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An archaeological landscape study of forager and farmer interactions at the Motloutse/Limpopo confluence area, South Africa.

BY

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ABSTRACT

Our understanding of the Later Stone Age on the Greater Mapungubwe Landscape has, until recently, been focused on specific forager camp types, namely shelters. This does not place significance on the range and variability of forager expressions distributed across the landscape. In this region expanding our approach to forager studies is especially important because they partook in the development of the Mapungubwe state between AD 900 and 1300, altering their cultural behavior. Foragers engaged and adapted to the changing social and cultural environment present on the landscape and shifted their settlement patterns, cultural signatures and material remains. Cultural change is expressed as a mosaic across the region with differences such as the production of specific tool types or activity patterns noted between sites. Single site analysis therefore fails to give a comprehensive insight into changing forager lifeways.

Parts of the landscape have seen considerable attention and research, yet other important portions remain unstudied. For example, the Motloutse/Limpopo confluence area has seen little research despite being rich in archaeological material and having a number of known sites in this region. It also lies between van Doornum’s (2005) and Forssman’s (2014) doctoral research areas and may demonstrate a linkage between these areas. To asses this, a landscape approach is utilised in this study in which all archaeological traces distributed across the study region were considered. This will provide important data that may or may not relate to these other two research areas. However, the primary focus in this research was forager and farmer sites and specifically sites that contained mixed forager-farmer assemblages. Euphorbia Kop, a K2 site with a mixed forager-farmer assemblage was selected for excavation through the survey, in order to show contemporaneity between the two cultural signatures. The excavations revealed that foragers moved into the settlement around c. AD 1000. It is also shown that the forager and farmer sequence at the site is contemporaneous with other mixed forager-farmer settlements in the region, but Euphorbia Kop provided the first secure dates demonstrating this settlement shift.

By implementing a landscape study, a combination of multiple and disparate archaeologies were examined, thus, better contextualizing the multi-cultural nature of the landscape and assisting in the chronological and cultural placement of Euphorbia Kop into this sequence. This research also links forager studies in the Northern Tuli, Botswana, and northern South Africa creating a more detailed picture of forager settlement across the Greater Mapungubwe Landscape. Therefore, it provides a more holistic understanding of the cultural sequence and spatial change on the landscape and the phases of forager-farmer interaction that occurred post AD 900.

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CCS	Crypto-crystalline materials
GML	Greater Mapungubwe Landscape
LSA	Later Stone Age
MSA	Middle Stone Age
OES	Ostrich egg shell
TK2	Transitional K2

1. INTRODUCTION

There have been a number of studies performed in northern South Africa on the forager[1] sequence, but most have failed to develop a regional perspective. This project focuses on foragers and their interactions within the last 2000 years. In southern Africa ample attention has been paid to individual forager shelter sites largely due to their state of preservation, spatial constraints, definability and ease of identification (see Arthur 2008). Shelter sites may give us valuable insights into forager lifeways and their interactions with arriving Iron Age farmers, however foragers occupied a variety of sites resulting in their material record being distributed across the wider landscape. The entire regional cultural sequence (forager and farmer) of the Greater Mapungubwe Landscape (GML[2]) needs to be considered in order to establish a landscape-wide understanding. For example, Forssman (2013, 2014) has shown in his research areas that 80% of all forager sites identified in northern South Africa and eastern Botswana are ‘open-air’ sites, many having lithic assemblages dominated by quartz, unlike the crypto-crystalline silicate-dominated (CCS[3]) shelter assemblages. Foragers were therefore also occupying sites in the open or away from shelters. Our investigation of the forager sequence should follow accordingly as this project reiterates. This type of approach, which is hinged on principles of landscape archaeology, is needed to further develop our understanding of the regional sequence.

On the GML there have been a series of Later Stone Age (LSA) shelter excavations in South Africa focusing on forager-farmer interactions. Each site has provided us with

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[1] The term ‘forager’ is primarily focused on the LSA and is preferred here to the more derogatory terms of Bushman, San, and to a lesser extent hunter gatherers, which have various stereotypical and incorrect connotations attached to them.

[2] I refer to the Greater Mapungubwe Landscape as the GML. This implies an area that extends beyond South Africa to include eastern portions of Botswana and southern portions of Zimbabwe, reflecting the known extent of Mapungubwe political and social influence.

[3] CCS: crypto-crystalline materials (Forssman 2010: 17). Refers to a stone tool’s material structure and is a fine grain raw material, used to produce the majority of LSA formal tools.

different insights into social interactions upon the landscape. At Little Muck Shelter an increase in the frequency of stone scrapers, bone points, ochre, ostrich eggshell (OES) beads and their manufacture, and subsistence diversity corresponds to the arrival of farming communities in the area (Hall & Smith 2000). Similar trends have been noted at other sites in South Africa, namely Tshisiku Shelter, Balerno Shelters 2 and 3 (van Doornum 2005), all of which show an increase in frequency and density of stone tools including scraping tools, with the onset of interaction (van Doornum 2005). Balerno Main Shelter is somewhat similar, but shows a greater degree of material continuity, maintaining similar stone tool types and frequencies during the arrival and settlement of farmers on the landscape. The shelter is also geographically isolated and located over three kilometres from the nearest farmer settlement. This led van Doornum (2008) to suggest that the site may have been a refuge or aggregation camp. A similar trend throughout all the shelters excavated in South Africa is their declining use by foragers from at least AD 900, save Balerno Main, and the disappearance of the forager record c. AD 1300. Although these studies have provided us with a great deal of information into forager lifeways, they have all been focused on shelters, potentially limiting forager expressions in the wider region. In addition, almost all have been performed in South Africa with very little work in Botswana (although see Walker 1994; Forssman 2014), with none to speak of in Zimbabwe. Thus, this study aims to identify and study forager expressions outside of the ‘shelter’, connecting South African forager studies to bordering countries, namely Botswana.

If open-air sites play the important role Forssman (2013, 2014: 4) claims, they may provide additional insights in forager life systems presently unrecorded in shelter contexts. Schoeman (2006) for example recorded stone tools in Iron Age rain-control hills. These assemblages, much like Forssman’s (2010, 2014) open-air sites, are characterized by a lack of formal tools and the dominance of quartz in the assemblages. However, where Schoeman (2006) discovered no formal tools, Forssman (2014), documented a small percentage of formal tools at the majority of the open-air sites identified. Assemblages like these have not been recorded at shelter sites (see van Doornum 2000, 2005 and Forssman 2010, 2014). This suggests that shelter-based reconstructions of the forager sequence and forager-farmer interactions, are not representative of the whole spectrum of social relations occurring in the region. One other notable omission when confining oneself to shelter studies is foragers living in farmer homesteads, as homesteads do not exist in shelters (e.g. Walker 1995; Van Der Ryst 1998; Hall 2000; Forssman 2014). It is entirely possible that similar shifts occurred on the GML and it needs to be investigated whether farmers settling the landscape affected forager mobility patterns (Moore 1985; Hall & Smith 2000), forcing changes in forager site distribution and movement (Kent 2002). The way in which farmers impacted the settlement patterns of foragers on the GML is therefore poorly understood.

During the period of farmer settlement forager open-air sites were generally located near farmer homesteads with some forager sites being located within farmer homesteads (see Forssman 2014). This is initially suggested by van Doornum (2005: 182) who postulated that some forager groups moved into agricultural settlements, yet reliable dates could not be obtained. These findings develop that future research conducted to understand the forager record on the GML should study a variety of site types. These site types include open-air camps and those, possibly, next to or within farmer homesteads (van Doornum 2005: 194). However, all of this is speculative. Forssman (2010, 2013) used relative dating techniques to suggest a chronology for certain open-air sites and LSA assemblages found in farmer settlements neither of the studies revealed reliable dates for the possible onset of this trend.

Forssman's (2014) work in Botswana attempted to diversify our methods of studying and interpreting the forager sequence on the GML. By performing an expansive survey he was able to identify forager scatters across the landscape. These results informed his selection of a variety of forager sites which he excavated to better understand forager-farmer interactions across the landscape. This included two 'farmer settlements' at which LSA remains were found, João Shelter and Kambaku Camp (see Forssman 2014), at which he argued foragers and farmers co-existed. João was relatively dated to between AD 1000 and 1200. Unfortunately, the radiocarbon dates at João were not conclusive in proving the exact period for the onset of this settlement shift. However, Kambaku was dated successfully and was occupied between AD 1480 and 1650, which post-dates the disappearance of foragers from shelters on the GML, and leaves questions about what occurred between AD 1000 and 1300, leading up to this disappearance. The excavation of these 'mixed material homesteads' may confirm co-existence as well as give us an indication of when groups of foragers began occupying fixed settlements with farmers, thus, showing when foragers began incorporating themselves into farmer culture and society. This is one of the largest paucities in the forager sequence on the GML and one that this project undertook to rectify. This was confirmed by van Doornum (2005) after her study of shelter sites. "Excavations aimed at identifying and describing a hunter-gatherer presence in farmer sites (or lack thereof) are sorely needed" (van Doornum 2005: 176-177).

These forager studies have shown regional variability, and suggest that the landscape was a culturally fluid region rather than one with strict boundaries and autonomous cultural groups. This research expands on this as well as connects forager research performed in the northern Tuli, Botswana (Forssman 2014) and northern South Africa (e.g. Hall & Smith 2000; van Doornum 2005). These separately studied landscapes will be more appropriately merged into the inter-regional forager sequence (same applies to Figure 1.1 and 4.2). Thus, through the implementation of a landscape approach the data and finds were analysed, identifying which site best bridged forager and farmer studies in South Africa. A K2-period homestead (Euphorbia Kop) containing evidence of forager presence is excavated in order to assess the validity of the claims made by van Doornum (2005) and Forssman (2014). The results presented herein support their suggestions that foragers began occupying fixed settlements alongside farmers. This study also provides the first reliable radiocarbon results indicating this settlement shift. This shows one of the numerous methods adopted by foragers to manage the influx of farmers settling the landscape. It has been shown that there is diversity in the forager cultural record (e.g. Kambaku Camp; see Forssman 2014: 108) and the regional sequence regarding foragers cannot be developed without considering sites outside the ‘shelter’. I provide data that further supports this standpoint.

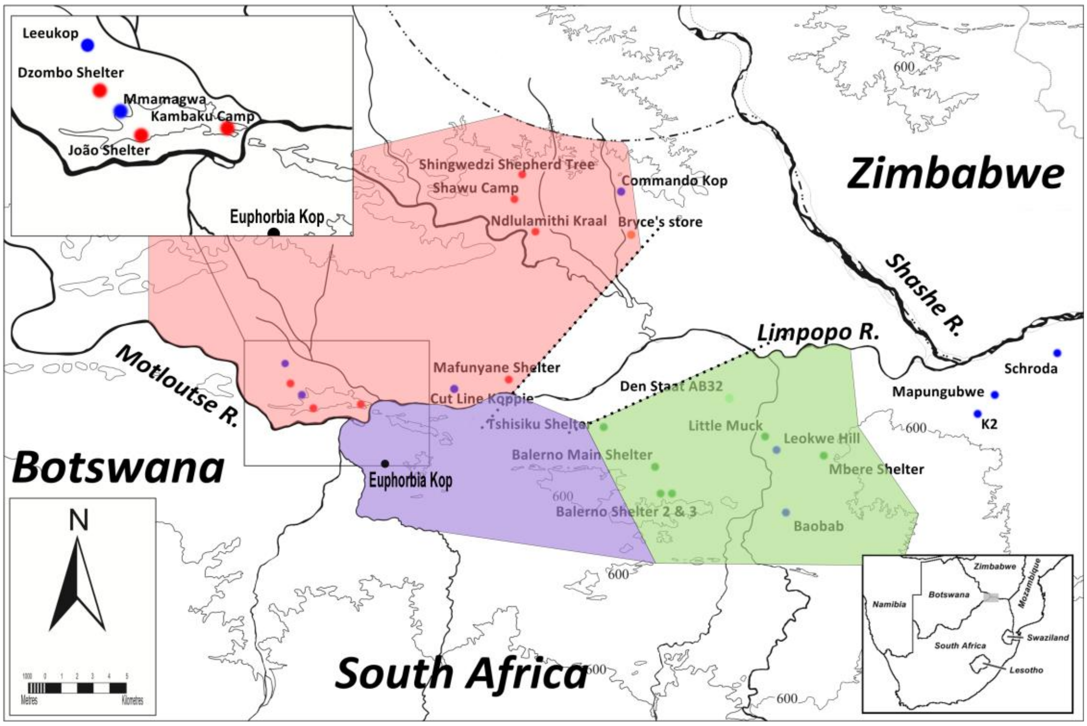

Figure 1.1. The Greater Mapungubwe Landscape with study areas. Green, van Doornum (2005) and Red, Forssman (2014). Purple indicates the study region of this research program.

1.1. CHAPTER OUTLINE

Chapter Two begins by providing a review of the relevant literature to this study. It considers first the ‘pre-farmer’ LSA sequence and then the farmer record. In presenting these separately the point is made that our tendency to view these records as independent and not entangled is problematic. Thus, through the implementation of this structure, problems in the isolated study of either culture are highlighted. Chapter Three presents the theoretical perspectives used in this study, explaining what landscape, material and environmental perspectives will be utilized as well as how they will be combined and theoretically cabled together. This is followed by Chapter Four, the survey and excavation methods, as well as a discussion on the merits of each. Chapters Five and Six presents the results from the survey and excavation, respectively, and the findings are discussed in the following chapter. Chapter 7 focuses specifically on the cultural fluidity in forager-farmer social relations and the impact separating foragers and farmers has on how we view the socio-cultural landscape. The concluding chapter summarizes the key findings and provides recommendations for future research on the GML.

2. LITERATURE REVIEW: THE GREATER MAPUNGUBWE LANDSCAPE

The way foragers and farmers used the landscape is situated in topographically, culturally, historically and socially informed decision-making. It is thus important to consider all of these contexts when examining a landscape's archaeological sequence. This chapter, therefore, begins by presenting the landscape itself, its geological, hydrological and ecological features. Following this, the archaeological sequence of both foragers and farmers is examined with specific attention given to the period leading up to the development of the Mapungubwe capital (AD 1220–1300). A distinction is made with regard to pre-farmer-contact forager groups and their cultural record and the shifts that occurred after farmer settlement. The chapter draws upon the research conducted in South Africa and Botswana to assist in understanding how the methods of forager interpretation vary within the GML. South African studies tend to create a chronological progression of phases in forager deposit, done solely through shelter excavation and analysis (van Doornum 2005, Hall & Smith 2000), whereas studies in eastern Botswana (Forssman 2014) focus on regionality and variability of forager landscape utilisation. Van Doornum's (2005) and Forssman's (2014) approaches differed with each being confined to a region on the GML with no attempts having been made by archaeologists at linking these two areas, despite each study considering similar archaeological trends.

The evidence that foragers were present on the landscape during the entire period predating the decline of Mapungubwe (AD 1300) has seldom been acknowledged in farmer contexts. The development of political and social complexity in southern Africa on the GML has been the focus of archaeologists since the discovery of international trade goods at the Shashe Limpopo confluence area. This has been done by exclusive studies of farmer settlements with ‘little’ regard to landscape and indigenous foragers within Iron Age studies (but see Hall 2000; Schoeman 2005; Forssman 2014). Social complexity occurred in this region, considering that foragers have not been considered as part of this complexity is a problem. The chapter reviews this and shows that forager and farmer archaeologies are intricately linked with the arrival of farmers affecting various changes in forager material culture.

2.1. THE PRE-FARMER FORAGER FOOTPRINT ON THE GREATER MAPUNGUBWE LANDSCAPE

Van Doornum (2005) established a sequence that chronologically documented the phases of activity at selected forager shelters in South Africa, postulating that “Interaction relationships are never purely functional… Instead they are based on social structure and identities, which make interaction predictable and which establish expectations on both sides of the relationship” (van Doornum 2005: 24). The work of not only van Doornum (2005) at Balerno Main but also Hall and Smith (2000) at Little Muck revealed a series of activity pulses at the various shelters, indicated by changes in artefact densities, frequencies of tool types as well as possible occupation hiatuses. From this work van Doornum (2005) was able to establish her framework which included five phases. The earliest, deemed the early pre-contact, begun around 11040 ± 90 BC at Balerno Main. Due to this phase pre-dating the period of interest here and that it is poorly studied, it will not be reviewed. The following two phases, her late pre-contact and early contact phases, are reviewed here separately to the final phases, Zhizo and Leopard’s Kopje contact phases (which will be combined), since it is during this latter period that farmers occupied the region in large numbers (see Table 2.1).

Table 2.1. Calibrated dates of the studied forager cultural phases on the Mapungubwe Landscape (after van Doornum 2008: 270; Forssman 2013: 55)

Phase	Period	Assemblage characteristics
Late pre-contact	1220 BC-AD 100	CCS dominates most sites but quartz marginally dominates at Little Muck Shelter, scrapers dominate and backed microlithic numbers are low.
Early contact	AD 100-900	CCS dominated; steep increase in scrapers and drop-off in all other tool categories; increase in bead production.
Zhizo contact	AD 900–1010	CCS dominates; there is a decrease in tools at most sites but scrapers still dominate.
Leopard Kopje	AD 1010–1300	CCS dominates; LSA assemblages become more ephemeral during this period but at Balerno Main Shelter they remain constant; scrapers dominate.

2.1.1. Late Pre-Contact Period: (1220 BC-AD 100)

Between 1220 BC and AD 100, which van Doornum (2005) called the late pre-contact phase, the forager presence on the landscape began to intensify from the earlier phase (early pre-contact), it is possible that sites from this phase are simply easier to find than those of the previous phase due to their higher level of preservation. Intensification is measured through the increase and diversity of occupied sites and the density of artefacts, which is considered a reflection of increasing activities. Small shelters such as Balerno 2 and 3 were occupied and foragers may have moved between these sites and larger camps such as Balerno Main, thought to be an aggregation camp (van Doornum 2008). If so, Balerno Main was a central place that was occupied at different times throughout the year. Trading camps developed, such as Little Muck, at which intense craft production occurred likely for exchanging purposes (see Hall & Smith 2000). However, it is not known whether the increase in forager material remains in the region indicates an increase in the local population or in an increasing dependence on shelters (Hall & Smith 2000: 31; van Doornum 2008: 271). Since no open-air sites have been studied it is possible that during this time foragers ceased using these camps and relied on rock shelters, increasing their archaeological visibility.

During the end of the late pre-contact phase at Tshisiku, backed tools slowly gave way to the dominance of scrapers (van Doornum 2007: 22). This coincided with the southwards migration of farmers who now crossed the Limpopo River entering modern day South Africa. At Tshisiku backed tool numbers also decline with the arrival of farmers, until only consisting of 15% of the formal tool category (compared to 78% in previous levels) with scrapers consisting of the other 85% (van Doornum 2005: 224). This is also reflected at Balerno Main where scrapers dominate the formal tool category during the pre-contact phase (van Doornum 2005: 244).

2.1.2. Early Contact Period: Before Zhizo (AD 100-AD 900)

This period has been labelled the ‘early contact period’ by van Doornum (2005), as Bambata and Happy Rest (around AD 350) ceramics had begun to permeate into sites on the South African landscape. It has been suggested, due to the presence of Happy Rest ceramics at rainmaking sites (see Schoeman 2006), that there may have been a small population or transit groups that occupied the Limpopo Basin (Huffman 2007: 22). However, farmers had not yet begun to settle within the basin, rather, they passed through and settled 80km south in the wetter Soutpansberg (Huffman 2007: 219). Whether or not farmers settled the basin or only the nearby Soutpansberg, their presence appears to have had an almost immediate effect on foragers. At almost all of the excavated shelters in Botswana (e.g. Dzombo; Forssman 2014) and South Africa (e.g. Balerno Main, Balerno 2, Balerno 3 and Little Muck; van Doornum 2005) there is an increase in artefact densities and what appears to be an intensification of activities, numbers of backed microliths decline further. For example, Little Muck was used as a forager camp from before AD 350, then evolved into a contact period forager camp between AD 350 and 600, which was signalled by a sharp intensification of activity at the shelter (Hall & Smith 2000: 34) documenting densities of material such as, bone, colouring material, ostrich eggshell, raw material and especially scrapers (Hall & Smith 2000).

The South African shelter sites are located between the farmers in the Soutpansberg and the incoming migration of farmers from the north into South Africa (elaborated on below). Van Doornum (2008) argues that foragers may have begun to occupy these shelters over this period (before AD 900) to avoid the farmers settling in the Soutpansberg. Why then did the foragers not move away with the onset of the next phase of more intense farmer occupation (Zhizo contact, see Table 2.1)? Could this occupation of shelter sites on the landscape not be a case of avoiding farmers, but rather, in some cases (e.g. Little Muck; elaborated upon later) foragers placing themselves in positions to engage with the migrating farmers (see Hall & Smith 2000; van Doornum 2005: 172)? If so, these shifts may represent foragers intentionally orientating themselves in positions on the landscape that would help maximise their involvement or contribution to farmer society. Nonetheless, notions of avoidance and ‘fleeing farmer occupied areas’ seem unsupported when one considers that foragers remained in the valley when farmers arrived in the area c. AD 900 (see van Doornum 2000, 2005).

2.2. THE AGRICULTURAL SEQUENCE OF THE GREATER MAPUNGUBWE LANDSCAPE

The Zhizo occupation of the South African portion of the GML is shown at the early tenth century to mid eleventh century sites of Schroda and Pont Drif (Hanisch 1980, 1981). The Zhizo groups established their centre at Schroda not far from the Limpopo, less than 5km east of Mapungubwe Hill (Hanisch 1980). Of particular significance at this point is that the Zhizo people were the first farming community at the Shashe-Limpopo confluence who were likely trading in, but not exclusively, ivory, salt, metals and animal skins for glass beads, cloth and coastal shell (Calabrese 2000: 184; Huffman 2000: 19; Hall *et al.* 2013). The first evidence for relatively large scale coastal trading came from a cache of glass beads from Schroda (Calabrese 2000:187), proving the development of the coastal-interior trading contacts with the Arab dominated Indian Ocean trade network (Calabrese 2000: 187). An increase in local wealth then led to a new farming group settling on the landscape who took over access to trade and the political landscape (Huffman 1996; 2000).

The arrival of Leopard's Kopje ceramics, indicate a new group of farmers arriving from south western Zimbabwe and eastern Botswana (Calabrese 2000: 183). As a result of interactions between K2 (Leopard's Kopje) and Zhizo groups, the Zhizo facies changed and is known archaeologically as the Leokwe ceramic facies (Huffman 2000). This latter facies has been a subject of much debate. According to Denbow (1983) and Huffman (1986a, 1996), Leopard's Kopje groups were hostile, forcefully driving away Zhizo groups into eastern Botswana and establishing their own political centre. Calabrese (2000), however, disagreed with this interpretation based on his finds at Leokwe Hill, an agricultural centre first occupied c. AD 900 and 1.5km from Little Muck. He performed a comparative analysis between the ceramics found on Leokwe Hill and Schroda and found similarities between morphological and decorative features. He argued that this comparative evidence suggests that ceramics found at Leokwe Hill are part of a larger Zhizo ceramic tradition. Calabrese (2000: 205) noted that Leokwe Hill's ceramics suggest stamping is favoured which also common in Zhizo assemblages, incision techniques were later incorporated into the facies from K2 decorative styles. This suggests that Zhizo users were not forced off the landscape but instead some remained in the valley and altered their material record, perhaps fulfilling an underclass role (Huffman 2014).

Calabrese (2000: 206) states that Zhizo groups remained in the Shashe-Limpopo area and that their material culture continued to develop, thus, it was not a case of “simple replacement, rather a much more complex and dynamic social and political situation”. This could be the case for other frontier examples on the GML (e.g. foragers and Zhizo groups). Calabrese (2000) changed the general view of the frontier zone, from one of hostility to a more tranquil approach of mutual habitation from the beginning of the second millennium AD. This gave rise to the sphere of political influence on the GML, with one core capital and a periphery of smaller sites, with their own regional capitals all trading resources. This was established in order to facilitate “systems that help to ensure that the flow of scarce, exotic resources used in status differentiation, and of the more mundane resources used to acquire them, continues” (Calabrese 2000: 207). Chirikure *et al.* (2013) challenged this notion, indicating a more complex system was present.

The Leopard’s Kopje capital, located at the base of Bambadyanalo Hill, was established c. AD 1000 and is known as K2 (Huffman 2000: 16; Meyer 2000: 6). K2 inhabitants intensified international east coast trade expanding the periphery of political control in southern Africa. Due to increases in individual wealth, disparity in ownership of cattle (Huffman 2000: 20) as well as political superiority, social stratification developed (see Huffman 2000).

The elite were eventually separated from commoners at the new capital of Mapungubwe, occupied between AD 1220 and 1300 (Huffman 2000:21). The Mapungubwe capital, located less than one kilometre from K2, was much larger and supported a population of about 5000 (Huffman 2000: 23). It was these developments that initiated the social structure which resulted in the first southern African state. The Mapungubwe state thrived for approximately 70 years before going into decline (Huffman 2000: 21). Likely reasons for the decline of Mapungubwe were initially attributed to climate change or to the loss of support in leadership, due to the economic disparity that occurred between the commoner and the elite (Huffman 2000: 23; Hall *et al*. 2013: 33). Whatever the reason for this decline (see Huffman 2000), by AD 1300 the elite had left Mapungubwe Hill and the population of farmers on the GML decreased (Huffman 2000: 24; Meyer 2000: 12). It has been widely accepted that after the decline of the Mapungubwe state, around AD 1300, Great Zimbabwe rose to prominence (Huffman 2000: 22). However, Chirikure *et al.* (2013: 339) believes that Khami[4] was a Leopard’s Kopje ceramic tradition descendant, making it a more likely offshoot from Mapungubwe. Great Zimbabwe is also believed to have already been a place of importance before the decline of the Mapungubwe state (Chirikure *et al.* 2013: 339). Of particular interest for this project is the near disappearance of forager material culture in shelters when the Mapungubwe state declines (van Doornum 2000, 2005, Hall & Smith 2000, Forssman 2010, 2014; Hall *et al.* 2013: 33). However, forager material at shelters did not completely vanish from the GML, for example Dzombo (Forssman 2014) in Botswana where forager material was dated to within the last 400 years.

Thus far, I have outlined the forager sequence of the GML (pre-farmer) as well as the progression of the intensified movement and settlement of Iron Age agro-pastoralists into the landscape. The next section will combine these two separate portions of archaeology into a more holistic understanding of both. In so doing, I will show how

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[4] Khami took over political control of the GML after the fall of Great Zimbabwe

in the GML region they never were apart but rather intrinsically linked. The LSA and the Early Iron Age (EIA) progression to the Middle Iron Age (MIA) should therefore be viewed as the same time period as they overlap (Sadr 2008). The way that I have chosen to demonstrate this link between foragers and farmers is by placing their archaeologies into a frontier framework.

2.3. FORAGER AND FARMER INTERACTIONS IN SOUTHERN AFRICA

Archaeologists in southern Africa insist on keeping a clear distinction between foragers and farming communities of the last 2000 years (Manyanga 2013: 75), with little integration of the Botswanan, South African and Zimbabwean landscapes. This should not be the case as we see many Stone and Iron Age sites occupied contemporaneously in all three countries. I begin by showing evidence of interaction outside of the GML and then returning to the GML and continuing the chronology of the shelter sites discussed above as well as possible avenues and motives for forager-farmer interaction.

Evidence collected from several regions in South Africa show that forager-farmer relations can be diverse and complex and not just necessarily a process of complete replacement. For example, at Broederstroom in North West province, archaeologists developed a new insight into the relationship between foragers and farmers (Wadley 1996). The site was a first millennium farmer homestead dating from AD 300-600 and excavated by Revil Mason (1981). In the cattle enclosures microlithic scrapers were found, presumably created and used by hunter gatherers (Mason 1981). There is no mention of knapping debris, which could indicate that foragers brought along their own scrapers from an offsite location to perform a service for the farmers, such as, hide production in the cattle kraal section of the farmer settlement (Wadley 1996).

This also points at possible spatial seclusion of the foragers in the farmer settlement, in which foragers only had access to certain portions of the settlement, such as the kraal. Similarly, Hall (2000: 33) excavated a Moloko homestead from the mid-second millennium AD on the Madikwe Game Reserve, North West Province. Forager material located at the farmer site was found at Madikwe, as well as possible forager spatial restrictions.

In the Waterberg, Van Der Ryst (1998) investigated forager-farmer contact between AD 1200 and 1700 and notes that in the shelters she excavated there is a decrease in forager material in the uppermost levels. This decrease coincides with foragers inhabiting farmer settlements on a more permanent basis (Van Der Ryst 1998). Foragers from the Waterberg intentionally shadowed the farmers, following them to the plateau where they interacted closely, eventually settling in their villages. Like forager-farmer interaction at the Waterberg, this pattern is seen elsewhere in the country. Excavated sequences from the Tugela Basin for example, show that with the emergence of farmers in the area the LSA (forager) occupation intensified in the valley, creating and maintaining amicable relations with the farmers (Mazel 1986; Walker 1995a; Hall *et al*. 2013: 29). This is somewhat contradictory to the 'usual' perceptions of forager behaviour, which is to avoid contact with farmers (see van Doornum 2000).

This is likely the case on the GML where forager material excavated from shelters give us insights into the levels of forager-farmer interaction and their phases (see van Doornum 2005). The initial increase in the LSA material (early contact: AD 100-900) record at most shelters (e.g. Balerno 2, Balerno 3, Little Muck and to a lesser extent Tshisiku) could be foragers whose mobility was disrupted and had begun looking for alternative economic strategies (e.g. Moore 1985; Hall 1990). Moore (1985) has shown how a small number of farmers settling a landscape rapidly raises the ‘cost’ on forager lifeways and settlement patterns as farmer’s livestock deplete the available resources. Possible forager strategies include trade of OES beads or wild produce, such as honey and ‘bush meat’ which was exchanged for grain or milk from agricultural settlements (Alexander 1984; Denbow 1984; Hall 1990; Klatzow 1994; van Doornum 2000).

During the ‘contact phase’ from AD 900, Zhizo groups began inhabiting the GML more intensively (Huffman 2000: 23). Foragers would have been faced with several choices to deal with the influx of farmers, these include, moving away, fighting, or interacting co-operatively with the farmers (see Alexander 1984; Moore 1985; van Doornum 2005). If foragers had already been trading (which was suggested earlier, through forager site selection, formal tool composition and material density) seasonally or more frequently, on equal footing with farmers, in the early contact phase (AD 100-900), the incursion of farmers onto the landscape may have been well received or gained little response (van Doornum 2005: 173). During this Zhizo contact period the material density at Balerno 2 and Balerno 3 drops drastically, interestingly, these sites are not in close proximity to farmer sites. This could mean that the foragers inhabiting these shelters desired to be in closer proximity to farmer settlements (van Doornum 2005: 174). However, material at Tshisiku remains at similar amounts, even though it is situated in close proximity to the farmer site of Pont Drif. At Balerno Main, LSA material increases, and as mentioned before is argued to be an aggregation site, where surplus items could have been traded at places like Little Muck. Thus, foragers appear to have seen farmers as a resource just as much as farmers saw them as one (e.g. van Doornum 2005: 193).

Little Muck's material remains are of interest. When Zhizo farmers settled at Leokwe Hill (1km south), it seems as though the foragers decided to enter into close relationships with the farmers, as opposed to moving away (van Doornum 2005: 175). Thus, Little Muck became more of a workshop than a camp, with a drastic increase in occupation and greater material densities (van Doornum 2005: 175). Hall and Smith (2000: 32) argue that following this initial intensification of activity at Little Muck (AD 900-1000), foragers on the GML had declining access to farmers over time, becoming increasingly socially inferior from a farmer perspective. According to Hall and Smith (2000) foragers eventually gave way to farmers who inhabited the site from AD 1100 onwards (Hall & Smith 2000: 35; van Doornum 2007: 18). Shortly after this, all evidence of forager habitation at shelters disappears, which seems to coincide with the decline of Mapungubwe (Hall *et al* 2013: 33; van Doornum 2008: 273). However, evidence of bone and bead technologies attributable to foragers have been found in elite sites and areas (e.g. burials, caches) on K2 and Mapungubwe. Hall and Smith (2000) claim that these 'forager' products were created by the Zhizo based underclass who replaced foragers, meaning, they would have to adopt portions of their technologies. This has since been disputed and will be discussed below.

From the Zhizo contact phase fewer shelters are occupied and forager signatures decrease at most excavated shelters on the South African portion of the GML, however, at Little Muck and Balerno Main LSA material increases. This could indicate foragers were spending most of their time working at or near farmer villages and less time in smaller, dispersal phase shelters (Balerno 2 and 3). Foragers, however, continued to aggregate at larger shelters such as Balerno Main during other times of the year (van Doornum 2005: 180). Thus, during the Zhizo contact phase it was postulated by van Doornum (2005), Hall and Smith (2000) as well as Forssman

(2014) that foragers may have begun utilizing alternate sites (outside the shelter), possibly moving into farmer settlements.

Several scholars have suggested that specialist forager medicine men were employed in the rainmaking rituals of farming communities (see Dowson 1998; Hall & Smith 2000; van Doornum 2005; Schoeman 2006). Rain-making consisted of a ritual called a trance dance, where shamans entered into altered states of consciousness. While in this altered state of consciousness, the shaman would perform specialist activities, such as capturing the rain animal and extracting rain (Schoeman 2006: 153). Rain-making occurred on hills, often with rock shelters or small caves, and where water pools (Schoeman 2009: 277). Farmers involved foragers in rain-making rituals because foragers were perceived as being the ‘First People’ and close to nature, therefore, capable of influencing it (Schoeman 2006: 280). Foragers may have utilised their increased status and rain-making skills to gain access to farmer resources.

A problem with this interpretation, according to Manyanga (2013), is the inherent assumption that foragers and farmers were living separate and divorced lives. He argues that, amongst many indigenous people in southern Africa, rituals, especially those related to healing and rain making are highly secretive and involve those at the core of the society or group (c.f. Manyanga 2013: 76). If foragers were at the core of these activities, this implies extreme trust and oneness. Foragers also needed rain and therefore may not have necessarily had to do it as a service to the farmers (Manyanga *et al.* 2013:78). This means that rainmaking may not necessarily have been purely providing a service to farmers and unlikely forced, but kindled out of a mutual relationship (e.g. Brunton *et al.* 2013). If archaeologists accept the continued adoption of shelters and rain-making hills as ritual arenas by farmers, this implies that an element of integration of the forager belief system permeated into farmer culture (Manyanga *et al.* 2013:78).

The view of farmers inhabiting shelters and foragers being misplaced or replaced is not shared by Schoeman (2009), who believes a mutually beneficial forager-farmer relationship occurred through rainmaking. Schoeman (2009: 293) suggests that the relationship between foragers and farmers became more than a strategic alliance and they were incorporated into the Mapungubwe society. Taking into account the variability of interaction between foragers and farmers, she claims different extents of assimilation, by foragers into the farmer community. This may explain the disappearance of the foragers from the archaeological record at shelters on the GML, at the same time as the decline of the Mapungubwe capital. Brunton's *et al.* (2013) findings at Kroonkop suggested the coexistence of foragers and farmers in a rain-making context. Kroonkop is situated at the Motloutse/Limpopo confluence area (Figure 1.1.).

Kroonkop is located just over 1km from Euphorbia Kop on the neighbouring farm of Ratho 2. The site was used as a rain making hill at least from K2 times into the historic period (Brunton *et al.* 2013: 110), excavated by Schoeman and interpreted by Brunton. Kroonkop was utilised by foragers initially, overlaid by K2 deposit that dates between AD 1040 and 1240 (the underlying forager deposits were not dated). Kroonkop has several rock tanks, these are key features on other rain control sites on the GML, as are cupules, pecked into the rock face that mark all rain control sites on the landscape (Schoeman 2006a, 2006b, 2009).

To the north, in Botswana, there are two broad physiographic zones identified by Denbow (1983: 405) with varied forager-farmer interactions: Kalahari Sandveld (northern portion which covers about 65% of the country) and the Eastern Hardveld (which is the western portion of the GML). Denbow (1983; 1984; 1990) conducted multiple excavations and surveys in Botswana, noting that foragers participated in complex interaction with farmers over the last 2000 years. Farmer sites such as Toutswe (AD 600–1300; Hall M. 1982) were powerful and tightly controlled with regard to settlement as well as economic and symbolic structures (van Doornum 2000). Due to farmers centralized hierarchical settlement systems, leading to crowded farmer occupation on the landscape of eastern Botswana, ecological space became a commodity. Foragers were then incorporated into, consumed or displaced by the centralized farmer polities (Dendow 1984; 1990). This perspective developed by Denbow (1990) is based on over 400 identified sites as well as excavations at 12 of the sites. Sadr (1997; 105), however, critiques this evaluation, suggesting that there is little evidence of relevance to the argument provided. Of the 12 sites excavated only three of the excavations had adequate publications and most of the sites excavated are farmer sites. Of the few forager sites that were excavated, material is limited to a few bones and potsherds. Sadr (1997: 107) states "that the presence of a handful of pot sherds and a few pieces of metal cannot prove the encapsulation of foragers by the farmers, as the material density is far too exiguous". Sadr (1997) does however agree to some extent, that some later groups of forgers were encapsulated by the Early Iron Age social and economic networks between AD 1100 and 1600, just not to the extent suggested by Denbow (1990). The view point of 'variability' in interaction was adopted by Forssman (2014), whose research in eastern Botswana was structured in such a way as to properly analyse and document the rich variability and regionality of forager and farmer interactions across the landscape.

Forssman (2014) attempted to address the issue of encompassing not only a chronological dynamic of interactions which was done through the study of shelter sites, but also the spatial dynamics. His strategy to redress these issues was through an archaeological landscape survey followed by the excavation of seven sites. Forssman (2014) studied various forager site types exposing multiple forager expressions, noting indications of their changing settlement patterns. At João (AD 1000–1200), it was established that foragers seemed to be living with farmers and claims that they may have been partly assimilated into the farming community. However, foragers still maintained certain aspects of their own culture, such as, not abandoning their LSA stone tool technologies (Forssman 2014: 341). The example of Kambaku (AD 1300–1500) excavated by Forssman (2014) shows foragers occupying a farmer settlement post-dating Mapungubwe.

João is located about 4km northwest of Euphorbia Kop. The shelter was selected for further research, through excavation, by Forssman (2014) because of the presence of a homestead directly outside the shelter. The homestead was occupied between AD 1000 and 1300, however, the radiocarbon dates acquired from João were inconclusive, so dates were obtained through ceramic and beads analysis, dating to the late-Zhizo and K2 era. In order to test if the shelter was occupied over the same period as the homestead, trenches were excavated within the shelter and immediately outside. There were also two trenches excavated at key locations on the homestead, namely at the grainbin foundation and in a midden. It was suggested by Forssman (2014: 335) that at João the relationship between foragers and farmers led to a spatial differentiation of the two lithic assemblages. There is a clear reliance of quartz as opposed to CCS in the homestead portion of the site, foragers living in the homestead may have used these artefacts but relied more heavily on farmer tools, hence only needing an expedient lithic production technology (Forssman 2014: 335).

Kambaku is located 3km north of Euphorbia Kop. Kambaku is an agricultural site occupied from about AD 1300 onwards, and is composed of two culturally distinct areas. Both of these areas were excavated in order to determine the relationship between them. The lower homestead is located in a small valley within the sandstone belt and the upper kraal is situated on top of the adjacent koppies above the camp (Forssman 2014: 108). The primary reason for the excavation of Kambaku was the presence of forager stone tools and the relatively late dates of the ceramics, which were identified to be Icon (AD 1400) and Khami (AD 1450 onwards), there was also a TK2[5] (AD 1200-1250) sherd found, but the sherd lacked context and could not be safely utilised to date the site to this era. Kambaku offers clear evidence that even though the forager material record vanishes from shelters post AD 1300, it does not disappear altogether (Forssman 2014: 341). The gradual disappearance of forager material culture from shelter sites might indicate a shift in settlement patterns toward farmer homesteads like João and Kambaku, beginning at around AD 900-1000.

Forager movement into farmer settlements is one of several possible outcomes resulting from farmer migrations onto the landscape, emphasising how interactions between farmers and the incumbent forager community “varied from place to place and time to time” (van Doornum 2000: 6). There is a rich mosaic of forager-farmer interactions on the GML, thus, in order to capture these, our methods of interpretation should be diverse. Kambaku proves that foragers remained on the GML post AD 1300, illustrating that foragers were capable of adapting their lifeways and culture to

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[5] TK2 refers to the transitional K2 period, which is between the K2 and the Mapungubwe period (AD 1200-1250).

farmers. Rainmaking and trade could have initially facilitated a foundation for mutual benefit leading to more intimate relations over time. However, some foragers retained their autonomous hunting and gathering culture until historical times (Sadr 1997: 111), this has been observed in northern South Africa at the Makgabeng Plateau (see Bradfield *et al.* 2009).

As this review indicates, work still needs to be conducted at different site types and on the peripheral zones of the GML in order to understand in greater detail forager settlement decisions, changes within their material culture, and regional patterning in terms of forager lifeway shifts. The investigation of forager-farmer relations hinges on theoretical perspectives. These help inform interpreting social relations and their correlates. The following chapter presents the theoretical framework adopted in this research and explains how it has assisted in understanding the archaeology of forager-farmer relations. This will be assisted through the identification of farmer material at forager sites as well as the reverse, assisting in documenting the level of cultural mixing, and in turn, the level of forager-farmer interaction that took place. By demonstrating this at a variety of sites and not only shelters, will then allow us to develop a holistic view of the late Holocene landscape. In addition, it will afford us the luxury of placing the local finds into a frontier perspective.

3. THEORY: FRONTIERS, BORDERS AND MATERIAL INTERPRETATION

3.1. A LANDSCAPE PERSPECTIVE

Archaeologists have long recognised the potential interpretive role of landscape in addressing broader questions of changing settlement patterns and cultural development (see Binford 1982; Anschuetz *et al.* 2001). This project will therefore focus on a landscape perspective as a tool for interpreting cultural trends on a regional scale and not the traditional focus of single sites on a landscape.

Landscape archaeology is based upon the premise that evidence of human habitation in an area exists in a variety of forms and is widely distributed (Foley 1981a). Landscapes are used to assess, emphasise and interpret natural factors (e.g. the ecology, geomorphology and hydrology) and cultural aspects (e.g. the organization, technologies and hierarchy) of human behaviour (Anschuetz *et al.* 2001: 158). A landscape study thus seeks to identify these various archaeological forms and interpret the layers of cultural representation/patterning which has been deposited over time (Cosgrove & Daniels 1988: 1). It is possible to consider people’s histories and acknowledge multidimensionality within the archaeological record, through the foundations created by the implementation of a landscape approach (Trigger 1991: 554).

A common thread within the field of landscapes and space, according to Harmanşah (2014: 11), is that the movement of people, items, myths and knowledge create connections between landscapes and places which orientate places into a larger interlacing network of “relationships and associations”. Anschuetz *et al.* (2001: 181) also share the perspective that people on a landscape are more than passive recipients of transformation enforced upon them from beyond their cultural systems. Therefore, people play an active role in the restructuring of their involvement with their physical environment as well as individuals and communities outside of their own (Anschuetz *et al.* 2001: 181). Trigger (1991: 559) states that individuals on a landscape could alter their communities' traditions through their ability to reason, and by doing so are able to alter their beliefs and culture to varying degrees. This is due to the people realizing their own changing needs and aspirations within a landscape (Trigger 1991: 560).

The range and variance of an individuals' behaviour in a community suggests that cultural systems were more progressive than traditionally recognized (Rambo 1991: 71). "Landscapes, after all, are the dynamic interaction of culture and nature" and not just the "imposition of culture on nature" or nature on culture (Anschuetz *et al.* 2001: 185). Cultures generate their own significance and signatures in material deposits during occupation, in turn developing new phases within the archaeological record, thus, altering the previous perceptions and uses of a place (Anschuetz *et al.* 1999: 9). The concept of culture being fluid and influenceable is not a recent development in archaeology, however, diagnostic factors are implemented in the identification of various cultures and landscapes, thus, creating a restricted classification system and implying a "closed concept of culture" (e.g. those pots equal that culture) (Green & Perlman 1985: 6).

Anschuetz *et al.* (2001:185) noticed that each cultural group assigns its' own sense of space and place, no matter the purpose, level of activity or extent of utilisation. A landscape approach provides an objective framework from which to interpret these factors. A physical landscape can be inhabited by diverse cultural groups with each drawing useful yet potentially conflicting values from places they perceive and imbue with importance (Anschuetz *et al.* 2001: 186). "Although a landscape approach realizes the inherent fluidity and permeability of narrowly defined boundaries, the persistence of particular ‘places’ within may serve to define a landscape” (Anschuetz *et al.* 2001: 186).

Thus, archaeological information identifying various economic strategies and tactics may contribute to the segregation of coexisting cultural groups (Anschuetz *et al.* 1999: 9). A landscape approach, when in practice allows researchers to identify and recognize multiple cultural communities as well as ethnic and social groups within the studied landscape. Therefore, archaeologists ought to predict a multitude of landscape histories which are delineated in the archaeological record.

The multidimensionality and variability of landscapes create issues to archaeological thought, and may seem too ambiguous to sanction a landscape approach (see Anschuetz *et al.* 2001). However, traditional single site analysis is limited when observing regional trends, thus, the potential contributions of a landscape approach should not be disregarded too hastily (Anschuetz *et al.* 2001: 191). In order to observe the archaeological record beyond the boundaries of a site as well as assess behavioural variability in an area, a landscape approach is needed to contextualize and expand on the understanding of a site (Anschuetz *et al.* 2001: 191).

Unusual locals and sites (e.g. sites that don’t fit into current landscape sequence), discovered through a landscape approach, challenge a traditional ‘site’ and therefore are often construed as marginal or epiphenomenal to the main structures of settlement on the landscape (Harmanşah 2014: 3). A holistic understanding of the region is needed to apply a landscape approach. There is also a need to approach archaeological landscapes as belonging to the present in their own way, calling for specialist field methodologies to get a grasp of their connectivity (Harmanşah 2014).

This interconnected landscape perspective is made possible through full archaeological survey and the recording of all archaeological features on the landscape. At present this has not been done in South Africa at the Motloutse/Limpopo confluence area. Parts of the northern Tuli have been studied with a landscape approach (forager & farmer) and parts of northern South Africa have been surveyed for forager (LSA) (Forssman 2010; 2014) and farmer (agricultural) sites (Huffman 2012). Changes in distributions of archaeological material on the landscape chronologically "can be used to evaluate changes in the patterning of cultural traditions as realignments" of behaviour (Anschuetz *et al.* 2001: 192). Thus by implementing a landscape approach we can more actively understand changes in forager settlement patterns as well as more accurately document the interaction between two distinct cultural groups (foragers and farmers). The peripheries of landscapes, the edge of the cultural reach, are generally observed to be the boundaries of the realm.

3.1.1. Boundaries and Frontiers

The key to understanding interactions on each side of a boundary, such as the Limpopo River, lies not only in the material culture but also in the theory used to frame interactive networks. If done correctly it enables us to observe how the Limpopo operated as a form of fusion or disunion among the settlements, shelters and camps on both sides of this natural border (e.g. Muianga 2013: 53).

Attention will be paid to work done in eastern Botswana as well as examples from South Africa, other parts of Africa, and the world. Studied regions on the GML are in Botswana and South Africa separated by the Limpopo River. Typically research in southern Africa tends to be country specific but interregional studies are a strong tool in further understanding the ways of life on an archaeological landscape, rich in social interaction. Social theory of boundaries and borders are important to consider given the geographical context of Breslau and Ratho between Forssman’s (2014) and van Doornum’s (2005) research areas and along the Limpopo River.

In Africa, studies at these ‘social frontiers’ have been heavily influenced by western thought (Kopytoff 1989: 4; Flynn 1997: 312). Turner (1894) formulated the concept of frontiers in North America during the expansion of European settlement. Turner (1894: 200) defined a ‘frontier’ as the outer edge of a wave, a meeting point of savagery and civilization. This brought the concept of clear distinctions between cultures like foragers and farmers. Lightfoot and Martinez (1995: 473) consider a ‘frontier’ to be a spatial term to designate a physical political margin, outer boundary or fringe area. Kopytoff (1989: 8) proposed an alternative definition. He considers a frontier as a matter of physical political division within a geographical space, arguing that frontiers can arise because of cultural divergences. The dictionary definitions describe a frontier as: “a fringe, a vague intermediate state or landscape” positioned along a dividing line between two countries (Naum 2010: 101). A “frontier” exists when “two or more groups come into contact with each other”, there is a meeting of different cultural backgrounds, a zone of interaction, generally with one encroaching on the other (Naum 2010: 101). From a frontier perspective, the landscape is considered and boundaries are identified. Boundaries can be geographical, political or ideological, possibly just the boundary of your dominion or known world (Naum 2010: 102). It is when these boundaries have been crossed and social interactions take place that a frontier develops. Geographic features can be cultural borders or boundaries of a sphere of influence. Boundaries become frontiers and frontiers occur on a variety of landscapes with varied outcomes resulting from interaction (see Alexander 1984; Lane 2004).

Studies on frontiers tend to focus on how the incoming groups affect the incumbent one, neglecting the interrelationships of both intrusive and indigenous cultures (Waselkov & Paul 1980). It was previously thought that geographical and social isolation was crucial in the maintenance of cultural diversity within an area (Barth 1969a: 74). However, now boundaries and how they separate different ethnic groups are considered to operate in more complex ways (Muianga 2013: 55). The presence of a boundary, cultural or natural, does not necessarily mean that social and cultural interaction did not take place (e.g. Flynn 1997). In this regard the archaeological remains can assist in the modelling of the nature of interaction (Barth 1969a; Wobst 1974; Hodder 1982; Kopytoff 1989; Flynn 1997). In southern Africa this can be assessed by changes of cultural material in the archaeological record, namely through the analysis of stone tools, fauna, organic beads and ceramic sherds.

Lightfoot and Martinez (1995: 472) argue that a reconceptualization of frontiers should be developed; they see “frontiers as socially charged places, where innovative cultural” constraints “are created and transformed”; places in which creolization[6], integration and/or assimilation occurs. They argue that the conceptual framework of frontiers must be broadened and revised, to be “considered as zones of cultural interfaces in which cross cutting and overlapping social units can be defined and recombined at different spatial and temporal scales of analysis”(Lightfoot & Martinez 1995: 472).

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[6] Creolized societies conjoin two or more formerly discrete cultures in a new setting to create a social order in which heterogeneous styles, structure, and contents are differently preserved. Yet earlier cultural traditional practices, symbols and sensibilities are often maintained revered and even highlighted (Spitzer 2003: 58).

3.1.2. Frontiers and Diffusion

In America, frontier regions traditionally lay between colonial domains and a wide range of indigenous domains and cultural patterns (Waselkov & Paul 1980: 310). The above mentioned frontier type was created through a clear distinction between the incoming group and the incumbent one, with one being dominated by the culture with superior technology (e.g. agriculture, pastoralism, iron). However, this concept has been proven to not be the case (see Lane 2004) with variable reactions through multiple phases of interaction. There are examples throughout southern, central and northern Africa of the many varieties of reactions which are seen with regard to forager and farmer interactions (Sampson 1978; Alexander 1984; Ambrose 1984b; Hall & Smith 2000; Marshall 2000; Lane 2004; van Doornum 2006; Forssman 2014).

Sampson (1986) noted forager-herder interaction in the Seacow Valley by documenting ceramic indicators, he concluded that foragers settled downstream while herders occupied the headwaters area. However, foragers staying more upstream began to practice “windbreak anchorage with stones” as well as piling cobbles within their camps, thus, they were likely interacting more intensely with the herders (Sampson 1986: 55). He also concluded that relations between foragers and herders in the Northern Cape were hospitable (see Sampson 1996).

Wright (2011: 223) examines the spread of domesticated animals in north and central Africa showing the variable introduction of domesticates among some groups whereas others, even though surrounded by agro-pastoralists, persisted with their reliance on wild resources. This was also reported on by Lane (2004) who states that data collected in the Central Rift Valley (north and central Africa) suggest that the initial early herding frontier lasted close to 1000 years, giving ample time for a rich mosaic of interaction types to develop. There is evidence in some contexts that hunter-gatherer groups “deliberately adopted stock herding into their subsistence economy” (Lane 2004: 250). In other contexts, foragers may have utilised trade or theft in order to acquire domestic animals as well as other items from farmer communities (Gifford *et al.* 1980). Lane (2004: 251) identified three different groups that likely existed side by side in the Central Rift Valley, encompassing a blending of hunting, gathering and pastoralism based on either small livestock or cattle. There are also examples where forager groups actively avoided contact, retaining their cultural autonomy into the early 20th century. As mentioned, this was documented on the Makgabeng Plateau in northern South Africa (Bradfield *et al.* 2009) and the Laikipia Plateau in northern Africa (Lane 2004).

We can see, from the original definition of the term ‘frontier’ that it has undergone scrutiny and evolved into a much broader, and more complex system of inter-relations and exchanges, that now take more than one side of the frontier into consideration. Contributions by Alexander (1984) helped signal the initiation of a progressive frontier mentality, assisting to redefine the interpretation process and analysis of zones of mixture in Europe as well as Africa, more specifically southern Africa. Igor Kopytoff (1987) also proposed a frontier model that was developed for Africa, attempting to alter the eurocentrism of frontiers, he argued that there were three outcomes of a frontier with the arriving group either displacing the original inhabitants, taming them and utilising them for labour in certain menial or specialised tasks or, alternatively, the superior group incorporating the “other” into their own culture and in the process stripping them of their cultural identities (Kopytoff 1987). However the model was created based on different agricultural groups in Africa and does not take foragers into consideration. This does not necessarily mean that the model cannot be applied to forager-farmer interpretations on the GML, however, Alexander (1984) focused on this southern African landscape.

Lane (2004) applies a 'frontier theory' that takes into account the varying degrees and mechanisms for the conversion into agriculture, following in the pioneering footsteps of Alexander (1984). According to Lane (2004: 244), Alexander had problems with the theory of frontiers and its' ability to accurately represent the evolving temperament of frontiers at contrasting periods in their development, at times being "permeable and fluid, at others fixed and vigorously defended or contested", where others are simply not utilised. Different conditions can give rise to rather different kinds of social relations, between those on alternate sides of a frontier (Lane 2004: 244). Lane progresses in stating that: "while bounded, self-identifying ethnic groups may have conceivably existed, there is no good reason to suggest that, as in the historically documented past, individuals and perhaps even whole communities were able to shift identities along with their economic strategy in response to changing circumstances" (Lane 2004: 250).

3.1.3. Alexander's Theory of African Frontiers

The frontier model utilised in this project was proposed by Alexander (1984) who adapted the European concept of a 'frontier' and applied it in southern Africa. He called it the 'African Frontier'; which comprised of different phases of interaction between foragers and incoming farming communities (Alexander 1984). The 'first moving frontier' is the initial spread of farmers into an area that was previously devoid of farming communities. Due to the small numbers of foragers or pastoralists in a foreign landscape, they may have adopted some of the local culture and maintained amicable relations with local groups (Alexander 1984). The large scale settlement of a region by farmers is the next phase in the perceived development of frontiers and is known as the ‘second moving frontier’. During this phase, the incoming group would establish their economy and social structure on the landscape (cf. Forssman 2014). It is followed by a phase characterised by the establishment of long distance relationships and a time when farmers instituted political authority and possibly formed polities. This phase is known as the ‘static frontier’ and it is during this time that the impact of farmers on foragers is most visible in the archaeological record and resulted in permanent and irreversible change in their cultural sequence.

Alexander’s (1984) model has been applied to several studies across southern African frontiers (e.g. Denbow 1986; Parkington & Hall 1987a; M, Hall 1988; Reid & Segobye 2000; Forssman 2014). Thus, providing a framework that can be directly implemented to forager and farmer interactions over the landscape. The various ‘phases’ proposed by Alexander (1984) provide a firm platform for the interpretation of interaction on the GML, this is due to all the phases proposed, being found at sites on the GML (e.g. Hall & Smith 2000; Van Doornum 2006; Forssman 2014).

Mazel (1989b: 133) criticized Alexander’s (1984) model considering it theoretically inadequate, due to the fact that it only analyses the relationship between people based in ecological and economic terms. Mazel (1989a: 134) states that economic and ecological terms ignore aspects of human interaction, which are constituted by social, political and symbolic parameters and are part of inter-group interactions. Mazel claims that, a model of interaction tempts researchers to categorize their observations according to pre-existing schemes, thus, masking the true nature and subtlety of interaction (1989b: 134). To address this issue a variety of sources have been consulted, accepting that Alexander’s work is not paramount and unchallenged.

In this study, frontiers are considered as landscapes in which a variety of interaction networks existed between foragers and farmers. Mazel's (1989b) concerns toward the stringent nature of 'models' are considered and incorporated, with forager-farmer agency being acknowledged. For example, each forager group would have decided their own method of approach or cultural reproach with the expanding farmer presence, resulting in various forager material expressions distributed across the landscape. These relations led to the flow of meanings and practices between different communities (Schoeman 2009: 293), and likely lead to foragers adapting, and encouraging various forms of interactions between different cultural groups on the GML.

For instance, it is generally thought that some groups of foragers began to incorporate aspects of the farming economy into their own (Sadr 1997, 2002; Hall & Smith 2000; Kent 2002; van Doornum 2006; Van Der Ryst 2006; Schoeman 2009; Forssman 2014). Foragers began producing items for trade, these production phases can be observed in the archaeological record (e.g. Hall & Smith 2000). Evidence of craft production implicates foragers in farmer exchange, but how did forager contributions affect farmers and their market economy? Foragers would have traded rhino horn, copper, aromatic woods, ivory, skins, OES beads, salt, meat, feathers, melons, berries and firewood (Cashdan 1986; Wilmson 1989; Wadley 1996), and in return they would have received: grain, metal, pottery, and domestic livestock, later, including cows (Wilmson 1989; Forssman in press)

Developments occurred over a lengthy period and in a series of stages, with Alexander's (1984) African frontier framework providing an opportunity to encapsulate forager reactions to farmers, without risking homogenising the archaeological record. Thus, frontiers offer deeper insights into the structuring of trade relationships, cultural change and shifting identities. Frontiers should be considered variable, complex, nuanced and at times complicated places allowing us to view cultural transformations. How we will interpret the various archaeological materials as well as their implied roles within interaction will now be covered.

3.2. MATERIAL PERSPECTIVES AND EVIDENCE OF INTERACTION

3.2.1. Stone Tools

It has been argued, through the excavation of shelter sites (e.g. Hall & Smith 2000; Sadr 2002; van Doornum 2005; Forssman 2013), that shifts in formal tool types, specifically from backed tools to scrapers are linked to trade with farmers. Scrapers are argued to be utilised in the preparation of hides by foragers, which would have intensified with the onset of interaction (Deacon & Deacon 1980).

Studies conducted by Schoeman (2009) and Forssman (2014) show that lithic assemblages that are dominated by quartz tend to be ‘open air’ sites. Quartz are found abundantly throughout the GML and thus no specific area is overly favoured. These ‘open air’ sites are generally unstudied and are almost exclusively located near farmer settlements. It has been suggested that these quartz dominated assemblages signify a change in forager lithic technology/production, to a more expedient one that possibly incorporated farmer tools, decreasing their reliance on formal tools which take more time to prepare. The lack of formal tools and dominance of quartz in lithic assemblages are traces indicating interaction. Bipolar flaking is the primary percussion technique utilised in ‘open-air’ lithic assemblages, which has been argued to be a technique favoured by foragers (see van Doornum 2005).

3.2.2. Organic Beads

Organic beads made from ostrich eggshell and Achatina (land snail) shell, much like scrapers, increased in frequency at the onset of interaction. For example, at Little Muck (Hall & Smith 2000) changes in the activities that took place at the shelter and an intensification of forager activity were noted, including OES bead production, when farmers appear in the area. Shelter excavations often noted that post-2000 BP assemblages contain large quantities of manufacture debris and/or incomplete organic beads (J. Deacon 1984a; Hall & Smith 2000; Sadr 2002; Forssman 2014).

It is widely thought that OES beads found on Iron Age/farmer sites were originally made by foragers and therefore obtained by farmers through trade (e.g. Silberbauer 1981; Jacobson 1987). OES beads have also been used as a strong line of evidence in interpreting early farmer and forager relationships (Tapela 2001, 61). For example, Mazel's (1987) excavations done at Mbabane and eSinhlonhlweni Shelters in the Tugela Basin, concluded that forager-farmer relationships and trade, as being strong and harmonious. This was due to the economic strategies adopted by foragers. Mazel (1986) states that the OES beads recovered from farmer settlements in the Tugela Basin were probably produced by foragers. This conclusion is based on the lack of evidence suggesting manufacture at farmer sites. He suggests that the beads may have been imported as a finished product (Mazel 1986). However, this cannot be proved conclusively due to the possibilities that the OES bead production areas may not have been identified and excavated, or farmers may have produced the beads themselves and then brought the finished goods to site. Elsewhere, in Zimbabwe near Bulawayo, OES bead manufacture is associated with the foragers from the Matopo hills area (Walker 1995). Walker (1995) goes further in suggesting that OES bead production was undertaken on a massive scale among the Motopo hills LSA groups for farmers.

It is possible that farmers produced their own beads for their own purposes. Thus, while these items have been used as indicators of interaction it cannot be shown with complete certainty that all such items, whether, stone tools or beads were produced for trade purposes (see Mitchell 2003). However, in Botswana and Namibia, studies have shown that there are significant size differences between forager and farmer beads, with OES beads found on forager sites being smaller than those found on herder or farmer sites (Tapela 2001; Jacobson 1987).

It is proposed that two different size productions may have been manufactured by two different groups or by one group specifically for the other. This is suggested by Jacobson (1987) stating that bead size is a stylistic variable, with larger organic beads representing farmer sites and smaller beads representing forager sites. Tapela (2001) noticed three patterns with OES bead sizes, by measuring the external and internal diameters, noting that 6mm external diameter forms a boundary between farmer and forager OES beads, with larger beads (>6mm) comprising the farmer’s preference (up to 18mm). If Tapela (2001) and Jacobson (1987) are considered, then all OES beads with an external diameter below six millimetres could indicate production by foragers for foragers, and diameters above six millimetres indicating production by foragers for farmers. An unrelated yet similar trend is noted by Huffman (2005) in regards to Bambata Pottery, noting that Bambata A was produced by farmers for foragers and Bambata B also being produced by farmers but for themselves.

3.2.3. Fauna

The faunal remains of forager and farmer assemblages vary. Domesticates largely dominate farmer assemblages throughout the Limpopo Valley, and the abundance of wild fauna varies between sites (Plug 2000; Badenhorst 2011). Wild fauna in farmer assemblages does not necessarily indicate trade between foragers and farmers, a point which Denbow (1999) argues, due to farmers also having hunted, trapped and snared wild animals (Kusimba 2005). This is more prevalent in early farmer sites (e.g. Zhizo), where wild game dominates the assemblages (e.g. Voigt & Plug 1981). Thus, faunal remains can be used to distinguish between different cultural groups due to their economic focus and variable utilisation of natural resources.

When shifting view, from considering general forager-farmer patterns to intra-site patterns, Hall (2000: 34) noted that forager artefacts were discovered in certain areas on an early Moloko homestead in Madikwe Nature Reserve. Hall (2000: 34) stated that: “when Bushmen entered farmer homesteads they were subject to Moloko socio-spatial ‘codes’ that structured day to day life“. This use of certain areas by foragers could give us an insight into variations in social-status on the site. It may be possible to apply frequency changes between wild and domesticate faunal remains within different portions of a site (see Plug & Voigt 1981; Forssman 2014). Noting, for example, if certain areas, such as the “periphery” of the site produced higher frequencies of “wild” fauna, with the central “kraal” area showing higher frequencies of domesticate fauna (wealth). This could indicate social standing, as well as area usage within a site as well as the reliance that can be placed by the inhabitants on domesticated fauna in each area.

3.2.4. Ceramics

Many forager sites occupied within the last 2000 years contain small amounts of ceramic sherds (Sadr 1997); representing maybe a few complete pots. This also seems to be the case on the GML. Van Doornum (2005; 148) argued that trade was the only method for foragers to acquire pottery from farmers. Gunther (1986) previously stated that foragers could acquire farmer items through labour relations. ‘Labour’ may have entailed; the herding of livestock (Solway & Lee 1990), the tilling of farmer fields

(Barnard 1992: 119) or may have been specialist hunters and/or ritual practitioners (Dowson 1994), providing rare items and being involved in sacred rituals (see Manyanga *et al* 2013).

Rain making sites are generally also observed as having larger quantities of ceramic sherds than other forager sites. It has been suggested that foragers use farmers as a social resource (Denbow 1984; Moore 1985), an example, is to resolve conflicts or disputes (see Wadley 1996). Ceramic sherds may have found their way onto forager sites through various means, as mentioned above, possibly even foragers picking up sherds of ceramic and bringing it back to their home base. These ceramic clusters on forager sites will be interpreted as signs of interaction and harmonious forager-farmer relations, keeping in mind the possibility of overlaying occupations.

Figurines, though not ceramic, are found at ‘elite’ farmer sites (see Calabrese 2005) and will be classified as a prestige item. They have been recognized as symbolizing female initiation rituals on the GML (e.g. Hanisch 1981), which only happened at important and influential farmer sites.

3.3. EVIDENCE OF INTERACTION

Certain artefact types either appeared in the forager assemblages at the onset of interaction, or quantities of certain artefacts increased. Some examples are the prevalence of scraping tools and the dominance of quartz, the faunal composition (increase in domesticates) and organic bead numbers and sizes. Changes to the archaeological record in the shelter sites should be compared to nearby Iron Age sites, where contemporaneity of interaction can be observed (see Wadley 1996; Mason 1986, Hall & Smith 2000, van Doornum 2005). There would also be changes in the farmer settlements’ archaeological record when interaction with forager communities intensified (Wadley 1996, Hall 2000). Building an interpretation on a single site or site type will lead to misunderstandings in the relationship between foragers and farmers (Forssman 2014: 28).

Changes are frequently accompanied by shifts in settlement and mobility patterns as a direct result of farmers through various phases, ultimately restricting access to resources and local grazing areas on the landscape (Moore 1985; Hall & Smith 2000; Forssman 2013). There were also many intangible exchanges and outcomes that took place during forager-farmer interaction or trade. Some examples could have been; religious beliefs, language, legal or political assistance and consumable foods (Forssman 2014: 28). The faunal record is but one of the consumables indicating interaction that can be studied in the archaeological record. Thus, while material remains are useful tools in observing forager-farmer interaction, exchange, and trade, they have limitations and should not be seen as the only source of forager and farmer relations. This is due to, not all evidence of relations between these groups being materially represented at a single site or in the archaeological record (Forssman 2014: 28), as some or most exchangeables don’t preserve.

Therefore, this project utilizes Wylie’s (2002) ‘multiple strand theory’, to strengthen the argument, combining landscape perspectives (geographical, hydrological, chronological and spatial) and material culture (e.g. stone tools, ceramic, beads and fauna). Reconstruction arguments developed by archaeologists’, lack direct access to the articulate beliefs, and cultural views of the inhabitants who no longer exist on the landscape and/or settlement (Wyllie 2002: 167). Archaeologists must make explicit a range of assumptions and inferal steps which are largely ignored when dealing directly with a culture we intend to understand (Wylie 2002: 167). Thus, the strength in ‘tacking’ these individual strands of evidence “derives not just from the diversity of the lines of evidence but by the use made by the constituted strands of different ranges of background knowledge to interpret different dimensions of the archaeological record" (Wylie 2002: 167). When the strands are tacked together an argument becomes more compelling, insofar as it is improbable that they could all incorporate subjective predispositions.

3.3.1. Summary

In this chapter I have summarised the theoretical and material resources that will be utilised in the interpretation of the data collected through surveys and an excavation in the field/research area. The perspectives presented have informed other researchers in the area (Hall & Smith 2000; van Doornum 2005; Schoeman 2006a; Brunton *et.al.* 2013; Forssman 2014), as well as in other parts of southern Africa such as the Waterberg (Van Der Ryst 2006), the Magaliesberg (Wadley 1986; 1989) and the Tugela Basin in Natal (Mazel 1989). Now that the theoretical perspectives have been established, the following chapter will elaborate on the methodology used in the interpretation of the data collected from the surveys and excavation.

4. STUDY SITES AND METHODOLOGY

This chapter seeks to detail and explain the methods selected to achieve the goals of this research project. In addition, it provides information regarding the research area (size, location) as well as the motivation in the execution of its survey. An overview of the geology, floral composition and hydrology of the farms will be undertaken to assist in creating a landscape perspective. Methods for the survey and identification of sites will be stated. I will then explain the need to excavate the site chosen for excavation and reasons for this..

4.1. LANDSCAPE AND LOCAL ECOLOGY

The three countries that make up the GML are separated by the Shashe and Limpopo Rivers as well as the Kaapvaal and Zimbabwe Cratons, with Botswana and Zimbabwe to the north and South Africa to the south. This geological zone is known as the Limpopo Mobile Belt (Huffman 2008: 2033). The terrain consists of various Karoo sandstones as a result of continental erosion with mafic intrusions caused by continental movements (see Bordy 2000; Bordy & Catuneanu 2002; Huffman 2008; Le Baron *et al.* 2011). The remainder is a broken sandstone-koppie landscape along the Limpopo, Shashe and Motloutse Rivers consisting of undulating terrain as one moves' away from this zone, with occasional sandstone ridges and koppies.

There are three major river systems of interest to this project: the Limpopo, Shashe and Motloutse Rivers. Before the introduction of European drilled boreholes and manmade dams during the early 20th century, these rivers and many of their tributaries flowed throughout the year (Huffman 2008). When the Shashe is in flood the increased flow of water backs-up the Limpopo, forcing the Limpopo to rise and inundate parts of the surrounding landscape creating wetlands (Figure 4.1). A short but narrow gorge just past the confluence enhances this dam effect. Depending on rainfall, flooding would have been a seasonal occurrence (Huffman 2008: 2034). This ability for the Limpopo to flow backwards has also been observed at the Motloutse confluence area (Milborrow pers. comm. 2014). The resultant '*vleis*' are composed of clay and silt which is enriched with phosphates and nitrogen. These conditions are ideal for cultivation and indigenous species thrive in these areas (Smith *et al.* 2007; Huffman 2008; Forssman 2014).

These waterways and the ecological niches they create were exploited by foragers and farmers alike, in different respects. Foragers would have utilised these fertile bands/wetlands as hunting areas and later, farmers for crop production (e.g. Mashimbye 2013). The use of these rivers extends further than purely a subsistence standpoint but would also have facilitated mobility and trade. Chirikure (*et al.* 2014: 717) suggests that major drainage channels such as the Zambezi, Limpopo and Save Rivers helped facilitate transportation of trade goods in and out of Southern Zambezia, which is the top half of the GML extending northwards into Zimbabwe. Huffman (2000) talks of trade items being brought down the Shashe from the greenstone belt in Zimbabwe to be traded internationally with the east coast trade as well as the possibility of iron travelling 200km from the Tswapong Hills in Botswana to the Shashe Limpopo confluence, possibly utilizing the Motloutse.

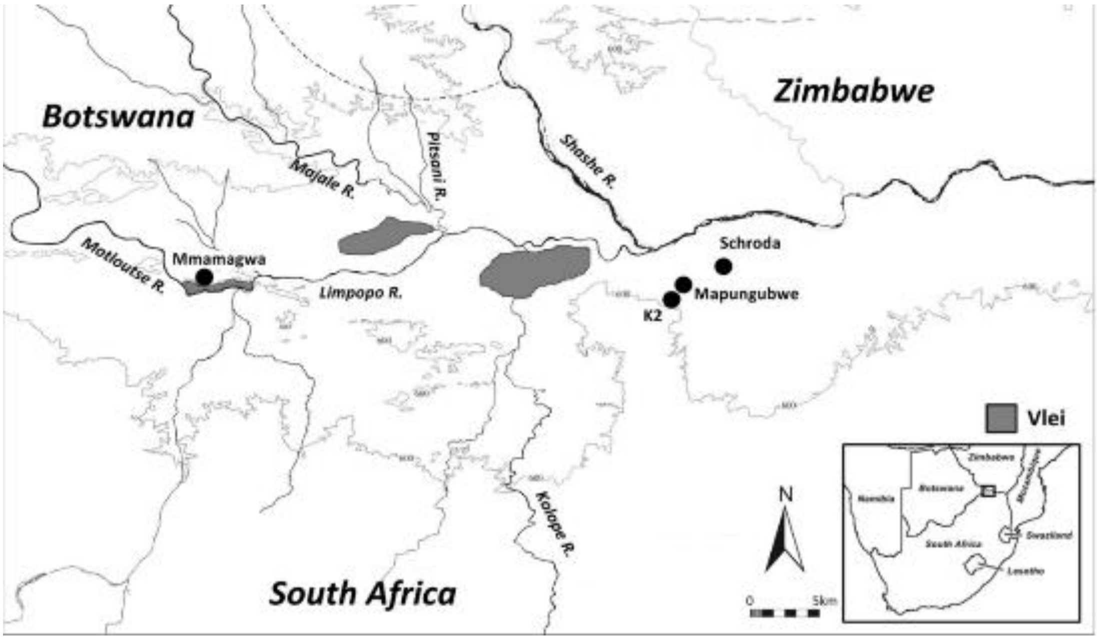

Figure 4.1. Water networks and wetlands (vleis) on the Greater Mapungubwe Landscape and dominant sites (after Forssman 2014: 31).

The Motloutse-Limpopo confluence is an area extremely rich in archaeological remains and the Motloutse could have facilitated a trade corridor into Botswana, connecting that landscape with the Mapungubwe landscape. This would be one of the furthest portions of the GML trade corridor used to deliver and obtain goods for the Indian Ocean trade (see Huffman 2000). The extent to which foragers rejected or engaged the farmer economy in this area is unstudied.

The GML falls under a savannah biome, which has a diversity of plant species, but is nevertheless dominated by mopane trees (*Colophospermum mopane*), which thrive in hot, low altitude regions with little rainfall (Van Wyk & Van Wyk 2007). Mopane trees retain their protein and phosphates well in winter months which grazers will exploit when grass becomes scarcer later in the season (Roodt 1998). Other important flora in the area (as listed by Forssman 2014: 33) are *Adenium, Aleo, Boscia, Cassine, Combretum, Commiphora, Cordia, Croton, Cussonia, Dombeya, Ehretia, Ficus, Flacourtia, Grewia, Gymnoporia, Hyphaene, Opuntia, Salix, Spirostochys, Sterculia,* *Vachellia* and *Ximenia*. All of the above trees were used by both animal and human populations at different times of the fruiting and flowering cycle (c.f. Forssman 2014: 33). While the dominance of mopane veld gives the impression of floral uniformity on the landscape, it is, however, quite diverse (Hanisch 1981a), with numerous ecological niches. Ecological niches occur in the koppies where vegetation grows thicker and various succulents and fruit bearing species are found (Eastwood & Eastwood 2006:19). Grasses also thrive on this landscape. The GML is largely composed of sweet grass, which means that they retain their nutritional value into the dry season, and are also characteristic of low lying, dry areas with low rainfall, generally between 250-500mm per annum (Van Oudtshoorn 1992: 37).

The ecological variability, diversity of plant species and highly nutritious content of the grasses should support large populations of antelope, pachyderms, rodents, reptiles and birds (Huffman 2008). However, at present this is not the case due to a variety of modern influences such as: land degradation, commercial farming, intensive grazing, expanding settlements and sport hunting (J. Smith 2005: 69). Many early travellers commented on the diversity of animals in the areas as well as their massive numbers (e.g. Selous 1907: 9, 1908; Dornan 1917: 37). And yet, even though the populations have declined through the years, the species composition has remained relatively constant (Voigt 1980). Examples of large mammals on the landscape (as listed by Forssman 2014: 34) are: 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 blackbacked 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 had an ample supply of floral species, grazing grounds, faunal diversity and large animal population from which human inhabitants of the land could draw upon. The river banks, *vleis* and floodplains were suitable for cultivation, though, not at all points throughout the last 2000 years, due to climatic variations over time.

4.2. RESEARCH AREA

Two areas on the Greater Mapungubwe Landscape have seen considerable work on the forager sequence, as described in previous chapters. These areas are north eastern Botswana (Forssman 2014) and in South Africa in the area west of the Shashe/Limpopo confluence (see van Doornum 2005) (see Figure 4.2). In order to investigate the LSA culture continuity across the landscape, it was therefore important to select an area that a) is geographically between these two areas and b) contains archaeological sites.

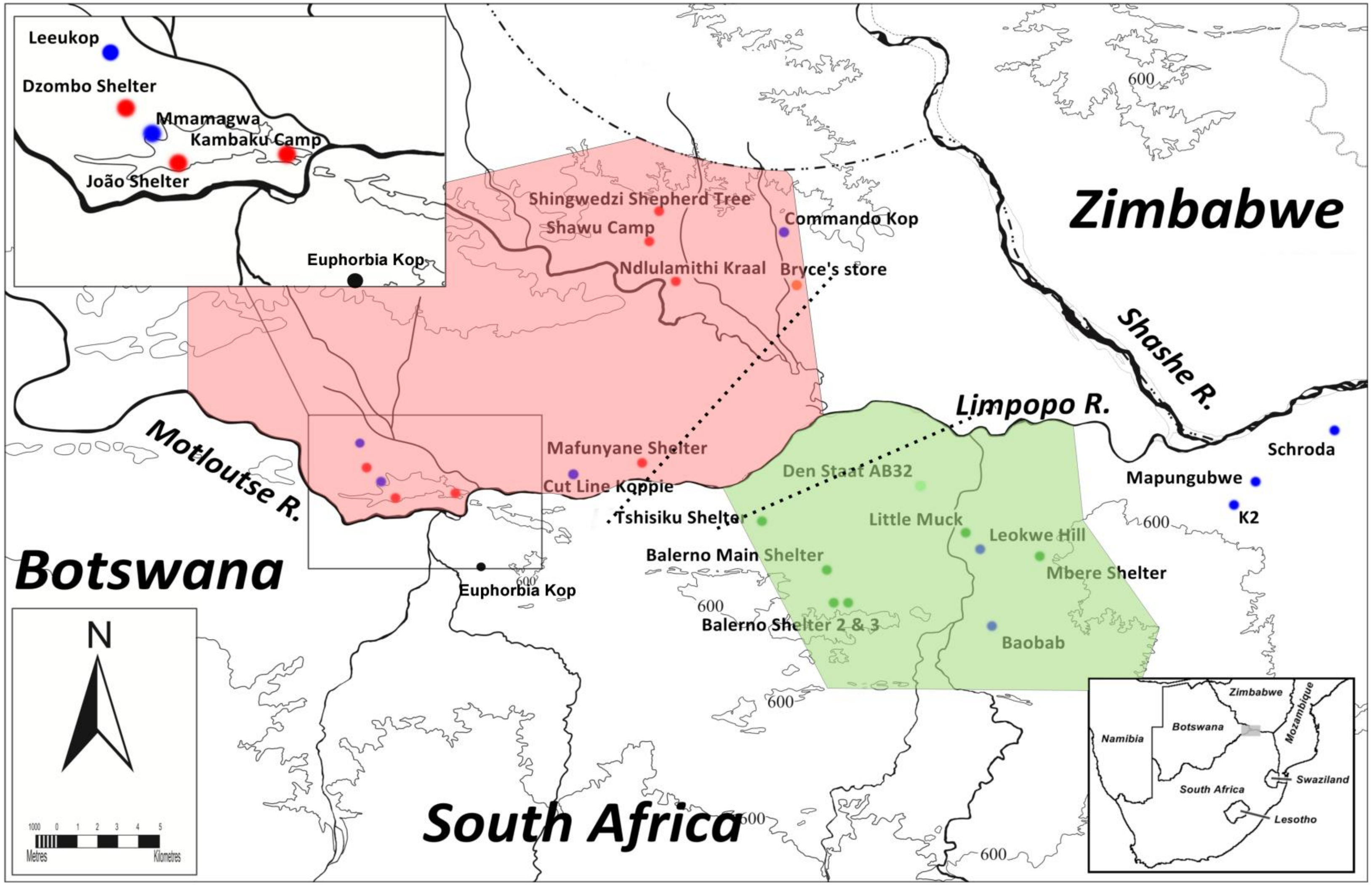

Figure 4.2. The Greater Mapungubwe Landscape and Research Concentrations (Red-Botswana; Green-South Africa)

Two farms, Ratho (1110ha) and Breslau (2920ha) were surveyed on foot, only using a vehicle to get to the survey area. The total area covered was a little over 40km² (4030 ha), with full coverage. The farms were selected for the purpose of identifying all archaeological sites on both research areas. One of the important selection criteria are the two farms' geographical location. Situated between Forssman (2014) and van Doornum's (2005) research areas, making the area a prime candidate to connect these two landscapes and create a comprehensive landscape study.

Within South Africa, the most distant excavated LSA site (see Figure 4.3) is Little Muck at just over 14km away, and the closest is Tshisiku less than 2km, Balerno Main, Balerno 2 and Balerno 3 falling between this margin, and all to the east (van Doornum 2005; see Figure 4.3). In Botswana, sites excavated by Forssman (2014) are extremely close (to Ratho), of which the nearest is Kambaku less than half a kilometre northwest, followed by Mafunyane at 600m, João at 3km and Dzombo at 4.1km. Therefore, as stated above, the area is ideally situated between the various LSA excavated sites.

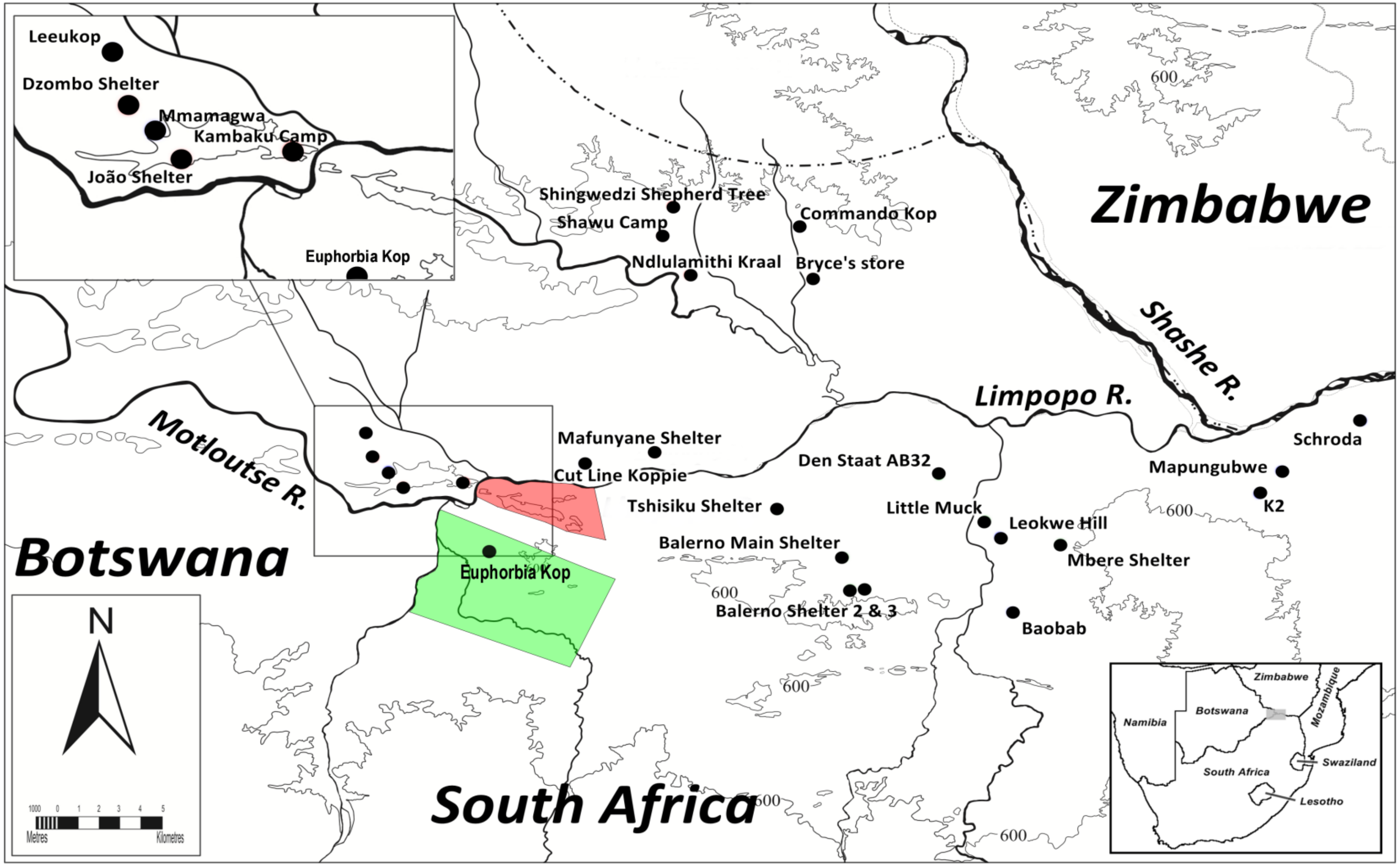

Figure 4.3. The Greater Mapungubwe Landscape: research area demarcated in red (Ratho) and Green (Breslau) (adapted from Forssman 2014)

As such, it was decided that the South African region surrounding the Motloutse/Limpopo confluence would be investigated. Therefore, these two farms Breslau and Ratho were selected as study areas (Figure 4.3), Ratho (red) is situated between the Motloutse/Limpopo confluence and the Pont Drift border post. The landscape is punctuated by sandstone koppies with a large central sandstone ridge running east to west (Poortjie Berg). Only the portion of Ratho located alongside the Limpopo (highlighted in red above; see Figure 4.3) was surveyed, this excludes the portion of the farm that Kroonkop is located on as it no longer belongs to the same farm owners (Ratho 2; see Brunton *et al.* 2013). The northern face of the ridge has a low lying Mopani dominated bushveld section bordering the river, and is susceptible to flooding. The sandstone ridge dominated the vast majority of my research area on Ratho. Situated 3km west is my second research area, Breslau, also bordering on the Limpopo River and is approximately 29km². The geology of Breslau and Ratho will be elaborated upon individually in the next section.

The survey areas were selected due to their proximity to the Limpopo River as well as their geographic position on the GML. There is a lack of published information on the area but some surveys have been conducted. Huffman (cf. Forssman 2013) and Pikirayi (pers. comm. 2014) have surveyed portions of the farms and identified a number of agriculturalist homesteads. Eastwood has also surveyed the area and identified seven rock art sites on two of the three farms surrounding my research areas, identifying three rock art sites on Breslau (Forssman 2015 pers. comm.). These surveys suggested good potential for this research area. In addition, there are a number of rock outcrops and ridges containing shelters that were likely used by foragers. The survey area is also in close proximity to other important shelters in the GML. For example, there are several prospective rain making sites situated on very prominent and distinct rock outcrops, one of which has been excavated named Kroonkop, located between my two research areas (Brunton *et al*. 2013).

The immediate area could also have served as a valuable location for farming activities due to the flood plain and Motloutse/Limpopo confluence area. Today farmers exploit the floodplain using this fertile strip directly on the northern and southern banks of the Limpopo River, and presumably the same may have occurred in the past (see Figure 4.1). This could suggest that the area near the Limpopo was valuable for both foragers and farmers. This could be due to cultivatable lands, access to water, available natural resources, ritual features (see Brunton *et al*. 2013) and places of refuge in the surrounding koppies and hills.

Therefore, the study area is ideally situated to study interaction in an area favoured by both foragers and farmers, and to explore cross-boundary frontier studies. The lack of research in this area dearticulates the various landscapes and this research will rectify this primarily by performing an archaeological survey connecting the different regions, culminating in excavations. In order to date, assess and compare the excavated material culture of both Forssman (2014) and van Doornum (2005). The next section will look at Ratho and Breslau separately, looking at their history, geology and vegetation.

4.2.1. Ratho

Ratho (22˚13’43.45’’ S; 29˚4’21.14’’E) is located 14km east of Pont drift border post at the confluence of the Motloutse and Limpopo Rivers. The farm stretches for 4.27km along the river and 2.6km inland from the confluence, covering an area of 11.1km² (1110ha) with an average rainfall of between 315 and 400mm per annum (see Straub 2002). While a portion of Ratho has been utilised as a crocodile farm for over 35 years, the area surveyed is utilised as a game farm and is largely undisturbed. This area includes a portion of the farm directly on the Limpopo River, consisting of a large sandstone ridge that runs from east to west named Poortjie Berg. Forming part of a larger sandstone ridge that runs along the Limpopo River starting about 10km west of Mapungubwe,stretching into Botswana as well as Zimbabwe along the Shashe and Motloutse Rivers (Le Baron *et. al* 2011). This ridge geologically falls into the Upper Karoo Sandstone and Silicate zone. There are no large water sources other than the Limpopo River on this portion of the farm, there are however several semi-annual springs that emerge from the ridge. One of these springs seems to be permanent, there is a small cement wall built under the shelter to collect this water, with the year 1948 engraved into it (Boshoff pers. comm. 2014).

4.2.2. Breslau

To the south of Ratho is Breslau (22˚15’ S and 22˚18’ S, 29˚00’ E and 29˚04’ E), located 18km west of the Pontdrift border post on the Limpopo River directly south of Botswana. The farm is 29.2km² (2920ha) and has an average rainfall of 400mm per annum (Straub 2002). The farm became fully fenced and was transformed into a game farm in 1989. The landscape is reasonably flat and varies in altitude between 535 and 560m above sea level, with the highest koppie being 630m above sea level (Straub 2002). Water sources other than the Limpopo River consist of the Matlamakadi Stream which enters Breslau from the east, as well as a number of smaller streams that join from the south and the east (Straub 2002: 40). These streams join and flow into Bertha dam, a man-made dam and the largest of several dams created by the current owners; these dams would not have been present during the period under-investigation although pans may have occurred here.

The geology of the area belongs to the Karoo Supergroup, of which three stratigraphic units occur on Breslau including dolerite dykes. The southern border of the farm contains isolated yellow mudstone overlain by quartz pebble conglomerates and sandstone (Straub 2002: 42). Breslau differs as it falls into different geological zones than Ratho, called the Lower Karoo Sandstone and Karoo Sandstone geological areas, interestingly also bordering a geological zone termed: Granulite Gneiss with Migmatite (Figure 4.4).

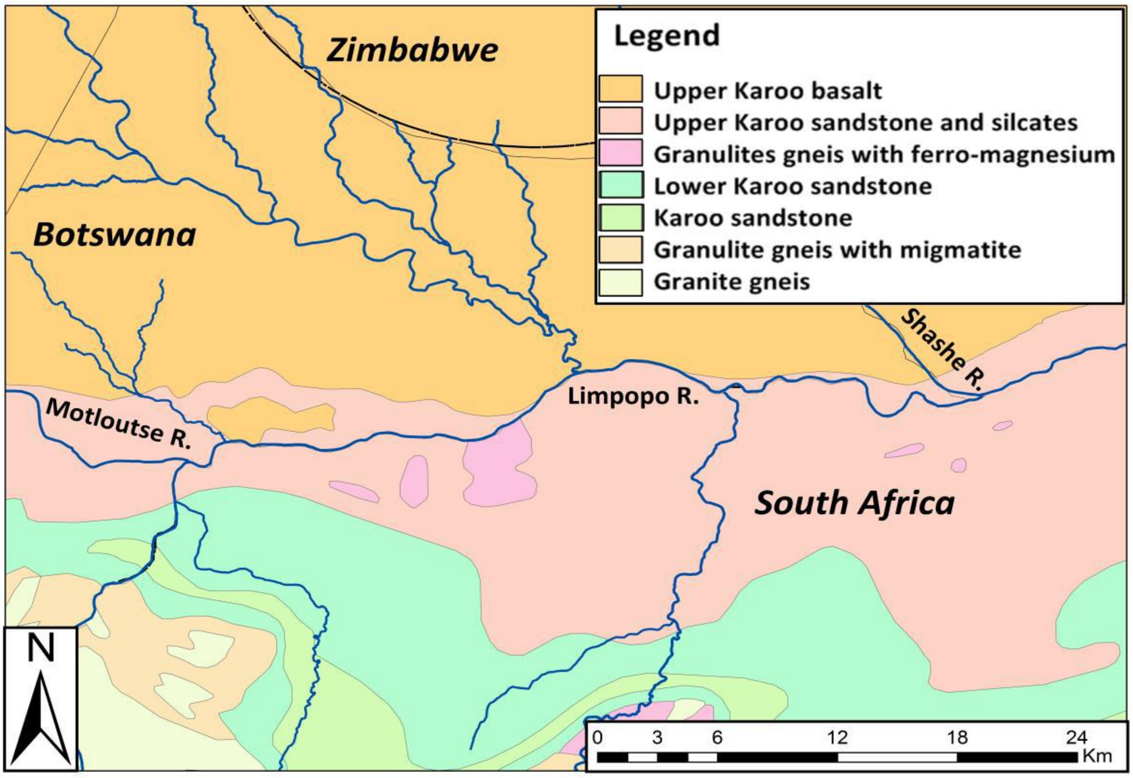

Figure 4.4. Geology of the Greater Mapungubwe Landscape (Source: Peace Parks Foundation).

The soils of the farm are derived from basalt. This assists *Colophospermum* Mopane to form extensive patches of the open shrubland and bushveld. The undergrowth of the farm is composed mainly of annuals *Enneapogon Cenchroides* and *Aristida* spp. (Straub 2002: 42).

As indicated the region has seen very little archaeological attention. It was therefore important to establish the presence, distribution, and occurrence of archaeological sites. This information was collected through the implementation of an archaeological survey described below.

4.3. SURVEY METHODS

The survey methods were designed to obtain a representative archaeological sample of the area, taking all facets of the cultural sequence into consideration. The survey design selected for this study was based on techniques that have been used by other surveyors who have conducted research both locally and abroad (e.g. Foley 1981; Mazel 1984; Sampson 1985, 1986a; Cherry *et al.* 1988; Sadr 2009; Forssman 2014: 72).

"Survey is not simply a poor substitute for archaeological excavation, or meant only to discover sites for us to excavate. In fact, it is uniquely able to address some research questions that excavations alone will never answer" (Banning 2002: 1).

The survey was conducted with a dual intention; to create a landscape understanding of the area, as well as to evaluate the sites discovered with instances of forager-farmer interaction. Several survey methods were considered and it seems that no specific technique is heavily favoured by archaeologists. I will elaborate on the various types of surveys, and then the techniques followed in order to execute the chosen type or types of surveys (mentioned below). I then elaborate on site identification and recording techniques, followed by the excavation methods, and finally, explore the typologies used in the analysis and interpretation of the material remains.

4.3.1. Survey Design

According to Ruppe (1966) there are four main types of survey. Type 1 is concerned with covering a large area in a less intensive manner in order to obtain a landscape-wide perspective of the archaeological distribution. This is useful despite the fact that in restricted areas survey coverage may be lacking. Type 2 combines surveying with excavations. Such an approach not only provides a landscape perspective but also a greater understanding of the archaeological presence at a single site (or more depending on the number of excavations). Type 3 is usually considered the most successful and is a limited problem orientated survey. Since little work has been conducted in my research area and we are unaware of the archaeological representation of the farms under investigation, this approach was not deemed useful at this early stage. Type 4 is a combination of Types 1 and 3 in which an extensive area is intensely surveyed. The limitations with this approach are the time required to achieve this goal and the funding needed for the fieldwork program. Determining which approach is best suited to the research proposed here one must take into consideration the regional context of the farms being studied and the nature of the investigation.

As discussed above, the farms being investigated are Ratho and Breslau. Both farms are situated in the mopane belt, where sandstone exposures in the Limpopo Mobile Belt have formed hill ranges and koppies. Combined the farms cover just over 40km² (4030ha). Since six weeks were available for surveying, it was felt that every part of the two farms could be surveyed on foot with no exclusions-ecological, hydrological or geological. No bias was paid to the likelihood or unlikelihood of settlement, thus, a holistic understanding of the landscape was achieved. Therefore, the surveys are similar to Ruppe's (1966) Type 4 in which an extensive area is surveyed intensively.

However, it also takes into account Type 3 (problem orientated) and Type 2 excavation. No surveys had been conducted in the area and this survey is an attempt to rectify that. Thus by combining these three types of survey, a realistic goal was set to gather as much archaeological information as possible with the available resources.

Data that were recorded then manipulated include: sites being plotted on large scale maps, as well as the aspects noted which are mentioned under: “Recording” (section 4.3.3.). Notes were made of the locations of sites on the landscape and the access to natural resources, raw materials, building materials (if an Iron Age settlement), farming areas and proximity to other sites. For dating, Deacon’s (1984) typology was used to identify broad chronological phases in the LSA, while Huffman’s (2007) ceramic typology in conjunction with Wood’s (2000) glass bead typology was used to date farmer sites (typologies discussed later in chapter).

Google Earth was used to help identify specific sites prior to entering the field. These include the identification of possible kraals, stone walls and shelter sites. The terrain was also analysed, noting, floodplains, rock outcrops as well as the various rocky ridges. This information was used to guide the field survey. Preliminary surveys conducted by Eastwood, Huffman and Pikirayi (pers. comm) were also used to assist with structuring the survey approach and give a broad picture of the archaeology in the area (see Chapter 5). Conducting extensive background research creates a concept of what should be found in the area and in what locales, which assists in the planning of the survey design.

I achieved Ruppe’s (1966) Types 3 and 4 by orientating the survey to identify all archaeological material on both farms. There are two types of on the ground surveying methods, walking and driving/riding. Walking can be done in transects, random or planned surveys. Various survey approaches were reviewed before the initial fieldwork was conducted. One method involved overlaying an area with a grid systems and then selecting squares randomly, systematically or in transects. These methods, however, are aimed at obtaining a representative sample of the area studied but all miss various sites for a number of reasons including visibility, Aeolian processes, and vegetation cover or simply bypassing/missing the area (Forssman 2014: 67). If survey methods are poorly constructed, the result is the unintentional exclusion of sites and the inaccurate representation of settlement on the landscape. Transects were experimented with in Forssman's (2014) survey of the northern Tuli. A team of five surveyors conducted a transect survey over 12 hours and covered 9.2km identifying 33 archaeological features (Forssman 2014: 119). He then conducted a solo planned survey focussing on areas more likely to have sites and in 8 hours of surveying covering 10.6km he identified 24 archaeological features (Forssman 2014: 119). Forssman concluded that transects may afford us with a greater resolution of the archaeology of a landscape, but it requires a more time and a larger survey team to achieve this. This led Forssman (2014) to continue with planned surveys, avoiding areas where possible erosive processes occurred, such as, floodplains, steep slopes and other areas that may not have archaeological remains in their primary context. These were determined by considering accessibility, a lack of fertile land, terrain harshness or areas prone to flooding which decreases the likelihood of archaeological preservation. That these same limiting factors exist in my own study, including issues of time and team size, I have opted to design my survey around the limitations discussed and identified by Forssman (2014). Since I will be surveying the entire farm, random paths are not useful because all areas would be covered and so a planned approach was opted for.

In the next section I explain the parameters used in the identification of a site and explain what indicators there are to define a site, other than material remains (e.g. rock tanks & cupules), looking at other applicable attributes mentioned below.

4.3.2. Site Identification

Identifying and grading archaeological sites is the primary phase in any archaeological survey (Tartaron 2003). Once a landscape survey has been conducted through the identification of all possible sites as well as the documentation of settlement densities and patterns, a good understanding of the settlement on the landscape will have been obtained. However, more data may be needed in order to chronologically investigate a specific period. Thus, site identification, inspection and comparison through a well-defined survey are integral steps before deciding on which site to excavate (Wandsnider & Camilli 1992; Tainter 1998). Once a holistic picture and understanding of all sites has been obtained on a landscape, the most informed decision can then be made in the selection of site for excavation.

Sites, at their most basic level, can be defined as any place at which culturally produced human evidence is found, including subsistence remains (Foley 1981: 157). Open air sites can be identified based on features such as scatters of diagnostic stone tools, but might also contain shell and bone beads, subsistence remains, and exchange items such as ceramics and glass beads. Sites may be identified through various features as well as changes in vegetation due to habitation. Some issues with site definition are: how many artefacts should an area have before it can be termed a site and what is the required artefact density is needed in what amount of space?

Foley (1981) viewed sites as areas where human activity existed on the landscape, but not necessarily with a definable locus in space or time (e.g. Fuller *et al*. 1976: 68). This gives a good representation of the activity on the landscape and use of space; open-air sites have been largely neglected. For example, open-air sites are generally identified through stone tool scatters that decrease in concentration towards the peripheries but no definable locus can be confidently identified, hence they are often not referred to or identified as archaeological 'sites'.

In this survey the identification of open-air stone tool scatters (multiple stone tools grouped in one location) as well as rock art sites were a priority. Lithics, the most common LSA remains, were identified and analysed. Concentrations of lithics[7] and evidence of stone tool manufacture was also documented. All cultural material was identified when a feature was located.

It was noted if forager features contained farmer material, as well as its geographic location and accessibility to the farmer homesteads found in the research area. This helps in understanding the cultural processes that occurred between the foragers and farmers in this area. As well as the settlement patterns of foragers in an area with farmer homesteads in it.

The distribution of LSA artefacts across a landscape offers an insight into the lives of foragers, however, archaeologists tend to be confined to narrow evidentiary bounds of archaeological material, dense accumulations of artefacts that are traditionally called 'sites' (Le Barron *et al.* 2010: 123). The view of sites not having a definable locus is utilised for this survey as it documents sites where nomadic populations are non-sedentary and leave widely scattered remains and a low density of evidence for their

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[7] 'Lithics' can be used interchangeably with 'stone tools'.

way of life (Thomas 1975: 81). Thomas (1975) also discusses the concept of off-or non-sites where just one or a few artefacts have been recorded. These are usually in areas between sites that have been given little importance by archaeologists, but, as Thomas (1975) argues, provide a much better, broader picture of the landscape. To create a regional perspective non-sites as well as forager evidence and farmer settlements have been considered here. "Archaeological material is often spatially continuous and not limited to one locus", thus, the term site may not be the optimal framework for analysis (Le Baron *et al.* 2010:123). Accordingly, all evidence of human activity was recorded, regardless of site-type, thus I have made use of the term 'feature', following Forssman (2014). Multiple features may be combined into a single 'site' with a definable locus (these are generally farmer settlements or shelters). Features were identified at locations where the concentration of archaeological artefacts (e.g. stone tools) was higher than the surrounding area, not necessarily a single artefact with no source which lacks context.

Farmer sites can be recognized easily as they create disruptions in the local flora. For example, kraals can be identified by open patches that are not caused naturally and where mopane trees are absent and sickle bush (*Dichrostachys cinerea*) and *Vachellia* species grow sparsely. *Vachellia* are pioneer trees whereas mopane trees take several decades to establish or re-establish themselves in an area (Forssman pers. comm. 2014). These grey patches of deposit tend to standout on the landscape which indicates possible middens or kraals from Iron Age settlements: they are easily identified as grey circles devoid of vegetation from a bird's eye view; this is where remote sensing is most useful. These criteria, coupled with the identification of features/artefacts have allowed me to get a thorough assessment of the Iron Age occupation in the area.

Farmer homesteads and features were recorded and identified based on all or a combination of the following features: a kraal, midden, grain-bin foundation, grinding stones, hut floors, human burials, ceramics, glass beads or evidence of metalworking in the form of slag. Each identified archaeological feature was photographed and all cultural remains were recorded as well as the site's GPS location, position on the landscape, context (for example sheltered or open) and degree of disturbance.

4.3.3. Recording

A specific site recording form was adapted from Forssman's (2014) recording sheet (feature recoding sheet) based on the research questions proposed in this study. The form has the following fields:

1) Site name and number: each site was given the name of the farm, followed by a number in numerical order. Where the farm owners had previously named the natural feature that the site was located upon, that name was used.
2) GPS coordinates: both the latitude and the longitude coordinates were recorded with a Garmin etrex GPS, as well as the altitude. This information was used to identify the relationship between different sites.
3) Features: all archaeological features were recorded, such as, for example, stone walling, terracing, middens, kraals and hut floors. The number of features that occur at each site was also noted.
4) Cultural material: all culturally modified artefacts (found within a 10 minute survey of the discovered site) were photographically recorded. Stone tools were gathered and photographed, raw material identified, and then placed into the specific industry into which the stone tools belonged (discussed further below). For example, stone tools and their raw material were identified (using Forssman 2014 which is based on Deacon's 1984 typology) and counted; photographs were taken of potsherds and beads; metal artefacts and stone tools were counted, photographed and all diagnostic artefacts, excluding ceramics, have been measured.

5) Drawing: only diagnostic artefacts have been drawn or photographed (during in field analysis).
6) Site context: this includes the type of vegetation, soil depth, animal and human disturbance as well as whether erosion is evident and to what extent.

Point 4 is a vital step in the site identification process. It is through this work that artefacts are further categorised, placed into chronological phases and, if diagnostic, drawn. Doing so is deemed necessary because it allows for the defining of relative dates to the archaeological occurrences. Fortunately, because of the work by scholars such as van Doornum (2005), Wood (2005), Huffman (e.g. 2007), Forssman (2014) and others within the area there are well-defined complexes and traditions with which to compare my results with.

4.3.4. Analysis of Survey Results

Spatial analysis has been conducted using Geographic Information System (GIS) utilizing a combination of ArcGIS and QGIS. All sites have been plotted on a map and related spatially to the landscape as well as other archaeological features. This then allowed me to observe landscape use patterns by determining the distribution of sites relative to each other as well as geographic and hydrological features. The cultural material was identified, where possible, to a specific culture. It also supplied me with the data required to determine the relationships between sites as well as the viewshed and visibility of sites in relation to other sites and the landscape.

All the collected data were digitized into Microsoft Excel spread sheets, noting several factors: natural, ecological and geographical, these include:

- Erosion: refers to the extent of erosion on the site. Labelled according to sediment removed/damage: extensive (>75%), considerable (>50%), slight (>25%), stable (<25%) and no erosion (0%).
- Substrate: refers to the soil type that the site is located upon.

- Location: refers to the exact location of the site.
- Habitat: refers to the ecological zone that the site is located in.
- Natural Features: refers to prominent natural features at or nearby the site.
- Animal Disturbances: refers to the extent and type of damage done by animals.

These variables give a good base for understanding how and where these sites are positioned on the landscape, as well as their potential for excavation (e.g. erosion and animal disturbances). Since this is not a geo-archaeological study the need to further assess and verify the substrate is not needed. Instead, this project focuses on the location of the sites on the landscape (e.g. pan clay vs lake clay). The habitat and ecological zones are identical to Forssman (2014) as they belong to the same landscape. Natural features are according to geological definitions, such as, a Koppies' are comprised of sandstone or rock, hills are inselberg and are covered with soil and not comprised of rock.

By combining the information collected at each site as well as the spatial relationship between sites and their surroundings, I am able to determine whether there are regional boundaries or whether my research area is a part of one region between Botswana and further east in South Africa. In performing typological cross-referencing between sites in these two areas I am able to observe whether assemblages in my research area more closely resemble those from one region or the other. By including access to trade goods and the distribution of sites I will be able to show areas of greater influence and settlement habits. For example, forager sites might have a closer spatial relationship with farmer sites in Botswana (Forssman 2014) or there might be a buffer or uninhabited zone (e.g. van Doornum 2005) between foragers and farmer settlements in South Africa, possibly indicating a lack of permeability between these landscapes.

The survey results provided, revealed a widespread distribution of archaeological sites. However, it was felt that considering the chronological issues associated with exclusively relying on surface material, an excavation would follow. One site, Euphorbia Kop, identified during the survey was selected for excavation. The excavation was conducted in order to assess the spatial restrictions/planning between forager and farmer interaction on farmer sites, as well as to assess the level of contemporaneity and contact between the forager (LSA stone tools) and farmer activity on a farmer homestead.

4.4. EXCAVATIONS AT EUPHORBIA KOP

Euphorbia Kop (22°15'17.69"S; 29° 1'54.85"E) was selected for several reasons. First, the site falls into the correct contact period (AD 1200). Second, LSA artefacts were found in the settlement and it was believed that they were associated with the farmer occupation. Thus, it was felt the site would reveal information pertaining to interaction between foragers and farmers. Third, this LSA assemblage was also believed to be extensive enough to extract enough data to securely associate the finds with foragers. Fourth, of all the sites identified in the survey it was felt Euphorbia Kop would offer the most pertinent data to this project. Fifth, the archaeological preservation appeared high.

A circular (4km) buffer zone was created around Euphorbia Kop, which would assist in contextualising the site within its immediate surroundings. The buffer zone covers the majority of the farm, hence, the whole farm will be considered, and also the neighbouring farm was not included in the initial survey, so a full buffer zone was not achievable in the same manner as van Doornum (2005) and Forssman (2014). However, comparisons were made to distance and density where possible.

Euphorbia Kop is a K2 site, with LSA stone tool scatters located to the west and south of the koppie, there seems to be an MSA scatter located immediately to the west, with a large kraal located between the scatter and the koppies. There is also a boulder site to the western periphery of the site. The koppie is located just over two kilometres from the Limpopo River and is within an area that has a high density of sites. Located on the surface at the northern periphery of the kraal there were ceramics, seven OES beads, a K2 Garden Roller and a LSA scatter. Four K2 Garden Rollers were found on the LSA/MSA scatter to the north of the kraal (40m). There are some small shelter sites to the immediate south-west of the kraal area, which also have forager and farmer material. Therefore, the site has clear spatial differences but in most of these there is an overlap of LSA and Iron Age material. While surface movement may have caused this, the presence of both material types is highly promising that both foragers and farmers used the site.

When excavating a site there are certain factors that need to be taken into consideration such as: substrate, location, cultural associations, research questions, hypothesis as well as availability of time and resources (see Renfrew & Bahn 2004 for an overview). An effective excavation should achieve the goals of the research by obtaining the required data so that research questions (Forssman 2014: 81) can be answered and the lacuna covered in the conducted research. I drew upon techniques used by Hall and Smith (2000), Hall (2000), van Doornum (2000; 2005), Van Der Ryst (2006) and Forssman (2014) to formulate a method that would allow me to acquire the results needed to achieve my goals. However, I relied more heavily on van Doornum (2005) and Forssman (2014) for comparative purposes. I only excavated a very small portion of the overall site (to create a representative sample of occupation, with minimum interference), utilizing some basic principles of excavation: spits, stratigraphy and trenches (e.g. Sampson *et al.* 1989).

4.4.1. Excavation Method

Four areas were selected for excavation (Figures 4.5 & 4.6): Trench A = the ‘shelter’ (boulder site) to the west of the site; Trench B = the stone tool ‘scatter’, with the K2 Garden Rollers, to the north of the koppie (70m); Trench C = the northern periphery of the ‘kraal’, with the seven OES beads and K2 Garden Roller; Trench D = an ‘enclosed’ area, on the koppie (Roughly between Trench A and Trench C) (see Figure 4.7). These areas have been selected because their spatial orientation was best suited to providing a representative archaeological sample relating to the site’s occupation. The shelter and kraal trenches will also assist in identifying if the foragers were present on the site, and if there were possible spatial restrictions, for example the site Broederstroom excavated by Mason (1981) then interpreted by Wadley (1996).

Figure 4.5. Photo showing Euphorbia Kop and points of excavation: red-Trench A (shelter); pink-Trench B (stone tool scatter); blue-Trench C (kraal); green-Trench D (enclosed area).

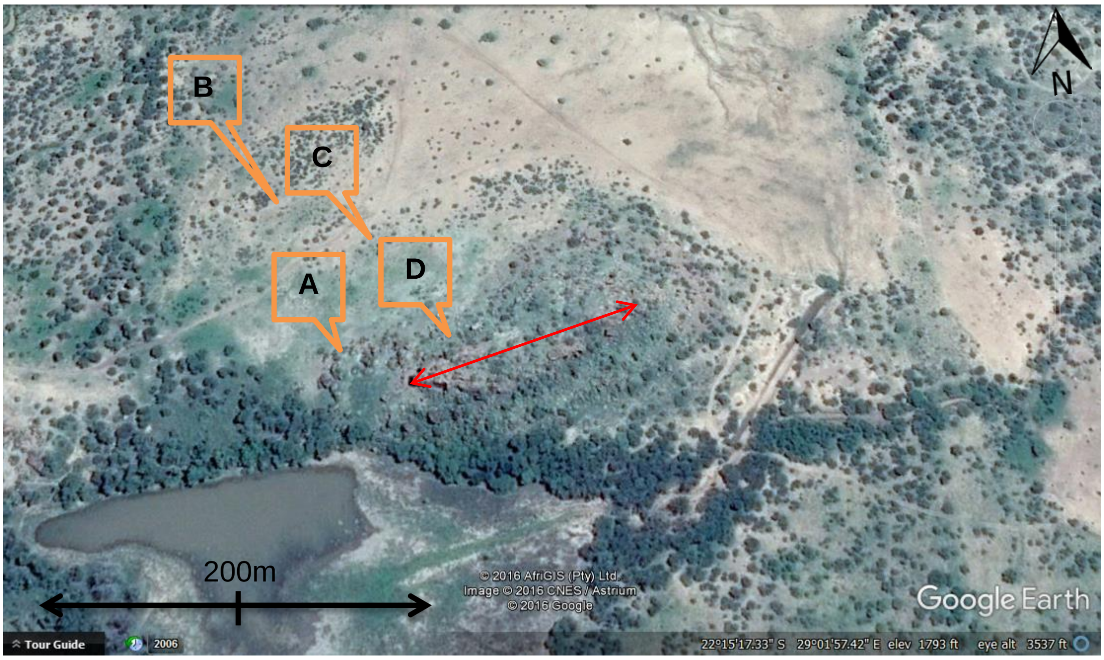

Figure 4.6. Aerial view of Euphorbia Kop (red line) with trench locations.

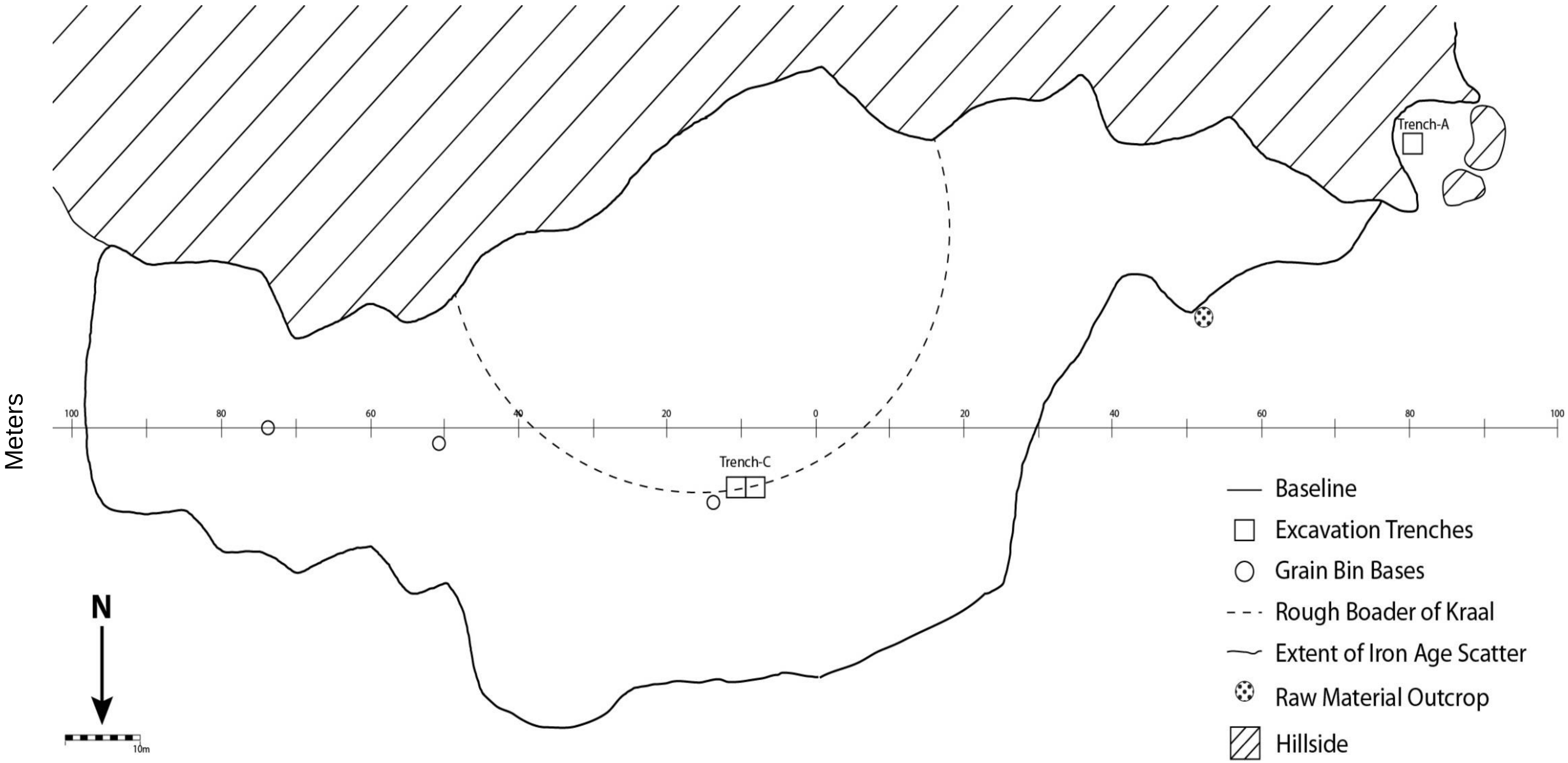

Figure 4.7. Site map of Euphorbia Kop, Trench B and Trench D were not included-Trench B was located about 40 meters north of Trench C, Trench D was located on the hillside between Trench A and Trench C.

In the stone tool scatter zone (Trench B) a 1x1m trench was excavated with a 1x2m trench excavated at Trench C (see Figure 4.7.). The trenches were taken down in spits of 5cm, noting natural stratigraphic horizons, but few were identified (e.g. van Doornum 2005; Forssman 2014). Spits were excavated within each stratigraphic unit. Therefore, a single spit might cover multiple stratigraphic units but in such cases the findings from each stratigraphic unit were treated separately and recorded as coming from a different unit but same spit. The deposit was measured and recorded by the number of buckets (one bucket =10L or 0.010m²) removed within each spit within each trench. This is done to assess the artefact density at each level of habitation (Forssman 2014: 81). Artefact density was calculated through data supplied from, spits (5cm) and buckets (10l), counted during the excavation. Frequencies of stone tools throughout the spits have been documented and compared between the separate trenches on Euphorbia Kop. Comparisons were also made to data collected by Forssman (2014) and van Doornum (2005) at their excavations.

These four placed trenches provided a decent representative sample for the whole site, with minimal damage to the site overall. The artefacts excavated were sorted into artefact categories and analysed at the laboratory at the University of Pretoria. Charcoal samples were submitted for radiocarbon dating at Direct AMS and were selected based on natural horizons or stratigraphic and cultural contact zones within the deposit. When the project is complete, all artefacts will be deposited at the Polokwane Museum for storage. A permit was acquired from SAHRA on the 9th October 2015 with the case ID7993 under Permit ID 2110. The same analytical methods used to identify cultural material in the survey were used and are presented below.

4.4.2. Analysis of Cultural Material

The analytical methods regarding the material culture utilised the same sources of interpretation for both the survey and excavation. The analysis of the data collected during the survey was done in the field and then photographs consulted when in doubt about a material culture. The material that was excavated was analysed at The University of Pretoria.

4.4.3. Stone Tool Analysis

Stone tools were analysed using van Doornum's (2005) method. Through the documentation of nodular[8] vs. embedded[9] raw material composition of the lithic assemblage, as well as composition frequencies of raw materials utilised (see van Doornum 2005). The raw materials were separated into five categories utilised by van Doornum (2005) and Forssman (2014), namely: quartz, quartzite, CCS, agate and dolerite after which it was also noted what raw material was dominant in each trench. Raw material dominance at one portion of the site could indicate a different use of space between these portions of the site.

The stone tool assemblage's composition of formal tools were noted and compared to frequencies shown by Forssman (2014). Analysis of LSA stone tools were based on Deacon's (1984) typology as well as Walker (1995), these typologies were adopted by van Doornum (2005) and Forssman (2010, 2014). By separating lithics into waste or debitage (e.g. chunks, chips, flakes, broken flakes, broken blades and lozenge chunks), which have no evidence of utilisation or damage as well as formal tool categories (e.g. scrapers and backed tools), which are tools that have been retouched

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[8] Nodules are raw materials that are not buried and are generally well worn, they are generally circular and found in riverbeds or material outcrops (on the surface).

[9] Embedded raw material entails that the material was exhumed from the earth at a specific location and not found on the surface, generally having no wear damage and are angular.

from a standardized shape (Forssman 2014:449). The formal tools identified during excavation were scrapers, their primary forms are: end scraper (where the working edge is at a distal or proximal end) and side scraper (where the lateral edge is worked out) (Forssman in press). Below are some examples of scrapers (Figure 4.8). Chunks could be shattered, or worked out cores or flakes, but are not recognisable as such (Forssman 2014: 448). Chunks are a rough by-product of lithic production, and are not indicative of a specific technology. Lozenge chunks, however, are more informative and are an indication that bipolar[10] flaking technology has been implemented in the creation of the lithics. A chip is a piece of lithic less than 10mm in length, some may be broken but others are part of tool or core preparation. No secondary working is evident on the chip. Flakes are pieces of lithics that have been removed from cores, blocks or chunks and show characteristics of working, such as a bulb of percussion. Broken flakes often indicate that flakes have been used or broken during production.

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[10] Bipolar flaking technology can be recognised by the distinctive crushing found on either one or both ends of a core. Often a “rugby ball” shape is created (Clark 1998), or the core ends in a point, with a fairly broad platform at the opposite end (van Doornum 2000: 23)

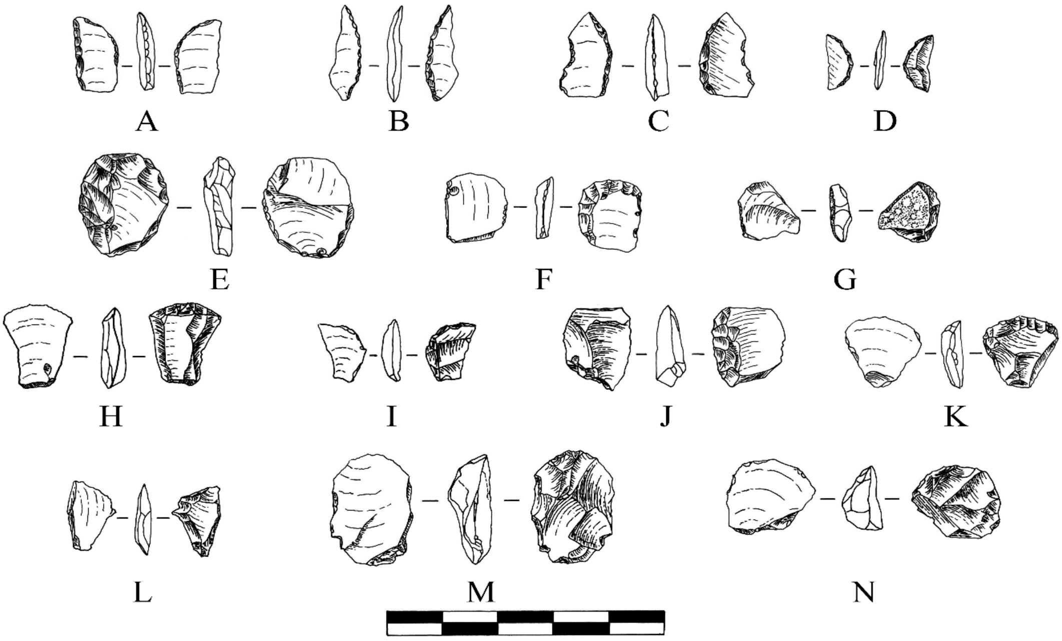

Figure 4.8. Scrapers and backed tools from Dzombo Shelter: A-D, I & L, backed tools; E, J, small side scraper; F, small end-side scraper; G, H, K & N, small end scraper; and M, medium end scraper (courtesy of Forssman).

4.4.4. Ceramic Analysis

Huffman (2007) has developed a well dated ceramic sequence for the GML. His various publications have addressed stylistic patterns and placement, among other features (summarised in Huffman 2007; 2009). This ceramic sequence has led him to create his ceramic typology for the GML that assists in a chronological understanding of a settlement or feature (see Figure 4.9).

The fabric, raw material and inclusions’ composition of the ceramics were documented for the excavation at Euphorbia Kop. The composition of the ceramics was separated into four groups, focused on the content of the fabric, with inclusions of sand and quartz. Group 1 consisted of 2-5% inclusions of mottled and course fragmented quartz and sand, group 2 consisted of >5% inclusions and above, with Group 3 consisting of the least inclusions (<2%), and Group 4 being a category where the sherds of ceramic fitted into none of the above groups, then compared between trenches (Trench A and Trench C). Trenches were selected not only on ceramic quantity but spatial dynamics of the site as well as to prove compatibility of comparability. This was done in order to see if the same group produced the ceramic assemblages from the contrasting areas, if found to be the case will prove contemporaneity of habitation between Trench A (shelter) and Trench C (Kraal).

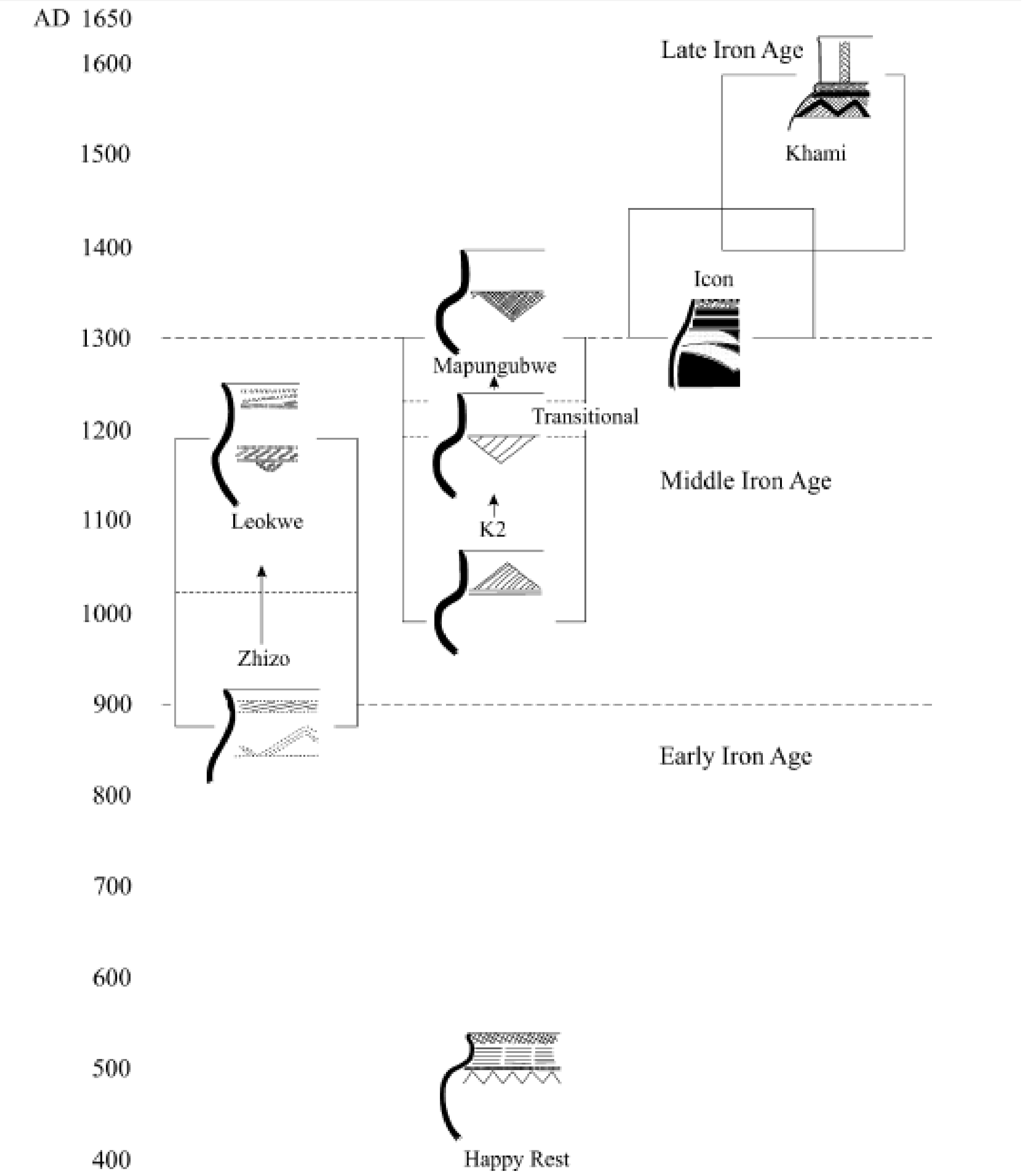

Figure 4.9. Iron Age ceramic sequence for the Mapungubwe region (adapted from Huffman 2009: 5).

4.4.5. Bead Analysis

Glass beads were analysed using Wood's (2000) bead typology, this typology encompasses the entire GML placing beads chronologically into their various phases. Glass beads are found in farmer settlements as well as in forager contexts. They can be used like ceramics to obtain a bracket date due to their well dated sequence. For example, Zhizo beads are characterized by ends that have not been reheated, and are generally tubes or cylinders that have been chopped into shape and many are transparent to translucent blue (see Figure 4.10. D), K2 beads are smaller (2-3.5mm in diameter and 12-4mm in length), shinier and have been reheated with a range of colours that vary in shape (see Wood 2000). Garden Rollers belong to the K2 period, they are beads that have been crushed melted and poured into clay moulds. Moulds would then be broken to release the bead; Garden Rollers are made locally and contain many inclusions (for examples see Figure 4.11.). Mapungubwe oblates are characterized by small to minute, drawn oblate beads that are generally highly uniform, with opaque black being most common.

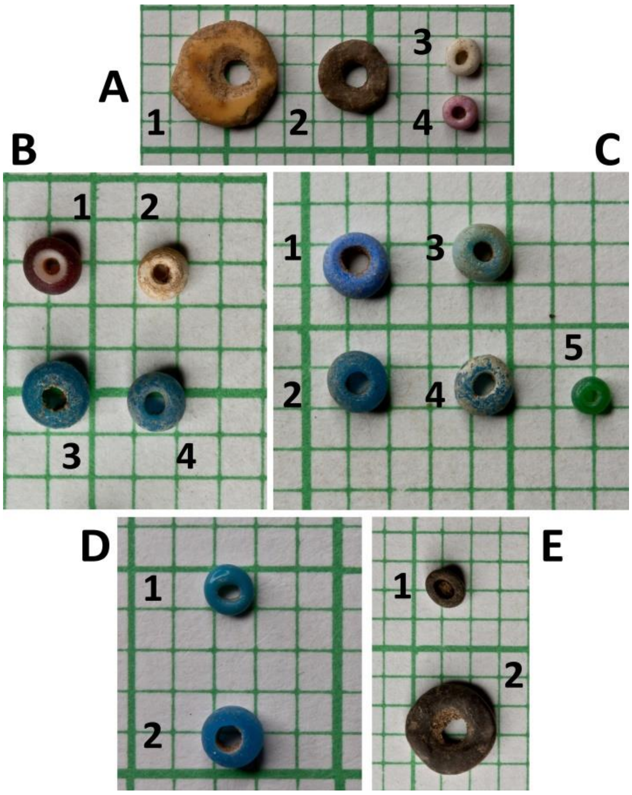

Figure 4.10. João Shelter glass bead examples: A1 & A2, ostrich eggshell bead; A3-A4, B2-B4, C1-C5 & D1-D2, most likely European but some may have a broad date range; B1, white-heart; E1, Mapungubwe oblate; and E2, burnt ostrich eggshell bead.(c.f. Forssman 2014: 274).

Figure 4.11. Examples of garden rollers from van Riet Lowe's collection: A, C-E, complete and B and F broken (Wood 2005: 79).

Organic beads excavated during the excavation were measured, noting their internal and external diameter. Other factors were also documented, namely, broken, burned, fused and a basic identification between OES and Achatina shell beads (see Figure 4.12).

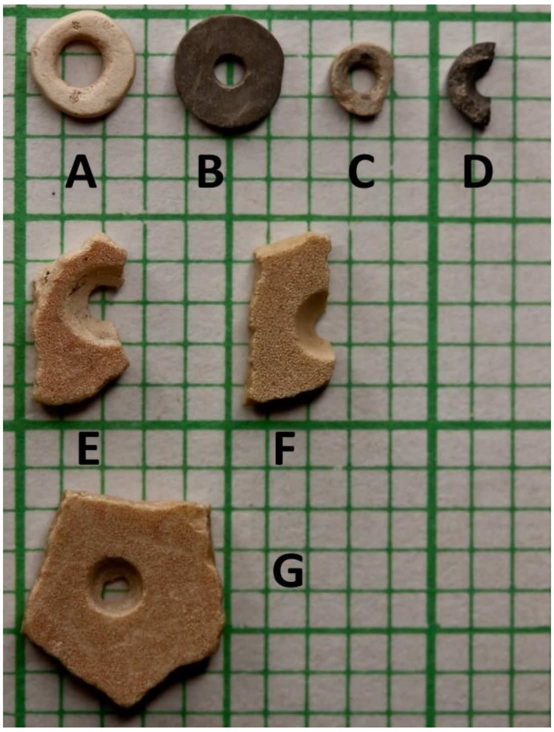

Figure 4.12. Examples of ostrich eggshell; A–C complete; D, broken complete; E-F, broken preform; G complete preform (c.f. Forssman 2014: 235).

4.4.6. Faunal Analysis

The faunal assemblage was weighed and intra-site trench comparisons conducted by comparing two trenches from Euphorbia Kop (Trench A and Trench C). The analysis and determination has been done by Claudia Abatino (PhD candidate) using the osteological atlas in the collection at the Department of Archaeozoology and Large Mammals at the Ditsong National Museum of Natural History in Pretoria. Differences between sheep and goat were identified using Zeder's (2010) work.

Through the implementation of these various methodologies and the tacking of these strands of evidence, a strong case can be made to prove the points posed in this project. The results attained through these methods of analysis are covered next, beginning with the survey.

5. SURVEY RESULTS

The whole of Ratho (1110ha) and Breslau (2920ha) were surveyed on foot, only using a vehicle to get to the days selected survey area. The total area covered was a little over 40km² (4030ha), identifying 137 archaeological features in all. The features identified represent MSA and LSA assemblages, rock art and shelter sites, agricultural homesteads, through material remains, and scatters. Items documented include beads, ceramics, grinding stones and larger features such as stone walling and kraals. European period sites and activity areas were also identified and documented (e.g. modern cattle kraals/troughs and foundations).

Several features identified in this survey were deemed of little value due to their disturbed contexts. These artefacts were found to be out of context after a thorough examination of their surroundings and were not taken into consideration (this occurred on five occasions). Archaeological material would be identified and if unaccompanied would be sourced to the nearest site or possible point of origin. Many of the features identified in this survey represent large sites and scatters with varying deposits.

Settlement and artefact scatter patterns were noted between different ecological zones. It was found that a lack of archaeological features from certain ecological zones existed but this in itself represents useable data. However, the point of this study is to present data that pertains to forager-farmer interactions. In this chapter Ratho’s data is presented briefly because little was found whereas Breslau’s data is presented in depth. However, at first I present the survey as well as the relevant data collected.

5.1. RATHO OVERVIEW

On Ratho, 36 features were identified, equating to 18 individual sites (feature groups belonging to the same culture, area and period) (see Appendix B for a list). The landscape had two different ecological categories, either the Mopane flats or the sandstone ridge. Only one site (5.55%) was identified on the Mopane flats, with the remainder (94.45%) being located sporadically on the ridge.

The cultural material most represented on Ratho (see Table 5.1) was that of farmers (N=17; 94.45%), only one forager feature was identified (stone tool core), located on a farmer site (mixed homestead: N=1; 5.55%). The lithic core (Figure 5.1) may or may not have been produced by foragers. However, a more in depth study of the site with the forager material on the farmer site (RF6) and its lithic assemblage would have to be undertaken to tell definitively who the authors were. Two farmer site types were identified, RF1 which was Venda (N=1; 5.55%) and RF35 which belonged to K2 (N=1; 5.55%). RF1 (Venda site) was identified through the presence of a Blue Bohemian Hexagoidal bead (Figure 5.2) and RF35 (K2 site) was identified through diagnostic decorated ceramic scattered on site (Figure 5.3). The distribution of sites was focussed mainly to the western and southern portion of the sandstone ridge which dominates the entire farm. The largest site was a K2 site located near the centre of the ridge. However, no forager material was documented (see Figure 5.4).

Table 5.1. Table showing numbers of sites for each cultural material

Cultures	**Number**	**Percentage**
Farmers	15	83.35%
Mixed Homesteads	1	5.55%
Venda	1	5.55%
K2	1	5.55%
Total	18	100.00%

Figure 5.1. Photo of possible forager crypto-crystalline core (left) and ceramic (right) (from RF6).

Figure 5.2. Photo of Blue Bohemian Hexagoidal bead and undecorated ceramic (from RF1).

Figure 5.3. Example of decorated pottery from the K2 site.

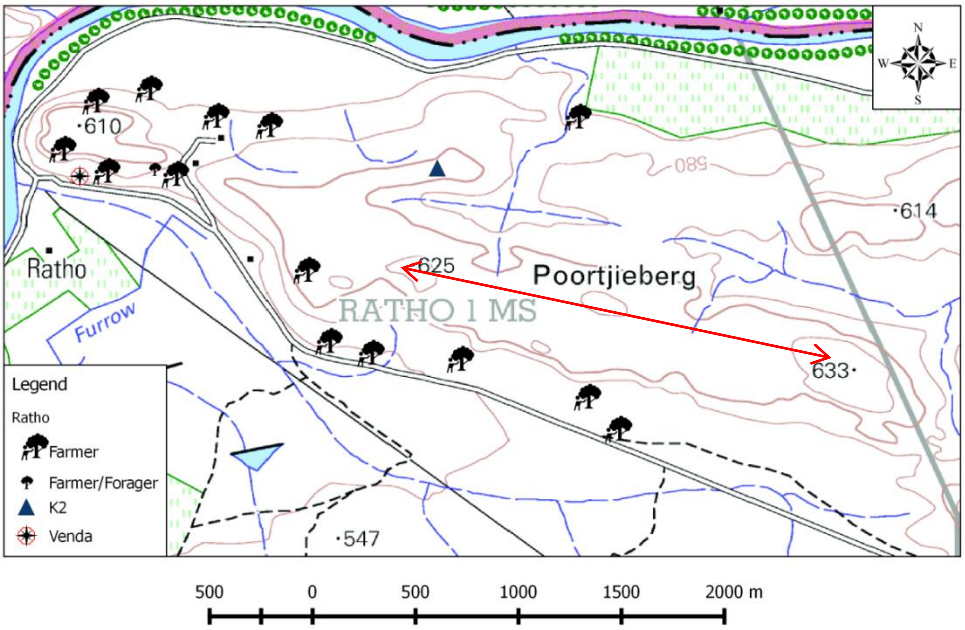

Figure 5.4. Map showing distribution of sites on Ratho, ridge indicated (red line).

5.2. BRESLAU SURVEY

On Breslau over 100 features were identified, of these features 60 individual sites were defined (see Table 5.2). The cultural material most represented in the survey area are farmer-settlements (N=34; 56.67%) followed by forager-rock art/stone tool scatters (N=14; 23.33%). The third most abundantly present features are, mixed material homesteads which are farmer homesteads that had forager material scattered onsite (mixed homestead) (N=5; 8.33%) these are classified as both forager and farmer, followed by MSA scatters (N=3; 5%) then new kraal/foundation (N=2; 3.33%) under 100 years old and herders (N=2; 3.33%) which were defined by loin cloth paintings (Figures 5.5 and Figure 5.6).

Table 5.2. Table showing the number of sites, for each cultural material.

Culture	**Number**	**Percentage**
Farmer	34	56.67%
Forager	14	23.33%
Mixed homestead	5	8.33%
MSA	3	5.00%
New	2	3.33%
Herder	2	3.33%
Total	60	100%

5.2.1. Distribution of Sites on Breslau

Although sites were widely distributed throughout Breslau, large concentrations were identified between the ridge (see Figures 5.5, 5.7 & 5.8) and Bertha Dam continuing north to Kraalkop Dam. The ridge runs from the southwest toward the northeast through the centre of the farm. Several sites were identified to the south of this ridge, but were much smaller and less prominent. The 60 sites identified on Breslau were documented by presence of cultural material and separated into sites (e.g. settlements= definable locus) and features (e.g. lithic scatter= no definable locus).

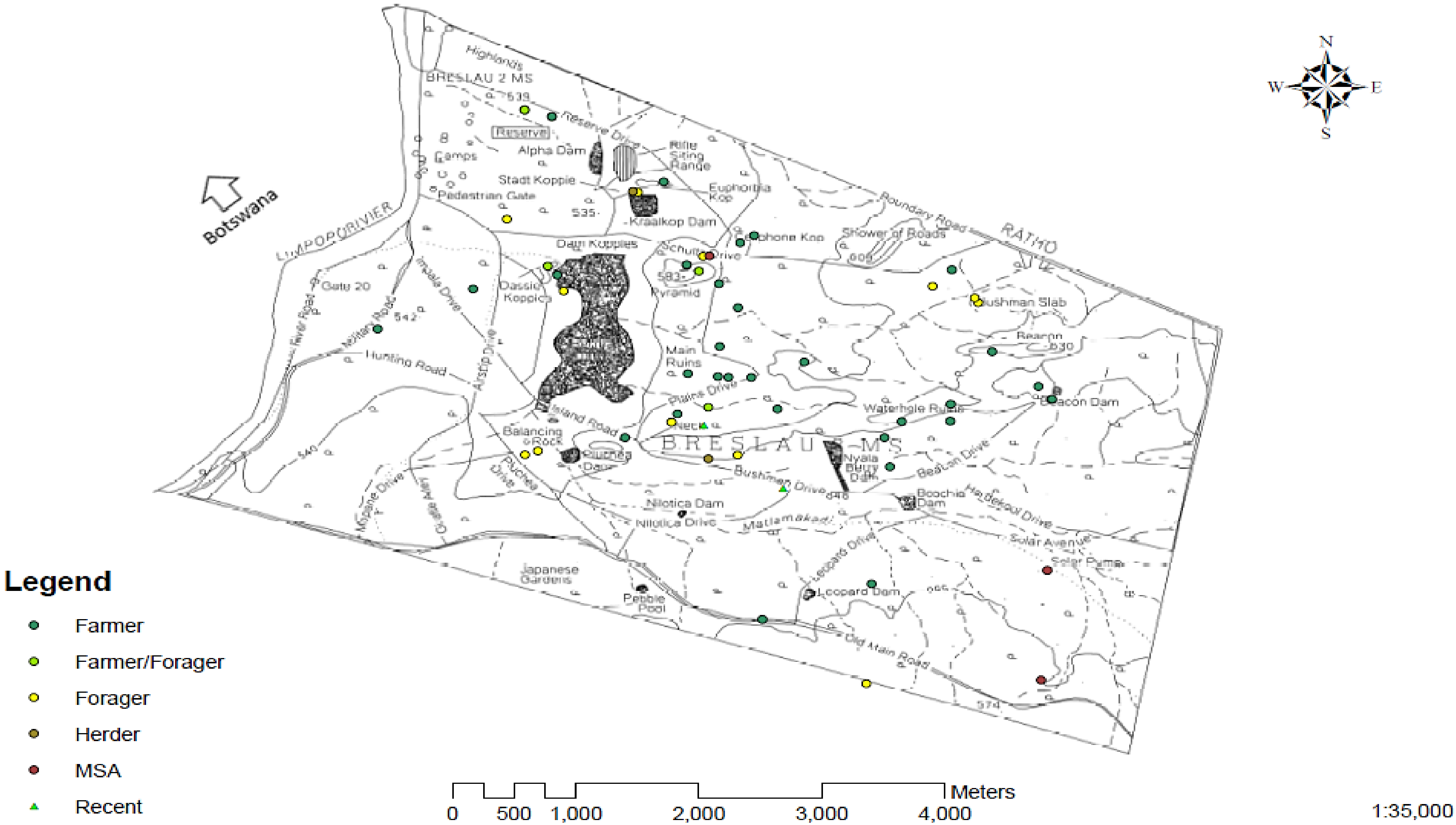

Figure 5.5. Detailed Map showing all sites identified on Breslau (N=60).

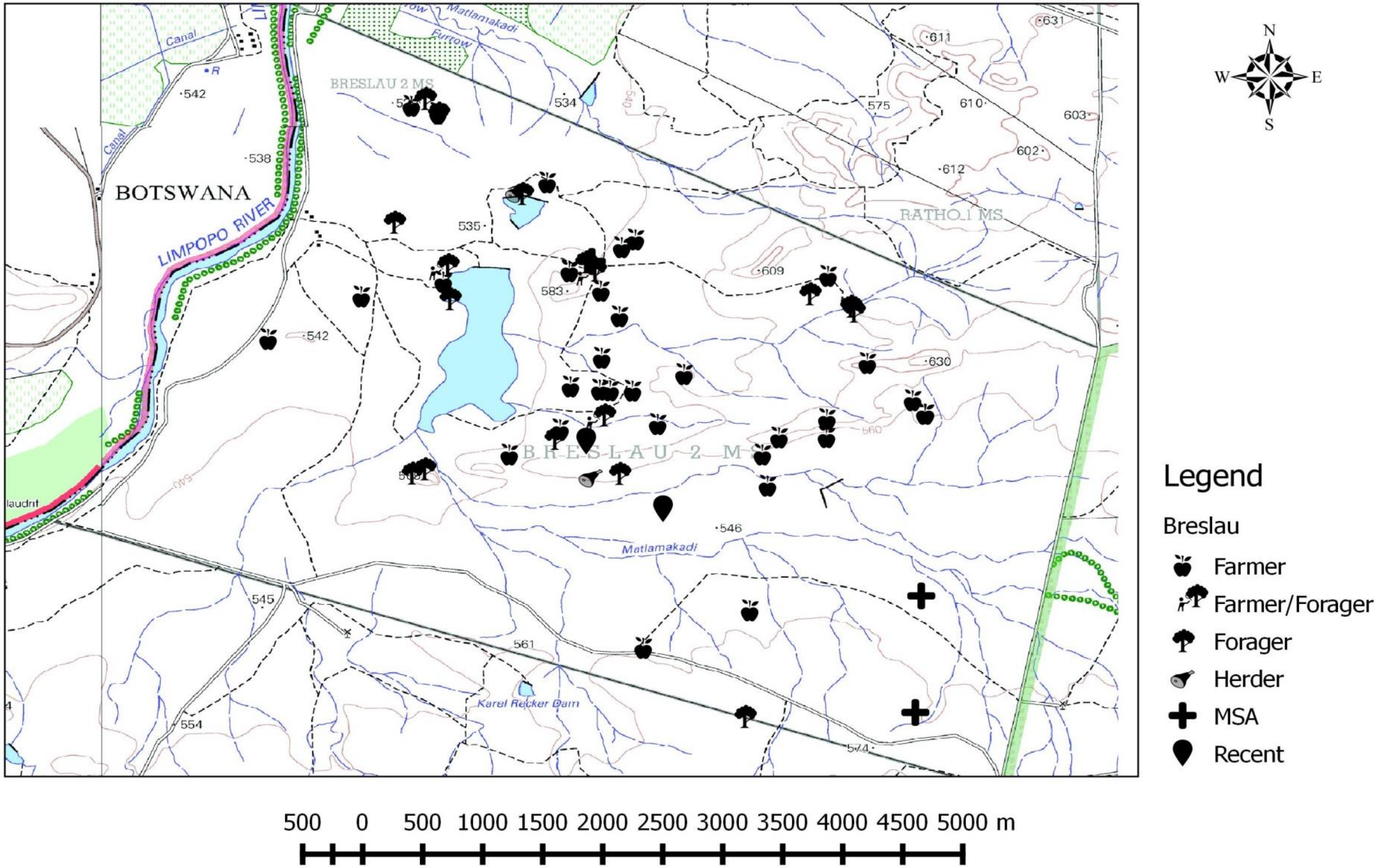

Figure 5.6. Map showing sites identified on Breslau with water courses and topography.

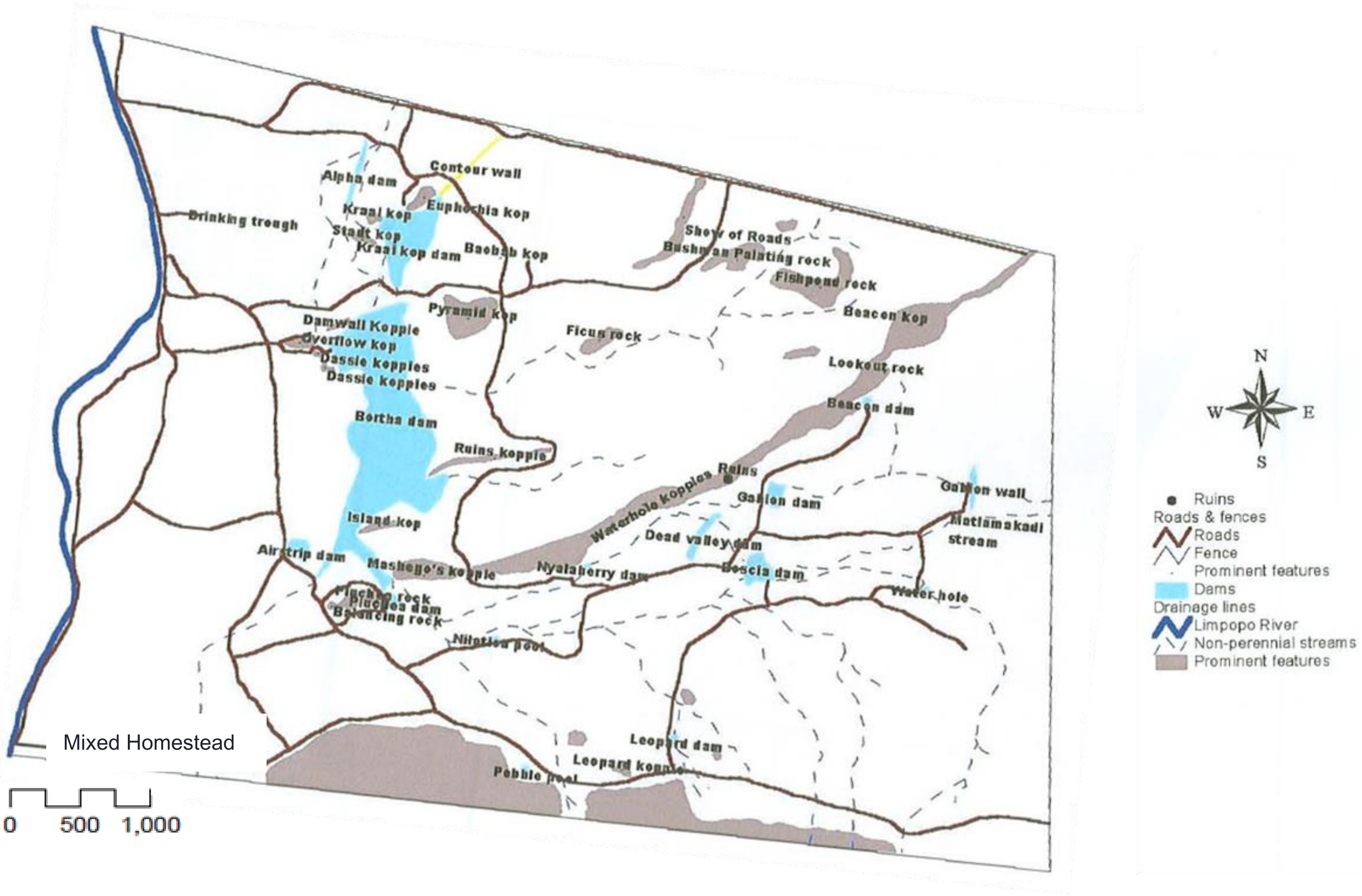

Figure 5.7. Map of Breslau, showing koppies, rocky outcrops, dams, watering points, roads and ridge (Waterhole koppies) (Straub 2002: 13).

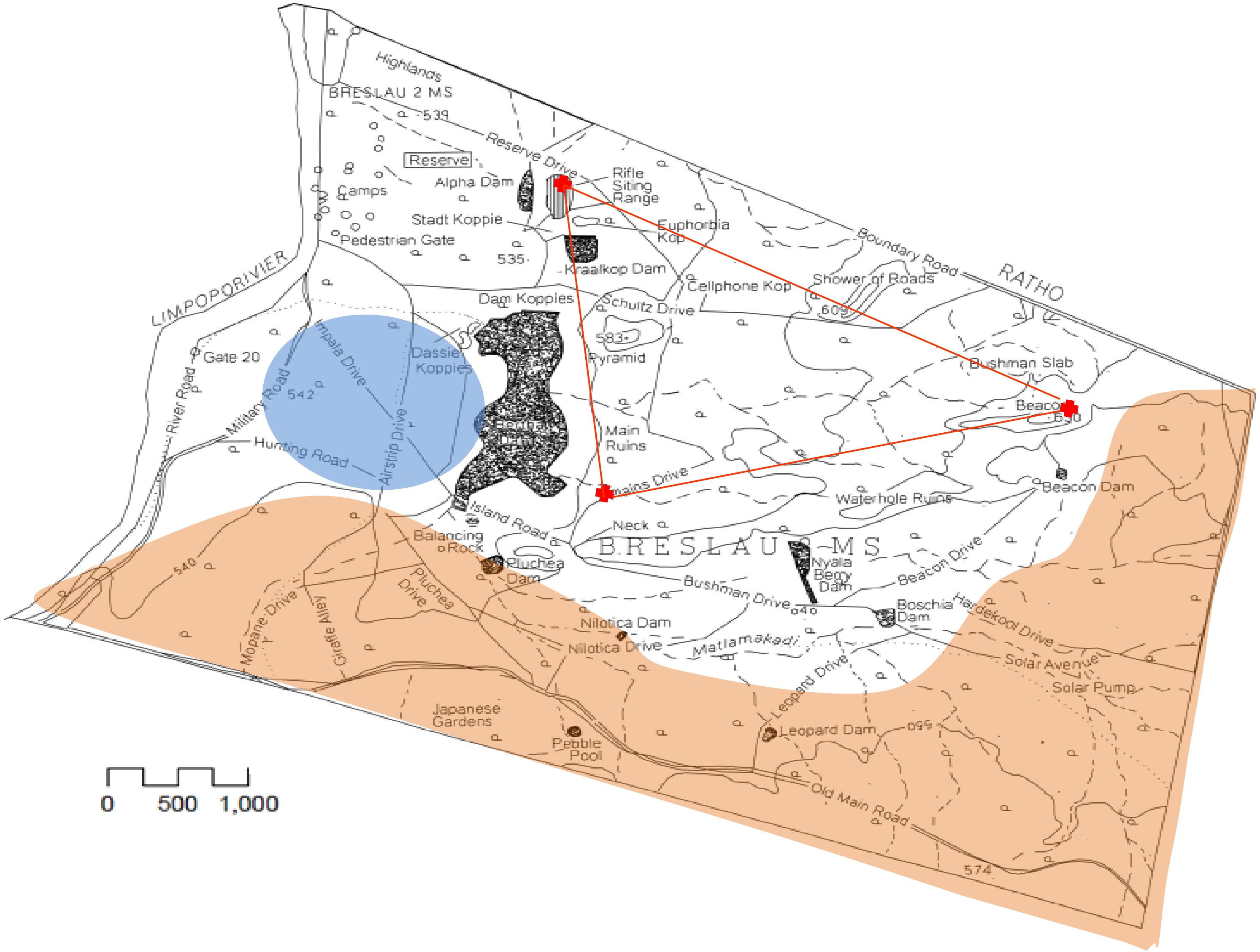

Figure 5.8. Map of Breslau showing Leeubos (Blue), Mopane (Orange) and flat sourveld (outlined in red).

The areas with the least amount of archaeological evidence were on the 'Leeubos flats' and the 'Mopane bushveld' (see Figure 5.7 and Figure 5.8). The Mopane portions dominate the eastern and southern portions of the farm.

The features identified on Breslau were concentrated on the 'flat sourveld' vegetated areas with punctuated koppies (area outlined in red, see Figure 5.8). The features were concentrated at the base of and on top of koppies, material remains were found scattered between koppies but generally not in high concentrations. The area was narrowed in Figure 5.9 and consists of roughly 20% of the research area yet contains 70% (N=42) of all sites identified on Breslau, it was in this area that all the koppies as well as the ridge were located.

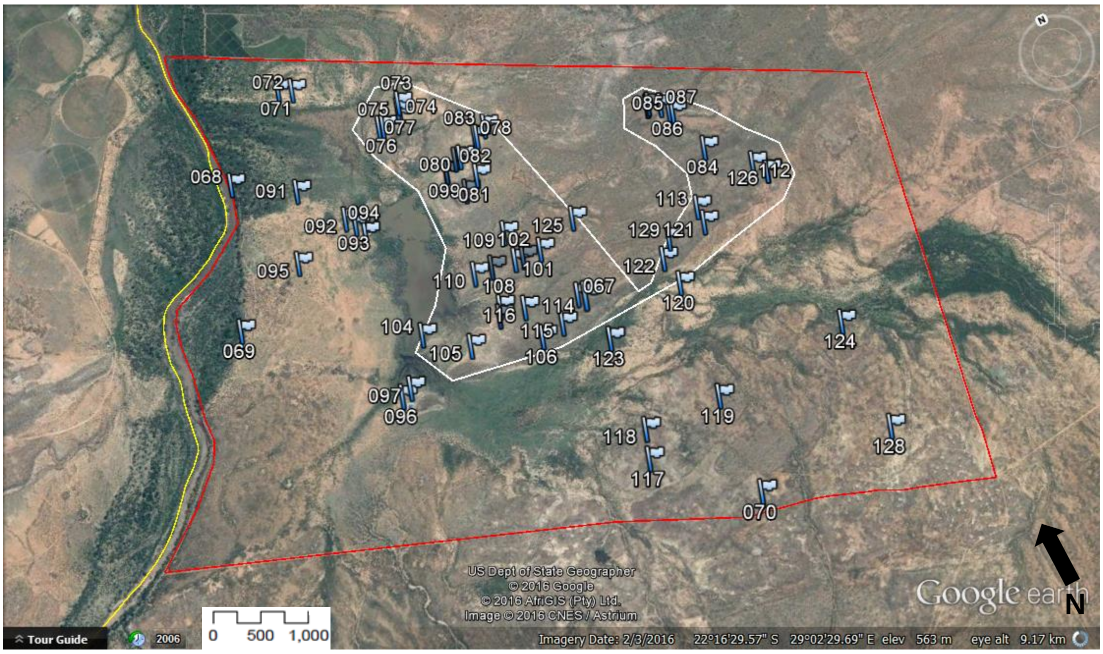

Figure 5.9. Map outlining Breslau and the above described area (70% of all sites found on Breslau were found in this area).

5.2.2. Breslau Site Recoding Data/Attributes

The documentation of sites was thorough as mentioned previously. All sites that were recorded on Breslau were done so using several documented variables. The below table (Table 5.3) shows the categories, factors and amounts which are illustrated for each site in the next table (Table 5.4). This is done to give a full range of information for each site as well as contextualize the recording variables.

Table 5.3. Variables used to record and describe archaeological sites as well as the amount of sites or features in each.

Erosion	**Amount**
No Data	2
Extensive Erosion	2
Considerable Erosion	12
Slight Erosion	27
Stable	11
No Erosion	5
Depositional	1
Substrate	**Amount**
No Data	9
Unconsolidated Red/Brown	3
Red/Brown	25
Pan Clay	13
Lake Clay	3
Alluvial Soils	2
Little	4
None Applicable	1
Location	**Amount**
Riverside/bed	2
Panside	1
Lake	2
Flats	6
Valley	10
Koppie	8
Koppie Top	5
Hill	10
Hilltop	8
Boulder	3
Rock Outcrop	2
Between Koppies	3

Habitat	**Amount**
Shrub Woodland	3
Open Woodland	14
Open Shrub Woodland	14
Dense Woodland	4
Mixed Woodland	11
Woodland on Disturbed Land	1
Riverine Bush	2
Sandstone Hills	11
Natural Features	**Amount**
Undulating	1
Punctuated Koppies	15
Valleys	1
Hills	4
Visible Water	1
Mound	2
Flats	12
Plateau Edge	1
Hill Ridge	23
Animal Disturbances	**Amount**
No Data	1
S/Burrowing Animals	20
L/Burrowing Animals	2
Trampling/Burrows	3
Large/Small Burrows	3
Trampling	8
Little/None	23

Table 5.4. All recorded sites on Breslau and their cultural, environmental, geological and natural attributes.

	SITE	CULTURE	EROSION	SUBSTRATE	LOCATION	HABITAT	NATURAL FEATURES	ANIMAL DISTURBANCES
1	**Bres-1**	Farmer	Stable	Red/Brown	Riverside/Bed	Mixed Woodland	Flats	S/Burrowing Animals
2	**Bres-2**	Forager	Considerable Erosion	No Data	Koppie Top/ Shelter	Sandstone Hills	Hill Ridge	Trampling
3	**Bres-3**	Farmer	Slight Erosion	Pan Clay	Flats	Shrub Woodland	Flats	Trampling
4	**Euphorbia Kop**	K2/Forager	Slight Erosion	Pan Clay	Panside	Open Shrub Woodland	Punctuated Koppies	S/Burrowing Animals
5	**Bres-4**	Farmer	Stable	No Data	Between Koppies	Open Shrub Woodland	Flats	L/Burrowing Animals
6	**Bres-5**	K2/Forager	Extensive Erosion	No Data	Koppie	Sandstone Hills	Hill Ridge	Large/Small Burrows
7	**Bres-6**	Farmer	Considerable Erosion	No Data	Between Koppies	Sandstone Hills	Hill Ridge	Large/Small Burrows
8	**Dassie Kop 1**	Forager	Considerable Erosion	Unconsol Red/Brown	Koppie	Open Woodland	Visible Water	S/Burrowing Animals
9	**Dassie Kop 2**	Herder	Slight Erosion	Red/Brown	Koppie Top	Woodland on Disturbed Land	Punctuated Koppies	S/Burrowing Animals
10	**Dassie Kop 3**	Farmer	Slight Erosion	Lake Clay	Lake	Open Shrub Woodland	Koppies	No Data
11	**Bres-7**	Forager	Considerable Erosion	No Data	Hill	Open Woodland	Punctuated Koppies	S/Burrowing Animals
12	**Bres-8**	MSA	Considerable Erosion	Pan Clay	Hill	Open Woodland	Punctuated Koppies	S/Burrowing Animals
13	**Bres-9**	Farmer	Depositional	Pan Clay	Flats	Open Shrub Woodland	Punctuated Koppies	S/Burrowing Animals
14	**Cellphone Kop**	Farmer	Slight Erosion	Red/Brown	Koppie Top	Open Woodland	Flats	S/Burrowing Animals

	SITE	CULTURE	EROSION	SUBSTRATE	LOCATION	HABITAT	NATURAL FEATURES	ANIMAL DISTURBANCES
15	**Bres-10**	Farmer	Stable	Pan Clay	Between Koppies	Open Woodland	Punctuated Koppies	S/Burrowing Animals
16	**Beacon Kop**	Farmer	Stable	No Data	Hilltop	Mixed Woodland	Hill Ridge	Little/None
17	**Bres-11**	Forager	Considerable Erosion	Alluvial Soils	Rock Outcrop/Shelter	Sandstone Hills	Undulating	S/Burrowing Animals
18	**Bres-12**	Forager	Considerable Erosion	Unconsol Red/Brown	Boulder/Shelter	Riverine Bush	Hill Ridge	L/Burrowing Animals
19	**Bushman Shelter**	Forager	Considerable Erosion	No Data	Boulder/Shelter	Dense Woodland	Punctuated Koppies	Little/None
20	**Bres-13**	Farmer	Slight Erosion	Little	Koppie	Dense Woodland	Punctuated Koppies	S/Burrowing Animals
21	**Bres-14**	Forager	Slight Erosion	Little	Boulder	Sandstone Hills	Punctuated Koppies	S/Burrowing Animals
22	**Bres-15**	Forager	Stable	Pan Clay	Flats	Open Woodland	Flats	S/Burrowing Animals
23	**Ridge 1**	Mixed Homestead	Slight Erosion	Red/Brown	Koppie Top	Sandstone Hills	Punctuated Koppies	Little/None
24	**Ridge 2**	Farmer	Slight Erosion	Red/Brown	Hilltop	Sandstone Hills	Flats	S/Burrowing Animals
25	**Ridge 3**	Forager	Slight Erosion	Little	Hilltop	Sandstone Hills	Flats	S/Burrowing Animals
26	**Bres-16**	K2/Mapungubwe	Stable	Pan Clay	Flats	Open Shrub Woodland	Flats	Little/None
27	**Balancing Rock**	K2/Forager	Slight Erosion	Red/Brown	Koppie	Shrub Woodland	Hill Ridge	S/Burrowing Animals
28	**Bres-17**	Forager	Slight Erosion	Red/Brown	Valley	Open Woodland	Punctuated Koppies	S/Burrowing Animals
29	**Bres-18**	Farmer	Slight Erosion	Red/Brown	Koppie	Mixed Woodland	Hill Ridge	Little/None
30	**Bres-19**	Farmer	Slight Erosion	Red/Brown	Koppie	Mixed Woodland	Hill Ridge	Little/None

	SITE	CULTURE	EROSION	SUBSTRATE	LOCATION	HABITAT	NATURAL FEATURES	ANIMAL DISTURBANCES
31	**Pyramid Kop**	Mapungubwe /Forager	Slight Erosion	No Data	Koppie	Open Shrub Woodland	Hill Ridge	Trampling
32	**Ridge 4**	Zhizo	Considerable Erosion	Red/Brown	Hill	Open Woodland	Hills	Large/Small Burrows
33	**Ridge 5**	Khami	Slight Erosion	Red/Brown	Hill	Open Woodland	Hills	Trampling/Burrows
34	**Bres-20**	Farmer	Slight Erosion	Red/Brown	Valley	Open Woodland	Valleys	S/Burrowing Animals
35	**Bres-21**	Mixed Homestead	Slight Erosion	Red/Brown	Hill	Riverine Bush	Punctuated Koppies	Trampling
36	**Bres-22**	Venda	Extensive Erosion	Unconsol Red/Brown	Valley	Open Woodland	Hill Ridge	Little/None
37	**Loin Cloths**	Herder	Slight Erosion	None Applicable	Koppie/Shelter	Mixed Woodland	Hill Ridge	Trampling
38	**Bres-23**	Forager	Slight Erosion	Red/Brown	Valley	Mixed Woodland	Hill Ridge	Little/None
39	**Bres-24**	Farmer	Slight Erosion	Red/Brown	Lake	Mixed Woodland	Mound	S/Burrowing Animals
40	**Bres-25**	Farmer	Considerable Erosion	Red/Brown	Valley	Mixed Woodland	Hills	Little/None
41	**Bres-26**	Mixed Homestead	Slight Erosion	No Data	Hill	Open Shrub Woodland	Punctuated Koppies	Little/None
42	**Bres-27**	Farmer	Slight Erosion	Red/Brown	Hill	Open Shrub Woodland	Punctuated Koppies	S/Burrowing Animals
43	**Main Ruins**	Khami	No Erosion	Red/Brown	Hilltop	Open Shrub Woodland	Hill Ridge	Little/None
44	**Bres-28**	Farmer	No Erosion	Red/Brown	Hilltop	Open Shrub Woodland	Hill Ridge	Trampling
45	**Bres-29**	Farmer	Stable	Red/Brown	Hilltop	Open Shrub Woodland	Hill Ridge	Trampling/Burrows

	SITE	CULTURE	EROSION	SUBSTRATE	LOCATION	HABITAT	NATURAL FEATURES	ANIMAL DISTURBANCES
46	**Bres-30**	Forager	No Erosion	Red/Brown	Hilltop	Open Shrub Woodland	Hill Ridge	Little/None
47	**Bres-31**	New	Stable	Pan Clay	Valley	Open Shrub Woodland	Hill Ridge	Trampling
48	**Bres-32**	Venda	No Erosion	Lake Clay	Koppie Top	Sandstone Hills	Hill Ridge	Little/None
49	**Bres-33**	Farmer	No Erosion	Lake Clay	Riverside/Bed	Sandstone Hills	Hill Ridge	Little/None
50	**Bres-34**	Farmer	Stable	Little	Rock Outcrop	Shrub Woodland	Flats	Little/None
51	**Bres-35**	Farmer	Considerable Erosion	Pan Clay	Valley	Open Woodland	Plateau Edge	Little/None
52	**Bres-36**	Farmer	Slight Erosion	Pan Clay	Valley	Open Woodland	Hill Ridge	Little/None
53	**Bres-37**	Mapungubwe	Slight Erosion	Pan Clay	Valley	Dense Woodland	Hill Ridge	Trampling
54	**Bres-38**	New	Stable	Pan Clay	Valley	Open Shrub Woodland	Flats	Little/None
55	**Bres-39**	MSA	Considerable Erosion	Red/Brown	Flats	Dense Woodland	Flats	Trampling/Burrows
56	**Bres-40**	Farmer	Stable	Red/Brown	Hilltop	Mixed Woodland	Mound	Little/None
57	**Bres-41**	Farmer	Slight Erosion	Pan Clay	Hill	Mixed Woodland	Hill Ridge	Little/None
58	***Bres-42***	Farmer	Slight Erosion	Red/Brown	Hill	Mixed Woodland	Hills	Little/None
59	**Bres-43**	MSA	No Data	Alluvial Soils	Flats	Open Woodland	Flats	Little/None
60	**Ridge 6**	Great Zimbabwe	No Data	Red/Brown	Hill	Sandstone Hills	Hill Ridge	Little/None

5.2.3. MSA Assemblages

Lithics from ESA and MSA assemblages are distributed all over the GML, with MSA features being more frequent in portions (Forssman 2014: 119). No ESA sites/scatters were identified on these particular farms. Nonetheless, the three MSA scatters are beyond the scope of this thesis.

5.2.4. Forager Assemblages

A total of 19 forager features were identified on Breslau. Most were located in open air contexts (N=14; 73.68%), and to a lesser degree shelter contexts (N=5; 26.32%). It is interesting to note that five (26.32%) of the open air forager features identified were located on or immediately next to farmer contexts making these mixed material homesteads and belonging to both foragers and farmers.

Many of the forager features have been subjected to some form of erosion. Most have been subjected to slight erosion (N=10; 55.56%). Others, exposed to considerable erosion (N=6; 27.78%). There were no cases of extensive erosion. There were, however, sites that appeared stable or with no erosion, which have been combined (N=3; 16.67%), these appear to be in their primary context. None of the stable features were found in shelters, two (N=2; 66.67%) were found located upon a hilltop and the other (N=1; 33.33%) located upon flats (surrounding Euphorbia Kop). These features have greater excavation potential due to their primary deposits. Below are two tables that have been complied which show the composition of the various categories identified in feature documentation.

Table 5.5. Table showing the relative percentages for erosion, substrate and location of forager features.

Location		**Substrate**		**Erosion**	
Koppie	3	No Data	6	Slight	10
Hill	3	Red/brown	6	Considerable	6
Boulder	3	Pan Clay	3	Stable	2
Flats	2	Unconsol Red/Brown	2	None	1
Valley	2	Alluvial Soils	1		
Hilltop	2	Little	1		
Panside	1				**19**
Koppie Top	1		**19**		
Rock Outcrop	1				
Between Koppies	1				
	19				

Table 5.6. Table showing the relative percentages for habitat, natural features and animal disturbance of the forager features.

Habitat		**Features**		**Animal Disturbances**	
Open Woodland	5	Punctuated Kop	8	S/Animal Burrow	10
Open Shrub Woodland	5	Hill Ridge	6	Trampling	4
Sandstone Hills	4	Flats	3	Little	3
Riverine Bush	2	Undulating	1	L/Animal Burrow	1
Shrub Woodland	1	Visible Water	1	None	1
Dense Woodland	1				
Mixed Woodland	1		**19**		**19**
	19				

Ecological zones favoured by foragers on Breslau are open woodland (N=5; 26.32%), open shrub woodland (N=5; 26.32%), which tend to be dotted with koppies. Followed by sandstone hills (N=4; 21.05%) and riverine bush (N=2; 10.53%), fewer sites may have been identified here, due to the dense vegetation found in this ecological zone. The remaining features were distributed between the habitats illustrated below (Figure 5.10).

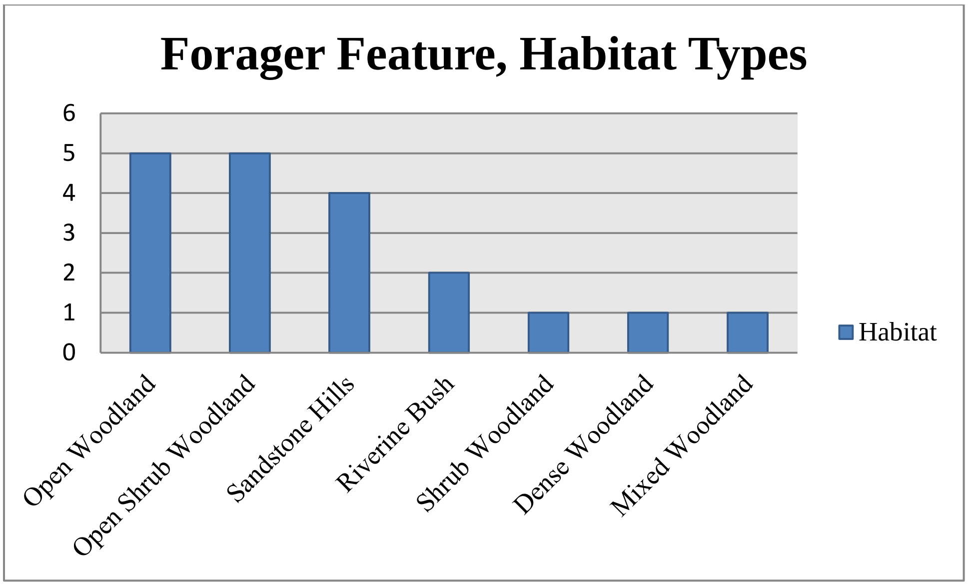

Figure 5.10. Graph showing habitat types were forager features where identified (N=19).

Forager features were located on various natural features. Forager evidence was most prominent on koppies (N=3; 15.79%), hills (N=3; 15.79%) and boulder sites (N=3; 15.79%). No sites were found in drainage areas or next to river beds, which could be due to higher levels of erosion in these areas. Other natural features notable are flats, valleys and hilltops, which are included in the graph below (Figure 5.11).

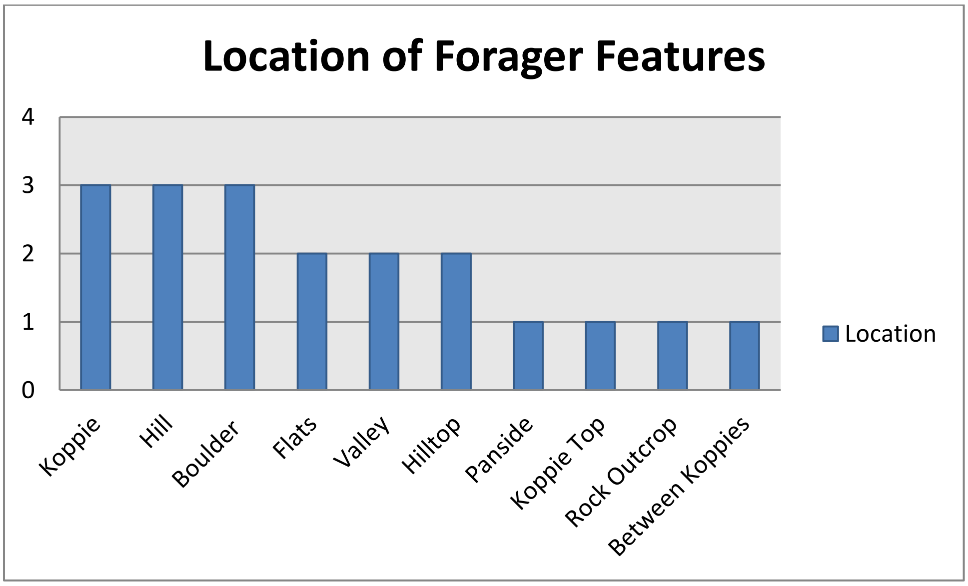

Figure 5.11. Graph showing the location of the forager features (N=19).

A large percentage of forager features were identified alongside, on and overlying farmer homesteads (N=5; 26.32%). At this point it is unknown whether the forager occupations are contemporaneous with the farmer occupations due to no excavations having been conducted (with the exception of Euphorbia Kop). Figure 5.12 shows purely forager sites that are not located in farmer settlements, showing their wide distribution throughout the farm. There was a single example of forager features mixed in with MSA features (3.7%), not illustrated.

The occurrence of farmer material at forager features on Breslau is high with 11 (78.57%) of all forager features showing some form of farmer material, with only three (21.42%) having no farmer evidence whatsoever (Figure 5.13). This farmer presence could be due to gradual dispersal of lithic scatters from farmer settlements or the appropriation of the shelter/open-air sites by farmers, alternatively, the foragers' material culture may have changed. Therefore, one should be cautious with regard to forager-farmer relations determined through the spatial overlap of artefact types. Artefacts could have been traded between groups over their +/- 900 year coexistence on the landscape. However the presence of forager stone tools on a farmer site, may indicate the possibility of such an association existing.

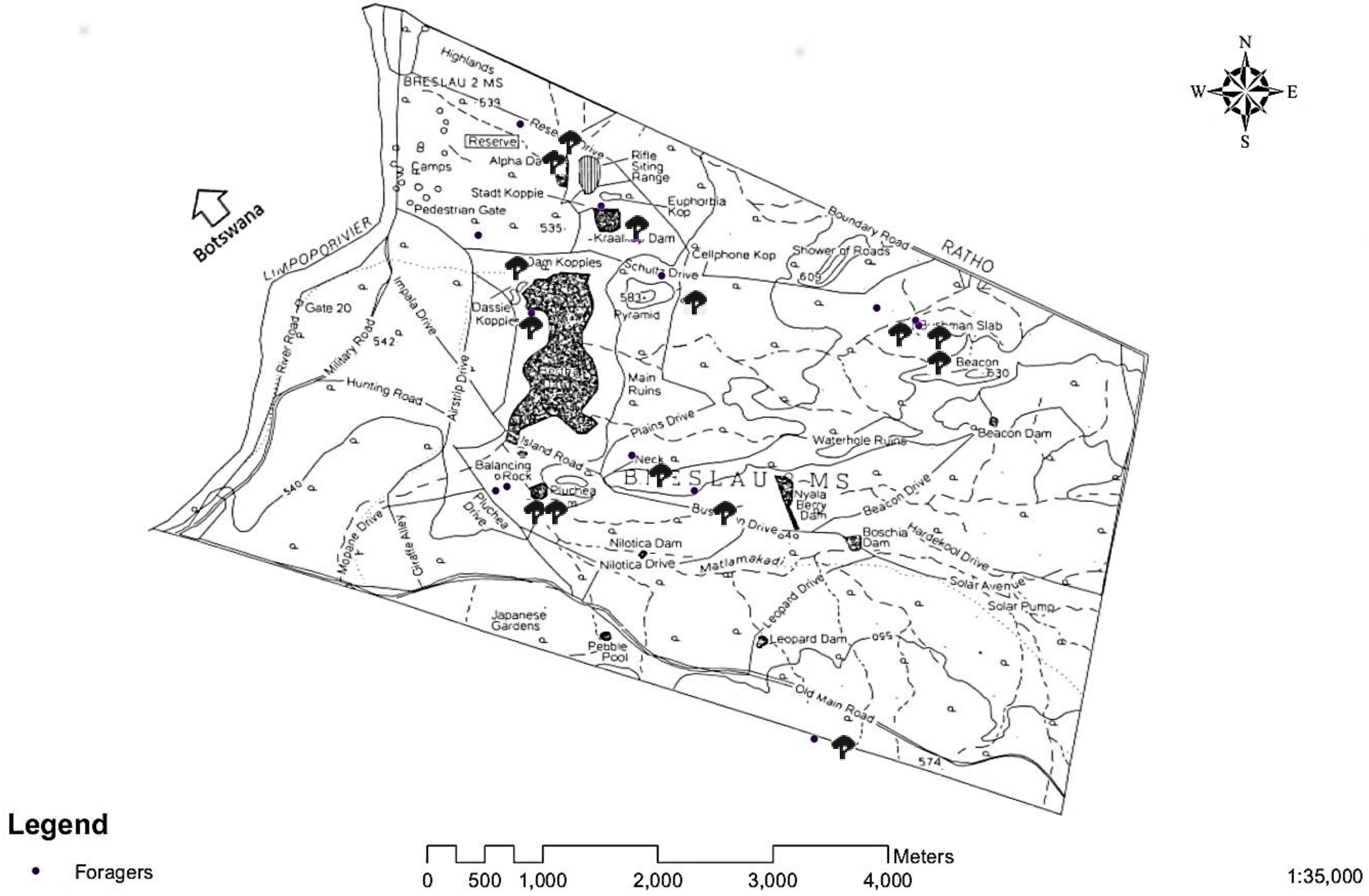

Figure 5.12. Map showing the distribution of forager sites on Breslau (N=14).

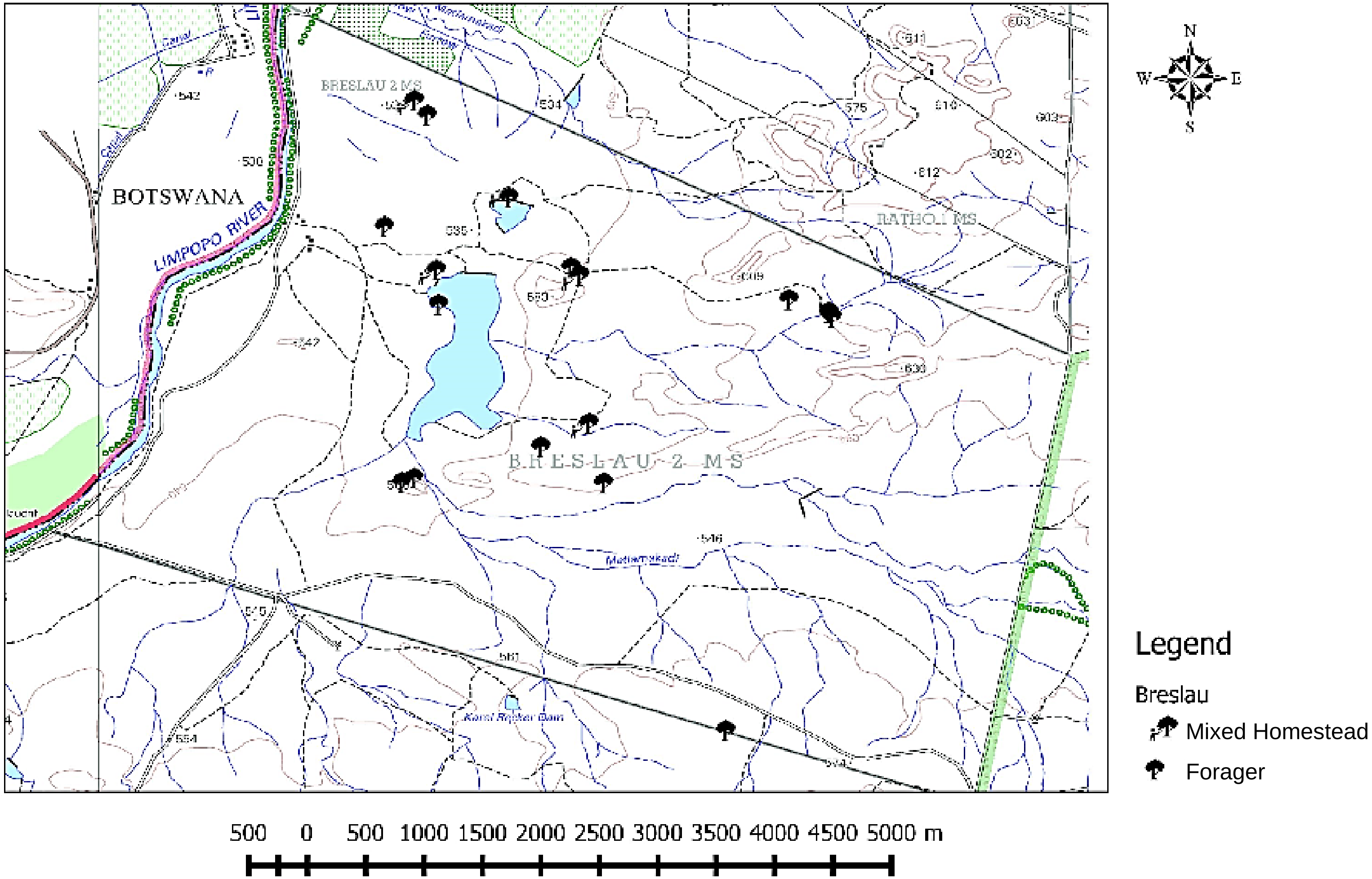

Figure 5.13. Map showing the distribution of mixed homesteads and forager sites on Breslau (N=19).

5.2.5. Farmer Assemblages

A total of 39 farmer homesteads were identified on Breslau, of which 34 (87.18%) consisted of only farmer material and an additional five (12.82%) contained forager stone tools, these sites are categorised under foragers and farmers (see Figure 5.15). Most of the farmer features/sites have been exposed to slight erosion (N=19; 48.72%), followed by stable (N=9; 23.08%) and then no erosion (N=4; 10.26%). Considerable (N=3; 7.69%) and extensive erosion (N=3; 7.69%) was also recorded at some sites. However, farmer sites were largely stable and their contexts intact (N=32; 82.05%), making them possible candidates for archaeological research. Once all the data for farmers has been presented, all cultures will be discussed shortly.

The fields: erosion, substrate and locations are illustrated (for farmers) in Table 5.7 The habitat, natural features and animal disturbances have been illustrated in Table 5.8 The implications of these observations will be mentioned later in the chapter.

Table 5.7. Table showing location, level of erosion and substrate of farmer sites.

Location		**Erosion**		**Substrate**	
Hill	8	Slight Erosion	19	Red/brown	17
Valley	6	Stable	9	Pan Clay	8
Hilltop	6	No Erosion	4	No Data	6
Koppie	5	Extensive Erosion	3	Lake Clay	3
Flats	3	Considerable Erosion	3	Little	3
Koppie Top	3	No Data	1	Unconsolidated Red/Brown	2
Between Koppies	3	Depositional	1		
Riverside/bed	2				**39**
Lake	2		**39**		
Rock Outcrop	1				
	39				

Table 5.8. Table showing the habitat, natural features and animal disturbances found at farmer sites.

Habitat		**Natural Features**		**Animal Disturbances**	
Open Shrub Woodland	10	Hill Ridge	15	Little/None	18
Open Woodland	9	Punctuated Koppies	9	S/Burrowing Animal	9
Mixed Woodland	9	Flats	6	Trampling	6
Sandstone Hills	6	Hills	4	Large & Small Burrows	3
Shrub Woodland	2	Mound	2	Trampling & Burrowing	2
Dense Woodland	2	Plateau Edge	2	No Data	1
Riverine Bush	1	Valleys	1	L/Burrowing Animal	1
	39		**39**		**39**

Large numbers of farmer homesteads were located on the hill ridge (N=15; 38.46%) running through the farm, which is a prominent natural feature of Breslau, followed by nine (23.08%) farmer homesteads in the area punctuated by koppies. These sandstone koppies lay in the landscape to the north of this ridge. This area (ridge and extending north) of the farm seems to consist of the highest settlement density. Figure 5.16 shows the different farmer cultures distributed throughout the farm.

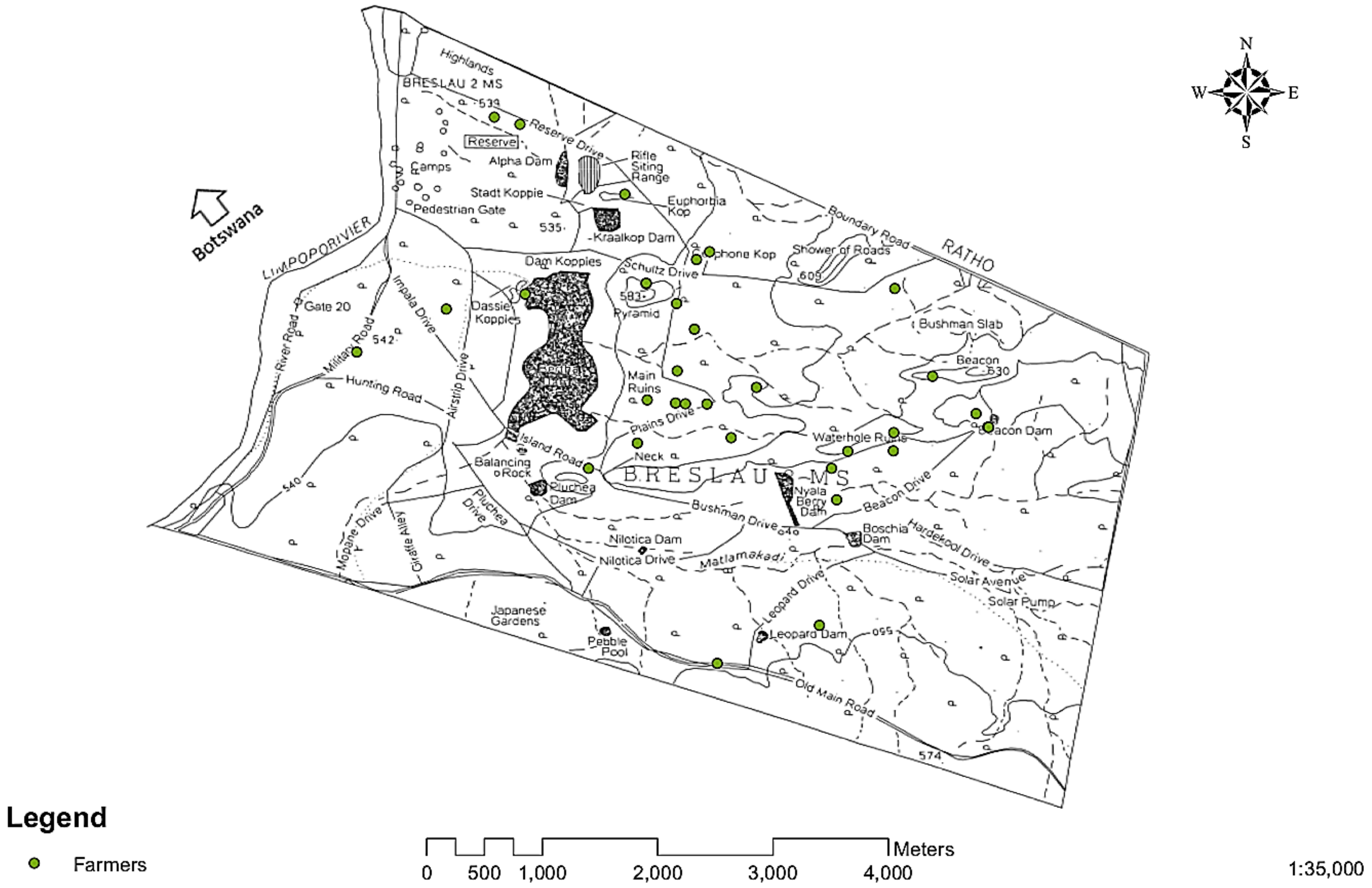

Figure 5.14. – Detailed map of farmer sites and their distribution on Breslau (N=34).

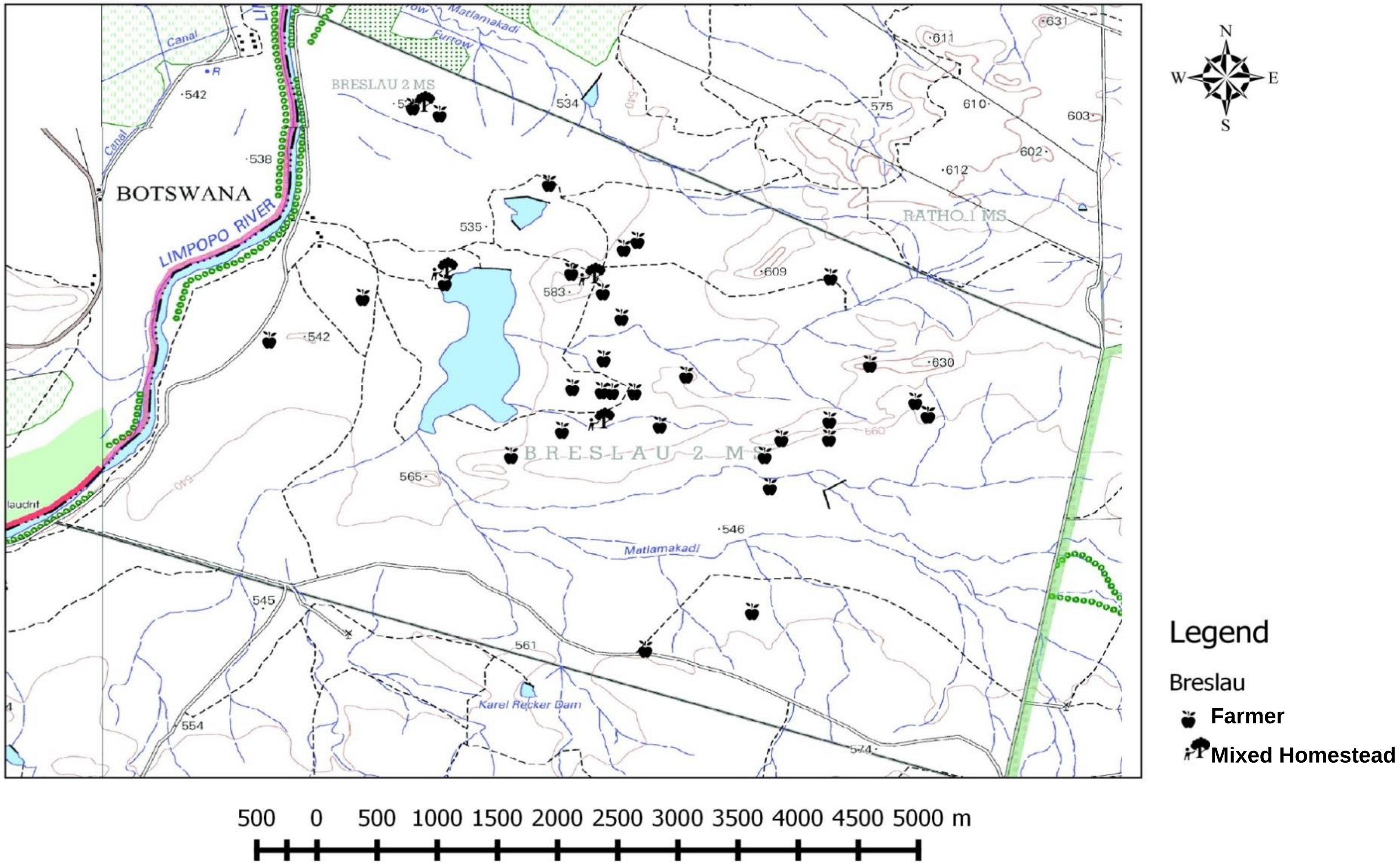

Figure 5.15. – Map showing mixed homesteads and farmers and their distribution on Breslau (N=39).

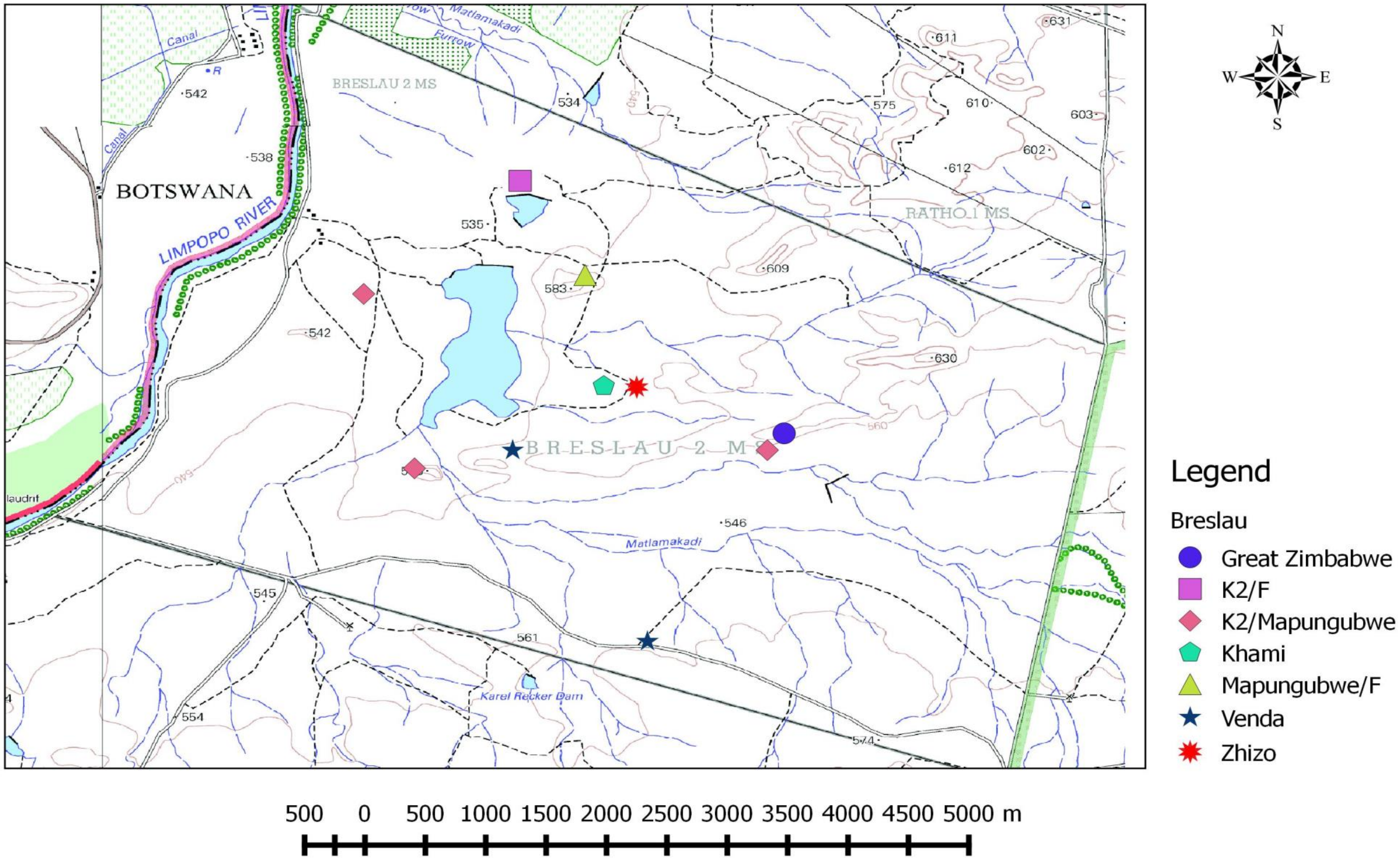

Figure 5.16. – Map showing identified farmer cultures and their distribution on Breslau (N=10).

The chronological understanding of sites on a landscape is essential when interpreting a landscape, as well as understanding the settlement patterns of the open air sites distributed in close proximity to these farmer sites. There are examples of Zhizo (N=1), K2 (N=1), K2/Mapungubwe (N=3), Mapungubwe (N=1), Great Zimbabwe (N=1), Khami (N=1) and Venda (N=2) sites, distributed mainly, on either the ridge, or located at the base of koppies to the north of the farm (see Figure 5.16). The farmer material cultures were identified through the analysis of glass beads (Wood 2000), ceramic (Huffman 2010) as well as stone walling creation techniques and decoration (as mentioned previously).

The ecological zones with the highest density of farmer homesteads was the open shrub woodland (N=10; 25.64%), the open and mixed woodland (N=9; 23.07%) and the sandstone hills (N=6; 15.38%), all which seemed to be arable land. Many farmer settlements were located at the base of koppies which littered the above mentioned habitats. The lack of farmer sites identified in the riverine bush (N=1; 2.56%) is likely due to the dense vegetation, which may also apply to dense woodland (N=2; 5.13%) habitats (Figure 5.17).

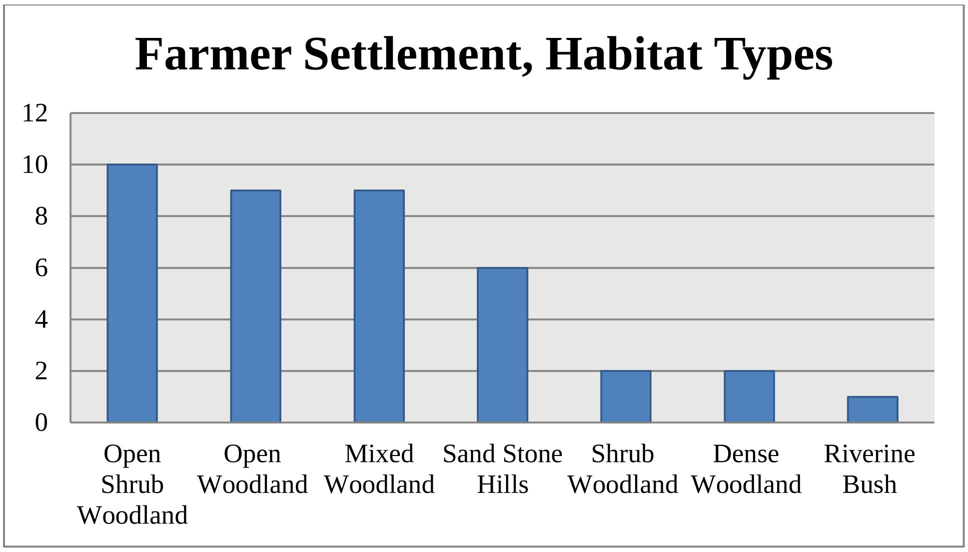

Figure 5.17. Graph showing the habitats that the farmer settlements are located in (N=39).

Locations of the farmer settlements were distributed widely, however, are focused more towards hills (N=8; 20.51%), hilltops (N=6; 13.38%), koppies (N=5; 12.82%) and koppie tops (N=3; 7.69%). When these elevated farmer locations are combined they make 56.41% (N=22). There were several sites located in valleys (N=6; 13.38%) and between koppies (N=3; 7.69%), placing them near elevated positions (Figure 5.18). There were very low amounts of farmer settlements located at riversides'/beds (N=2; 5.13%), again this could be attributable toward erosion or vegetation. This could indicate arable fields not being located in these areas, as farmers generally stayed near their fields. Rock outcrops (N=1; 2.56%) were also not favoured by farmers.

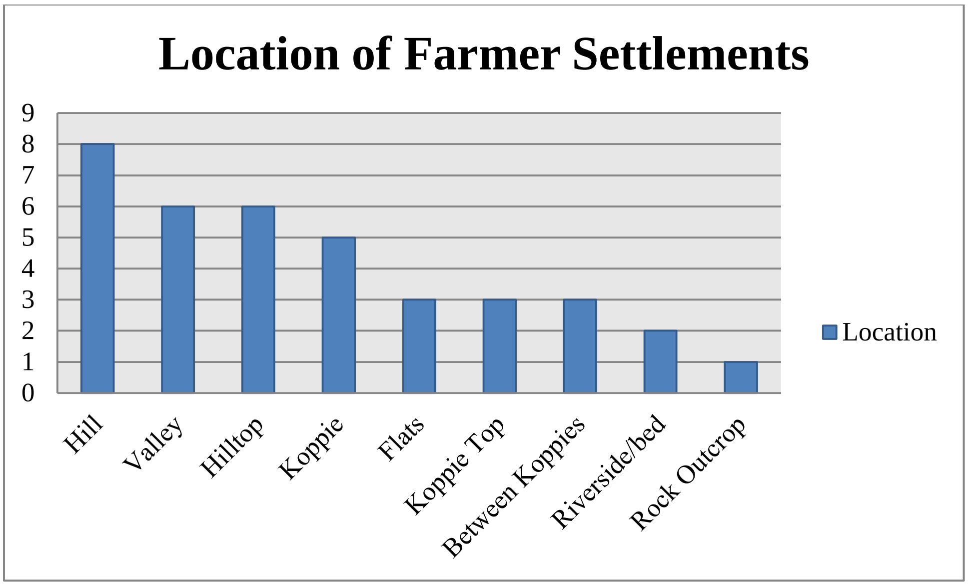

Figure 5.18. Graph showing the location of the farmer settlements (N=39).

Farmers made use of elevated spaces and woodland habitats. The location is possibly due to the defensible position of higher ground, however, there is no data suggesting hostility. These elevated positions were located largely overlooking ideal grazing lands and surrounding woodland habitats likely being utilised for domestic grazing grounds, with elevated positions utilised as a perch from which to observe their animals, while grazing. These areas are also within two kilometres from floodplains bordering the Limpopo River, with great agricultural potential and amble resources for construction, fuel for forges and wildlife.

The range and density of archaeological material on this farm gives an indication, that geographically this area was favoured for settlement. Foragers that inhabited Breslau occupied mainly open air (N=14; 73.68%) sites as well as five (26.32%) shelter sites.

5.3. SUMMARY OF BRESLAU SURVEY RESULTS

Evidence of forager and farmer occupations and activities tended to be clustered on the same portion of landscape, with both material cultures being represented at several sites (N=5; 26.32%). This settlement pattern suggests close proximity to each other and possible co-existence (see Chapter 7). The overlap of cultural material (forager and farmer) on the landscape is the most pertinent observation in the field and yet the most understudied locally. Therefore, excavating a site that best represented this pattern was imperative and was felt to have the greatest potential to contribute toward the regional pattern. The next chapter covers the excavations conducted at Euphorbia Kop to ascertain if the forager evidence was contemporaneous with the farmer context. Another objective is to establish a chronological understanding of the site, and establish when this ‘mixing’ of material cultures took place.

6. EXCAVATION RESULTS

In this chapter the excavation results from Euphoria Kop are presented. The chapter begins by discussing the selection of Euphorbia Kop and its relationship with neighbouring sites. This is followed by a discussion on trench selection then stratigraphy which will contextualise the finds and radiocarbon dates, followed by a detailed outline of the findings. Each artefact category is considered separately and their implications will be considered in the following chapter. They are presented under the following headings: stone tools, fauna, beads, ceramic and other finds. Surface analysis (controlled counting, identification and documentation of archaeological scatters) was conducted in grids but due to the chronological variability, possible mixing and unreliability of the method utilised were felt to be unreliable (Forssman pers. comm. 2016). Thus, I chose to exclude these data from the excavation results.

6.1. BUFFER ZONES

Euphorbia Kop is the largest K2 settlement located on the farm with evidence of forager activity on the site. If a 4km buffer zone had been utilised in the same manner as van Doornum (2005) and Forssman (2014), the zone would overlap Forssman's (2014) excavation buffer zones at Dzombo and João shelters, Kambaku and the Mmamagwa Complex. This then places the excavation at Euphorbia Kop in the same landscape/buffer zones as over half of Forssman's (2014) excavations. The buffer zone would also cover Brunton *et al.*'s (2013) excavation at the rain making hill of Kroonkop. At Euphorbia Kop 13 of the 14 forager features identified fall within a 4km range, as well as all 38 farmer sites and all four with mixed forager-farmer material sites (26.32%). In Forssman's (2014) buffer zone around João there were 13 of 37 (35.14%) forager sites in farmer contexts and 47 farmer homesteads.

Several of these sites are contemporaneous with Euphorbia Kop (e.g. João and Kroonkop); therefore, contact would likely have been made between Euphorbia Kop and these sites. Euphorbia Kop, much like Forssman's (2014) excavated sites, is placed amongst a multifaceted cultural landscape, and filled with forager and farmer sites and likely various social entanglements.

6.2. TRENCH SELECTION

The four trenches selected for excavation were Trenches: A, B, C and D. As mentioned above (Methods Chapter) Trench A was a 1x1m square excavated next to a small overhang (shelter) on the western portion of the site. Trench B was a 1x1m square excavated on the northern periphery of the site, in the centre of a stone tool scatter with Garden Rollers found on the surface. Trench C was a 1x2m trench and was placed on the edge of the kraal, near the centre of the site. Trench D was a 1x1m trench and was located midway up the koppie in a sheltered/secluded area (same applies to Figures 4.7 and 6.1).

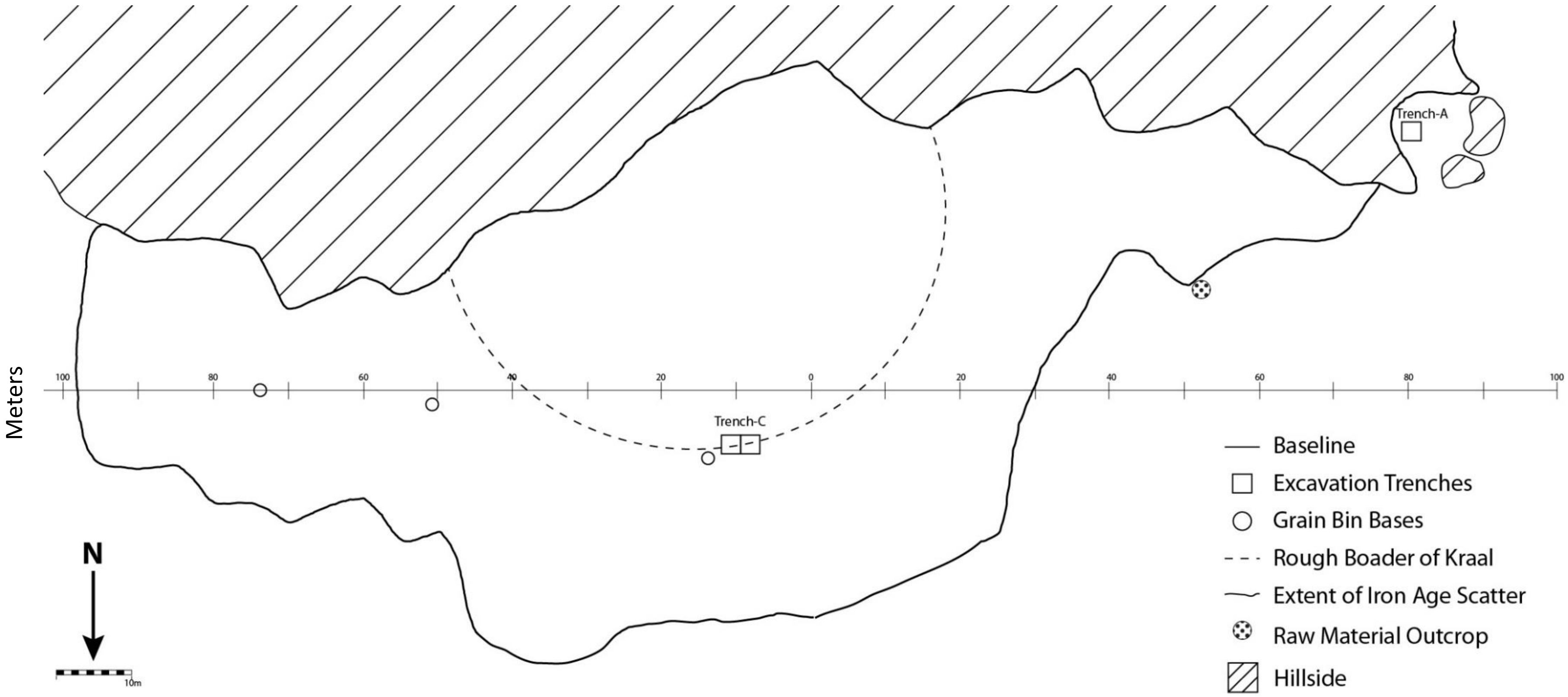

Figure 6.1. Site map of Euphorbia Kop, Trench B and Trench D were not included-Trench B was located about 40 meters north of Trench C, Trench D was located on the hillside between Trench A and Trench C.

6.3. STRATIGRAPHY

Spits are more reliable for measuring density of deposit, as well as, more comparable to Forssman's (2014) and van Doornum's (2005) excavations. Spits were labelled numerically from the surface (e.g. Trench C begins: C1/S=surface; C1-Spit 1=5cm) until the lower most spit (see Table 6.1).

Table 6.1. Table showing Trench C's spits and corresponding depths

Spit	Depth(cm)
C1/S	0
C1	5
C2	10
C3	15
C4	20
C5	25
C6	30
C7	40
C8	50
C9	60
C10	70
C11	78

Trench A's (shelter) deposit was relatively shallow (20cm), however the trench was located next to an overhang, which kept the deposit structurally intact. About three metres away lay a gap between the boulders and erosional activity is currently forming a gully through the suspected "forager" area. There were two distinct stratigraphic layers (silty sand on surface and gravelly below) which also contribute to the suspicion of a stable and undisturbed deposit (see Figure 6.2). Only one lithic was found in Spit A4 (lowest spit). The composition of Trench A's deposit was a high concentration of gravel which became harder to excavate and overlaid what looked to be degrading bedrock (see Figure 6.2).

Trench B (open scatter) and Trench D's (elevated area) material deposit was intact; however the trenches did not yield the expected or relevant material once moving below the surface layer when the density of material remains declined abruptly. Trench D was extended (Trench D-extension) and excavated in 5cm spits noting little stratigraphic change. These findings will be covered briefly under the ceramic section.

Trench C had an impressive level of preservation, there were organic beads that were clearly strung together (see Figure 6.4), situated less than 10cm into the deposit (Spit C2), suggesting little or no mixing occurred. In the same spit as the organic bead cluster the remnants of a hut floor in the north eastern corner of Trench C was identified. The level of preservation was confirmed through the dates being chronologically in order between the upper and lower levels. It is important to note that Trench C's spits were increased from 5cm to 10cm spits at C7; this was done due to a dwindling volume of archaeological material and time constraints, however, excavation was still conducted methodically. The side profile is illustrated in Figure 6.3.

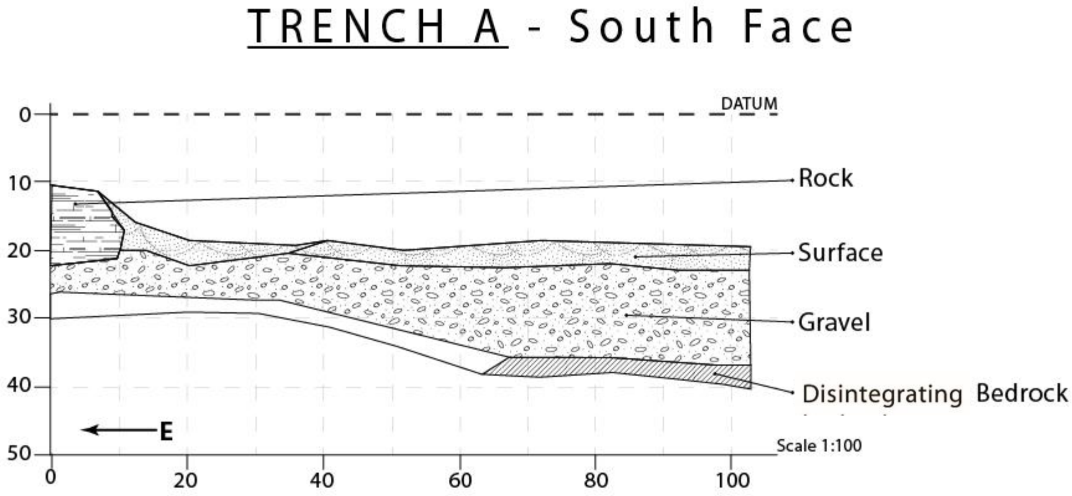

Figure 6.2. Trench A: side profile.

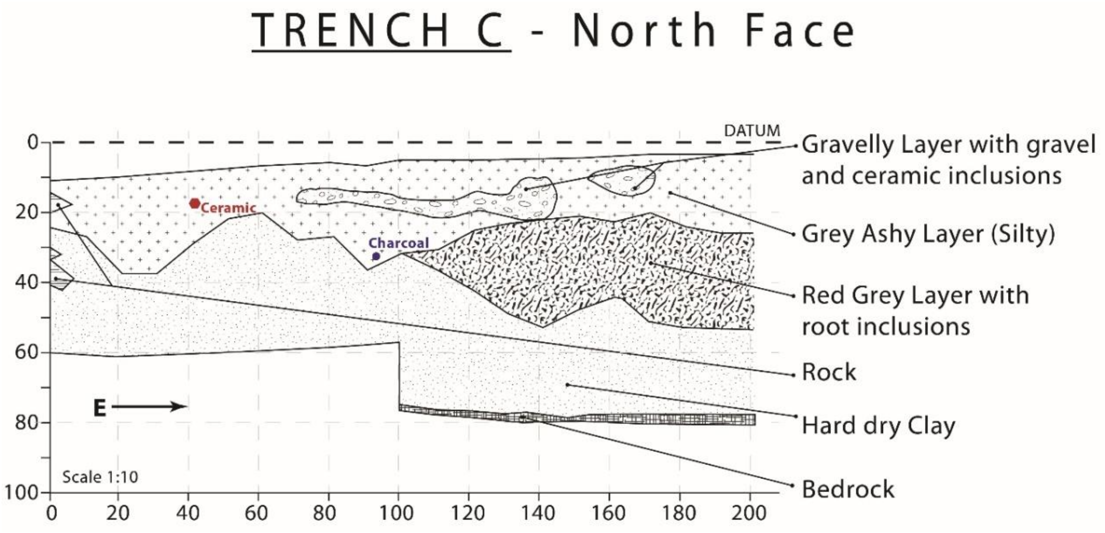

Figure 6.3. Trench C: side profile.

Figure 6.4. Trench C- K2 glass bead and OES bead bracelet in situ.

6.4. DATING

Two charcoal samples that were collected in situ were submitted to Direct AMS for dating. The samples submitted were not identified to floral species. All results were calibrated using OxCal 4.1 and the Southern Hemisphere calibration curve, SHCal14. The first date from Spit C4 (20cm) was selected due to the perceived apex of habitation (mentioned later) and dated between AD 1046 and 1160. The second charcoal sample from Spit C7 (38cm) was selected because of its lower level (older) and dated between AD 995 and 1063 (see Table 6.2). The C7 charcoal sample was found closely associated with the only formal tool recovered from Trench C.

Table 6.2. Radiocarbon dating results: Trench C.

Direct AMS code	**Spit number**	**Sample type**	**Fraction of modern**		**Radiocarbon age**		**Calibrated**
			pMC	**1σ error**	**BP**	**1σ error**	
D-AMS 017472	C4	Charcoal	88,67	0.21	966	19	1046-1160
D-AMS 017473	C7	Charcoal	87,61	0.29	1063	27	995-1063

6.5. STONE TOOL ANALYSIS RAW MATERIAL

One of the major factors with lithic analysis is the raw materials used to produce the tools. This assists in understanding the measure of effort expended in the acquisition of the raw material. Another important factor, according to van Doornum (2000: 27), is the emphasis on either bedded or nodular raw materials.

At Euphorbia Kop there were high instances of nodular raw materials found scattered throughout site, defined by rounding and extreme rounding and wear. This is possibly due to the quartz outcrop that appears on the northern border of the site. I excluded unworked nodules from the excavation analysis, as they were unreliable because I was unable to show whether they were collected by people with the intention of using them or if they occurred naturally at the site (see Method Chapter). Including the nodules would have distorted the raw material counts of the stone tools, thus, quartz numbers would have been inaccurately emphasised (N=391; 72.68%). The raw materials excavated (excluding nodules), comprising the assemblage are: quartz (N=111; 57.22%), CCS (N=44; 22.16%), fine grain dolerite (N=33; 17.01%) quartzite

(N=11; 2.58%) and agate (N=2; 1.03%) (see Table 6.3). The stone tool assemblage comprised mostly of quartz, possibly due to the availability of raw material through the quartz outcrop mentioned above, however there are alternative theories to this dominance of quartz (covered in discussion chapter).

Table 6.3. Raw material frequency, with and without nodules.

Stone Tool Quantities		Nodules	Without Nodules
Quartz	391	280	111
CCS	61	18	43
Dolerite	68	35	33
Quartzite	16	11	5
Agate	2	0	2
Totals	538	344	194

There are raw material outcrops within 4km of the site and it is possible that material was collected from them. The Limpopo and Motloutse are two other locations where materials can be sourced (Forssman 2014: 150). In a conversation with a local farmer (Steyn pers comm. 2016), he stated that much of the raw material found on site (barring quartz) can be obtained at the Motloutse/Limpopo confluence, where large nodules of raw material can be found. This means that there is no need to import materials from far away or travel great distances to source these materials, but this does not exclude the possibility that this did occur (Forssman 2014: 150). I will be reporting on 194 stone tools, neglecting the 344 identified nodules (see Table 6.4).

Table 6.4. Raw material distribution throughout the various trenches and their individual spits.

Spit Number	Quartz	Quartzite	CCS	Agate	Dolerite
Trench A					
A1	15	0	9	0	2
A2	37	0	18	0	1
A3	11	0	0	0	0
A4	1	0	0	0	0
Total	64	0	27	0	3

Spit Number	Quartz	Quartzite	CCS	Agate	Dolerite
Trench B					
B1	8	1	3	0	1
B2	3	0	0	0	1
B3	2	0	1	0	0
B4	0	0	0	0	1
Total	13	1	4	0	3

Spit Number	Quartz	Quartzite	CCS	Agate	Dolerite
Trench C					
C1	2	0	0	0	3
C2	4	1	0	2	1
C3	1	0	1	0	0
C4	8	1	1	0	4
C5	8	0	6	0	7
C6	1	0	0	0	4
C7	0	0	1	0	2
C8	1	0	0	0	1
C9	1	1	0	0	1
C10	2	0	0	0	2
Total	28	3	9	2	25

Spit Number	Quartz	Quartzite	CCS	Agate	Dolerite
Trench D					
D1	3	1	1	0	1
D2	1	0	0	0	0
D3	0	0	0	0	0
D4	2	0	0	0	1
D5	0	0	2	0	0
Total	6	1	3	0	2

Most of the tools at Euphorbia Kop were made of quartz (57.22%), followed by CCS (22.16%) and dolerite (17.01%), and with agate and quartzite consisting of the remaining 3.61%. Demonstrated in the table above (Table 6.4 and Figure 6.5), dolerite use seems to be considerably higher in Trench C, where amounts are similar to quartz; this has increased the overall dolerite composition of the site. Quartz dominate the majority of the spits throughout the excavation, with the only exceptions being, spits C6 and C7, where dolerite dominates (Table 6.4, Table 6.5 and 6.6 for comparison). It is interesting to note the low quantities of CCS (N=9; 13.43%) in Trench C whereas in Trench A, a much higher CCS composition was noted (N=27: 28.72%). Trench A comprises the largest quantity of stone tools, as well as the largest variety of tools. Here quantities of CCS are under half the quantity of quartz (N=64; 68.09%) (Table 6.4), making Trench A similar in frequencies of raw material deposit, when compared to van Doornum (2008) and Forssman (2014). Of the 94 stone tools excavated from Trench A, quartz comprised 68%, CCS 29%, and only 3% of stone tools utilize dolerite as a raw material, with agate and quartzite absent all together (see Table 6.4). It is noted therefore, that Trench A consists of the highest proportion of stone tools and has the lowest dolerite frequency. This could suggest that different materials were used in different portions of the site. A spatial difference may reflect varied activities at different portions of the site. However, had a larger portion of the site been excavated and a larger sample recovered, a stronger argument could then be made.

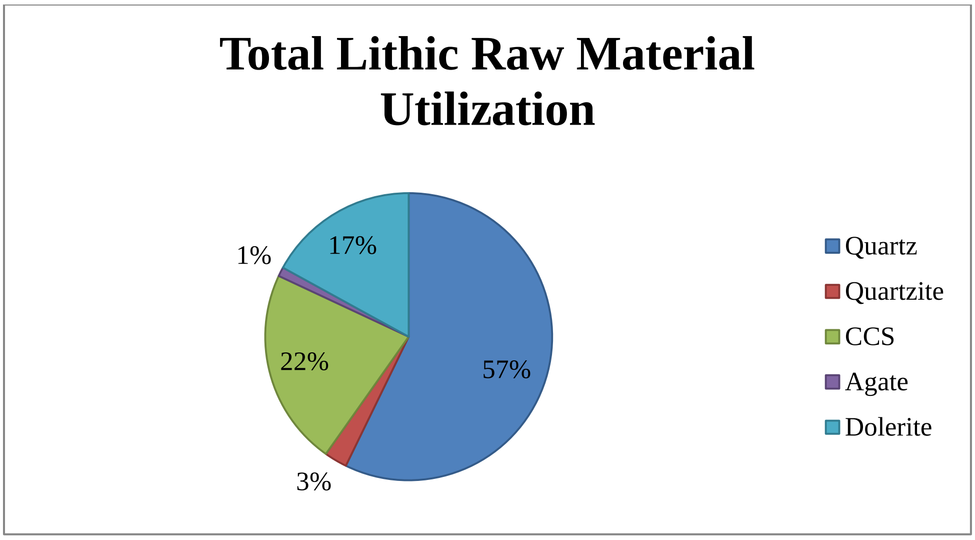

Figure 6.5. Euphorbia Kop: total assemblage raw material utilisation (N=194).

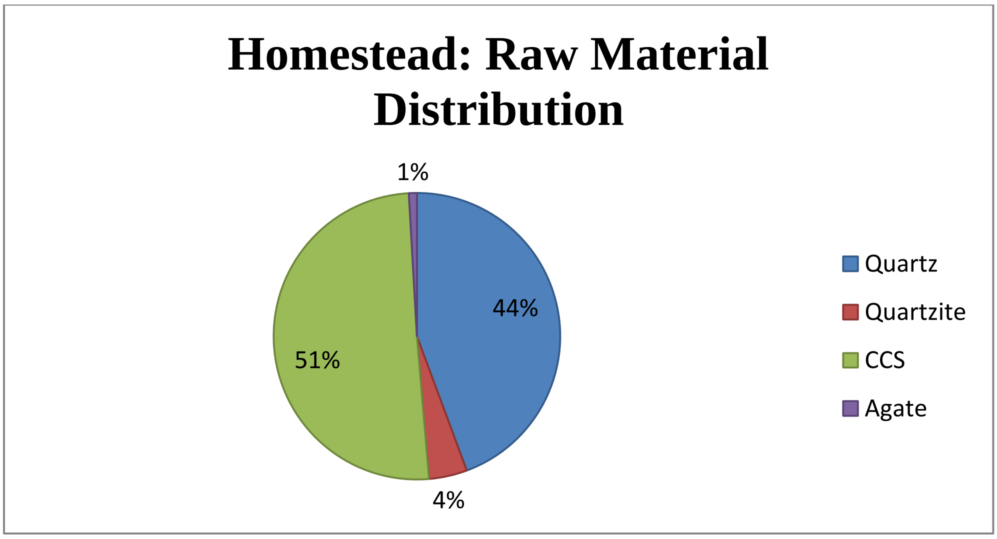

Figure 6.6. Kambaku Camp: raw material utilisation in the homestead (N=285) (Forssman 2014: 292)

In comparison to Forssman's (2014) lithic analysis of Kambaku (which is also an agriculturalist camp with lithic scatters), we can clearly see that Euphorbia Kop has higher frequencies of quartz and dolerite and a lower frequency of CCS. The tendency for agate and quartzite to be of lesser importance as a raw material is emphasised. It is important to keep in consideration that the stone tool assemblage collected at Euphorbia Kop is similar in quantity to that analysed by Forssman (2014) in the homestead at Kambaku (Figure 6.6). The dominance of quartz throughout each trench and throughout the site of Euphorbia Kop does have similarities to findings noted by Schoeman (2006) and Forssman (2010, 2014) which will be discussed further in the following chapter.

6.5.1. Debitage and Formal tools

The concentrations of stone tools were as follows: 94 were recovered in Trench A (48.45%), 21 were recovered in Trench B (10.82%), 67 were recovered in Trench C (34.54%) and 12 recovered from Trench D (6.19%) (see Table 6.6). Additional details are provided in Table 6.5, showing the quantities of stone tools that the individual spits yielded in each trench. Special attention will be paid to Trench A (shelter) and Trench C (kraal) due to their higher lithic content and their varied locations on the site, as well as one having predominantly forager material (Trench A) and the other farmer (Trench C).

There was a variety of debitage found at Euphorbia Kop, yet only four formal tools (see Table 6.5). It should be noted that three of the formal tools were recovered from Trench A (shelter), with the remaining formal tool recovered from a lower level spit (C7) of Trench C (kraal). This is where the dated charcoal sample was recovered (dated: AD 995-1029). The debitage varied from trench to trench or area to area, identifying different debitage may assist in defining separate activity areas.

Table 6.5. Quantities of various lithic types, per Trench.

Stone Tool Type	Trench A	Trench B	Trench C	Trench D	Totals
Chunk	18	6	24	7	55
Chips	14	13	9	0	36
Lozenge Chunk	9	0	1	2	12
Flake	35	0	28	1	64
Broken Flake	10	0	0	2	12
End Scraper	2	0	0	0	3
Side Scraper	1	0	1	0	1
Rounded Nodule	2	0	2	0	4
Casual Core	2	1	0	0	3
Bladelet Core	0	0	1	0	1
Irregular Core	0	0	1	0	1
MSA Broken Blade	1	0	0	0	1
MSA	0	1	1	0	2
Totals per Trench	**94**	**21**	**67**	**12**	**194**
Percentage	**48,45%**	**10,82%**	**34,54%**	**6,19%**	**100%**

Table 6.6. Frequencies of stone tools in each trench per spit.

Stone Tool Frequencies			Stone Tool Frequencies		
Trench	No.	Per (%)	Trench	No.	Per (%)
A1	26	27.66%	C1	5	7.46%
A2	56	59.57%	C2	8	11.94%
A3	11	11.70%	C3	2	2.99%
A4	1	1.06%	C4	14	20.90%
			C5	21	31.34%
B1	13	61.90%	C6	5	7.46%
B2	4	19.05%	C7	3	4.48%
B3	3	14.29%	C8	2	2.99%
B4	1	4.76%	C9	3	4.48%
			C10	4	5.97%
			C11	0	0.00%
			D1	6	50.00%
			D2	1	8.33%
			D3	0	0.00%
			D4	3	25.00%
			D5	2	16.67%

6.6. TRENCH A AND TRENCH C COMPARISON

To attempt to contextualise the deposition of the stone tools, it is necessary to note the various spits and their lithic concentrations. Another important factor is to analyse the concentration of the stone tools in their respective trenches and the composition of the lithic material. This is done due to these two trenches being in separate locations on the site with different material culture, Trench C being on the periphery of the kraal and Trench A the eastern periphery of the site. This will be useful in understanding the differences between these two portions of the site. When understanding the variations of lithic composition of the two areas, it is possible to form an idea of the activities that may have occurred in these areas. Trenches B and D did not produce enough subsurface data to warrant an in-depth lithic comparison, as well as producing no formal tools.

6.6.1. Concentration Comparison between Trench A and Trench C

The deposit from Trench A was relatively shallow and went to a maximum depth of approximately 20cm with a total of 33.5 buckets (10L) excavated and 94 stone tools (2.81 lithics per bucket) (see Figure 6.7 for comparison). Trench A, thus, contained the largest concentration of stone tools, the highest density was located in Spit A2 (N=56) and was deposited between 5-10cm below the surface. The spit consisted of 6.25 buckets, which is a concentration of 8.96 lithics per bucket (Spit A2). Lithic numbers decreased dramatically in Spit A3 and continued to do so into Spit A4.

Trench C contained the second highest concentration of lithics (N=64), but it must be noted that the trench was double the size and substantially deeper than Trench A, with the deepest point at 78cm (see Figure 6.3). Trench C comprised a total of 155 buckets which were excavated, with a total of 67 lithics, this means that the concentration is 0.41 stone tools, excavated per bucket. The largest concentration of lithics in Trench

C were found in Spit C5 (N=21), which was 20-25cm below the surface and comprised of 13 buckets, which is a concentration of 1.61 lithics per bucket for Spit C5. The deposit continued to fluctuate in the deposition of lithics throughout the following spits, they did however continue to occur throughout every spit in Trench C, baring the final spit (C11) (see Table 6.5).

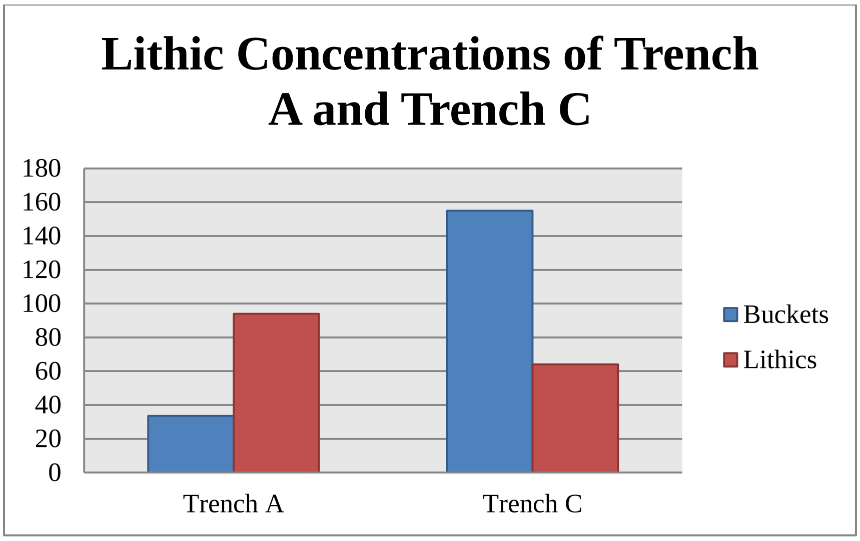

Figure 6.7. Concentration of lithics in Trench A and Trench C, buckets vs. lithics found.

The stone tool concentration differences between Trench A and Trench C could be due to how these spaces were utilised (see Figure 6.8). The ratio of stone tools in Trench A was 6.85 times higher than the ratio of stone tools in Trench C. The presence of three formal tools in the shallow deposit in Trench A could also be an indication that this area was used more intensely by groups that utilise refined stone tool technology. Excluding Trench A, more expedient stone tool technologies (quartz) were likely used throughout the site (mentioned in Chapter 7), in the form of quartz and fine grained dolerite, which are easier and quicker to manufacture into stone tools than CCS (Wadley 1996). In order to understand the various activities that took place at the different parts of the site, it is important to identify the types of lithic waste and their respective quantities.

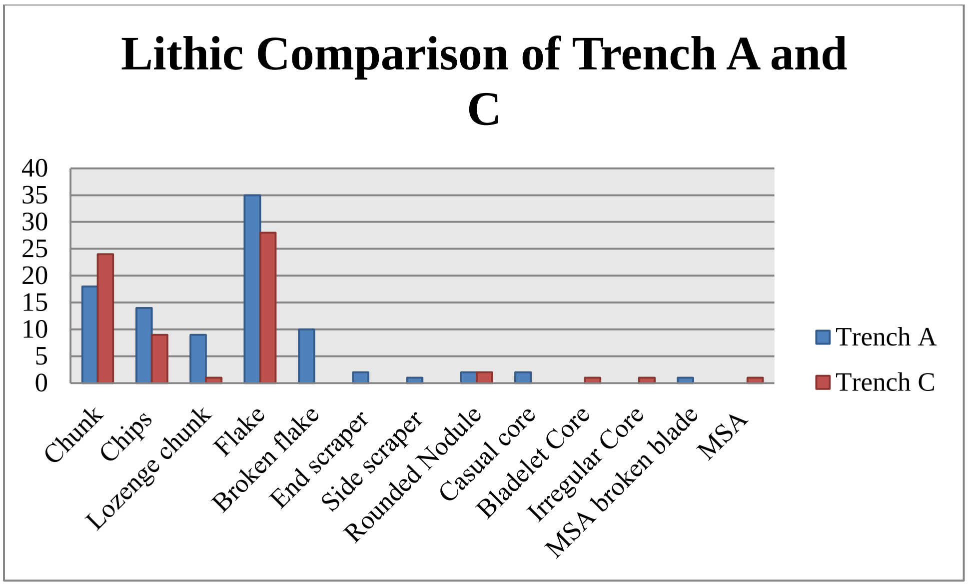

Figure 6.8. Euphorbia Kop: the complete assemblages from Trench A and Trench C.

6.6.2. Chunks

Trench C has a higher quantity of chunks (N=24), whereas Trench A has 18. Chunks have an angular nuclei with relatively few flake scars. It is interesting to note that nine lozenge chunks (see Forssman 2014) were found in Trench A, with only one in Trench C. It is possible that different technologies (e.g. bipolar) and raw materials (e.g. quartz) may have been utilised more in certain areas of the site to increase expediency of stone tool production. This bipolar technique suggests a forager presence and is a strong focus point in work done by van Doornum (2008: 86) and Forssman (2014: 157). It is possible that foragers were not the creators of this lithic waste. In order to prove this, however, a thorough technological analysis will be needed to be conducted to determine the manufacture technique.

6.6.3. Chips

Trench A has a higher quantity of chips (N=14) and Trench C, lower with 9. When analysing such low quantities of chips it is impossible infer too much, hence it will just be noted that although the number is low the concentration of chips is much higher in Trench A. However, low numbers of chips might relate to erosion or tool manufacturing locations (Kuman & Field 2009), with higher numbers of chips indicating an area of more intense manufacture.

6.6.4. Flakes

Trench A also had a higher quantity of flakes (N=35), whereas Trench C had a flake quantity of 28. This comparison too cannot solely provide the information to formulate any conclusions, however interestingly when identifying broken flakes it was noted that Trench A had 10 broken flakes (quartz-7 and CCS-3) whereas Trench C had none. This could be due to a different method of stone tool production on this portion of the site, or the actual use of these flakes on this portion of the site as the trenches' raw tool composition for flakes is similar. However, a more detailed use wear analysis is needed to prove this speculation.

6.6.5. Formal Tools

A total of four formal tools were excavated and identified from Euphorbia Kop. They represent two different categories of scraper, namely, side scraper (N=2) and end scraper (N=2). Of the total amount of tools excavated, formal tools consists 2.06% of the total assemblage. Trench A consisted of 94 stone tools, of which 3.19% were formal tools; Trench C had 67 stone tools, the formal tool comprised 1.49% of the stone tools in this assemblage.

The majority of formal tools (Figures 6.9 and 6.10) were found in Trench A (75%), which also had the greatest density of lithics. The raw material used in the creation of the three formal tools in the trench were quartz (N=2), which consisted of a side scraper (N=1) and an end scraper (N=1), as well as CCS which consisted of an end scraper (N=1). The two quartz scrapers were deposited in Spit A3 with the CCS end scraper in Spit A2. This means that all the formal tools were found between 5cm and 15cm below the surface, bearing in mind the trench was 20cm at its deepest, but interpreted as undisturbed. Trench C’s formal tool’s raw material was CCS, and the tool, a side scraper, which was found in the lower levels of deposit (Spit C7; 50cm). Reasons for the possible lack of formal tools will be reviewed in the discussion.

Figure 6.9. Trench C: CCS end scraper (drawn to scale).

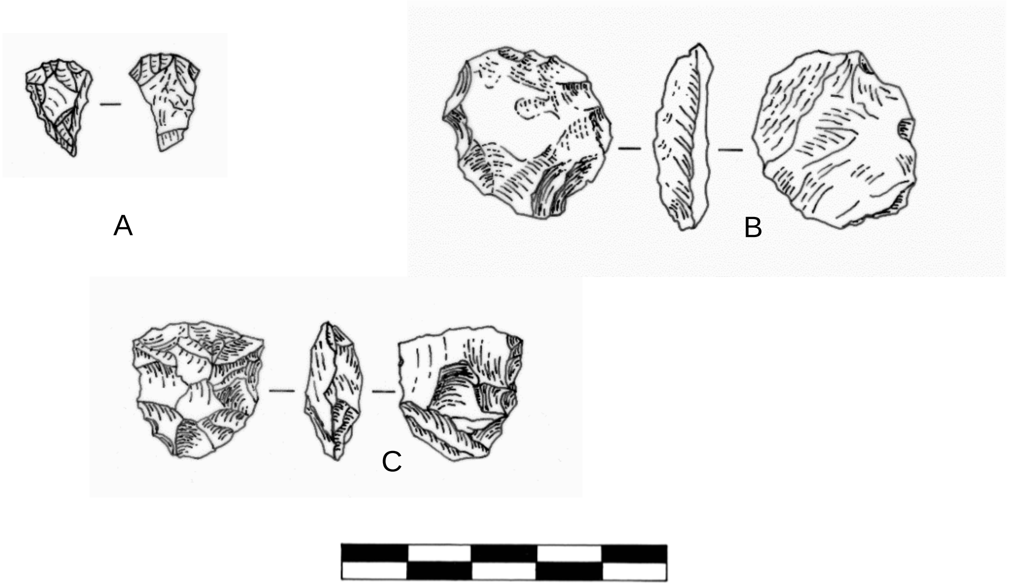

Figure 6.10. Trench A: formal tools; A= quartz end scraper, B= quartz side scraper and C= CCS end scraper (drawn to scale).

6.7. CERAMIC ANALYSIS

There were 1147 ceramic sherds excavated from Euphorbia Kop (Table 6.7), only 15 (1%) of these had decoration, however, the sherds with decoration were not diagnostic. Ceramics were found in the upper levels (10-15cm) of deposit in Trenches A and B, Trenches C and D were located in more central locations of Euphorbia Kop and ceramic presence was found throughout all levels except the bottom (C11) (see Figure 6.11). The majority of ceramics as well as decorated ceramics came out of Trench C (see Figure 6.12). A total of 35 (3%) sherds were undecorated rim sherds, these were drawn to assist in interpreting vessel shape (see Figure 6.13). One sherd of unidentifiable decorated ceramic was excavated from Trench D. There was, however, a large cache of ceramics in Trench D-extension (burial). This is not presented in this project due to the nature of the deposit and by the farm owners' request. It was however ascertained that the ceramics are from the K2 ceramic period.

Table 6.7. The distribution and weight of ceramics at Euphorbia Kop

	Ceramics	Weight (g)
Trench A	29	143
Trench B	26	100
Trench C	1050	5011
Trench D	42	260

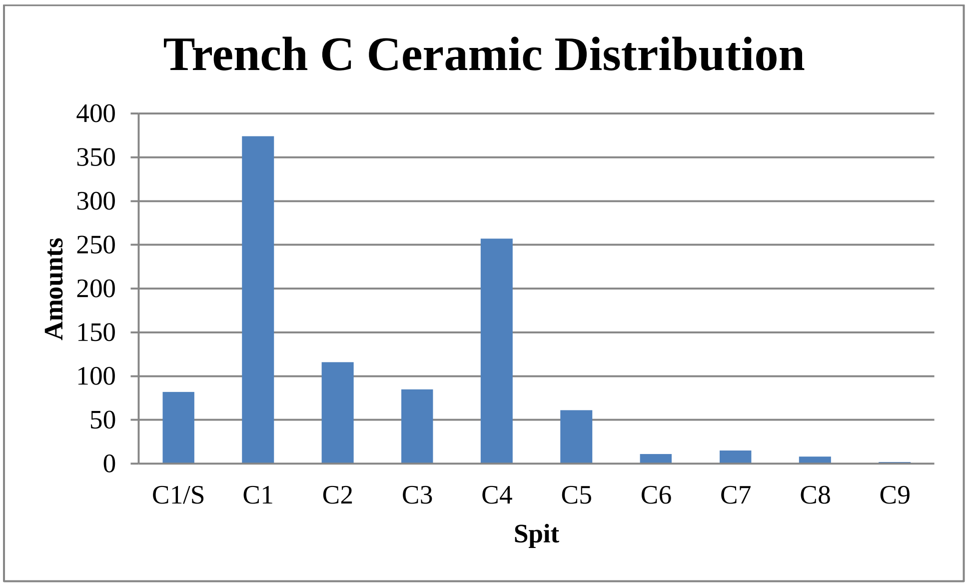

Figure 6.11. Ceramic distributions in Trench C.

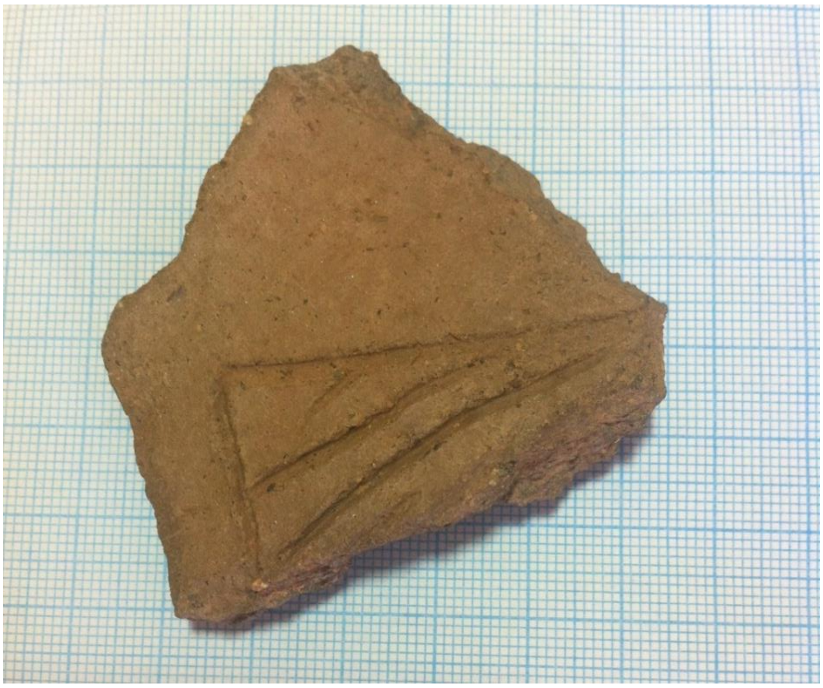

Figure 6.12. Example of decorated ceramic in Trench C (stylistic similarities to K2 triangles).

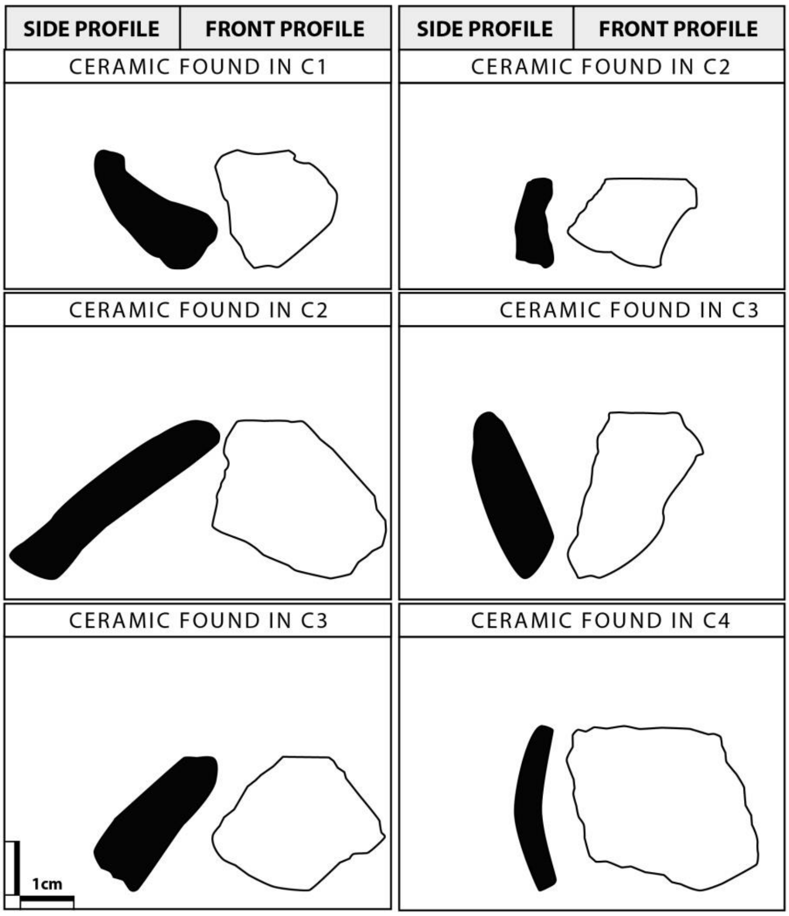

Figure 6.13. Side profiles of rim sherds found in Trench C.

The profile of the rim sherds traced show the shapes of the vessels, all the rim sherds large enough to be utilised (N=5) were found in Trench C.

6.7.1. Fabric Composition

Ceramics larger than two centimetres were selected to analyse the fabric composition and the inclusions in the ceramics. Trench A (N=19 sherds) and Trench C (N=128 sherds) were selected for analysis to see the contemporaneity of fabric composition between the kraal section (Trench C) and the shelter portion (Trench A) of the site. Trench A revealed no datable material, thus another method had to be utilised to establish contemporaneity to the main site (Trench C). If the fabric composition is uniform, this informs us that the producers of the ceramics found in Trench C were probably the same as Trench A. The ceramics were separated into four groups of fabric compositions (see Methods Chapter) then compared between trenches A and C.

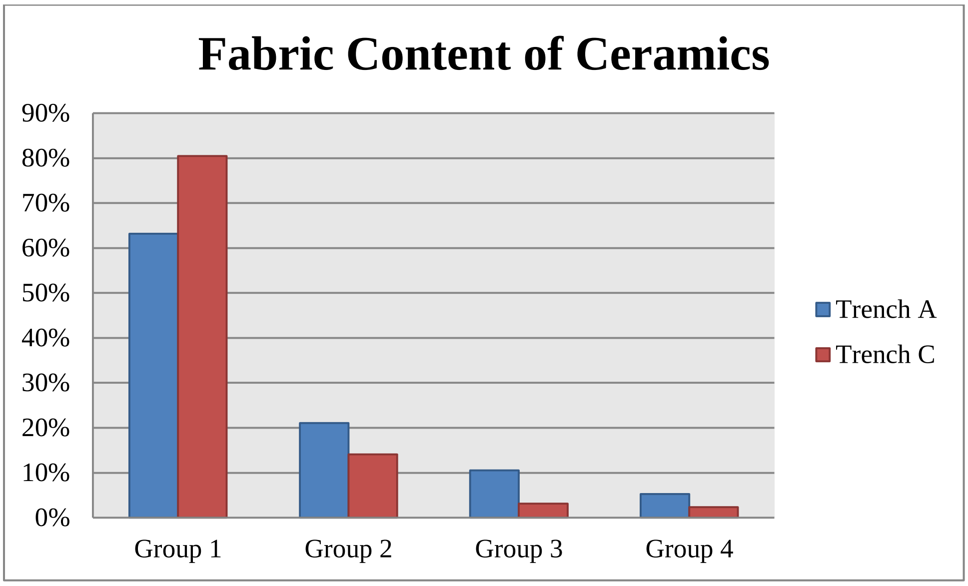

Figure 6.14. Material inclusions comparison of Trench A and Trench C.

The data collected shows (Figure 6.14) a similar composition of inclusions between Trench A and Trench C, confirming the expectation that these two areas of the site were likely utilised at the same time. However, the similarity of the fabric compositions could be due to the local landscape and available material.

6.8. FIGURINES

There were three figurine fragments that were found scattered on site, they are associated with Zhizo, and later, Leopard's kopje cultures. The figurines were found on the surface in the vicinity (N=2) of Trench C, as well as in the deposit (N=1). The locations were documented and pictures taken. There was also a figurine fragment excavated from Trench C4 (Dated: AD 1046-1160), shown below (Figure 6.15). One of the three figurines was identified as human by the identification of a buttocks shape (no photograph). The other two pieces may have been human or animal (Figure 6.16) (see Calabrese 2005).

Figure 6.15. Figurine fragment found in Trench C (C4).

Figure 6.16. Figurine fragment collected on surface (near Trench C).

6.9. BEAD ANALYSIS

Two complete and two broken K2 garden rollers were discovered on the surface near Trench B. Glass beads were not very common on the site with the exception of these four glass beads as well as one other K2 Garden Roller fragment discovered on the surface of Trench C (among OES beads). Trench C also had one K2 styled glass bead in situ with the OES bead cluster (see Figure 6.17)

Figure 6.17. K2 Garden Rollers collected from surface scatter near Trench B, two broken (A and D) and two whole (B and C).

Analysis of the organic beads was conducted by measuring the internal and external diameter of the OES and Achatina shell beads which for the sake of brevity I will refer to purely as organic beads. Several of the organic beads were more oval due to wear or production techniques; in this case the longest diameter (internal and external) was measured. There were 236 organic beads excavated at Euphorbia Kop, all 236 of the organic beads were excavated from Trench C (see Table 6.8 and Figure 6.18). The highest concentrations of organic beads were found in the uppermost levels of Trench C (C1/S, C1, C2 and C3), showing a remarkable level of preservation. Trench C's surface spit (C1/S) consisted of 12 organic beads with an average internal diameter (AID) of 1.83mm and an average external diameter (AED) of 4.56mm, Spit C1 consisting of 71 organic beads, with an AID of 1.47mm and AED of 4.82mm, Spit C2 had 100 organic beads with an AID of 1.74mm and AED of 4.27mm, Spit C3 had 46 organic beads with the AID=1.64mm and AED=4.31mm, from this spit organic bead deposits plummet, with Spit C4 having 5 organic beads with the AID=2.12 and AED=4.64, Spit C9 was the next level containing 1 organic bead with an internal diameter (ID) =2.45 and an external diameter (ED) =4.9mm, finally in Spit C10 one organic bead was discovered with an ID=2.15 and an ED=5.55 (see Figure 6.19). There were three larger OES beads found in the higher levels (Spit C1/S; C1), measuring above 6mm, the first measured ID=3mm and ED=6.90 with the second’s ID=1.80mm and ED=7.15mm and the thirds’, ID=2mm and ED=8.15, these were substantially larger (2-3mm) than the other beads collected from the same spits, as well as throughout the other spits in Trench C. Of the 236 organic beads collected, only 16 were identified as Achatina shell beads.

Table 6.8. Table showing measurements of organic beads (Unit/Context coloured per spit) as well as other recorded variables

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	1/S					3.20	1.50
C	1/S					3.70	1.55
C	1/S					3.95	1.55
C	1/S					4.60	2.20
C	1/S					4.75	2.45
C	1/S					5.00	1.50
C	1/S					3.85	1.95
C	1/S					5.00	1.90
C	1/S					3.45	1.45
C	1/S					5.05	1.65
C	1/S					5.25	1.20
C	1/S					6.90	3.00
C	1					8.15	2.20
C	1					5.00	1.65
C	1					4.90	1.45
C	1					4.80	1.45
C	1					5.20	1.55
C	1					7.15	1.80
C	1					5.40	2.80
C	1					4.50	1.90
C	1					5.00	1.90
C	2					4.40	1.75
C	2					4.20	1.90
C	2					4.70	2.00
C	2					3.65	1.70
C	2					3.80	1.65
C	2					3.35	1.75
C	2					4.65	1.80
C	2					3.85	1.70
C	2					3.65	1.60
C	2					3.70	1.75
C	2					4.90	2.10
C	2					4.50	2.05
C	2					4.65	1.65
C	2					4.50	2.20
C	2					4.40	2.50
C	2					4.45	2.15
C	2					4.40	1.70
C	2					4.45	1.55
C	2					3.10	1.40
C	2					3.75	1.45
C	2					4.30	1.90
C	2					4.50	1.50
C	2					4.90	1.35
C	2		x			3.35	1.50
C	2		x			3.40	1.70
C	2		x			3.95	1.30
C	2		x			4.00	1.40
C	2		x			3.40	1.50
C	2		x			3.50	1.65
C	2		x			3.30	1.60
C	2		x			3.25	1.55
C	2		x			3.10	1.35
C	2		x			4.10	1.40
C	2		x			3.20	1.85
C	2		x			3.40	1.70
C	2		x			3.10	1.85
C	2		x			3.10	1.80
C	2		x			3.30	1.85
C	3					4.85	1.70
C	3			x		4.10	1.55
C	3			x		3.80	NA
C	3			x		4.50	NA

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	1					5.25	1.45
C	1					4.00	1.45
C	1					4.95	2.45
C	1				x	"	"
C	1					4.85	2.45
C	1					4.90	1.80
C	1					5.00	1.65
C	1					4.65	2.00
C	1					4.70	1.90
C	1					5.00	1.90
C	1					4.60	1.70
C	1					4.70	1.70
C	1					5.15	1.50
C	1					4.60	2.10
C	1					5.10	2.00
C	1					5.45	1.75
C	1					5.00	1.90
C	1					5.00	1.70
C	1					4.90	1.75
C	1					4.50	1.65
C	1					4.65	1.60
C	1					5.20	1.75
C	1					4.60	1.90
C	2					4.25	2.20
C	2					4.15	1.95
C	2					4.55	2.15
C	2					3.35	1.65
C	2					3.65	1.85
C	2					5.05	1.80
C	2					4.10	2.10
C	2					4.50	1.55
C	2					4.65	1.50
C	2					4.35	1.40
C	2					4.45	1.40
C	2					4.15	1.85
C	2					3.70	1.40
C	2					4.10	1.75
C	2					4.30	1.70
C	2				x	"	"
C	2			x		4.65	1.75
C	2			x		4.30	2.10
C	2			x		4.55	1.60
C	2			x		5.80	1.65
C	2			x		4.65	1.75
C	2			x		4.30	NA
C	2			x		4.70	1.55
C	3			x		4.50	1.60
C	3			x		4.40	2.20
C	3			x		3.95	1.60
C	3			x		4.00	1.40
C	3			x		3.80	NA
C	3			x		4.45	1.35
C	3					3.85	1.35
C	3					4.50	1.85
C	3					4.95	1.80
C	3					3.95	1.65
C	3					4.35	1.60
C	3					4.70	2.05
C	3					4.95	1.85
C	3					3.75	1.35
C	3					4.40	1.65
C	3					4.55	1.55
C	3					4.65	1.45
C	3					4.20	2.05
C	3					4.90	1.55
C	3					4.90	1.40
C	3					4.50	1.85
C	3					4.85	1.50
C	3					5.00	1.85

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	1					5.15	1.70
C	1					5.25	1.55
C	1					4.55	1.70
C	1					5.35	2.00
C	1					5.10	2.00
C	1			x		4.00	1.65
C	1			x		4.25	NA
C	1			x		4.20	1.80
C	1					4.90	1.85
C	1					5.40	1.70
C	1					3.65	1.85
C	1					5.35	2.10
C	1					4.30	1.50
C	1					5.40	1.35
C	1					5.30	1.45
C	1					5.40	1.80
C	1					4.65	1.20
C	1			x		4.40	1.60
C	1			x		4.50	1.55
C	1					4.50	1.35
C	1					4.15	1.50
C	1					4.45	1.70
C	1					4.20	1.80

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	2			x		4.15	1.75
C	2			x		3.55	1.80
C	2					3.95	2.05
C	2					4.90	1.65
C	2					4.00	1.80
C	2					4.50	1.40
C	2		x			3.65	1.80
C	2					4.55	2.00
C	2					3.80	1.10
C	2					5.15	1.85
C	2					3.60	1.85
C	2					5.10	1.90
C	2					4.90	2.70
C	2					4.00	1.40
C	2					4.60	4.60
C	2					4.95	1.70
C	2					3.80	1.60
C	2					3.45	1.30
C	2					5.25	1.85
C	2					5.00	1.35
C	2					4.55	1.80
C	2					5.15	1.80
C	2					4.70	1.90

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	3					4.85	2.00
C	3					5.10	1.45
C	3					4.85	2.10
C	3					4.70	1.80
C	3					4.45	1.65
C	3					4.65	1.50
C	3					3.75	1.45
C	3			x		4.40	1.90
C	3			x		4.35	1.95
C	3					4.30	2.10
C	3					3.95	1.40
C	3					3.70	1.55
C	3					3.75	1.55
C	3					4.40	1.65
C	3	x				3.70	1.40
C	3		x			3.45	1.85
C	3		x			3.40	1.65
C	3		x			3.50	1.70
C	3		x			3.50	1.55
C	4					4.45	2.45
C	4					4.80	2.10
C	4					5.85	2.05
C	4					4.05	2.20

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	1					4.70	1.20
C	1					4.60	1.70
C	1					4.50	1.65
C	1			x		4.10	1.60
C	1			x		4.20	NA
C	1			x		4.50	NA
C	1			x		3.90	1.35
C	1			x		4.70	1.60
C	1			x		5.35	NA
C	1			x		4.45	NA
C	1			x		4.55	1.90
C	1					4.60	1.85
C	1			x		4.75	1.70
C	1			x		4.40	1.75
C	1					4.45	1.80
C	1					4.65	1.85

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	2					4.70	1.85
C	2					3.70	1.35
C	2				x	6.20	NA
C	2					4.70	1.50
C	2					4.55	1.60
C	2					4.40	1.40
C	2					4.90	1.40
C	2					5.20	1.90
C	2					5.15	1.65
C	2					4.65	1.65
C	2					4.45	1.85
C	2					4.40	1.85
C	2					4.65	1.35
C	2					5.00	1.45
C	2					5.20	1.45
C	2					5.15	1.85

Unit	Context	Burnt	Achatina Bead	Fused	Broken	External Diameter (mm)	Internal Diameter (mm)
C	4					4.05	1.80
C	9					4.90	2.45
C	10	x				5.55	2.15

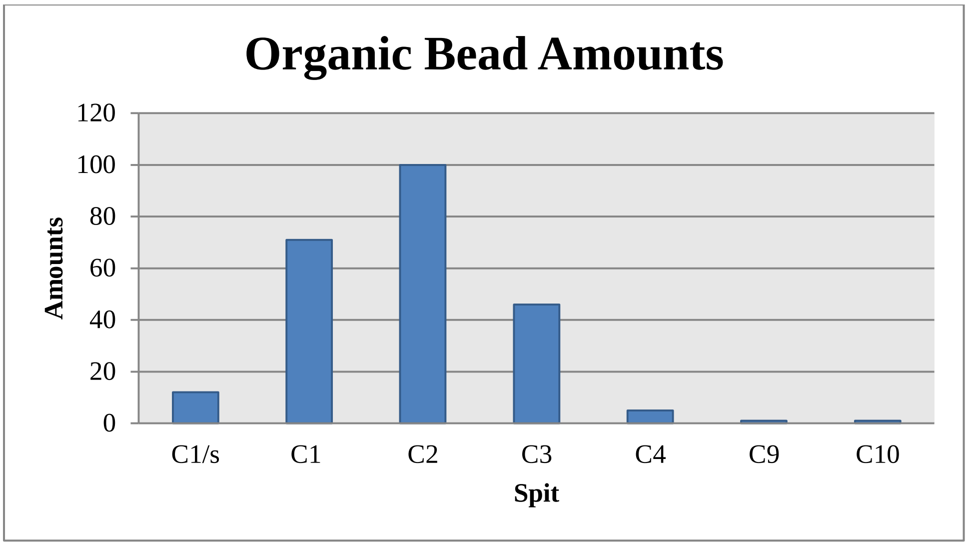

Figure 6.18. Number of organic beads in Trench C.

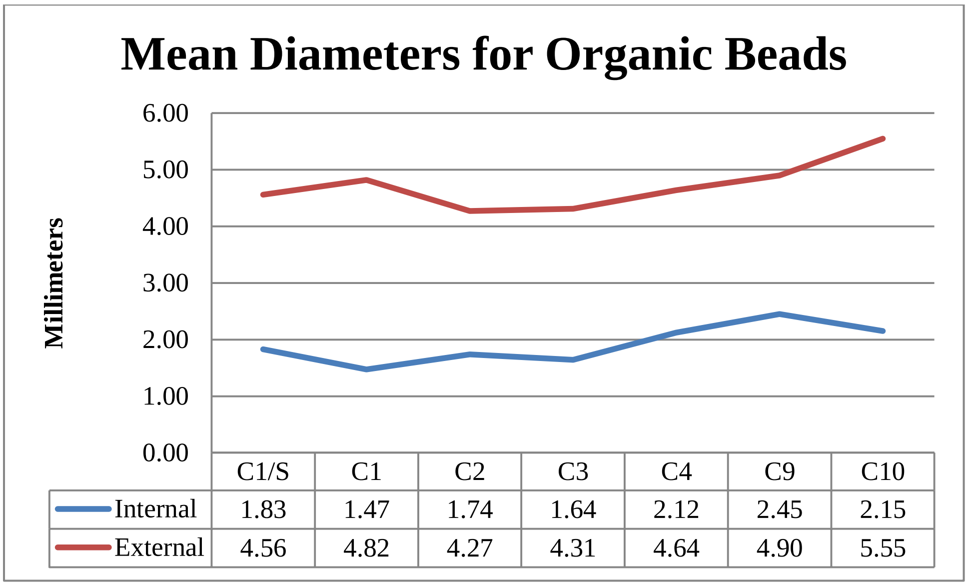

Figure 6.19. Internal and external diameters of organic beads per spit excavated.

There were several strings of organic beads that were excavated in situ. This is likely due to them being part of the same necklace or bracelet. There were six strings of beads. The sixth bracelet consisted of 37 beads of which 15 beads were Achatina shell beads and one K2 glass bead. The bracelets may have all been part of one large string of beads and were found strung together horizontally. These 15 Achatina shell beads look to have been strung together with the glass bead and 22 other OES beads, the

Achatina shell beads AID=1.60mm and AED=3.43mm were about a millimetre smaller (AED) than that of the other OES beads from the same bracelet (AID=1.63mm and AED 4.83mm). This could be due to the shell being thinner, and a smaller bead needing to be produced as not to break the shell, however, more research is needed (for production techniques see Orton 2007).

During analysis there were some OES and Achatina shell beads that had merged together making it impossible to separate them, and to measure the internal diameter of the centre beads (N=9) without causing damage to the external beads. In these cases the external diameter was measured and the internal diameter only measured on the two end beads.

It is clear that the vast majority of the OES beads fall into the category of forager sized beads (see Jacobson 1987; Tapela 2001). Only three OES beads are farmer sized (larger than 6mm) this is a promising sign that foragers were present on the site of Euphorbia kop. Of the four locations excavated OES beads were only found in one of the excavation trenches, Trench C which is located near the centre of the site slightly away from the koppie on the periphery of the kraal, in the farmer portion of the site. However, there is little evidence to suggest that beads were being produced at Euphorbia Kop since no blanks were found. This lack of organic bead production is common at farmer sites. However, since only a limited area of the site was excavated, bead production may have been taking place in one of the unexcavated areas.

6.10. FAUNAL ANALYSIS

In total Euphorbia Kop contained 342g of faunal remains. Almost all the faunal remains were excavated from Trench C (329g; 0.212g per bucket) which also has the highest density per spit (C1-C7) (Figure 6.20). The other trenches comprised the remaining 13g with the highest being Trench D (10g; 0.27g per bucket), followed by Trench A (2g; 0.06g per bucket) and finally Trench B (1g; 0.02g per bucket).

Unfortunately, very little of the faunal remains were identifiable and the majority were fragmented (analysis conducted by Claudia Abatino). Of the faunal samples that are identifiable, seven of them belonged to the class Bovid ll with only one piece being identifiable to species; the species identified was domestic sheep. The difference between sheep (*Ovis aries* L.) and goat (*Capra hircus* L.) has been determined using Zeder's (2010) work. There were a few rodent specimens which were presumably post-depositional (burrowing) as the state of preservation was better than the other fauna. There was also a specimen that was identified to be a bird. Unfortunately the species could not be identified. Little can be said by analysis of the faunal assemblage due to its fragmentation. However it is interesting to note the prevalence of Bovid ll and the lack of Bovid lll (cattle) fauna, this small sample is worth considering, although at present a strong argument cannot be made but with additional work this trend may become clearer.

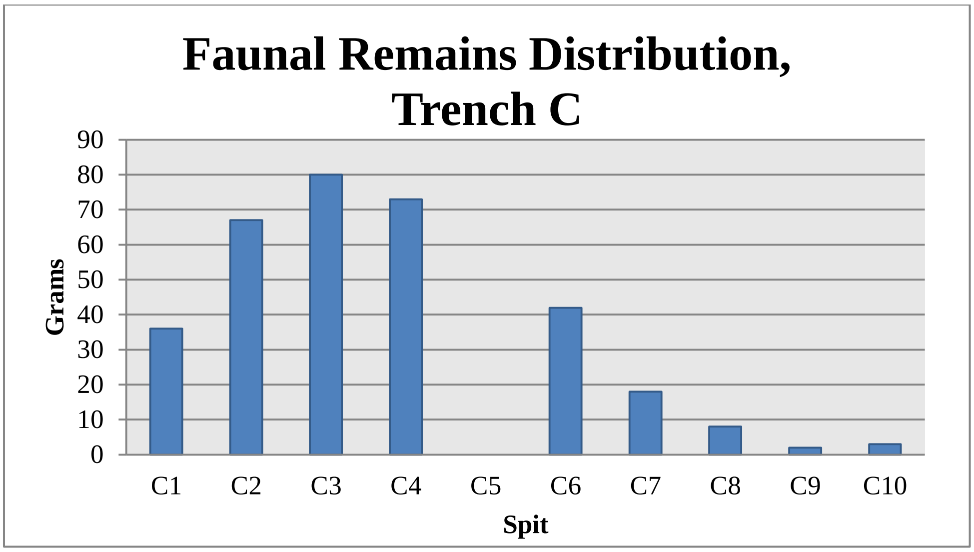

Figure 6.20: Distribution of faunal deposit in Trench C.

In the following chapter I discuss these findings further. I begin by interpreting site specific patterns and then situate EK on the landscape in relation to van Doornum's (2005) and Forssman's (2014) findings. Specifically, I focus on forager landscape use-patterns, regional variability and shifts in forager settlement patterns, focussing specifically on their presence in farmer contexts.

7. DISCUSSION

7.1. SURVEY DISCUSSION

Surveys show that forager material is distributed unevenly across the landscape (Foley 1981; Forssman 2014). On the GML, two broad periods of occupation can be defined: the era before the arrival of farmers, when foragers had access to “free space” (Hall & Smith 2000), and the post-farmer settlement phase when forager movements became restricted by farmers (Moore 1985). The degree to which forager mobility patterns were affected depended upon the extent that farmers ‘restricted’ them (Kent 2002). Therefore by studying changes in forager mobility as well as settlement patterns within a cultural landscape and across the contact divide, one may be able to make inferences about the nature of interaction between foragers and farmers (Forssman 2010: 74). To do this, we need to consider the distribution of forager sites and consider what factors may have played a role in influencing site selection.

Forager site selection is influenced by a number of topographical features (Foley 1981; Cashdan 1983) and possibly human relationships (Hall & Smith 2000; van Doornum 2005; Forssman 2010, 2014). On the GML, the environment is fairly uniform (Smith 2005) and the animal populations would have been consistent throughout (see Huffman 2008). Mopane woodland dominates the area with pockets of micro-environments found on koppies, ridges, and alongside rivers and stream networks (see van Wyk & van Wyk 2007). The sandstone belt is interspersed with koppies whereas the plateau is punctuated with them. There is one sandstone ridge running through Breslau and overall the terrain is not rugged, however, Ratho’s sandstone ridge is much steeper and inaccessible. This may have contributed to the lack of forager material identified on Ratho.

Forager features were found in all environmental zones on Breslau, with the ridge on Ratho having only a single CCS core to represent a forager presence on the farm. On Breslau, of the 19 identified forager sites there was only one small isolated forager boulder site located in the Mopane (at some distance from the nearest farmer site), along with two MSA sites. This south-eastern corner (Mopane dominated) is the driest portion of the farm and no Middle Iron Age farmer features (AD 900-1300) were identified. Forager and farmer features were concentrated on the flat sourveld areas with punctuated koppies in the central and northern portion of the farm. As noted by Forssman (2014) a large number of forager features were located on hilltops and surrounding koppies.

The distribution of sites does not correspond to either terrain ruggedness or the location of water courses within Breslau, again similar to patterns found across the Limpopo River by Forssman (2014). It may be as Hall and Smith (2000) as well as Forssman (2010, 2014) argue that forager site selection could be influenced by social factors. Van Doornum (2005) showed that all her study sites have different signatures, which she believes is the result of variable activities at each site as well as the proximity of the site to farmer settlements. There are interesting examples of forager shelter sites in close proximity to my research area such as Balerno Main, Dzombo, Tshisiku and, further away, Little Muck (van Doornum 2005). Nearby there are specific rain making sites at which foragers and farmers are thought to have co-existed, such as Kroonkop (Brunton *et al.* 2013) and at a slightly greater distance Rhodes Drift, M3H, JC Hill and EH Hill (see Schoeman 2006), likely utilising the same space with common purpose. Other examples where foragers occupied farmer settlements are Kambaku and João (Forssman 2014), also located within very close proximity to my research area. These settlement strategies are some of the many and varied outcomes of interaction on the GML. New methods have been implemented to interpret these varied reactions and adaptations during interaction (see Forssman 2014). Based on the results collected here, and by comparing them to Forssman's (2010, 2014) studies, sites identified in this project looked to be used for different purposes (see Wadley 1989), hence the range of locations with forager sites in varied proximities to farmer settlements (see Figure 5.3).

To establish the chronological relationships between forager and farmer occupants, shelters, which are commonly excavated may be less frequently utilised by foragers on the GML than previously thought (Arthur 2008). For instance Breslau only had five forager sites located in shelters or under an overhang (26.31%). This is a significant problem, as emphasis has been placed on forager shelter sites for interpreting the nature of interaction and shifting frontiers. Forager open-air sites consisted of the largest portion of forager features (N=14; 73.68%), of which five were located on agricultural homesteads (35.71%). This trend was also identified in the buffer zone at João where 37 forager features were identified, of which 14 (37.83%) were located at farmer homesteads (Forssman 2014: 251). If van Doornum (2005) is correct and forager sites were chosen due to their proximity or distance from farmer sites, all of the forager sites would fall into her buffer zone of interaction. Shelter sites located within the same proximity to farmer settlements are rare. All forager sites (both shelter and open-air), save one, were located less than 2km from a Zhizo, K2 or Mapungubwe site. This then indicates that the settlement patterns of foragers on this landscape, was one of actively seeking exposure to the settling farmers during this Early to Middle Iron Age period (AD 900-1300).

This landscape approach conducted at Breslau shows that there are likely as many, if not more, forager features located in farmer contexts on the GML than at the traditionally excavated shelter sites. The majority of forager features on Breslau were located in open-air contexts (N=14; 73.68%), much like Forssman (2014), who identified 175 forager features during his survey in the northern Tuli Botswana directly across the river of my research area, of which only 16 (9.14%) were forager features located in shelters. This illustrates the problem with focussing exclusively on shelters, which should be rectified through landscape survey methods and excavations at these open-air sites and mixed material homesteads.

When studying interaction, but only from a forager perspective (e.g. shelters), how then is it possible to examine settlement shifts or residential change? By noting the various settlement patterns through a landscape approach, decisions can be more accurately made as to which archaeological signature of interaction should be studied.

7.2. EXCAVATIONS AND CONTEMPORANETY ON THE LANDSCAPE

This project proves Euphorbia Kop to be a farmer homestead that was co-inhabited by foragers. Excavations at Euphorbia Kop revealed that there were changes in density of archaeological material between early occupation (AD 995-1029), and the later culmination of activity around K2 (AD 1046-1160), this latter period is where the highest densities of ceramic, fauna, organic beads and stone tools are deposited. The reliance on density of material became a focus point for comparative purposes, noting any changes in the material record through time. The shelter sites Little Muck and Balerno Main will be discussed, as they have well dated assemblages. Buffer zones were considered to orientate and contextualise Euphorbia Kop chronologically on the landscape. The nearby farmer homesteads with forager material will also be examined, namely, João and Kambaku, excavated by Forssman (2014), and lastly the rain making site of Kroonkop (Brunton *et al.* 2013).

This project culminating with the excavations at Euphorbia Kop utilised multiple strands of evidence, a concept developed by Wylie (2002). These separate strands include determining Euphorbia Kop's position on the cultural landscape (site identification, settlement density and chronology) and the incorporation of all relevant forager-farmer studies (e.g. Hall 2000, Hall & Smith 2000, van Doornum 2005, Schoeman 2006, Forssman 2014, Brunton *et al.* 2013) as well as acquiring conclusive dates (AD 996-1164) confirming that foragers were present at Euphorbia Kop. This was done through the analysis of stone tools: identifying forager stone tools in a farmer context, ceramics: by proving that the shelter ceramic deposit was contemporaneous with the farmer settlement, beads: by comparison of forager-farmer size differences and fauna by looking at the species composition between areas. Good stratigraphic preservation and dating of the site were included to assess Euphorbia Kop's contemporaneity to other sites where interaction occurred. Alone none of these strands are rationally decisive, however, when tacked together they can call into question deeply held convictions and positions of what occurred, or what was supposed to have occurred, at a site or on a landscape (Wylie 2002: 167). This 'tacking' of separate strands of evidence is intended to give a more objective interpretation of cultural changes on Euphorbia Kop as well as the landscape (Wylie 2002).

The changes that formal tool categories and frequencies underwent when foragers came into contact with farmer communities has been extensively published (e.g. Deacon 1984a; Parkington *et al.* 1986; Wadley 1989; Hall 1994, 2000; Sadr 1997, 2002, 2005; Van Der Ryst 1998, 2003; Hall & Smith 2000; van Doornum 2000, 2005, 2007, 2008; Forssman 2014). Most of these excavations have been performed at shelter sites in order to interpret the nature of forager interaction, with the exceptions of Hall (2000), who excavated an agricultural homestead with forager evidence, and Forssman (2014), who excavated shelter, open-air and farmer sites with interaction in order to get a better representation of the variable nature of forager-farmer associations and the eventual assimilation and/or creolization.

Open-air assemblages may be the result of contact (Forssman 2010: 79). Forssman concluded that CCS dominated assemblages, which are high in formal tool numbers occurred mostly in shelters on the landscape for about 10 000 years (see van Doornum 2005). The only shelter with a quartz dominated assemblage is Little Muck (see Hall & Smith 2000; van Doornum 2005). Many quartz assemblages have been found alongside farmer settlements, suggesting that they are linked. Nevertheless, the greater similarities between these and Euphorbia Kop’s stone tool assemblage are quartz dominated assemblages, documented by Schoeman (2006) at rain control sites and Forssman (2010, 2014) at open-air sites in northern South Africa and northern Tuli.

Quartz is generally used in expedient stone tool technologies because it shatters into many pieces (Wadley 1996), thus creating many tools by using a bipolar technique, a technique van Doornum (2005: 163) noted to be favoured by LSA foragers on the GML. CCS requires more work in order to produce a usable tool. It may be that at this point in time foragers did not need an extensive tool kit, compared to earlier periods, and had included iron implements to their repertoire of tools. This suggestion is strengthened by the lack of formal tools in open-air assemblages (see Forssman 2010); it may be that this shift in forager mobility patterns and the reconstitution of their lithic index is the result of their increased dependence on farmers. Forssman (2010: 79) states that the lack of formal CCS tools and the utilisation of expedient quartz tools near and at farmer settlements as well as why foragers chose to live near to the farmers, may have been for access to tools and resources in order to perform various tasks.

Schoeman (2006a) found that on the GML in northern South Africa K2 rain control sites were dominated by quartz lithic assemblages. She argued that these were produced by forager people, even though the assemblages lacked formal tools, also, that foragers were specialist rain diviners for these K2 settlements, like Euphorbia Kop. It has been noted that the formal tool component in quartz assemblages are typically low, this is probably due to the unpredictable and irregular fracturing of the raw material (Orton 2004: 38). This leads to quartz being the dominant material in informal tool assemblages (Orton 2004: 112). Euphorbia kop did not have a large formal tool assemblage (2. 06%). Based on the current evidence, it seems likely that the stone tool assemblage at Euphorbia Kop was produced by foragers. It is also important to note that quartz is the dominant raw material, comprising 57.22% of the stone tool assemblage at Euphorbia Kop, as well as dominating surface scatters located on and around the site (survey), suggesting expediency in stone tool manufacture. Therefore, Euphorbia Kop had foragers on site that begun utilizing farmer technologies and adapting their stone tool production accordingly. As seen by the decrease in stone tool deposits (Trench C) after c. AD 1100 at Euphorbia Kop. All the stands of evidence point toward towards the co-existence of foragers and farmers with the forager material record adapting to farmer lifeways.

There are some issues when assessing contemporaneity of forager and farmer material at a single site, such as Euphorbia Kop, João or Kambaku. The question must be asked if foragers were sharing the farmer homesteads during its agricultural occupation or if the stone tools were from previous or later forager occupations. Another possibility brought forth by Hall (2000) is the possibility of stone tools being introduced to the deposit through agricultural construction or cleaning activities. In some cases it is possible that the kraal was placed on top of an earlier forager camp, which is highly unlikely in the case of Euphorbia Kop, since stone tools were found throughout the excavation on almost every level (Trench A and Trench C). For the same reason the possibility of foragers occupying the site after farmers abandoned it is unlikely. The concentrations of stone tools and ceramic increase together steadily toward the apex of habitation above spit C4 of the excavation at Euphorbia Kop when stone tools begin to decline. This suggests co-habitation, and a relationship between the intensity of occupation and the forager presence at the site.

It was noted that the ceramics were highly likely to have been produced by the same manufacturer. There is no evidence to suggest that Trench A and Trench C are not contemporaneous, however to prove this conclusively, dates would have to be acquired from Trench A.

There were three figurine fragments found at Euphorbia Kop. Figurines on the GML have been interpreted as indicating that initiation rituals took place (see Hanisch 1981; Wood 2000; Calabrese 2005). Calabrese (2005: 84) suggests that figurines found at farmer sites may suggest the site to be an important farmer settlement. He states that more figurines at a site may suggest the site has a higher status. When considering these figurines as well as the five K2 Garden Rollers collected from the site, it is possible that Euphorbia Kop was a regionally important site, where foragers and farmers co-existed economically and culturally.

The organic beads excavated from the Trench C in situ, suggest that the stratigraphy is intact and that there is an absence of significant mixing. The organic beads were all within the documented forager size range, save three which were all excavated near the surface of Trench C. There was no evidence of production of organic beads, however the trenches dug on Euphorbia Kop covered an insignificant amount of the entire site. It is possible that the organic beads were produced on site and the production area is still to be identified. The possibility of the organic beads being produced by foragers and possibly being used as trade goods is likely. However, more research should be done with regard to comparing the size variations and preferences between forager and farmer organic beads on the GML. Studies mentioning bead size have been conducted in northern and western portions of southern Africa, thus, we do not know if the same principles apply to this landscape (see Jacobson 1987; Tapela 2001).

These bead sizes are of interest as the farmer site of Schroda had 810 OES beads and 4733 Achatina beads, sized between 2 and 12mm with many rough outs, suggesting that they were produced on site (Hanisch 1980). However, the majority of the beads fell into the larger category (6mm-12mm) (Hanisch 1980). Using sources from Namibia, Botswana and the Tugela basin it is noted that the size of organic beads, or more specifically OES beads, differs between forager and farmer sites (Jacobson 1987; Mazel 1989; Tapela 2001). Forager beads seldom exceed an external diameter of 6mm in length, and farmer bead sizes vary between 6 and 18mm. The vast majority of the OES beads at Euphorbia Kop fall under 6mm (98.63%) and were found in situ with a glass K2 styled bead. Strengthening the viewpoint that foragers were present at Euphorbia Kop during the agricultural phase.

The fauna excavated at Euphorbia Kop was concentrated in Trench C but was obscured due to the fragmented nature of the assemblage. A faunal analysis identified the few identifiable fragments and concluded that all identifiable bones, which were identified using the comparative collection at the ‘Ditsong Cultural History Museum’, belonged to Bovid ll, with one piece being positively identified to be sheep (Capri). The absence of Bovid III is interesting, but the faunal assemblage is too small to provide a full interpretation.

In order to interpret Euphorbia Kop’s occupation sequence, shelter sites need to be considered. Shelter sites have given archaeologists the greatest insight so far into forager-farmer interactions on the GML as well as the local LSA sequence, and should therefore not be excluded. Buffer zones, discussed, placed Euphorbia Kop into the cultural landscape by looking at nearby sites with forager-farmer interaction.

7.2.1. Shelter Sites

The chronological model of interaction (see van Doornum 2005) which has been created through the excavation of shelter sites showed considerable alterations in deposit from AD 900–1200. This is roughly the same period that foragers began moving into Euphorbia Kop (AD 995-1063). At Little Muck there is an increase in artefact frequencies, showing an intensification of production activities with the arrival of Zhizo farmers at Leokwe Hill. This means that foragers actively engaged with farmers at this shelter over this period, until drastic decreases in formal tools, worked bone, shell and the disappearance of ochre around AD 1100–1220 (Hall & Smith 2000). These decreases in ‘forager material’ were replaced with increases of glass beads and all metal artefacts, like iron beads and points. This was argued by Hall and Smith (2000) to signify the expropriation of the site by farmers. This is possible; however, at the onset of this phase (AD 900) foragers are likely to have begun to adapt their material culture to farmer technologies, thus, becoming indistinguishable archaeologically from farmers.

In contrast to Little Muck, Tshisiku, though also in close proximity to farmer settlements, showed little evidence of forager intensification with the onset of interaction on the GML. There was no adaptation of forager material or technologies to suggest intensive trade between foragers and farmers. Van Doornum (2007) suggests that foragers from Tshisiku may have avoided farmers and instead have focused on other areas. Alternatively, the foragers may have spent most of their time at or near farmer settlements herding cattle, working skins or supplying skills like healing and rainmaking (Maggs 1980, 2004; Mason 1981, Wadley 1996, Hall 2000, cf. van Doornum 2007). Thus, moving into settlements like Euphorbia Kop where hide working, OES bead production or trade as well as the rendering of services may have been undertaken.

Balerno Main differed from both Little Muck and Tshisiku in that the forager signatures were not replaced or absent post-dating AD 1200, suggesting the continuity of a range of forager activities (van Doornum 2008). Trade may not have taken place at Balerno Main but rather at shelters like Little Muck or at farmer settlements. Van Doornum (2008) suggests that the continued use of shelters like Balerno Main may indicate it as being an aggregation site, which would assist in maintaining forager culture well into the interaction phase. However, forager mobility patterns may have been altered or modified to include time spent at farmer settlements, trading or working for farmers, as well as possibly spending time at other smaller more distant shelters.

One trend is constant between all three shelters, the disappearance of forager material at the shelters coinciding with the collapse of Mapungubwe. However, at Dzombo, between AD 1000 and 1200 frequencies of forager artefacts decrease and ceramics increase, yet forager material does not disappear from the shelter with the decline of

Mapungubwe (AD 1300). The dated material from Dzombo places forager material to within the last 400 years showing a continued utilisation of shelters and culturally distinct practices well past the previously perceived ‘disappearance of foragers’ from the GML. This may strengthen the position that foragers began permeating into farmer settlements like Euphorbia Kop across the region. In most cases, nonetheless, we see the abandonment of shelter sites with varied degrees of cultural adaptation.

Euphorbia Kop’s dates (AD 995-1160) coincide perfectly with the onset of these various changes in the South African shelter records (AD 900-1000). Forager material deposition at Euphorbia Kop rises steadily from the onset of interaction around AD 995-1063 to the perceived apex at AD 1046-1160, after which forager material begins to decline. Euphorbia Kop gives us an insight into forager’s migration into farmer settlements in South Africa post-AD 900. The majority of foragers would have had the choice as to what cultural avenue they would have liked to pursue. Foragers at the shelter sites had varied means of ‘dealing’ with farmers. A Buffer zone is used to contextualize Euphorbia Kop, then this diversity of interaction is again emphasised with the farmer sites that will be discussed.

7.2.2. Buffer Zone, Contextualization on a Cultural Landscape

Buffer zones were not utilised at Euphorbia Kop in the same method as van Doornum (2005) and Forssman (2014) as previously explained. However, all excavated sites within a four kilometre distance from Euphorbia Kop were considered to gauge the nature and extent of interaction between forager and farmer sites on the immediate landscape (Breslau, Ratho and Botswana). The data show that forager open air sites dominate forager settlement on the landscape (Breslau=73.68%), the majority of forager features are concentrated in areas surrounding farmer homesteads, as well as a significant portion located on farmer homesteads (26.32%). Thus, suggesting a settlement trend of forager encroachment into closer proximity as well as onto farmer sites such as Euphorbia Kop.

Euphorbia Kop is situated directly between sites where forager-farmer co-existence and assimilation is argued to have occurred (see Brunton *et al.* 2013; Forssman 2014). These sites are João (AD 1000-1300), Kambaku (AD 1300 onwards) and Kroonkop (AD 1040-1240). João and Kroonkop are contemporaneous, situated on the same landscape with similar cultural material during the K2 period (AD 1000-1200). Thus, supporting the standpoint that Euphorbia Kop was a mixed material homestead and that some foragers were working alongside farmers on this landscape between AD 1000 and 1300. Open-air sites were possibly being utilised as trading camps between farmer settlements and favoured forager shelters.

7.2.3. Farmer Sites with Forager Material

João is a shelter site 4km northeast of Euphorbia Kop and was occupied contemporaneously. It has a farmer homestead directly outside the shelter and was argued to have foragers and farmers co-existing. The lithic assemblage showed spatial differentiation between the two assemblages of shelter and the homestead. There is a clear reliance on quartz in the homestead portion of the site. Kambaku is located 3km north and was occupied from AD 1300 onwards. Kambaku was also shown to have foragers and farmers co-existing at the site, shown through the presence of stone tools in the farmer contexts. The frequencies of quartz dominated the stone tool assemblage in all portions of the site and similar to João, had a small formal tool composition (below 3%) (Forssman 2014). Euphorbia Kop is on the same cultural landscape and shows similar lithic raw material trends, with quartz being the dominant category as well as a small formal tool assemblage (2.06%).

These mixed homesteads have low formal tool frequencies and larger frequencies of quartz present in their lithic assemblages (suggesting expediency). Thus, this may be typical of these assemblages. Foragers were relying on Iron Age technologies and only produced a limited LSA assemblage. Kambaku is a good example that foragers did not just disappear from the landscape post-AD 1300, but were rather more likely to have adapted farmer economic strategies.

At João, Kambaku and Euphorbia Kop it seems that foragers lived with agriculturalists and may have been partially assimilated while still maintaining certain aspects of their own culture. The movement of foragers into places like João and Euphorbia Kop around AD 900 to 1000 as well as the continued presence of stone tools on Kambaku may offer some deeper insight into what may have happened to foragers after the collapse of the Mapungubwe state (AD 1300).

This indicates that in Alexander’s (1984) static frontier phase widespread changes occurred that may have resulted in foragers occupying sites in close proximity to farmer settlements, or within homesteads. Foragers may have gradually begun integrating with farmers during this period, resulting in less evidence of their activities in rock shelters, also observed by van Doornum (2005). In Alexander’s (1984) model, it was these changes that distinguish the static frontier from others, resulting in considerable change and the ‘disappearance’ of technologies or cultures in the archaeological record, due to the assimilation or abandonment of cultures on the landscape.

The implications of João’s and Kambaku’s levels of interactions during this static frontier have comparative value to Euphorbia Kop. Both indicate an increased reliance on farmers to the point that foragers did not continue with their economy and technology after the static frontier. If foragers did continue living as hunter gatherers, we would expect to find evidence of this in rock shelters, yet this has not been documented on the South African portion of the GML, post-AD 1300. This means that in order to study this advanced phase of interaction and possible assimilation, landscape methods and alternatives to shelter sites should be excavated. Some foragers further south on the Makgabeng Plateau utilised shelters well past AD 1300 into as recent as the last two centuries (Bradfield *et al.* 2009), and should be viewed as one of the mosaic of responses carried out by foragers on the GML.

It may be that foragers across the landscape either left the area, resulting in a smaller local population, or lived at or near settlements like João, Kambaku and Euphorbia Kop. Foragers, in these sites co-existed and depending on the degree of integration their material culture, would not be discernible archaeologically from farmers due to their adoption of the farmer based technologies. In such cases, distinguishing between foragers who have assimilated into a farming economy and agriculturalists might be difficult; Little Muck for example, was appropriated by farmers from AD 1000 until 1200 (Hall & Smith 2000). Yet if foragers were completely assimilated with farming technology, this occupation could be foragers adopting farmer technology (including mankala boards) while still retaining certain aspects of their culture, instead of the suggested appropriation of the shelter.

7.2.4. Rain Making and Co-Existence

Kroonkop is located just over 1km from Euphorbia Kop. The site was a rain making hill from at least K2 times into the historic period (Brunton *et al.* 2013: 110). Kroonkop was utilised by foragers initially, overlaid by K2 deposit (AD 1040-1240) making it contemporaneous with Euphorbia Kop (AD 1046-1160). Kroonkop has several rock tanks which are key features of forager-farmer interaction on other rain control sites on the GML, as are cupules, pecked into the rock face. These mark all rain control sites on the landscape (Schoeman 2006a, 2006b, 2009).

During the excavation at Euphorbia Kop Trench A (shelter), it was noted that on top of the boulder directly north of the trench contained a cupule, clearly pecked out of the rock face (Figure 7.1 and Figure 7.2), as well as a less obvious cupule to the west of the trench (Figure 7.3). I am not suggesting that Euphorbia Kop was used as a rain control site because evidence clearly indicates a living site. Kroonkop was, however, suggested to be a rain making site used only for ritual purposes and not as an occupation camp. Furthermore, Brunton *et al.* (2013) believe that Kroonkop was utilised co-operatively by both foragers and farmers, who participated in controlling rain on this portion of the GML. Schoeman (2006a, 2006b, 2009) and Brunton *et al.* (2013) believe that rock tanks and cupules are a central theme in the merger between forager and farmer joined rain control. Cupules are present at all rain control sites on the GML in South Africa (Brunton *et al.* 2013: 113), all of which have both forager and farmer material on site, suggesting co-existence. The proximity and similarities between Kroonkop and Euphorbia Kop are an unlikely coincidence. Kroonkop has proven co-existence and is uninhabited ritual space, as well as contemporaneous with Euphorbia Kop situated 2.2km away. It is possible that Euphorbia Kop was the settlement occupied between the ritualistic rain making activities that took place at Kroonkop.

Figure 7.1. The cupule located on boulder above Trench A.

It is clear that Euphorbia Kop is an example of forager-farmer coexistence on a farmer settlement on the GML. Utilizing all the separate strands of evidence covered above, once tacked together creates a concrete and cabled opinion as to what may have occurred to the forager record on the GML post-AD 900. Conclusions will be drawn in the next chapter, tying Euphorbia Kop into the Landscape and suggesting the way forward with research into the forager sequence on the GML.

Figure 7.2. Northern cupule in relation to Trench A.

Figure 7.3. Smaller cupule to the west of Trench A.

8. CONCLUSION

Studying a range of sites in varied contexts contributes towards further understanding forager-farmer interaction. When coupled with the implementation of a landscape approach, which identifies the various signatures of forager material expression, we are able to achieve a rich mosaic of interaction strategies implemented by foragers on the GML. Through the identification of sites that are contemporaneous (forager and farmer) with each other as well as their proximity, more concrete associations can be made with regard to forager-farmer interaction.

The majority of forager open-air sites identified in this project (also see Forssman 2014) are found near farmer settlements, or as in the cases of João, Kambaku, Den Staat AB 32 and Euphorbia Kop, within the farmer settlements. This, I believe is because the contemporaneous open-air forager features are intrinsically linked to the farmer occupations throughout the GML landscape. At this time, during the static frontier, foragers became more reliant on farmers and adjusted their stone tool assemblages and settlement patterns accordingly. Foragers were now actively encroaching on farmer settlements in order to engage economically with farmer culture and technologies.

Euphorbia Kop provides us with solid dates, from which we can infer the chronology of forager movement into farmer settlements. Euphorbia Kop gives us the first concrete insight that foragers began settling in farmer settlements between AD 995 and 1029, utilizing CCS to manufacture formal tools such as scrapers providing services to farmers. Between AD 1046 and 1160 foragers look to have made the transition to a more expedient stone tool technology (bipolar flaking) using easily manipulated raw materials (quartz). This was shown at Euphorbia Kop by the rapid decline of stone tools in the deposit after the phase of intense occupation. Thus, foragers were relying more heavily on farmer technologies such as iron. This would have led to the eventual disappearance of the forager cultural material in northern South Africa, resulting from this adoption of farmer material culture. This does not necessarily mean that foragers lost their cultural identity, despite changes to their material cultural signature (see van Doornum 2008). Instead they may have used their power as ‘first people’, healers and rainmakers to ease the transition between forager and farmer cultures (Gunther 1986; Prins 1994; Sugawara 2002; van Doornum 2008). This proves that foragers did not disappear from the landscape with the decline of Mapungubwe rather that certain groups that chose to interact with farmers were integrated archaeologically into the farmer material record becoming farmers’ from an archaeological point of view.

Euphorbia Kop and Kroonkop are likely very closely linked (spatially, chronologically and culturally). It is probable that the forager-farmer group that were utilizing Kroonkop co-inhabited Euphorbia Kop. This is worth considering when studying other rain control sites on the GML. Foragers and farmers that conducted rain making at these hills may have been co-existing at farmer homesteads nearby, however, more research into the cultural landscapes surrounding rain control hills is necessary to confirm this.

There were three fragments of figurines as well as five K2 Garden Rollers found at Euphorbia Kop. According to Calabrese (2005) this may indicate Euphorbia Kop as being a farmer settlement of regional importance. This is of interest, if more extensive excavations are conducted at Euphorbia Kop and this possibility proven correct, a re-evaluation of forager social status may need to be considered on the GML. Thus, suggesting that foragers were indispensible to the rise of complex state society on the GML.

There are four suggestions for further research in the area in identifying the forager-farmer sequence of interaction.

1) Additional 'landscape' surveys are required in the area and on neighbouring farms, connecting the sites on the landscape into the complex mesh of cultures and interactions found on the GML.
2) Excavate open-air sites with clear stratigraphic sequences that are contemporaneous with nearby farmer sites.
3) Further excavations at Euphorbia Kop and/or surrounding sites with mixing of materials to identify if the OES beads were produced onsite, nearby or further afield.
4) Discover the location of the site where the OES beads recovered from Euphorbia Kop were manufactured, possibilities could have been: onsite, at an open air site or a nearby shelter site.
5) -More farmer homesteads should be excavated with forager material located on or next to the site. By doing this we will be diversifying the scope in which we have to interpret forager-farmer interactions and discover the impacts on farmers by foragers, instead of the prior focus on purely 'shelter' sites.

At this point the majority of forager research is orientated towards understanding interaction from a forager perspective (excavation of shelter sites). There is a need to combine the perspectives of forager and farmer signatures, through a landscape perspective and a subsequent excavation. This would assist in confirming the finds from Euphorbia Kop, suggesting some foragers begun inhabiting farmer homesteads around AD 1000. I propose that the combination and tacking of strands utilised in this project is at present the best way to further our understanding of the settlement changes and material adaptations of foragers and farmers on the GML.

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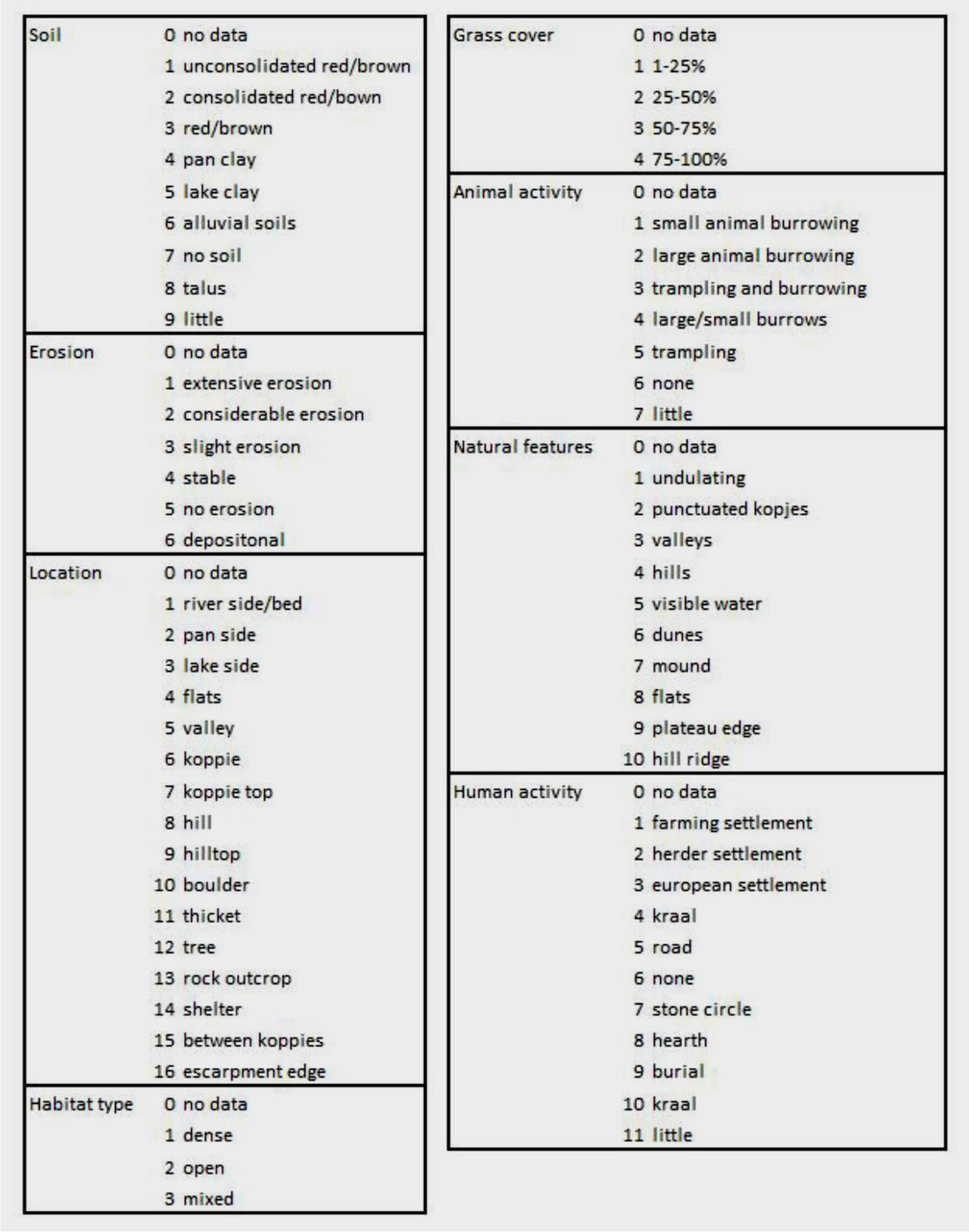
Other; Peace Parks Foundation: http://www.peaceparks.co.za/

Appendices

Appendix A.

Recording sheets

Variables and conditions used to record and describe archaeological features (Forssman 2014: 427)

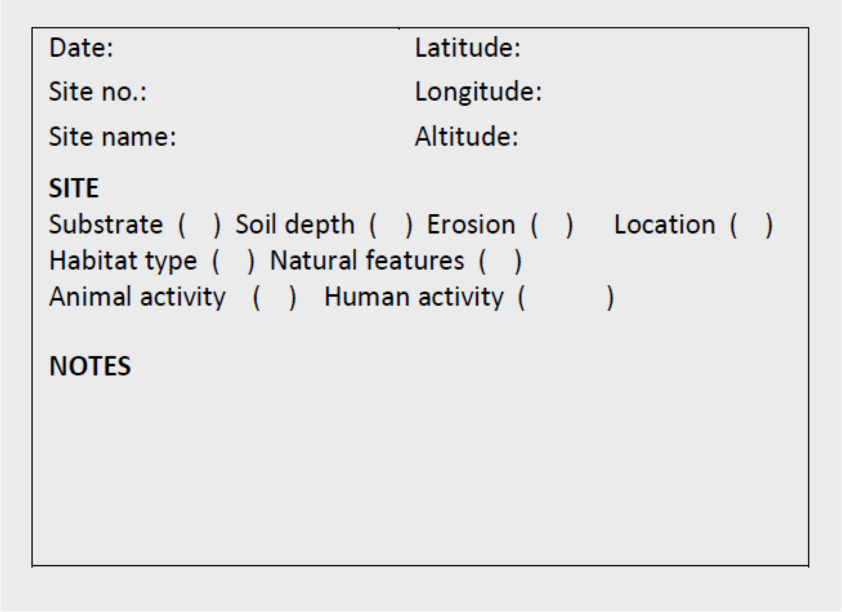


Soil	0	no data
	1	unconsolidated red/brown
	2	consolidated red/bown
	3	red/brown
	4	pan clay
	5	lake clay
	6	alluvial soils
	7	no soil
	8	talus
	9	little
Erosion	0	no data
	1	extensive erosion
	2	considerable erosion
	3	slight erosion
	4	stable
	5	no erosion
	6	depositonal
Location	0	no data
	1	river 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
Habitat type	0	no data
	1	dense
	2	open
	3	mixed

Grass cover	0	no data
	1	1-25%
	2	25-50%
	3	50-75%
	4	75-100%
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
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
Human activity	0	no data
	1	farming settlement
	2	herder settlement
	3	european settlement
	4	kraal
	5	road
	6	none
	7	stone circle
	8	hearth
	9	burial
	10	kraal
	11	little

Appendix B.

Site recording sheet



Date: Latitude:
Site no.: Longitude:
Site name: Altitude:

SITE
Substrate ( ) Soil depth ( ) Erosion ( ) Location ( )
Habitat type ( ) Natural features ( )
Animal activity ( ) Human activity ( )

NOTES

Appendix C.

List of sites on Ratho/Poortjieberg

Site Name	Latitude	Longitude	Culture
RF1	22°13,449'	029°01,985'	Venda
RF2	22°13.448'	029°02.033'	Farmer
RF3	22°13.430'	029°02.181'	Farmer
RF4	22°13.452'	029°02.161'	Mixed Homestead
RF5	22°13.428'	029°02.213'	Farmer
RF6	22°13.390'	029°01.918'	Farmer
RF7	22°13.456'	029°02.213'	Farmer
RF8	22°13.232'	029°02.144'	Farmer
RF9	22°13.306'	029°03.267'	Farmer
RF10	22°13.328	029°02.459'	Farmer
RF11	22°13.264'	029°02.005'	Farmer
RF12	22°13.707'	029°02.557'	Farmer
RF13	22°14.039'	029°03.292'	Farmer
RF14	22°13.934'	029°02.959'	Farmer
RF15	22°13.924'	029°02.725'	Farmer
RF16	22°13.893'	029°02.615'	Farmer
RF17	22°14.123'	029°03.373'	K2
RF18	22°13.427'	029°02.921'	Farmer
RF19	22°13.304'	029°02.319'	Farmer

Appendix D.

STONE TOOLS (cf. Forssman 2014: 447-500)

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 colours, of which only clear and milky quartz 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 course-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 but some scholars contest whether or not all types are CCS. CCS materials vary in colour and composition due to formation processes and the contexts of this formation. On the Greater Mapungubwe Landscape they can be found in the form of nodules which can come from beds within other rocks or rock outcrops. They can also be collected from alluvial deposition beds. Sometimes, however, CCS materials have a rind that is heavily patinated 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, caused by various impurities (van Doornum 2005: 201). They might also display dendritic inclusions.

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. On the Greater Mapungubwe Landscape there are a number of such geological features (Hanisch 1981) with some being identified in the survey zone for this project.

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.

Category Description

Waste

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 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.
Nodule:	Unmodified pieces Materials such as manuports and pebbles that show no signs of Working.

Formal artefacts 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.

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).