	Fine loamy soils	Fine loamy to clayey soils	Clayey soils	Coarse loamy soils	Coarse loamy soils
Landscape	Well drained	Moderately well drained	Moderately well drained	Well drained	Well drained
Colour	Reddish brown to dark brown	Brown to very pale brown	Dark red to strong brown	Brown	Brown
Landform	Plain	Medium gradient escarpment	Plain	Valley floor	Valley floor

**Known and possible sites**



**Catalogue A.1.4: Graphic representation: survey square's possible sites.**

**Catalogue A.1.5: Raw material outcrop record sheet.**

<b>Date</b>	<b>Latitude:</b>	<b>Longitude:</b>	<b>Altitude:</b>
<b>Material</b>	CCS Agate Quartz Quartzite Dolerite Other:		
<b>Notes</b>			

**Catalogue A.1.6: Simple site recording sheet.**

Date:	Latitude:
Site no.:	Longitude:
Site name:	Altitude:
<b>SITE</b>	
Substrate ( ) Soil depth ( ) Erosion ( ) Location ( )	
Habitat type ( ) Natural features ( )	
Animal activity ( ) Human activity ( )	
<b>NOTES</b>	

**Catalogue A.1.7: Detailed recording sheet.**

Date:	Latitude:
Site no.:	Longitude:
Site name:	Altitude:

**SITE** **SIZE**

Substrate ( ) Soil depth ( ) Erosion ( ) Location ( )  
Habitat type ( ) Natural features ( )  
Animal activity ( ) Human activity ( )

**RAW MATERIAL**

CCS ( ) Quartz ( ) Quartzite ( ) Dolerite ( )  
Other:

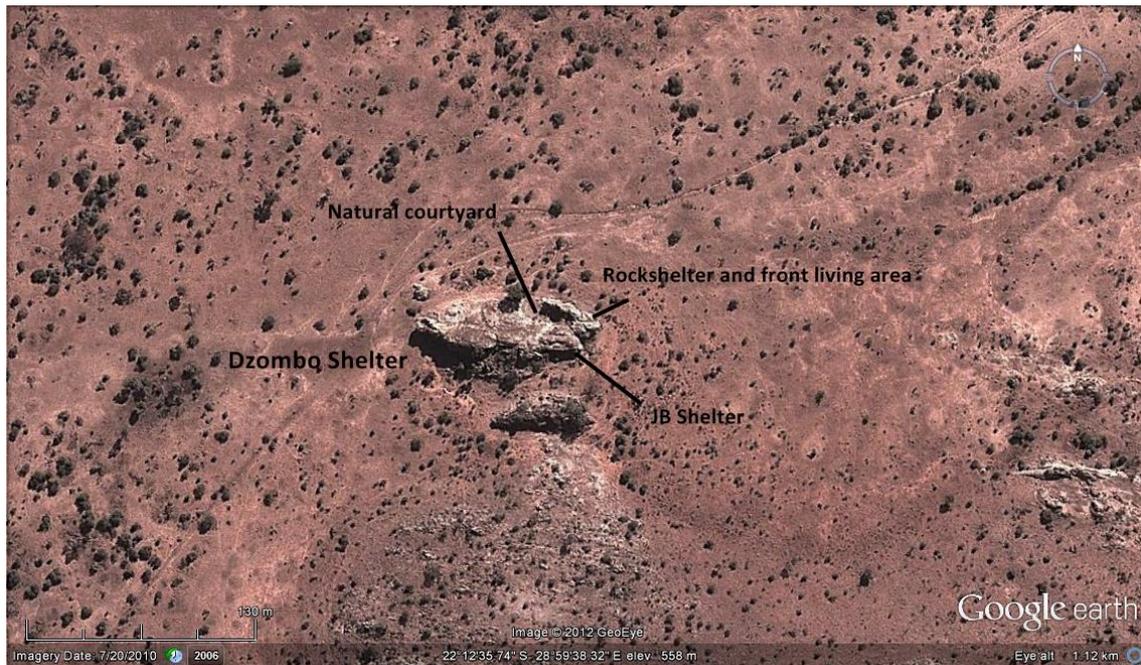
**ARTEFACTS**

ESA ( ) MSA ( ) LSA ( ) Plain ceramics ( )  
Rim ( ) Decoration ( ) Rim/dec ( ) Kraal ( )  
Midden ( ) GBF ( ) UGS ( ) LGS ( ) Walls ( )  
Burial ( ) Organic beads ( ) Glass beads ( ) Metal beads ( )  
Bone ( ) Charcoal ( ) Seeds ( ) Shell ( ) Wood ( ) Ochre ( )  
Roofspall ( ) Bullet ( )  
EU farm items ( ) Wall ( ) Other:

**Catalogue A.1.8: Variables and conditions used to record and describe archaeological features interest.**

Substrate	0 no data 1 consolidated red/brown 2 unconsolidated red/brown 3 red/brown 4 pan clay 5 lake clay 6 alluvial soils 7 no soil 8 talus 9 little	Habitat type	0 no data 1 shrub woodland 2 open woodland 3 open shrub woodland 4 dense woodland 5 dense shrub woodland 6 mixed woodland 7 woodland on disturbed land 8 abandoned cropping lands 9 water pan 10 riverine bush 11 sandstone hills
Soil depth	0 no data 1 < 5 cm 2 5 - 20 cm 3 20 - 50 cm 4 50 - 100 cm 5 > 100 cm	Natural features	0 no data 1 undulating 2 punctuated kopjes 3 valleys 4 hills 5 visible water 6 dunes 7 mound 8 flats 9 plateau edge 10 hill ridge
Erosion	0 no data 1 extensive erosion 2 considerable erosion 3 slight erosion 4 stable 5 no erosion 6 depositional	Animal activity	0 no data 1 small animal burrowing 2 large animal burrowing 3 trampling and burrowing 4 large/small burrows 5 trampling 6 none 7 little
Location	0 no data 1 river side/bed 2 pan side 3 lake side 4 flats 5 valley 6 koppie 7 koppie top 8 hill 9 hilltop 10 boulder 11 thicket 12 tree 13 rock outcrop 14 shelter 15 between koppies 16 escarpment edge 17 drainage area	Human activity	0 no data 1 farming settlement 2 herder settlement 3 European settlement 4 kraal - modern 5 road 6 none 7 stone circle 8 hearth 9 burial 10 kraal - Iron Age 11 little

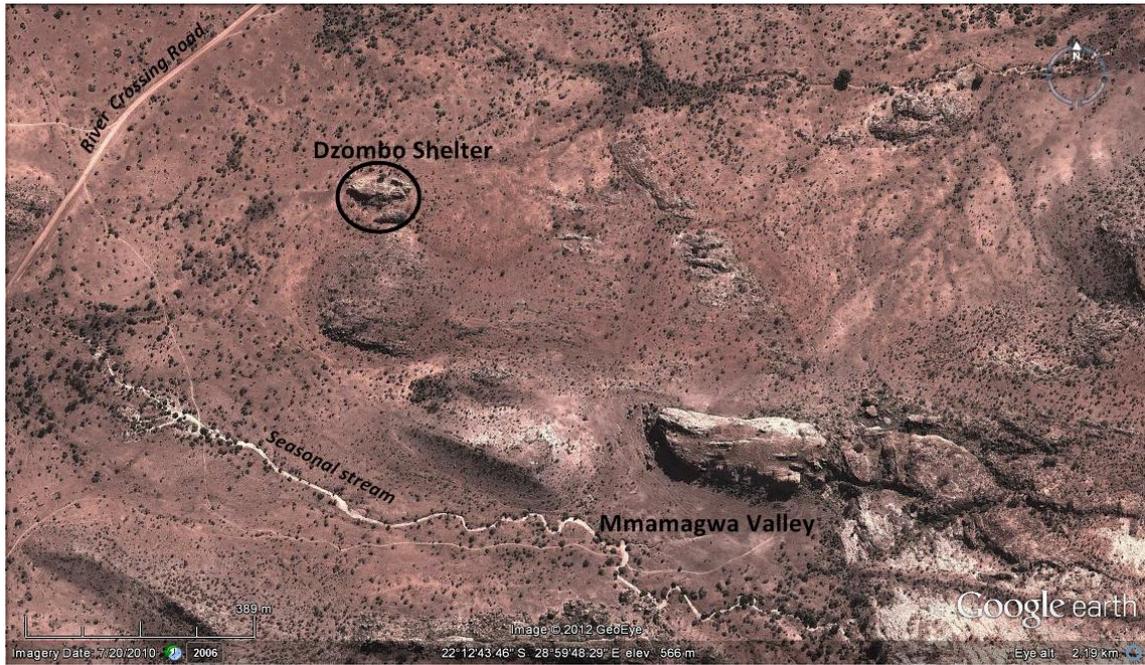
## 2 DZOMBO SHELTER



Catalogue A.2.1: Dzombo Shelter from above. Note the two living areas, front and back, and the location of JB Shelter behind Dzombo Shelter.



Catalogue A.2.2: Images from Dzombo Shelter. *Top left*, looking south towards Dzombo Shelter with the front outside living area in the foreground; *top right*, inside the rockshelter – the rocks in the centre foreground are the approximate location of Trench 1 (after backfilling); and *bottom left*, view west through the rockshelter – trench one is at the bottom left and in the top right corner is the opening to the back outside living area.



**Catalogue A.2.3: Mmamagwa Valley and palace are about 600m southeast of Dzombo Shelter.**



**Catalogue A.2.4: JB Shelter situated on the southern side of the Dzombo Shelter koppie. The ceiling contains at least two so-called Khoekhoen herder aprons but others seem to have faded almost entirely.**



Catalogue A.2.5: A grooved stone found outside the rockshelter but on the upper terrace.



Catalogue A.2.6: The grinding stone from within Dzombo Shelter.

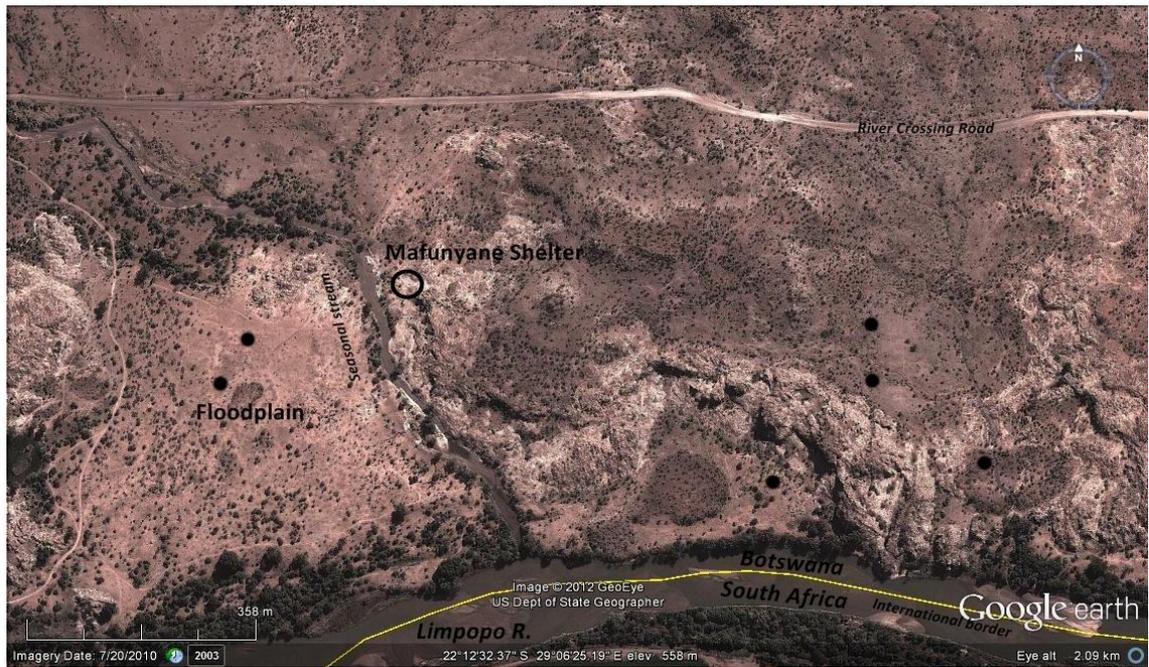


**Catalogue A.2.7: Rock walling inside Dzombo Shelter.**



**Catalogue A.2.8: Large boulder at the base of Trench 1 may have represented bedrock but seems likely to be from roof collapses.**

### 3 MAFUNYANE SHELTER



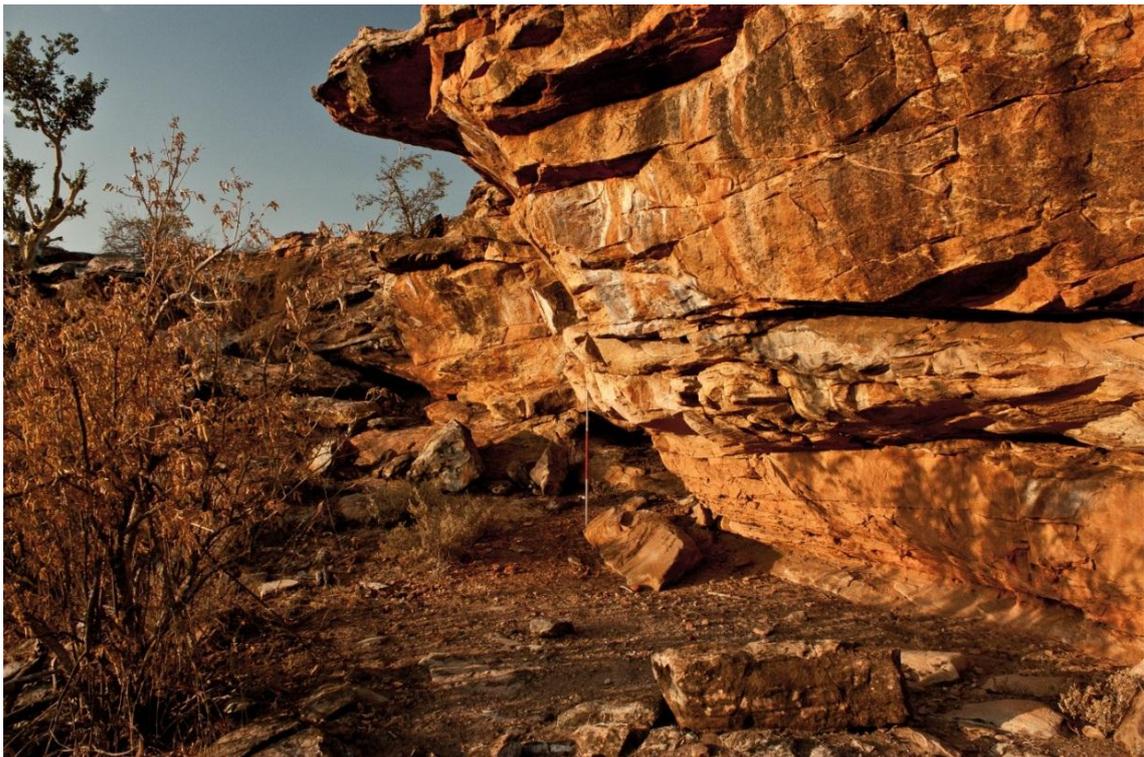
**Catalogue A.3.1: Mafunyane Shelter and the Limpopo River. Black dots indicated agriculturalist sites.**



**Catalogue A.3.2: Rock art (*left*) and grooves (*right*) in Mafunyane Shelter.**



**Catalogue A.3.3: The floodplain west of Mafunyane Shelter. Black dots indicated homesteads.**



**Catalogue A.3.4: Mafunyane Shelter, looking east, has only a slight overhang and small living space.**



Catalogue A.3.5: Trench 3, Square C, bedrock in Mafunyane Shelter.

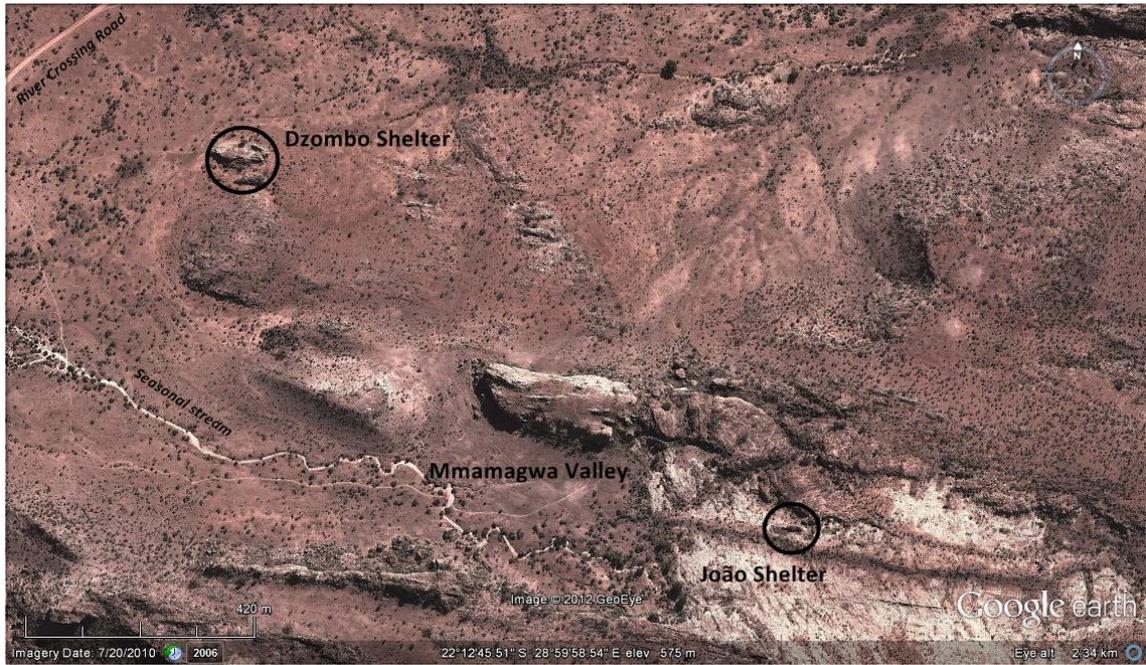
#### 4 JOÃO SHELTER



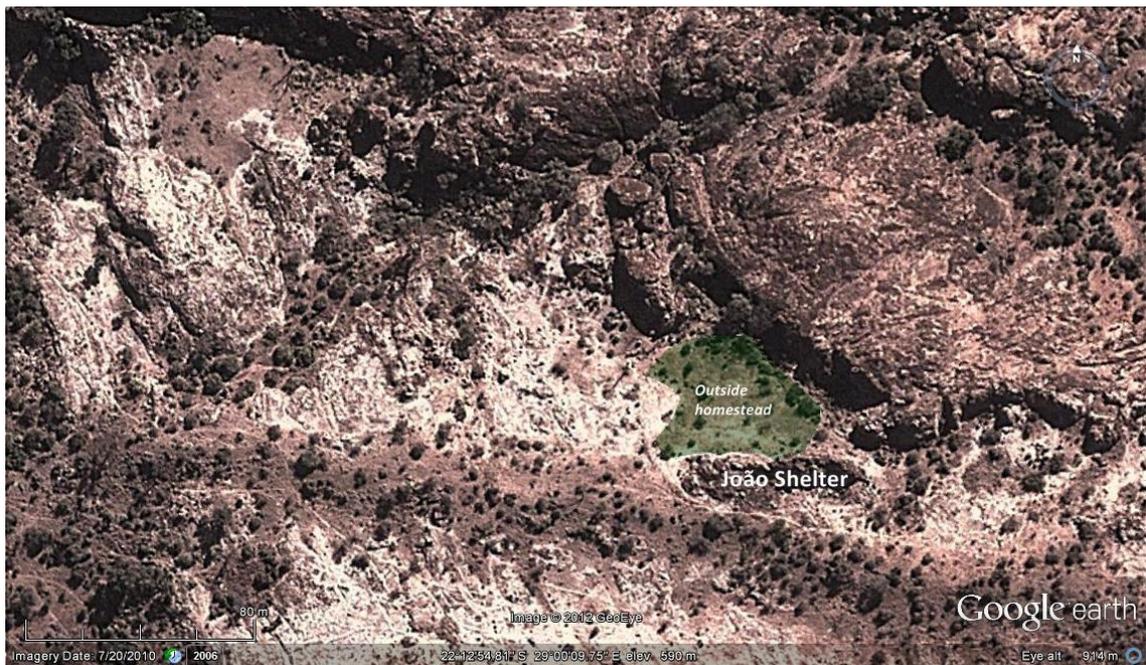
Catalogue A.4.1: Looking west over João Shelter. The rockshelter is to the left with the grey kraal outside and walling situated along the rockshelter's koppie near to its end as well as inside the rockshelter.



**Catalogue A.4.2: Looking east from within João Shelter over Trench 1.**



Catalogue A.4.3: João Shelter in relation to Mmamagwa Valley and Dzombo Shelter.



Catalogue A.4.4: João Shelter and the outside homestead.



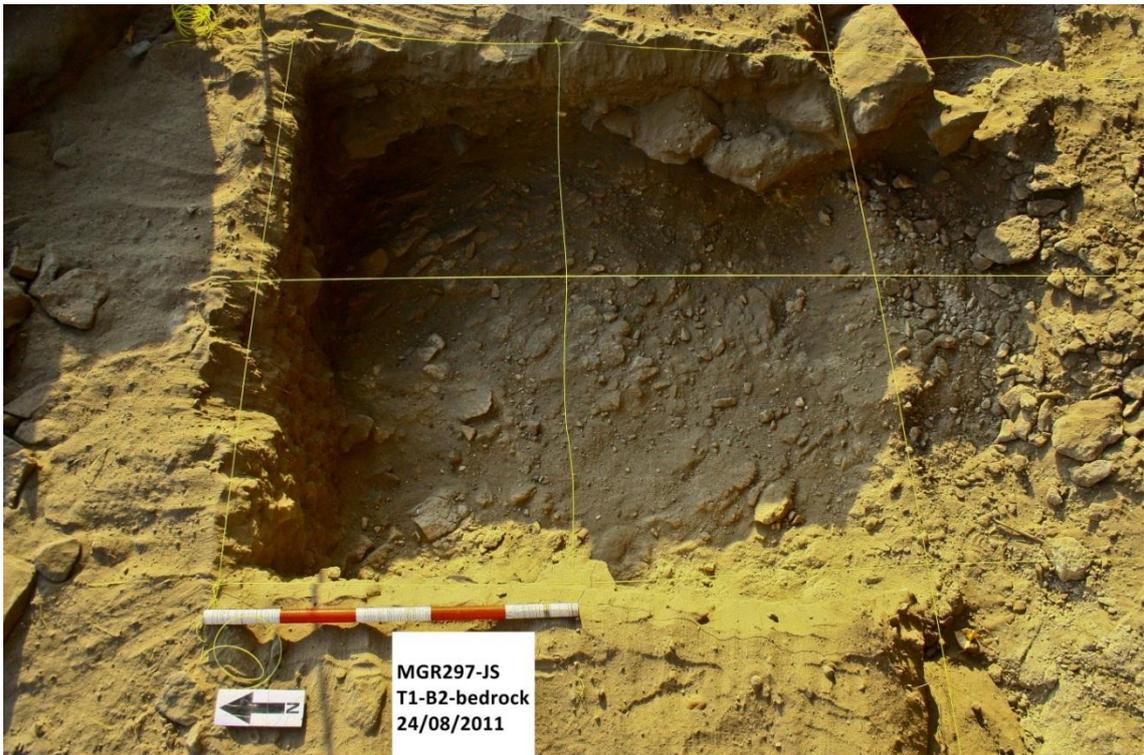
**Catalogue A.4.5: The rock art from João Shelter is heavily eroded.**



**Appendix A.4.6: An image enhanced using DStretch shows possibly four additional antelope images.**



**Catalogue A.4.7: One of the two possible human burials at João Shelter.**



**Catalogue A.4.8: Trench 1, Square B2, bedrock.**



Catalogue A.4.9: Trench 2, Square B, bedrock.

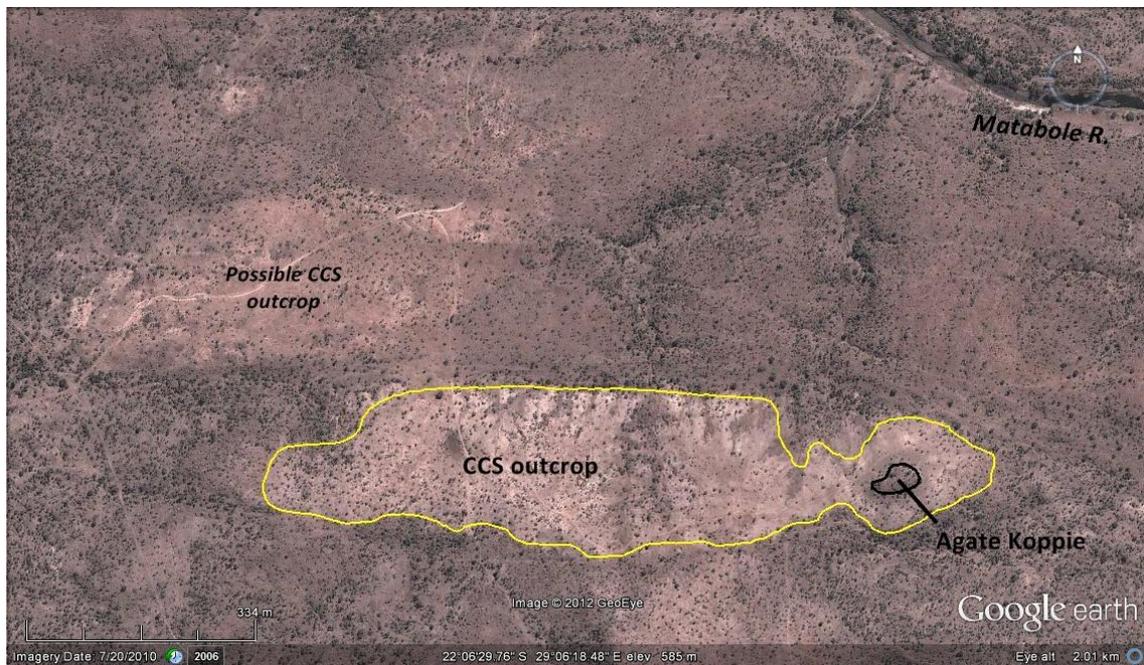


Catalogue A.4.10: Trench 4, Square C, bedrock.

## 5 SHAWU CAMP



Catalogue A.5.1: The hilltop has limited space and little protection from the elements.



Catalogue A.5.2: Agate Koppie from above. Note the general liver-shape of the hill.

## 6 KAMBAKU CAMP



**Catalogue A.6.1: Kambaku Camp has two components in close proximity to one another, which seem to be associated.**



**Catalogue A.6.2: Looking west over Kambaku Camp with the rockshelter to the left.**



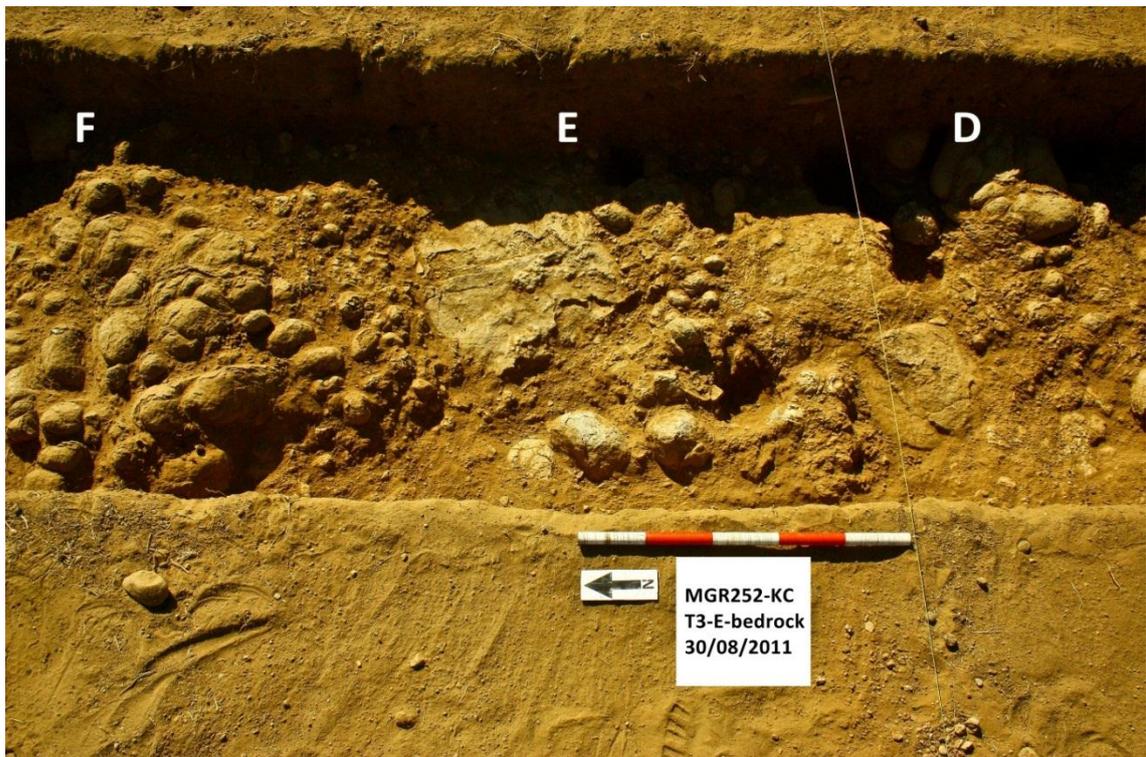
**Catalogue A.6.3: A closer view of the rockshelter and walling within it. The possible burial is on the extreme right-centre of the image but only a portion of it can be seen.**



**Catalogue A.6.4: Looking north over the upper kraal. Note the natural wall in the image (dark dolerite rock).**



Catalogue A.6.5: Trench 1, Square A, bedrock: inside the rockshelter.

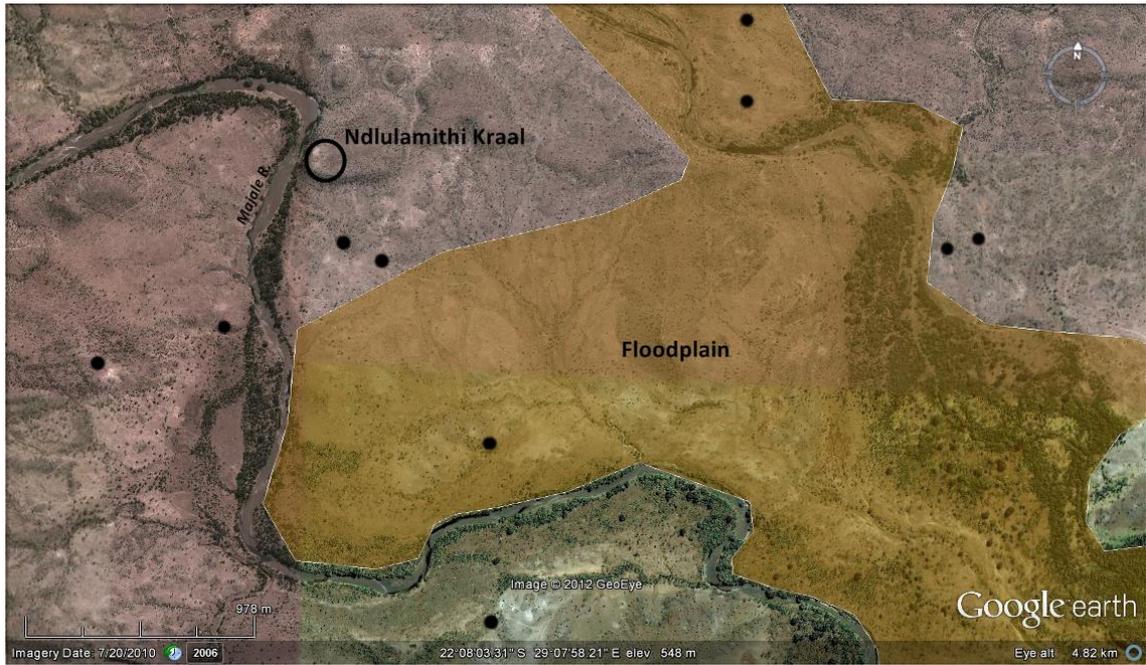


Catalogue A.6.6: Trench 3, Square E (and partials of Squares D & F), bedrock.

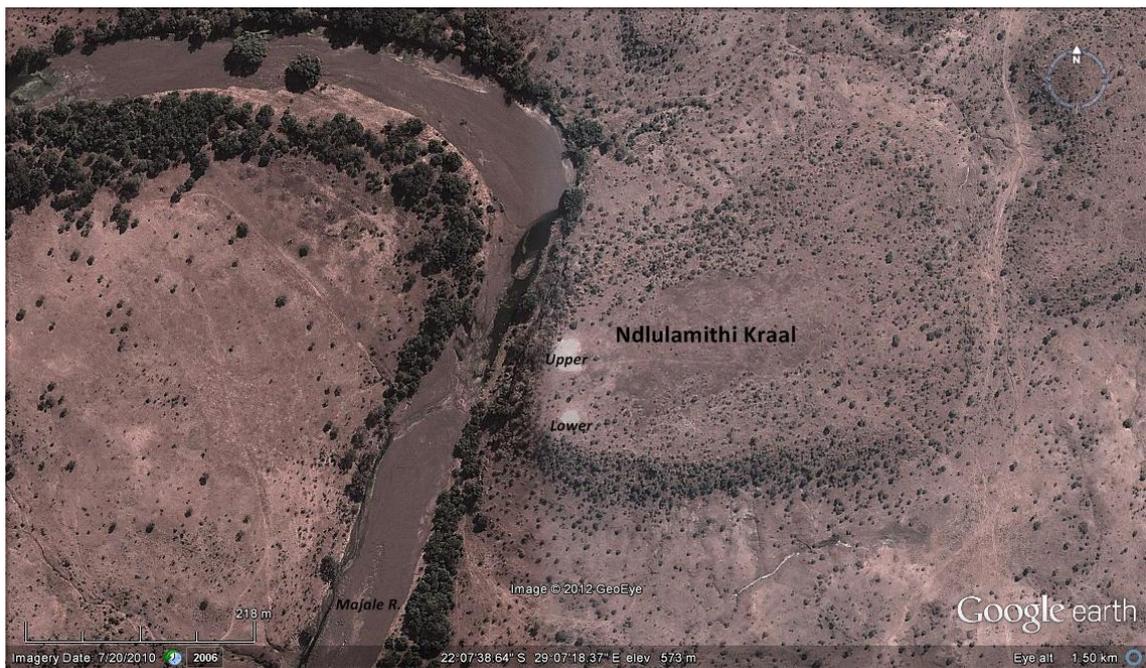
## 7 NDLULAMITHI KRAAL



**Catalogue A.7.2: Looking east over the Majale River at the koppie on top of which Ndlulamithi Kraal is situated.**



**Catalogue A.7.1: Ndlulamithi Kraal is near to extensive floodplains and other homesteads (indicated by black dots).**



**Catalogue A.7.3: Ndlulamithi has two kraals: an upper, which was excavated, and a lower. Ceramics on the surface seem to indicate the two were occupied during the same period and so may be associated.**



**Catalogue A.7.4: Trench 15, Square R, bedrock.**

**8 SHINGWEDZI SHEPHERD TREE**



**Catalogue A.8.1: Shingwedzi Shepherd Tree looking west over the site.**

## CATALOGUE B

### 1 RAW MATERIAL DEFINITIONS

#### QUARTZ

This is the most common stone material in southern Africa and is flaked by MSA and LSA stone tool producers (Orton 2012: 111). Quartz can be found in the form of nodules or within other rocks and comes in a variety of colours, of which only clear and milky quartz (see Nesse 2000) are found in archaeological assemblages. There is a degree of unpredictability during flaking because of the presence of crystals in the rock (Orton 2012: 112). In the study area, quartz is available mostly in the form of nodules at rock exposures found at a number of locations but concentrated in the northern parts of Northern Tuli.

#### QUARTZITE

Quartzite is common on the Greater Mapungubwe Landscape and often used as lower and upper grinding stones, planes or as hammerstones. It is a fairly coarse-grained sedimentary rock, composed of sand grains that have become interlocked due to recrystallisation making it a particularly hard rock (McCarthy & Rubidge 2005: 323).

#### CRYPTO-CRYSTALLINE (CCS) MATERIALS

This term is used to cover a variety of different fine-grained siliceous rocks, notably chert and chalcedony. Differentiating the different CCS materials is not always possible in hand specimens, where cross-sections are needed, yet they share similar features (Nesse 2000) but some scholars contest whether or not all types are CCS (e.g. Whittaker 1994; Rapp & Hill 1998). CCS materials vary in colour and composition due to formation processes and the contexts of this formation (Andrefsky 1998). On the Greater Mapungubwe Landscape they can be found in the form of nodules which can come from beds within other rocks (see Whittaker 1994) or rock outcrops. They can also be collected from alluvial deposition beds. Sometimes, however, CCS materials have a rind that is heavily patinated (Whittaker 1994) and it must be removed if the piece is going to be worked.

#### AGATE

Agate's are CCS materials and very fine-grained quartz, usually with concentric colour banding (McCarthy & Rubidge 2005: 318), caused by various impurities (van Doornum 2005: 201). They might also display dendritic inclusions (Rapp & Hill 1998).

## DOLERITE

Dolerite is considered a medium-grain igneous rock consisting of plagioclase (calcium, aluminium, and silicate) and pyroxene (calcium, magnesium and iron silicate) and is found in dykes or sills (McCarthy & Rubidge 2005: 320). On the Greater Mapungubwe Landscape there are a number of such geological features (Hanisch 1981a) with some being identified in the survey zone for this project.

### **2 STONE TOOL TYPOLOGY: CATEGORIES AND DEFINITIONS** (Deacon 1984a; Walker 1994; van Doornum 2005; Forssman 2010)

The stone tool typology used was based on van Doornum's (2005). She constructed hers based on Deacon (1984a) and Walker (1994). I also used this typology in my previous research in the area (Forssman 2010). By using the same typology comparisons between assemblages can be made easily. Presented below is the typological sequence.

<b>Category</b>	<b>Description</b>
<b>Waste</b>	No evidence of utilisation or damage even though they may have been used
Chips	These are pieces less than 10mm in maximum size. Some may be broken but others are the product of tool or core preparation. No secondary working is evident on a chip
Chunks	Angular nuclei with relatively few flake scars. Some could be shattered or worked out cores or flakes but are not recognisable as such. Others are lumps collected for core manufacture and do not contain diagnostic fractures
Cores	Material from which at least three flakes have been removed. They are divided into subtypes (not included here)
Bipolar core	Usually ends in a point with a broad striking platform. They might also be oval in shape with two striking platforms
Blade or bladelet core	A core from which blades or bladelets were removed. It can be in different forms such as a bipolar or radial blade or bladelet core

Double platform core	Two striking platforms that are not opposite from one another
Irregular core	Cores with multiple flake scars in no regular pattern
Opposed platform core	Two striking platforms opposite from one another
Rice seed core	A long and narrow bipolar core that has been reduced in size and resembles a rice seed. It is also referred to as a rice grain (e.g. Orton 2004) but I use van Doornum's (2005) terminology here
Single platform core	A core with a single striking platform from which blades or bladelets are not the primary flake type (see blade or bladelet core)
Unmodified pieces	Materials such as manuports and pebbles that show no signs of working
Crystal	Unmodified beyond the removal of up to two flakes. Commonly from quartz. They are used as hammers, chisels or drills sometimes
Flake pieces	Removed from cores, blocks or chunks and show characteristics such as bulbs or percussion etc. Here they are separated into two categories: a) blade flakes and b) wide flakes
Pigment	Colouring matter
<b>Formal artefacts</b>	Tools that have been retouched to form a standardised shape
Backed tools	More accurately backed blade tools. The length is at least twice the width of the stone tools. The arc is steeply retouched or blunted. The chord is usually unmodified but may have irregular utilisation damage and rarely shaping along the whole edge. These are thought to have mainly been used as arrow inserts or tips. It is possible that some were also used as either knives or needles. All but the largest would have been hafted

Geometrics (Walker 1994); Segments (Deacon 1984a)	More commonly these are called segments or crescents. The steep retouch or blunting of the arc meets the chord on both ends. Sometimes the arc is angular or unretouched in the centre
Tranchéts	Rarely the length of the chord of a segment is less than the width producing a very steeply retouched arc
Quadrants (Walker 1994); Segmented backed bladelets (Deacon 1984a)	Also called curved backed knives or backed flakes, this is when the arc is only partially blunted and one end retains the unmodified striking platform
Backed points	There is at least straight backing on one side to produce a point. Most have high length/breadth ratios but some are short triangular, quadrangular or pentangular tools
Miscellaneous retouched piece (MRP)	MRPs have part backing along the mid-length of the arc. Others may be pieces discarded during a reduction process or simply unfinished tools. Others may not have required additional working or are broken
Double backed pieces	Segment-like tools with retouch on both the cord and arc
Borers	These artefacts have backing down both sides and one or both ends were sharpened into points. Many of these tools were subsequently blunted by use as drills. They were probably mounted onto handles
Scrapers	Scrapers have on edge of fairly acute retouch (35° to 75°), which may be stepped from use. They were used for working hides (Deacon & Deacon 1980), sticks and bone (Binneman 1982; Deacon 1984a). They are variable in shape and some have multiple working edges from being turned and retouched, thumbnail-shaped or long slivers. The variability in shape has no functional basis or temporal significance. Tools were separated into small (up to 20mm), medium (20mm to 30mm) and large (more than 30mm)

Convex scraper (Walker 1994)	A scraper with a convex working edge
Concave scraper (Walker 1994); spokeshave (Deacon 1984a)	Here, a steep concavity has been produced. These are thought to be spokeshaves or woodworking tools
Backed scraper	The side opposite the working edge has been blunted in a neat curve. These are also called biconvex or double crescents
Miscellaneous scraper	In these scraper forms the working edge has been denticulated and is irregular or straight

### Other tools

Triangular point	Most of these are MSA but smaller examples (<25mm) may be LSA. They have invasive retouch
Adze	They have stepped or invasive retouch along a working edge, are biclinal in profile and may have damage. These were used in woodwork
Chopper	Flakes have been removed from two faces but along one edge. They are similar to radial cores
Plane	Large thick flakes or cores showing steep step flaking along one edge. They are thick and invariably large than 50mm
Battered piece	These pieces show invasive retouch along both faces of one or more edges and were used as chisels or wedges for splitting wood and bone (Binneman 1982). Some could be worked blade cores. They are referred to as <i>outil écailles</i>
Piercer	A flat piece with concave retouch at one end to produce a point
Rubbing stone	Rounded pebbles often with striations or smoothing along a face
Abrasive	Course flat stone showing striations along one face ; whetstone

Grooved stone	Grooves ground into a rock to shape beads and bone tools
Pestle	A cylindrical hammerstone
Hammerstone	A pebble or core with pitting from hammering

### 3 CERAMIC TYPOLOGY (Huffman 2007)

Tom Huffman has developed a well dated ceramic sequence for the Greater Mapungubwe Landscape. His numerous publications have addressed, amongst other features, stylistic patterns and placement, and in so doing he has been able to establish a ceramic typology for the area (see Huffman 2007). Presented below are those ceramic types that are mentioned in the text. For more information refer to the page referenced in Huffman (2007) where greater detail can be found along with additional references and examples of the ceramic facies. Also refer to Calabrese (2000) for a detailed explanation of the various stylistic patterns and vessel shapes; these have not been included here as a full ceramic analysis to such an extent is not undertaken.

<b>Facies</b>	<b>Tradition</b>	<b>Branch</b>	<b>Date (AD)</b>	<b>Key features</b>	<b>Page</b>
Bambata	Kalundu	Benfica sub-branch	A: 150 - 650; B: 350 - 650	Fine decoration, long rims with multiple bands and cross hatching, alternate patterns of stamped and incised lines in the neck	213-216
Diamant	Kalundu	Happy Rest sub-branch	750 - 1000	Tapered rims, broadly incised herringbone designs	223-226
Eiland	Kalundu	Happy Rest sub-branch	1000 - 1300	Fine herringbone combined with ladder design	227-229
Gokomere	Urewé	Nkope	550 - 750	Multiple neck bands, oblique stamping on a thickened rim	139-142

Happy Rest	Kalundu	Happy Rest sub-branch	500 - 750	Thick rim, multiple bands of mixed decoration technique, ladder stamping, herringbone-like designs	219-222
Icon	Urewe	Moloko	1300 -1500	Multiple incised bands that are separated by colour, lip decoration on bowls, punctuates may occur	183-186
K2	Kalundu	Happy Rest sub-branch	1000 - 1200	Hatched bands in the neck and on beaker bottoms, upright incised triangles in the neck	279-281
Khami	Kalundu	Happy Rest sub-branch	1400 - 1820	Black and red designs, tall neck and broad shoulders of constricted vessels	258-262
Leokwe	Urewe	Nkope	1050 - 1220	Wide band on the lower rim, horizontal stamping in the neck, wide band on the shoulder	147-150
Mapungubwe	Kalundu	Happy Rest sub-branch	1250-1300	Dark burnish on bowls, cross hatched triangles on the shoulder, upturned triangles	284-287
TK2	Kalundu	Happy Rest sub-branch	1200-1250	Upright triangles in lower neck and upper shoulder, alternating triangles on beaker shoulders	279 & 282-283
Toutswe	Urewe	Nkope	1050 - 1300	Narrow band in the neck, upright triangles	151-153
Thatwane	Urewe	Nkope	1000-1050	Poorly understood branch when Zhizo became Toutswe	150 & 319

Venda (Letaba)	Kalundu	Happy Rest sub- branch	1600-1840	Hatched bands on the shoulder, black and red triangles below the rim	267-269
Zhizo	Urewe	Nkope	750 - 1050	Stamped and incised bands on the lower portion of the rim, single line of stamping along the shoulder	143-146

#### **4 GLASS BEAD TYPOLOGY** (Wood 2000, 2005)

Like Huffman's (2007) ceramic typology, Wood (2000, 2005) has developed one for glass beads on the Greater Mapungubwe Landscape. Beads are often found in abundance at agriculturalist homesteads and centres and also in forager contexts. They can be used like ceramics to obtain a bracket date due to their well dated sequence. All of the information presented below are from Wood (2000, 2005); refer to her work for greater detail and examples of the beads.

##### Temporal markers

European beads only reached southern Africa in the sixteenth century when explorers and traders arrived. Their appearance in the site means there is a post-date associated with the occupation or they are intrusive. Four bead types are easily recognised:

##### Opaque Indian red-on-green (occasionally red) cores

Sometimes the green glass of this bead looks almost black or clear. They are often called green hearts and were made in Venice and other EU centre between c. 1600 and 1836. They are replaced by white hearts that are very common in southern Africa and are made with a red-on-white core.

##### Blue faceted hexagonal beads

The number of facets in these beads may vary. They were popular between 1820 and 1900 and made in Bohemia. They appear in southern Africa early in the 1800s and were in use until AD 1910 in some areas.

##### Single-wound annular (ring) beads

These beads have large perforations and are sometimes called Dutch or Dogon doughnuts. Most were made in Germany in the nineteenth century. The earliest types – either greyish blue or

amber – are pre-1850. A colourless variety appears in around 1860 and cobalt blue or green ones were produced towards the end of the century. They arrived in southern Africa from the early 1880s and were used into the 1900s.

White, pink or white striped beads

These are small to medium sized drawn beads. These can be difficult to place. White beads with a clear white coat were made in Vienna between AD 1580 and 1890 but uncoated white were made later. Uniform beads begin from 1867.

Zhizo period beads:

Zhizo beads are characterised by ends that have not been reheated. They have been incorrectly called snapped canes. Canes, however, do not have perforations. More accurately they are tubes or cylinders. They are also cut or chopped into shape (Catalogue B.4.1).

Most frequently they are a transparent to translucent blue, ranging from soft (not pale) to deep in colour. They are less purple than cobalt blues found in later series. At first they may appear opaque but this is not the case. Yellow is the next most common colour and ranges from translucent to translucent-opaque. The yellow is more orange than green on the colour spectrum and it is often dull or dirty but is more an indication of the glasses condition rather than original colour.

Both blue-green and green beads are also found in the Zhizo series. Green appears in limited numbers but blue-green may be far more frequent. They are both in the translucent range.

Key characteristics:

- Glass may appear striated caused by rows of bubbles, parallel to the perforation that have risen to the surface
- They are fairly large
- The glass is less stable and often heavily patinated. They have a different chemical structure to other K2 and Mapungubwe beads



**Catalogue B.4.1: Examples of Zhizo period beads (Wood 2005).**

#### K2 glass beads

K2 beads appear in the mid-AD 900s (Catalogue B.4.2). They are characterised by small (2-3.5mm in diameter and 1.2-4mm long) reheated transparent to translucent drawn tubes and cylinders in a range of colours from blue-green to greenish-blue. There are even a few green examples. They vary in shape (because cut and reheated by hand) and include tubes, cylinders and occasional oblates (which are fortuitous and not intentional). Easiest to recognise are transparent turquoise tubes. The glass is often clear and shiny. K2 beads in blue-green and greenish-blue are often translucent and duller and more frequently cylindrical. They are seldom patinated possibly because of high aluminium, which slows weathering and resists devitrification of glass (Bray 2001).

These beads are mostly found at K2, some at Schroda and Pont Drift slightly pre-dating K2 and also at Skutwater. In Botswana a few at Mmamagwa and Bosutswe but many from the small commoner site of Kgaswe B55 – here they were found in a pot, some 2600, under a hut floor. Brownish red was the most common followed by black and then K2 blue-green. The three calibrated dates fall between AD 1000 and 1260. Black oblates are part of the Mapungubwe period and so this site must date to somewhere in that period when K2 beads were circulating but not being imported and the Mapungubwe coloured oblates had not yet appeared. Zimbabwe

also has a number of sites in possession of K2 beads. The beads may have been imported slightly beyond the end of the twelfth century.



**Catalogue B.4.2: K2 series beads (Wood 2005).**

#### *Garden rollers*

These beads are made in clay moulds and then the mould is broken to release the bead (Catalogue B.4.3). They are made locally by melting down glass. Gardner found a mould with blue glass adhering to it and one unbroken mould (Gardener 1963). They are large, usually translucent to opaque even though the glass may be good, and they have many inclusions.

#### Indo-Pacific beads

These beads were produced on the Indian sub-continent and possibly Sri Lanka and several other areas of Southeast Asia. They are slightly larger than K2 beads and are reheated and cut or chopped producing cylinders, tubes and fortuitous oblates. The quality of glass is poor and so they often have inclusions and bubbles. Brownish-red glass is always opaque; blue-green, green, yellow and light orange are translucent to opaque-translucent. Opaque black beads may be included but are difficult to distinguish between the Mapungubwe oblates.

These beads appear first when K2 series arrive. The yellow and green first, brownish-red next, black following but rare and finally blue-green beads, some of which may be K2 series but are impossible to discriminate by eye.

Indo-Pacific beads are the most abundant beads beginning in the second century BC until the seventeenth century AD (Francis 2002; Catalogue B.4.4). They are found in sites post-dating the Zhizo occupation.

## Mapungubwe oblates

The Mapungubwe oblate series (Catalogue B.4.5) is characterised by small to minute, drawn oblate beads that are highly uniform. Opaque black is the most common colour. Other colours range from translucent to opaque-translucent and include blue-green light green, yellow and orange. Two other types include translucent-transparent cobalt blue and a purplish to brownish colour referred to commonly as plum. Oblates are characteristic but all colours appear in cylinder and tubular forms which are always reheated.

The glass used to make the beads is of good quality without large bubbles. Generally they are not prone to corrosion. Some black beads devitrify into a golden type colour. By scraping the crust off the black is revealed if devitrification has not gone too far.



**Catalogue B.4.3: Examples of garden rollers from van Riet Lowe's collection: A, C-E, complete and B and F broken (Wood 2005).**



**Catalogue B.4.4: Khami period Indo-Pacific beads (Wood 2005).**



**Catalogue B.4.5: Mapungubwe oblates from a hilltop burial (Wood 2005).**

CATALOGUE C

1 SURVEY

Catalogue C.1.1: All identified archaeological points of interest: TH, Tom Huffman; GH, Grant Hall and EE, Ed Eastwood refers to sites first identified by them but revisited during this survey.

Site no.	TH survey	GH survey	EE survey	Y	X	Altitude	Length	Width	Soil	Soil depth	Erosion	Location	Habitat type	Natural features	Animal activity	Human activity			Material source
MGR1				-22.135	29.101	617			2	2	3	9	1	10	5	6			
MGR2				-22.134	29.100	618			2	1	3	9	1	10	6	6			
MGR3				-22.133	29.099	619			2	2	3	9	1	10	6	6			
MGR4				-22.134	29.098	619			2	2	3	9	1	10	5	6			
MGR5				-22.136	29.097	620			2	2	3	9	1	10	5	6			
MGR6				-22.136	29.096	623			2	3	5	9	9	10	5	6			
MGR7				-22.138	29.100	607			9	1	3	8	1	10	5	6			X
MGR8				-22.138	29.100	606			9	1	2	8	1	10	5	6			X
MGR9				-22.139	29.097	593			3	2	3	8	1	10	5	6			X
MGR10				-22.136	29.100	623			6	3	2	1	1	1	6	6			
MGR11				-22.148	29.098	591			2	2	2	4	1	1	6	5			
MGR12				-22.148	29.098	588			2	2	5	4	1	1	6	6			
MGR13				-22.147	29.097	595			9	1	2	8	1	1	6	6			
MGR14				-22.145	29.095	591			2	3	5	4	1	1	6	6			X
MGR15				-22.142	29.090	613			2	2	5	8	1	1	6	6			X
MGR16				-22.135	29.086	620			9	1	3	9	1	10	6	6			
MGR17				-22.134	29.084	610			9	1	3	9	1	1	5	6			

MGR18				-22.137	29.105	594			2	2	2	8	1	10	6	6			X
MGR19				-22.140	29.104	585			3	2	5	8	1	1	5	6			
MGR20				-22.140	29.103	589			9	1	2	1	1	1	5	6			
MGR21				-22.140	29.102	586			2	2	5	4	1	1	5	6			
MGR22				-22.140	29.101	584			2	2	5	4	1	1	5	6			
MGR23				-22.141	29.100	582			3	2	3	4	1	1	6	6			
MGR24				-22.143	29.100	582	12	12	3	2	5	4	1	1	5	6			
MGR25				-22.145	29.101	577			3	2	2	1	1	1	5	6			
MGR26				-22.148	29.102	576			6	3	5	4	1	1	3	6			
MGR27				-22.149	29.105	573			6	3	2	17	1	1	5	6			
MGR28				-22.149	29.102	576			2	3	3	17	1	1	5	6			
MGR29				-22.148	29.107	568			2	3	3	17	1	1	5	6			
MGR30				-22.148	29.107	569	6	5	2	3	3	17	1	1	5	6			
MGR31				-22.148	29.115	571			2	2	2	9	3	10	5	6			
MGR32				-22.147	29.115	563			6	3	2	4	3	1	3	6	5		
MGR33				-22.146	29.116				2	3	3	4	3	1	6	6			
MGR34				-22.146	29.115	567			2	3	3	4	3	1	3	6			
MGR35				-22.145	29.115	562			2	3	3	4	3	1	6	6			
MGR36				-22.145	29.115	570			2	3	3	4	3	1	3	6	5		
MGR37				-22.145	29.115	568	50	25	2	3	3	4	3	1	5	6	5		
MGR38				-22.145	29.113	574			2	3	3	4	3	1	5	6			
MGR39				-22.136	29.113	582	20	35	2	4	3	8	1	10	3	6			
MGR40				-22.137	29.111	583			9	1	2	8	1	10	5	6			X
MGR41				-22.135	29.115	577	25	20	9	1	2	8	1	10	6	6			X
MGR42				-22.135	29.111	583			2	1	5	8	1	10	5	6			
MGR43				-22.134	29.113	589			9	1	3	8	1	10	5	6			
MGR44				-22.135	29.112	595			2	2	3	8	1	10	5	6			
MGR45				-22.135	29.109	606			2	2	3	12	1	10	6	6			

MGR46				-22.135	29.109	597			2	2	3	8	1	10	5	6			
MGR47				-22.134	29.107	612			2	2	3	8	1	10	5	6			
MGR48				-22.136	29.105	615			2	2	3	8	1	10	5	6			
MGR49				-22.126	29.104	573	100	80	2	3	3	4	1	1	5	6	5		
MGR50				-22.128	29.106	576	14	10	2	2	2	17	1	1	5	6			
MGR51				-22.127	29.106	569	12	8	2	2	2	17	1	1	5	6			
MGR52				-22.127	29.107	574	6	6	2	2	5	4	1	1	5	5			
MGR53				-22.126	29.108	573	9	9	2	2	3	4	1	1	5	6			
MGR54				-22.127	29.108	568	25	20	2	2	3	4	1	1	5	5			
MGR55				-22.127	29.108	566	60	45	2	2	3	4	1	1	5	6			
MGR56				-22.126	29.109	572	35	27	2	3	3	4	1	1	3	6			
MGR57				-22.127	29.110	575	14	14	2	1	3	4	1	1	5	6			
MGR58				-22.125	29.112	572	40	40	2	3	3	1	1	1	5	6			
MGR59				-22.125	29.112	564	100	30	2	3	3	4	1	1	3	6	5	11	
MGR60				-22.124	29.114	563	18	16	2	2	3	4	1	1	5	6			
MGR61				-22.124	29.114	563	60	50	2	3	3	4	1	1	3	11			
MGR62				-22.124	29.115	551	25	20	2	2	3	4	1	1	3	5			
MGR63				-22.127	29.117	571	>200	>200	2	3	3	1	2	1	5	11			
MGR64				-22.128	29.116	565	30	25	2	2	3	1	2	1	5	6			X
MGR65				-22.131	29.115	572	200	120	2	3	3	4	2	1	5	6			
MGR66				-22.129	29.114	586	100	40	9	1	2	8	1	1	5	6			
MGR67				-22.129	29.113	590	150	40	9	1	2	8	1	1	5	6			
MGR68				-22.129	29.112	591	150	40	9	1	2	8	1	1	5	6			
MGR69				-22.130	29.110	573	80	50	9	1	2	8	1	1	5	6			
MGR70				-22.132	29.106	598	12	10	2	2	3	8	1	10	5	6			
MGR71				-22.131	29.105	599			2	1	5	8	1	10	5	6			
MGR72				-22.130	29.101	595			2	2	5	8	1	10	5	6			
MGR73				-22.127	29.101	579	100	100	9	1	2	1	1	1	5	5			

MGR74				-22.127	29.102	578			2	2	3	4	1	1	5	6			
MGR75				-22.126	29.102	578			2	2	2	17	1	1	5	6			
MGR76				-22.125	29.102	578			2	3	3	4	1	1	6	5			
MGR77				-22.123	29.103	580			2	2	3	4	1	1	5	6			X
MGR78				-22.123	29.103	579	6	4	2	2	3	4	1	1	5	6			X
MGR79				-22.121	29.104	584			2	2	2	13	1	1	5	6			
MGR80				-22.120	29.104	580	50	8	2	1	5	13	1	1	3	6			
MGR81				-22.120	29.103	591			2	2	5	4	1	1	5	6			X
MGR82				-22.119	29.104	582	4	3	2	2	5	4	1	1	5	6			X
MGR83				-22.120	29.107	583			2	3	3	4	1	1	5	6			
MGR84				-22.121	29.106	596			2	1	5	4	1	1	5	6			X
MGR85				-22.121	29.109	578			2	3	2	4	1	1	5	6			X
MGR86				-22.124	29.107	579			2	1	2	4	1	1	5	6			X
MGR87				-22.125	29.106	576			2	1	2	17	1	1	5	6			X
MGR88				-22.126	29.105	582			2	3	5	4	1	1	5	5			
MGR89				-22.124	29.113	567	8	6	2	2	2	17	1	1	5	6			
MGR90				-22.123	29.113	569			2	2	2	1	1	1	5	6			
MGR91				-22.122	29.114	574	120	80	2	1	3	13	1	1	5	6			X
MGR92				-22.120	29.112	573			2	1	2	4	1	1	5	6			
MGR93				-22.121	29.112	570	40	30	2	1	3	4	1	1	5	6			X
MGR94				-22.122	29.112	574	200	150	2	3	5	4	1	1	3	6			X
MGR95				-22.124	29.110	569	25	20	2	1	2	17	1	1	5	6			X
MGR96				-22.111	29.101														X
MGR97				-22.110	29.101		200	100											X
MGR98				-22.112	29.103	592			2	2	5	4	5	1	5	6			
MGR99				-22.112	29.103	590													X
MGR100				-22.112	29.106	609	200	150											X
MGR101				-22.110	29.109	601	200	150											X

MGR102				-22.110	29.110	604	10	8	9	1	3	6	1	1	6	5			
MGR103				-22.109	29.110	614	6	5	2	1	3	4	1	1	5	6			
MGR104				-22.109	29.112	596	7	5	2	1	5	4	1	1	5	6			
MGR105				-22.109	29.113	596			2	2	5	4	1	1	5	5			
MGR106				-22.107	29.115	594			2	3	2	4	1	1	5	6			
MGR107				-22.106	29.114	577													
MGR108				-22.103	29.114	578	10	9	2	2	5	4	1	1	5	5			
MGR109				-22.102	29.113	598	12	10	2	1	3	6	5	1	5	6			X
MGR110				-22.106	29.117	579													X
MGR111				-22.107	29.117	584													X
MGR112				-22.111	29.101	582	25	20											X
MGR113				-22.111	29.116	579			2	1	2	4	5	1	5	6			
MGR114				-22.112	29.116	584	30	20	2	2	3	13	5	1	5	6			X
MGR115				-22.114	29.115	592													X
MGR116				-22.115	29.110	586													X
MGR117				-22.114	29.110	590													X
MGR118				-22.113	29.108	595													X
MGR119				-22.111	29.116	590													X
MGR120				-22.107	29.103	605													X
MGR121				-22.104	29.104	592													X
MGR122				-22.095	29.109	603	100	40											X
MGR123				-22.095	29.110	613	180	40											X
MGR124				-22.094	29.112	610	200	200											X
MGR125				-22.092	29.113	605	300	300											X
MGR126				-22.091	29.114	605			2	1	2	1	5	1	5	6			X
MGR127				-22.090	29.114	605	80	50											X
MGR128				-22.091	29.115	604													X
MGR129				-22.092	29.115	583													X

MGR130				-22.095	29.117	596	100	60											X
MGR131				-22.095	29.119	603	9	9	2	2	3	9	1	10	5	6			
MGR132				-22.094	29.120	609			2	2	5	9	1	10	5	6			
MGR133				-22.095	29.123	599	120	35											X
MGR134				-22.097	29.124	590	400	200											X
MGR135				-22.101	29.125	606			2	2	2	9	1	10	5	5			
MGR136				-22.101	29.124	607	60	40											X
MGR137				-22.101	29.117	593			9	1	2	7	5	1	5	6			
MGR138				-22.101	29.115	588			2	1	2	4	5	1	5	6			X
MGR139				-22.099	29.111	593			2	2	5	8	5	1	5	6			
MGR140				-22.098	29.110	600													X
MGR141				-22.096	29.109	603													X
MGR142				-22.100	29.103	590	120	80											X
MGR143				-22.098	29.101	605	100	60											X
MGR144				-22.090	29.108	618	150	120											X
MGR145				-22.088	29.110	620													X
MGR146				-22.084	29.112	614													X
MGR147				-22.082	29.116	625													X
MGR148				-22.085	29.119	611													X
MGR149				-22.098	29.125	589													X
MGR150				-22.110	29.121	578													X
MGR151				-22.134	29.118	567													
MGR152				-22.134	29.118	568			2	3	3	1	3	1	3	3			
MGR153				-22.129	29.122	581													X
MGR154				-22.127	29.122	591			2	3	2	8	3	1	3	5	11		
MGR155				-22.124	29.126	577	250	180											X
MGR156				-22.123	29.124	579	200	160											X
MGR157				-22.124	29.122	593			9	1	3	8	1	1	1	6			

MGR158				-22.125	29.124	571													X
MGR159				-22.127	29.127	578													X
MGR160				-22.128	29.128	580													X
MGR161				-22.128	29.129	569			2	2	2	4	1	1	5	6			
MGR162				-22.129	29.132	567													X
MGR163				-22.134	29.136	589													
MGR164				-22.134	29.134	562													
MGR165				-22.132	29.131	564													X
MGR166				-22.132	29.127	568													X
MGR167				-22.132	29.124	572	300	300											X
MGR168				-22.130	29.119	562			2	4	2	1	1	1	5	6			
MGR169				-22.132	29.122	572			2	3	3	4	3	1	3	5			
MGR170				-22.121	29.118	568													X
MGR171				-22.120	29.117	579													X
MGR172				-22.119	29.113	576	150	100											X
MGR173				-22.119	29.108	573													X
MGR174				-22.099	29.086	599													X
MGR175				-22.094	29.083	614													X
MGR176				-22.092	29.081	608													X
MGR177				-22.085	29.078	610													X
MGR178				-22.082	29.077	615													X
MGR179				-22.079	29.075	616													X
MGR180				-22.072	29.068	610	100	80											X
MGR181				-22.065	29.046	640	200	180											X
MGR182				-22.074	29.048	635	450	400											X
MGR183				-22.078	29.042	624			9	1	2	8	6	4	5	5	11		
MGR184				-22.077	29.038	612													X
MGR185				-22.076	29.037	614													

MGR186				-22.078	29.040	612			2	2	3	1	6	4	5	6			
MGR187				-22.063	29.031	630	500	400											X
MGR188				-22.062	29.066	632													X
MGR189				-22.062	29.076	626													X
MGR190				-22.063	29.078	630													X
MGR191				-22.066	29.081	626			2	3	2	4	5	1	3	5			
MGR192				-22.070	29.080	612													X
MGR193				-22.072	29.078	614	250	200											X
MGR194				-22.079	29.081	615													X
MGR195				-22.147	29.074	607	50	40											X
MGR196				-22.146	29.072	609	80	35											X
MGR197				-22.146	29.069	634													X
MGR198				-22.149	29.067	615													X
MGR199				-22.148	29.065	617													X
MGR200				-22.147	29.062	620													X
MGR201				-22.145	29.058	644			2	2	5	8	1	10	5	6			
MGR202				-22.146	29.052	650			2	2	3	8	1	10	5	6			
MGR203				-22.146	29.052	641			2	2	3	8	1	10	5	6			
MGR204				-22.141	29.055	637			2	3	5	4	1	1	5	6			
MGR205				-22.142	29.063	634			2	2	5	4	5	1	5	6			
MGR206				-22.139	29.066	626													X
MGR207				-22.137	29.066	619													X
MGR208				-22.136	29.066	622													X
MGR209				-22.135	29.068	623			2	2	2	4	3	1	5	6			
MGR210				-22.120	29.081	574													X
MGR211				-22.119	29.080	573													X
MGR212				-22.191	29.062	579			2	2	3	15	1	2	5	6			
MGR213				-22.193	29.064	569			2	3	3	15	1	2	5	6			

MGR214				-22.193	29.067	574			9	1	2	6	1	2	5	6			
MGR215				-22.190	29.058	569			8	1	2	6	4	2	5	6			
MGR216				-22.186	29.055	590													X
MGR217				-22.185	29.057	594													X
MGR218				-22.188	29.059	587													X
MGR219				-22.185	29.050	562			2	3	3	4	1	2	3	5			
MGR220				-22.196	29.118	553			2	3	2	4	3	1	3	6			
MGR221				-22.197	29.118	553			2	3	5	4	3	1	3	6			
MGR222				-22.198	29.118	556			2	3	5	4	3	1	3	6			
MGR223				-22.199	29.119	549			2	3	5	4	3	1	3	6			
MGR224				-22.199	29.120	551			2	3	5	4	1	1	3	6			
MGR225				-22.197	29.121	549			2	3	5	4	1	1	3	6			
MGR226				-22.202	29.126	552			9	1	3	7	1	2	5	6			
MGR227				-22.204	29.125	555			2	3	5	8	1	1	5	6			
MGR228				-22.204	29.125	564			2	3	5	7	1	1	3	6			
MGR229				-22.205	29.126	552			7	1	5	7	1	2	6	6			
MGR230				-22.206	29.126	556			9	1	3	7	1	2	5	6			
MGR231				-22.206	29.125	564													
MGR232				-22.206	29.125	557													
MGR233				-22.205	29.122	557			2	3	5	15	1	2	5	11			
MGR234				-22.204	29.121	548			2	3	5	15	1	2	3	6			
MGR235				-22.203	29.122	555			2	3	5	15	1	2	3	6			
MGR236				-22.202	29.123	552			2	3	5	15	1	2	3	6			
MGR237				-22.198	29.121	547			2	2	2	13	1	1	5	6			
MGR238				-22.200	29.004	552			2	3	2	4	8	2	5	6			
MGR239				-22.202	29.006	553			2	3	3	4	8	2	5	6			
MGR240				-22.208	29.019	546			2	3	3	14	6	2	5	11			
MGR241				-22.208	29.019	556			2	2	2	7	6	2	5	6			

MGR242				-22.208	29.020	548			2	3	5	14	6	2	5	11			
MGR243				-22.211	29.018	570			2	2	3	7	6	2	5	6			
MGR244				-22.212	29.025	569			2	2	3	7	6	2	5	11			
MGR245				-22.212	29.025	570			2	2	3	7	6	2	5	6			
MGR246				-22.214	29.024	561			8	1	2	6	6	2	5	6			
MGR247				-22.212	29.024	572	15	10											X
MGR248				-22.214	29.026	575			2	3	5	7	6	2	5	6			
MGR249				-22.213	29.026	571			2	3	3	7	6	2	5	6			
MGR250				-22.215	29.029	555			2	2	2	6	6	2	5	6			
MGR251				-22.214	29.029	570			2	2	2	14	6	2	5	6			
MGR252				-22.216	29.031	560			2	3	3	14	6	2	6	6			
MGR253				-22.217	29.029	555			2	3	5	14	6	2	5	6			
MGR256				-22.217	29.030	554			2	3	3	14	6	2	5	6			
MGR254				-22.218	29.031	542			2	3	5	15	6	2	6	6			
MGR255				-22.218	29.031	554			2	3	5	15	6	2	6	6			
MGR257				-22.218	29.031	542			2	3	5	7	11	2	5	6			
MGR258				-22.216	29.023	593			2	2	2	14	6	2	5	6			
MGR259				-22.212	29.018	569													X
MGR260				-22.211	29.011	551			9	1	3	7	6	2	5	6			
MGR261				-22.210	29.016	551													
MGR262				-22.113	29.093	582			2	2	2	4	1	1	5	3			
MGR263				-22.116	29.093	585													X
MGR264				-22.206	29.003	563			2	3	5	4	6	2	3	6			
MGR265				-22.209	29.005	554			2	3	5	6	6	2	3	6			
MGR266				-22.203	29.005	558			2	3	5	6	6	2	3	6			
MGR267				-22.209	29.010	569			2	2	5	6	6	2	3	6			
MGR268				-22.208	29.012	566			2	3	3	7	6	2	3	6			X
MGR269				-22.209	29.012	561			2	4	5	6	6	2	3	6			

MGR270				-22.208	29.010	567													X
MGR271				-22.208	29.013	566	150	60											X
MGR272				-22.210	29.014	557			1	2	3	13	6	2	5	6			
MGR273				-22.211	29.014	565			9	1	3	14	6	2	5	6			
MGR274				-22.213	29.013	580			2	3	5	6	6	2	3	6			
MGR275				-22.212	29.014	572			2	3	5	6	6	2	3	6			
MGR276				-22.217	29.019	582			2	3	5	6	6	2	3	6			
MGR277				-22.217	29.022	584			2	3	3	6	6	2	3	11			
MGR278				-22.218	29.022	604			9	1	3	14	6	2	5	6			
MGR279				-22.220	29.022	587			2	2	3	6	6	2	5	6			
MGR280				-22.220	29.022	591			9	1	3	14	6	2	5	6			
MGR281				-22.220	29.019	597			2	2	5	7	6	2	5	11			
MGR282				-22.221	29.025	569			9	1	2	14	6	2	5	6			
MGR283				-22.221	29.022	550			2	4	2	6	8	2	3	6			
MGR284				-22.219	29.014	551			2	3	5	6	6	2	5	6			
MGR285				-22.209	29.001	563			2	3	5	13	8	2	5	6			
MGR286			LVB/TB/14	-22.210	28.994	570			1	3	3	14	6	2	5	11			
MGR287				-22.213	28.993	572			2	3	5	15	7	2	5	6			
MGR288				-22.214	28.996	593			2	3	3	7	11	2	5	6			
MGR289				-22.213	28.997	580			2	3	2	15	6	2	3	11			
MGR290				-22.213	28.997	581			2	3	2	15	6	2	3	11			
MGR291				-22.213	28.999	594			2	3	5	6	6	2	3	6			
MGR292				-22.213	28.999	606			1	2	3	14	6	2	5	6			
MGR293				-22.214	29.004	625			1	2	3	14	11	2	5	6			
MGR294				-22.214	29.004	616			2	3	5	7	11	2	5	6			
MGR295				-22.214	29.000	614			2	3	3	7	11	2	3	11			
MGR296				-22.215	29.000	581			2	4	2	15	6	2	3	5	11		
MGR297			LVB/TB/15	-22.216	29.003	603			1	3	3	14	11	2	5	6			

MGR298				-22.219	29.004	614			2	2	2	10	11	2	5	6			
MGR299				-22.217	29.002	582			7	1	1	1	6	2	5	6			
MGR300				-22.217	28.993	611			1	2	3	14	11	2	3	6			
MGR301				-22.217	28.995	621			2	4	5	7	6	2	3	6			
MGR302				-22.218	28.996	614			2	4	3	7	6	2	3	6			
MGR303				-22.218	28.996	617			2	4	5	7	6	2	5	6			
MGR304				-22.218	28.993	616			7	1	2	7	6	2	5	6			
MGR305				-22.217	28.993	637			7	1	2	7	6	2	5	6			
MGR306				-22.217	28.991	633			2	2	3	14	11	2	5	6			
MGR307				-22.217	28.991	635			2	3	2	7	11	2	5	6			
MGR308				-22.217	28.990	517			2	3	3	10	6	2	5	6			
MGR309				-22.217	28.990	568			1	3	5	10	6	2	5	6			
MGR310				-22.223	29.002	586			2	3	5	7	6	2	5	6			
MGR311				-22.222	28.994				2	3	2	6	6	2	3	6			
MGR312				-22.223	28.992	574			2	3	3	6	6	2	5	6			
MGR313				-22.221	28.983	571			2	3	3	7	6	2	5	6			
MGR314				-22.207	28.967	579			1	3	3	6	8	2	3	6			
MGR315				-22.206	28.965	573			1	4	5	6	8	2	3	6			
MGR316				-22.207	28.965	572			1	3	3	6	8	2	3	6			
MGR317				-22.205	28.965	572			1	3	5	6	8	2	3	11			
MGR318				-22.204	28.964	584			2	3	5	7	1	2	5	6			
MGR319				-22.207	28.963				2	3	3	13	8	2	3	6			
MGR320				-22.203	28.961	583			1	4	5	6	1	2	3	6			
MGR321				-22.203	28.961	588			1	4	5	6	1	2	3	6			
MGR322				-22.203	28.960	568			2	2	2	6	8	2	5	6			
MGR323				-22.202	28.956	566			7	1	2	6	6	2	5	6			
MGR324				-22.201	28.954	568			7	1	2	14	6	2	6	6			
MGR325				-22.201	28.954	581			9	1	2	6	6	2	5	6			

MGR326				-22.200	28.954	569			2	4	2	6	10	2	5	6			
MGR327				-22.201	28.955	577			9	1	2	6	6	2	5	6			
MGR328				-22.200	28.956	572			8	1	2	6	6	2	5	6			
MGR329				-22.200	28.957	574			9	1	2	6	6	2	5	6			X
MGR330				-22.199	28.957	579			9	1	2	14	6	2	5	6			
MGR331				-22.198	28.956	587			1	2	3	7	6	2	5	6			
MGR332				-22.192	28.960	589													X
MGR333				-22.190	28.961	585			2	3	3	9	5	2	3	6			
MGR334				-22.191	28.963	584													X
MGR335				-22.205	28.967	571													X
MGR336				-22.138	29.129	564			2	3	3	9	8	1	3	5			
MGR337				-22.13	29.150	566			2	3	3	4	8	1	3	5			
MGR338				-22.138	29.164	560			2	4	3	4	8	1	3	6			
MGR339				-22.14	29.170	562			2	4	3	4	8	1	3	6			
MGR340				-22.136	29.166	553			2	4	3	4	8	1	3	6			
MGR341				-22.138	29.162	554			2	4	3	4	8	1	3	5	11		
MGR342				-22.14	29.161	554			2	4	3	4	8	1	3	6			
MGR343				-22.224	29.001	562			2	3	2	8	8	2	3	6			
MGR344				-22.223	29.012	545			2	4	3	4	8	2	5	6			
MGR345				-22.150	29.132				2	3	3	4	2	1	3	5			
MGR346				-22.150	29.131				2	3	3	4	2	1	3	5			
MGR347				-22.151	29.133				2	3	3	4	2	1	3	5			
MGR350				-22.208	28.969	567			2	2	3	8	7	2	5	11			
MGR351				-22.205	28.968	571													X
MGR352				-22.205	28.969	566			7	0	2	13	3	2	0	6			
MGR353				-22.207	28.970	563			2	3	3	8	3	2	5	6			
MGR354				-22.208	28.972	565			9	1	3	6	3	2	5	6			
MGR355				-22.207	28.972	570			9	1	4	6	3	2	5	6			

MGR356				-22.206	28.972	556			9	1	3	14	3	2	5	6			
MGR357				-22.204	28.973	573			2	3	3	6	3	2	3	6			
MGR358				-22.208	28.972	567			9	1	3	6	3	2	5	6			
MGR359				-22.205	28.974	565			6	3	2	17	3	2	3	6			
MGR360				-22.204	28.974	571			2	4	2	15	3	2	3	6			
MGR361				-22.204	28.973	571			2	4	2	15	3	2	3	6			
MGR362				-22.201	28.974	591			9	1	3	7	3	2	7	6			
MGR363				-22.203	28.975	568			2	4	3	15	3	2	5	6			
MGR364				-22.205	28.975	556			2	3	3	9	3	2	5	6			
MGR365				-22.211	28.975	560			2	4	3	6	7	2	3	6			
MGR366				-22.204	28.976	562			2	3	3	4	3	2	5	6			
MGR367				-22.203	28.977	569			2	2	3	6	3	2	5	6			
MGR368				-22.203	28.977	577			2	2	3	7	3	2	5	6			
MGR369				-22.202	28.978	569			2	4	3	9	3	2	3	6			
MGR370				-22.201	28.977	567			2	4	3	9	3	2	3	6			
MGR371				-22.206	28.980	554			2	3	3	6	3	7	3	6			
MGR372				-22.209	28.977	562			9	2	3	6	3	2	5	6			X
MGR373				-22.200	28.967														
MGR374				-22.210	28.982	567			2	3	3	14	3	2	3	6			
MGR375				-22.200	28.967														
MGR376				-22.200	28.967														
MGR377				-22.210	28.968	562			2	3	3	8	3	2	3	6			
MGR378				-22.206	28.983	566			2	3	3	6	3	2	3	6			
MGR379				-22.206	28.967	565			2	3	3	6	3	2	5	6			
MGR380		2229MSH026		-22.206	28.983	571			2	3	3	6	3	2	5	6			
MGR381				-22.205	28.986	565			2	3	3	6	3	2	5	11			
MGR382				-22.206	28.983	569			2	3	3	6	3	2	5	6			
TL 383				-22.208	29.105	554			2	2	2	14	3	2	3	11			

TL 384				-22.209	29.105	552			2	2	2	14	3	2	3	11			
TL 385				-22.208	29.105	549			2	3	3	15	3	2	5	6			
TL 386				-22.211	29.110	541			6	4	1	1	7	2	3	11			
TL 387				-22.212	29.112	550			7	0	3	6	3	5	5	6			
TL 388				-22.211	29.113	546			2	4	2	15	3	2	3	6			
TL 389				-22.211	29.115	545			7	0	3	6	3	2	5	6			
TL 390				-22.210	29.116	560			9	1	2	7	3	2	5	6			
TL 391				-22.208	29.117	554			9	1	3	7	3	2	5	6			
TL 392				-22.209	29.112	550			2	4	2	15	3	2	3	5			
TL 393				-22.210	29.112	551			2	4	2	15	3	2	3	5			
TL 394				-22.207	29.105	545			1	4	3	6	3	2	5	5			
TL 395				-22.208	29.103	546			9	1	2	13	7	2	5	6			
TL 396				-22.209	29.101	543			2	9	2	15	8	2	3	5			
TL 397				-22.209	29.101	544			2	4	2	15	8	2	3	6			
TL 398				-22.209	29.098	554			2	3	3	14	3	2	3	11			
TL 399				-22.208	29.095	559			9	1	2	7	3	2	5	6			
TL 400				-22.210	29.094	557			9	1	5	6	3	2	6	11			
TL 401				-22.212	29.094	553			2	3	2	6	3	2	3	11			
TL 402				-22.213	29.093				2	4	3	14	3	2	5	5			
TL 403				-22.202	29.094	553			2	3	3	4	3	2	5	5			
TL 404				-22.199	29.097				2	4	3	4	3	2	5	5			
TL 405				-22.197	29.099	560			9	2	3	6	3	2	5	6			
TL 406				-22.197	29.098	550			9	1	3	6	11	2	5	6			
TL 407				-22.196	29.097	571			9	2	2	6	11	2	5	6			
TL 408				-22.199	29.082	577			1	3	1	4	3	2	5	6			
TL 409				-22.213	29.078	576			2	3	3	14	3	2	3	6			
TL 410				-22.214	29.077	565			9	1	3	6	3	2	5	6			
TL411				-22.194	29.090	567			2	4	3	4	3	2	5	6			

US412				-22.214	29.082	564													X
US413				-22.200	29.065	589			1	2	3	9	3	2	5	5			
US414				-22.202	29.059	570			2	4	4	14	3	2	5	6			
US415				-22.204	29.059	562			2	2	3	14	3	2	3	11			
US416				-22.205	29.060	560			2	4	3	6	3	2	3	11			
US417				-22.207	29.057	556			2	4	3	15	3	2	5	11			
US418				-22.207	29.056	556			2	4	3	15	3	2	5	11			
US419				-22.215	29.054	551			2	4	3	6	3	2	2	5			
US420				-22.215	29.055	548			2	4	3	6	3	2	5	6			
US421				-22.216	29.057	563			2	4	3	7	3	2	5	6	11		
US422				-22.216	29.055	586			9	1	3	7	11	2	7	11			
US423				-22.210	29.063	551			2	3	3	15	3	2	3	11			
US424				-22.212	29.062	561			2	4	3	6	3	2	5	11			
US425				-22.210	29.057	554			1	3	3	8	3	2	7	11			
US426				-22.200	29.065	585			1	2	3	9	3	2	5	5			
US427				-22.212	29.061	560						14							
MGR428				-22.163	29.218														
MGR429	AA_100			-22.07	29.117														
MGR430	AA_101			-22.069	29.116														
MGR431	AA_102			-22.121	29.139														
MGR432	AA_103			-22.125	29.139														
MGR433	AA_105			-22.144	29.115														
MGR434	AA_106			-22.144	29.117														
MGR435	AA_107			-22.145	29.114														
MGR436	AA_108			-22.144	29.113														
MGR437	AA_109			-22.144	29.112														
MGR438	AA_110			-22.145	29.111														
MGR439	AA_111			-22.145	29.113														

MGR440	AA_113			-22.146	29.113														
MGR441	AA_114			-22.146	29.114														
MGR442	AA_115			-22.146	29.114														
MGR443	AA_117			-22.148	29.115														
MGR444	AA_118	2229MSH027		-22.205	29.001														
MGR445	AA_119	2229MSH028		-22.206	29.003														
MGR446	AA_121	2229MSH030		-22.199	29														
MGR447	AA_122			-22.13	29.15														
MGR448	AA_124			-22.131	29.148														
MGR449	AA_128			-22.141	29.162														
MGR450	AA_129			-22.152	29.194														
MGR451	AA_130			-22.152	29.195														
MGR452	AA_131			-22.153	29.197														
MGR453	AA_132			-22.184	29.193														
MGR454	AA_133			-22.205	29.125														
MGR455	AA_134			-22.204	29.126														
MGR456	AA_4			-22.206	29.009														
MGR457	AA_55			-22.22	29.019														
MGR458	AA_56			-22.217	29.05														
MGR459	AA_97			-22.071	29.113														
MGR460	AA_98			-22.071	29.113														
MGR461	AA_99			-22.07	29.117														
MGR462			LVB/TB/1	-22.21	28.94625														
MGR463			LVB/TB/2	-22.21	28.94645														
MGR464			LVB/TB/3	-22.208	28.95015														
MGR465			LVB/TB/13	-22.205	28.98277														
MGR466			LVB/TB/16	-22.215	29.0033														
MGR467			LVB/TB/17	-22.216	29.00392														

MGR468			LVB/TB/18	-22.21	29.03803														
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Catalogue C.1.2: LSA points of interest.

Total:	186	2	2	4	58	18	20	60	1	32	10	10	1	1	8	12	1	1	8	2	11	3		
Site no.	LSA	Fine-line painted	Finger-painted	Total rock art	Plain ceramics	Decorated ceramics	Rim ceramics	Total ceramics	Spindle whorl	Kraal	Midden	Grain bin foundation	Grain bin	Decorated GB	Upper grind stone	Lower grind stone	Grinding hollows	Mankala	Walling	Human burial	Cupule	Grooves		
MGR1	X																							
MGR2	X																							
MGR4	X																							
MGR6	X																							
MGR10	X																							
MGR14	X																							
MGR16	X																							
MGR17	X																							
MGR18	X																							
MGR19	X																							
MGR20	X																							
MGR21	X																							
MGR22	X																							
MGR24	X																							
MGR25	X																							
MGR27	X																							
MGR30	X																							
MGR32	X				X			X			X													





MGR95	X																					
MGR97	X																					
MGR101	X																					
MGR102	X																					
MGR103	X																					
MGR104	X																					
MGR105	X																					
MGR107	X																					
MGR108	X																					
MGR109	X																					
MGR110	X																					
MGR113	X																					
MGR114	X																					
MGR119	X																					
MGR126	X																					
MGR128	X																					
MGR129	X																					
MGR130	X																					
MGR131	X																					
MGR132	X																					
MGR137	X																					
MGR138	X																					
MGR139	X																					
MGR141	X																					
MGR152	X				X			X		X												
MGR154	X				X	X	X	X		X			X					X				
MGR157	X																					
MGR161	X																					

MGR168	X																					
MGR183	X				X			X														
MGR186	X																					
MGR201	X																					
MGR202	X																					
MGR203	X																					
MGR204	X																					
MGR205	X																					
MGR214	X																					
MGR216	X																					
MGR219	X				X			X		X												
MGR226	X																					X
MGR238	X																					
MGR239	X																					
MGR240	X				X			X														
MGR241	X				X	X	X	X														
MGR242	X				X			X									X					X
MGR243	X				X			X														
MGR244	X																					
MGR245	X																					
MGR246	X																					
MGR247	X																					
MGR250	X																					
MGR251	X				X			X														
MGR252	X				X			X		X					X							X
MGR257	X				X	X	X	X		X	X	X			X	X			X	X		
MGR260	X																					
MGR262	X				X			X														

MGR267	X				X		X	X	X	X	X	X			X	X							
MGR268	X				X		X	X		X		X											
MGR269	X				X			X		X						X							
MGR272	X																						
MGR273	X																						
MGR279	X				X			X		X		X											
MGR280	X																						X
MGR281	X				X	X	X	X			X	X			X	X			X				
MGR284	X				X			X		X													
MGR286	X		X	X	X			X															
MGR291	X				X	X	X	X		X													
MGR295	X				X	X	X	X			X	X			X	X			X			X	
MGR297	X	X		X	X			X								X					X	X	
MGR298	X				X			X		X						X			X			X	
MGR302	X				X	X	X	X		X		X											
MGR318	X				X			X			X								X				
MGR325	X				X		X	X		X	X								X				
MGR326	X																						
MGR327	X				X	X	X	X		X									X				
MGR329	X																						
MGR330	X				X			X															
MGR336	X				X			X		X						X							
MGR338	X				X			X		X													
MGR345	X				X	X		X		X					X								
MGR354	X																						
MGR357	X				X		X	X		X		X			X	X							
MGR360	X				X			X		X													
MGR361	X				X			X		X													

MGR362	X				X			X				X										
MGR369	X				X			X		X												
MGR372	X																					
MGR374	X				X			X														
MGR378	X				X		X	X														
MGR379	X				X			X														
MGR380	X				X			X														
MGR381	X				X			X														X
TL 383	X	X		X	X			X														
TL 384	X				X			X														
TL 385	X				X			X														
TL 386	X					X	X	X		X												
TL 388	X				X	X		X		X	X											X
TL 389	X																					
TL 390	X																					
TL 391	X																					
TL 399	X																					
TL 402	X				X			X														X X
TL 405	X																					
TL 406	X																					
TL 407	X																					
TL 409	X				X			X														
US414	X				X	X		X														
US415	X				X	X	X	X								X						X
US416	X				X	X	X	X		X					X	X						
US420	X				X	X	X	X		X			X	X								
US423	X				X	X		X		X												
US424	X		X	X	X	X	X	X		X												X X X

Total:	186	1	4	5	14	15	3	3	1	2	11	9	6	2	3	1	2	6	2	3	30	
Site no.	LSA	Medicine cupule	Organic beads	Glass beads	Bone	Shell	Iron	Bullet	Glass	EIA	MIA	LIA	Zhizo	Leokwe	K2	TK2	Mapungubwe	Khami	Venda	EU farmer items	Material source	
MGR1	X																					
MGR2	X																					
MGR4	X																					
MGR6	X																					
MGR10	X																					
MGR14	X																					X
MGR16	X																					
MGR17	X																					
MGR18	X																					X
MGR19	X																					
MGR20	X																					
MGR21	X																					
MGR22	X																					
MGR24	X																					
MGR25	X																					
MGR27	X																					
MGR30	X																					
MGR32	X																					
MGR33	X											X						X				
MGR34	X		X								X	X										
MGR35	X																					

MGR36	X										X				X							
MGR37	X																					
MGR38	X									X			X									
MGR41	X																					X
MGR42	X																					
MGR43	X																					
MGR44	X																					
MGR45	X																					
MGR46	X																					
MGR47	X																					
MGR49	X																					
MGR50	X																					
MGR51	X																					
MGR52	X																					
MGR53	X																					
MGR54	X																					
MGR55	X																					
MGR56	X																					
MGR57	X																					
MGR58	X																					
MGR59	X																					
MGR60	X																					
MGR61	X				X																	
MGR62	X																					
MGR63	X																					
MGR64	X																					X
MGR65	X																					
MGR66	X																					



MGR102	X																				
MGR103	X																				
MGR104	X																				
MGR105	X																				
MGR107	X																				
MGR108	X																				
MGR109	X																				X
MGR110	X																				X
MGR113	X																				
MGR114	X																				X
MGR119	X																				X
MGR126	X																				X
MGR128	X																				X
MGR129	X																				X
MGR130	X																				X
MGR131	X																				
MGR132	X																				
MGR137	X																				
MGR138	X																				X
MGR139	X																				
MGR141	X																				X
MGR152	X																				
MGR154	X		X		X					X		X									
MGR157	X																				
MGR161	X																				
MGR168	X																				
MGR183	X				X																
MGR186	X																				

MGR201	X																				
MGR202	X																				
MGR203	X																				
MGR204	X																				
MGR205	X																				
MGR214	X																				
MGR216	X																				X
MGR219	X																				
MGR226	X																				
MGR238	X																				
MGR239	X																				
MGR240	X				X	X															
MGR241	X									X		X									
MGR242	X																				
MGR243	X																				
MGR244	X																				
MGR245	X																				
MGR246	X																				
MGR247	X																				X
MGR250	X																				
MGR251	X				X																
MGR252	X			X							X										
MGR257	X				X	X	X				X					X					
MGR260	X																				
MGR262	X																				
MGR267	X					X															
MGR268	X										X										X
MGR269	X																				

MGR272	X																			
MGR273	X																			
MGR279	X					X														
MGR280	X																			
MGR281	X				X	X					X							X		
MGR284	X																			
MGR286	X																		X	
MGR291	X					X				X				X						
MGR295	X	X	X	X	X	X	X			X	X	X	X		X		X	X	X	X
MGR297	X		X			X														
MGR298	X					X														
MGR302	X																			
MGR318	X																			
MGR325	X				X	X														
MGR326	X																			
MGR327	X			X		X	X	X				X						X		
MGR329	X																			X
MGR330	X																			
MGR336	X																			
MGR338	X										X							X		
MGR345	X										X		X	X						
MGR354	X																			
MGR357	X																			
MGR360	X																			
MGR361	X				X	X														
MGR362	X					X														
MGR369	X																			
MGR372	X																			X

MGR374	X																				
MGR378	X																				
MGR379	X			X																	
MGR380	X																		X		
MGR381	X																				
TL 383	X				X	X		X													
TL 384	X																				
TL 385	X																				
TL 386	X				X					X								X			
TL 388	X																				
TL 389	X																				
TL 390	X																				
TL 391	X																				
TL 399	X																				
TL 402	X								X												X
TL 405	X																				
TL 406	X																				
TL 407	X																				
TL 409	X																				
US414	X																				
US415	X			X																	
US416	X				X	X		X			X								X		
US420	X									X		X									
US423	X									X			X								
US424	X				X																

**Catalogue C.1.3: Rock art and rock marking site details.**

Total:			2	2	0	4	16	1	3
Site no.	Y	X	Fine-line painted	Finger-painted	Engraved track	Mankala board	Cupule	Hollow	Groove
MGR 381	-22.205	28.986					X		
MGR226	-22.202	29.126					X		
MGR229	-22.205	29.126					X		
MGR242	-22.208	29.02				X	X		
MGR252	-22.216	29.031					X		
MGR278	-22.218	29.022				X	X		
MGR280	-22.22	29.022					X		
MGR286	-22.210	28.994		X					
MGR295	-22.214	29					X		
MGR296	-22.215	29					X		
MGR297	-22.216	29.003	X				X		X
MGR298	-22.219	29.004					X		
MGR298	-22.21	28.946						X	
MGR323	-22.202	28.956					X		
MGR352	-22.205	28.969				X			
TL 383	-22.208	29.105	X						
TL 387	-22.212	29.112				X			
TL 388	-22.211	29.113					X		
TL 392	-22.209	29.112					X		
TL 402	-22.213	29.093					X		X
US415	-22.204	29.059					X		
US424	-22.212	29.062		X					X
LVB/TB/1	-22.21	28.946	X				X	X	
LVB/TB/13	-22.219	29.004			X				
LVB/TB/16	-22.216	29.004							X
LVB/TB/17	-22.21	29.038				X			
LVB/TB/18	-22.205	28.983	X				X		
LVB/TB/2	-22.21	28.946	X				X		X
LVB/TB/3	-22.208	28.95	X						

Catalogue C.1.4: Agriculturalist homesteads identified in the survey zone.

Total:	124	32	90	38	5	14	22	2	19	17	1	8	6	8	1	4	5	5	7	2	10	3	6	1	30	2	
Site no.	Kraal	LSA	Plain ceramics	Decorated ceramics	Spindle whorl	Midden	Grainbin foundation	Grainbin	Upper grind stone	Lower grind stone	Hut floor	Walling	Human burial	Rock markings	Spokeshave	Organic beads	Glass beads	Iron	Zhizo	Leokwe	K2	TK2	Mapungubwe	Icon	Khami	Venda	
MGR33	X	X	X																						X		
MGR34	X	X		X		X										X											
MGR36	X	X	X	X																	X						
MGR38	X	X	X																X								
MGR39	X			X	X								X														
MGR152	X	X	X																								
MGR154	X	X	X	X			X			X						X			X								
MGR169	X		X																								
MGR191	X		X				X																				
MGR219	X	X	X																								
MGR221	X		X				X																		X		
MGR222	X		X				X																				
MGR224	X		X																								
MGR225	X		X						X	X																	
MGR227	X		X	X		X	X		X	X				X								X					
MGR233	X		X	X		X																					
MGR234	X		X																								
MGR235	X		X	X																			X				









Catalogue C.1.5: Agriculturalist items identified in the survey zone where no kraal is present.

Total:	75	32	2	1	3	63	8	13	64	11	6	6	8	1	2	17	9	2	3	2	1	2	1	1	4	3	7	
Site no.	Farmer items	LSA	Fine-line painted	Finger-painted	Total rock art	Plain ceramics	Decorated ceramics	Rim ceramics	Total ceramics	Midden	Grain bin foundation	Upper grind stone	Lower grind stone	Hut floor	Mankala	Walling	Rock markings	Organic beads	Glass beads	Iron	Glass	Zhizo	K2	Mapungubwe	Khami	Venda	EU period artefacts	
MGR31	X											X																
MGR32	X	X				X			X	X																		
MGR56	X	X				X			X	X																		
MGR61	X	X																										
MGR64	X	X																										
MGR90	X	X										X																
MGR163	X															X												
MGR183	X	X				X			X																			
MGR220	X					X			X	X		X																
MGR223	X					X			X			X																
MGR228	X					X			X							X												
MGR230	X					X			X							X												
MGR231	X																X											
MGR232	X															X												
MGR240	X	X				X			X																			
MGR241	X	X				X	X	X	X													X						
MGR242	X	X				X			X						X		X											
MGR243	X	X				X			X																			







CATALOGUE D

1 DZOMBO SHELTER

Catalogue D.1.1: The excavated assemblage.

		Chips	Chunk	Lozenge chunk	Irregular core	Split cobble	Bladelet core	Radial bladelet core	Bipolar bladelet core	Single platform core	Opposed platform core	Rice seed	Preliminary flaked core	Radial core	Battered piece	Flake	Backed flake	Utilised flake	Facetted flake	Core rejuve. flake	Broken flake	End scraper (s)	Broken end scraper (s)	
1	SUR	94	8	1		1									1	8		1				34		
1	II	99	8	1	4	1	1						1			7						28		
1	III	142	6	2		2				1			1			14						51	1	
1	IV	223	23	1		1	1	1		1						24						83	2	1
1	V	266	28	8	4	2										11						125	2	
1	VI	218	31	3	2	2			1							37		1				157	1	
1	VII	537	59	3	12	3	3		1			1	3			63						228	6	
1	VIII	466	53	7	5	1			1				2	1		46		1		2		206	1	1
1	IX	370	41	6	4		1			2						36						129	2	
1	X	238	27	2	1	2										30						123	2	
1	XI	278	45	1	5								2			56						169	2	
1	XII	380	53	5	2					1			1			38	2					171	3	
1	XIII	377	38	4	3		1			1		1		2		43						176	1	
1	XIV	318	25	6	2					1	1				1	30						135	3	
1	XV	264	28		1	1		1		1			1			44			1			121		
1	XVI	218	25	3	3	1	1			3	1		2			25				1		166		1
1	XVII	113	18	2	2		1			1						24				1		89	1	
1	XVIII	169	12	3	5			1		1						19						89	1	
1	XIX	93	10													10						35		

1	XX	98	8	2	3					1				1		15					52	1	
1	XXI	58	6	1	3		1									10		1			38		
1	XXII	65	9			1				1	1					16					39		
1	XXIII	44	10	1					1	1			1			18					43		
1	XXIV	54	9							1						13					46	1	
1	XXV	44	15	1	1					2						14					39		
1	XXVI	81	11	3	1											12					66		
1	XXVII	68	15	3		1				1						19					64		
2	SUR	270	1		1																		
2	I	13																					
2	II	29																					
2	III	33	1																		0		
2	IV	33																			2		
2	V	35	2																				
2	VI	67	1																		1		
2	VII	40																			1		
2	VIII	71																			3		
2	IX	7														1							
2	X																						
2	XI-XIV	8	3		1					1						2					4		
2	XV	3	10	1											1					1	4		
2	XVI	5	3		1											2					5		
2	XVII	6	9	1												2					13		
2	XVIII	44	10	1	1					1						2					39	1	
2	XIX	116	49	6		1										25					206	1	
2	XX	25	10			1										9					74		
2	XXI	30	13	3												7					54	1	
<b>Total:</b>		<b>6210</b>	<b>733</b>	<b>81</b>	<b>67</b>	<b>21</b>	<b>10</b>	<b>3</b>	<b>4</b>	<b>21</b>	<b>4</b>	<b>2</b>	<b>14</b>	<b>4</b>	<b>3</b>	<b>732</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>3108</b>	<b>33</b>	<b>3</b>

		End scraper (s) + bladelet core	End + side scraper (s)	End, side + side scraper (s)	Broken end, side + side scraper (s)	End + adze scraper (s)	Broken end scraper (s)	End scraper (m)	End + side scraper (m)	End scraper (l)	End + side scraper (l)	End, side + side scraper (l)	Side scraper (s)	Broken side scraper (s)	Side scraper (m)	Broken scraper	Segment	Incomplete segment	Broken segment	Adze	Awl	Bladelet	Backed bladelet
1	SUR																1					1	
1	II				1																	1	
1	III												2									2	
1	IV												1									2	
1	V												1		1		1					5	
1	VI		2					1		1							3				1	2	
1	VII		1					2					5				3				1	6	
1	VIII		1										3	1			1		1			4	3
1	IX			1				2					4				1		1			7	
1	X																1					7	
1	XI		1														3					9	2
1	XII		1													1	3					14	1
1	XIII					1							1				1					7	
1	XIV	1	1	1					1				1				1					10	
1	XV							1				1					1			1		9	2
1	XVI							1						1			3					4	
1	XVII							2		1							1					2	
1	XVIII							1														6	
1	XIX																		1			1	

1	XX																	1				1	
1	XXI															1						1	
1	XXII						1									1						3	
1	XXIII						2									1		1				1	3
1	XXIV																					2	
1	XXV																					1	
1	XXVI																					2	
1	XXVII																					2	
2	SUR																						
2	I																						
2	II																						
2	III																					1	
2	IV																						
2	V																						
2	VI																						
2	VII																						
2	VIII																						
2	IX																						
2	X																						
2	XI-XIV																					1	
2	XV																						
2	XVI						1																
2	XVII																					2	
2	XVIII												0										
2	XIX						1	1					1									2	
2	XX																					2	
2	XXI																					1	
<b>Total:</b>		<b>1</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>19</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>26</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>120</b>	<b>11</b>

		Backed bladelet/awl	Utilised backed bladelet	Broken backed bladelet	Naturally backed bladelet	Naturally backed bladelet + utilisation	Broken bladelet	Segmented backed bladelet	Blade	Broken blade	MRP	MBP	Plane	Hammerstone	Nodule	MSA single platform core	MSA flakes	MSA broken flake	MSA scraper	Total
1	SUR																			148
1	II						1					2								150
1	III						1								3			1		220
1	IV						2				3									361
1	V						2								1					446
1	VI						9				1				1					453
1	VII				1		4	1	1		2	2			3					919
1	VIII		1	1			11	1			3	1			5					793
1	IX						8				1				7					591
1	X	1					10		1			1		1	2		1			425
1	XI			2			4		3		1				2					558
1	XII			1	1		9	3	1		3		1		4					656
1	XIII					1	8	1				1			1					647
1	XIV			1			15	2	1		1				1					522
1	XV						6	3	1	1	1				2		1			463
1	XVI						6	1							1					450
1	XVII				1		5				1									252
1	XVIII						11													300
1	XIX						2		1											148

1	XX				1		5									1				181
1	XXI						5		1									1		118
1	XXII						1							1						132
1	XXIII						6				1									119
1	XXIV						7													124
1	XXV						6	1			1				3					116
1	XXVI			1	1		4			1	1									174
1	XXVII						4				2	1				1				171
2	SUR																			272
2	I																			13
2	II																			29
2	III																			34
2	IV																			35
2	V																			37
2	VI																			69
2	VII										1									41
2	VIII																			74
2	IX										1									8
2	X																			0
2	XI-XIV																			19
2	XV						1			1	2				2					20
2	XVI						2				1									16
2	XVII																			31
2	XVIII										1						4			99
2	XIX				1		2				1					7			1	404
2	XX						2				2									119
2	XXI																			108
<b>Total:</b>		<b>1</b>	<b>1</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>159</b>	<b>13</b>	<b>10</b>	<b>3</b>	<b>31</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>39</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>2</b>	<b>11585</b>

		Ceramics				Beads											Copper		
		Plain	Decoration	Plain rim	Decorated rim	Ostrich eggshell	Ostrich eggshell preform	Broken preform ostrich eggshell	Broken ostrich eggshell	Bone	Broken bone	<i>Achatina</i>	Glass	Zhizo glass	K2 glass	Mapungubwe glass	Indo-pacific glass	Bangle	Charcoal
1	SUR	6		1															X
1	II	3				1													X
1	III	8							1							1	1		X
1	IV	2				1	1		2	1					1	2			X
1	V	12			1	1		1	1									4	X
1	VI	9		1				0	1				1					2	X
1	VII	6	2			1		1	1	3		1		5	1			1	X
1	VIII	1				1		1	1	1				1		1			X
1	IX	2				1			1	2				2		1			X
1	X	1				1			1										X
1	XI						3		1		1								X
1	XII	2				3	2	1		5	1								X
1	XIII					3	1	1	2	1									X
1	XIV					2	1		3	1									X
1	XV							1		2				1					X
1	XVI	1							1		1								X
1	XVII					1													X
1	XVIII	2					1			1									X
1	XIX					1			1	1									X

1	XX																			X
1	XXI																			X
1	XXII								1											X
1	XXIII						1		2											
1	XXIV																			X
1	XXV	1				1			1											X
1	XXVI					1														X
1	XXVII					1														
2	SUR	19		1																
2	I	1																		
2	II																			
2	III																			X
2	IV																			X
2	V																			
2	VI	5																		X
2	VII	3												1						X
2	VIII	4							1								1			X
2	IX		1																	X
2	X	3																		X
2	XI-XIV																		1	X
2	XV	66	1	1																
2	XVI	20		3					1											X
2	XVII	3				1													1	
2	XVIII	7	1			2														
2	XIX	12		1					1		1								1	X
2	XX					1														
2	XXI																			
<b>Total:</b>		<b>199</b>	<b>5</b>	<b>8</b>	<b>1</b>	<b>24</b>	<b>9</b>	<b>5</b>	<b>14</b>	<b>27</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>2</b>	<b>6</b>	<b>11</b>	<b>35</b>	

		Other finds																
		Iron slag	Iron arrowhead (broken)	Bone	Burnt bone	Cut bone	Bone linkshaft	Decorated bone	Bone needle	Bone jewellery item	Human tooth	Shell	Wood	Burnt wood	Seed	Specularite	Ochre	Material
1	SUR			X	X							X	X	X		1		
1	II			X								X			1			1
1	III			X								X			2	2		
1	IV			X			1	2				X				1		
1	V			X		1						X				5		
1	VI	1		X			1					X						
1	VII		1	X		2	1					X			1		1	
1	VIII			X				1				X						
1	IX			X					1	1	1	X						
1	X			X								X						
1	XI			X					3			X						
1	XII			X								X	X					
1	XIII			X							1	X						
1	XIV			X								X						
1	XV			X								X						
1	XVI			X								X						
1	XVII			X								X						
1	XVIII			X			1					X						
1	XIX			X								X						

1	XX			X								X			3			
1	XXI			X								X						
1	XXII			X								X						
1	XXIII			X								X						
1	XXIV			X								X						
1	XXV			X								X						
1	XXVI			X								X						
1	XXVII			X								X						
2	SUR			X	X							X						
2	I																	
2	II																	
2	III																	
2	IV			X								X						
2	V			X														
2	VI			X								X						
2	VII											X						
2	VIII			X														
2	IX			X														
2	X																	
2	XI-XIV			X								X						
2	XV			X								X						
2	XVI			X								X						
2	XVII																	
2	XVIII			X								X						
2	XIX	1		X														
2	XX			X								X						
2	XXI			X								X						
<b>Total:</b>		<b>2</b>	<b>1</b>	<b>40</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>37</b>	<b>2</b>	<b>1</b>	<b>7</b>	<b>9</b>	<b>1</b>	<b>1</b>

**Catalogue D.1.2: Excavated volume.**

Trench	Spit	Volume
1	SUR	0.02
1	II	0.02
1	III	0.1
1	IV	0.1
1	V	0.1
1	VI	0.1
1	VII	0.1
1	VIII	0.1
1	IX	0.1
1	X	0.04
1	XI	0.1
1	XII	0.1
1	XIII	0.1
1	XIV	0.04
1	XV	0.04
1	XVI	0.04
1	XVII	0.03
1	XVIII	0.03
1	XIX	0.02
1	XX	0.01
1	XXI	0.01
1	XXII	0.01
1	XXIII	0.02
1	XXIV	0.02
1	XXV	0.01
1	XXVI	0.01
1	XXVII	0.02

**Total**     1.04

Trench	Spit	Volume
2	SUR	0.04
2	I	0.001
2	II	0.01
2	III	0.01
2	IV	0.03
2	V	0.02
2	VI	0.04
2	VII	0.1
2	VIII	0.1
2	IX	0.1
2	X	0.03
2	XI-XIV	0.1
2	XV	0.03
2	XVI	0.03
2	XVII	0.03
2	XVIII	0.01
2	XIX	0.05
2	XX	0.02
2	XXI	0.01

**Total**     0.6

Trench	Spit	Volume
1	SUR	0.02
1	GS	0.1
1	CGS	0.2
1	GA	0.5
1	CGA	0.02
1	GS2	0.1
1	GBS2	0.1
1	CGS2	0.03
1	GBS3	0.03
1	GCB2	0.01

**Total**     1.04

2	SUR	0.04
2	GB	0.3
2	CGB	0.3
2	RBS	0.04

**Total**     0.6

**Catalogue D.1.3: Formal tool catalogue.**

Trench	Spit/stratigraphy	Faceted flake	Plane	Scraper (s)	Scraper (m)	Scraper (l)	Broken scraper	Segment	Adze	Awl	Backed bladelet	MRP	MBP	Total
1	SUR	0	0	0	0	0	0	1	0	0	0	0	0	1
1	II	0	0	1	0	0	0	0	0	0	0	0	2	3
1	III	0	0	3	0	0	0	0	0	0	0	0	0	3
1	IV	0	0	4	0	0	0	0	0	0	0	3	0	7
1	V	0	0	3	1	0	0	1	0	0	0	0	0	5
1	VI	0	0	3	1	1	0	3	0	1	0	1	0	10
1	VII	0	0	12	2	0	0	3	0	1	2	2	2	24
1	VIII	0	0	7	0	0	0	1	1	0	6	3	1	19
1	IX	0	0	7	2	0	0	2	0	0	0	1	0	12
1	X	0	0	2	0	0	0	1	0	0	1	0	1	5
1	XI	0	0	3	0	0	0	3	0	0	4	1	0	11
1	XII	0	1	4	0	0	1	3	0	0	6	3	0	17
1	XIII	0	0	3	0	0	0	1	0	0	2	0	1	7
1	XIV	0	0	7	1	0	0	1	0	0	3	1	0	13
1	XV	1	0	0	1	1	0	1	1	0	5	1	0	10
1	XVI	0	0	2	1	0	0	3	0	0	1	0	0	7
1	XVII	0	0	1	2	1	0	1	0	0	1	1	0	7
1	XVIII	0	0	1	1	0	0	0	0	0	0	0	0	2
1	XIX	0	0	0	0	0	0	1	0	0	0	0	0	1
1	XX	0	0	1	0	0	0	1	0	0	1	0	0	3
1	XXI	0	0	0	0	0	1	0	0	0	0	0	0	1
1	XXII	0	0	0	1	0	0	1	0	0	0	0	0	2
1	XXIII	0	0	0	2	0	0	2	0	0	3	1	0	8
1	XXIV	0	0	1	0	0	0	0	0	0	0	0	0	1
1	XXV	0	0	0	0	0	0	0	0	0	1	1	0	2
1	XXVI	0	0	0	0	0	0	0	0	0	2	1	0	3
1	XXVII	0	0	0	0	0	0	0	0	0	0	2	1	3

**Total:      1      1      65      15      3      2      30      2      2      38      22      8      197**

2	SUR	0	0	0	0	0	0	0	0	0	0	0	0	0
2	I	0	0	0	0	0	0	0	0	0	0	0	0	0
2	II	0	0	0	0	0	0	0	0	0	0	0	0	0
2	III	0	0	0	0	0	0	0	0	0	0	0	0	0
2	IV	0	0	0	0	0	0	0	0	0	0	0	0	0
2	V	0	0	0	0	0	0	0	0	0	0	0	0	0
2	VI	0	0	0	0	0	0	0	0	0	0	0	0	0

2	VII	0	0	0	0	0	0	0	0	0	0	1	0	1
2	VIII	0	0	0	0	0	0	0	0	0	0	0	0	0
2	IX	0	0	0	0	0	0	0	0	0	0	1	0	1
2	X	0	0	0	0	0	0	0	0	0	0	0	0	0
2	XI-XIV	0	0	0	0	0	0	0	0	0	0	0	0	0
2	XV	0	0	0	0	0	0	0	0	0	0	2	0	2
2	XVI	0	0	0	1	0	0	0	0	0	0	1	0	2
2	XVII	0	0	0	0	0	0	0	0	0	0	0	0	0
2	XVIII	0	0	1	0	0	0	0	0	0	0	1	0	2
2	XIX	0	0	3	1	0	0	0	0	0	1	1	0	6
2	XX	0	0	0	0	0	0	0	0	0	0	2	0	2
2	XXI	0	0	1	0	0	0	1	0	0	0	0	0	2

**Total:** 0 0 5 2 0 0 1 0 0 1 9 0 19

1	SUR	0	0	0	0	0	0	1	0	0	0	0	0	3
1	GS	0	0	7	0	0	0	0	0	0	0	1	2	10
1	CGS	0	0	8	2	1	0	4	0	1	2	2	0	21
1	GA	1	1	37	10	2	1	17	2	1	21	12	4	113
1	CGA	0	0	1	0	0	0	1	0	0	3	2	1	9
1	GS2	0	0	7	0	0	1	2	0	0	5	2	0	17
1	GBS2	0	0	3	1	0	0	0	0	0	3	1	0	8
1	CGS2	0	0	1	0	0	0	4	0	0	4	1	0	10
1	GBS3	0	0	1	2	0	0	1	0	0	0	0	0	4
1	GCB2	0	0	0	0	0	0	0	0	0	0	1	1	2

**Total:** 1 1 65 15 3 2 30 2 2 38 22 8 197

2	SUR	0	0	0	0	0	0	0	0	0	0	0	0	0
2	GB	0	0	0	0	0	0	0	0	0	0	2	0	2
2	CGB	0	0	5	2	0	0	1	0	0	1	7	0	16
2	RBS	0	0	0	0	0	0	0	0	0	0	0	0	0

**Total:** 0 0 5 2 0 0 1 0 0 1 9 0 19

**Catalogue D.1.4: Ceramic and bead assemblage.**

Spit/stratigraphy	Trench 1						Spit/stratigraphy	Trench 2					
	Ceramics total	Plain ceramics	Diagnostic ceramics	Total beads	Organic beads	Glass beads		Ceramics total	Plain ceramics	Diagnostic ceramics	Total beads	Organic beads	Glass beads
SUR	7	6	1	0	0	0	SUR	20	19	1	0	0	0
II	3	3	0	1	1	0	I	1	1	0	0	0	0
III	8	8	0	2	1	1	II	0	0	0	0	0	0
IV	2	2	0	8	5	3	III	0	0	0	0	0	0
V	13	12	1	3	3	0	IV	0	0	0	0	0	0
VI	10	9	1	2	1	1	V	0	0	0	0	0	0
VII	8	6	2	13	6	7	VI	5	5	0	0	0	0
VIII	1	1	0	6	4	2	VII	3	3	0	1	0	1
IX	2	2	0	7	4	3	VIII	4	4	0	2	1	1
X	1	1	0	2	2	0	IX	1	0	1	0	0	0
XI	0	0	0	5	5	0	X	3	3	0	0	0	0
XII	2	2	0	12	12	0	XI-XIV	0	0	0	0	0	0
XIII	0	0	0	8	8	0	XV	68	66	2	0	0	0
XIV	0	0	0	7	7	0	XVI	23	20	3	1	1	0
XV	0	0	0	4	3	1	XVII	3	3	0	1	1	0
XVI	1	1	0	2	2	0	XVIII	8	7	1	2	2	0
XVII	0	0	0	1	1	0	XIX	13	12	1	2	2	0
XVIII	2	2	0	2	2	0	XX	0	0	0	1	1	0
XIX	0	0	0	3	3	0	XXI	0	0	0	0	0	0
XX	0	0	0	0	0	0							
XXI	0	0	0	0	0	0	<b>Total:</b>	<b>152</b>	<b>143</b>	<b>9</b>	<b>10</b>	<b>8</b>	<b>2</b>
XXII	0	0	0	1	1	0							
XXIII	0	0	0	3	3	0							
XXIV	0	0	0	0	0	0							
XXV	1	1	0	2	2	0							
XXVI	0	0	0	1	1	0							
XXVII	0	0	0	1	1	0							
<b>Total:</b>	<b>61</b>	<b>56</b>	<b>5</b>	<b>96</b>	<b>78</b>	<b>18</b>							

**Catalogue D.1.4: Continued.**

Trench 1							Trench 2						
SUR	7	6	1	0	0	0	SUR	20	19	1	0	0	0
GS	12	12	0	6	4	2	GB	17	16	1	3	1	2
CGS	24	21	3	12	5	7	CGB	115	108	7	7	7	0
GA	11	10	1	60	54	6	RBS	0	0	0	0	0	0
CGA	0	0	0	1	1	0	<b>Total:</b>	<b>152</b>	<b>143</b>	<b>9</b>	<b>10</b>	<b>8</b>	<b>2</b>
GS2	5	5	0	10	7	3							
GBS2	0	0	0	2	2	0							
CGS2	1	1	0	0	0	0							
GBS3	1	1	0	2	2	0							
GCB2	0	0	0	0	0	0							
<b>Total:</b>	<b>61</b>	<b>56</b>	<b>5</b>	<b>93</b>	<b>75</b>	<b>18</b>							

2 MAFUNYANE SHELTER

Catalogue D.2.1: The excavated assemblage.

	Stone tools																									
	Chips	Chunk	Lozenge chunk	Irregular core	Casual core	Split cobble	Bipolar core	Bipolar bladelet core	Single platform core	Opposed platform core	Rice seed	Preliminary flaked core	Radial core	Bipolar radial core	Core tablet	Battered piece	Flake	Utilised flake	Core rejuvenation flake	Broken flake	End scraper (s)	End + side scraper (s)	End + end scraper (s)	Broken end scraper (s)	End scraper (m)	
SUR	148	3	1	1							0						7		1	34	2				1	
I	364	16	5	3		4		1			1		1				10	1	2	64						
II	856	46	7	7		8			2			2					27		3	166	4					
III	737	24	11	1		2			3		2	1					37		1	136	1					
IV	493	58	14	11		2	1	2	3		4	1	1				73		2	420	5			1		
V	529	138	31	14	7	9			2	1	1	3		1	1	1	138		1	752	11	1	1	2	1	
VI	230	42	12		1	1					1	1					35			250	2					
VII	34	2	1		1						1						10			45				1	1	
<b>Total:</b>	<b>3391</b>	<b>329</b>	<b>82</b>	<b>37</b>	<b>9</b>	<b>26</b>	<b>1</b>	<b>3</b>	<b>10</b>	<b>1</b>	<b>10</b>	<b>8</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>337</b>	<b>1</b>	<b>10</b>	<b>1867</b>	<b>25</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	

	Stone tools																			Ceramics				
	End scraper (m) + adze	Side scraper (s)	Broken side scraper (s)	Side + side scraper (s)	Side scraper (m)	End scraper (l)	Segment	Incomplete segment	Broken segment	Adze	Awl	Bladelet	Broken backed bladelet	Broken bladelet	Broken blade	Segmented backed bladelet	MBP	Polished stone	Nodule	MSA irregular core	Total	Plain	Decoration	Plain rim
SUR							1									1					198	2		1
I						1	1		1			1					2		1		472	4		
II		3				1	1					5		1			1	1	5		1128	5	2	
III		1				1	3					4	1	2			1		1		956	7		
IV		7				1	4			3	2	5		5		4	4		7		1091	6		
V	1	4	2	1	2		3	1		3		14	1	43	1	2	4		2		1645	3		
VI		2					1					1		13		1				1	575	1		
VII													2								96			
<b>Total:</b>	<b>1</b>	<b>17</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>30</b>	<b>2</b>	<b>66</b>	<b>1</b>	<b>8</b>	<b>12</b>	<b>1</b>	<b>16</b>	<b>1</b>	<b>6161</b>	<b>28</b>	<b>2</b>	<b>1</b>

	Beads											Other finds													
	OES	Broken OES	OES preform	Broken preform OES	Bone	Broken bone	Broken <i>Achatina</i>	Glass	Zhizo glass	Indo-pacific glass	Copper	Charcoal	Tuyère	Iron chunks (gr)	Copper piece	Copper chunk (gr)	Bone	Clay figurine	Ostrich eggshell	Freshwater mussel	<i>Achatina</i>	Small snail species	Wood	Modern glass	
SUR	3	1	1	2								X		1.6			X		X		X				
I		1		2							1	X		6.6	2	1	X		X	X	X	X	X	X	
II	4	1			4	1	2		1	1		X		22	7	12	X	1	X	X	X	X	X	X	
III	3	1		3	1		1	1				X		25.2	2		X		X	X	X	X	X		
IV	3		2	5								X	1	52	2		X		X	X	X	X	X		
V	3	1	1		1							X		13.8			X		X	X	X	X	X		
VI		1	2									X					X		X	X	X	X	X		
VII												X					X		X	X	X	X	X		
<b>Total:</b>	<b>16</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>1</b>	<b>121</b>	<b>13</b>	<b>13</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>7</b>	<b>8</b>	<b>7</b>	<b>1</b>	<b>1</b>	

**Catalogue D.2.2: Excavated volume.**

Trench	Square	Spit	Volume
3	C	SUR	0.00
3	C	I	0.01
3	C	II	0.03
3	C	III	0.03
3	C	IV	0.02
3	C	V	0.02
3	C	VI	0.01
3	C	VII	0.01

Trench	Square	Stratigraphy	Volume
3	C	SUR	0.00
3	C	PBS	0.03
3	C	AS	0.04
3	C	SAS	0.06

**Total: 0.13**

**Total: 0.13**

**Catalogue D.2.3: Formal tool catalogue.**

Trench	Square	Spit/stratigraphy	Scraper (s)	Scraper (m)	Scraper (l)	Segment	Incomplete segment	Broken segment	Adze	Awl	Broken backed bladelet	Segmented backed bladelet	MBP	Total
3	C	SUR	2	1	0	1	0	0	0	0	0	1	0	5
3	C	I	0	0	1	1	0	1	0	0	0	0	2	7
3	C	II	7	0	1	1	0	0	0	0	0	0	1	17
3	C	III	2	0	1	3	0	0	0	0	1	0	1	14
3	C	IV	13	0	1	4	0	0	3	2	0	4	4	41
3	C	V	22	4	0	3	1	0	3	0	1	2	4	99
3	C	VI	4	0	0	1	0	0	0	0	0	1	0	20
3	C	VII	1	1	0	0	0	0	0	0	0	0	0	4

**Total: 51    6    4    14    1    1    6    2    2    8    12    207**

3	C	SUR	2	1	0	1	0	0	0	0	0	1	0	5
3	C	PBS	5	0	2	2	0	1	0	0	0	0	3	19
3	C	AS	4	0	1	3	0	0	0	0	1	0	1	19
3	C	SAS	40	5	1	8	1	0	6	2	1	7	8	164

**Total: 51    6    4    14    1    1    6    2    2    8    12    207**

### 3 JOÃO SHELTER

#### Catalogue D.3.1: The excavated assemblage.

		Stone tools																								
		Chips	Chunk	Lozenge chunk	Irregular core	Split cobble	Bladelet core	Bipolar bladelet core	Radial core	Single platform core	Rice seed	Preliminary flaked core	Opposed platform	Battered piece	Polishing stone	Flake	Core rejuvenation flake	Utilised flake	Broken utilised flake	Broken flake	End scraper (s)	End, side + side scraper (s)	End scraper (m)	End + side scraper (m)	End scraper (l)	
Trench 1	SUR	279	16	1	3	1					1					21			1	121	1					
	I	11																		2						
	II	69	5	1	1	1	1									1				28						
	III	168	8	1	2	1				1						6				61	1					
	IV	380	21	3							2	1			2	21				155						
	V	351	28	5	2	4					2			1		28				117			1			
	VI	433	58	8	11	4		2		2	2	3				32				267	4		1			
	VII	381	41	9	3	5				2			1	1		30		1		287	2					
	VIII	310	32	8	4	2					5		1			34				261	1		2			
	IX	148	16	1	3						3					21	1			142				1		
	X	113	20	1	1					1	1		1	1		15			1	101	2					
	XI	52	7	3	1								1			4				42						
	XII	29	3																	16						
	XIII	19																		12						
XIV	17															2				13						

Trench 2	I	112	1			1													11									
	II	79	5	1										2					19									
	III	41	10											1					25									
	IV	41	15	1															28									
	V	14	9	1	2	1				1									5					27				
Trench 3	SUR	34	8	1	1	2												4					14		1			1
	VII	16	5	1	1	1												1						16				1
	VIII	20	3			3																		27				
	IX	23	9	1		1						2						3						27	1			
Trench 4	SUR	6	4	1		1																		1				
	I	25	2			1												1						3				
	II	33	6	2		1		1		1														15				
	III	43	8	1	3	5												1						17	1			
	IV	65	30	5	4	13					1	1						7						46	1			
	V	34	20	2	1	5						1						9						42	1			
	VI	5	4	2	2								1						7					18				

**Total: 3351 394 60 45 53 1 3 1 20 5 10 3 2 2 256 1 1 2 1961 15 1 4 1 2**

		Stone tools																								
		Side scraper (s)	Broken scraper	Segment	Broken segment	Bladelet	Backed bladelet	Utilised bladelet	Broken backed bladelet	Incomplete backed bladelet	Broken bladelet	Segmented backed bladelet	Blade	Broken blade	MRP	MBP	Nodule	Hammerstone	Plane	MSA irregular core	MSA chopper core	MSA chopper	MSA scraper	MSA flakes	Total	
Trench 1	SUR		1			2					1	1			1		7								458	
	I																								13	
	II				1																				108	
	III					1	1				3		1				2								257	
	IV			1		2	1				3				2		6								600	
	V				1	1	1		2		2	1			2		5							2	556	
	VI	1	1	3	1	1					7							7			1	1		1	3	854
	VII			1		4			2		7				2		13		1						793	
	VIII				1	6				1		2			1	1		5		1			1	1		680
	IX			1											1		3	1							342	
	X					2					7							3								270
	XI		1									1						1								113
	XII																	1								49
	XIII																	1								32
	XIV																									32



		Ceramics					Beads														Copper		
		Plain	Decoration	Plain rim	Decorated rim	Spout	Ostrich eggshell	Ostrich eggshell preform	Broken preform ostrich eggshell	Broken ostrich eggshell	Bone	Broken bone	<i>Achatina</i>	Broken <i>Achatina</i>	Glass	Zhizo glass	K2 glass	K2 Indo-pacific glass	Mapungubwe glass	Indo-pacific glass	White heart (EU bead)	Bangle	Piece
Trench 1	SUR	11					3	1	2	1	1				5		4		3	14			
	I									1													
	II	2					3							1				1	3				
	III	10					3		1					2	1		2	1	7				
	IV	17	2	1			5			1		1		9		3	1		12				
	V	10					6	1		2				1		2	1		15				
	VI	13		1			5	2	2	5	2	1		3		1	1		15	1			
	VII	6					8	1										3	2	7			1
	VIII	5					6				1									6			
	IX	3					1			1	1									2			
	X						5				1									1			
	XI	2					1																
	XII	0																					
	XIII	1					1																
XIV																			1				

Trench 2	I	10		1												1						
	II	25	2	1	1		1									3						
	III	52	4	2												2						
	IV	36		3																		
	V	16	2	1																		
Trench 3	SUR	14					1								1							
	VII	5																				
	VIII	4					1															
	IX	3	1																			
Trench 4	SUR	8																				
	I	11													3				1			
	II	26		2																		2
	III	84	3		1		1				1				1				1			4
	IV	413	23	5	1	1	1						1						2			1
	V	232	6	12	4		1						1	1					1			3
	VI	18					1												2			1

**Total: 1037 43 29 7 1 54 5 5 11 7 2 2 1 26 1 21 8 9 84 1 11 1**

		Other finds															Periods						
		Charcoal	Broken upper grindstone	Iron frag	Iron slag	Iron arrowhead (broken)	Bone	Shell	Wood	Seed	Glass	Modern button	Iron piece	Bullet frag	Modern glass	Safety pin	Material hook/clip	Tyre cap	Toutswe	K2	Transitional K2	MIA	
Trench 1	SUR						X	X	X	2								1					
	I			1			X	X															
	II	X		1			X	X															
	III	X	1	1			X	X															
	IV	X	2	2			X	X	X	41	1				1	1	1						
	V	X					X	X	X			1											
	VI	X					X	X			1												
	VII	X		1			X	X	X														
	VIII	X		1			X	X															
	IX	X					X	X															
	X	X					X	X															
	XI	X					X	X															
	XII	X					X	X															
	XIII						X																
	XIV						X	X															

Trench 2	I	X					X	X													
	II	X					X	X	X									X			X
	III	X					X	X													
	IV						X	X													
	V						X													X	X
Trench 3	SUR	X					X	X													
	VII	X		1			X	X					1								
	VIII						X	X													
	IX	X					X	X													
Trench 4	SUR						X	X													
	I	X					X	X													
	II	X					X	X													
	III	X	1			1	X	X										X	X		X
	IV	X	1		1		X	X										X	X		X
	V						X	X										X	X		X
	VI						X	X													

**Total:** 21 5 8 1 1 30 28 5 43 2 1 1 1 1 1 1 1 4 3 1 5

**Catalogue D.3.2: Excavated volume.**

Trench	Square	Spit	Volume
1		SUR	0.1
1		I	0.0004
1		II	0.01
1		III	0.05
1		IV	0.1
1		V	0.1
1		VI	0.1
1		VII	0.1
1		VIII	0.1
1		IX	0.1
1		X	0.1
1		XI	0.05
1		XII	0.05
1		XIII	0.03
1		XIV	0.03
2	B	I	0.05
2	B	II	0.1
2	B	III	0.1
2	B	IV	0.1
2	B	V	0.02

Trench	Square	Spit	Volume
3	C	SUR	0.01
3	C	VII	0.01
3	C	VIII	0.01
3	C	IX	0.01
4	C	SUR	0.01
4	C	I	0.01
4	C	II	0.03
4	C	III	0.04
4	C	IV	0.04
4	C	V	0.1
4	C	VI	0.03

**Total: 1.582**

Catalogue D.3.3: Formal tool catalogue.

	Spit	Plane	Scraper (s)	Scraper (m)	Scraper (l)	End scraper (s)	End, side + side scraper (s)	End scraper (m)	End + side scraper (m)	End scraper (l)	Side scraper (s)	Broken scraper
Trench 1	SUR	0	1	0	0	1	0	0	0	0	0	1
	I	0	0	0	0	0	0	0	0	0	0	0
	II	0	0	0	0	0	0	0	0	0	0	0
	III	0	1	0	0	1	0	0	0	0	0	0
	IV	0	0	0	0	0	0	0	0	0	0	0
	V	0	0	1	0	0	0	1	0	0	0	0
	VI	0	4	2	0	3	0	2	0	0	1	1
	VII	1	2	0	0	2	0	0	0	0	0	0
	VIII	1	1	2	0	1	0	2	0	0	0	0
	IX	0	0	1	0	0	0	0	1	0	0	0
	X	0	2	0	0	2	0	0	0	0	0	0
	XI	0	0	0	0	0	0	0	0	0	0	1
	XII	0	0	0	0	0	0	0	0	0	0	0
	XIII	0	0	0	0	0	0	0	0	0	0	0
XIV	0	0	0	0	0	0	0	0	0	0	0	
Trench 2	I	0	0	0	0	0	0	0	0	0	0	0
	II	0	0	0	0	0	0	0	0	0	0	0
	III	0	0	0	0	0	0	0	0	0	0	0
	IV	0	0	0	0	0	0	0	0	0	0	0
	V	0	0	0	0	0	0	0	0	0	0	0
Trench 3	SUR	0	1	0	1	0	1	0	0	1	0	0
	VII	0	0	0	1	0	0	0	0	1	0	0
	VIII	0	0	0	0	0	0	0	0	0	0	0
	IX	0	1	0	0	1	0	0	0	0	0	0
Trench 4	SUR	0	0	0	0	0	0	0	0	0	0	0
	I	0	0	0	0	0	0	0	0	0	0	0
	II	0	0	0	0	0	0	0	0	0	0	0
	III	0	1	0	0	1	0	0	0	0	0	0
	IV	0	1	0	0	1	0	0	0	0	0	0
	V	0	1	0	0	1	0	0	0	0	0	1
	VI	0	0	0	0	0	0	0	0	0	0	0
		<b>2</b>	<b>16</b>	<b>6</b>	<b>2</b>	<b>14</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>4</b>

		Segment	Broken segment	Backed bladelet	Broken backed bladelet	Incomplete backed bladelet	Segmented backed bladelet	MRP	MBP	Total
Trench 1	SUR	0	0	0	0	0	1	1	0	5
	I	0	0	0	0	0	0	0	0	0
	II	0	1	0	0	0	0	0	0	1
	III	0	0	1	0	0	0	0	0	2
	IV	1	0	1	0	0	0	2	0	4
	V	0	1	1	2	0	1	2	0	9
	VI	3	1	0	0	0	0	0	0	11
	VII	1	0	0	2	0	0	0	0	8
	VIII	0	1	0	0	1	2	1	0	9
	IX	1	0	0	0	0	0	1	0	3
	X	0	0	0	0	0	0	0	0	3
	XI	0	0	0	0	0	1	0	0	2
	XII	0	0	0	0	0	0	0	0	0
	XIII	0	0	0	0	0	0	0	0	0
XIV	0	0	0	0	0	0	0	0	0	
Trench 2	I	1	0	0	0	0	0	0	0	1
	II	0	0	0	0	0	0	0	1	1
	III	0	0	0	0	0	0	0	0	0
	IV	0	0	0	0	0	0	0	0	0
	V	0	0	0	0	0	0	0	0	0
Trench 3	SUR	0	0	0	0	0	0	1	0	3
	VII	0	0	0	0	0	0	0	0	1
	VIII	0	0	0	0	0	0	0	0	0
	IX	0	0	0	0	0	0	0	0	1
Trench 4	SUR	0	0	0	0	0	0	0	0	0
	I	0	0	0	0	0	0	1	0	1
	II	0	0	0	0	0	0	0	0	0
	III	0	0	0	0	0	0	0	0	1
	IV	1	0	0	0	0	0	0	0	2
	V	0	0	0	0	0	0	1	0	4
	VI	0	0	0	0	0	0	0	0	1
		<b>8</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>10</b>	<b>1</b>	<b>73</b>

#### 4 SHAWU CAMP

##### Catalogue D.4.1: The excavated assemblage.

	SUR	I	II	Total
<b>Waste/debitage</b>				
Bifacial bladelet core	0	1	0	1
Bipolar chunk	1	1	1	3
Bladelet	2	1	1	4
Bladelet core	0	1	1	2
Broken blade	0	1	0	1
Broken bladelet	1	1	0	2
Broken flake	7	16	26	49
Broken utilised flake	0	1	0	1
Chips	56	187	52	295
Chunk	18	88	82	188
Flake	2	7	10	19
Flake bladelet core	0	1	0	1
Irregular core	5	9	3	17
Lozenge chunk	0	6	0	6
Nodule	13	77	57	147
Opposed platform core/nodule	1	0	0	1
Preliminary flaked core	1	2	1	4
Radial core	1	0	0	1
Rice seed core	0	1	2	3
Single platform core	0	0	3	3
Split cobble	5	17	10	32
<b>Formal tools</b>				
Awl	0	0	2	2
End scraper (s)	0	1	1	2
MBP	0	1	0	1
MRP	1	2	1	4

**Total:**    114    422    253    789

## 5 KAMBAKU CAMP

### Catalogue D.5.1: The excavated assemblage.

Trench	1							2	3
Square	A				E	G	T		
Spit	I	II	III	IV					
<b>Waste/debitage</b>									
Chips	7	6	6	2	6		19	3	16
Utilised flake									1
Broken backed bladelet									1
Broken bladelet				1		1	1		1
Preliminary flaked core									2
Bladelet				1					2
Nodule			1		1	8		18	3
Split cobble								1	4
Flake			1		1	2		1	11
Chunk			2		2	4	1	8	25
Broken flake		3	2	3	9	5	6	6	64
Lozenge chunk								1	
Irregular core			1	1					
<b>Formal tools</b>									
End scraper (s)									1
End scraper (s)/bladelet core			1						
MRP				1					
Segment						1			

**Total: 7 9 14 9 28 21 27 38 131**

Plain		3	74	44	92	100	21	1	204
Decoration			1		3	2			2
Plain rim				1	7	3			12
Decorated rim									1
Glass			1						
Iron slag			2	5	4				2
Bullet casing					1				

6 NDLULAMITHI KRAAL

Catalogue D.6.1: The excavated assemblage.

Trench	Square	Spit	Stratigraphic unit	Bag no.	Quartz				Quartzite			Crypto-crystalline silicate								Agate					Dol		
					135	15	2	1	5	1	1	91	18	2	2	2	1	17	1	1	5	9	2	6	1	3	1
					Chips	Chunk	Split cobble	Nodule	Chips	Chunk	Broken flake	Chips	Chunk	Lozenge chunk	Irregular core	Split cobble	Core rejuvenation flake	Broken flake	Naturally backed bladelet	Broken bladelet	Nodule	Chips	Chunk	Lozenge chunk	Split cobble	Broken flake	Broken flake
3	J	SUR	SUR	1	20	3		1				4	4	1				1			1	1		2	1	2	
3	J	I	FPB	2	34	3	1		3		1	45	4		2	2		4			1	5	1	3		1	
3	J	II	FPB	3	37	3			2	1		16	3					7			1	3	1	1			
15	R	SUR	SUR	-																							
15	R	I	KR	4	4	3						4						1			1						
15	R	II	KR	5	3																						
15	R	III	KR	6														2									1
15	R	IV	KR	7								1	4														
15	R	V	KR	8													1				1						
15	R	V	CKR	9																							
15	R	VI	CKR	10	1							2															
15	R	VII	CKR	11	2							1															
15	R	VIII	CKR	12	5							3	1														
15	R	IX	CKR	13	5																						
15	L	SUR	SUR	14	3							2															



Trench	Square	Spit	Stratigraphic unit	Bag no.	Stone artefacts						Ceramics					Beads									
					322	153	7	140	21	1	372	7	16	1	396	6	4	3	1	0	2	1	13	3	1
					Total	Total quartz	Total quartzite	Total CCS	Total agate	Total dolomite	Plain	Decoration	Plain rim	Decorated rim	Total ceramics	OES	Bone	Broken <i>Achatina</i>	Glass	K2	Indo-pacific glass	Iron	Total organic	Total glass	Total metal
3	J	SUR	SUR	1	41	24	0	11	6	0	19				19							0	0	0	
3	J	I	FPB	2	110	38	4	58	10	0	65		1		66	1		2				3	0	0	
3	J	II	FPB	3	75	40	3	27	5	0	16		2		18	1						1	0	0	
15	R	SUR	SUR	-	0	0	0	0	0	0	15				15							0	0	0	
15	R	I	KR	4	13	7	0	6	0	0	40	1	3	1	45							0	0	0	
15	R	II	KR	5	3	3	0	0	0	0	11	2	3		16							0	0	0	
15	R	III	KR	6	3	0	0	2	0	1	20		1		21	1		1				2	0	0	
15	R	IV	KR	7	5	0	0	5	0	0	24	1	2		27	1						1	0	0	
15	R	V	KR	8	2	0	0	2	0	0	2				2							0	0	0	
15	R	V	CKR	9	0	0	0	0	0	0	11		1		12		2					2	0	0	
15	R	VI	CKR	10	3	1	0	2	0	0	2				2							0	0	0	
15	R	VII	CKR	11	3	2	0	1	0	0	4				4	1	1					2	0	0	
15	R	VIII	CKR	12	9	5	0	4	0	0	3				3					1		0	1	0	
15	R	IX	CKR	13	5	5	0	0	0	0					0							0	0	0	
15	L	SUR	SUR	14	5	3	0	2	0	0	11				11							0	0	0	
15	L	IV	KR	15	23	12	0	11	0	0	97	2	3		102		1			1	1	1	1	1	
15	L	V	KR	16	4	2	0	2	0	0	17				17			1				0	1	0	
15	L	VI	KR	17	6	2	0	4	0	0	12				12	1						1	0	0	
15	L	VII	CKR	18	5	4	0	1	0	0	1	1			2							0	0	0	
15	L	VIII	CKR	19	7	5	0	2	0	0	2				2							0	0	0	

Trench	Square	Spit	Stratigraphic unit	Bag no.	Other								
					9		4	17		17	11	2	
					Charcoal	Charcoal code	Iron piece	Bone	Bone code	Freshwater mussel	<i>Achatina</i>	Small snail species	
3	J	SUR	SUR	1									
3	J	I	FPB	2				X	2-3II	X	X		
3	J	II	FPB	3			1	X	3-3III	X	X		
15	R	SUR	SUR	-									
15	R	I	KR	4				X	4-15RI	X	X		
15	R	II	KR	5				X	5-15RII	X	X		
15	R	III	KR	6				X	6-15RIII	X	X		
15	R	IV	KR	7	X	7C-15RIV		X	7-15RIV	X	X		
15	R	V	KR	8	X	8C-15RV		X	8-15RV	X			
15	R	V	CKR	9	X	9C-15RV		X	9-15RV	X	X		
15	R	VI	CKR	10	X	10C-15RVI		X	10-15RVI	X			
15	R	VII	CKR	11	X	11C-15RVII		X	11-15RVII	X			
15	R	VIII	CKR	12	X	12C-15RVIII	1	X	12-15RVIII	X			
15	R	IX	CKR	13	X	13C-15RIX		X	13-15RIX	X			
15	L	SUR	SUR	14			2						
15	L	IV	KR	15				X	15-15LIV	X	X	X	
15	L	V	KR	16				X	16-15RV	X	X		
15	L	VI	KR	17	X	17C-15LVI		X	17-15RVI	X			
15	L	VII	CKR	18	X	18C-15LVII		X	18-15LVII	X	X		
15	L	VIII	CKR	19				X	19-15LVIII	X	X	X	