

Pastoralist systems of the Roggeveld in the 18th and 19th centuries

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Abstract

Eighteenth and nineteenth century Karoo history has received relatively little archaeological attention. This is despite the fact that the area underwent a major economic transformation in the nineteenth century. The pastoralists of the eighteenth and early nineteenth century Roggeveld predominantly practiced small-scale subsistence farming. This changed rapidly with the introduction of merino wool sheep in the region in the mid 1800s. The region went from small-scale subsistence pastoralism to commercial and global scale Merino wool production, which fully integrated the Roggeveld into the economy of the colony. This dissertation looks at this sequence through the identification and mapping of the infrastructure of pastoralism using Google Earth and begins the process of linking this survey data with refined research on the ground by excavating at one of the sites located on Google Earth.

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1. Introduction

The area known as the Roggeveld and more specifically as the Klein Roggeveld gradually became part of the Cape Colony through the eighteenth century. This occurred as the economics of land and capital closer to Table Bay marginalised burgers without capital. This and other factors contributed to a 'drift' of small scale trekboer pastoralists out into these semi-arid areas on the fringes of the colony.

Unlike the Eastern Cape frontier, historically this frontier has received less historical attention – just as it was an environmentally marginal landscape so too has it been historically marginalised.

The historical character of this region is tied to small-scale sheep pastoralism that is in turn, determined by the regions ecological and environmental character. The use of this landscape for small-scale pastoralism significantly predated this drift of trekboers of Dutch and German descent into this area. Khoe indigenous pastoralists had a relatively long history of occupation and consequently were already resident on this landscape. Additionally, San hunter-gatherers were also significant occupants of this landscape. The encroachment of trekboers into the Roggeveld away from the immediate area of the Cape Colony placed pressure on its resources and increasing competition between economies and different cultural points of view. While trekboers economically merged into this landscape using the same pastoralist strategies and structures employed for centuries by Khoekhoen pastoralists the term Moordenaars Karoo for a section of this landscape underpins that the interface of diverse economies and points of view was also fatal, brutal and as is well known, took on genocidal proportions in the second half of the eighteenth century.

This dissertation picks up on Penn's (2005a) description of this region as the forgotten frontier but employs an archaeological approach. That focuses on the relatively high visibility of Khoe pastoralist sites in this region because kraals, the fundamental facilities for managing animals, were often constructed from dry stone-walling (Sampson 1985; Hart 1989; Hart *et al.* 2010; Halkett & Webley 2011) compared, for example, with the Western

Cape where it has proved consistently difficult to find the archaeological traces of pastoralism that would match the intensity of Khoe pastoralist systems evident in the early Dutch period historical records (Arthur 2008). The high visibility of pastoralist sites also applies to the built fabric of pastoralist systems that can be associated with the colonial period in the Roggeveld. This dissertation is aimed at sampling this area for the fabric of pastoralist sites and engaging with this fabric and how it may develop an archaeological approach to the structure and chronology of pastoralism across the Khoe and colonial interface and deep into the nineteenth century, when colonial command of this landscape became pastorally complete.

The Roggeveld became a part of northern frontier of the Cape Colony with the arrival of the trekboers in the 1740s. The Roggeveld however, was more than a political frontier; it was also an environmental frontier (Penn 1986:65, 2005:108). North of the Roggeveld plateau the landscape became increasingly more arid, making increased expansion unattractive on this frontier and initially, there was no significant pressure by colonial settlers to push further into the interior. Compared to the wine- and wheatlands of the Western Cape, the area was not economically attractive and consequently the arrival of trekboers was the result of both being pushed from the formal rural economy of the Cape because they had no financial foothold, and pulled in the quest to seek land and economic independence on the fringes of the colony where there was less effective regulation by the VOC. Compared to the southern and Eastern Cape, which was agriculturally more productive, the administrative focus on the Roggeveld and Karoo was not high. The majority of the colonial settlers of the Roggeveld practiced small-scale subsistence pastoralism, and had minimal involvement in the colonial economy.

The 'backwater' character of the Roggeveld began to shift in the nineteenth century and dramatically so with the introduction of merino wool sheep. Merino sheep were imported to the Colony in the early nineteenth century. However, they only reached the Roggeveld around the 1850s as the earlier merino production was centred more in the eastern Cape. The wool industry supplied British textile mills, hence the introduction of merino sheep drew the colony's rural pastoralists into the global economy of the British Empire and into a global export economy. In short, the Roggeveld farmers experienced a rapid, and dramatic

change from predominantly small-scale subsistence pastoralism to intensive commercial pastoralism. As a result, through the nineteenth century the status and value of land changed in response to more competitive commercial interests, as did the means and infrastructure for managing merino sheep.

It is the aim of this dissertation to investigate how the archaeology of pastoralism may reflect, relate to and pass comment on these significant shifts in the organisation and structure of Roggeveld pastoralist systems. The intention is to explore these shifts starting with the arrival of the trekboers in the mid- eighteenth century, and concluding with the mass uptake of commercial pastoralism at the end of the nineteenth century.

The research area is situated in the south-western section of the Roggeveld escarpment, this is where some of the early VOC loan farms were granted. The area covers the Moordenaars Karoo, the Klein Roggeveld, and a portion of the Middle Roggeveld (the Roggeveld plateau). All in all, the research area covers approximately 4,900 km². This landscape provides upland and lowland areas where Khoe pastoralists followed seasonal transhumant systems for managing their sheep. The dissertation consequently, will also consider the archaeology of the interface between Khoe and early colonial pastoralists. Of particular interest are the pastoralist systems that were in place in the eighteenth and early nineteenth century when interaction between colonial settlers, Khoekhoen pastoralists, and San hunter-gatherers was widespread. This period is not well documented historically. The records of European travellers (e.g. Lichtenstein 1812; Burchell 1822; Gordon 1988) provide some idea of the way of life in the region but there is little on pastoralist systems, and, other than directives to Khoe and their participation in the commando system, there is little on the relations between the indigenous inhabitants of the region and the trekboers. Official reports from this period are largely concerned with raiding and commandos (Moodie 1960), these give only one perspective regarding interaction between the colonists and the indigenous inhabitants, which is one of animosity. Furthermore, both of these historical resources provide European, or colonial perspective. As many archaeologists (e.g. McGuire 1982; Lightfoot 1995; Williamson 2004) have noted, archaeology has the potential to see beyond a historical perspective that is predominantly concerned with European affairs and points of view. Consequently, this consideration informed my survey of this landscape,

especially for sites that in terms of their form and content, suggested evidence for interaction between Khoe and colonial pastoralists systems within a shared landscape.

To provide a basic database from which to address these aims I needed to survey the entire area. Obviously, a comprehensive ground survey would not be possible within the scope of a masters dissertation. However, the primary material evidence of these pastoralist systems are the stone-walled kraals, constructed and used by both indigenous and colonial pastoralists. The sparse vegetation in the research area means that many of these structures are visible on Google Earth (GE), and consequently, an intensive, aerial survey search for these structures was initiated.

With this broad outline in place the dissertation is organised as follows.

The historical background covered in chapter two situates the dissertation in the historical context of the eighteenth and nineteenth centuries. Chapter three then focuses on the environmental and ecological background that underpins the pastoralist systems in place in the Roggeveld. With this historical and environmental framework in place the GE survey data in chapter four, and the details on the excavation at Welgemoed in chapter five are presented. Chapter six discusses the findings from the survey and the excavations. The dissertation is concluded in chapter seven with a brief overview of the discussion in chapter six and some possible avenues for expanding the research on pastoralist practices during the eighteenth and nineteenth century Roggeveld.

2. Historical background

This chapter situates the research both historically and in the landscape of the Klein Roggeveld and neighbouring escarpment during the eighteenth and nineteenth centuries. I start at the Cape in the seventeenth century followed by an overview of the indigenous pastoralists at the Cape. This sets the scene for the development of the northern frontier of the Cape colony, and the small-scale stock farming that was practiced in these regions. The more detailed examination of the Roggeveld provides essential background that anchors the following chapters.

Before beginning, I would like to clarify the terminology regarding the indigenous peoples discussed in this chapter. Although there is some debate over whether the difference between hunter-gatherers and indigenous pastoralists was economic rather than ideological (discussed in more detail in section 2.7.1), in this dissertation they are discussed in terms of two distinct cultural groups. Hence, indigenous pastoralists are referred to as Khoekhoen, (Khoen is used as the adjective i.e. Khoen ceramics), and hunter-gatherers are referred to as San. Although today seen as derogatory, the term 'Hottentot' was used by colonists to refer to Khoekhoen during the period under discussion. Therefore, the term 'Hottentot' is used when discussing historical references to the Khoekhoen.

2.1. The establishment of the Cape Colony

The Cape colony originated as a way station for the Dutch East India Company (Vereenigde Oost-Indische Compagnie - VOC) in 1652. Its position, roughly midway between Europe and the VOC territories in the East, combined with the availability of fresh provisions, made it ideal for these purposes (Giliomee 2003:1; Sadr 2008:179). Fresh water was plentiful, cattle and sheep could be sourced from the indigenous Khoekhoen pastoralists, and, given time, they would also be able to supply wheat and vegetables (Guelke 1989:66; Penn 2005a:27). In order to achieve this the VOC encouraged the growth of a 'class of independent farmers' (Penn 2005a:27). They, in turn, needed labourers, and VOC soldiers were frequently loaned out to farmers for this purpose but slaves were also imported from around the Indian Ocean rim for the more menial labour (Schoeman 2007:196-7; Mitchell 2008:1-21).

These immigrants and slaves formed a diverse colony with multiple origins and backgrounds. The European immigrants were primarily from the Netherlands, Germany, France and Scandinavia, and consisted of farmers, artisans, former VOC employees and so on (Guelke 1989:67; Schoeman 2007:11; Mitchell, L. 2008:1-21). Up to 1717 the VOC actively encouraged European immigrants, offering land grants and, for a period of time, even covering the cost of the passage from Europe (Guelke 1989:66-7; Penn 2005a:29). Slaves living at the Cape came from a much wider range of places, encompassing Africa and the East Indies - Madagascar, Angola, Guinea, Malaysia, Bengal and many more (Schoeman 2007:53-5; Schoeman 2011:101, 192). The division between slave and master was by no means static. Through a combination of miscegenation and manumission a coloured/freeblack community evolved; and in the early days of the colony, their status was linked more closely to class (or economic status) than to colour (Malan 1998/1999; Schoeman 2007:308-9). Furthermore, while independent Khoekhoen groups had been forced out of the immediate hinterland of Table Bay by the eighteenth century, there were a number of subjugated Khoekhoen individuals assimilated into the Cape colony (Schoeman 2011:21). Early on in the history of the Cape, new identities were being created.

This was a small colony with less than 4,000 individuals at the beginning of the eighteenth century (Elphick & Malherbe 1989:4) but more importantly, it was a heterogeneous colony. As Kent lightfoot (1995) described the American colonies, the Cape Colony was a “pluralistic entrepot where peoples of diverse backgrounds and nationalities lived, worked, socialised, and procreated.” (Lightfoot 1995:201).

The trekboers that spread into the interior came out of this cultural melting pot. By overemphasising their European roots trekboers are rendered culturally homogenous, and their identity static.

2.2. Farming conditions at the Cape

The VOC opened up land to free burgers in the 1650s with the express intent to supply enough fresh produce for the VOC ships (van der Merwe 1995:1). The free burgers were also encouraged to farm livestock and poultry, however, this was to be a secondary concern

as the company was initially able to meet the demands for livestock through bartering with the Khoekhoen (van der Merwe 1995:3; Penn 2005a:27). Allowing farmers to barter with the Khoekhoen pastoralists could have potentially detrimental consequences for the VOC; they might jeopardise the company's relationship with the Khoekhoen through aggressive bartering, drive the prices up, or stop meeting the demand for fresh produce through focusing too much on livestock (Penn 2005a:28). Possibly the most serious consequence would be the creation of a class of roving herders pushing into the interior, outside of the company's control (Penn 2005a:28). However, the VOC compounded their own problems to some degree by prescribing what was to be grown, and setting the prices, which naturally favoured themselves to the detriment of the farmers (van der Merwe 1995:2; Penn 2005a:28). Moreover, the process of transforming uncultivated land into profitable agricultural property was a laborious exercise with scant reward and to then be faced with little, or sometimes no, profit did not to encourage enthusiasm (van der Merwe 1995:7, 11; Schoeman 2011:126). Stock farming was far more enticing than agriculture for many colonists. Poorer colonists, for example, could establish herds gradually while working as overseers because stock farming was far less labour intensive. A consequence, despite edicts banning bartering with the Khoekhoen, was that many farmers turned their focus more and more to livestock, which was supplied in large part by bartering with various Khoekhoen groups (Penn 2005a:28-29). Finally, in 1700 the cattle trade was officially opened up to the public (Elphick & Malherbe 1989:21; Penn 2005a:30-31). In doing so, the company accelerated the dispersal of colonists into the interior.

Farmers had been sending their livestock out to graze inland since the 1670s, supervised by older sons, knechts (overseers), and sometimes even slaves (van der Merwe 1995:30; Penn 2005a:59; Schoeman 2011:127). Hunters had also been venturing out in search of game since the company first arrived at the Cape; going further and further inland as they decimated the game in the immediate vicinity of Table Bay (Mitchell, L. 2008:1.10). Furthermore, there were the frequent trips in search of cattle for barter, be they official or otherwise (van der Merwe 1995:29-30; Mitchell, L. 2008:1.10¹). Hence, the interior was not uncharted territory. Allowing them to trade with Khoe groups only led to an increase of

colonists penetrating deeper into the colony in search of Khoekhoen with livestock to trade (van der Merwe 1995:27-28; Schoeman 2011:126), and for land to graze their herds (van der Merwe 1995: 27-28; Schoeman 2011:126). This was not a uniform expansion of European colonists fanning out from the Cape. Rather, “it was a matter of independent and isolated movements by individual hunters, traders, and cattle farmers” (Schoeman 2011:326) that ebbed and flowed according to season, environment, and the intensity of indigenous resistance amongst other factors (Mitchell, L. 2008; Schoeman 2011:326).

Officially, however, the colonial frontier only moved when loan farms were formally requested (Schoeman 2011:327). A loan farm was a permit that gave the farmer exclusive rights over a tract of land. They could improve it through building structures, hunt on it, and, naturally, graze livestock and farm (Mitchell, L. 2008:1.11). The farmer would need to reapply for a permit yearly (van der Merwe 1995:84). This was seen as more of a formality than a necessity, as loan farms were seldom revoked, even when the quitrent was in arrears (van der Merwe 1995:87; Penn 2005a:43). The size of a loan farm was limited by proximity to another farm; the homesteads had to be a minimum of an hour apart in walking distance (van der Merwe 1995:74). Outside of that stipulation, however, there was no guideline as to size (van der Merwe 1995:74). Hence the area encompassed by loan farms developed organically as more loan farms were allocated around them (van der Merwe 1995:74), gradually restricting the extent of farms. Although, the officials granting the loan farms did take quality of land, particularly in reference to water sources, into account when loan farm boundaries were officially set.

While a farmer could not officially sell a loan farm, they could sell the improvements they had made (van der Merwe 1995:88; Penn 2005a:43). The improvements became proxies for the property, with small structures selling at prices that reflected the value of the loan farm (Guelke 1976:31; van der Merwe 1995:88). Importantly, loan farms could not be subdivided (van der Merwe 1995:96). Children were, therefore, compelled to branch out and establish their own loan farms (van der Merwe 1995:96). With many colonists having large families, the dispersal of colonists into the interior increased exponentially (Schoeman 2011:327). For example, in the mid eighteenth century the five Kruger brothers in the Roggeveld, who are discussed later, had a total of forty-seven children between them (Schoeman 2011:337).

Families with over ten children were not uncommon (Lichtenstein 1812: 109, 113; Burchell 1822:248). The dispersal was fairly quick with loan farms appearing in the 1720s in the Olifants Rivier Valley, the Warm and Koue Bokkeveld, the Sandveld, and the Cedarberg, eventually crossing the Tanqua Karoo into the Roggeveld by the 1740s (Penn 2005a:56, 81). This process, however, was not uncontested.

2.3. Khoekhoen and San resistance

There had been numerous skirmishes between the colonists and the indigenous inhabitants of the Cape since the formation of the colony in the mid seventeenth century (Thunberg 1986:291; Guelke & Shell 1992:811; Penn 2005a:31-41). As colonists expanded, competition for land with indigenous groups increased. The level of resistance put up by the various indigenous peoples frequently led to the retreat of trekboers. When colonists moved into the Waveren Valley, for example, persistent raids by the Ubiqua San pressured the company into stationing a garrison in the valley (Penn 2005a:49-50; Schoeman 2011:88).

This is not to say that the indigenous peoples lived in harmony prior to the arrival of the VOC. There are frequent accounts of conflict and raiding between different indigenous groups; both Khoekhoen and San. War between the Saldana Khoekhoen and the Namaqua Khoekhoen is mentioned in some reports (Moodie 1960:303) due to the fact that this conflict sometimes interfered with the supply of cattle to the VOC. The Ubiqua San are frequently mentioned in seventeenth century government reports because of their regular raids on other Khoekhoen groups (Moodie 1960:303, 324, 342, 443). Nevertheless, there is little doubt that the colonists exacerbated hostilities between indigenous groups thereby further destabilising them (Penn 2005a:35).

The opening up of the livestock trade increased the number of colonial pastoralists dispersing from the Cape. This in turn precipitated an increase in resistance as the trekboers came into direct competition with the San and Khoekhoen inhabitants of the interior. As the loan farm system allowed the trekboers to claim exclusive rights to this land (Guelke & Shell 1992: 805; Mitchell, L. 2008:3.17), there was a fundamental clash with the Khoekhoen and

San whose concepts of land rights were very different. Khoekhoen and the San groups operated in territories with somewhat flexible and fluid boundaries, which were only seriously contested in times of environmental stress (particularly drought) (Smith 1983:85; Guelke & Shell 1992:804; Penn 2005a:89). A territory included numerous focal points centred on water sources and grazing (Smith 1983:85; Penn 1986:63; Arthur 2008:28). The European concept of individual ownership therefore inhibited access to these focal points (Mitchell, L. 2008:3.17). Laura Mitchell (2008:3.18) also points out that not only would the trekboers have restricted access to grazing and water but also to places of ritual significance. This must have been a great loss to people already in a state of crisis. In consequence, resistance to trekboer settlers was bitter and widespread.

By the eighteenth century a number of Khoekhoen were either working for, or in partnership with trekboers (Thunberg 1986:289; Guelke 1976:30; Guelke & Shell 1992:812-813; Penn 2005a:44). Loss of territory and livestock had left many Khoekhoen in a position where they had little other choice than to apply to trekboers for work (Guelke 1976:30; Penn 2005a:44). The concept of clientship was not foreign to the Khoekhoen; war/raiding, drought or disease could easily wipe out a herd; clientship offered an opportunity to rebuild ones herd while working for, and therefore under the protection of, another (Smith 1986; Penn 2005a:45; McGranaghan 2012:115). Hence, working for colonists was well within existing survival strategies for the Khoekhoen, and was not, therefore, a sign of being wholly assimilated into trekboer society. This can be seen in the incident that sparked off the rebellion of 1739.

In 1738 a group of colonists and some of their Khoekhoen servants ventured north as far as the Orange River to barter for cattle with the Great Namaqua Khoekhoen (Penn 2005a:60-61; Amschwand 2009:44; Schoeman 2011:133). After remaining with the Namaqua for a month, during which time they bartered for cattle, and generally ingratiated themselves into the community (Penn 2005a:60), the colonists absconded in the middle of the night, and sent their Khoekhoen servants to attack the kraal and steal the cattle the next morning (Penn 2005a:61; Schoeman 2011:133). These servants were promised a share of the bounty upon return. However, the colonists distributed the livestock amongst themselves without compensating their Khoekhoen servants, which resulted in the Khoekhoen servants

reporting the incident to the authorities (Penn 2005a:61; Schoeman 2011:131). The authorities investigated the claims, with a view to returning the cattle to the Namaqua. Upon threats of rebellion from the colonists, however, the authorities abandoned the inquiry leaving the cattle with the colonists (Penn 2005a:62-63; Schoeman 2011:131-132). This sparked off the wide-reaching resistance of 1739. Disaffected Khoekhoen and San, many of whom had been working with or for colonists for a number of years, carried out a series of raids across the northern frontier (Penn 2005a:60-65). The attacks on homesteads combined with the significant loss of livestock forced many trekboers to abandon their farms (Penn 2005a:65). The colonial authorities reciprocated by sending out several large commandos between April and October 1739 that eventually crushed the rebellion (Penn 2005a:66-75). As Nigel Penn aptly put it “from the Piketberg to Namaqualand, from the west coast to the Bokkeveld, the Khoisan had been shattered, dispersed, and subjugated.” (Penn 2005a:75). The removal of this indigenous opposition was what enabled trekboers to push the colonial frontier forward; crossing the Tanqua Karoo, and settling in the Roggeveld.

2.4. Arrival in the Roggeveld

The first loan farms in the Roggeveld were registered in 1743 (Penn 2005a:85), it is likely that runaway slaves, soldiers and Hottentot labourers, as well as trekboers used it intermittently for grazing, and had probably been in and around the Roggeveld well before the first loan farms were registered. Trekboers were unlikely to apply for a loan farm if they had not established the suitability of the area to be registered (Amschwand 2009:53).

The initial trekboer population in the Roggeveld was not large. In 1750 there were only 31 loan farms registered over the whole of the Roggeveld (Penn 2005a:85). Loan farms were not readily affordable for everyone. At ± 24 Rixdollars per year in 1732 they were roughly equivalent to the yearly salary of a company soldier (Penn 2005a:43-44). For trekboers just starting out, the price may have been prohibitive, especially after buying the necessary equipment for stock farming (Penn 2005a:44). Some trekboers may have worked on other people's farms as *knechts* (overseers) while they built up their own herds, others as *bywoners* (tenant farmers) handing over a portion of their livestock in exchange for grazing

rights (Penn 2005a:44; Amschwand 2009:147). Some farmers were not as financially restricted, and registered more than one loan farm. Jochem Scholtz, for example, had three loan farms in the Roggeveld (Penn 1999:151). Hence, loan farm registrations should not be seen as an accurate gauge of population. Nevertheless, the region does not appear to have been densely populated. Robert Gordon (1988:210) noted that the Great Roggeveld had only twenty families when he travelled through the region in 1778. Twenty-five years later, Henry Lichtenstein (1812:100,104) recorded forty-seven farms owned by twenty families in the Lower Roggeveld, sixty-two farms owned by thirty-six families in the Middle-Roggeveld, and fourteen families in the Klein Roggeveld (he failed to mention the amount of farms in the Klein Roggeveld). Although this marks a large increase from Gordon's records, these are still not high figures for a fairly extensive region (Fig. 2.4.1). These colonial settlers were, for the most part, based in the mountainous valleys of the escarpment, and along the escarpment edge of the Middle Roggeveld (van der Merwe 1995:110).

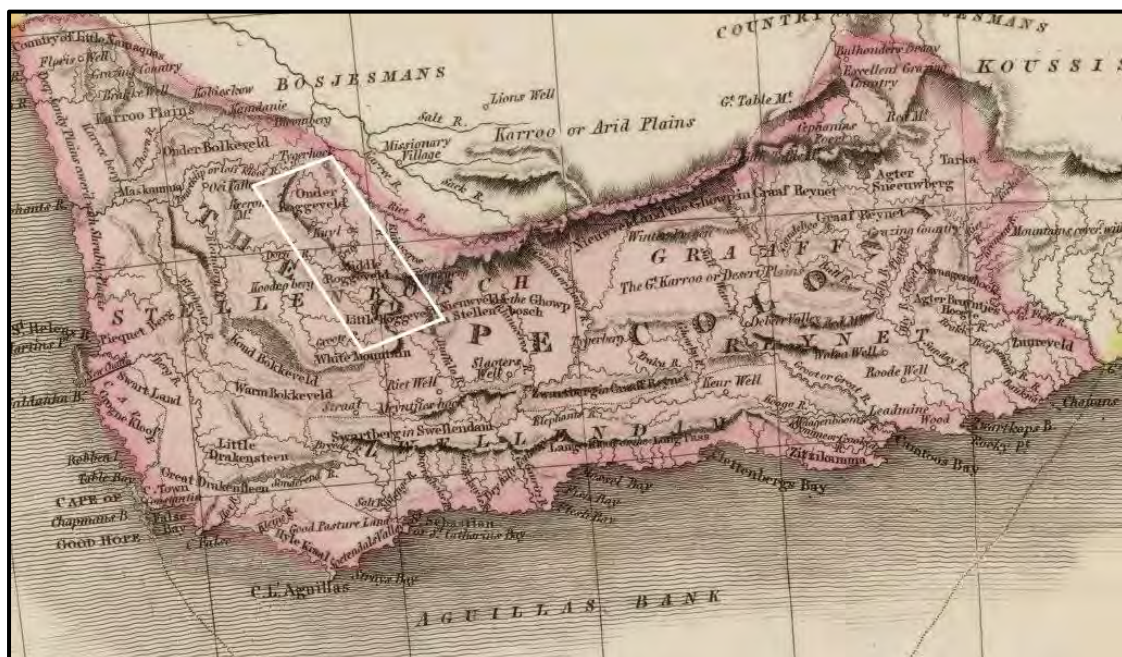


Figure 2.4.1. Map of the Cape Colony in 1809. The white rectangle shows the location of the Roggeveld region.

The fact that these settlers were applying for loan farms shows that they were intent on remaining under colonial rule, however, the frontier zone appears to have been only nominally under colonial administration. In most cases colonial officials would only have had a vague idea of where these remote loan farms were situated. The Roggeveld was also well

outside of the 'civilised', Christian world; a point that caused considerable concern amongst a number of church and government officials who feared the creation of an amoral society on the fringes of the colony. At such a distance however, their authority in regions like the Roggeveld was limited. As a consequence, these settlers were largely unconstrained and unregulated.

2.5. Resistance in the Roggeveld

While the primary reason that settlers applied for loan farms was undisputedly to reserve reliable water sources, the ability to ask for assistance in the case of indigenous resistance may have been another consideration.

Initially there appears to have been little resistance in the Roggeveld, probably because the initial low number of trekboers settling in the Roggeveld did not create significant competition for resources. Possibly more importantly, the settlers were in an unfamiliar and rather harsh environment. Encouraging friendly relationships with Khoekhoen groups in order to learn how to exploit this environment would have been critical to their survival (Penn 2005a:92). Hence, the initial relationship between the Khoekhoen of the region and the trekboers was likely to have been congenial rather than inimical (Penn 2005a:92). The San, however, did not have knowledge indispensable to the pastoralist settlers, and were therefore, at a disadvantage from the start. With this in mind, it is not surprising that San, or '*bosjesmans*', are held accountable in the first reports of raiding in the region (Penn 2005a:92).

Extracts from landrost records from Stellenbosch during the 1770s reveal raid after raid in the Roggeveld (Moodie 1960:III: 8, 19, 22, 69n, 72, 74, 106). The resultant livestock losses would have been enormous. The Swedish traveller Thunberg (1986:303) recorded a Roggeveld farmer stating that during 1773 and 1774 over 10 000 sheep had been stolen from trekboers in the region – quite possibly exaggerated but even with a pinch of salt the total would have been significant, especially for colonists in vulnerable areas who were more likely to have taken the brunt of the raiding. Raids on the northern frontier were

frequently violent; farmsteads were burnt down, families attacked, and often livestock were slaughtered in the fields (Lichtenstein 1812:142; Moodie 1960:19, 69n, 72; Thunberg 1986:144, 303).

Clearly these acts of brutality were about more than stock theft, these were the acts of a people desperate to regain land that was being appropriated by the trekboer settlers. This standpoint is demonstrated in an exchange between an infamous San hunter-gatherer, Koerikei, and a local veldwachtmeester, Van der Merwe:

“Van der Merwe told me that after an action which he had commanded, this Koerikei, standing on a cliff out of range, shouted at him: ‘What are you doing on my land? You have taken all the places where the eland and other game live. Why did you not stay where the sun goes down, where you first came from?’ Van der Merwe asked why he did not live in peace as before, and why he did not go hunting with them and live with them (he had been living with the farmers), and whether he did not have enough country as it was? He replied that he did not want to lose the country of his birth and that he would kill their herdsman, and chase them all away.”
(Robert Jacob Gordon 1777 in Penn 2005a:132)

This dialogue took place in the Camdeboo but it is likely that the indigenous inhabitants of the Roggeveld felt much the same as Koerikei, and had much the same goals.

The incessant raiding frequently had the desired effect; there are many instances of farmers abandoning their loan farms as a result of repeated raids (Moodie 1960:69). In 1785 the eastern section of the northern frontier, from the Roggeveld to the Sneeuberg, was forced back by aggressive raiding (Penn 2005a:171). Unfortunately for the indigenous inhabitants, these retreats were short-lived. The trekboers’ pastoralist way of life was dependent on continued expansion; without new land, water and grazing “a pastoralist society is doomed to stagnation or decline.” (Penn 2005a:108). Moreover, the Roggeveld escarpment was contiguous with an environmental frontier (Penn 1986:65, 2005:108), the dry regions further north would not support a pastoralist way of life. In consequence, the trekboers were as relentless as the raiders in trying to hold ‘their’ ground. They, however, had a more systematic approach using the quasi-military institution, the commando.

A Commando consisted of a group of volunteers (farmers affected by a raid, or a series of raids) who pursued the raiders in order to retrieve their livestock. Later on the commando system became more structured with farmers having an official obligation to go on commando when ordered by the colonial authorities (Penn 2005a:116). Their mandate was to retrieve stolen stock and neutralize threats to the settlers without harming, or antagonizing, innocent groups (Penn 2005a:112). In practice however, commando groups appear to have acted with unreserved aggression. Commando reports in the Landrost records are little more than tallies of the number of Bushmen and/or Hottentots exterminated, and those captured, predominantly women and children (see Moodie 1960:35-36, 40; Schoeman 2011:342-343,346). Thunberg (1986:302) recorded meeting a commando group in the Roggeveld who were returning from a sortie; they had killed 400 Bushmen and captured 230. The captured Bushmen were split amongst the commando members, and forced into servitude (Dooling 2005:52; Schoeman 2011:342). There is also some evidence that suggests that some commandos' underlying motivation was purely to procure captives to provide free labour for the colonists (Moodie 1960:23; Penn 2005a:118).

Despite the commandos, the raids and violence continued. By the 1790s cases of Hottentot servants, with their guns joining up with San raiders had become more common in the Roggeveld (Penn 2005a:227); a clear indicator that relations between the trekboers and indigenous herders had changed significantly. The initial symbiotic relationship had gradually been replaced with settler dominance. Khoe pastoralists had steadily lost independence as they became integrated into the settler system. Trekboers claimed exclusive access to prime grazing and water sources, marginalising the Khoekhoen within their own landscape. Company bartering also reduced indigenous flocks, and herds, leaving them even more dependent on trekboer settlers (Penn 2005a:96).

As time passed it became more and more difficult for Khoekhoen who had started labouring for trekboers to remove their livestock from their master's herds, their wages were also frequently withheld, and, more often than not, family members were co-opted into labouring for the trekboer master as well (Penn 1999:165-6, 2005:111). This restricted the movement, and the freedom to change employers for the labourers. Furthermore, by employing the woman and children, the indigenous herders lost access to the labour they

needed to manage their own herds (Penn 2005a:111). Under these deteriorating conditions it was inevitable that some of these Khoekhoen labourers would abscond to join up with raiding bands.

A change in tactics came with the British administration in 1795. The British authorities issued a proclamation that the San of the northern frontier were to be provided with livestock, given rights to certain tracts of land, and to come under the protection and authority of the English government (Penn 2005a:231-232). This was supposed to encourage the San to become pastoralists, and thereby, to become more civilized (Penn 2005a:231). In 1799 in the Roggeveld the *veldwachtmeester*, Floris Visser, reported that this policy was having some success (Penn 2005a:234). This approach was not wholly successful, however it did facilitate less hostile relationships, which led to colonial settlers encroaching further into the interior (Penn 2005a:286). The incessant commando activity, combined with the deeper infiltration of settlers into San territory, eroded San society (Penn 2005a:286). By the 1830s resistance on the northern frontier was all but extinguished (Penn 2005a:286).

The Khoe pastoralists of the Roggeveld had been easier to suppress due to their early enmeshment with the trekboer settlers. The Caledon Code, or 'Hottentot' Proclamation, of 1809 completed the removal of Khoekhoen agency, and cemented their subordinate status in the colony. The proclamation required that all 'Hottentots' were to have a fixed domicile, and to carry an official pass when travelling in the colony (Theal 1902:408-410; Benton 1999:580; Penn 2005b:67-68). It did offer 'Hottentot' servants greater legal protection from 'arbitrary cruelty' of the white settlers (Penn 2005a:268). However, any 'Hottentot' without a pass was classified as vagrant, and could therefore, be apprehended by any white settler (Dooling 2005:50). Moreover, Khoekhoen not in service, or resident at mission stations, were ineligible for passes, and therefore vagrants (Benton 1999:580). So, without explicitly stating it, the act made independent or semi-independent Khoe pastoralists illegal (Benton 1999:580).

The neutralization of the San threat and the eradication of Khoe independence in the early nineteenth century meant that the Roggeveld was no longer a frontier zone. As this happened so the region became more tied to the centre of the colony, which was, in itself,

firmly integrated in the global economy. How this affected pastoralism in the Roggeveld will be discussed in more detail after looking at the conditions of the early trekboers in the Roggeveld.

2.6. Trekboers in the Roggeveld in the eighteenth and early nineteenth centuries

Trekboers settlers have traditionally been seen as a homogenous group of European colonists, primarily of Dutch or German descent, there are, however, a number of problems with this view. Namely, these settlers were the products of a heterogeneous Cape society. As discussed at the beginning of this chapter, the colony was a cultural melting pot consisting of Europeans from different regions and classes, slaves from all over Africa and the Far East, and some disenfranchised Khoe pastoralists. For example, the five Kruger brothers, who lived in the Klein Roggeveld during the latter half of the eighteenth century, were second-generation colonists, with a German father and, all the evidence points to, a coloured mother (Schoeman 2011:330). There were baastards, runaway soldiers, *knechts* with flocks belonging to farmers in the Koue Bokkeveld or Cedarberg, families with large flocks, families with only a handful of livestock, colonists who had been living in the colony for generations, colonists who had only recently arrived at the Cape, and many other variations of individuals. Moreover, there is little mention of their bastaard servants and slaves. While they were not 'white' or 'European', they were certainly products of the Cape Colony. In short, the colonial settlers were far more diverse than the traditional view allows, and were in an active state of creolisation well before they entered the Roggeveld.

Most colonial settlers on the northern frontier had little contact with the Cape. Getting to Cape Town was a long and arduous trip. Burchell (1822:213) reported that 20 miles a day was considered a full days work for a team of oxen. Seeing as it is approximately 215 miles to Cape Town from Sutherland, it would have taken a considerable amount of time for Roggeveld farmers to get to Cape Town. Additionally, this route included getting up and down the steep escarpment. While the Komsberg Pass was constructed in the 1770s (Mossop 1947:17), it was still treacherous to navigate (Lichtenstein 1812:129; Burchell 1822:180; Thunberg 1986:304-305; Gordon 1988:208). In 1810 Burchell (1822:180) described the oxen slipping all over the road, and having to place rocks behind the wheels to

stop the wagons sliding backwards. Similarly, on the way down, wagons frequently threatened to run into the back of the oxen (Masson 1776:315). Once they had negotiated the passes, they still had to travel through the parched Karoo and then the Cape Fold mountains surrounding the peninsula. During the trip the farmer either had to leave his wife and children alone, and therefore vulnerable, or take them with, which left the farm unmanaged (van der Merwe 1995:156) – presuming a lack of confidence in their herders and/or servants. Consequently, trips to Cape Town were avoided as much as was possible. As a consequence, we have the advent of the travelling traders.

Slagter's knegts (butcher's men) and *smouse* (itinerant traders) dispensed the need to travel to Cape Town, except for the unavoidable administrative reasons e.g. to get married, or apply for a loan farm (van der Merwe 1995:157). *Slagter's knegts* would buy livestock from the farmers using fiscal approved credit notes that could be exchanged for money in Cape Town (Burchell 1824:113). These credit notes were also used in transactions between farmers in the rural areas (Burchell 1824:113-114). *Smouse* brought a range of dry goods, hardware, cloth and other necessary goods (Noble 1875:55-56; Bundy 1979:30; Ross 1989:267; van der Merwe 1995:158; Tamarkin 2009:62). Nevertheless, trekboers on the frontier required a large measure of self-sufficiency, particularly in the early days of their arrival in the Roggeveld.

The early colonial settlers learnt about and adapted to local resources. Indigenous plants were used to replace many substances; the channa bush (if it grew in the area) was used to produce lye for soap making, local gums replaced commercial resins, and leather was tanned using indigenous plant mixtures (see Sparrman 1786:266; Lichtenstein 1812:124; Burchell 1822:243, 259). Leather frequently substituted for cloth, particularly trousers (Burchell 1822:243). Their diet was also restricted to what they could produce on their loan farms. Frequently, this was limited to mutton and game (van der Merwe 1995:176-177). In the early 1800s both Burchell (1822:240) and Lichtenstein (in van der Merwe 1995:180) describe Roggeveld farmers eating mutton for breakfast, lunch and dinner. This region was not ideal for cultivating crops, both because the region was climatically harsh and because the transhumant nature of sheep farming (related to the harsh climate as well). In the Roggeveld, farmers often moved their flocks in both winter and summer, down to the

Tanqua and Moordenaars Karoo in winter and further north to the Sack and Riet rivers in summer (Gordon 1998:410; van der Merwe 1995:172; Penn 1986:65). As a consequence, crops were frequently untended, or not attempted at all (van der Merwe 1995:158, 177-180). This does not necessarily mean they had no other resources; Carl Peter Thunberg (1986:300) recorded Roggeveld farmers eating the indigenous plants commonly eaten by the Hottentots.

Critical for this research is to what extent dwellings and structures were permanent and archaeologically visible. There is not a lot of historical information on the homes and material goods of early trekboers in the Roggeveld. What we do know, however, speaks to a very basic and spartan lifestyle. This highlights the problems associated with tracking eighteenth and early nineteenth century trekboers archaeologically, which is discussed further in chapter four.

The eighteenth century trekboers of the Roggeveld were not just settlers who already had loan farms; there were also those who were still looking for good places to base themselves, individuals tending the flocks of more affluent farmers based somewhere else, and *bywoners* labouring on established loan farms. These settlers had a highly mobile lifestyle and even those with loan farms were frequently on the move. Building permanent structures to live in would not have been logical. There are reports of trekboers living in huts made of reeds, or straw mats, similar to, or the same, as the *Matjieshuise* used by Khoe pastoralists (described in section 2.7) (Barrow 1801: 386; van der Merwe 1995:173). It is likely that settlers in the Roggeveld constructed similar structures.

Obviously this would change as the trekboers became more settled and applied for loan farms, thereby choosing a semi-permanent base for their pastoralist activities.

By the early nineteenth century there are descriptions of permanent dwelling structures in the Roggeveld but they are still very basic. In 1803 Lichtenstein described the farmhouses in the Roggeveld as being “smaller, poorer and less convenient” (Lichtenstein 1812:105) than anywhere else in the Colony. They typically only had two rooms, one for the family and their servants to sit, cook and eat, and the other for sleeping and storage (Lichtenstein 1812:105; Burchell 1822:237). Some of the better houses had a separate kitchen area (Lichtenstein

1812:106). Construction was crude with 'roughhewn' branches and thatch, or just reeds forming the roof, and clay floors that were smeared with cow dung (Lichtenstein 1812:107). In 1822 Burchell described Gerrit Snyman's house as "a small oblong low hut built of rough bits of rock, rudely thatched with reed and sedge' having no window, excepting one small opening covered with white linen, instead of glass" and the doorway but half closed with a clumsy panel of reeds." (Burchell 1822:237).

These dwellings would be difficult to locate archaeologically. However, we do have the locations of the loan farms on the deed surveys done during the 1830s (these surveys are discussed further in section 2.10). These surveys show the original circular loan farms (Fig. 2.6.1), which were usually centred on a water source. While we may not necessarily be able to see the remains of domestic structures from the later eighteenth and early nineteenth centuries (discussed at length in chapter four), we have a good idea of where many of them would have been located, which was at the centre of the loan farms outlined on these surveys. As discussed earlier, a loan farm base (the centre of the circle) would have been chosen because of its access to natural resources, the most important in the semi-arid Roggeveld being water. Locations with relatively reliable water sources would have been regularly reoccupied, eventually becoming the base, or werf, for a loan farm.

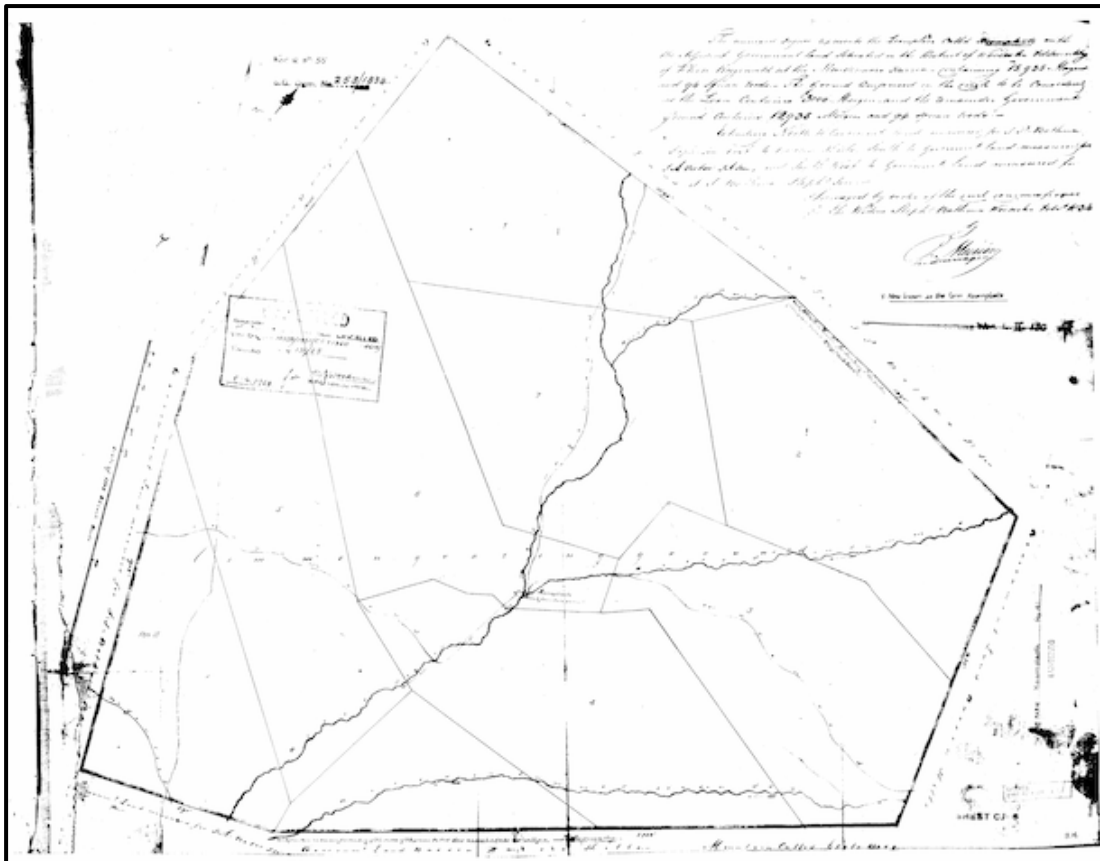


Figure 2.6.1. Survey diagram done in 1834 for Koornplaats loan farm in the Middle Roggeveld .

Werfs would have changed considerably as the Roggeveld settlers invested more into their farms, a process encouraged by the change from the loan farm system to the freehold farm system (this change is discussed in section 2.8). However, even near the end of the nineteenth century there were still reports of farmers using reed huts when they were wintering in the Karoo (Noble 1875:255), which shows both the social and economic gradients, and the still high level of mobility amongst trekboer pastoralists during this period.

The belongings of eighteenth century trekboers were, like the early dwellings, basic. Karel Schoeman's example of a typical probate inventory gives an idea of the living conditions of these settlers; "a wagon, one or more horses, a saddle, and a few rifles, perhaps a bullet mould, some farming implements, sacks and baskets, a churn and a butter tub, a hand mill for grinding corn and a coffee mill, some basic furniture, (...) tin plates and spoons and a few iron forks." (Schoeman 2011:329-330). He does note that most probate inventories list a

few items of porcelain, even those from the more modest homesteads (Schoeman 2011:330).

As the Roggeveld became more integrated with the rest of the colony during the nineteenth century there was an increase in prosperity, which would have been matched with an increase in the material goods available in the region, however, for the majority of the period covered in this dissertation, from the 1740s to the late 1800s, the Roggeveld trekboers appear to have been materially poor.

Before I discuss the change in circumstances of Roggeveld settlers during the nineteenth century, we need to look at the Khoekhoen pastoralists that had been exploiting the Roggeveld well before the colonial settlers arrived.

2.7. Khoekhoen pastoralists

This chapter has so far focused exclusively on historical material to background the research, however, this material has little information on Khoe pastoralists. Historical references to indigenous pastoralists are primarily reflections of colonist concerns i.e. disputes with Hottentot labourers, details on bartering with indigenous pastoralists, and so on. Information on their lifeways and subsistence practices are sparse. Any consideration of change in indigenous pastoralist societies in the post contact period cannot be attempted without some understanding of these societies before the arrival of colonial settlers (Lightfoot 1995). Archaeology and ethnography provide a way to breach the gap between the precolonial and the historical (Lightfoot 1995:202), although it can lead to a static view of past lifeways and identities. Moreover, it downplays the variances between geographically disparate pastoralist groups (Lightfoot 1995:204-205; Williamson 2004:186). Hence, the research drawn upon provides a guideline from which we can outline pre-contact indigenous pastoralists in the Roggeveld.

There is some debate as to when pastoralism arrived in southern Africa. There are two main schools of thought. The first argues that Khoe pastoralists migrated with their livestock into

southern Africa early in the first millennium A.D. (Smith *et al.* 1991; Smith 1998; Smith & Ouzman 2004; Smith 2008). The second school argues that livestock entered southern African through a process of diffusion starting early in the first millennium, possibly followed by a migration, or multiple small-scale migrations, of Khoekhoen around the second millennium (Sadr 1998; Sadr & Sampson 1999; Sadr *et al.* 2003; Sadr 2007; Sadr 2013). Neither view however, changes the issue here, which is that pastoralists with large herds of cattle and sheep were in the region by the seventeenth century.

We do not have dates for the arrival of herding in the Roggeveld, however, there is evidence of herding at ± 250 AD at Boomplaas Cave (Deacon *et al.* 1978) (approximately 152 kilometers to the south east of the Klein Roggeveld), and at ± 1000 AD in the Seacow River Valley (Sampson 2010) (approximately 334 kilometers north east of the Klein Roggeveld). It is not unreasonable to assume that herders were exploiting the Roggeveld for several centuries, possibly more, before the arrival of the trekboers.

2.7.1. Indigenous pastoralist identity

Another matter for debate is the identity of indigenous pastoralists in southern Africa. Were they a discrete cultural group with separate worldviews i.e. Khoekhoen and San, or was the distinction based on economic differences; those with livestock versus those without (Marks 1972:57-58; Elphick 1977; Smith 1991)? If the latter, then Khoekhoen could easily become San if disease and conflict eradicated their livestock, and vice versa should one acquire livestock through raiding or clientship.

There is research that points to two distinct groups but within these groups there is room to manoeuvre between different subsistence strategies (Barnard 1988:71, 2008), hence, “it is not a matter of San versus Khoekhoen, but of San without livestock and San with livestock, and of Khoekhoen with livestock and Khoekhoen without livestock.” (Barnard 2008:73). This standpoint allows for an ideological economy to be present within individuals no matter what their subsistence strategy was at the moment of observation.

The European settlers at the Cape noted a distinct difference between San and Khoekhoen when they arrived in the seventeenth century. Whether this difference was purely based on

subsistence strategy is debatable (Smith & Ouzman 2004:499; Sadr 2008:192). Nevertheless, whether there were two cultural groups present or not, historically there is a material and spatial signature associated with indigenous pastoralists, though this can be difficult to see archaeologically.

2.7.2. Housing and belongings

Indigenous pastoralists had a very mobile lifestyle based around the seasonal availability of water and grazing for their livestock. Their material culture reflects this mobility, which makes them difficult to trace archaeologically - much like the early trekboer settlers in the Roggeveld. Their houses (called *matjieshuise*) consisted of a framework of branches that were tied together with leather strips, and overlaid with reed mats (Webley 2009:26) (Fig. 2.7.1). These were easy to put up and dismantle, and light enough to be taken with when moving to new grazing areas (Webley 2009:26) (Fig. 2.7.2). Ethnographic studies in Namaqualand note that the domestic area around the huts are kept clear of vegetation and rocks, and are swept regularly (Webley 1986:27), it is likely that this is an old practice. All that would remain after the pastoralists had moved on were the stones used to weigh down the *matjieshuise*, and these cleared domestic spaces.



Figure 2.7.1. Painting by Charles Bell in the 19th century of a *matjieshuis* with a *kookskerm* (sheltered hearth) for cooking outside (Simons 1998).

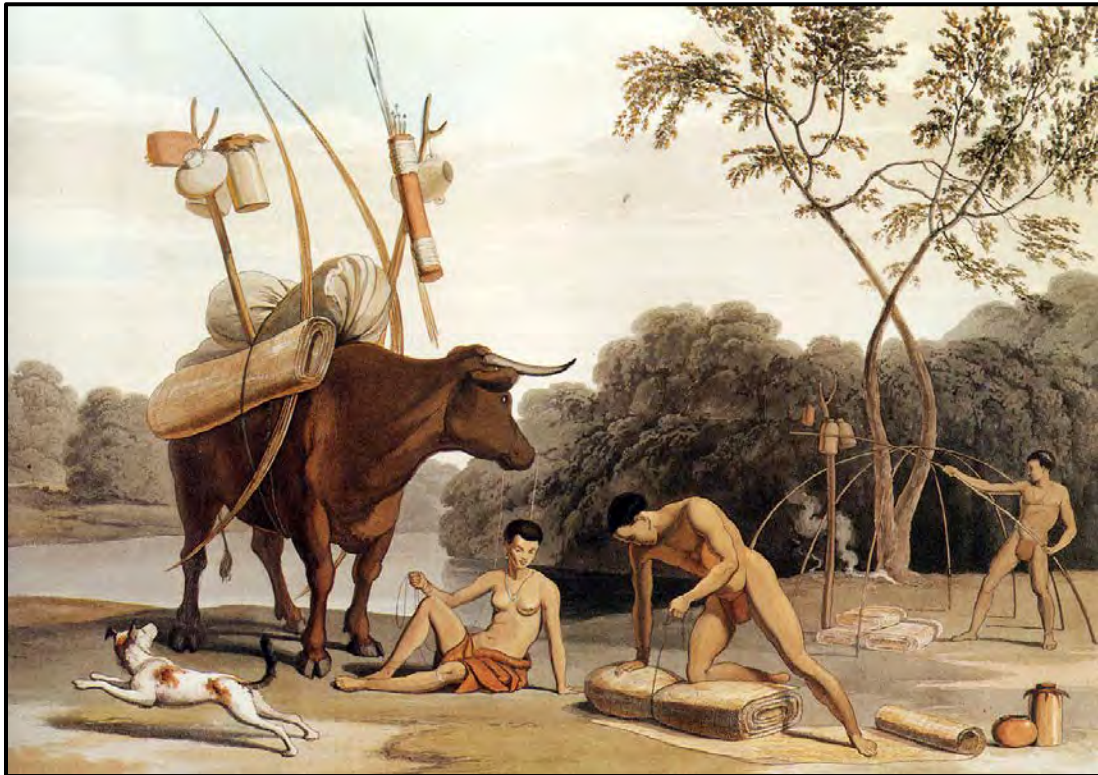


Figure 2.7.2. Illustration by Samuel Daniell in 1805 of Khoekhoen dismantling a *matjieshuis*. (image courtesy of Wikipedia).

Cape coastal ceramics, and lithics are the predominant artefacts associated with Khoekhoen. Naturally these are not the only items owned and used by the Khoekhoen, however, they are the items most commonly used to archaeologically differentiate between San and Khoekhoen sites.

The pots are characterised by long necks, lugs, and ovoid or conical bases² (Sadr & Sampson 1999; Stewart 2005) (there is an example of this type of pot hanging from a pole in fig. 2.7.2). Other features of Cape coastal ceramics that differentiate are the decorations, the use of grit rather than fibre for temper, the construction method, and the firing technique (Bollong *et al.* 1997:277; Sampson *et al.* 1997; Sampson 2010:843).

² This describes Cape coastal ceramics from the second millennium. Pots from the first millennium did not have long necks, and had spouts rather than lugs (Sadr & Sampson 1999).

Lithics associated with Khoekhoen pastoralists tend to be expedient with few or no formal tools (Beaumont & Vogel 1984; Smith *et al.* 1991:87; Parsons 2003; Sealy *et al.* 2004:20-21; Kinahan 2001:32). The Doornfontein industry of the Northern Cape is consistent with this description, and is frequently found associated with decorated, grit tempered Cape coastal ceramics (Beaumont & Vogel 1984; Parsons 2003:34). This industry contrasts with the Swartkop industry, which is also located in the Northern Cape, with sites often found in close proximity to Doornfontein sites (Parsons 2003). Swartkop lithics are characterised by a higher incidence of formal tools than the Doornfontein industry, and tend to favour fine-grained raw materials, usually cryptocrystalline silicates (CCS) (Beaumont & Vogel 1984; Parsons 2003). Swartkop lithics are also often associated with ceramics but unlike the Cape coastal ceramics, these sherds are generally the undecorated and grass tempered ceramics associated with San hunter-gatherers (Beaumont & Vogel 1984; Parsons 2003). It has also been suggested that indigenous pastoralist sites will have a higher ratio of ceramic sherds relative to lithic pieces than sites associated with hunter-gatherers (Yates & Smith 1993). Although there is some debate over whether the differences between the Doornfontein and Swartkop typologies may indicate different activities rather than different peoples, the debate does not change the general consensus that Khoekhoen lithics are predominantly informal and expedient.

The material signature of the Khoekhoen is generally ephemeral. Their predominantly open-air sites seldom have high densities of artefacts (Arthur 2008:215; Sadr 2008:189). However, in the semi-arid regions of southern Africa, like the Roggeveld, round kraals associated with Khoe pastoralists are comparatively easily found because they were constructed with stone rather than vegetation (discussed in more detail in chapter four).

2.8. Pastoralism in the Roggeveld

There is no direct information on Khoekhoen pastoralist systems in the Roggeveld, and little on the trekboers. However, there is historical and ethnographic research on indigenous herding practices from other areas of southern Africa that have similar environmental

conditions to the Roggeveld, which can be used to put together an overview of main systems, such as transhumance, aggregation, kraaling, and livestock dispersal.

2.8.1. Transhumance

Historical observations of pastoralist systems are primarily concerned with locating Khoekhoen groups with sufficient livestock for trade (i.e. Thunberg 1772:102, 289, 321; Moodie 1960; Thom 1958). This preoccupation with locating the groups, however, does emphasize the mobile nature of the pastoralists (Moodie 1960:58). Transhumance patterns were, and are, an important part of livestock management in southern Africa, particularly in semi-arid regions, which are not able to support large numbers of livestock for extended periods of time (Smith 1983:85). Seasonal movements allowed the pastoralists to take advantage of a range of environments, each with different seasonal resources and climatic conditions (Webley 1986:56).

While we do not have details regarding the transhumant pattern of the Khoekhoen in the Roggeveld, there are several accounts (Barrow 1801:402; Lichtenstein 1812:99; Thunberg 1986:304; Gordon 1998:208) from eighteenth and nineteenth century travellers that document the trekboer pastoralist transhumance pattern in the Roggeveld. In the eighteenth century, Otto Mentzel (in van der Merwe 1995:115) noted the trekboers of the northern frontier followed the routes and practices of the Khoekhoen pastoralists. This suggests that the trekboer transhumance system was learnt and modelled on indigenous strategies.

The system cycled between the Roggeveld plateau in summer, and the Tanqua and Moordenaars Karoo during winter (van der Merwe 1945: 1995). By following this pattern, the trekboers avoided the low temperatures, frequently accompanied by frost and snow, during the upland Roggeveld winters, and the hot, arid conditions of the lowland Tanqua and Moordenaars Karoo in summers. The respite from grazing in the winter gave the Roggeveld vegetation some time to recover, thereby ensuring good grazing for the livestock when they returned in summer. Furthermore, the fresh winter grazing in the Tanqua and Moordenaars Karoo was ideal for the lambs, customarily born in late autumn or early winter (Tamarkin 2009:56). The Roggeveld plateau was also subject to drought, in which case the

trekboers would alternatively trek their livestock north, to the Riet or Sack rivers in Bushmanland. As a consequence, the reality was that a loan farm was just the centre point of a territory that spanned from Bushmanland down to the Tanqua and Moordenaars Karoo. The trekboers of the Roggeveld were, in short, a 'semi-nomadic people' (Penn 1986:63).

During the early loan farm period, mid- eighteenth to early nineteenth century, the Tanqua and Moordenaars Karoo appears to have been seen as communal property for all trekboers wintering there (Lichtenstein 1812:265; van der Merwe 1995). As farmers continued returning to the same sites, they began to view these sites as an extension of their loan farms (Lichtenstein 1812:99; Penn 2005b:83). These winter farms were known as *legplaats*. However, the Karoo was still, in large part, communal property during the winter in the eighteenth and early nineteenth centuries. Lichtenstein made note of this when he travelled through the area in 1803; "all occasions of strife between the different inhabitants are averted by the lands being common property..." (Lichtenstein 1812:154). Many trekboers did not have a *legplaats* in the Karoo. Even those with *legplaats* made little mark on the land; despite being in the Karoo for four to five months of the year, most farmers lived in reed huts or in their wagon tents during the season (Noble 1875:225). This is a pastoralist practice that is not easily found and archaeologically invisible.

2.8.2. Aggregation

Khoekhoen groups aggregated seasonally in order to trade and socialise (Elphick 1985:141; Arthur 2008:62). This interaction enabled these groups to remain interdependent despite being widely dispersed for the vast majority of the year (Kinahan 1986:69). The primary time for interaction for the trekboers of the Roggeveld was during the winter. Farmers from all over the Roggeveld, as well as farmers from the Bokkeveld, wintered in the Tanqua or Moordenaars Karoo (Lichtenstein 1812:153; Burchell 1822:207; Gordon 1988:208,218). Lichtenstein (1812:153) described how 'long separated friends and relations' would get to see each other, marriages could be brokered, livestock bought and sold, localised commodities bartered (Penn 2005a:83). The relationships maintained during this period were invaluable, they could share resources in times of ecological hardship, negotiate passage over each other's land, and ask for assistance with raiding bands (Tamarkin

2009:58-62). In the harsh environment of the northern frontier these reciprocal relationships were essential.

2.8.3. Kraaling

Kraaling livestock was standard practice for Khoekhoen pastoralists because it safeguarded the herds and/or flocks from predators, it prevented the livestock from wandering during the night, and it reduced livestock theft (Von den Driesch & Deacon 1985:41; Beinart 2003:45; Webley 2009:27). Kraals also allowed pastoralists to separate and manage livestock when required. Ethnographic research on indigenous herders in Namaqualand (descendants of the Namaqua Khoekhoen) showed that kraals are essential for the management of ewes and lambs (Webley 2009:27). Without the separation of the lambs from the ewes, the herders would struggle to milk the ewes (Webley 2009:28). There is also a risk that the lambs would be trampled if they were kraaled with the main flocks overnight (Webley 2009:28). Trekboer settlers kraaled their livestock overnight for much the same reasons (Noble 1875:258-259; Lichtenstein 1812:172; Beinart 2003:45; Lilja 2013:50). Lichtenstein (1812:107) described how trekboers in the Roggeveld kraaled their livestock overnight, with each livestock category, such as fat-tailed sheep, wool sheep, draught cattle, cattle to be slaughtered, cattle with calves, in their own kraals. Homesteads frequently had seven or eight kraals in the werf (Lichtenstein 1812:107). Noble (1875:259) noted that trekboer kraals were built out of the most freely available, suitable resource. In the Roggeveld stone is more readily available than suitable vegetation.

2.8.4. Livestock dispersal

As a semi-arid region, the Roggeveld has a fairly low carrying capacity (discussed in chapter three), which means that large flocks needed to be spread out as much as possible to maximise exploitation of the land. Archaeological and ethnographic research has shown that Khoekhoen pastoralists used a stock post system to disperse their livestock (von den Driesch & Deacon 1985:41; Deacon 1992:263; Webley 1986:56; Beinart 2003:44). Trekboers had a similar system of kraaling and trekking. Initially livestock were kept at the homestead and grazed close by but as the season progressed the grazing would be depleted and the flocks would need to be trekked out further and further to reach good grazing. Hence, the

creation of outstations spread out over the farm. This allowed access to distant grazing spots without extended treks everyday (Noble 1875:258-259; Lilja 2013:49). Trekking took up time, compacted the soil, which led to erosion, and could damage wool (Noble 1875:259; Lilja 2013:50-51). However, the system was labour intensive and each flock required a herder to supervise their grazing, make sure they did not stray, and to protect them from predators and thieves day and night (Lichtenstein 1812:107; Noble 1875:258-259; Beinart 2003:45; Lilja 2013:50). Frequently the herder's family moved out to the outstations with them (Lilja 2013:49).

These pastoralist systems remained much the same through the eighteenth and well into the nineteenth century but started to change with the rapid growth in sheep farming that reached the Roggeveld around the middle of the nineteenth century.

2.9. The wool boom

Wool farming got off to a slow start in the Cape Colony. Although Colonel Robert Gordon introduced merino sheep in 1789, there were only 6 of them (Lilja 2013:30). They were a gift from the Dutch Royal Family, who subsequently asked for them back; Gordon returned 6 but kept the offspring. A more serious attempt to introduce them to the colony took place in 1815 when 10 rams and 25 ewes were introduced by Lord Somerset as breeding stock, the offspring of which could be purchased by farmers to start their own flocks (Lilja 2013:30). The industry only really took off in the 1830s (Beinart 2003:9; Tamarkin 2009:4; Lilja 2013:31). The growth in sheep farming was exponential. When the British took over the Cape Colony in 1806, the colony had an estimated 1.5 million sheep, mostly African fat tailed sheep, by 1855 there were approximately 5 million wool bearing sheep, and, by the time Noble wrote his handbook for emigrants in 1875, the number of woolled sheep had increased to approximately 10 million (Beinart 2003:9). While the initial growth was primarily felt in the Eastern Cape, by the mid nineteenth century it had spread throughout the sheep farming regions of the colony, including the Roggeveld (Beinart 1997:230).

The increase in sheep farmed for mutton in the later nineteenth century was stimulated by the flood of immigrants to southern Africa, primarily attracted by the diamond fields in the 1870s (Noble 1875:261; Archer 2002:121). This demand drove the price for mutton up significantly, making farming for meat far more profitable than it had been in the early nineteenth century (Archer 2002:121). By the beginning of the twentieth century there were 4,5 million fat-tailed meat sheep in the colony (Beinart 1998:176). This was not as dramatic as the wool sheep but still a significant increase.

2.10. Land tenure and investment

Such rapid growth in sheep farming naturally initiated extensive changes for the farmers. The primarily subsistence farming of the eighteenth century was replaced with commercial farming over a relatively short period, approximately 50 years. Furthermore, wool farming not only pulled rural pastoralists into the colonial economy, it also pulled them into the global economy of the British Empire (Lilja 2013:32-37; Tamarkin 2009:4). Consequently, the British colonial government was far more intrusive in the rural sphere than the VOC had been (Tamarkin 2009:129).

Starting in 1813 with a change from the loan farm system to that of freehold land under perpetual quitrent, the British experimented with land policy, partly in order to encourage and intensify agriculture in the colony (Christopher 1971:4-5; Kramer 2011:34; Lilja 2013:34). A freehold farm could officially be inherited, subdivided, and sold (Kramer 2011:34; Lilja 2013:34). It was hoped that this more official land security would encourage farmers to invest more into their farms, leading to higher productivity (Lilja 2013:35).

Converting to land grants under perpetual quitrent required official government surveys, which mapped out the farms far more precisely than the VOC loan farm system had. In the Roggeveld, farmers started applying for their loan farms to be surveyed in the 1830s and the original circular loan farms were submerged into properties that fitted neatly together with crown lands and neighbouring farms (2.10.1).

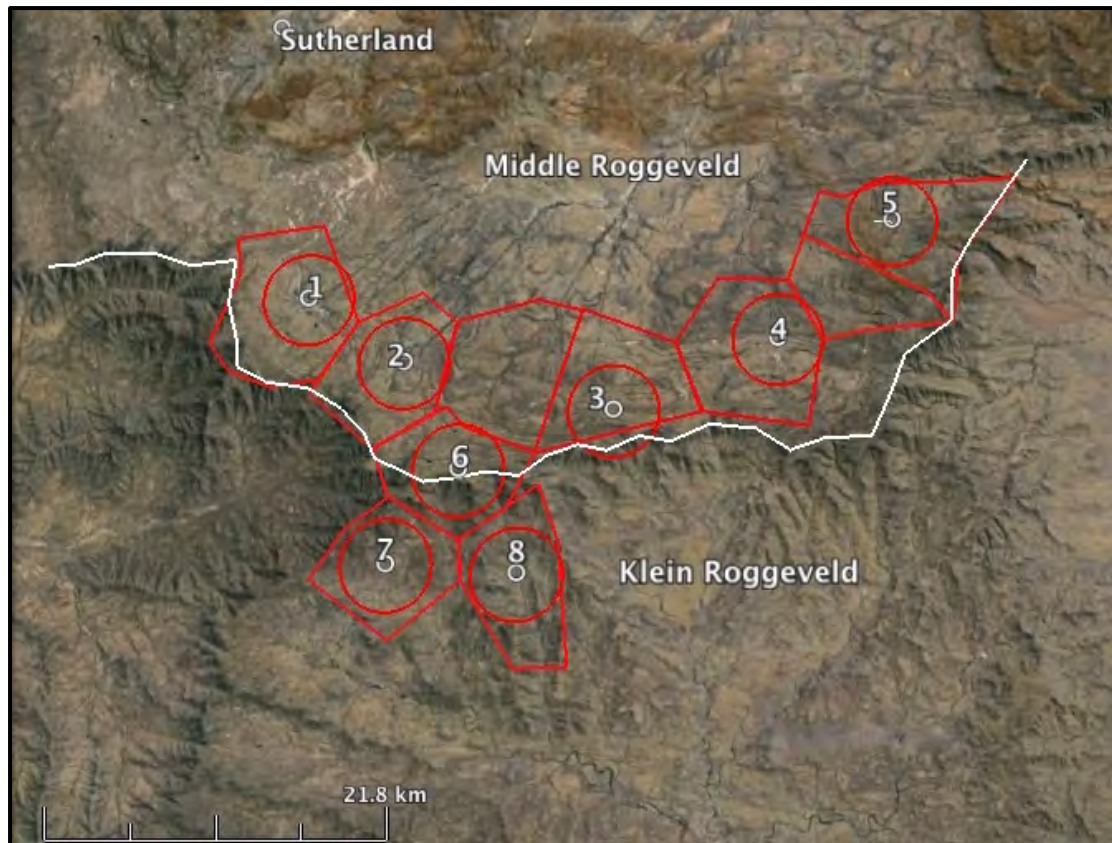


Figure 2.10.1. Some of the original loan farms in the Roggeveld that are discussed in more detail in chapter four. The white line follows the contours of the escarpment, which separates the Klein Roggeveld from the Middle Roggeveld. The red circles approximate the boundaries of the original loan farms. The red lines are the property boundaries set when the farms were surveyed in the 1830s. Loan farms: 1 - Gunstfontein. 2 – Tonteldoos fontein. 3 – Beerenvally. 4 – Nooitgedagt. 5 – Vinkekuil. 6 – Schietfontein. 7 – Drie Roode Heuvels. 8 – Welgemoed.

The British also closed the boundaries of the colony to the north (Fig. 2.10.2), reducing access to untouched land (Lilja 2013:35). Additionally, the influx of immigrants applying for farms reduced access to grazing outside of the farmers immediate regions (Lilja 2013:34-35). Access to other regions was crucial in an environment prone to environmental stress, particularly drought. The only option was to manage their land more productively, which required a level of investment.

This investment was not immediately evident, the big changes only came in the 1870s with the introduction of wire fencing, and artificial water sources.

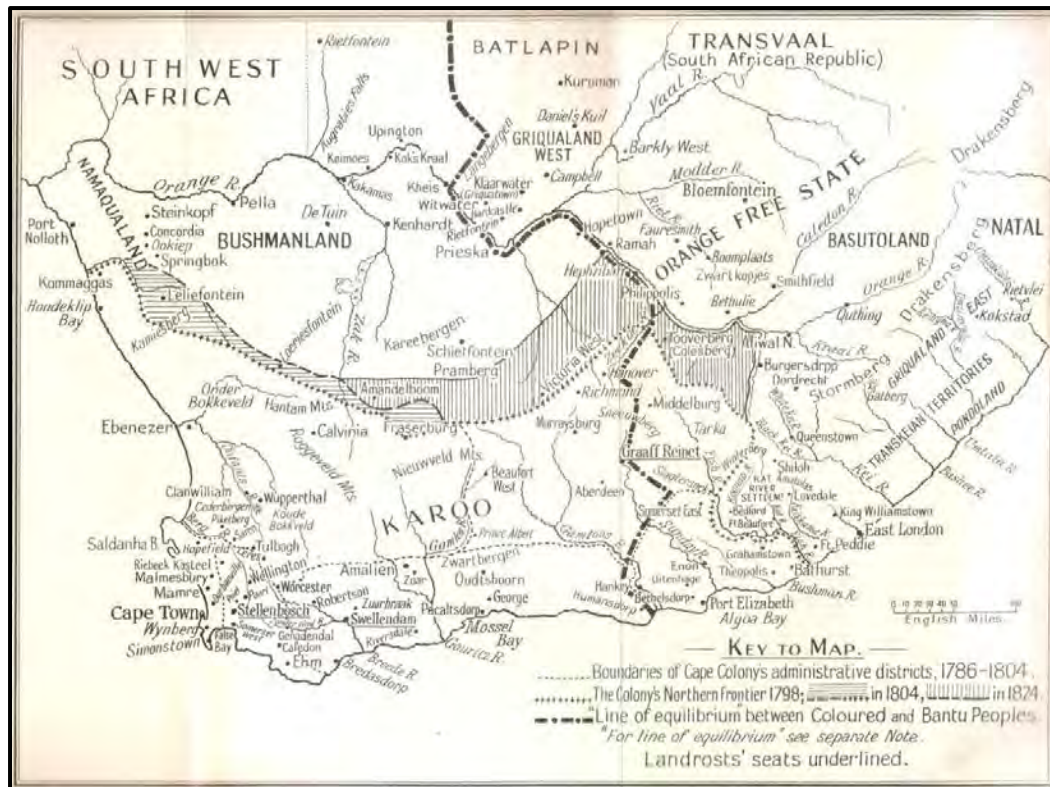


Figure 2.10.2 Map showing the borders of the Cape Colony from 1786 to 1824 (Marais 1939).

2.10.1. Wire fencing

The introduction of wire fencing altered, and eventually ended, the kraaling and trekking systems. Trekking sheep out to graze everyday, sometimes walking for several hours, had a number of negative effects; the repeated trampling of the veld led to erosion along the well worn paths, wool was damaged by walking through the thorny vegetation, and the animals were over exercised by having to trek (Noble 1875:259-260; Van Sittert 2002:98). Wire fencing allowed the farmers to create large enclosed camps within which the sheep could be safely kept, relatively speaking, night and day (Lilja 2013:00). Furthermore, farmers would save on herder costs (Lilja 2013:55). Weighed against the initial outlay for fencing, the savings on labour was not a significant in the short term. The much-increased size of flocks, combined with losing access to grazing elsewhere, required that the farmers intensify their exploitation of their farms (Van Sittert 2002:98); wire fencing made this possible. Creating camps for sheep, and enclosing fields to protect them from livestock and game, should not be confused with the enclosure of farms as a whole. Boundary fencing only became common late in the nineteenth century and even later in the Roggeveld (Fig. 2.10.3).

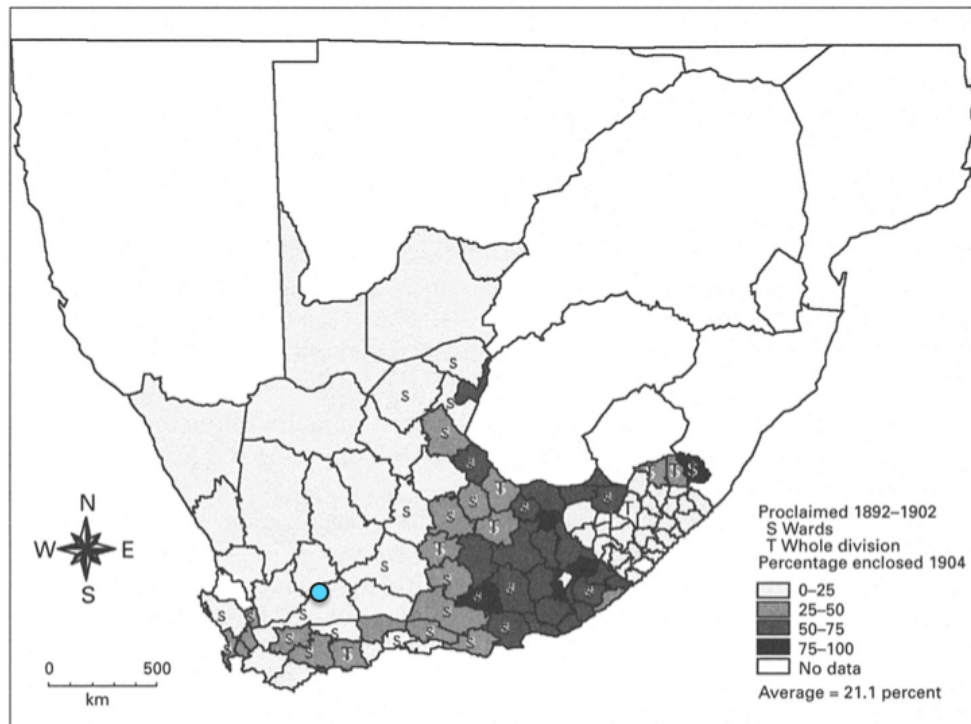


Figure 2.10.3. Extent of land enclosed with wire fencing by 1904 (map from Van Sittert 2002:103). Research area indicated by the blue dot.

Even before wire fencing, some farmers had created camps using stone-walling or brush (Lilja 2013:53). Wire fencing seems to have taken off from the 1870s (Archer 2002:120; Van Sittert 2002:97; Lilja 2013:57). However, Lilja (2013:57) points out that farmers were still choosing to build stone-walled kraals and creating camps was seen as a long term project, hence the practice of kraaling and trekking faded out over several decades and was discontinued in the second decade of the twentieth century (Archer 2002:112).

2.10.2. Water management

High livestock density combined with reduced access to grazing lands elsewhere, increased attention on water management and innovation in water supply. The farmers were dealing with a higher livestock density during a century (nineteenth) that was plagued with drought (Spinage: 2012:195). It was not uncommon to send flocks to farmers who had water and grazing to spare (O'Farrell *et al.* 2009:36; Lilja 2013:67). Hence, the importance of maintaining ties with distant family and friends. This was not a good long-term solution, particularly during widespread drought. The most common methods of water management included; dam construction, weirs, and irrigation channels for lucerne fields, which provided

fodder in times of drought (Beinart 2003:163). Windmills appeared at around the same time as the first wire fences in the 1870s (see Noble 1875:146) but they were expensive (Archer 2002:120), farmers needed to invest in a borehole, the windmill, a reservoir, as well as pipes and water troughs (Archer 2002:124), a considerable outlay for any farmer. As a consequence, they appeared slowly and in 1904 there were only 1275 windmills recorded in the Cape census (Archer 2002:121). Nevertheless, they revolutionised farming in the semi-arid regions of South Africa; allowing farmers to increase the carrying capacity of their farms significantly while leaving them less vulnerable to the regular droughts experienced.

2.11. From beginning to end: trekboer to commercial farmer

The trekboers who settled in the Roggeveld came out of a colony that was made up of a highly diverse group of individuals that included Europeans, disenfranchised Khoekhoen, and slaves from all over Africa and the East Indies. Miscegenation and manumission blurred the divisions between the various ethnic groups. This emphasises that the colonial settlers of the Roggeveld were products of this cultural melting pot and not a homogenous group of Europeans of predominantly Dutch and German descent. Furthermore, the Roggeveld was already settled prior to the arrival of the colonial settlers. Khoekhoen and San groups are likely to have already been impacted by the colony already, directly (colonial hunting and bartering trips, or runaway VOC soldiers etc.), or indirectly (Khoekhoen, and San retreating from their territories closer to the Cape as the colony spread). Essentially, the Roggeveld would have already been in flux when colonists started applying for loan farms and settling there in the latter half of the eighteenth century. By granting these loan farms the border of the colony expanded.

2.11.1. Overview of the historical background, and environmental data of the Roggeveld

It is likely that colonists had ventured into the Roggeveld prior to the 1740s, possibly to barter for livestock with the Khoekhoen pastoralists, or on hunting trips. However, the first record of colonists settling in the Roggeveld appears in 1743 with the granting of the first loan farm (Schoeman 1986). Although there was a large increase in loan farms in the

Roggeveld between the 1740s and the end of the eighteenth century, this does not necessarily indicate that there was a proportional increase in population as many farmers had more than one loan farm. Many of these excess loan farms were not used frequently, or at all.

The low population of trekboers meant there was little competition with the Khoekhoen groups in the region. Furthermore, the trekboers would initially have been dependent on local knowledge in order to farm sheep successfully in the Roggeveld. Hence, this may have encouraged friendly relations. However, as more trekboers started settling in the area, claiming key resources (predominantly reliable water sources) as their own, so the indigenous pastoralists slowly lost ground in the region. The integration of indigenous pastoralists into the settler system as labourers, combined with the gradual loss of their livestock through enforced bartering, and reduced access to good grazing and reliable water sources, slowly decimated Khoekhoen pastoralist autonomy. This independence was officially removed with the Caledon Code, or 'Hottentot Proclamation', of 1809. The code required that all 'Hottentots' had to have a pass to move about the colony. However, a 'Hottentot' could only get a pass if they were in service, or were living at a mission station. This code basically rendered independent or semi-independent Khoe pastoralists illegal.

The Roggeveld was principally suitable for transhumant sheep farming with the pastoralists following seasonally available resources. While the trekboers did apply for loan farms, these farms were the focus around which their seasonal movements revolved.

Up until the nineteenth century the Roggeveld was dominated by a subsistence economy. This economy appears to have remained relatively static until the dramatic increase in sheep initiated by the introduction of Merino wool farming. Whilst this was first felt in the Eastern Cape, it was soon felt in other regions of the colony, like the Roggeveld. The colony as a whole had an estimated 1,5 million sheep in 1809. By 1855 there were over 5 million sheep, and in 1875 there were over 10 million sheep in the colony. This radical increase in sheep numbers mirrored the change in economic systems, from subsistence to one far more in line with capitalism, as rural communities were drawn into the international wool trade (Lilja 2013:33-34).

Despite these changes, there were not many innovations in pastoralist systems up till the 1870s. The conversion of the loan farm system to freehold farms under perpetual quitrent in the 1830s provided some impetus for farmers to invest more into their farms but, while there was some attempt to increase the carrying capacity of the land through dam construction and lucerne cultivation, the main pastoralist practices remained the same; kraaling and trekking, and the transhumance cycle between the escarpment plateau in summer, and the Tanqua and Moordenaars Karoo in winter.

The introduction of wire fencing in the 1870s slowly made the practice of daily 'kraaling and trekking', obsolete and the sheep could be left out in large fenced camps rather than kraaled overnight and trekked out each day. Around the same time, the first wind based water pumps made their appearance in the Karoo, which had the potential to increase the carrying capacity of a farm, reducing the need to send flocks off to other areas for fresh grazing. The extreme temperatures of the Roggeveld meant that moving down from the escarpment in winter and back up again in summer was still necessary, however, it curtailed the traditional transhumance system.

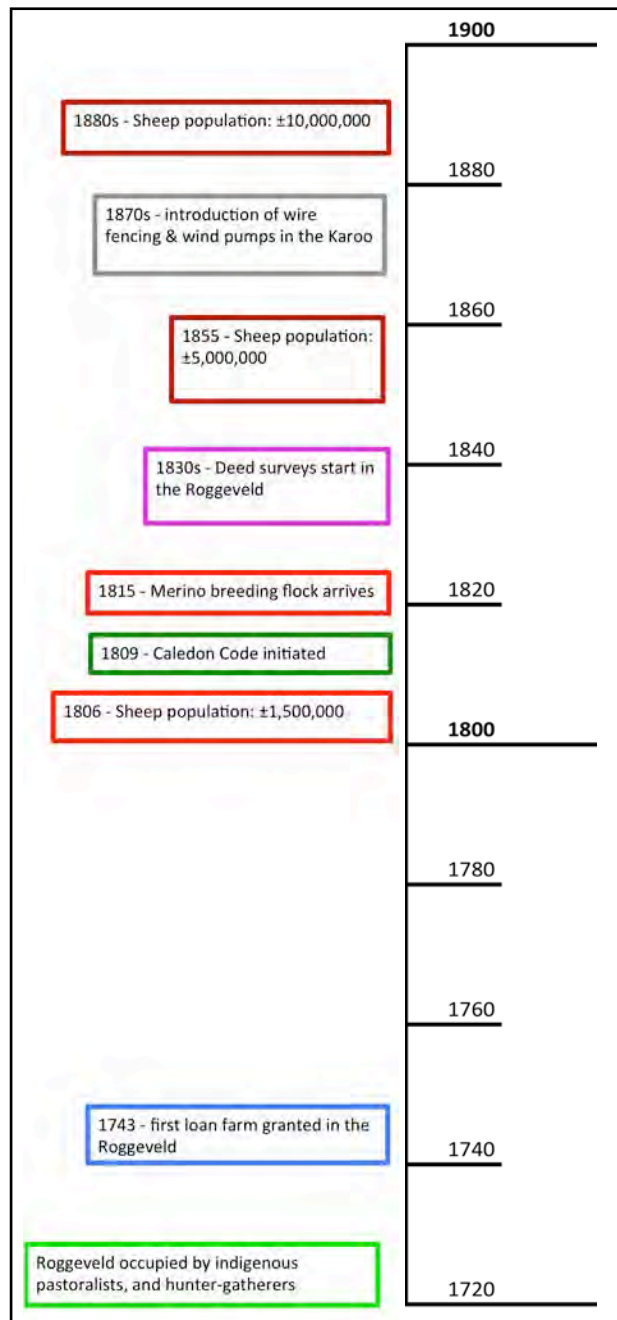


Figure 2.11.1. Timeline of events that effected pastoralism in the Roggeveld.

As discussed, the Roggeveld is a semi-arid region, best suited for small livestock farming. While many of the trekboer settlers would have had experience farming sheep in similar conditions, areas like the Koue Bokkeveld or the Cedarberg, they would still have needed details specific to the Roggeveld (particularly in regards to where to settle, and the transhumance cycle). Naturally, the Khoekhoen pastoralists who had been exploiting the Roggeveld for centuries would have been able to instruct them. This would have initially put Khoekhoen pastoralists and trekboers on a relatively equal footing. However, as more and

more colonial settlers arrived in the Roggeveld so the Khoekhoen pastoralists were marginalised, slowly losing their independence.

It is expected, on the basis of the historical outline given, that the trekboers of the eighteenth and early nineteenth centuries are archaeologically difficult to see. Their belongings were few and basic, and their dwellings were simple constructions of predominantly organic materials. This, combined with their mobile lifestyle makes them difficult to study archaeologically. In contrast however, their stone-walled kraals are highly visible not only as a signal of occupation and presence but also potentially informative of both Khoekhoen and trekboer pastoralists. Kraals underpin pastoralist practices and, given the timeline constructed, how these practices changed in the nineteenth century. Importantly, kraals offer an emic perspective that historical resources may not match.

In the following chapter I overview the environmental conditions of the Roggeveld within which pastoralism was practiced and which stone-walled kraals facilitated.

3. Environmental Background

3.1. Introduction

This chapter seeks to outline the environmental structure within which pastoralist systems in the research area operated. In this chapter I specifically outline the topography, geology, climate, vegetation, and hydrology of the three environmental zones in the research area, and highlight those features that are relevant to historical pastoralist practices.

The research area is situated on the southern end of the Roggeveld Mountain range. The area covers approximately 4,900 km², and includes the Middle Roggeveld (this is the historical name, today it is commonly referred to as the Roggeveld plateau), the Klein Roggeveld, the Komsberg, and the Moordenaars Karoo (Fig. 3.1.1.). The Roggeveld mountain range is part of the Great Escarpment of South Africa, and the research area is positioned on the most southerly section of the Great Escarpment. It spans the border between the Western Cape and Northern Cape Provinces, with the towns of Sutherland marking the northern end, and Laingsburg the southern end of the research area.



Figure 3.1.1. Google Earth (GE) image of the Western Cape Province in South Africa with the research area outlined in white.

The area is remarkably diverse environmentally with both rolling plains and mountainous areas, and a range of different vegetation types. Climatically, it covers two extremes with Sutherland being one of the coldest areas in South Africa during winter, and Laingsburg one of the hottest during summer. The environmental variability of the research area is divided into three zones mentioned above; the Middle Roggeveld (MR), the Klein Roggeveld and Komsberg Mountain range (KR), and the Moordenaars Karoo (MK) (Fig. 3.1.2).

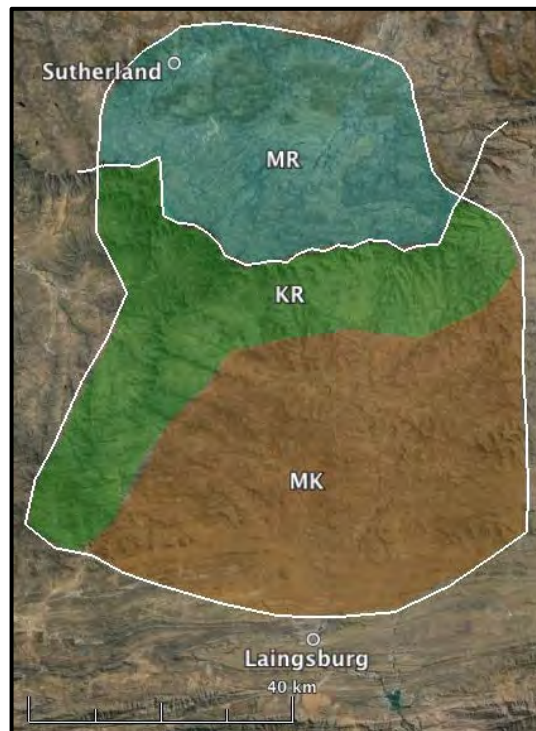


Figure 3.1.2. Environmental zones in the research area. MR: Middle Roggeveld. KR: Klein Roggeveld. MK: Moordenaarskaroo

3.2. Topography

The topography of the research area is incredibly diverse, as Figure 3.2.1 shows. The three environmental zones are clearly very different topographically. This is likely to have played an important role in where pastoralists chose to base themselves. The logistics of accessing the different environmental zones would have been very important for transhumant pastoralists. The primary movement was up and down the escarpment but inter-seasonal movements e.g. access to areas with sporadic grazing during summer would also have been of consideration. Even the day-to-day trekking of the flocks may have been helped or

hindered depending on the ruggedness of the terrain. Topography would also, naturally, influence where kraals were constructed.

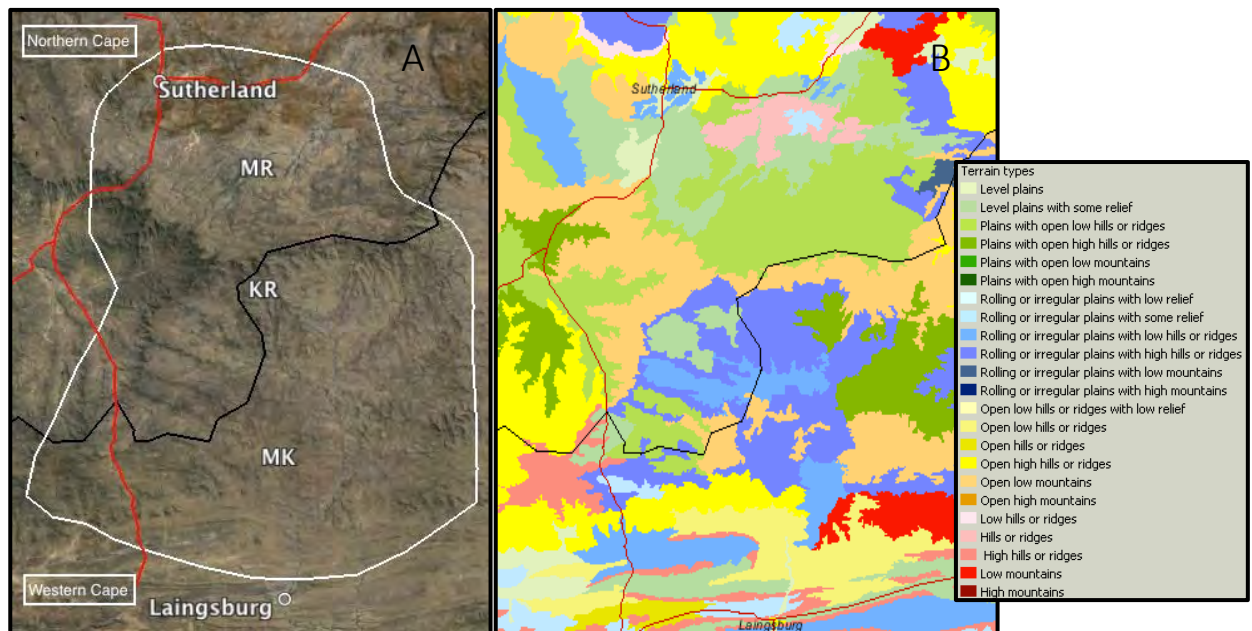


Figure 3.2.1. Topography of the research area in GE (A) and topographical map (B) (the R356 in red & the Komsberg Pass road and escarpment road in green) and provincial borders (black).

The MR zone is predominantly composed of plains with some low hills and ridges (Agricultural Geo-referenced Information System [AGIS] 2015) (Figs. 3.2.1 & 3.2.2). Along the northern edge of the MR zone close to Sutherland the area is more rugged with high hills and ridges (AGIS 2015). The highest point of the MR is Salpeterkop sitting at 1766m above sea level (Clark *et al.* 2011:114).



Figure 3.2.2. Flat plains on the MR plateau with a low ridge in the background.

The KR zone is immediately below the lip of the escarpment and as a consequence, it is dramatically rugged and mountainous, with high hills and ridges plunging into the MK zone (Figs. 3.2.1 & 3.2.3). There is an approximate 500 m altitudinal difference down to the lower plains of the Karoo from the summit of the Komsberg (Clark *et al.* 2011:115). The highest point of the KR zone is Besemgoedberge at 1742 m above sea level. The topography of the MK zone is varied with rolling irregular plains and ridges, and low hills. The area is approximately 1,500 km² (AGIS 2015). The Moordenaarskarooberge form a mountainous ridge within the MK zone with the highest peak being Gatsberg at 1454 m above sea level. However, rolling irregular plains with hills and ridges is the predominant topography in this zone. By the time the various tributaries have formed the Buffels River the terrain is primarily composed of flat plains.



Figure 3.2.3. Mountains of the KR viewed from the top of the Komsberg Pass.

3.3. Geology and soil

The geology of the research area is dominated by the Adelaide subgroup of the Beaufort Group (Adams *et al.* 2001:93; Clark *et al.* 2011:113). This consists of sedimentary rocks, predominantly sandstones and mudstones. There are also basaltic dolerite dykes that run on a roughly east-west course, forming rocky peaks and long ridges (Adams *et al.* 2001:93; Clark *et al.* 2011:113). These dolerite intrusions have played a role in reducing the rate of erosion in the region (Clark *et al.* 2011:115). The intrusions are also associated with

fractures in the sedimentary rock (Adams *et al.* 2001:91-93), which act as aquifers (Adams *et al.* 2001:91; Le Maitre *et al.* 2007:265). Consequently, springs and seeps are likely to be found in the vicinity of dolerite intrusions.

The dolerite clays in the MR and KR remain saturated after rains, when they absorb large quantities of water but appear dry on the surface (Clark *et al.* 2011:115). The dolerite clays are usually between 20 to 50 cm deep on hill slopes, and 1m deep on flat areas (Clark *et al.* 2011:15). Farmers move their sheep off these areas during the rainy season as sheep can easily get bogged down in the clay (O'Farrell *et al.* 2007:317). This would certainly influence where pastoralists chose to locate their kraals.

3.4. Vegetation

The vegetation of the research area falls predominantly within the Succulent Karoo biome (Mucina & Rutherford 2006:279; Clark *et al.* 2011:116). The Roggeveld is an exceptionally rich botanical area (Clark *et al.* 2011:112). The levels of diversity within this region have been described as “rival(ing) those of rain forests” (South African National Biodiversity Institute 2006), and as having “the richest geophyte area in the world” (Clark *et al.* 2011:112). The vegetation map (Fig. 3.4.1) shows that just within the bounds of the research area there are six vegetation types. Each of the vegetation type areas has different environmental conditions.

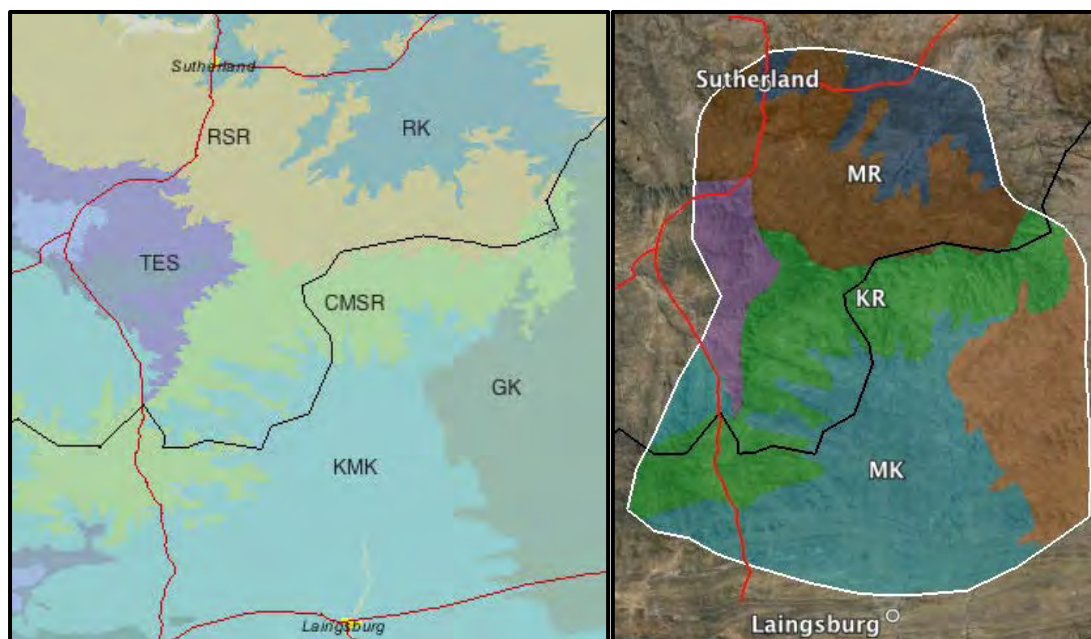


Figure 3.4.1. Vegetation map from AGIS and in GE. **CMSR**: Central Mountain Shale Renosterveld. **GK**: Gamka Karoo. **KMK**: Koedoesberge Moordenaars Karoo. **RK**: Roggeveld Karoo. **RSR**: Roggeveld Shale Renosterveld. **TES**: Tanqua Escarpment Shrubland (AGIS 2015).

3.4.1. A brief overview of vegetation types

There are two vegetation types in the Middle Roggeveld, Roggeveld Shale Renosterveld (RSR) (Fig. 3.4.2), and Roggeveld Karoo (RK) (Biodiversity GIS 2006). The RSR is predominantly fairly tall shrubland with geophytic flora in some areas (Mucina & Rutherford 2006:177). In comparison to the rest of the research area, RSR vegetation is almost lush. Clearly, the RSR habitat would have been a prime grazing area, however it would not have been able to support grazing over a full year. The RK vegetation type is considerably different to the RSR, it consists of sparse dwarf shrubland (both succulent and non-succulent) and grasses (Mucina & Rutherford 2006:279), which are transitional between the Succulent Karoo biome and the Nama-Karoo biome (Mucina & Rutherford 2006:279). This vegetation type does not equal the RSR in regards to grazing potential.



Figure 3.4.2. Roggeveld Shale Renosterveld vegetation.

The Klein Roggeveld zone is almost exclusively Central Mountain Shale Renosterveld (CMSR) (Fig. 3.4.3), which consists of low shrubs and some geophytes (Mucina & Rutherford 2006:178), although there are some patches of Tanqua Escarpment Shrubland (TES), which consists of medium height shrubland and lower shrubs, both succulent and non-succulent (Mucina & Rutherford 2006:283, 647). The CMSR vegetation type provides good grazing, although it is not as abundant as the RSR vegetation type. Being based between the RSR and CMSR vegetation areas would have undoubtedly been the best location for pastoralists.



Figure 3.4.3. Central Mountain Shale Renosterveld vegetation.

The MK zone is predominantly Koedoesberge Moordenaars Karoo (KMK) (Fig 3.4.4), which is composed of low succulent shrubs, and occasional patches of higher shrubs and grasses (Mucina & Rutherford 2006:286). The rest of the MK zone is Gamka Karoo (GK), which consists of dwarf spiny shrubland with occasional trees (Mucina & Rutherford 2006:342). The vegetation in the MK is much sparser than the vegetation in the MR and KR. Neither the GK nor KMK would support grazing for long periods of time. These vegetation types are only suitable directly after rain, which is seldom and usually restricted to winter. These climatic conditions are discussed in more detail in the following section.



Figure 3.4.4. Koedoesberge Moordenaars Karoo vegetation (courtesy of Mucina & Rutherford 2006).



Figure 3.4.5. Gamka Karoo vegetation (image courtesy of Mucina & Rutherford 2006).

There is considerable debate on how much the vegetation of the Karoo has changed since the trekboers started exploiting the region in the eighteenth century. The hypothesis that the Karoo had been a predominantly perennial grassland biome prior to intensive sheep farming (Acocks 1953; Vorster & Roux 1983) has largely been refuted (Hoffman & Cowling 1990; Archer 2004:387) but there is no doubt that grazing has had a large impact on the Karoo vegetation (Archer 2000:643; Roche 2008:158; Rutherford & Powrie 2010).

Concerns over the degradation of the veld in the Karoo started in the nineteenth century, during the wool boom (Noble 1875:260). Farmers looking to take advantage of the wool market overstocked their farms, which may have been sustainable in optimal conditions but the semi-arid conditions would have eventually overstressed the more palatable vegetation. John Noble (1875:260) noted that sheep often graze shrubs down to the point where the shrubs could no longer regenerate, which would lead to changes in plant species ratios (Allsop *et al.* 2007:84).

Sean Archer (2002:120) points out that the vegetation in regions with erratic rainfall patterns, like the Karoo, are less likely to be effected by grazing because herds and flocks will naturally disperse when grazing is reduced. The gradual intensification of sheep farming from the 1850s onwards and the enclosure of land in the late nineteenth century combined severely impacted this process (Archer 2002:120). The changes however, do not seem to be

as severe as those predicted by Acocks (1953). Naturally, the degree that the veld is affected depends very much on individual farmers, with some being more progressive, or consistent, with grazing rotation than others (McDonald 2011:13).

A good understanding of the different vegetation types, and when they were at their best for grazing purposes would have been essential knowledge for pastoralists in the Roggeveld. Relics of these practices are still seen today with farmers exploiting different vegetation types at appropriate times of the year (O'Farrell *et al.* 2007:317), for example, moving sheep into the Moordenaars or Tanqua Karoo two weeks after the first winter rains. This is when the vegetation in these areas is at its most palatable for sheep (O'Farrell *et al.* 2007:318). Additionally, farmers avoid areas with Renosterveld vegetation in spring when poisonous plants are at their peak (O'Farrell *et al.* 2007:317).

3.5. Climate

As a whole the research area is semi-arid, there are considerable variations in rainfall within the three zones. Broadly, the mean annual rainfall in the MR is 300-400 mm but lower at 200-300 mm down in the KR and MK (Venter *et al.* 1986:40; Van Wyk & Smith 2001). The mean annual rainfall associated with the different vegetation types discussed above give a more detailed view of rainfall in the different zones (Fig. 3.5.1). The MR zone has the highest mean annual rainfall at approximately 305 mm but the area around Sutherland and in the northeast section of the research area receives a mean annual rainfall of 230 mm (Mucina & Rutherford 2006:177, 279). The mean annual rainfall of the KR zone is 290 mm (Venter *et al.* 1986:40; Mucina & Rutherford 2006:178). The MK's mean annual rainfall is approximately 200 mm, although the western edge of the MK zone receives slightly less with an approximate mean annual rainfall of 170 mm (Mucina & Rutherford 2006:286, 342).

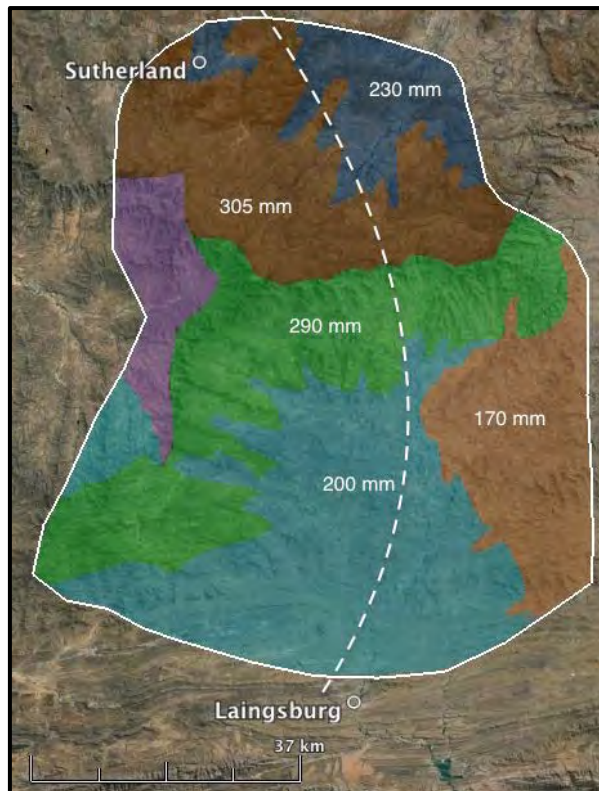


Figure 3.5.1. Mean annual rainfall in the research area.

The research area also straddles the dividing line between the predominantly winter rainfall region to the summer rainfall region (Venter *et al.* 1986:40; Van Wyk & Smith 2001). The transition takes place just to the east of Sutherland (Venter *et al.* 1986:40; Van Wyk & Smith 2001). As Conradie and Piesse (2014:11) point out, being on the margins of two rainfall systems makes for a highly variable rainfall pattern. The majority of the research area falls in the winter rainfall region. Pastoralists may have been able to take advantage of summer rainfall on the eastern edge of the research area.

The region is susceptible to drought with an oscillation of approximately 15 to 20 years since the 1920s (Venter 1986:44). Earlier records from the late nineteenth century suggest a shorter oscillation period (Venter *et al.* 1986:44; Spinage 2012:195), indicating that drought was more frequent during this period. There are certainly frequent references to droughts in historical records in the eighteenth and nineteenth centuries (Spinage: 2012:195).

Research has demonstrated that Namaqua Afrikaner sheep (indigenous fat-tailed African sheep) are better adapted to Karoo conditions (Snyman *et al.* 1996). They outbreed merino

sheep during drought periods without the supplementary feeding, which is required by merino sheep (Snyman *et al.* 1996). Considering the frequency of drought in the research area, this would suggest that water management, predominantly to grow feed crops like Lucerne, would have been required to farm merino sheep successfully. A shift in emphasis to areas with significant fluvial terraces for fields would have been also encouraged by wind pump irrigation.

The temperature differs significantly between the three zones. Sutherland, in the MR zone, is well known for being one of the coldest areas in South Africa, certainly the coldest in the Karoo with a mean annual temperature of 12.5°C (Venter *et al.* 1986:46; Van Wyk & Smith 2001). It also has a potential frost period that lasts from late April to late October, which is approximately a month longer than any other area in the Karoo (Venter *et al.* 1986:46-47; Van Wyk & Smith 2001). The mean daily minimum and maximum temperatures in winter are 0°C and 12°C respectively (van der Merwe 2009:14; Cape Farm Mapper 2015).



Figure 3.5.2. Snow just outside of Sutherland during winter.

At the height of summer the mean daily minimum and maximum temperatures in the MR zone are 10°C and 27°C respectively, making it the coolest area in the Karoo (van der Merwe 2009:14; Clark *et al.* 2011:115; Cape Farm Mapper 2015).

The KR zone is warmer than the MR, with a mean annual temperature of 15° (Venter *et al.* 1986:46). The mean daily minimum and maximum temperatures in the KR in winter are 3°C and 15°C respectively (van der Merwe 2009:14; Cape Farm Mapper 2015), and the summer mean daily minimum and maximum temperatures in the KR zone are 12°C and 30°C

respectively (van der Merwe 2009:14; Clark *et al.* 2011:115; Cape Farm Mapper 2015). The MK region is warmer still with a mean annual temperature of 16°C (Venter *et al.* 1986:46; Cape Farm Mapper 2015). The mean daily minimum temperature in winter is 5°C and the maximum is 16°C (Cape Farm Mapper 2015). In summer the mean daily minimum and maximum temperatures are 14°C and 32°C (Cape Farm Mapper 2015). A combination of seasonal vegetation, changing rainfall and temperature contribute significantly to a free range pastoral transhumant pattern in which sheep were trekked between the MR in summer down to the MK in winter.

3.6. Hydrology

The MR zone is drained by the Vis and Renoster Rivers, which are in the Lower Orange Tributaries catchment (Department of Water Affairs 2012:29). The KR and MK zones are drained by the Buffels River, which is within the Groot-Gouritz catchment (Clark *et al.* 2011:115). The multitude of ephemeral rivers that drain into the Vis, Renoster and Buffels Rivers are usually dry for part of the year. The intermittent nature of the Roggeveld rivers has been mentioned by early travellers (Burchell 1822:261), and the seasonality of the rivers are frequently noted on deed surveys from the nineteenth century (Fig. 3.6.1). Yet even dry rivers would have contained alluvial groundwater, which would have been accessible for early settlers (Noble 1875:138; Allsop *et al.* 2007:83; Le Maitre *et al.* 2007:265). Even though alluvial water was accessible, surface water would obviously have been preferable. In semi-arid environments like the Karoo the processes of evotranspiration, subsurface retention, and evaporation gradually reduce the volume of water as it flows further from its source (Gorgens & Hughes 1986:53). It follows that the most advantageous position for a settler would be at, or as close as possible to the springs and seeps along the top of watersheds, or close to the upper catchments below the escarpment.

Rock aquifer groundwater only became accessible when the equipment required to drill boreholes, and pump the water to the surface using windmills (Fig. 3.6.2) became available to farmers in the late nineteenth century (Le Maitre *et al.* 2007:265). This obviously loosened sheep farmers dependence on natural springs and fountains, and stream and river flow.

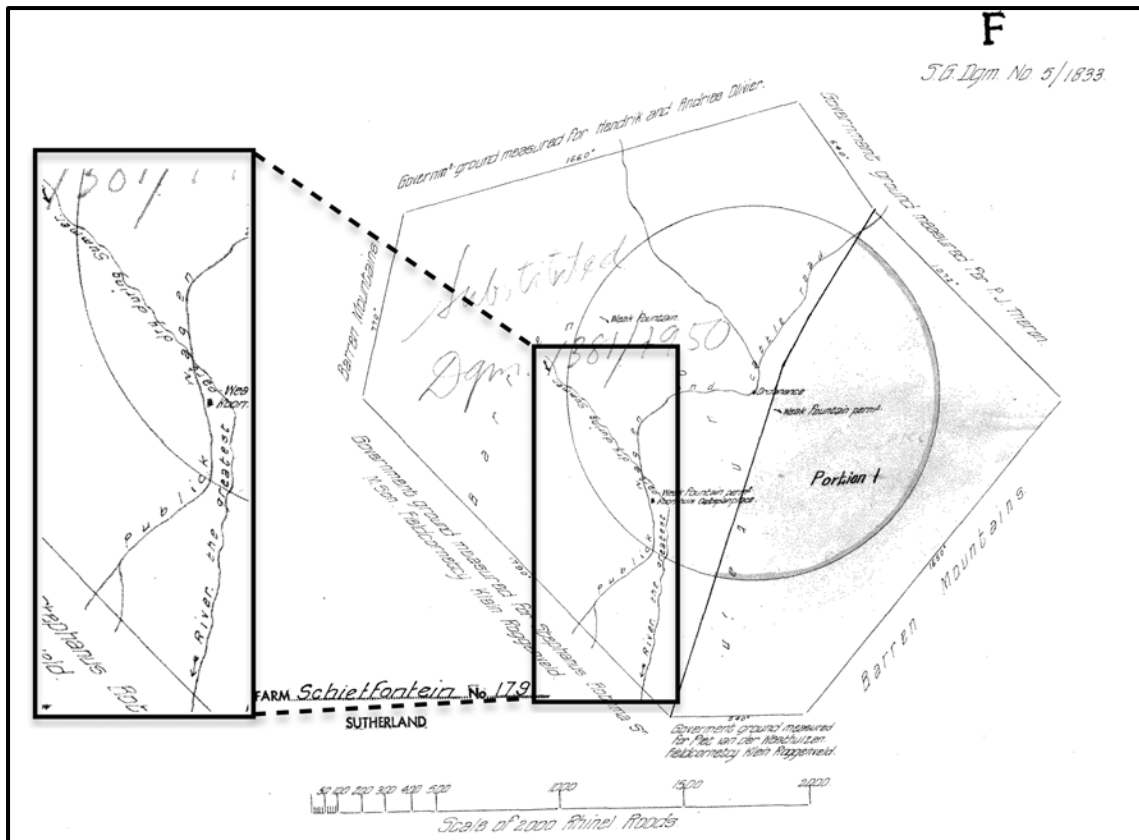


Figure 3.6.1. Deed survey for the farm Schietfontein in the Komsberg where the surveyor has noted that the river is dry for most of summer (Surveyor General, Cape Town 1948).

3.7. Conclusion

It is evident that the three environmental zones of the research area have distinct differences when the topography, geology, climate and vegetation are examined. The important point is that these three zones compliment each other when considered from a pastoralist perspective. The contrasting seasonal availability of key resources was essential for pastoralists farming in this harsh semi-arid environment; the transhumance pattern followed by Khoekhoen and trekboer pastoralists during the eighteenth and nineteenth centuries is a direct reflection of this seasonal availability.

Evidently, the most advantageous situation water wise is along the top of the watersheds, i.e. the edge of the escarpment plateau or in the mountains of the escarpment. However, the vegetation in the region is sparse, even in areas with higher rainfall. This vegetation would not have been able to sustain intensive sheep farming. Even small-scale pastoralism would have required the dispersal of flocks in late summer when grazing was close to exhausted.

That is until technical innovations loosened the dependence on natural water sources, which made it possible to provide water during dry periods, and to grow animal feed, like Lucerne, which would allow for a higher density of sheep, and less mobility. It is against this environmental background, combined with the historical context discussed in chapter two, that I explore pastoralist strategies in the Roggeveld using the Google Earth survey data. This is presented in chapter four.

4. Google Earth survey

4.1. Introduction

A systematic Google Earth (GE) survey of the southern section of the Roggeveld Escarpment has contributed to a database that plots the eighteenth and nineteenth stone-wall physical fabric of sheep pastoralist systems. This aerial survey has allowed me to compile a large data sample, which can be used to plot sites and search for patterns in distribution of site types in relation to terrain and their location and correlations with the ecology. Although a ground survey of this area would enlarge the site sample, it would also take considerable time to cover the same amount of ground, and I am confident that the GE survey has captured a significant and representative sample.

The most prominent and visible features are the stone-walled kraals, associated domestic structures of both landowners and labourers, and the farm werfs. These are clearly visible on Google Earth because the open landscape and sparse shrubland vegetation generally does not obscure the sites. The majority of these structures are rectilinear kraals predominating. However, there are also circular kraals and others that do not fit neatly within either category. It is reasonable to assume that circular and rectangular kraals represent part of a sequence straddling indigenous and colonial pastoralist systems. Consequently, it is assumed that kraal shape can be used as a cultural marker in the region, with round associated with Khoekhoen pastoralists, and rectilinear associated with the colonial period. There is considerable archaeological data that supports this (Sampson 1984; Hart 1989:86-89; Hart & Orton n.d.). With the assumption that, to a greater or lesser degree, kraal shape signals cultural affinity, these structures can potentially identify a relative chronology. Obviously, it is not possible to distinguish temporal layers on GE. However, distributions, comparisons and common sense may suggest some chronology when referenced against the historical, ethno-historical, and environmental background. With this in mind, I start with a brief overview of the pertinent points discussed in chapters two and three before outlining the structure of the chapter.

4.1.1. Environment

As discussed in chapter three, the research area consists of three distinct zones; the Middle Roggeveld plateau (MR), the Klein Roggeveld escarpment (KR) (for the purposes of this dissertation I have included the Komsberg in the KR zone) and the Moordenaars Karoo (MK) at the base of the escarpment (Fig. 4.1.1).

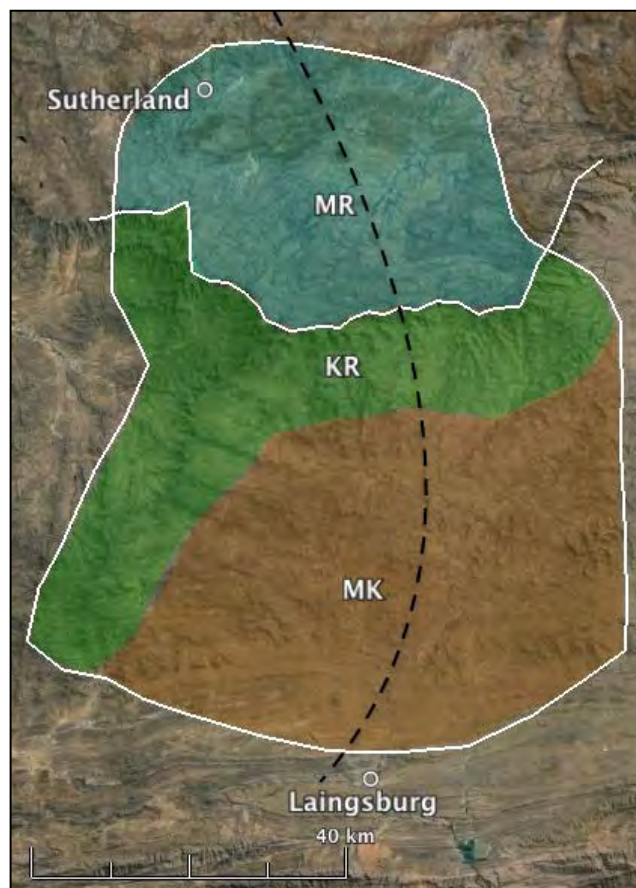


Figure 4.1.1. The three zones in the research area.
The dashed line indicates $\pm$ boundary summer

Pastoralists have been farming sheep, and to a lesser degree, cattle in these zones for centuries. These zones cannot, however, be seen in isolation; they need to be viewed as key pieces in a unified ecological pastoralist system with seasonality at its core. This fits with ethnohistorical research that demonstrates that indigenous pastoralist communities occupied territories with permeable boundaries (Schapera 1931:286- 291). These territories contained a range of seasonal resources, each available at different times of the year, which is reflected in the movements of pastoralists within their territories (Smith 1983:885; Kinahan 1986, 2001).

Table 4.1.1. Environmental features of the research area.

zone	position	topography	temperature	rainfall
Middle Roggeveld	southern end of the Roggeveld plateau, altitude ± 1500 m	high plateau - predominantly undulating plains	very cold winters – mean annual temp $12,5^{\circ}\text{C}$	300-400 mm per annum – transition from winter to summer rainfall region
Klein Roggeveld	Steep gradient escarpment, altitude ± 1000 m at base to ± 1500 m	predominantly mountainous, with areas of steep hills and ridges	cold winters – mean annual temp 15°C	200-300 mm per annum - transition from winter to summer rainfall region
Moordenaars Karoo	plains at the base of the Klein Roggeveld, altitude ± 1000 m	predominantly plains with high hills and ridges	moderate winters – mean annual temp $17,5^{\circ}\text{C}$	200-300 mm per annum - transition from winter to summer rainfall region

The research area has all the requirements for a transhumant pastoralists system. The MR and KR are suitable for livestock during summer; settling along the tract bordering these two zones (along the escarpment/plateau line) allowed pastoralists to take advantage of both these zones during summer, and if there was mid-summer drought, they could trek north to the Sak or Riet rivers (Gordon 1988:409) (Fig. 4.1.2). During winter the MR and KR was too cold for livestock but the MK was considerably warmer, and, with the winter rains, there was plenty of fresh grazing available.

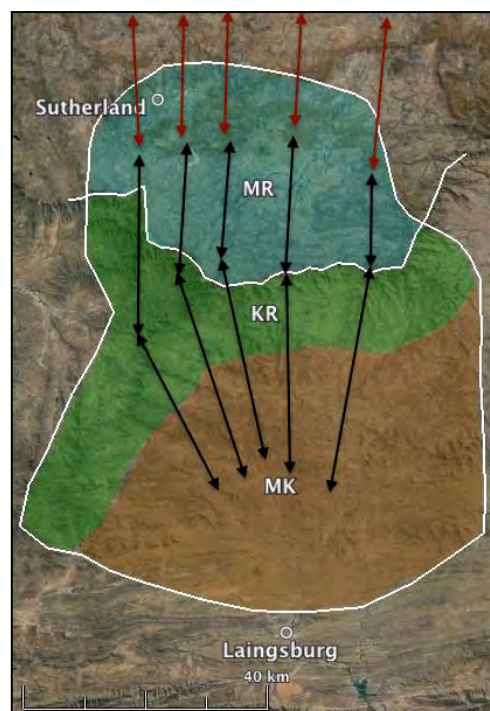


Figure 4.1.2. Map modelling possible seasonal movements (red arrows followed during drought).

The environmental and historical background clearly indicates that there would have been different pastoralist practices for each season, appropriate to the environmental conditions of the area. There were also significant changes that took place during the eighteenth and nineteenth centuries. The GE survey data has been collected and the distributions of sites mapped in order to explore some of the pastoralist practices, and how these changed over time.

4.1.2. Chapter outline

This chapter starts by describing the Google Earth (GE) aerial survey undertaken for this dissertation and the database created to map the distribution of pastoralist systems in the southern section of the Roggeveld. This is followed by the presentation of the data from the database and from the GE images. This data is then discussed in relation to the environmental and historical background.

4.2. Survey and database

Little archaeological research has been undertaken in the research area. Two HIAs (heritage impact assessments) (Hart *et al.* 2010; Halkett & Webley 2011) alerted us to the archaeological potential of the area, especially to the many stone-walled structures in the area, and their visibility. However, the HIAs only covered a small portion of the research area (Fig. 4.2.1), and a far more comprehensive survey for stone-walled structures would be necessary to map pastoralist sites over the different zones.

A comprehensive ground survey of the research area was impractical. However, advances in remote sensing, particularly with GE, meant that an aerial survey was possible. Remote sensing using aerial photographs and GE is not new to South African archaeology (e.g. Mason 1968; Maggs 1976; Hall 1981; Sadr & Rodier 2012), and HIAs also make use of GE as part of their survey process. Considering the wealth of information available through geospatial analysis, and the fact that the most conspicuous feature of pastoral systems, the stone-walled kraal, is clearly visible via GE in the research area, it was evident that a GE survey of stone-walled features was the obvious way to obtain sufficient data relevant to

the structures of pastoralist systems in the region. This section covers the methods and limitations of the GE survey and the database.



Figure 4.2.1. Farms surveyed for the HIAs.

4.2.1. Method: Google Earth survey and database

The survey area covered a portion of the MR (sometimes referred to as the Roggeveld plateau), and the whole of the KR and MK (Fig. 4.1.2). In order to make the survey systematic, the research area was separated into two sections, the southern section encompassed the KR and MK, and the north section covered the MR. These sections were marked out with polygons on GE; the polygons delimited the survey area, and allowed me to calculate the square area of the sections. The KR and MK polygon covered 3,624.39 square kilometres, and the MR polygon covered 1,299.01 square kilometres (the smaller sample area is related to GE image quality, this is discussed below).

The polygons were then divided into transects, the width of which was based on an eye altitude of approximately 1.8 kilometres. This eye altitude was found to be the most efficient for covering ground quickly without compromising the visibility of stone-walled

structures. Even significantly dilapidated structures were visible at this altitude. This altitude was also adjusted according to the image quality, and different terrains. For example, the steep valleys of the Komsberg, and vegetation dense riversides required closer examination than other areas.

Place marks were allocated for each site. These were put into different folders on Google Earth based on their site type e.g. kraals, domestic ruins, werfs. Kraals were further separated into shape types, and then size groups (this will be covered in more detail further on). This allows the different site types, and their subtypes to be accessed as layers. The structures that were recorded on the ground surveys (this included the HIA surveys) but not visible via GE were also given GE placemarks. These included middens and surface scatters of artefacts, rock art, stone-walled structures not visible on GE, and graves. These have been categorised and collected into separate folders so that they do not give a false impression of structure density within the HIAs' boundaries. All of the data collected from GE was entered into the database.

The database consists of all the sites found during the GE survey as well as the sites found during the ground surveys done for this dissertation, and the surveys done for HIAs (Hart *et al.* 2010; Halkett & Webley 2011). The database was designed so that it could interact with the GE layers. Accordingly, each entry has a site code that is linked with its GE placemark. This allows the data to be presented both statistically and visually. The information collected for each entry included the geospatial data, description of the structure/feature, proximity to water, and notes on the topography and general environment. Kraals were recorded in more detail with shape, size (measured using GE ruler function), structural features (whether they had interior divisions, or were made up of a abutting kraals) (Fig. 4.2.2), proximity to natural water sources, and proximity to other structures (other kraals, domestic ruins, and/or werfs) forming the primary data. Several other details were also recorded; if they attached to fenced kraals, within 2 kilometres of the escarpment edge, close to fields or threshing floors, and whether they made use of natural features such as a scarp edges for a wall (Figs. 4.2.3 & 4.2.4), or straddled a stream.

Currently, the database does not differentiate between the KR and MK. The geospatial data does, however, allow for this to be changed at a later date.

All entries noted whether the structure or feature was visible on GE. This controls the ground survey data distorting the numbers in the tables and this is discussed further on.



Figure 4.2.2. A kraal (DB ref. 513) that has been added to over time.



Figure 4.2.3. Rectilinear kraals against a scarp edge (database [DB] ref. 272.1 & 272.2).



Figure 4.2.3. Semi-circular kraals (site WG01) against a scarp.

4.2.2. Limitations:

The primary limitations with aerial surveys are related to visibility, and the inability to separate temporal layers.

Visibility

As discussed above, not all stone-walled structures are visible via GE. The ground surveys were particularly valuable as they gave an indication of the number of structures, and type of structures being missed. In total, the ground surveys picked up 104 kraals that were not seen via GE; 81 of these were small round kraals. Round kraals are less likely to be visible on GE for several reasons; time, construction and size (Fig. 4.2.5). As noted above, round kraals are assumed to reflect a Khoe settlement, and as Khoe pastoralists are likely to have been in the area for several centuries (as discussed in chapter two) prior to the arrival of the trekboers, many of the round Khoe kraals would be considerably older, and therefore are more likely to be dilapidated. Consequently, we are probably missing a large proportion of the early prehistoric kraals. I return to the topic at the end of this chapter.

Regarding construction, many of the round kraals found during the ground surveys consisted of loosely stacked boulders, usually less than 0,5 metres high (Fig. 4.2.5). This construction method is not as stable as the structured coursing associated with the majority of the rectilinear kraals, hence a higher incidence of collapsed walls makes them more difficult to see. Obviously, larger structures are easier to see during an aerial survey, and as round kraals tended to be smaller than rectilinear kraals (seen in the data presented further on), a larger proportion of round kraals would have been missed in comparison to rectilinear kraals (this pattern was noted during the ground surveys). One consequence of this is that we will miss many of the kraals used for separating lambs from the ewes (*lammerkraals*). Lambs are traditionally born in, or just before winter, so *lammerkraals* could inform us on this seasonal practice. Missing a large proportion of these kraals limits identifying this practice. Domestic ruins were also usually quite small, and thereby often difficult to see on GE (Fig. 4.2.6).



Figure 4.2.5. The low collapsed round kraals at Vinkekuil.



Figure 4.2.6. A domestic ruin on Scholtzenhof farm was not visible on GE.

Dense vegetation also impeded visibility, however, the predominantly succulent Karoo biome is characterised by low shrubs so this was less of a problem. While I cannot estimate how many structures were missed due to dense vegetation, I do not feel it to be significant.

Lastly, there is the issue of image resolution. GE imagery is inconsistent for some areas because of resolution, so there were some areas where the image resolution was not high enough to identify stone-walled structures. At the time of the survey, for example, portions of the MR had a significantly poorer image resolution, which is why the area surveyed in the MR is smaller than the KR.

4.3. Classification:

Accurate classification of structures is unquestionably essential if the GE survey data is to be of value. Consequently, only those structures and/or sites that were readily identifiable were positively classified. These were primarily kraals, domestic ruins, and contemporary werfs. This is not to say that I have not recorded other features, but they have been classified under a category that notes their ambiguity. Naturally, archaeological sites and features that were recorded during ground surveys have also been entered into the

database, however, as all database entries note whether they can be seen on GE, biases in the areas that were surveyed on the ground can be avoided.

One of the problems encountered with classification systems is to what degree does one split the units; site types, structure types and so on. For the purposes of this dissertation, it is the kraal category that was of primary concern regarding lumping and splitting. However, one of the convenient features of putting together my own database was that I could create as many sub-classes as was deemed necessary. As I progressed in the survey I also started identifying more features that needed to be recorded, leading to a considerable amount of reassessment, and sometimes reassignment, of structures already recorded. There was a corresponding realisation that some of the sub-classes were of little value, and were therefore removed. This section describes the classification system I eventually settled on.

Kraals were highly variable. While it was usually obvious whether they were rounded or rectilinear, their exact shape, condition, and degree of regularity (regarding curvature or linearity) varied considerably. I first categorised them as rounded or rectilinear, and then gave a detailed description of each kraal, noting the exact shape, any unusual features, the degree of preservation, and regularity, or irregularity of the walls. The rounded category included oval, circular, and semi-circular kraals (Figs. 4.3.1 & 4.3.2). The rectilinear category was primarily composed of square and rectangular kraals, however, triangles, pentagons and trapezoids are also present (Fig. 4.3.3). Essentially, straight walls and corners distinguished rectilinear kraals (Fig. 4.3.1). Kraals that were too irregular to fit either category were placed in a separate category, indeterminate (Fig. 4.3.4).



Figure 4.3.1. Oval kraal (DB ref. 15).



Figure 4.3.2. Rectangular kraal (DB ref. 172.1) with *lammerkraal*, and a semi- circular kraal (DB ref. 172.2) against a scarp edge.



Figure 4.3.3. Irregular rectilinear kraals (DB ref. 8).



Figure 4.3.4. Indeterminate kraal (DB ref. 205).

The kraals were then further separated into size classes and distance to water classes. The kraal size categories were based on the square area of each kraal. I created size classes that increased in 100m² increments from A (kraals 1m² to 100m²) to I (kraals over 1500m²). Size class A was further separated into 1-50m² and 51-100m² in order to separate out kraals more likely to be *lammerkraals*, which have the potential to inform us of seasonal movements.

The distance from water classes were split into 100 metre increments, ranging from 1 (0m to 100m from natural water source) to 6 (over 500m from natural water source). As mentioned earlier, I also created fields for the following:

- Interior divisions
- Abutting other kraals
- Used a scarp edge for a wall Straddled a watercourse
- Attached to fenced kraal
- Within 2 kilometres of the escarpment edge
- Within a werf
- Associated with a domestic ruin

Each kraal can be classified under any of these sub-classes, or under a range of sub-classes i.e. kraals under 400m², with internal divisions, within werfs.

Domestic ruins

In the context of this research, the domestic ruin category is not limited to houses. It also includes; agricultural buildings such as barns, and wind shelters (*skerms*), which can be a crude shelters or shelters for cooking outside of the house. Classifying agricultural buildings and *skerms* separately was not necessary for the purposes of this dissertation; however, they can be separated at a later date if necessary.

Domestic ruins are generally small stone-walled rectilinear structures (Figs. 4.3.5 & 4.3.6), although some round structures that were clearly domestic when examined on the ground have also been identified. It is difficult to tell the difference between *lammerkraals* and

domestic ruins on GE but there are some features that can be used to differentiate the two structure types; interior divisions, a narrow shape, and depth of shadow. Small kraals are seldom divided, and hence, small structures with separate sections are more likely to be domestic ruins. The narrow shape is common in traditional trekboer houses, and atypical for kraals (I have yet to see a disproportional narrow kraal on the ground).

Lastly, domestic ruins are more likely to have higher walls than *lammerkraals* (although this is not always the case), hence depth of shadow can be a useful indicator. The ground surveys proved crucial in helping to identify domestic ruins as I was able to isolate the features associated with domestic ruins, and the domestic ruins found during the ground surveys provided a valuable, well used, comparative collection. Nevertheless, this category needs to be treated with caution.



Figure 4.3.5. T-shaped domestic ruin (DB ref. 349.2). Note the proximity to a dilapidated round kraal.



Figure 4.3.6. Narrow domestic ruin (DB ref. 188.1).

Werfs

In this study a werf is a farmyard that appears to be in use today. A standard werf always has a building that can be identified as a farmhouse, as well as a range of other structures and/or features commonly associated with farmyards. These include various combinations of the following; outbuildings (sheds and labourers' cottages), reservoirs and/or dams, kraals, and fields (see Fig. 4.3.7). A well-maintained road is a good indicator as to whether the werf is still in use. Many of the werfs in use today were established in the historic period; hence, there are sometimes domestic ruins in the werf. However, this is not the case for all werfs.



Figure 4.3.7. Contemporary werf (DB ref. 432) in the MR.

I have allowed for the possibility that some of the smaller werfs recorded may be abandoned werfs, and consist of what would qualify as domestic ruins but with roofs. However, few of the werfs I recorded suggest this. The abandoned werfs that were found during the ground surveys tend to be considerably smaller, and to have tracks leading to them rather than roads, which was evident when viewed on GE.

Open sites

These sites were found during ground surveys. There are no visible structures; they consist of relatively dense artefact scatters between 60 and 80m in diameter. The artefacts included Khoekhoen artefacts (thin walled pot sherds, some with lugs, grinding stones, and stone tools made from coarse quartzite), and historical artefacts (glass, metal, refined earthenware). Ostrich eggshell, bone, and small ash middens were also present. There were no stone-walled structures present. There may have been structures made from vegetation, which have subsequently decomposed e.g. kraals constructed from thorn bushes, and reed *matjieshuise*.

Miscellaneous

As discussed earlier, there are several features and structures included in the database that were found during the ground surveys. Some of the categories are self-explanatory i.e. middens and artefact scatters, rock art (only two sites found so far) (Figs. 4.3.8 & 4.3.9), one kiln, and probable graves. The other miscellaneous categories are river walling, and indeterminate structures. River walling is described as stone-walling that encloses sections of riverbank (Fig. 4.3.10 & 4.3.11). These enclosures may have been used for ostrich farming during the nineteenth century. The indeterminate structure category consists of stone-walled structures that do not fit within the domestic ruin or kraal categories (Figs. 4.3.12). The primary purpose of this category was to mitigate erroneous classification of structures by trying to force them to fit within the kraal or domestic ruin categories.

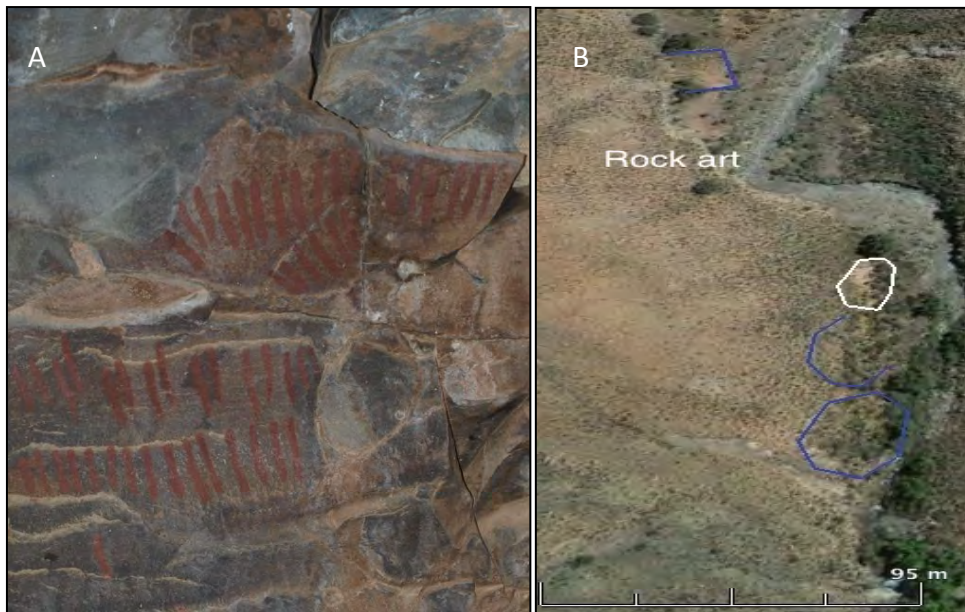


Figure 4.3.8. A: Khoe rock art (DB ref. 146) found in the KR. B: GE image showing where the rock was found, the site has a number of structures including both round and rectilinear kraals (outlined).



Figure 4.3.9. A: Khoe rock art (DB ref. 588) in the MR. B: view from the rock shelter that has the rock art.



Figure 4.3.10. Examples of river walling (left to right: DB refs. 192 & 235).



Figure 4.3.11. River walling at a site with a small two-roomed domestic ruin, skerm, & a rectilinear kraal.



Figure 4.3.12. Indeterminate structures in the KR. A: DB ref. 72. B: DB ref. 352.

Clearly not all of the miscellaneous categories are visible via GE, hence we do not have a consistent level of detail for the research area. However, there enough farms from the KR and MR to compare these two areas. Unfortunately, no ground surveys have yet to be done in the MK zone.

The classification of these archaeological structures has not been done before; hence the categories may change as more data is gathered. Categories may also be further separated in order to answer different questions e.g. separating kraals further according to wall regularity to see if it relates to area, or time period. Of course, it is unlikely that the classification process has been completely accurate. It comes from an etic viewpoint, however, input from historical sources, and ethnography provides an emic perspective, which I have used to ground the classification system as much as I could.

4.4. Survey results

A total of 817 structures and/or sites have been recorded in the database (table 4.4.1). The GE survey located 75% of these, the other 25% were found during the ground surveys. Of these structures and sites 77,8% are stone-walled kraals. To avoid distorting the results,

structures that were only visible on the ground have not been included in the data presented unless specifically noted.

The statistics from the database are presented first; this includes data on kraal shape, size variations, association with other structures, and distance to naturally occurring water sources. Following this I use the same categories to look at the distribution of the kraals in the GE images.

Table 4.4.1: Overview of sites and structures recorded.

type	sub-type	found on GE survey	%	found only on ground survey	%	total recorded in database
kraals:	round	63	43,2%	83	56,8%	146
	rectilinear	292	95,4%	14	4,6%	306
	indeterminate	17	60,7%	11*	39,3%	28
domestic ruins		97	70,3%	41	29,7%	138
werfs		91	100,0%	0	0,0%	91
miscellaneous:	artefact scatter/midden	0	0,0%	41	100,0%	41
	rock art	0	0,0%	2	100,0%	2
	kiln	0	0,0%	1	100,0%	1
	grave	5	27,8%	13	72,2%	18
	river walling	17	100,0%	0	0,0%	17
	indeterminate structure	30	93,8%	2	6,3%	32
Open sites		0	0,0%	3	100,0%	3
total sites		612	74,4%	211	25,6%	823

* These 11 kraals have no shape identified in the HIAs, they may not necessarily fit within the indeterminate category.

4.4.1. Database statistics

The summary statistics compare the area below the escarpment with the area above the escarpment and for the same reason, the KR and MK zones are treated as one area, and the acronym KR represents both zones in Figures 4.4.1 to 4.4.6.

Kraal shape

The kraals found on GE were predominantly rectilinear (78,4%), followed by rounded kraals (16,9%), and lastly indeterminate kraals (4,5%) (as the sample size was so small I have not included the indeterminate kraal category in the following discussions). The percentages of round kraals and rectilinear are similar above and below the escarpment (Fig. 4.4.1). The significantly higher percentage of rectilinear kraals is not unexpected if we consider the dramatic increase in sheep numbers during the nineteenth century.

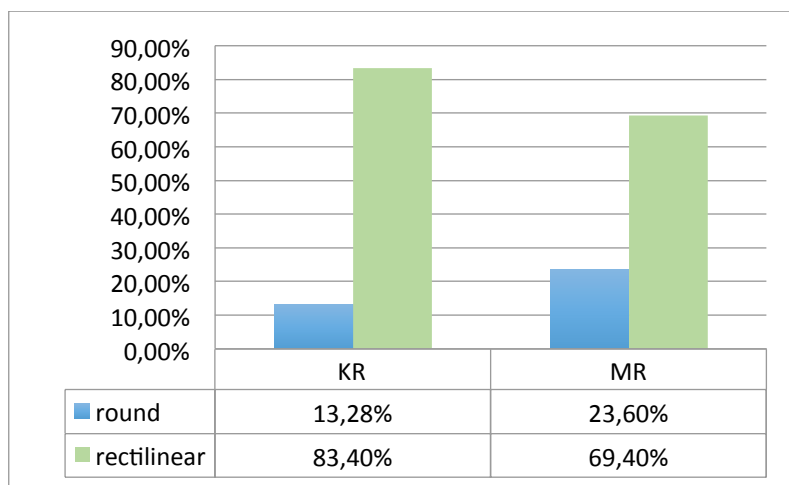


Figure 4.4.1. Kraal shape comparisons.

Kraal size

Figures 4.4.2 and 4.4.3 provide the proportion of kraals in each size class according to shape and area. The kraals are divided into 100m² units (Table 4.4.2). Kraal size A is divided into two units (A-1: 1m² – 50m² and A-2: 51m² – 100m²) so that I can separate out possible *lammerkraals*. They are presented as one unit in figures 4.4.2 and 4.4.3 with shading to differentiate sizes A-1 and A-2.

Round kraals

Round kraals in the KR and MR are most numerous in size class A (1-100 m²) and B (101-200 m²) (Fig. 4.4.2). As the shading in figure 4.4.2 shows, there is a notable difference in the percentage of kraals under 50 m² in the KR. This could be an indicator of seasonal lambing practices. However, the difference in percentages is not large. Possibly because, while lambing was a winter practice, and therefore took place in the KR, *lammerkraals* would still be necessary when the sheep were returned to the MR with the lambs at the end of winter.

However, if kraals under 50 m² are examined more closely (appendix A) 50% of the round kraals in the KR are below 13 m², whereas in the MR only 33% of the kraals less than 50 m² are below 13 m². As indicated, these very small kraals are more likely to be *lammerskraals*. There are also no kraals in the KR that are between 51 m² and 100 m². However, caution needs to be exercised with these patterns as these percentages come from a relatively small sample of round kraals; there are only 8 round kraals under 50 m² in the KR, and only 5 in the MR.

Round kraals larger than size A in the KR cluster in the B, C and D size classes; these collectively represents 53% of the KR round kraals (Fig. 4.4.2). Round kraals larger than size A in the MR have a more erratic size distribution with spikes in size classes B, F and H. It is worth noting that the round kraals that were measured³ during the ground surveys were all less than 200 m² (I am referring specifically to the round kraals that were not visible on GE).

Table 4.4.2. Kraal size classes.

size class	A-1	A-2	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
m ²	0-50	51-100	101-200	201-300	301-400	401-500	501-600	601-700	701-800	801-900	901-1000	1001-1100	1101-1200	1201-1300	1301-1400	1401-1500	>1500

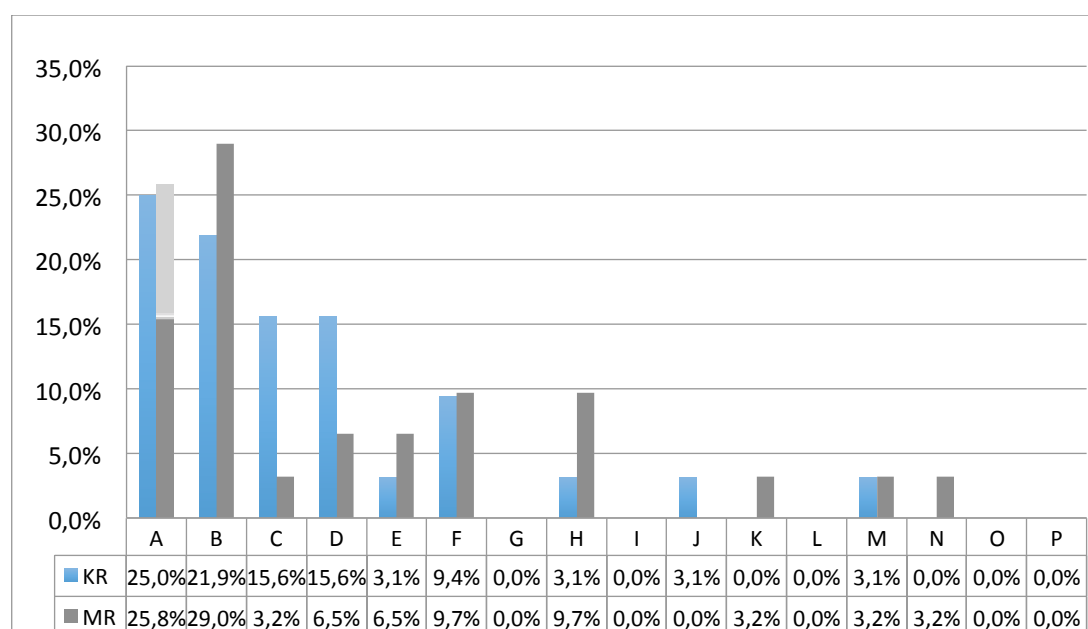


Figure 4.4.2: Round kraal size comparisons. Size class A column: A-1 = dark shade, A-2 = lighter shade.

³ Only 32 of the 83 round kraals found only during the ground surveys were measured.

Rectilinear kraals

Rectilinear kraals have a far more even distribution between the KR and MR in comparison to the round kraals. However, the KR has a larger concentration of smaller rectilinear kraals with 73 % of the kraals situated between sizes A and F in comparison to the MR (Fig. 4.4.3). There is also a notable difference between the KR and MR when looking at the percentages of rectilinear kraals above size class E; 69% of the MR's rectilinear kraals are over size E whereas only 48% of the KR's rectilinear kraals are above size E.

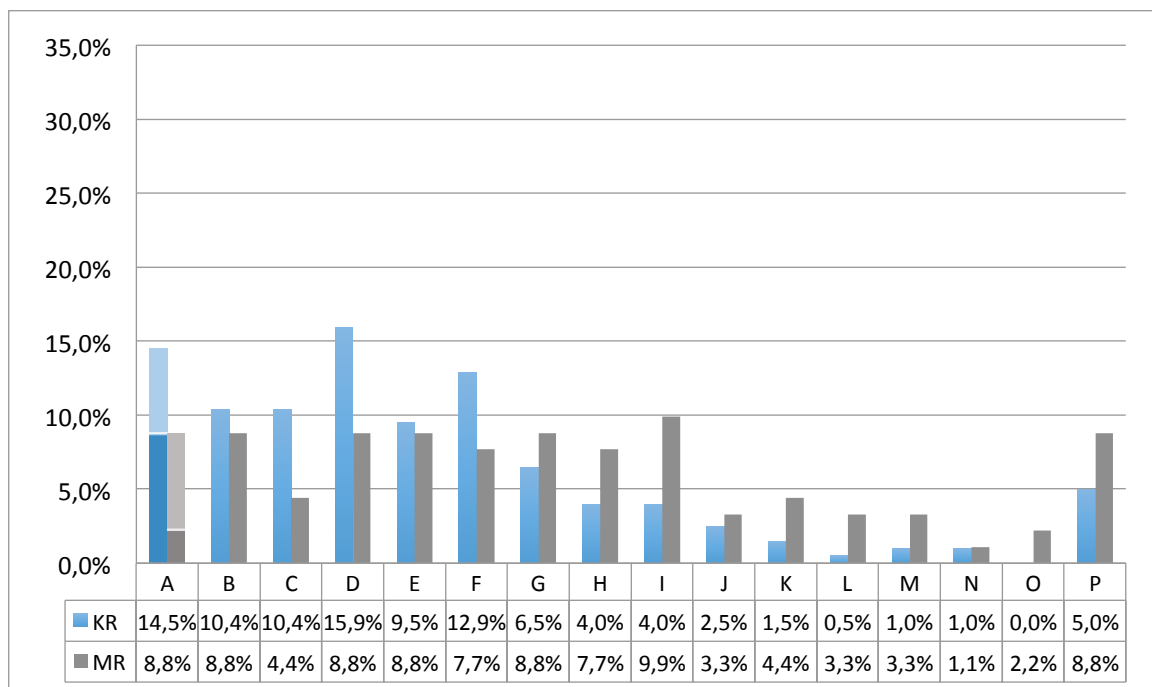


Figure 4.4.3: Rectilinear kraal size comparisons. Size class A column: A-1 = dark shade, A-2 = lighter shade.

If we keep in mind that pastoralists were using the two environmental zones, then the higher percentage of small kraals in the round kraal category, and to a lesser degree in the rectilinear kraals in the KR is likely to be related to different pastoralist practices between the two areas, I will return to this in the discussion. As previously mentioned, this may be related to different seasonal practices.

Kraal association with domestic ruins, and werfs

Before discussing these figures it is important to note that some of the werfs recorded have domestic ruins in the farmyard, hence some kraals are associated with both domestic ruins and on going werfs. In regards to the isolated kraals, this category is based only on what is visible on GE. We know from the ground surveys that some isolated kraals have domestic ruins in close proximity (Figs. 4.4.4 & 4.4.5). Furthermore, this category refers to isolation from domestic ruins and werfs, not necessarily other kraals.



Figure 4.4.4. The white circle marks the domestic ruin at Scholtzenhof.



Figure 4.4.5. A domestic ruin on Scholtzenhof farm.

The round kraal numbers (Fig. 4.4.6) are not surprising. As round kraals are assumed to be predominantly associated with Khoe pastoralist systems (please note that I am referring to indigenous systems here, not whether the pastoralists using these kraals were Khoekhoen or colonial), we are likely to be seeing an early phase of pastoralism when looking at these kraals.

Similarly, the higher incidences of rectilinear kraals associated with werfs is not unexpected (Fig. 4.4.6). Many of the contemporary werfs in the Roggeveld were established during the mid to late nineteenth century, when the numbers of sheep increased dramatically.

Obviously, larger sheep numbers required a corresponding increase in kraals, many of which are likely to have been built close to, or in the werfs. What is interesting is the higher percentage of rectilinear kraals associated with werfs in the MR compared to the KR. Is this an indicator that the MR is better suited for contemporary farming than the KR? The lower percentage of rectilinear kraals associated with domestic ruins in the MR may support this. This will be returned to in the discussion.

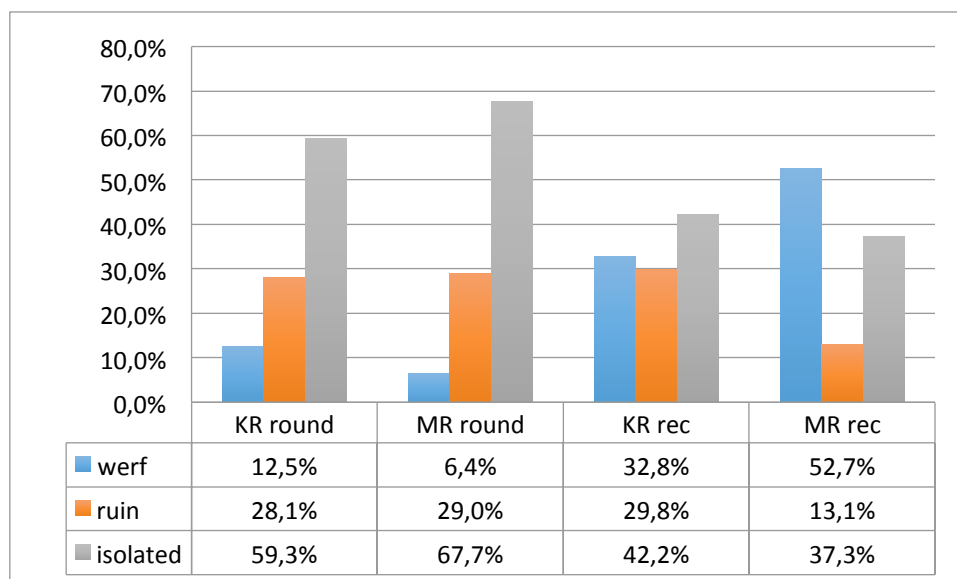


Figure 4.4.6: Kraal proximity to other structures.

Kraal distance to naturally occurring water

In the KR 78% of the round kraals and 66% of the rectilinear kraals are within 100 m of a natural watercourse (Fig. 4.4.7). As these figures indicate, the percentage of kraals over 100 m from water in the KR drops steeply, particularly in the round kraal category. No round

kraals, and only 2,5% of the rectilinear kraals, are found further than 300 m from water in the KR.

In the MR, 41% of the round kraals and 42% of the rectilinear kraals are within 100 m of a natural watercourse. There is a higher percentage of kraals over 300 m from water in the MR when compared to the KR but at 12% it is not very notable. More interesting is the greater number of kraals within 101 m to 300 m when compared to the KR.

As these are two different environmental zones some variation is to be expected because water availability differs between the KR and MR. It is also possible that topography plays a role; the steep valleys of the KR may have forced building on the valley floors, close to the rivers.

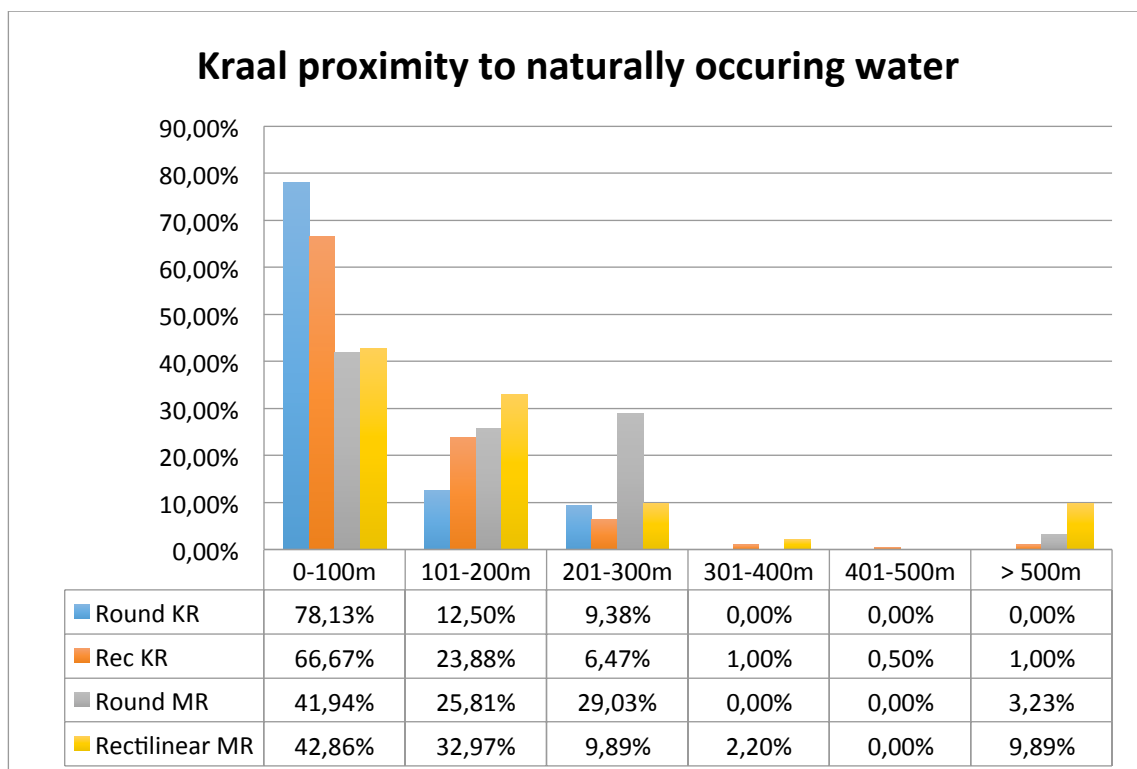


Figure 4.4.7: Kraal distance to naturally occurring water.

4.4.2. Kraal distribution

This section reviews the distribution of the kraals, according to shape, size, and association, or lack of association, with other structures (domestic ruins, and werfs). The distribution is shown using images from GE. I have included an overlay of Mucina and Rutherford's (2006)

vegetation areas (Fig. 4.4.8) (discussed in chapter three) in many of the GE figures as their vegetation types seem to correspond with the distribution of certain kraal categories.

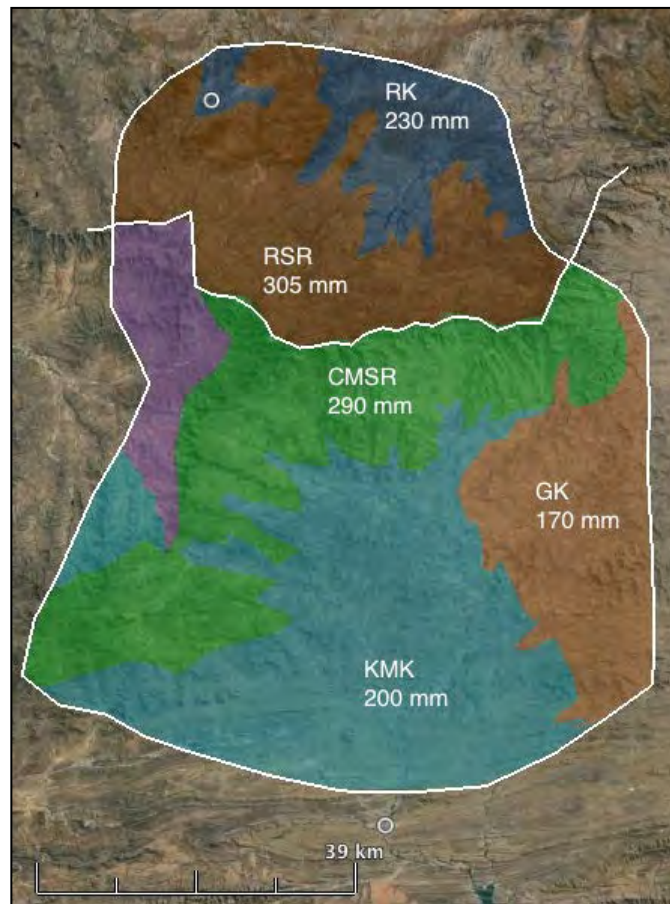


Figure 4.4.8. Vegetation areas with mean annual rainfall. **CMSR**: Central Mountain Shale Renosterveld. **GK**: Gamka Karoo. **KMK**: Koedoesberge Moordenaars Karoo. **RK**: Roggeveld Karoo. **RSR**: Roggeveld Shale Renosterveld. (AGIS 2015).

Round kraals

Round kraals have a limited distribution, favouring specific areas along the escarpment and in the KR zone (Fig. 4.4.9). Combining the round kraal distribution and the vegetation type map in GE shows a clear preference for the areas that support vegetation types RSR and CMSR. As these areas have the highest mean annual rainfall in the research area (Fig. 4.4.8), we can safely assume that they would have better grazing than the other areas and are therefore, the most logical areas for a pastoralist to base themselves. As discussed in chapter three, the research area straddles the line between the summer and winter rainfall

zones so rainfall season is inconsistent but if we consider temperature, then these two areas are better suited to summer occupation than winter.

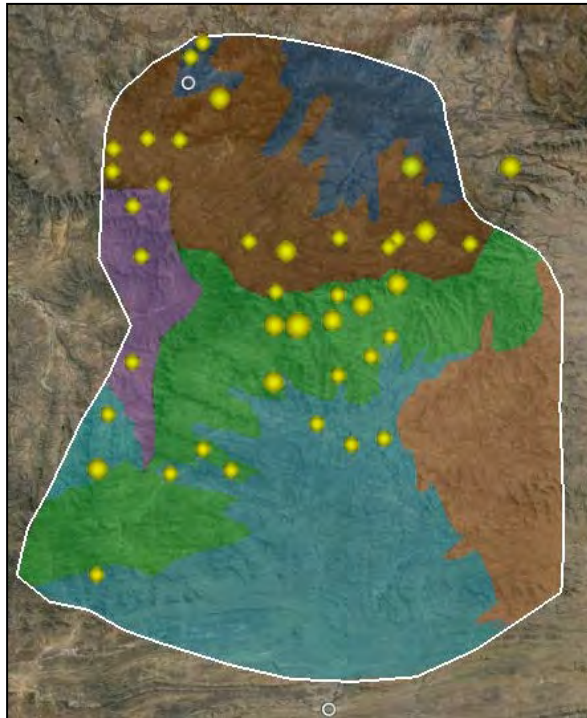


Figure 4.4.9. Round kraal distribution.

In the KR zone, circular kraals are primarily situated in the mountainous valleys, particularly in the high reaches of the Komsberg valleys. This meant that the kraals were positioned along the top of the watershed where there are a number of springs. As most of the rivers are dry during summer, springs would have been a far more reliable water source.

Circular kraals in the MR follow a similar pattern with the distribution following the edge of the escarpment with the interior of the MR research area bare. The circular kraals situated on the western edge of the research area are not taking advantage of a watershed border, however, there may be a higher number of springs along this western edge. Furthermore, this is also where the main route that runs up from the lower Karoo, through the Roggeveld and on to Bushmanland is situated. As this route links the ecological zones necessary for a complete pastoralist cycle, it would be a convenient to be based close to this it. The fact that circular kraals are situated close to the route suggests that this route was possibly

established before the arrival of trekboer settlers. Early European travellers (Lichtenstein 1812; Gordon 1988) journeying into the interior also used this route.

Another factor that may have influenced the location of round kraals is raiding by San hunter-gatherers. As discussed in chapter two, raiding between San and Khoekhoen was frequently documented in the seventeenth and eighteenth centuries. It is unlikely that the Roggeveld was free from raiding prior to the arrival of the trekboers. And, after the arrival of the trekboers, there are regular reports of raiding in the Roggeveld. Hence, it is highly likely that defensibility would have been an important factor when choosing where to base oneself for both Khoekhoen and trekboer pastoralists.

Rectilinear kraals

Rectilinear kraals have too wide a distribution to analyse effectively, however, when separated into kraals associated with domestic ruins, kraals in werfs, and isolated kraals, some clear distribution patterns emerge.

Kraals associated with domestic ruins (Fig. 4.4.10), and kraals in werfs (Fig. 4.4.11) both have a higher presence in the same vegetation areas as the circular kraals but the two rectilinear kraal categories seldom overlap within these areas. The kraals associated with domestic ruins have a similar distribution to the circular kraals; concentrated in the Komsberg section of the KR zone with a lighter scatter out along the escarpment edge (Fig. 4.4.10). The kraals in werfs, however, are more spread out, and situated predominantly in the central MR zone and in the south-western portion of the KR (Fig. 4.4.11).

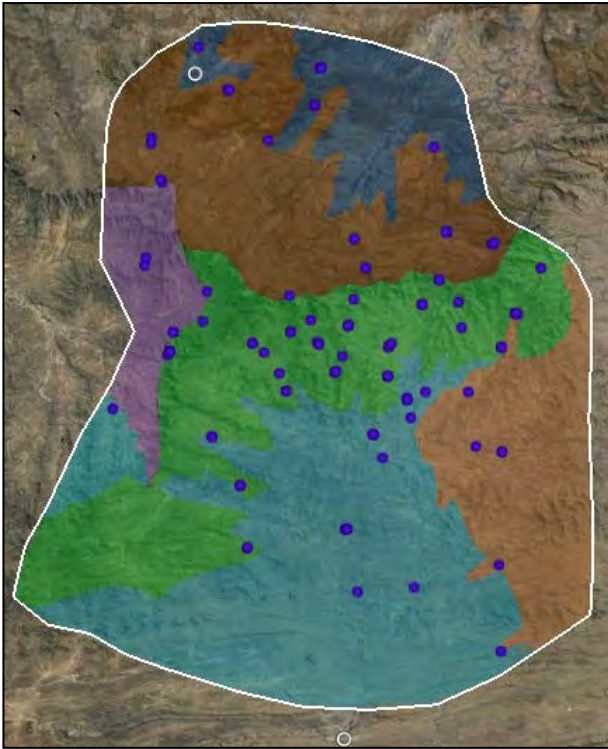


Figure 4.4.10. Rectilinear kraals associated with domestic ruins distribution.

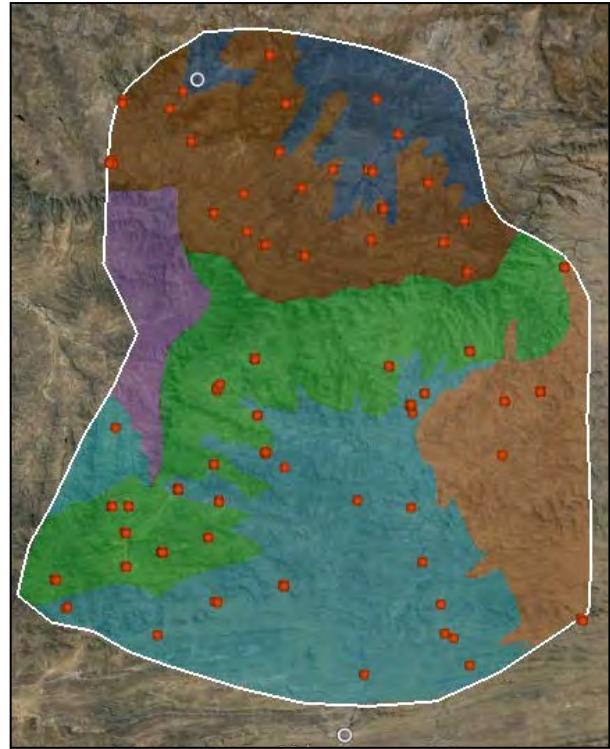


Figure 4.4.11. Rectilinear kraals associated with werfs distribution.

There are also some differences between kraals associated with domestic ruins, and those associated with werfs if we split the kraals according to size (Figs. 4.4.12 to 4.4.15). There is a noticeably higher density of kraals under 300 m² in the KR but the distribution within the KR and MR is comparatively (Fig. 4.4.12). Rectilinear kraals over 300 m² appear roughly equal in distribution between the KR and MR but, in both zones, they appear to be concentrated in the areas that have a higher density of werfs (Fig. 4.4.13). There are more kraals over 300 m² associated with werfs when compared to those associated with domestic ruins (Figs. 4.4.14 & 4.4.15). This suggests that werfs are more likely to be associated with large-scale commercial farming than domestic ruins. While this is not an unexpected conclusion, it does suggest a broad chronology when using the size and distribution of kraals associated with domestic ruins and those associated with werfs.

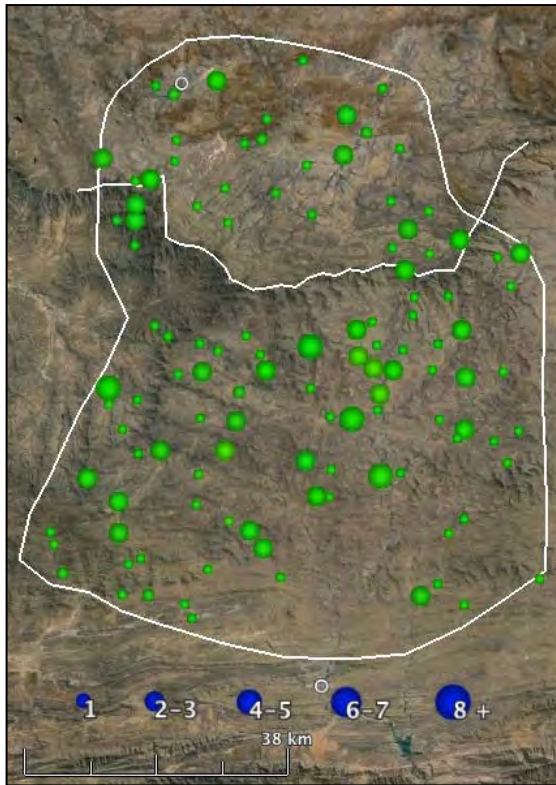


Figure 4.4.12. Rectilinear kraals under 300 m². The size of the marker indicates the number of kraals in this category in the vicinity. The blue markers at the bottom of the images show the number of kraals according to the size of the markers (this key applies to Figs 4.4.13 to 4.4.20, & 4.4.31).

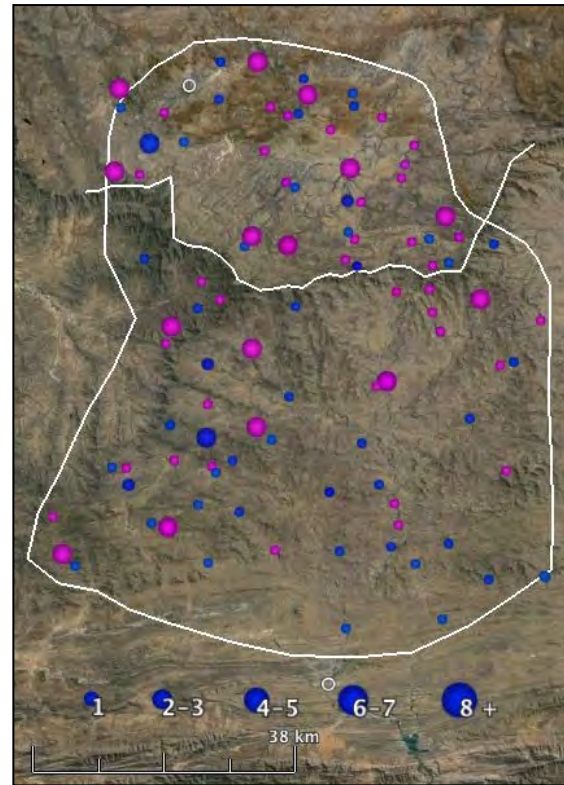


Figure 4.4.13. Rectilinear kraals over 300 m² (blue markers: 301-400 m², pink markers: 401-<1500 m²) (this key applies to Figs 4.4.13 to 4.4.20, & 4.4.31).

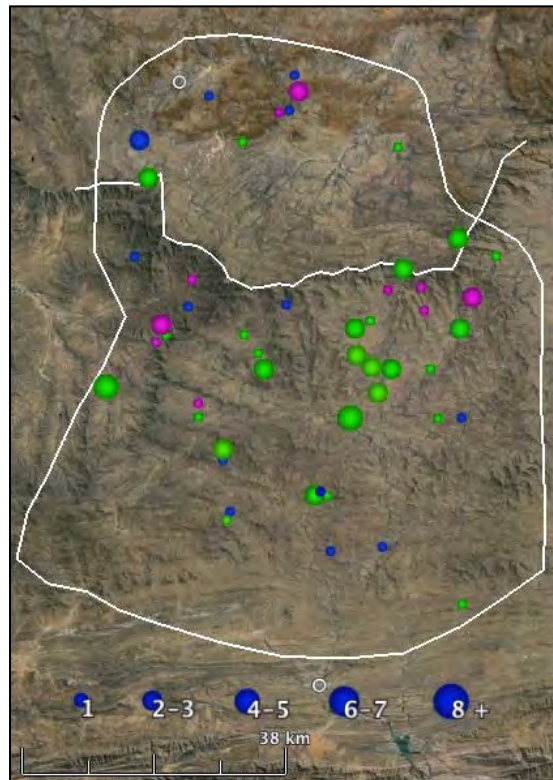


Figure 4.4.14. Rectilinear kraals associated with domestic ruins according to size.

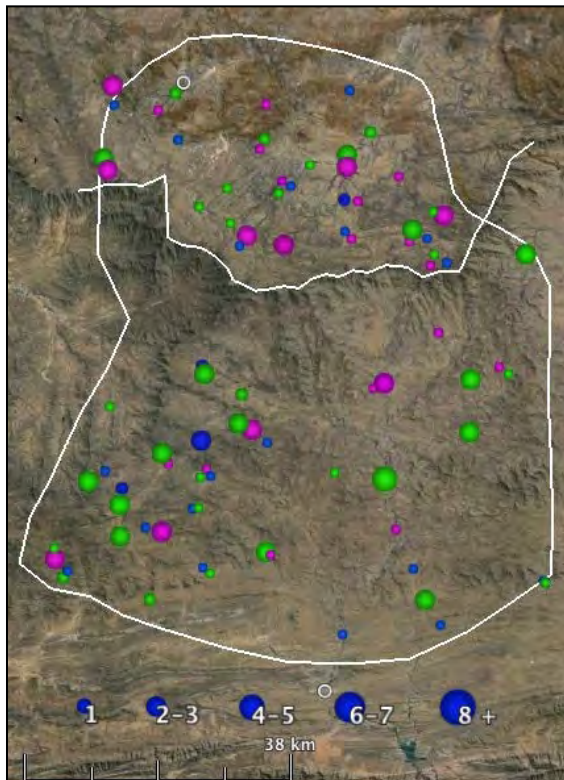


Figure 4.4.15. Rectilinear kraals associated with werfs according to size.

Furthermore, if distance to a natural water source is included, it is evident that kraals in werfs are slightly more likely to be further from water than those associated with domestic ruins (Figs 4.4.16 & 4.4.17). This is possibly connected to the advances in water management that took place when sheep numbers started to increase in the nineteenth century, and reservoirs, earth dams, and later on, wind based pumps were constructed and erected.

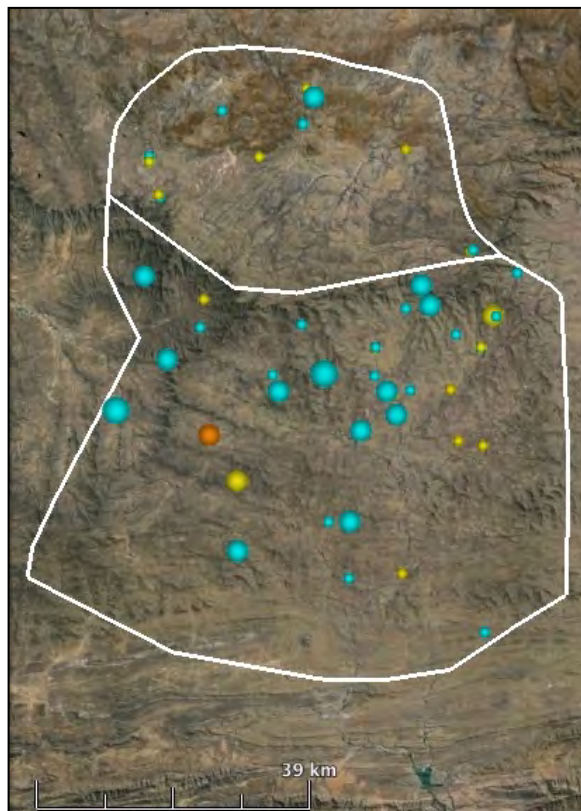


Figure 4.4.16. Rectilinear kraals associated with ruins. Key: blue markers= < 101m, yellow = 101m to 301m, orange = > 300m (this follows for Figs. 4.4.17 & 4.4.18).

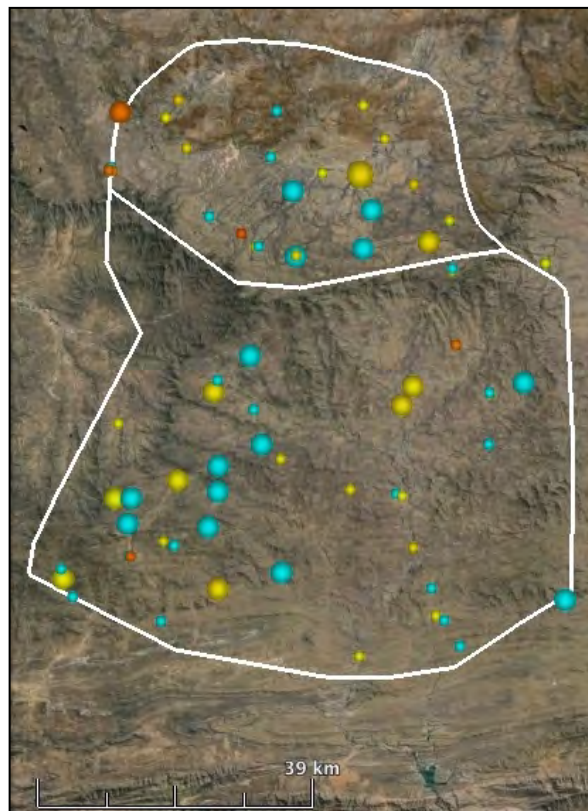


Figure 4.4.17. Rectilinear kraals associated with werfs.

Isolated rectilinear kraals have a different distribution to both the kraals associated with domestic ruins, and to those in werfs. Most interesting is the fact that they are denser in the areas with low rainfall when compared to kraals associated with werfs and domestic ruins (vegetation areas RK and GK) (Fig. 4.4.18). These areas would better suited for outlying stock posts than main werfs. We know that stock posts usually only had small huts or matjieshuise, neither of which would be visible on GE. The kraals also tend to be smaller (Fig. 4.4.18) than

those associated with werfs, which makes sense if farmers were splitting the sheep up into smaller flocks to take advantage of these more marginal areas.

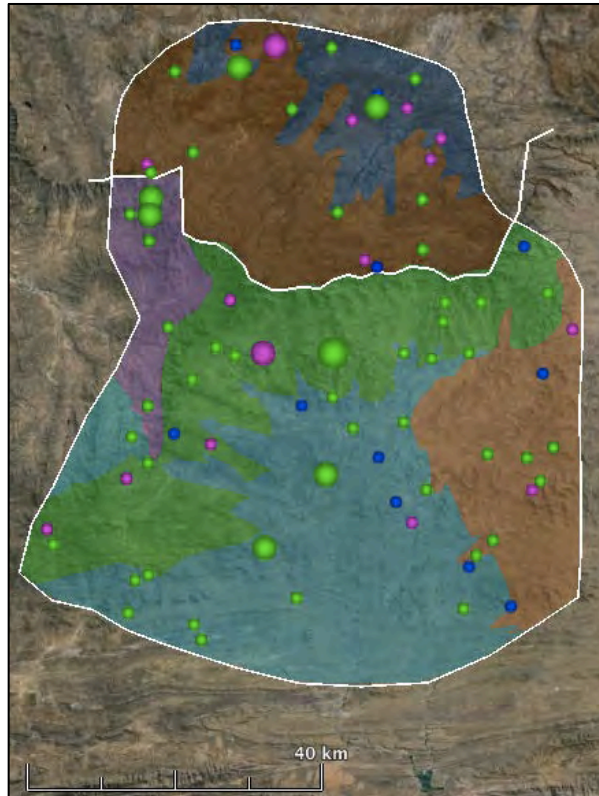


Fig. 4.4.18. Isolated rectilinear kraal distribution.

4.4.3. Kraal location in relation to natural water sources

During the ground surveys we noted some trends that are reflected to some degree in the statistics. In the KR, both round and rectilinear kraals were often positioned right next to riverbeds (Fig. 4.4.19 A), a trend not seen when surveying in the MR. The GE survey picked up the same pattern with 21 kraals (round and rectilinear) within 10m of a watercourse, in comparison to only 5 kraals within 10m of watercourse in the MR. In the MR there were several sites with large round and rectilinear kraals that were clustered around springs (Fig. 4.4.19 B & 4.4.20), which was not seen in the KR. As mentioned earlier, it is possible that these differences are based on the topography of the two areas; the mountainous valleys of the KR versus the rolling plains of the MR.



Figure 4.4.19. A: cluster of kraals in the KR (outlined) situated right next to the riverbed. B: kraal complex clustered around a spring in the MR (Fig. 4.418).



Figure 4.4.20: Spring in Fig. 4.4.17 B. Neatly bordered with stone blocks.

4.4.4. Open sites

Three open sites were found in the research area and visited during the course of this research. Two were located during a HIA done by Hart *et al.* (2010), and the other was found during a ground survey done for this dissertation. The two sites that were found during the HIA were on the farm Modderfontein, which is on the eastern edge of the KR zone. These two sites were approximately 200 m apart on the banks of the same river. There were large stands of thorn trees in close proximity. The most southerly of these two sites had a surface scatter that included both indigenous and colonial artefacts; thin walled lugged coarse earthenware pottery, lithics, ostrich eggshell, metal, glass, and refined earthenware. The second site had a similar indigenous artefact scatter but no colonial artefacts.

The third open site was on Welgemoed farm, also in the KR. It is on a river terrace approximately 7 km from the top of the escarpment ($\pm 2,5$ km south of the site excavated for this dissertation). This site also only had indigenous artefacts; thin walled coarse earthenware pottery, lithics, ostrich eggshell, and grindstones.

If present, it is possible that the kraals were built from organic materials, like thorn tree brush or wattle. Although, this is not necessarily related to the availability of raw materials; the open site on Welgemoed has plenty of rock in the vicinity for kraal building. It is highly likely that further ground surveys would uncover more of these sites.

4.4.5. Structure categories

When assessing the GE and ground survey data several structure categories stood out; piled rock round kraals, high walled round kraals, large regular rectilinear kraals, and rectilinear kraals over 300m from a watercourse. These are not the only feasible categories that can be discerned from the data collected, however, these groups, when juxtaposed with the historical background, could be used as chronological markers.

Piled rock round kraal clusters

Seven clusters of these piled rock round kraals have been found in the research area. These ranged from a cluster of six kraals to a cluster that had seventeen kraals. These groups include individual kraals in close proximity, and kraals that share walls. Not all of these kraals were measured during the ground surveys but those that were, were all under 200 m². These kraals were all very dilapidated, and none had any colonial artefacts close by. This suggests that the clusters were not in use during the colonial period, or not long into the colonial period.

The cluster on Vinkekuil farm (Fig.4.4.21) also had areas cleared of rocks and dense vegetation close to the kraals. Tim Hart (2011) described these as 'living floors'. Only one of these clusters was found on GE (Fig. 4.4.22). The degree of dilapidation made them difficult to see on GE. The other clusters were found during HIA ground surveys. That these kraals are indigenous in origin is almost a certainty. They match the descriptions of indigenous pastoralist kraals from other sites in southern Africa; the Zeekoe Valley (Sampson 1984:100; Hart 1989:90), Bloubos in the Northern Cape (Parsons 2004), and those described by John Kinahan (2001) in Namibia. I return to this in the discussion section.



Figure 4.4.21. Prehistoric kraal cluster at Vinkekuil.



Figure 4.4.22. Prehistoric kraal cluster on GE (DB ref. 589).

There are also a number of piled rock round kraals that are visible on GE. For the most part these kraals are solitary, however, there were several sets of two that fit within this category. They are generally under 300m², although there are some as large as 700m². These kraals have low walls (usually under 1m), and are constructed by piling rocks (Fig. 4.4.23 & 4.4.24). I have used kraal shape and size, in combination with a low depth of shadow (this is viewed as suggestive of wall height rather than as an accurate gauge) to provisionally assign round kraals to this category. I have included semi-circular kraals that back onto scarp edges in this group (Fig. 4.4.25). These kraals are usually within approximately 50 m of a natural watercourse. In the KR they tend to be in the steep valleys of the mountainous escarpment, and in the MR they are situated along the escarpment edge and on the western border of the research area. Many of these kraals were close to rectilinear kraals, and some of those visited (including the excavated kraals at Welgemoed) had surface scatters that included colonial artefacts.



Figure 4.4.23. Indigenous round kraal (474.4) at Scholtzenhof 01 on the ground.

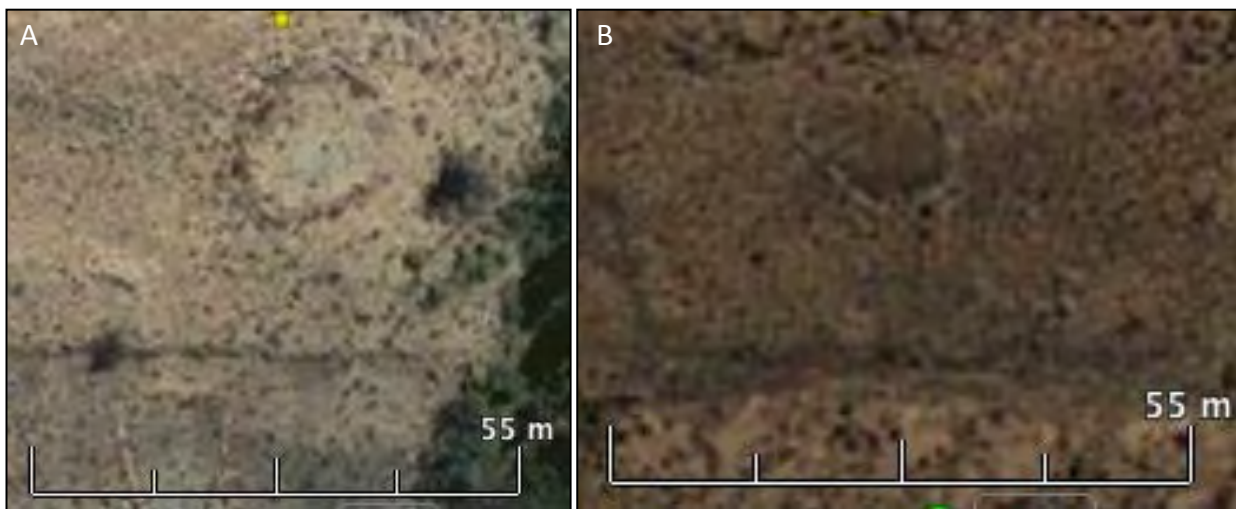


Figure 4.4.24. Piled rock round kraals. A: on Scholtzenhof (Fig. 4.4.20) DB ref. 474.4). B: DB ref. 188.



Figure 4.4.25. Semi-circular Indigenous round kraal at WG01 (DB. ref. 83). White lines roughly approximate the kraal and the scarp edge (note its position right next to the river).

High walled round kraals

This category consists of round kraals that are between 400m² and 1200m², considerably larger than the piled rock kraals, and have a regular construction style (Figs. 4.4.26 & 4.4.27). They are decidedly different from the piled rock round kraals, most notably in the size range, but the height of the walls and the comparatively neat wall construction are also significant factors. On GE these kraals are often associated with rectilinear kraals, and/or domestic ruins. The depth of shadow on GE indicates that the walls are higher than the piled rock round kraals (Fig. 4.4.27) (again, depth of shadow is a guideline not a certainty).

The artefact scatters associated with the high walled round kraal at Theronsrus is composed of historical items (including eighteenth century Asian porcelain), and a distinct lack of artefacts associated with Khoekhoen pastoralists (ostrich eggshell, coarse earthenware, lithics). At the piled rock round kraals at Welgemoed and Scholtzenhof, brief visits turned up considerable amounts of Khoe artefacts amongst historical artefacts, suggesting that there was a Khoe pastoralist presence at these sites.



Figure 4.4.26. Round kraal DB ref. 373.5 at Theronsrus with a close up of the walling on the bottom.



Figure 4.4.27. High walled round kraals. A: kraals (DB. refs. 373.5 & 373) at Theronrus (Fig. 4.4.26). B: DB ref. 117.

Domestic ruins

The vast majority of domestic ruins picked up on GE are rectilinear (Fig. 4.4.28), and often have more than one room. All the domestic ruins we found during the ground surveys also had artefact scatters with colonial artefacts, or middens close by with lots of colonial artefacts. Furthermore, both on the ground and on GE, domestic ruins were frequently associated with rectilinear kraals. The distribution of these kraals is notably denser in the high valleys of the Komsberg, tailing off down the Buffels River drainage.



Figure 4.4.28. Domestic ruin close to the original Welgemoed loan farm werf.

Large regular rectilinear kraals

These are rectilinearly uniform kraals with a depth of shadow that indicates high walls (Fig. 4.4.29) that range in size from 500m² to 1200 m². Kraals over 1200m² without interior divisions are unlikely to have been for sheep as large flocks can cause injuries if they panic (running together in a large band) (pers. comm. Donald Murray 21 February 2015). The majority of the large regular kraals are associated with domestic ruins or werfs, and those that were visited during the ground survey had colonial artefacts (glass, refined earthenware, metal) around them.



Figure 4.4.29. Large regular rectilinear kraal on Scholtzenhof (DB. ref. 180.1) with its GE image on the right.

Rectilinear kraals over 300m from a natural watercourse

Other than being rectilinear, and over 300m from water there is little else to define this category. There are only 19 kraals that fit this category; of these 14 are over 600m from water. Furthermore, 14 of the 19 are situated in the MR.

These categories are by no means fixed, there are some structures that clearly fit within a category but miss one of the key characteristics. For example, round kraals with high walls that are close to a domestic ruin but are under 400m² (Fig. 4.4.32); in this case I have provisionally marked them as a historical round kraals because I think circularity and wall height may be more telling than size in these kraals as construction plays an important part of the definition of this category. In the case of rectilinear kraals with straight, high walls, however, size is more important than precise corners and wall height as I am more interested in livestock density.

4.5. Concluding comments

It is clear that there are distinct patterns emerging from the GE database. The distribution of the different structures, particularly the domestic ruins and larger werfs, indicates that this data does spatially pattern in ways that can be related to different approaches to sheep farming in the region. There are other structures, such as the possible *lammerkraals* and the isolated kraals that may also fit with what we already know about pastoralist practices in the Roggeveld. That these regional patterns relate to chronology and periods during which approaches to pastoralist management changed through the eighteenth and 19 centuries is also inferred. I have raised some of these chronological implications in the course of outlining these patterns above. I do not discuss and elaborate these patterns further here. This discussion is the subject of chapter six.

The reason for delaying this discussion is that I want to add the results of the excavations conducted at Welgemoed to the spatial data in order to enhance the discussion of chronology and structure/settlement type. In the next chapter I present the data and the results from the Welgemoed excavations.

5. Excavations at Welgemoed

5.1. Introduction

In the previous chapter I discussed potential chronological markers based on kraal or site type. However, more detailed ground work is required to support the hypothesis that we can establish a preliminary timeline using Google Earth. The primary purpose of the excavations at Welgemoed was to establish a chronology for the site. This could then assess some of the chronological working hypotheses formulated from some of the GE patterns. In particular the Welgemoed was chosen because, the two semi-circular kraals fit more into an Khoekhoen style and fall within the piled rock construction technique for non-rectangular kraals described in chapter four. Additionally, when we visited the site in 2013 we found a mixture of colonial and indigenous artefacts, including some Asian porcelain that possibly dated to the late eighteenth /early nineteenth century (Antonia Malan pers. comm. February 2013). The possibility was that Khoe and colonial material were contemporary. To explore this possibility it was important to determine what the stratigraphic relationship is between Khoe and colonial material and between this material and the stone walls.

Another factor underpinning the decision to excavate at Welgemoed is that from archival sources we know that it was established in the mid- eighteenth century as a loan farm (MOOC8/10.74a). The surface scatter of mixed indigenous and colonial artefacts, and the sub-circular kraals may be associated with the mid- seventeenth century date of the Welgemoed loan farm. The excavations could potentially contribute to understanding the interaction between these early trekboers and the Khoe pastoralists, and how this shared landscape was negotiated based on pastoralist strategies. By excavating, we hoped to chronologically situate WG01 within this landscape, and explore the degree and nature of the interaction as it appeared at the site.

This chapter is organised into four sections. The first section describes the site and its features, the second outlines the excavation and data collection methods, and the third describes the material collected at the site. In the fourth section the site and finds are discussed in relation to chronology, association and historical inference.

5.2. Site description

Welgemoed 01 (WG01) was first identified by David Halkett and Lita Webley during a Heritage Impact Assessment (2011). WG01 is situated ($32^{\circ}43'56.92''\text{S}$ - $20^{\circ}49'51.29''\text{E}$) in the lower reaches of the Komsberg mountains approximately 4,5 kilometers from the top of the escarpment (Fig. 5.2.1). Consequently, the surrounding terrain is fairly mountainous, as can be seen in the topographic map (Fig. 5.2.3). The site itself is on a river terrace immediately to the west and adjacent to the Venters River (Fig. 5.2.2), which is often dry in summer. The terrace backs onto a low scarp edge to the west and is about 52 metres wide. The vegetation type is Central Mountain Shale Renosterveld, and composed predominantly of low shrubs with some reed beds along the river.



Figure 5.2.1. WG01 from Google Earth.



Figure 5.2.2. Close up of WG01.

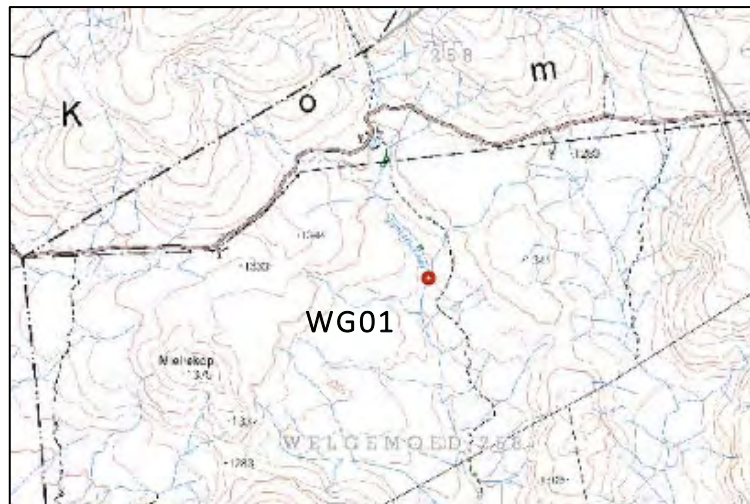


Figure 5.2.3. Topographic map of Welgemoed farm.

5.2.1. Site features

The dominant features at WG01 are two kraals, built of low dry stone-walling (Fig. 5.2.4). A second section of crude walling runs along the top of the scarp edge immediately above these kraals. Additionally, there are three possible burial cairns and one indeterminate stone feature on the terrace. Most of the surface scatter of indigenous and colonial artefacts, were found on the river terrace to the east of the kraals (Fig. 5.2.4).

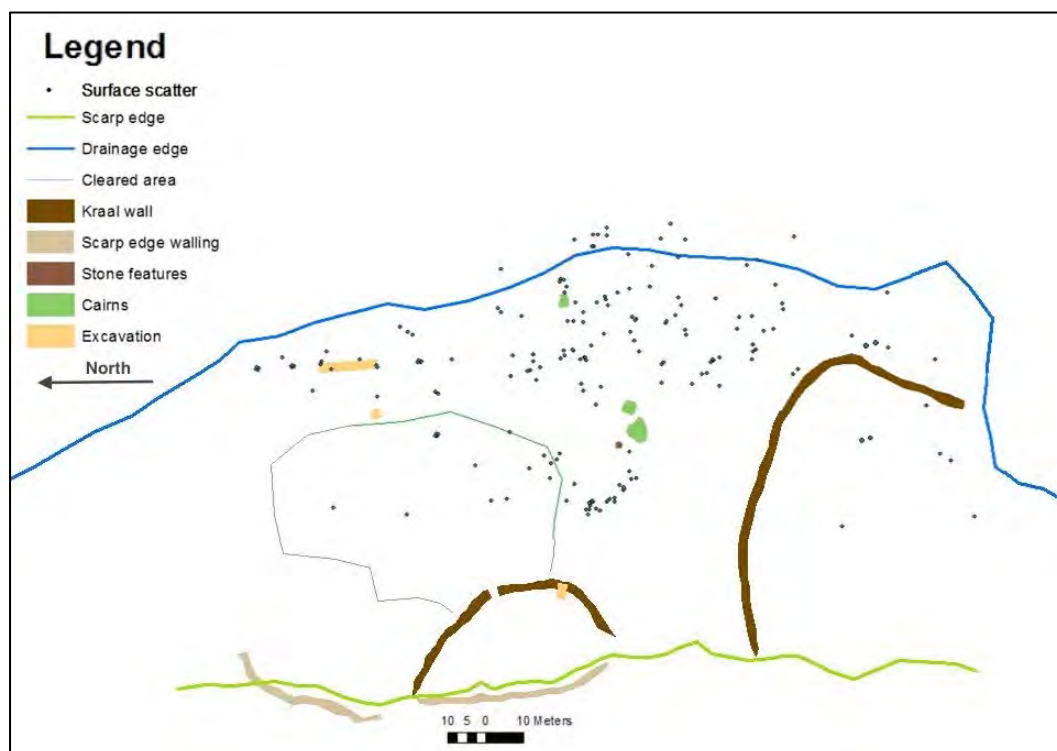


Figure 5.2.4. Site map of WG01 (more detail on the surface scatter in Fig.5.3.9).

Kraal 1 covers an area of 180 m² (size class B - see chapter four). It was built to take advantage of the scarp edge, which acts as the back kraal 'wall' and consequently, the built wall is a shallow arc and both ends are 'keyed' into the scarp edge. The kraal is on a slight incline so the northern section of the kraal slopes down to the south. The southern section of the kraal, because of this, acted as a dam so deposit has banked up against the wall up to the top of the wall. This deposit becomes shallower towards the northern section of the kraal.

The height of the outside kraal wall suggests that the deposit averages a maximum depth of 0,8 m in the southern half of the kraal. The entrance of the kraal faces east towards the river (Fig. 5.2.5). The walling style can be described as piled, although there are some large upright monoliths that hold the smaller rocks in place (Fig. 5.2.6). It does not have a rubble filled interior a building style usually associated with historical kraals (Hart 1989:89). While most of the Kraal 1 infill is probably the result of slope wash from the scarp, it presented the possibility that in situ cultural deposits were sealed below this wash.



Figure 5.2.5. Kraal 1. Taken from the top of the scarp facing south east with the terrace behind. The white line indicates the kraal entrance.



Figure 5.2.6. Large upright monoliths in kraal 1's wall.

Kraal 2 is 16 m south of kraal 1. It has an area of approximately 921 m² (size class J) (Fig. 5.2.7). The kraal has a shallow sandy deposit mostly in the north-west corner, but most of the kraal floor is exposed shale bedrock (Figs. 5.2.7 & 5.2.8). The western end of the Kraal 2 wall also abuts the scarp edge and arcs out to the south east and south. The southern tip of the wall ends at a steep drop into the riverbed. The river has cut back at this point and some wall rubble has collapsed down slope but the steep drop was deliberately used as a natural barrier (similar to a ha-ha). Compared to Kraal 1, Kraal 2 therefore was built to optimise two natural features in defining an enclosed space. The Kraal 2 walls are quite dilapidated, but there are some sections where the walling is still in relatively good condition. In these sections, the wall height is approximately 0,80 m. There are none of the upright monoliths seen in the construction of kraal 1's walls.



Figure 5.2.7. Kraal 2. Taken from the top of the scarp facing south east.



Figure 5.2.8. Kraal 2 facing south west.

There are two sections of scarp edge walling. One section is situated above kraal 1 and runs for approximately 30 m, from the south corner of the kraal and ending roughly 5 m beyond the point where the wall abuts the scarp edge at the north corner of the kraal. Where the wall is more or less complete, it is around 0,7 m in height (Fig. 5.2.9). The second section of walling starts approximately 10 m to the north of kraal 1 and is around 23 m long, and is built of three courses. The fact that this second section of walling is not directly above a

kraal and that the first extends beyond the end of kraal 1 suggests that they were not necessarily built to keep livestock in. Possibly they were built to channel water away from the two areas downslope (Fig. 5.2.10). If so, the second stretch of wall may indicate the location of domestic dwellings.



Figure 5.2.9. Scarp edge walling above kraal 1.



Figure 5.2.10. Channel behind the scarp walling above kraal 1.

Cairns

Cairn 1 is a low oblong mound of piled water worn rocks approximately 2 m long, 1,5 m wide, and 0,5 m high (Fig. 5.2.11: left). Cairn 2 is 5 m east of cairn 1. It is also a low mound of piled rocks with a roughly oblong shape (Fig. 5.2.11: right). It is around 1,5 m long, 1 m wide, and 0,5 m high. A third stone feature is 30 m east of cairn 2 and is a comparatively neat construction, although quite dilapidated. It looks as though it was originally rectilinear in

shape (Fig. 5.2.12: left). It is approximately 1,3 m long, 0,8 wide, and 0,5 m high. All three features may be burial mounds. If so, this implies an indigenous and perhaps a later colonial period burial. A small stone feature is situated close to cairn 1 (Fig. 5.2.12: right). It consists of three rocks that have been positioned together to form a 'platform' with a diameter of approximately 0,9 m. Considering its proximity to cairns 1 and 2, it may also be a grave marker.



Figure 5.2.11. Left: cairn 1 – the white oval in the background indicates the position of the stone feature shown in Fig. 5.2.12. Right: cairn 2.



Figure 5.2.12. Left: cairn 3 – note the rectilinear shape and neat stacking of rocks in comparison to cairns 1 & 2. Right: stone feature.

There were some indications that a relatively large circular area below kraal 1 marked an activity area. In this area there was little vegetation and it was more clearly defined because a small white 'daisy' like flower grew in relative abundance up to the edge of this area, but not within it. Additionally there were fewer rocks within it when compared to the rest of the terrace. The area may have been cleared purposely, possibly for a brush kraal or living

space, comparable to the descendants of Khoe pastoralists in Namaqualand keeping the area around their huts clear of vegetation and rocks (discussed in chapter two).

5.3. Excavations

The kraal building style, in conjunction with the mixture of indigenous and colonial artefacts at WG01, particularly the late eighteenth /early nineteenth century Asian porcelain, clearly indicates that Khoekhoen used the site, possibly in the regional or immediate presence of trekboers. The excavations, consequently, were aimed at establishing stratigraphic relationships and the nature of this material co-presence. Does the co-presence represent unrelated and chronologically distinct occupations at the same place, or a contemporary presence in the region, or indeed at the site. With this in mind, we opened up two trenches, one in kraal 1 and the other on the terrace.

Kraal 1

As indicated above the depth of the deposit in kraal 1, despite the fact that hill wash made a significant contribution to the deposit made it an obvious choice for excavation. Two 1 x 1 m squares were excavated in kraal 1. As we wanted to establish stratigraphic relationships between the deposit and the kraal wall, especially any dateable artefacts that might indicate when the kraal was built, square 01 included a section of the kraal wall. Square 02 extended back at right angles to the wall (west) into the central area of the kraal (Fig. 5.3.2). The excavation was initially carried out in 0,05 m spits within the natural stratigraphy (layers) of the deposit. However, after spit 4 we increased it to increments of 0,10 m as there was little variation in the deposit and no material culture had been found in these upper spits. All excavated deposit was sifted through 3 mm wire mesh, and all artefacts and bone was retained for analysis. Both squares were excavated until we were satisfied that the deposit was culturally sterile.

The upper deposit, from the surface to approximately 0,50 m in square 01 (layer 01 spits 0 to 06), and 0,40 m in square 02 (layer 01 spits 0 to 05), was predominantly composed of a very fine light red silt with varying levels of gravel and rock inclusions (Fig 5.3.1). At approximately 0,40 m (layer 02 spit 01) in square 02 a dark brown, organic layer primarily

composed of dung was encountered (Fig. 5.3.1 & Fig. 5.3.4). This dung layer sloped down to the east into square 01, which resulted in there being six spits in layer 01 in square 01 but only five spits in layer 01 in square 02. For the most part, the thickness of the dung layer was approximately 0,10 to 0,12 m. Below the dung layer the deposit was a hard light brown sand and the density of small rocks rose significantly and comprised up to a third of the deposit in square 01. We reached the base of the kraal wall in this layer (Fig. 5.3.3). Based on the density of stone rubble and the sterile deposit, this layer marks the original surface of the terrace upon which the kraal was built.

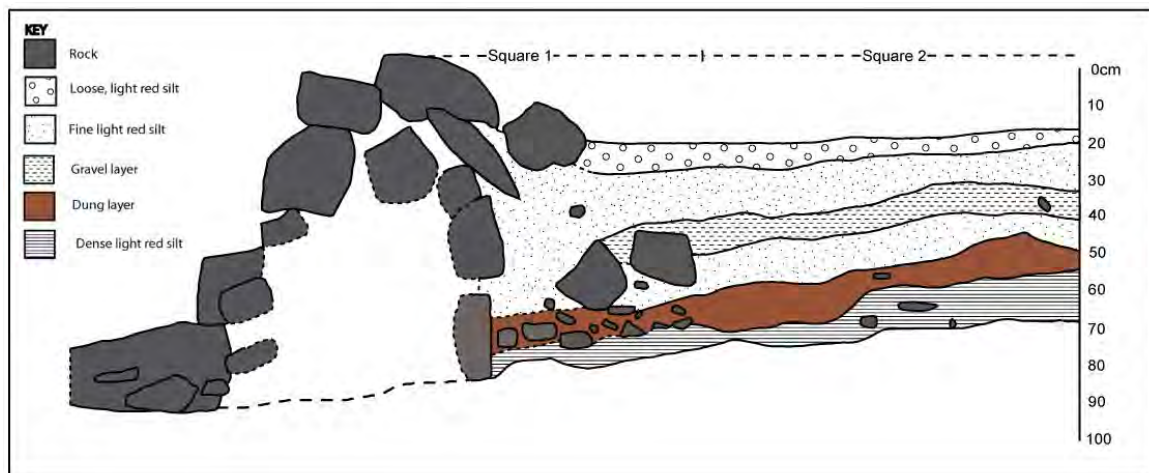


Figure 5.3.1. Section drawing of the south wall of squares 01 & 02.



Figure 5.3.2. Surface of kraal 1 excavation (facing east).



Figure 5.3.3. Base of kraal 1 excavation (facing east).



Figure 5.3.4. South wall of kraal 1 excavation. The dung layer is clearly visible sloping down in square 01.



Figure 5.3.5. Base of the kraal wall (east wall of the excavation).

The artefact density was low with only 48 artefacts (85% of which were lithics) and 346,8 g of bone were recovered. The stratigraphic position of the artefacts is notable and there is a distinct clustering immediately above and in layer 02 spit 01 - the dung layer. It appears that lower cultural layers with artefacts have been sealed in by deposit washed in from the scarp above.

Charcoal was retained but the samples were small and given the chronological indications from the material culture, radiocarbon dates would be of little use. It is the sealed lower artefact bearing deposit that provides some chronological control for the kraal deposit.

Terrace

The terrace excavation was positioned in an area that on surface inspection had the highest density of coarse earthenware ceramics (CEW) (Fig. 5.3.6). Nine squares were excavated; C3 to C10 on a south-east (SE) north-east (NE) axis, the ninth square, I3, was 5 m perpendicular to C3.



Figure 5.3.6. Squares C10 to C3 (facing south-east).

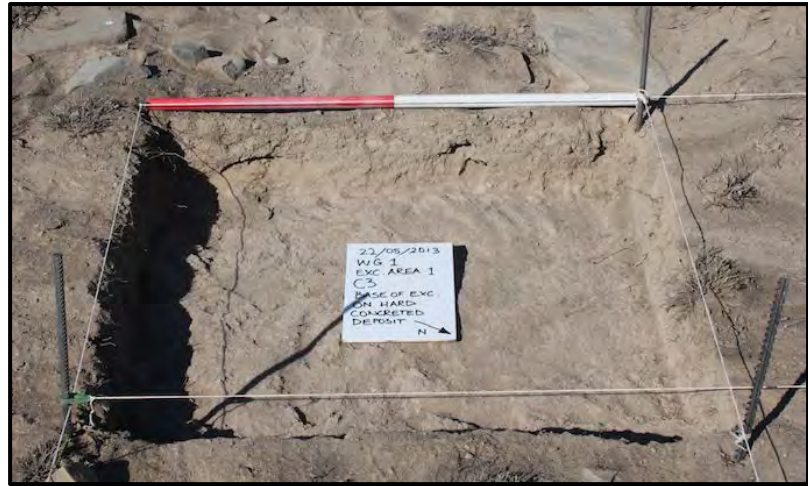


Figure 5.3.7. Base of square C3.



Figure 5.3.8. Base of square I3.

The deposit was a fine, light grey silt which initially had the appearance of ash but as the excavation progressed it became clear that it was fine silt. Termitaria and burrows were encountered between 0,05 to 0,10 m. The deposit is shallow and the stratigraphy simple and was excavated in 0,05 m spits within the natural stratigraphy down to a sterile and very hard indurated layer, which was reached between 0,15 and 0,20 m below the surface (Figs. 5.3.7 & 5.3.8). All of the deposit was sieved through a 3mm wire mesh, and all artefacts and bone was collected for analysis. There were 134 artefacts collected, the majority of which were lithics (83%), followed by CEW (16%). No samples suitable for carbon dating were found.

Surface scatter

The surface scatter over the whole terrace was also collected. The artefacts were individually plotted using a total station and the distribution of the artefact types are shown in Figure. 5.3.9. In total, 204 artefacts were collected and glass, CEW, and refined earthenware (REW) made up the majority of the artefacts (86%).

The most important feature of the surface scatter is the clear indications that, while they do overlap in the central section of the terrace, the indigenous and the precolonial material appear to be concentrated in separate areas. The glass and REW are clustered on the southern end of the kraal, close to kraal 2, and the CEW and lithics are concentrated to the north, closer to kraal 1. Notably, all the Asian porcelain sherds are inside or just next to kraal 2.

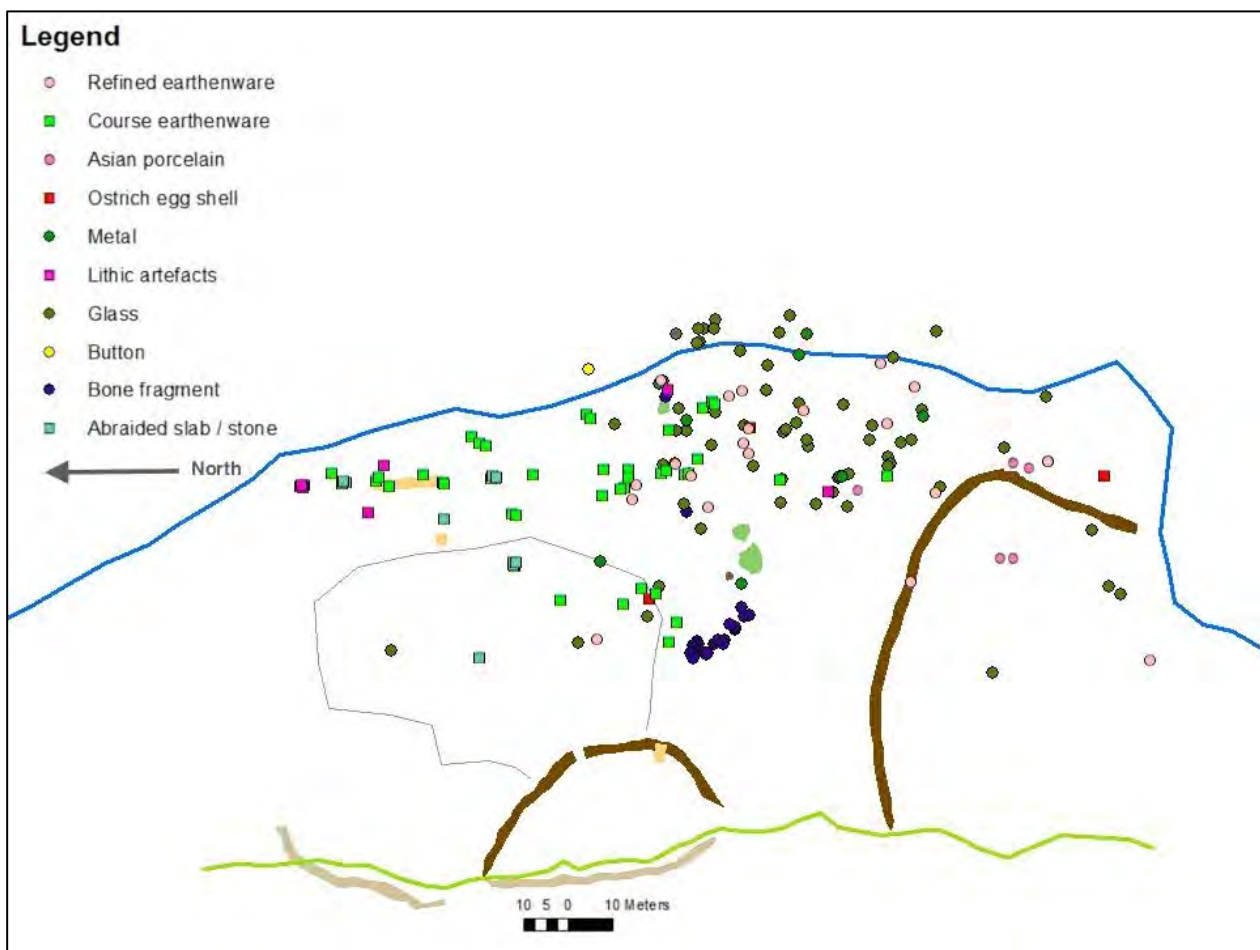


Figure 5.3.9. Surface scatter distribution map.

5.4. Finds

All of the artefacts recovered from WG01 were cleaned, given a reference number, labelled and curated. The methodology used for the analysis of the different types of artefacts is described first, followed by a discussion on the finds themselves.

5.4.1. Ceramics

In terms of classification and analysis for the CEW, I followed Sadr & Sampson (1999) and Stewart (2005). I included form, any diagnostic features (such as rims and lugs), temper, and decoration.

I based the analysis of the European and Asian ceramics on the procedures and methods outlined by Klose (1993) and Klose and Malan's (2004). The sherds were first separated into ware type, and further sub-divided within ware types. For example, Asian porcelain was separated into fine and coarse porcelain, and European REW was sub-divided by decoration such as transfer printed, painted, sponged, and then by pattern and colour i.e. transfer printed – Willow pattern – blue (Appendix B). Stoneware sub ware categories were also made, in this case salt glazed stoneware was the only sub category necessary. Other diagnostic features such as footrings, rims, well to ledge, bases and shoulders were also recorded as were the diameter of vessels when the rim sherds were big enough.

Indigenous ceramics

There were no indigenous CEW sherds excavated from the kraal at WG01. The terrace excavations produced twenty-one CEW sherds and their distribution is shown in Table 5.4.1. Only one of the CEW sherds is decorated. This is a rim sherd with four lines incised almost vertically below the rim (Fig. 5.4.1).

There were fifty-three CEW sherds collected from the surface scatter, six of which were diagnostic; five rims (two of which appear to be from the same vessel) and one lug. Fifteen sherds (six from the excavation and nine from the surface collection) were burnished. Based on the rim shape and thickness, I suggest that there is a minimum number of vessels (MNV) count of four CEW vessels. The CEW sherds were on average 6,2 mm thick and this

combined with the other diagnostic features indicate that these sherds are from Khoekhoen vessels (Sadr & Sampson 1999:4; Stewart 2005).



Figure 5.4.1. CEW sherds from WG01.
Terrace excavations: A: incised rim sherd.
Surface scatter: B & C: refitted rim
sherds, D: lug fragment, E: plain sherd.

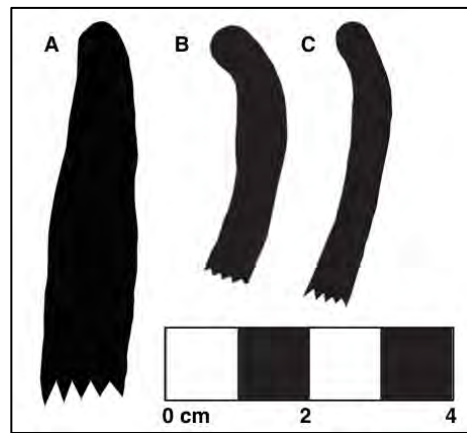


Figure 5.4.2. CEW rim profiles for sherds
A, B, C in Fig. 5.4.1.

Table 5.4.1. The distribution of CEW in the terrace excavation (the hyphens indicate that the start of the hard indurated layer - these levels were not excavated).

layer	spit	squares									total	%
		C3	C4	C5	C6	C7	C8	C9	C10	I3		
0	1	0	0	4	2	2	0	0	0	0	8	38,10%
1	1	1	2	0	1	0	3	0	0	1	8	38,10%
1	2	0	-	-	-	1	-	4	0	0	5	23,81%
1	3	0	-	-	-	-	-	0	0	0	0	0,00%
1	4	-	-	-	-	-	-	-	0	0	0	0,00%
total		1	2	4	3	3	3	4	0	1	21	

Colonial ceramics

Only one plain white, adiagnostic refined earthenware sherd (REW) sherd was found in kraal 1 from layer 01 spit 05. This sherd is adiagnostic and had no decoration but on ware type it is clearly not Asian porcelain. Given that the majority of the sherds from the terrace are from European/English REW vessels the kraal sherd clearly falls within this category.

Significantly no European or Asian ceramics were found in the terrace excavations. Forty-seven colonial period sherds were collected from the surface scatter, the majority were

from European REW vessels but there were also seven Asian porcelain sherds and four stoneware sherds. As can be seen in Figure 5.3.9, the REW is situated in the southern and central areas of the terrace. There is also a notable clustering of porcelain around kraal 2.

The minimum number of REW vessels comes to eleven. There are five transfer printed vessels, two painted vessels, two band and line, and two sponged vessels. The form and function of the REW vessels indicate that they were all plates and small bowls.

While all the transfer printed pieces are consistent with nineteenth century REW (Fig. 5.4.4), it is difficult, on stylistic grounds, to place these pieces with more chronological precision. Two of the transfer printed sherds are too small to identify the patterns so they offer little chronological control. Two other decorated sherds that can be identified are Willow Pattern and Asiatic Pheasant, but these styles were produced throughout the nineteenth century and also cannot refine chronology. However, we do know that REW became more common as the colony was assimilated into the British economy during the nineteenth century. The painted vessels from the terrace pick-up are more informative as the colours can be described as 'harsh' (Fig. 5.4.5) and ware matching this description only became common in the archaeological record after 1830 (Klose & Malan 1993:7, Klose & Malan 2004:20). The sponge decorated sherds are cut sponged which was popular between the 1840s and 1870s (Klose & Malan 2004:21; Maryland Archaeological Conservation Laboratory 2015). In summary, the REW is clearly nineteenth century in date, and most likely date from the latter half of the nineteenth century when this type of material flooded into the Karoo.

The chronology indicated by the REW from the terrace is significant for the small undiagnostic REW sherd from the Kraal 1 excavations. This significance for the kraal deposits will be dealt with in the discussion after the rest of the material has been described.

The Asian porcelain sherds include two rim pieces that possibly come from the same coarse porcelain bowl, two body sherds from a fine porcelain bowl, and three body sherds from a ginger jar (the interior rilling suggests that these sherds are from a jar rather than a bowl) (pers. comm. Antonia Malan 2013) (Fig. 5.4.3). Based on diagnostic features and form, there appear to be a MNV of three porcelain vessels; two bowls and one jar.

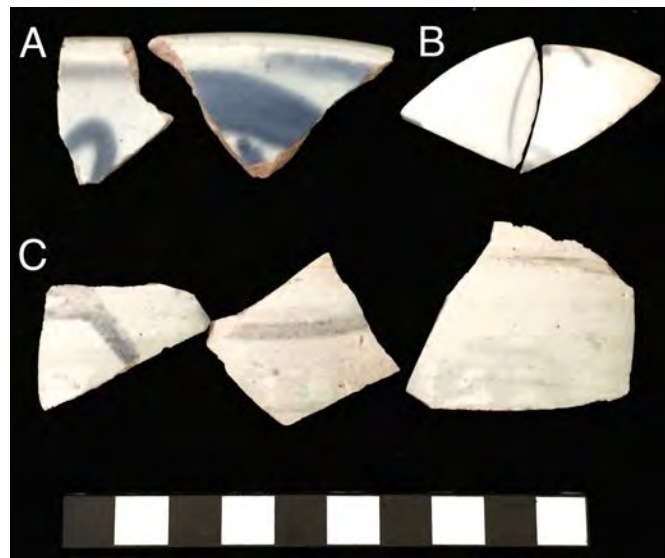


Figure 5.4.3. Porcelain sherds from WG01. A: two coarse Asian porcelain sherds. B: two Asian porcelain sherds. C: three ginger jar sherds.



Figure 5.4.4. Transfer printed REW. A – B Willow Pattern, C – D unidentified grey pattern, E – H Asiatic Pheasant.

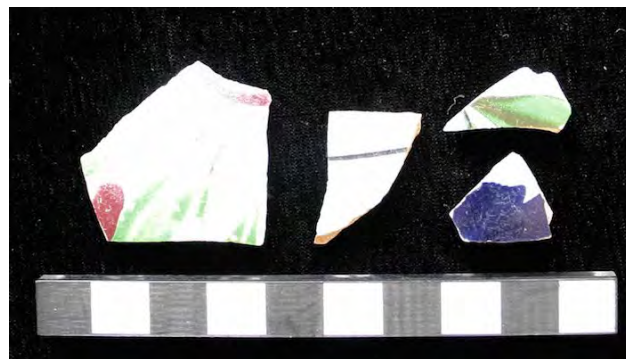


Figure 5.4.5. Painted REW 'harsh' colours.

There are only four stoneware sherds (Fig. 5.4.6), one of which comes from a small short bottle, most likely an ink bottle. The other three stoneware body sherds are consistent with a larger jug or jar but it is not possible to be more precise about their form. The three sherds appear to be from the same vessel. Accordingly, my MNV for the stoneware category comes to two.



Figure 5.4.6. Stoneware – the sherd on the left is from an ink bottle.

5.4.2. Glass

The glass analysis followed the methodology of Jones and Sullivan (1985), Ethleen and Al Lastovica (1982), and Lindsey (n.d.). The glass was counted and weighed, and sherd colour was recorded along with any diagnostic features. This included what part of the vessels the piece was from e.g. base or rim, and any details regarding base, and rim type. Other features recorded included; writing, whether there was evidence of moulding, and any other decorative features. Colour can be a useful indicator of vessel contents and function. For example, in South Africa, beer, wine and brandy was usually bottled in dark green to black glass, and carbonated drinks, ink and medicine were typically in colourless glass bottles (medicine and poison was also frequently bottled in cobalt blue vessels) (Lastovica & Lastovica 1982).

There were eighty-six glass sherds with a combined weight of 547,02 g collected at WG01 (Table 5.4.2). All of the glass came from the surface scatter. There was a total of fourteen diagnostic sherds comprised of three rims and thirteen base pieces (two of these could have come from the same bottle) (Fig. 5.4.7). As the base counts are the highest, I used these for the MNV count, which came to eleven glass vessels.

Eight of the bases were colourless glass and four of these were complete enough to get a diameter measurement (Table 5.4.3). Two were approximately 20 mm in diameter, a size more appropriate for medicine bottles than beverages (Lindsey n.d.). The other two had

diameters of approximately 40 mm. There was one small (diameter $\pm$ 30 mm) oval cobalt blue base, most likely from a medicine or poison bottle.

The green base pieces consisted of two dark green pieces and one light green base piece. The two dark green bottle bases are typical of liquor bottles used for beer, wine or brandy. The diameter of the most complete was 74 mm which is a standard size for liquor bottles.

All three rims were colourless glass. Two of these are flattened side rims, and one was a small (diameter approximately 22 mm) flanged rim (Jones & Sullivan 1985).

There are five glass sherds that come from angular shaped bottles, three of which are base fragments. Only one piece is complete enough to reconstruct the shape which is octagonal (20 mm base diameter). Two of the angled body sherds have embossed lettering, although it is only possible to identify three letters on one ('NRE'), and the bottom of an L and an E on the other.. The dimensions of the sherd with 'NRE' embossed may be from the octagonal vessel, or one that is very similar.

Most of the glass sherds were smooth and featureless but there were some interesting fragments with moulded patterns .One sherd has a diamond pattern, and six sherds were ribbed (Jones et al. 1985:59, 67). All of these moulded pieces were colourless glass.

All of the diagnostic glass pieces come from bottles and some idea of contents and function can be inferred. The clear glass base diameters suggest that there were at least two bottles of a size associated with medicine, and two vessels of the size consistent with carbonated beverage bottles. The two dark green bases are most likely from liquor bottles, which are frequently found on other sites in the Karoo.

The presence of the glass at WG01 has to be part of the broader assemblage of REW ceramics and there are no attributes in the glass that alter the later nineteenth century chronology suggested by the REW ceramics. The presence of medicine bottles and bottles for carbonated beverages, for example, clearly indicate a later nineteenth century date.

Table 5.4.2. Glass analysis according to colour.

Colour	Weight	Bases*	Rims	Writing
Colourless	196,69	8	3	3
Green	328,65	3	0	0
Blue	21,68	1	0	0
Total	547,02	13	3	3

* Bases included one resting point piece.

Table 5.4.3. Bottle base details.

colour	shape	basal shape	diameter
colourless	octagonal	flat indentation	20
colourless	round	shallow concave	26
colourless	round	flat indentation	40
colourless	round	flat indentation	42
colourless	angled	-	-
colourless	angled	-	-
colourless	round	flat	-
colourless	round	dome	-
cobalt blue	oval	shallow concave	30
dark green	round	dome	74
dark green	round	dome	-
light green	round	dome	-

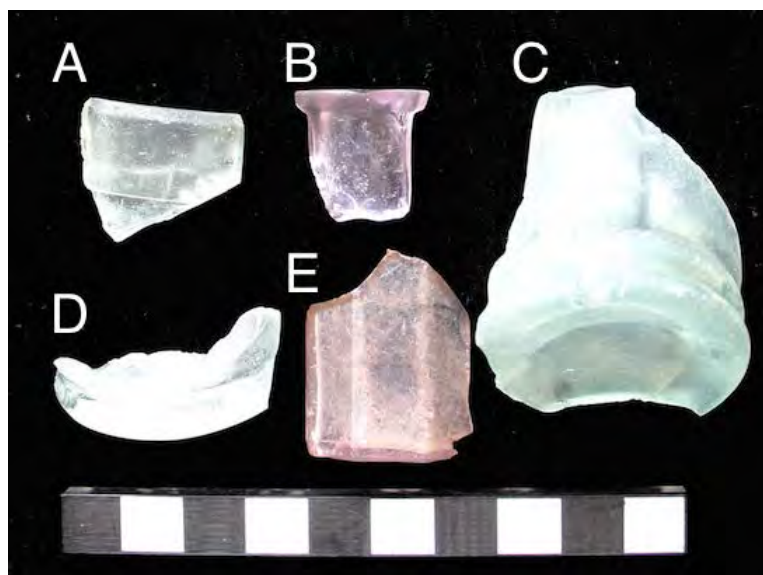


Figure 5.4.7. Selection of diagnostic glass pieces from the surface scatter at WG01. A – flattened side rim, B – flanged rim, C & D – base pieces, E – base of small octagonal bottle.

5.4.3. Metal

There were eleven pieces of metal recovered at WG01 (Table 5.4.4). Two pieces were found in the kraal excavation, one in layer 01 spit 05 (the same layer with the REW sherd) and the other in layer 02 spit 01 (the dung layer) (Table 5.5.1). The metal artefact from layer 01 spit 5 was a small strip (103 mm x 43 mm) of iron sheet metal. The piece in layer 02 spit 01 is a small decorative piece with a green patination which indicates it a copper based alloy.

There were nine metal artefacts from the surface scatter (Table 5.4.4). These included a small iron buckle, a bullet casing with 'UMC 38 S&W' etched on the end, and a small decorative piece made from bronze (pers. comm. Shadreck Chirikure 14 January 2016) (Fig. 5.4.8). The bullet casing comes from a 38 calibre Smith & Wesson hand gun produced by the Union Metallic Cartridge Company from the late nineteenth and early twentieth century (Ball 1996:91). The decorative bronze piece has a hole, suitable for a small nail or pin, which might suggest that it was attached to wood.

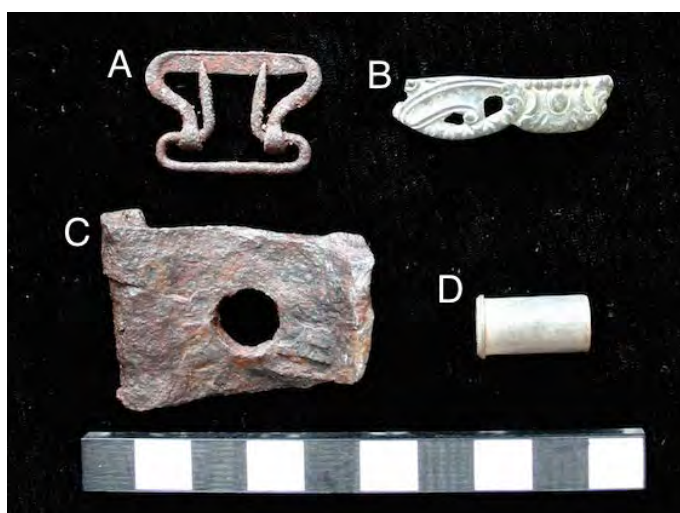


Figure 5.4.8. Metal items from the surface scatter. A: buckle, B: cast bronze decorative piece, C: cast iron piece, D: Smith & Wesson bullet cartridge.

Again, there is nothing in the metal assemblage that changes the later nineteenth century date indicated by the REW and the glass. The rectangular nail provides some chronological pointers because they were generally discontinued in the late nineteenth and early twentieth centuries and replaced by circular nails (Chervenka n.d.).

Table 5.4.4. Metal artefacts from WG01.

Area	Description	Metal
surface scatter	rectangular sheet metal strip with corners folded over on one end - $\pm$ 600 mcm wide 240 mm long	iron
surface scatter	shoe buckle	iron
surface scatter	Cast bronze piece (alloy of copper & zince) ornate curved piece $\pm$ 38,9 mm long 11 mm wide (both ends are snapped off - plain on the inside surface, also has nail hole on inside surface	bronze
surface scatter	small piece of sheet metal - 38 x 66 mm	iron
surface scatter	bullet casing (UMC 38 S&W)	unknown
surface scatter	rectangular nail - 49mm long	cast iron
surface scatter	piece of cast iron with hole in it - 29,9 wide, 48,9 long	cast iron
surface scatter	small strip of sheet metal - 76mm long, 17,3 wide	iron
surface scatter	small rough piece of cast iron - $\pm$ 27 x 12 mm	cast iron
excavation: kraal 1	strip of sheet metal in an L shape: 103,9 long 47,1 wide (widest area).	iron
excavation: kraal 1	Patinated metal piece with decorative features	unknown

5.4.4. Lithics

The lithics were analysed following Deacon's (1984:402-409) classification system.

There were fifty-three lithic pieces found in the kraal excavation, one hundred and fourteen in the terrace excavations, and seven lithic pieces were picked up during the surface collection. The raw material was predominantly quartzite (Table 5.4.5). The tools can be described as crude and rough and there were few formal tools. The coarse nature of the raw material meant that I could not be certain in all cases that the lithics had been deliberately flaked.

There are thirty-nine definite lithic pieces, and fourteen possible lithic pieces from the kraal excavations (Table 5.4.4). The flakes were all irregular informal pieces (Fig. 5.4.9), the majority of which were broken. There were two flakes with possible retouch, however, as both of these were broken, they cannot be catergorised as formal tools. In short, the stone tools represent an expedient rather than formal lithic technology.

Table 5.4.5. Lithic pieces from the kraal excavations.

Lithic type	Raw material					
	quartzite		hornfels		CCS	
flakes	25	83,3%	14	60,9%	0	0,0%
- whole flakes	7	23,3%	1	4,3%	0	0,0%
- broken flakes	18	60,0%	13	56,5%	0	0,0%
cores	0	0,0%	0	0,0%	0	0,0%
grindstones	0	0,0%	0	0,0%	0	0,0%
possible lithics	5	16,7%	9	39,1%	0	0,0%
total	30		23		0	

The majority of the lithic pieces in the kraal were recovered from layer 02 spit 01 (Table 5.4.6) (the dung layer discussed in section 5.3). This layer is near the base of the kraal wall. All twelve of the lithic pieces in Layer 01 spit 05 came from square 02, and as discussed in section 5.3, there was no sixth spit of layer 01 in this square so all twelve pieces were from immediately above the dung layer.

Table 5.4.6. The stratigraphic distribution of lithic pieces in kraal 1.

Kraal 1 - including possible pieces			
Layer	spit	lithic pieces	%
1	1	0	0,0%
1	2	0	0,0%
1	3	0	0,0%
1	4	9	17,0%
1	5	12	22,6%
1	6	4	7,5%
2	1	23	43,4%
3	1	5	9,4%
Total		53	



Figure 5.4.9. Two irregular, unmodified flakes from kraal 1 excavation. A: ventral view. B: dorsal view.

The terrace excavation had a higher density of lithics and one hundred and thirteen pieces were recovered (Table 5.4.7). For the most part, because the lithics were made from coarse sandstone they had an irregular morphology similar to those from the kraal (Fig. 5.4.10), however, there was also a higher frequency of tools made from fine-grained raw material, including some fine-grained quartzite pieces and fourteen cryptocrystalline silica (CCS) pieces. There were five formal tools collected from the terrace; four blades, and one bifacially flaked tanged point made from a fine quartzite (pers. comm. Justin Pargeter 15 January 2016) (Figs. 5.4.11). There was also one piece of ochre (possibly ground on one side) found in the terrace excavations.

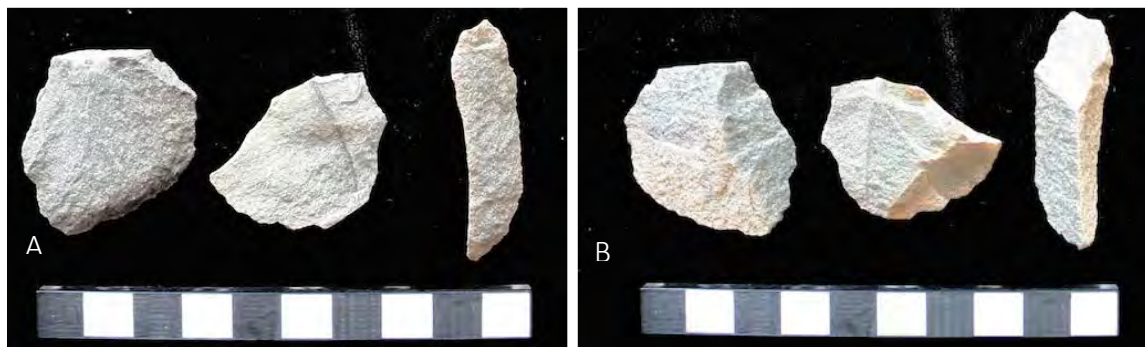


Figure 5.4.10. Irregular, unmodified flakes, and a blade from the terrace excavation. A: ventral view , B: dorsal view.

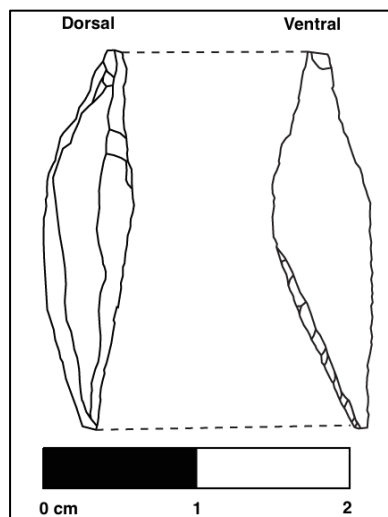


Figure 5.4.11. Bifacially flaked tanged point found in the terrace excavations.

Another notable difference from the kraal was the four grindstone pieces found on the terrace, which indicate some degree of domestic activity in the vicinity of the terrace excavations.

Table 5.4.7. Terrace excavation lithic type and raw material.

Lithic type	Raw material					
	quartzite		hornfels		CCS	
flakes	65	80,2%	15	83,3%	13	0,0%
- whole flakes	21	25,9%	1	5,6%	3	0,0%
- broken flakes	44	54,3%	14	77,8%	10	0,0%
cores	7	8,6%	0	0,0%	1	0,0%
grindstones	4	4,9%	0	0,0%	0	0,0%
possible lithics	5	6,2%	3	16,7%	0	0,0%
total	81		18		14	

There has been considerable disturbance of the terrace excavation deposit and additionally, the artefact bearing deposit was not deep. The bifacially flaked tanged point (excavated from square C6 layer 01 spit 01) may have some chronological significance. Humphreys' (1991) overview of tanged, bifacial, pressure flaked, barbed points, give a date range from approximately 2000 BP and into the historical period (Humphreys 1991:42). Bradfield and Sadr's (2011) more recent research on stone arrowheads has found a similarly wide date range (Bradfield & Sadr 2011:83,86). The point from WG01 is not barbed so it does not quite fit with the arrowheads described by Humphreys (1991), or those presented by Bradfield and Sadr (2011). Close and Sampson's (1999) research on stone points in the Seacow River Valley includes points that have very similar characteristics to that of the point from WG01, particularly those found in the precolonial ceramic levels at Haaskraal shelter, and the historic levels at Boundary shelter (Close & Sampson 1999:84-85). This work highlights the chronological presence of these points within the last 2000 years, and therefore, the WG01 point would not be out of place in its association with the other lithics and the Khoe ceramics from the terrace. Given the wide chronological spread of these artefact type, its presence in layer 01 spit 01, provides no chronological hints for this deposit, and, the other material with which it may be associated.

Table 5.4.8. The distribution of lithic pieces in the terrace excavation, not including possible lithics (the hyphens indicate that the start of the hard indurated layer - these levels were not excavated). The bifacially flaked tanged point was found in square C6.

layer	spit	squares									total	%
		C3	C4	C5	C6	C7	C8	C9	C10	I3		
0	1	5	5	3	3	8	0	8	0	0	32	30,2%
1	1	10	7	6	12	8	4	16	0	4	67	63,2%
1	2	0	-	-	-	0	-	0	1	2	3	2,8%
1	3	2	-	-	-	-	-	0	0	0	2	1,9%
1	4	-	-	-	-	-	-	-	0	2	2	1,9%
total		17	12	9	15	16	4	24	1	8	106	

The prevalence of informal, irregular flakes in both the kraal and terrace excavations certainly points towards an expedient lithic technology at WG01. This combined with the preference for course-grained raw materials is reminiscent of the *Doornfontein* industry described by Beaumont *et al.* (1995), which is associated with pastoralist groups. The fact that lithics are also associated with the thin-walled grit tempered CEW ceramics suggests these lithics may be considered as part of a Khoekhoen pastoralist package (Parsons 2007, 2008). The bifacially flaked tanged point and CCS scraper suggest San activity at the site but as these are the only two tools associated with San currently, it is unlikely that their presence was frequent.

As indicated, the chronology of the lithics at WG01 is difficult to pin point. The stone point has some potential as a chronological marker but it cannot be safely associated with the informal lithics due to the disturbance of the deposit on the terrace. The informal lithics in the kraal are predominantly found just above and in the dung layer which would suggest they were 'sealed' in, and can therefore possibly be dated by association with other artefacts in these layers (this will be covered in the discussion to come).

5.4.5. Miscellaneous artefacts

There were two miscellaneous items found in the kraal excavations. One is the front half of a leather shoe and the other is a bone button. Both were found in layer 01 spit 05 in square 2, just above the dung layer.

The shoe consists of three layers of leather, which have been attached with wire nails on an outer seam (Fig. 5.4.12). The sole is composed of two of these layers, with the upper section of the shoe being the third layer. It appears that the shoe was hand repaired at some point and this repair job is easily visible when the regularly spaced wire nails are compared to the erratically placed plain nails. The spacing of the wire nails is quite regular, but not quite regular enough to be machined, although some of the irregular spacing may be due to warping of the leather. If the shoe was machine nailed it would date to the later nineteenth century (Quirk & Beaudoin 2011:29). This would fit with the chronology of wire nails, which become common from around the 1850s (Nelson 1968:209; Wells 1998:88-89).



Figure 5.4.12. Half of a leather shoe excavated from kraal 1. Note the different nails used for repairing the shoe.

The bone button from layer 01 spit 05, has a diameter of 15 mm. There are four holes set in a recessed circular centre, and there is a thin line engraved along the edge of the button. The back of the button has no distinctive features. Small bone buttons are sometimes associated with items such as undergarments, or pillow cases (an unlikely option in this

case) (Lindbergh 1999:52). As these buttons were used on many different garments, it is difficult to establish what article of clothing the button came from. The engraved line may indicate that the button was made for outerwear because decorative features are unnecessary for undergarments (Marcel 1994:4). The engraved line also gives an indication of chronology as engraved features are associated with the second half of the nineteenth century (River 1999:34).

Other miscellaneous artefacts from the surface scatter included two pieces of harmonica base plates to which the reeds were attached (from separate instruments), a fragment of clay pipe stem, half a blue glass bead, and a metal button (Fig. 5.4.13).

The harmonica reed plate fragments consist of a metal plate made from a relatively soft and malleable metal alloy with thin metal strips (the reeds) one end of which was attached to the end of a blow hole. Although harmonicas were invented in the early 1820s, they only become popular in the mid 1870s when industrial production made them a relatively cheap musical instrument (Berghoff 2001:344). They are commonly found in the middens of Karoo households.

The clay pipe stem fragment is 43 mm long, has a diameter of 6,3 mm and a bore hole diameter of 1,6 mm, and comes from the mouth end of the stem. There are no markings present. Pipe stems can be dated by measuring the bore hole diameter; the thinner the diameter, the later the pipe. The method however, is not valid beyond the nineteenth century (Walker 1970:14). Considering the age of the other artefacts found at WG01, there is a strong probability that it is from the nineteenth century.

The metal button is a 'trouser' button with a depressed circular eye (Lindbergh 1999:52). It has the following letters impressed on it 'BEST. RING. EDGE'. These types of buttons were produced from the 1850s, and are from work wear garments (Lindbergh 1999:55; Casey & Lowe n.d.:75).

The blue glass bead is 9 mm long, it has a diameter of 7,9 mm and a bore diameter of 2,5 mm.



Figure 5.4.13. Miscellaneous items from the surface scatter. A: harmonica reed plate fragments. B: blue glass bead. C: pipe stem. D: metal 'trouser' button.

5.4.6. Bone

The bone from the excavations is awaiting detailed analysis. Much of the diagnostic bone is fragmented making it difficult to identify. In total, the amount of bone excavated was not large; 341.24 g was found in the kraal, the majority of which was in between layer 01 spit 06 and layer 03 spit 01 (Table 5.4.9), and only 17,9 g of bone was found in the terrace excavations.

An almost complete skeleton of a neonatal lamb skeleton was found in layer 01 spit 06, hence the notably higher percentage of bone in this level.

Table 5.4.9. Bone weight per spit from the kraal excavation.

Layer	spit	weight g	%
1	1	0,49	0,10%
1	2	0,2	0,10%
1	3	8,01	2,30%
1	4	2,77	0,80%
1	5	30,79	9,00%
1	6	147,02	43,10%
2	1	89,93	26,40%
3	1	62,03	18,20%
Total		341,24	

5.5. Discussion

It is clear from the descriptions of the WG01 excavations that the density of artefacts is low but they provide the only evidence, so far, for stratigraphic relationships. I start with kraal excavation, which provided the clearest evidence of a relative chronology. This is followed by an overview of the terrace excavations before discussing the stone-walled structures and other features present at WG01.

The kraal excavations

The kraal deposit can be broadly separated into two contrasting sections; first is the artefactually sterile light red silt from the surface down to the fourth spit, and the second the artefact layers below which included the thick dung layer. Although the artefact density is low, the interpretive value of the artefacts is increased because of the sterile deposit above, which sealed in the artefact bearing layers.

The two notable artefact bearing levels are layer 01 spit 05, and layer 02 spit 01. Layer 01 spit 05 is has all colonial artefacts except one piece of metal, and 22,6 % of the lithic pieces found (Table. 5.5.1). The shoe and button in this level both date to the latter half of the nineteenth century so it is likely that the other associated colonial artefacts are from the same period. No colonial artefacts from the later eighteenth /early nineteenth century were found in the kraal. This is also the layer that has the almost complete juvenile sheep skeleton.

Layer 02 spit 01 is very different. It has the largest proportion of lithic pieces (43,4 %) in comparison to the other layers, and a significant percentage of the bone found in the kraal (26,4 %). There is one piece of metal (the unidentified patinated decorative piece) (Table. 5.5.1); this is the only colonial artefact in the layer.

In summary, there are significant differences between the two layers. Layer 01 spit 05 has some lithics but not nearly as much as layer 02 spit 01, and it has, except for the one metal piece, all the colonial artefacts. Layer 02 spit 01 has a much higher proportion of lithic pieces and only the one colonial artefact, the metal piece. This suggests two distinct

chronological periods. As indicated by the shoe and the button, layer 01 spit 05 indicates a colonial recycling of the kraal and terrace in the late nineteenth century. Layer 02 spit 01 does not have any datable artefacts but the expedient lithic technology points towards an earlier Khoe pastoralist use of the kraal. If we consider that the base of the kraal wall is just below layer 02 spit 01, it is clear that the date of the wall's construction and the lithics are closer in time. Based on this evidence it is possible that the walls were constructed by Khoe pastoralists (to be discussed further shortly).

Table 5.5.1. Kraal 1 artefact table according to the stratigraphy.

Layer	spit	ceramics	metal	lithic pieces	miscellaneous	bone*	total	%
1	1	0	0	0	0	1	1	1,20%
1	2	0	0	0	0	1	1	1,20%
1	3	0	0	0	0	1	1	1,20%
1	4	0	0	9	0	1	10	12,20%
1	5	1	1	12	2	2	18	22,00%
1	6	0	0	4	0	8	12	14,60%
2	1	0	1	23	0	6	30	36,60%
3	1	0	0	5	0	4	9	11,00%
Total		1	2	53	2	24	82	

* The bone count is based on 20 g increments i.e. 1 is equal to between 0,1 g to 20,9 g of bone 2 is equal to between 21,0 to 40,9 g etc.

Terrace excavation

The terrace deposit was shallow, and from a sedimentary point of view comprised only one layer. The shallowness of the deposit combined with the bioturbation makes it difficult to establish a relative timeline. However, as the artefacts consisted predominantly of CEW sherds and lithic pieces, with a complete absence of any colonial artefacts, it suggests that the terrace deposit predates the colonial artefacts found in kraal 1 and is a single component. It is significant that the expedient lithics from the terrace excavation can be linked to material from layer 02 spit 01 in kraal 1. As is likely, the collection of grindstones fragments from the terrace excavation can be associated with the CEW and indicates that this was an area of domestic activity. The terrace trench was placed in an area that had the densest spread of CEW, and, as CEW pots were used for storing and cooking food, the potsherds may support this.

Surface scatter

The colonial artefacts from the surface scatter all support a later nineteenth century date, and this correlates with the upper artefact layer (layer 01 spit 05) in the kraal sequence.

The colonial artefact density was very low when compared typical later nineteenth century homesteads in the Karoo. Only 140 colonial artefacts were recovered, the majority of which was glass sherds (79 sherds) and REW (47 sherds). The contrast, for example, a small homestead on Scholtzenhof farm, possibly used by *bywoners* (tenant farmers) in the nineteenth century has in excess of 1680 colonial artefacts in the surface scatter (pers. observation field notes).

The very low density of later nineteenth century artefacts at WG01 indicates that the site was not used for extended periods of time, and was not a homestead. The MNV count is low, and other than one ginger jar sherd, the colonial ceramics appear to be plates and small bowls. No vessels associated with cooking or major food storage were found. This suggests periodic site use and food consumption, rather than the cooking and storing of food that one would expect at a homestead. The absence of any stone-walled domestic structures further supports this. The site may have been used as a satellite camp within the boundary of Welgemoed for flocks in the late summer, or it may have been used as they came down from the escarpment (to Moordenaars Karoo winter farms). Either way, WG01 does not appear to have been used for extended periods of time in the later nineteenth century.

The density of indigenous artefacts is also very low with only 64 artefacts collected in the surface pick up. Thin walled CEW (53 sherds) made up the majority of the indigenous surface scatter. However, indigenous pastoralist sites seldom have large numbers of artefacts (Fauvelle-Aymar *et al.* 2006; Jerardino & Maggs 2007; Arthur 2008). The style of the piled rock round kraal cluster on Vinkekuil farm for example, has 15 kraals, and the circular rings of rocks that are commonly thought to have been used to secure *matjieshuise* (Parsons 2004), yet we struggled to find any Khoe ceramics or stone tools when we walked around the site. In short, low artefact density cannot be used as a guideline for the intensity of site use, or the duration of site occupation. The several grindstones found at WG01 for

instance could indicate that pastoralists may have used the site for more extended periods of time.

Stone structures

The stratigraphic evidence for the construction of the kraals indicates a date well before the later nineteenth century chronology indicated by the majority of the colonial material. The sub-rounded shape and irregular piled rock construction in combination with the presence of the lithics in the lower levels of kraal 1 suggest that this is a reasonable conclusion. There is no evidence of the rubble filled, neat walling associated with the historical period. However, when the style of the kraal wall was exposed by the excavations and then compared to other piled rock kraals that have been recorded (Fig. 5.5.1 & 5.5.2) there are some differences in style. In fact, the walling style is more comparable to the rectilinear, historical kraals such as those seen at Scholtzenhof farm (Figs. 5.5.3 & 5.5.4).



Figure 5.5.1. Walling from inside the kraal 01 at WG01.



Figure 5.5.2. Piled rock walling at Scholtzenhof



Figure 5.5.3. Rectilinear kraal walling at Scholtzenhof – note the use of large rocks with smaller rocks filling up the gaps.



Figure 5.5.4. Exterior section of kraal 01 at WG01. Not in a very good condition but it possible to see the similarities with the Scholtzenhof wall in Fig. 5.5.3.

Additionally, if we also consider the presence of eighteenth century Asian porcelain, it is possible that the kraals are not deeply precolonial but could rather date from the mid-eighteenth century early loan farm period. As mentioned in the introduction, Welgemoed was one of the early Roggeveld loan farms granted in the mid eighteenth century. The site may have been a satellite camp connected to the main loan farm focus 2,5 km to the south, which could account for the Asian porcelain. Alternatively, indigenous pastoralists who were interacting or competing with the trekboers at the loan farm may have been using the kraal, which could also account for the Asian porcelain. Furthermore, it must be noted that kraal 2's size, 921 m² does not fit the size class of the smaller round piled rock kraals which usually range between 20 to 300 m². This may support early trekboer use of the kraal, and the kraal construction postdates the material from the terrace excavation material but obviously predates the late nineteenth century use of the site. This would then also imply that earlier indigenous pastoralists were using the site without building stone-walled kraals.

In support of this, what appear to be Khoe pastoralist sites without stone-walled kraals, have been found in the region. Approximately 2,3 km down river there is a terrace site, which has an indigenous pastoralist artefact scatter that is very similar to WG01 (thin walled ceramics, expedient lithic technology, grindstones) but no stone-walled kraals. There is no shortage of suitable rocks close to this site so it is not related to a lack of raw materials. Additionally, there also two other sites in the Klein Roggeveld, both on Modderfontein farm, with extensive Khoe material culture surface scatters, also with no stone-walled kraals, one of which had a mixture of indigenous pastoralist artefacts and historical artefacts. Presumably, if these open sites were pastoralist sites, they would have had organic kraals made from thorn bushes or wattle. I am confident that many more of these sites will be found with further ground surveys. In short, WG01 may originally have been an open air Khoe site and the kraals were constructed in the eighteenth century by trekboers. The cleared area may indeed prove to be the location of an organic kraal.

The area was definitely part of a shared landscape during eighteenth century because just three km west of WG01 is a site where a knapped piece of eighteenth century Asian

porcelain with confirmed usewear was found (Fig. 5.5.5) (pers. comm. Marina Araújo 2014). This knapped porcelain was found in a skerm or hut base, and the knapping is systematic Later Stone Age technology and retouch. Additionally, the small skerm would also support a San context. This certainly indicates that there was a relationship between indigenous and colonial people during this period, even if it was only recycling porcelain for tool manufacture. These processes of interaction may have been present at WG01 as indicated by the unworked porcelain found there.



Figure 5.5.5. Macroscopic detail of the knapped porcelain showing intentional scarring with usewear. Polish associated with striation magnified (200x) on the right.

It is also possible that the kraals 1 and 2 at WG01 are not contemporaneous. The Asian porcelain was only found in kraal 2. This may indicate that kraal 2 is connected to the loan farm period and kraal 1 may be earlier. The fact that the wall style of kraal 2 is different from kraal 1 (most notably, kraal 2 has no upright monoliths present in the walling) may support to this proposition.

Whatever the date for kraal 1, it is clear that colonists recycled it at a later date. Kraal 1 may, be an earlier Khoe kraal that was repaired later by trekboers and this would explain the irregular walling style. As discussed in the previous chapter, trekboers did build large circular kraals but by the late nineteenth century I would not expect it to be a common occurrence. The repair of old round kraals however, is entirely feasible.

The cairns at WG01 also point to two chronological periods. The shape of the two sub-circular piled cairns near the kraals indicates that these may be precolonial burials, possibly contemporaneous with the terrace excavation material. The neatly stacked rectilinear

shaped cairn, however, matches historical building styles making it far more likely to relate to the colonial period.

In order to elaborate further on the possible interpretive options for the WG01 sequence, I visited a site (VNK01) that was found on GE, and looked remarkably similar to WG01 (Fig. 5.5.6 & 5.5.7). The kraals are also semi-circular, back onto a scarp edge, and they are high up a valley leading to the escarpment. Classification through the GE survey would place them in the same class as WG01.



Figure 5.5.6. WG01 on Google Earth.



Figure 5.5.7. VNK01 on Google Earth.

A site visit indicated that, while the kraals were sub-circular, the shape appeared to be the result of the topography of the setting rather than a stylistic choice based on cultural affinity. The kraals backed onto a scarp edge, but the land surface is quite steep, and more hillside than terrace. Most notably, the walls consisted of two outside layers, with a rubble filled interior that is typical of historical walls (Figs. 5.5.8 & 5.5.9). There was no artefactual surface scatter around the kraals.



Figure 5.5.8. Rubble filled kraal wall at VNK01.



Figure 5.5.9. Neat stone-walled kraal at VNK01.

Furthermore, there were several other structures in the immediate vicinity of the kraals. On the scarp above the kraals was a small bilobial enclosure (Fig. 5.5.10) (each lobe had a diameter of ± 3 m) with neat rubble filled walls, and a small skerm 20 m from the bilobial structure. Around both of the features there is a light surface scatter of late nineteenth century REW, some metal pieces, and glass.



Figure 5.5.10. Bilobial enclosure VNK01.

On the opposite side of the river (to the south) from the kraals is a rectilinear, two roomed domestic ruin (Fig. 5.5.11), again with neat rubble filled walling. There was also a small window that gives a direct visual sight to the kraals (Fig. 5.5.12). There was a light surface scatter of historical material, including REW from the latter half of the nineteenth century.

Approximately 20 m from the domestic ruin was a dilapidated rectilinear kraal ($\pm 77 \text{ m}^2$), and a further 15 m from this kraal was a dilapidated structure that consisted of two small round enclosures (both with a $\pm 2 \text{ m}$ diameter) joined by a short ($\pm 1 \text{ m}$) length of wall. Despite the similarity to WG01 suggested by the GE survey, this site was completely different to WG01. On current evidence it is not helpful for resolving the age of the kraal construction at WG01. At the GE scale, WG01 and VNK01 appear similar, but on the ground, the kraal building style and the associated structures indicate a chronology in the later nineteenth century. This is similar to that suggested by the majority of the colonial material at WG01.

This comparison does demonstrate that information gathered from the Google Earth survey can be used as a guide, or starting point but it cannot replace on the ground research. Additionally, when I revisited to the GE view of the site after I visited it, I found it reasonably easy to identify the domestic ruin and the other kraal. Site visits like this will increase the accuracy of aerial assessments of sites.



Figure 5.5.11. Domestic ruin at VNK01.



Figure 5.5.12. View of the kraals from the window in the domestic ruin.

In conclusion, the purpose of the WG01 excavation was to establish a chronology for the site and to assess the relationship between the indigenous and the colonial material culture that was present on the surface at WG01. The expedient lithics may be associated with Khoekhoe pastoralists because the majority in kraal 1 were in the layers below those with European artefacts. This is a clear indication of an indigenous presence, and suggests that indigenous pastoralists were using the kraal prior to the pastoralists of the late nineteenth century. Unfortunately, we found no colonial artefacts in the kraal that would allow us to

elaborate a discussion of the site in the context of a shared landscape of the late eighteenth /early nineteenth century. The Asian porcelain bowls certainly hint that WG01 was in use during the eighteenth /early nineteenth C, but we cannot tell whether these were Khoe herders interacting with trekboers, or early trekboers.

This evidence indicates that kraal 1 was used at least during two periods, the latest clearly being the late nineteenth century use of the site. The chronology of the earlier periods is less clear. The wall style of kraal 1 does not quite match other precolonial kraals, which might suggest it dates from the colonial period but the recycling of the kraal later in the nineteenth century could explain these inconsistencies. The kraal 2 wall style is more typical of the piled rock round kraals but its size is well outside of the standard size range for these kraals. This points towards the use of kraal 2 in the colonial period, and considering the position of the Asian porcelain inside kraal 2 it is possible that its use dates to the eighteenth century when the Welgemoed loan farm was occupied. The late nineteenth century use of the site is more likely to be connected to a group of nineteenth /early twentieth century domestic structures approximately 1 km north of the site when the farm may have been fully fenced and the kraals provided kraaling options away from the main werf.

Regarding site use, the low density of colonial artefacts is a good indicator that the site was not occupied for long periods of time in the nineteenth century. The density of artefacts is not comparable with even small homesteads of equivalent age in the Karoo. Low artefact density however, is not an explicit indicator of low or short-term occupancy when it comes to Khoekhoen pastoralists. The grindstones may suggest that Khoe pastoralists were occupying the site for longer periods of time but this would require more investigation.

6. Discussion

The goal of this dissertation has been to explore the changes in Roggeveld pastoralist strategies during the eighteenth and nineteenth centuries through the archaeology of pastoralist systems. The most visible trace of these systems is the stone-walled kraals that were used right up to the end of the nineteenth century. The premise of the dissertation has been that the distribution of these kraals, and different kraal types, should to some degree, reflect the change from small-scale predominantly subsistence meat pastoralism of the eighteenth and early nineteenth century to the large-scale commercial farming for wool that started midway through the nineteenth century. The Roggeveld is a generally open landscape with low shrub vegetation, and because of this it was possible to survey an area large enough to incorporate the territory of a seasonally transhumant pastoralist system using Google Earth (GE). As discussed in chapter two, the semi-arid environment and seasonal conditions made it necessary for pastoralists to exploit a territory that included an upland zone in summer, and a lowland zone during winter. The research area covered such a territory; the Moordenaars Karoo, Klein Roggeveld, and Middle Roggeveld.

The GE survey systematically scanned the entire research area, and recorded a wide range of stone-walled structures, which are predominantly stone-walled kraals, domestic ruins, and on going werfs. This recorded information was backed up by two extensive heritage impact assessments and several ground surveys done in the course of this research. These ground surveys served to substantiate, and correct the GE data. The intention was to look for trends in the distribution of the structures recorded. The distinct distributions of kraals when looked at against their size, association and environmental surrounds indicate that this has been a productive exercise. Furthermore, as a beginning to the process of linking the GE survey data to the archaeology on ground I excavated a site that could add substance to some of the interpretation of the GE data.

This chapter first discusses the findings from the GE survey and before looking at the excavations.

6.1. Patterns from the GE survey

The survey area covered was approximately 4,900 km², and was chosen because historical records specifically mention Roggeveld farmers from the Middle Roggeveld moving down into the Moordenaars Karoo during winter so I knew that a full seasonal cycle for the pastoralists exploiting the southern section of the Roggeveld was encompassed by this area. As mentioned, the principle sites and structures entered into the database were the stone-walled kraals, domestic ruins and on going werfs. As a direct manifestation of the pastoralist systems that were in place during the eighteenth and nineteenth centuries, kraals had the greatest level of detail recorded. The location, shape, size, distance to water, and association (or lack thereof) with other structures have proven the most useful of these details. Using this information I was able to create multiple layers from the survey that could interact with the environmental information, notably the vegetation areas of Mucina and Rutherford (2006), and historical events that affected the residents of the Roggeveld.

The discussion of the Google Earth (GE) database and some of the patterns identified is organised around the timeline presented in the conclusion of chapter two. This figure (Fig. 6.1.1) is reproduced here with additional annotation that summarises the patterns noted in chapter four. These annotations provide working ideas and suggestions concerning chronological position along this timeline. With a broad chronology in place it is possible to see changes in the pastoralist strategies as sheep farming gradually intensified during the nineteenth century. Before discussing these structures it is important to keep in mind that the chronologies apply to broad categories and not to individual structures. For example, I am not suggesting that no domestic ruins were built before the nineteenth century, or all large rectilinear kraals are late nineteenth century, rather that they are far more likely to date from those periods because of particular historical events and/or environmental constraints. There are also structure categories that have not been included in this discussion because I am not at all sure where they might fit. For example, rectilinear kraals below 500 m² are likely to have been built consistently from the arrival of the trekboers in the Roggeveld right up to the introduction of wire fencing in the late nineteenth century. Consequently, without reference to other structures, such as domestic ruins or werfs, they in my opinion do not yet inform on changes in pastoralism in the historical period.

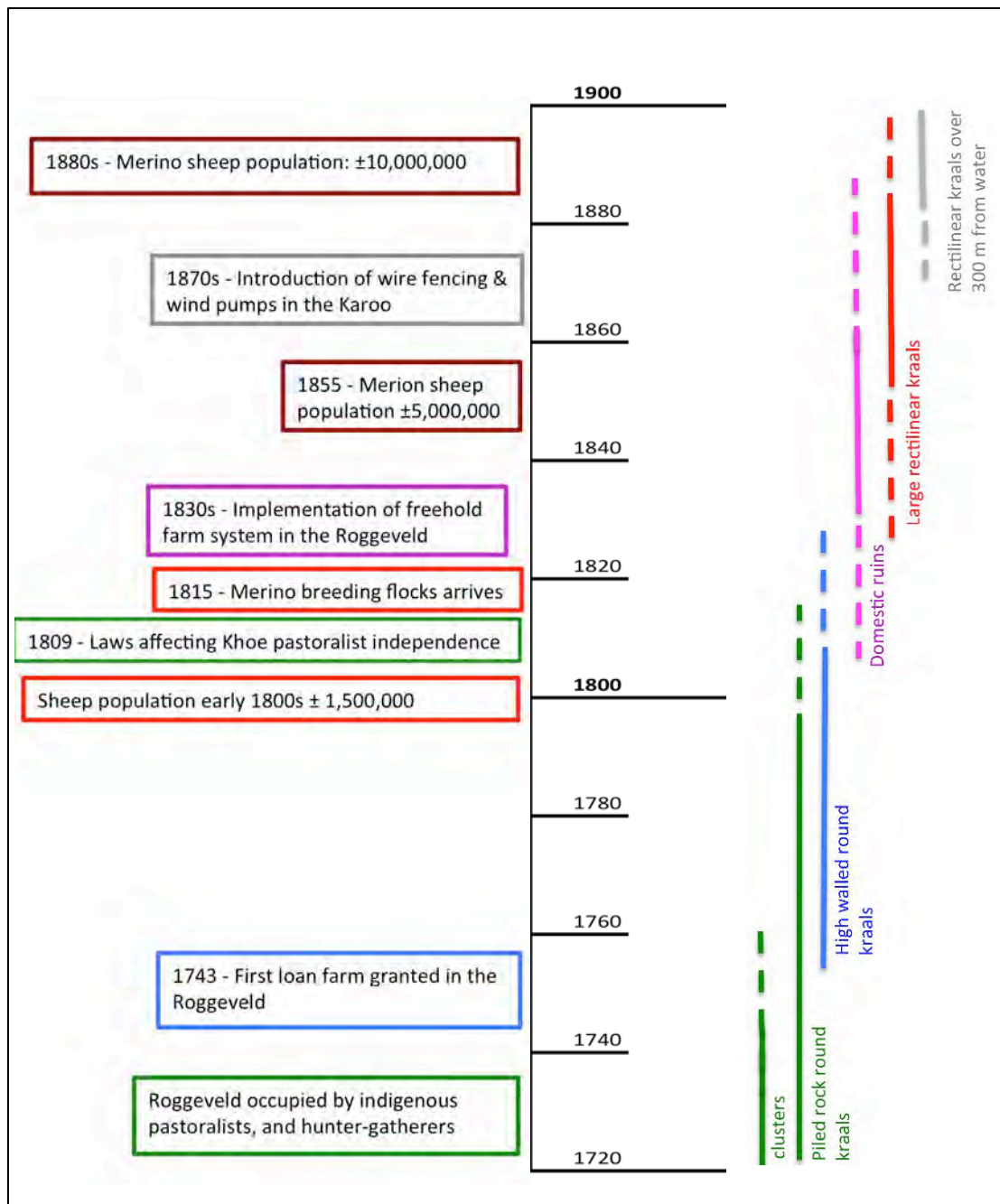


Figure 6.1.1. Timeline with the approximate chronologies for the structure categories described in chapter four indicated by the lines on the right. The colour of the lines for each of the structure categories corresponds with the historical events on the left.

Circular kraals

The generally small sizes of round kraals fits with what we know about the small-scale subsistence based pastoralism practiced by indigenous pastoralists, and the trekboer settlers in the Roggeveld during the eighteenth century. The low occurrence and visibility of round kraals in comparison to rectilinear kraals indicates that they are harder to find, but also may be congruent with the relatively low indigenous populations in the Roggeveld

compared to the intensity of pastoralism and the population increase of trekboer settlers starting in the eighteenth century.

The circular kraals are predominantly situated in the Komsberg in the KR area and along the edge of the escarpment in the MR area. The escarpment was the cusp between the two environmental zones, and by basing themselves on this cusp pastoralists could exploit the two areas relatively easily. Furthermore, the fact that the research area straddles the summer/winter rainfall regions means that from this cusp pastoralists were poised between the two regions, and were better able to take advantage of rainfall patterns, particularly to the northeast. It is possible to see rainfall many kilometres away from the top of the escarpment; pastoralists could quite literally chase the rain from this vantage point. Additionally, the escarpment edge and Komsberg have a higher annual rainfall compared to the rest of the research area, and this is also where the springs and streams that feed into the two watersheds of the Buffels River in the KR, and the Vis and Renoster Rivers in the MR originate, being near these water sources avoids the processes of evapotranspiration, subsurface detention, and evaporation discussed in chapter three that gradually reduces the volume of surface water. In short, these kraals take advantage of prime environmental resources.

Piled rock round kraals

As discussed, the construction of these kraals match those described in the literature (Sampson 1995; Hart 1989; Kinahan 2001; Parson 2004), which suggests that these were constructed by Khoekhoen pastoralists. The clusters of piled rock round kraals are most probably indigenous in both construction and use. As no archaeological research has been done on the arrival of pastoralism in the Roggeveld, I have no chronological starting point for these kraals, however, we know that Khoekhoen herders were in the area well before the arrival of the trekboers. The advanced state of deterioration of these kraals and the low incidence of associated historical artefacts or structures, suggests that many of these kraals had ceased being used before or soon after the physical arrival of the trekboer settlers in the 1740s. As most of these have only been found during ground surveys we cannot provide a more comprehensive statement about their distribution. It is however notable that, so far, no clusters of these kraals have been found in the KR or MK and they all occur on top of the

escarpment (MR). Additionally, it may be relevant that where potential Khoe sites have been found below the escarpment, the coarse earthenware (CEW), grindstones and lithics are generally not associated with stone-walled kraals. The small kraal clusters on the plateau suggests that these clusters 'speak' to social structure and extended kin units that seasonally settled and aggregated in the MR when conditions could support larger groups at a single place. It is also possible that raiding was a regular occurrence on the escarpment, or during the season that the pastoralists usually exploited the escarpment hence aggregation may have been partially related to 'safety in numbers'.

The isolated piled rock round kraals that are visible on GE may reflect, either a different season or different time period. In support of the latter possibility their greater visibility suggests that there has been less time for dilapidation, and secondly, they are frequently close to colonial structures or have colonial artefacts in close proximity. This suggests that many of these isolated kraals may have been in use after the arrival of the trekboers in the 1740s. Their assumed indigenous construction, suggests that these may have been the kraals of Khoekhoen pastoralists that were interacting to some degree with trekboer settlers but still maintained a level of independence. Some of these kraals may have been reused by trekboers, but I think it is probable that many were used by independent Khoekhoen pastoralists for their own flocks during the early stages of the trekboer colonisation of the Roggeveld.

The implementation of the Caledon Code (the 'Hottentot' Proclamation that deprived the Khoekhoen in the colony from independence) in 1809, can be viewed as the concluding period for the construction of these kraals. It is likely that their construction gradually decreased in the eighteenth century with the erosion of Khoekhoen independence.

High walled round kraals

The high walls and neater stone-walling associated with these kraals is a building style shared with many of the rectilinear kraals. Additionally, these kraals are much larger than indigenous kraals and the Theronrus examples are also built in defensive positions, have high walls and are located close to a significant spring. I suggest that trekboers built these kraals during the loan farm period. The Asian porcelain at the Theronrus kraals supports this

date range, as does the defensive position considering that raiding was prevalent during the loan farm period. Furthermore, the round shape suggests a strong indigenous influence, which in turn suggests that these kraals were constructed when the trekboers were still actively/consciously learning from indigenous pastoralists and shared the landscape with them. While these significantly large circular kraals ‘copied’ the circular concept of Khoe kraals, and indeed may have been built by Khoe clients or labourer for trekboers, circular design may not be limited to indigenous influence. The loan farm system, although a thoroughly colonial product, was itself based on circularity with the extent of the farm being prescribed by the radial distance defined by an hours walk. There is congruence between circular loan farms and circular kraals that underpin an expansive and seasonal sheep management system practiced by trekboers. While kraals were at the centre of loan farms, the loan farm boundaries did not limit the widespread trekking of sheep. Additionally, the large circular kraals in the MR and KR areas may indicate the size required to keep larger numbers of sheep either for their defence, or in the grazing conditions provided during the summer months (the same conditions that allowed for the suggested aggregation of extended Khoe kin groups reflected in the piled rock round kraal clusters). With this in mind, we can possibly extend the period of use of these large circular kraals up to the introduction of freehold property under perpetual quitrent in the early nineteenth century. This was when the circular farm boundary gave way to the rectilinear farm boundaries that we know today.

Domestic ruins

The historical data suggests a period from about the 1830s onwards for the small domestic ruins. In 1803 Lichtenstein recorded only thirty-six families in the Middle Roggeveld (keep in mind that the research area only covers a portion of the Middle Roggeveld), and fourteen families living in the Klein Roggeveld. Consequently, I would not expect a great number of domestic structures dating from this period. Furthermore, as discussed in chapter two, the dwellings of the early trekboers were rudimentary and comprised low walled, reed-roofed houses, or huts similar to the *matjieshuise* of Khoe pastoralists. These are unlikely to be visible on GE, and in the case of the reed dwellings, practically invisible on the ground. Consequently, the domestic ruins seen on GE are far more likely to be from the nineteenth century, probably after the loan farms were converted to freehold farms under perpetual

quitrent in the 1830s. Additionally, some of these small domestic ruins are associated with circular kraals. If, in these cases, the association between these small, generally two roomed dwellings is direct, it raises questions about the identity of the occupants and whether they were landowners or tenant farmers.

Encouraging investment in farms was a major factor in the British government's decision to change the land tenure system from loan farms to freehold farms. Converting a loan farm to a freehold farm required a comprehensive survey undertaken by the deeds office. This fixed, or cemented, these farms onto the landscape in a far more permanent way than the loan farm system ever had. The greater land security innate in this process cannot but have had an impact on farmers' investment in their land, which would have presumably included more substantial, permanent domestic structures. Hence, I suggest that the 1830s is the logical chronological start point for the majority of the small stone built domestic ruins.

The chronological end point for domestic ruins in the KR is not obvious at this stage. The vast majority of these domestic ruins are situated in the central Komsberg. This distribution is particularly important because it overlaps with the areas where circular kraals are found. Circular kraals are assumed to be more closely related to indigenous pastoralist systems rather than colonial, and farmers occupying these small domestic ruins in the 1830s may still have followed indigenous pastoralist systems. These indigenous systems however, were increasingly curtailed with large-scale commercial wool farming, as the landscape gradually filled with settlers attracted to the potential profits to be made from wool. Roggeveld farmers became more and more hemmed in. If pastoralists did not have the capital to purchase farms to which they could seasonally move their sheep, this effectively negated the ability of being able to seasonally access different environmental zones. Additionally, the rugged landscape of the KR may not be ideally suited for the infrastructure of large-scale wool farming.

When large-scale commercial pastoralism increased in the Roggeveld from the 1850s, development increasingly expanded outside of the areas where these small domestic ruins are concentrated. Therefore, these domestic dwellings may have slowly ceased being occupied as sheep farming expanded geographically. Additionally, if some of these small

dwelling were occupied by tenant farmers of mixed race, these arrangements may also have been terminated with the increased intensification of land use and land ownership with commercial merino sheep farming from the mid- nineteenth century.

This could also be seen as the chronological start point for the occupation sequence of contemporary werfs. Werfs were obviously established in the early loan farm period, however, the werfs outside of the areas predominantly populated with the small domestic ruins are more likely to date from the increasing commercialisation of sheep pastoralism because few occur in the central Komsberg area. The areas favoured by domestic ruins were obviously already occupied when new settlers attracted by the wool boom started entering the Roggeveld. Therefore, they would have had to claim land outside of these areas. There are some scattered domestic ruins in these areas but certainly nothing that compares to the domestic ruin cluster in the Komsberg. The fact that this area has few large working werfs now may indicate that farmers moved their base of operation out of these areas because of environmental constraints on pastoralist intensification from the 1850s. The most notable difference between the areas with lots of domestic ruins, and those with a higher density of werfs is the terrain. Kraals associated with small domestic ruins are densest in the middle of the Komsberg, an area dominated by mountains, high ridges, and steep hills. Whereas, the areas heavily populated with kraals associated larger werfs are located on plains and low hills. The most obvious supposition is that the rugged terrain did not limit small-scale pastoralism but was not as well suited for the large-scale commercial farming associated with the wool boom. A point briefly mentioned in chapter three was that, unlike indigenous sheep, merino sheep may require supplementary feeding in hot dry periods. Merino wool farmers would have benefitted significantly if they could produce their own lucerne, hence the conditions for the growing of lucerne would have been an important consideration when locating a werf. It is clear from general survey in the Karoo that alluvial sediment adjacent to larger drainages has and continues to be used for lucerne production. These fields are often in close proximity to the werfs.

Large rectilinear kraals

The chronology suggested for rectilinear kraals over 500 m² is between the 1850s, when wool farming started in the Roggeveld, and the introduction of wire fenced camps which

took over from kraals in the later nineteenth/early twentieth centuries. The increase of the sheep population during the nineteenth century was dramatic, in 1815 there were less than 100 merino sheep in the colony, by 1875 there were 10 million. Less dramatically, but nevertheless significant, the sheep for meat production population rose from 1,5 million in 1806 to 4,5 million by the beginning of the twentieth century. Although the initial growth in wool sheep was largely felt in the Eastern Cape, by the mid nineteenth century, the merino wool trade should have made enough of an impact in the Roggeveld for it to be visible in the GE database. Wire fenced camps for sheep only started being built in the 1870s, and did not become commonplace till the end of the nineteenth century and only completely replaced the daily 'trekking and kraaling' practice in the second decade of the twentieth century (Archer 2002:112). Hence, we have an approximately fifty-year period where sheep numbers increased by close to 50%. Naturally this would have required a corresponding increase in kraals. Considering that many of the contemporary werfs were first established during the wool boom, the fact that rectilinear kraals associated with werfs tend to be larger than those associated with the small domestic ruins supports this sequence and the chronology. The majority of these kraals are likely to have been dispersed across the farms in order to maximise the exploitation of the land. Farmers were, by this stage, increasingly restricted to their farms, and there was no option to graze beyond farm boundaries, unless of course farmers owned multiple farms.

There are isolated rectilinear kraals in the more marginal areas of the research area i.e. the Roggeveld Karoo vegetation area in the MR and the Gamka Karoo vegetation area in the KR. These marginal areas are situated along the eastern edge of the research area, in other words, in the summer rainfall region, so despite their low mean annual rainfall they are likely to have had some rainfall in summer. This distribution of isolated kraals may reflect the use of these marginal areas that were still crown lands or unclaimed and used sporadically when there were periods of rainfall in their vicinity. These kraals may have been used in late summer when grazing had been overstretched closer to the werfs.

Rectilinear kraals over 300 m from water

The last category consists I consider of rectilinear kraals over 300 m from a natural watercourse. The timeline proposed for these is after the introduction of wind based water

pumps (windmills) in the 1870s and would coincide with the decline of stone-walled kraals in the Roggeveld. Kraals further than 300 m from a natural watercourse are rare in both the MR and the KR. Farmers are unlikely to have changed this in the semi-arid environment of the Roggeveld, hence these more distant kraals are likely to have had an artificial source of water. These water pumps would have allowed farmers to graze their flocks more permanently in areas previously neglected because of a lack of water. As sheep farming intensified, there was a greater investment in windmills, an expensive investment. Furthermore, many of these windmills may have been set up in areas with watercourses that are dry for most of the year but would retain water reasonably close to the surface. Farmers may have located windmills close to previously established kraals so they could be used for longer periods of time. However, those rectilinear kraals over 300 m from a natural watercourse are more likely to only have been constructed in these distant positions if an artificial water source had been set up close by.

Lammerkraals

Lammerkraals cannot be placed chronologically because farmers would have needed them throughout the period covered in this dissertation. They are important however, because they show that seasonality can be seen in the GE survey data. We know that the KR and MR were environmentally similar ecological zones that were seasonally complimentary. Therefore, pastoralists could have exploited the two areas, just at different times of the year but there would have been different pastoralist strategies in place depending on the season.

We know that lambing occurs winter, and there are historical references that mention the lambing season taking place in winter while the trekboers were in the lower Karoo (Burchell 1822:171) and contemporary descendants of Khoe herders in Namaqualand still practice winter lambing in their lowland winter camps (Webley 2009: 27-29), as do some of the descendants of the trekboers in the Roggeveld. I believe this practice is reflected in the higher incidence of small (under 50 m² – size class A1) kraals in the round and rectilinear categories in the KR. The fact that we are seeing this higher percentage of small kraals in both round and rectilinear also suggests that there is some continuity of practice from the earlier indigenous pastoralist systems into later colonial systems.

Lambing in the lower Karoo (the MK in the research area) during winter took advantage of grazing that had been rested over summer and the fresh growth stimulated by the seasonal rains in early winter. This new growth is ideal for lambs and meant that farmers did not have to supply supplementary feed for them. Kraals for managing lambs were essential, because pastoralists needed to keep the ewes separate from the lambs, and to keep the lambs safe when the flocks were out grazing. Ethnographic research from Namaqualand shows that the descendants of Khoe herders still use *lammerkraals* to manage the milking of the ewes and for protecting the lambs, both from predators and from getting trampled by adult sheep during the night (Webley 2009:28). By the time these lambs return from the winter lowlands they are able to go into the veld during the day with the ewes, making *lammerkraals* less of a necessity (although they are still kraaled overnight) (Webley 2009:28). Webley (2009:28) also notes that the lambs are often packed into relatively small kraals as they then keep each other warm. This fits with the pattern of smaller (>50 m²) kraals in the KR. As noted with round kraals, there are also more very small (under 13 m²) kraals in the KR but the sample size is not large so I hesitate to draw too much attention to this. Regardless, the higher incidence of kraals under 50 m² in the KR suggests we are seeing seasonal practices and hence the differences between the KR and MR.

The categories discussed here are simplified, and treated as undifferentiated within the category. When individual sites are examined on the ground, things become far more complex. WG01 is perfect example of this. The GE image of WG01 indicates that the structures are piled rock constructed, semi-circular kraals. The large size of kraal 2 was not usual for this category of kraal but I thought that the piled rock construction and shape were attributes that assigned this kraal to the Khoe category. An initial ground survey of the site did not hint at the complexity that was uncovered as the excavations progressed.

6.2. Excavations at Welgemoed

One of the primary reasons for excavating WG01 was to add detail to the piled rock round kraal category. The combination of presumed indigenous kraals, and a surface scatter that included indigenous and colonial artefacts, particularly several sherds of eighteenth /early nineteenth century Asian porcelain, indicated that the early phase of interaction between

indigenous herders and trekboers could potentially be explored at this site. The primary goal was to establish the stratigraphic relationship between the Khoe and trekboer artefacts, and how this material culture stratigraphically is linked, or did not link, to the kraal walls.

There were two main artefact-bearing layers in the kraal excavations, a colonial layer that had artefacts that date to the late nineteenth century, and a layer below it that had the largest proportion of lithic pieces in the kraal. The lithics consisted of coarse-grained expedient pieces. This lower layer was also just above the base of the kraal wall. The terrace excavation consisted of one stratigraphic layer before an indurated deposit was reached. The artefacts consisted predominantly of lithic pieces and coarse earthenware (CEW). No colonial material was recovered, which suggests that the material was deposited prior to the late nineteenth century layer in the kraal. The only link with the kraal is the coarse grained expedient lithics, associated with Khoe pastoralists. There is however, little chronological control for these lithics. The density of artefacts was low in both the kraal and on the terrace.

As mentioned, the surface scatter was composed of a mixture of indigenous and colonial material. Like the kraal and terrace, the density of artefacts was low. Except for four sherds of eighteenth century Asian porcelain, most of the colonial material seems to date to the late nineteenth century. The transfer printed refined earthenware (REW) can date to the earlier nineteenth century but it was far more common from the latter half of the nineteenth century (Klose & Malan 1993:7, Klose & Malan 2004:20). Furthermore, the painted REW appears to be 'harsh' coloured, which places it in the second half of the nineteenth century. Several other artefacts (such as the bullet casing, metal 'trouser' button, and the harmonica reed plate) also made the late nineteenth century appear to be the appropriate date range for the colonial material in the surface scatter. This would clearly align with layer 01 spit 05 from kraal 1. An interesting point noted in chapter five was that the eighteenth century Asian porcelain was found in kraal 2, which I will come back to shortly. The notable feature regarding the artefacts is that the colonial material is denser on the southern end of the terrace, while the indigenous artefacts cluster at the northern end of the site, which may suggest that these were separate encampments. By the later nineteenth century there were obviously no independent Khoe pastoralists and the

indigenous artefacts are likely to have been deposited much earlier, possibly in the precolonial period. On stratigraphic grounds, kraal 1 would have also been built in the precolonial period.

However, after excavating kraal 1 it became evident that the kraal walls did not comply with the piled rock construction style associated with Khoe kraals. Based on the data obtained from the site, two possible options regarding the construction of the kraals and the site sequence are suggested.

The first option is that the kraals were built during the early loan farm period, either by trekboers from the Welgemoed loan farm interacting with Khoe pastoralists, or built by Khoe pastoralists for trekboers living at Welgemoed. This would account for the presence of the eighteenth century Asian porcelain, and for the unusually large size of kraal 2.

Consequently, there may be three visible occupations at the site. The terrace deposit CEW and lithics would indicate a precolonial Khoe presence without stone-walled kraals. As discussed earlier, Khoe sites without stone-walled kraals have been found in the research area. The second visible occupation would be during the early loan farm stage when the kraals would have been built and the eighteenth century Asian porcelain deposited. The third visible occupation would then be the late nineteenth century reuse of the kraals.

Option two also proposes three visible occupations but reassigns the identity of the builders of the kraals. This option is as follows; kraal 1 is a Khoe kraal, possibly contemporaneous with the terrace deposit, and kraal 2 is a later addition from the early loan farm period. The later nineteenth century use of kraal 1 included repair of the walls, which is why the walling exposed by the excavations does not fit the typical piled rock round kraal construction.

It is unlikely that these kraals were built in the late nineteenth century and repair of the old rounded kraals is more likely. It is still possible that both kraals are precolonial in date and the eighteenth century Asian porcelain indicates a brief period of use during the early loan farm period. It is however, not possible to explore this further without further excavations.

These two options both have merit but as the data currently stands, little more can be said about WG01. There may have been numerous short uses of kraal 1 that are not apparent in the squares excavated. The excavations do clearly show how complicated even small, apparently simple, sites can be when more refined research methods are applied.

This discussion has outlined some of the patterns derived from the GE survey and attempted a preliminary assessment of this pattern in relation to the timeline (Fig. 6.1.1). Additionally, the excavations at WG01 have been summarised and several scenarios suggested for the chronology and sequence of occupation and use of this site. Both the GE survey and the WG01 excavations provide a range of working hypotheses that can only be elaborated, refined or rejected with further and more detailed research. In the concluding chapter I make some brief comments on future research directions that build upon the start made here.

7. Conclusion

This dissertation had the goal of exploring the archaeology of pastoralism and how this reflects, relates to and passes comment on the major shifts in pastoralist systems in the Roggeveld through the eighteenth and nineteenth centuries. The dissertation only makes a start but has underlined the potential of the GE database. There are clear patterns that have emerged some of which segue neatly with the environmental conditions of the research area, and with the historical events that impacted the Roggeveld. The chronology proposed for some of the structure types discussed in chapter four and elaborated in chapter six show that there is potential for exploring these types and their distribution in relation to shifting pastoralist systems in the Roggeveld, through the precolonial, early colonial and later colonial periods.

The settlement types and structures, however, and the preliminary chronological correlations provide working hypotheses that need to be corroborated on the ground. The Vinkekuil kraals outlined in chapter five, for example, demonstrate that not all of the kraals identified as piled rock round kraals can be assumed to fit the Khoe kraal category. As discussed, the Vinkekuil kraals appeared on Google Earth, to be very similar to the semi-circular kraals at WG01 but when they were recorded on the ground, I found typical rubble filled historical construction techniques, and the semi-circular shape appeared to be the result of the terrain rather than a choice based on cultural style. This does not mean the category is redundant, there are other kraals identified as piled rock round kraals on GE that have proved to fit the category when examined during ground surveys. Clearly, on going research will need to test and assess all the chronological suggestions made here for different structure types and refine their relationship to the timeline. Additionally, and as I noted in chapter five, after the ground survey of the Vinkekuil site, I found it easy to identify the other structures that were close to the kraals, which I had not picked up when the site was first identified on GE.

As the excavations at Welgemoed show, every site is likely to be far more complex when addressed at the level of excavations. WG01 seemed to fit within my initial expectations that it was a piled rock round kraal site but the multiple layers of occupation and lack of

dateable material makes it difficult to confirm or reject this supposition. Many of the sites in the Roggeveld are likely to have multiple layers of occupation. We know trekboers often chose to settle at places where they found evidence of Khoe herders precisely because they were well aware that Khoe pastoralists knew the environment far better than they did. The recycling of kraals is also likely to have happened frequently, unless a significantly larger kraal was required, the logical choice would be to utilise structures already present. In short, these sites are seldom likely to be straightforward. As more sites are examined in greater detail however, there will be more data that can be used to support possible interpretations. For example, there is a site on Scholtzenhof that I have interpreted as a piled rock round kraal but with significant evidence of later nineteenth century occupation including rectilinear kraals and associated domestic structures. Furthermore, there is an extensive surface scatter of predominantly colonial material but there is a significant amount of coarse earthenware and expedient type lithics. Additionally, this site is at the centre of a mid- eighteenth century loan farm and provides the potential to examine sequence and interaction and address further the questions raised at WG01.

The GE survey should also be extended into other areas of the Roggeveld. This would prove valuable for comparative purposes, and for looking for patterns to develop and modify some of the hypotheses suggested here. For example, I would like to see if the distribution of domestic ruins and contemporary werfs overlap or not in other areas of the Roggeveld. If they do not overlap and the terrain is different in their respective areas, it will support the suggestion that rugged terrain may not be as well suited for large-scale commercial farming, which in turn supports the chronology of the domestic ruins. In this regard the research area discussed here, compared to the escarpment to the east and to the north, provides a relatively gentle gradient between the top of the escarpment and the base. In adjacent areas to the Komsberg the drop-off down to the Tanqua Karoo and the Laingsburg plains is much more abrupt. These areas would provide important comparative data through which to assess the survey data presented here. It would be interesting to see how terrain may influence more local pastoralist strategies and whether this can be correlated with the infrastructure of sheep management.

A key ongoing research aim must be to keep exploring the documentary archives in order to construct more chronological precision and provide ideas at which to focus archaeological attention on cultural and social issues that may be suggested in the documentary evidence but not outlined in any detail. One obvious and simple source are the survey diagrams that outline both loan farms and later farm boundaries. Frequently these surveys provide information on landscape, springs, public infrastructure in the form of wagon tracks and reliable roads. Some of these are in areas with mountainous terrain that would have influenced how the colonial landscape developed, and this would be premised probably on an underlying Khoe use of the land. Comparing current road with the old wagon routes visible on the deed surveys for the early loan farms could potentially show how early trekboer farmers moved across this landscape and between werfs and invested in their werfs. For instance, the deed surveys (Fig. 7.1) for Beerenvally on top of the escarpment (now subdivided into Scholtzenhof and Beerfontein farms) shows that there were wagon tracks close to the edge of the escarpment that connected the original werf to the neighbouring farms. These have long been abandoned and the current werfs for Scholtzenhof and Beerfontein are now situated on the main road that now links all the farms with Sutherland. Another factor on Beerenvally is that there are large lucerne fields at the contemporary werfs and this is one factor that could have influenced the relocation of the werf. This aspect of the development of intensive pastoralism has not been addressed here and focuses on elaborating infrastructure through windmills and irrigation that was way beyond the capacity of the small spring around which the original loan farm was situated. These survey documents can be used in conjunction with the archaeology to elaborate our understanding of how earlier pastoralist landscapes 'worked'. Another avenue to follow up in the historical records would be the role of defensibility in kraal/werf distribution. This avenue has potential for expanding our understanding of the relationship between the hunter-gatherers and pastoralists in the Roggeveld, both Khoekhoen and trekboer.

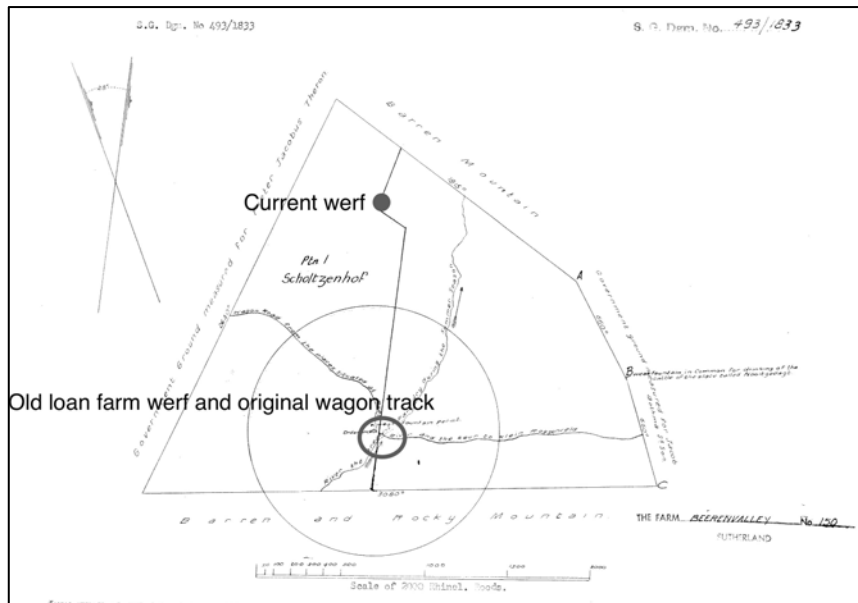


Figure 7.1. Deed survey for Beerenvalley farm in the MR.

Examining large rectilinear isolated kraals within the environmentally productive areas of the research area may also elaborate adaptations in pastoralist practices related to the intensification of sheep farming in the region. Isolated large (over 500 m²) rectilinear kraals are more likely related to the practice of 'trekking and kraaling' where the flocks would be dispersed across the farms instead of concentrated around the werf. These isolated kraals would have become more necessary as sheep numbers grew and farmers needed to maximise the exploitation of their land. This could also be explored further by looking at the original loan farm deed surveys and those surveys when the farms were converted to freehold farms. Are these kraals shown on the survey diagrams, what dates can be suggested for their construction, and where are they located in relation to the centre of the original circular loan farm? As indicated, apart from demonstrating adaptations of pastoralist practices, this avenue could potentially assess the chronology of these kraals suggested here, and indeed the chronology of other structure types.

In conclusion, the GE survey data shows some distinct patterns, which indicates that the survey of the stone-walled structures in the research area has identified pastoralist practices and changes to these strategies, especially during the nineteenth century. The timeline proposed based on these patterns, in combination with environmental and historical information however, will benefit greatly from more in depth research through ground surveys and excavations. Several avenues for further research have been suggested,

and this in itself shows how useful the GE data can be for developing models that can then be assessed on the ground and through closer examination of historical data.

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Appendix A

size class	M ²	KR Kraals	MR kraals	total kraals
A-1	0-50	8	5	22
		25,0%	16,1%	
A-2	51-100	0	3	8
		0,0%	9,7%	
B	101-200	7	9	16
		21,9%	29,0%	
C	201-300	5	1	6
		15,6%	3,2%	
D	301-400	5	2	7
		15,6%	6,5%	
E	401-500	1	2	3
		3,1%	6,5%	
F	501-600	3	3	6
		9,4%	9,7%	
G	601-700	0	0	0
		0,0%	0,0%	
H	701-800	1	3	4
		3,1%	9,7%	
I	801-900	0	0	0
		0,0%	0,0%	
J	901-1000	1	0	1
		3,1%	0,0%	
K	1001-1100	0	1	1
		0,0%	3,2%	
L	1101-1200	0	0	0
		0,0%	0,0%	
M	1201-1300	1	1	2
		3,1%	3,2%	
N	1301-1400	0	1	1
		0,0%	3,2%	
O	1401-1500	0	0	0
		0,0%	0,0%	
P	>1500	0	0	0
		0,0%	0,0%	
?		0	0	0
		0,0%	0,0%	
Total		32	31	63

Appendix A1: Round kraal comparison between the Klein Roggeveld and the Middle Roggeveld.

size class	m2	KR Kraals	MR kraals	total kraals
A-1	0-50	17	2	19
		8,5%	2,2%	
A-2	51-100	12	6	18
		6,0%	6,6%	
B	101-200	21	8	29
		10,4%	8,8%	
C	201-300	21	4	25
		10,4%	4,4%	
D	301-400	32	8	40
		15,9%	8,8%	
E	401-500	19	8	27
		9,5%	8,8%	
F	501-600	26	7	33
		12,9%	7,7%	
G	601-700	13	8	21
		6,5%	8,8%	
H	701-800	8	7	15
		4,0%	7,7%	
I	801-900	8	9	17
		4,0%	9,9%	
J	901-1000	5	3	8
		2,5%	3,3%	
K	1001-1100	3	4	7
		1,5%	4,4%	
L	1101-1200	1	3	4
		0,5%	3,3%	
M	1201-1300	2	3	5
		1,0%	3,3%	
N	1301-1400	2	1	3
		1,0%	1,1%	
O	1401-1500	0	2	2
		0,0%	2,2%	
P	>1500	10	8	18
		5,0%	8,8%	
?		1	0	1
		0,5%	0,0%	
Total		201	91	292

Appendix A2: Rectilinear kraal comparison between the Klein Roggeveld and the Middle Roggeveld.

Kraals associated with werfs			
KR round	KR rec	MR round	MR rec
4	66	2	48
% of total kraals			
12,50%	32,84%	6,45%	52,75%
Kraals associated with domestic ruins			
KR round	KR rec	MR round	MR rec
9	60	9	12
% of total kraals			
28,13%	29,85%	29,03%	13,19%
Isolated kraals			
KR round	KR rec	MR round	MR rec
19	85	21	34
% of total kraals			
59,38%	42,29%	67,74%	37,36%

Appendix A3: Kraals associated with domestic ruins, werfs, or isolated.

distance class	rectilinear kraals	% of total rec	round kraals	% of total round	irregular kraals	% of total irregular	total kraals	% of total kraals
1	134	66,67%	25	78,13%	5	71,43%	164	66,67%
2	48	23,88%	4	12,50%	1	14,29%	53	21,54%
3	13	6,47%	3	9,38%	0	0,00%	16	6,50%
4	2	1,00%	0	0,00%	1	14,29%	3	1,22%
5	1	0,50%	0	0,00%	0	0,00%	1	0,41%
6	2	1,00%	0	0,00%	0	0,00%	2	0,81%
?	1	0,50%	0	0,00%	0	0,00%	1	0,41%
total	201		32		7		240	

Appendix A4: Kraal distance to natural water source in the Klein Roggeveld.

distance class	rectilinear kraals	% of total rec	round kraals	% of total round	irregular kraals	% of total irregular	total kraals	% of total kraals
1	39	42,86%	13	41,94%	5	50,00%	57	49,14%
2	30	32,97%	8	25,81%	2	20,00%	40	34,48%
3	9	9,89%	9	29,03%	0	0,00%	18	15,52%
4	2	2,20%	0	0,00%	0	0,00%	2	1,72%
5	0	0,00%	0	0,00%	0	0,00%	0	0,00%
6	9	9,89%	1	3,23%	3	30,00%	13	11,21%
?	2	2,20%	0	0,00%	0	0,00%	2	1,72%
total	91		31		10		132	

Appendix A5: Kraal distance to natural water source in the Middle Roggeveld.

Appendix B

	Burnished	decorated	undercorated	sherds
Diagnostic Lugs rims				
				0
		1		1
Undiagnostic	6		14	20
Total	6	1	14	21

Appendix B1: Coarse earthenware from the terrace excavations at WG01.

	Burnished	decorated	undercorated	sherds
Diagnostic Lugs rims				
			1	1
	3		2	5
Undiagnostic	6		41	47
Total	9	0	44	53

Appendix B2: Coarse earthenware from the surface scatter at WG01.

Ware type category	decoration	hollow ware	Flat ware	Undiagnostic re form	sherds	MNV
PORCELAIN						
<i>Asian</i>						
Ginger jar	underglze blue	3			3	1
Chinese export porcelain (fine)	underglze blue	2			2	1
Asian market ware (coarse)	underglze blue	2			2	1
STONEWARE						
<i>European</i>						
	salt glazed	4			4	2
REFINED EARTHEN WARE	-	-	-	-		
<i>European</i>	-	-	-	-		
	Decorated					
	Painted	7			7	2
	Sponged:					
	<i>cut sponge</i>	2		3	5	2
	Band and line:					
	<i>blue</i>	2			2	1
	<i>black</i>	3			3	1
	Printed:					
	<i>blue</i>					
	-willow		1	1	2	1
	-Asian pheasant		6	3	9	3
	<i>black</i>		1	1	2	1
Unidentified					0	
Undiagnostic		2		4	6	
TOTAL		27	8	12	47	16

