

The Origins and Spread of Pre-Colonial Stone-Walled Architecture in Southern Africa

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Great Zimbabwe is the best known pre-colonial stone-walled structure (SWS) in southern Africa but there are many tens or even a few hundreds of thousand other 'Iron Age' SWS scattered throughout the subcontinent. Regardless of the many stylistic variations, these SWS all date to the second millennium AD and were designed to control access and movement of people and often livestock as well. There are different and sometimes fantastic views about the origins of these Iron Age SWS, and these views are described in the first section of this paper. In the second part, I propose that one of the roots of southern African SWS taps into a 'Later Stone Age' culture of the subcontinent. The indigenous hunter-gatherers of southern Africa were using stone in built structures since the Pleistocene and recent discoveries on the west coast have brought to light a first millennium AD stone-walled structure designed to control the movement of livestock. The suggestion is that the west coast herder-hunters of the first millennium AD played a significant role in the development of the Iron Age tradition of building stone-walled enclosures in the Highveld of the eastern half of the subcontinent. The paper concludes with a brief report about an on-going project to elucidate the chronological sequence and socio-political evolution of SWS in the southern half of Gauteng Province, South Africa, from the Witwatersrand to the Vaal River.

Current Views on the Origins of SWS

The colonial view of the origins of pre-colonial stone-walled structures in southern Africa assumed an exotic source and Phoenicians were high on the list of those thought to have been responsible for such well known ruins as Great Zimbabwe (Bent 1892). More recently, a number of writers on the fringe of the discipline of archaeology have proposed South Asian origins for SWS in the eastern parts of

South Africa (Hromnik 1981). These mysterious colonists from the Indian subcontinent are said to have erected temples and astronomical observatories on mountain tops and built stone-walled cities from which they hunted for ivory and mined the region's gold, red ochre and iron ore. Although countless artefacts, local memory and intensive archaeological research on these structures prove that they were built by Africans within the last 500 years (Delius & Schoeman 2010), such evidence has made little impression on those who have a low opinion of Africans' technical prowess. The latest pseudo-archaeological best-seller ascribes some of the stone walled ruins in Mpumalanga to a gold-mining, sun-worshipping civilization that inhabited southern Africa some 200,000 years ago (Tellingner & Heine 2010).

In the mainstream of archaeological research, Thomas Huffman (2007) has proposed two separate 'families' of Iron Age SWS in southern Africa, the Zimbabwe pattern and Central Cattle walling, each with its own point of origin. In the Zimbabwe pattern, stone walls helped to mark class differences and provided ritual seclusion for the sacred leader through elite enclosures, hut terracing and perimeters. The first Zimbabwe pattern walling is said to have appeared around AD 1250 at Mapungubwe in the Limpopo River valley (Fig. 1). Flat, vertical faced walls were built with irregular courses of untrimmed blocks, and are classified in a diversity of styles such as types M, P and Q walling, LK and Z terracing, rough walling and R-Type perimeter walls. At Khami, platform-type walling started around AD 1400 and continued at Danangombe (DhloDhlo) until about 1830. Another Zimbabwe pattern coursing style developed among the Venda south of the Limpopo. Here large foundation blocks supported a vertical face made with irregular-shaped stones. The Venda style started after AD 1600 and still exists today in traditional capitals. Some of the stone-walled sites in the eastern highlands of Zimbabwe may have been related to gold extraction and processing (Kritzinger 2010).

Huffman refers to the other 'family' of Iron Age SWS as Central Cattle walling. CCW stone walled sites are common in grasslands where timber is scarce, and the stone walls helped to separate cattle from people, household from household, and the

entire settlement from the veldt (Huffman 2007). In Mpumalanga Province, stone walls were also used to funnel cattle along certain routes and for agricultural terracing (Collet 1982; Delius & Schoeman 2008). In the CCW sites, adult cattle stayed in large central enclosures and calves in smaller kraals. The number of adult cattle kraals reflects the number of cattle-owning families living in the homestead.

According to Huffman, the oldest known CCW stone walling is at Moor Park in the Midlands of KwaZulu-Natal Province, and dates from the thirteenth to the fifteenth centuries AD. Moor Park consists of a walled citadel covered with terraces, and a large outer area with a circuit wall. The next oldest cluster of CCW walling occurs near the hill Ntsuanatsatsi, in the Free State Province. Commoners lived in dispersed stone-walled homesteads while a cluster of SWS formed a chief's capital. These so-called Type N sites (Maggs 1976) have been dated to between the fifteenth and seventeenth centuries AD. According to Huffman (2007: 431) they were built by Nguni speakers. North of the Vaal River, Type N is thought to have developed into Klipriviersberg type SWS. In the Klipriviersberg type, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. Aggregated settlements were common. Klipriviersberg type dates to the eighteenth and nineteenth centuries AD. Southwestern Sotho-Tswana, such as Rolong and Tlhaping, built Type Z walling south of the Vaal River (Maggs 1976). North of the Vaal, a related type of SWS is referred to as Group II, with dates from the eighteenth to the nineteenth centuries AD (Taylor 1979). Some of these settlements were huge aggregations that housed up to 20,000 people. To the east, in today's Mpumalanga Province, extensive terracing around Badfontein settlements may represent a special adaptation to the cultivation of maize in addition to sorghum, and indicates intensive agricultural production (Huffman 2007; Delius & Schoeman 2008, 2010).

There are further subtypes of CCW but they need not be described here. The focus of the rest of this paper is on the fact that current interpretations of the origins of Zimbabwe pattern and CCW structures ignore the much longer history of building with stone in the Later Stone Age cultures in the western half of the subcontinent.

Stone Age Structures

Already in the Middle Stone Age, in the central interior of South Africa perhaps 100 to 200 thousand years ago, the site of Zeekoegat 27 contained flaking debris within a circular enclosure of rocks nine metres in diameter (Sampson 1974: 250). The enclosure perhaps originally consisted of thorn bushes that were anchored with dolerite boulders. Only the circle of boulders has survived together with four main flaking zones. Similar stone circles were documented in Holocene Later Stone Age (LSA) context at many sites throughout the subcontinent. As Figure 1 shows, there is a close correlation between the distribution of such LSA stone structures and the succulent Karoo and the Namib Desert biomes. On Figure 1, the higher density of LSA stone structures in Namibia probably is the result of more diligent examination of the archaeological records by (Veldman 2008). One assumes actual densities are equally high in South Africa. Dating these stone structures is difficult, but the one at Springbokoog may be as much as 4400 years old, while those at the Uniab River mouth may be 2700 years old (Beaumont & Vogel 1989). There is some debate as to whether these structures were for habitation or functioned as hunting blinds (Jacobson 2005). Properly speaking, most simple stone circles cannot be considered stone-*walled* structures since they are often no more than alignments of a single course of stones. But there are also some proper stone walls in LSA sites. Some LSA stone walls and alignments were designed to funnel and trap animals. The clusters of stone alignments at Port Nolloth may have served this purpose (Colson 1905), and the structure at Graafwater is clearly a hunting trap (Beaumont et al. 1995). In a variation on this theme, the tidal fish-traps or weirs on the south-western Cape coast, which have been assigned to the Later Stone Age, consist of low boulder walls constructed across gullies or other suitable localities within the inter-tidal zone to catch fish (Avery 1974), but these actually may date from the colonial period (Hine et al. 2010).

Anzel Veldman compiled an atlas of all records of stone structures kept in the National Museum of Namibia. The records refer to everything from stone hut foundation rings to windbreaks, cairns, hunting blinds, stock enclosures, goat pens,

cooking shelters, game fences, and even large 'towns' of stone circles such as in the Brandberg and neighbouring areas. Although most of these structures are undated, a few have provided more or less reliable age estimates that fall within the past eight centuries (Carr et al. 1978; Vogel & Visser 1981). Importantly, many of them are associated with Later Stone Age artefacts, although whether they were occupied by hunter-gatherers or LSA herders is a debatable issue.

Further south lies perhaps the most significant of the LSA stone-walled structures yet discovered. The stone walls at Simon se Klip on the west coast of South Africa were built to contain and control the movement of livestock and are securely dated to the second half of the first millennium AD; a date that is in agreement with the diagnostic ceramics and stone tools from the LSA occupation at this site (Jerardino & Maggs 2007). Although they are roughly built, short stretches of stone walls were designed to fill gaps between boulders on a prominent outcrop in such a way as to protect and channel livestock (Fig. 2). The walls at Simon se Klip pre-date the earliest 'Iron Age' CCW structures in the eastern half of the subcontinent by at least two centuries. They are contemporary with evidence from the LSA site of Kasteelberg, 100 km further south along the west coast, that documents community feasts with the consumption of sheep and seal fat aimed, presumably, towards the acquisition of social and political capital (Sadr 2004). The earliest southern African SWS for the control of livestock thus seem to have originated in the relatively complex hunter-herder societies on the west coast during the second half of the first millennium AD.

The next oldest, securely dated LSA stone walled stock enclosures have been identified in the Seacow River valley, with some examples probably dating to the eleventh century AD (Sampson 2010). These large sub-circular alignments of collapsed dry-stone walling often have a distinctive smaller sub-circular enclosure (Fig. 3). These smaller structures were probably used to separate lambs or kids from their mothers in order to regulate the milk supply. Interestingly, similarities in the LSA ceramics from the Seacow valley to those from Simon se Klip and Kasteelberg culturally link the west coast hunter-herders with those of the Seacow River valley (Sadr & Sampson 1999). Such enclosures continued to be built and used

in the Seacow River valley until the dawn of colonial times, but long before then the idea of constructing SWS to contain the movement of livestock had diffused among LSA communities throughout the Karoo biomes of southern Africa. Among the best known examples of these structures are the Type-R settlements from the lower Riet River valley (Humphreys 2009). One radiocarbon date from a burial inside these Type-R structures suggests a date of occupation as early as the twelfth century AD, but several other associated dates are not significantly older than AD 1400. By that time, settlements of stone-walled structures were also present in the Brandberg and neighbouring parts of Namibia (Kinahan 1986; Veldman 2008), and the earliest 'Iron Age' SWS were being built in the grasslands to the east.

From this quick tour of the horizon, it is clear that the oldest SWS built to contain and control livestock are found in LSA cultures of the western half of the subcontinent. This distribution and chronology raises the question of whether the earliest 'Iron Age' CCW walling in the Highveld might not represent in some sense the fusion of indigenous LSA herding cultures with Bantu-speaking agricultural ones.

Project KRK

To investigate the role of autochthonous Later Stone Age populations in the evolution of CCW structures on the Highveld, the Klip River Kraals (KRK) project aims to study diachronic change in the distribution of SWS in three adjacent drainage basins between Johannesburg and the Vaal River (Fig. 4). A handful of SWS in this area combine elements of the stone walled kraals of the Seacow Valley and the earliest type of CCK Iron Age SWS, the Group I ruins. These few structures resemble in plan view the simple stone kraals of the LSA herders in the Seacow Valley, which have been dated between the eleventh century and the colonial period (see Fig. 3). The only one that has been closely examined so far is referred to as Tom's Kraal (Fig. 5), and appears to be associated with scatters of microlithic LSA flaked stone tools. Somewhat like the Seacow Valley kraals, it has a small enclosure attached to the interior edge of a larger more or less elliptical stone walled enclosure. Tom's Kraal, however, is a little larger than the average Seacow

Valley kraal, and includes a few tiny stone circles distributed evenly along the perimeter wall. They bring to mind the herd-boys' huts built into the walls of contemporary Sotho kraal (Walton 1958), and which are also commonly seen on Group I SWS on the Highveld. Furthermore, two portions of the walling in Tom's Kraal show the core and rubble construction technique, also mentioned by Walton as being typical of contemporary Sotho kraals. Tom's Kraal and the few other analogous structures in this area remain undated, but as the research progresses we hope to collate distribution maps from which to start making the necessary comparisons with the settlement patterns of the Group I structures. In due time we hope to be able to test the hypothesis that Tom's Kraal and others of its type represent the earliest SWS in this part of the Highveld, and later evolved into the Group I style of structures.

We know a fair bit now about the distribution of the Group I SWS on the opposite side of the Valley from Tom's Kraal. In this portion of the KRK Project's survey zone named polygon Pam 1, over 750 SWS have been classified and analysed using Google Earth satellite imagery and Geographic Information System software. Around 150 of these SWS have been classified as Group I, which in their simplest form are identified by a smaller stone circle in the centre of a larger one. The internal structure is thought to have housed the livestock while the ring of space between the two walls would have contained the huts of the occupants. There are larger and more complex examples of Group I SWS where the outer wall may be less circular in shape and contain several inner enclosures. The diagnostic feature of this style of SWS is the relatively central location of the inner structures with free space all around them leaving space for huts; and the outer wall that forms a relatively even curve, as opposed to being indented and scalloped as in later types of SWS in this area.

The results of the survey in Pam 1 show that Group I homesteads were dispersed individually or in small clusters throughout the hills at all elevations, often far from cultivable soils (Fig. 6). This hilly landscape has very good grazing potential (AGIS, 2007), but if the occupants of Group I structures also raised crops, their lands under cultivation would necessarily have been of limited size in the thin, stony soils

of the hills, and if one refers to excavated data from south of the Vaal River (Maggs 1976: 315), hunting may have played a significant role in the diet of Group I people as well. Relative to later types of SWS in Pam 1, the Group I SWS are on average smaller and their clusters contain fewer SWS. In relative terms, the society that built Group I SWS in Pam 1 can be characterized as an egalitarian one (Sadr & Rodier 2012).

Later SWS in this area, Group II and III structures, show a marked trend towards larger structures, more livestock enclosures, denser cluster of SWS, and a move towards lower altitudes and closer to the best arable lands in polygon Pam 1. Because of the so-called Suess effect, radiocarbon dates cannot tell us whether Group II or III structures followed each other in time or whether they were contemporary, as Taylor (1979; also Huffman 2007: 38) assumed. Stylistically, it is generally agreed that Group III SWS represent an evolution of Group I styles, with more (but often off-center) livestock enclosures surrounded by a more 'curvaceous' outer wall. Indeed, there is a considerable gray area where analysts have difficulty drawing a line between Group I and Group III SWS types. Nevertheless, it is clear that in Pam 1, the ~230 Group III SWS include some small dispersed structures in the hills, but also several densely aggregated clusters of SWS in the northern foothills of the polygon Pam 1 located within five kilometers of high potential arable soils. In average size, the Group III SWS are comparable to Group I, but the proportion of space within the compound taken up by internal structures is significantly larger (around 28%) than in Group I (about 18%); there were many more Group III SWS; and their clusters were bigger and, in terms of numbers of SWS per cluster, more steeply ranked than those of Group I (Sadr & Rodier 2012). Some Group III SWS may have contained ash middens which are associated with men's political courts (Boeyens & Plug 2011: 7-9; Huffman 1986a: 293-294). All these lines of evidence suggest that there was an increase in population, a move towards more intensive agriculture, increase in livestock wealth, and more political and economic stratification in the transition from Group I to Group III SWS.

The spatial analyses support the idea that Group II SWS represent the last phase of stone-walled structures in survey polygon Pam 1. Group II sites are characterized by a highly scalloped outer wall which in fact often is more a discontinuous series of c-shaped embayments that mark the back of the individual huts areas. The numbers and distribution of Group II SWS indicate a larger population size compared to Group III, and a move into yet more densely aggregated homesteads, clustering in the western foothills of Pam 1 within 5 km of the prime agricultural lands (Sadr & Rodier 2012). Hardly any Group II structures are found as isolated dispersed homesteads in the hills. The size of the SWS and their clusters, their ranking, and the numerous middens associated with Group II SWS all indicate the height of economic and political stratification in Pam 1. Although the proportion of space devoted to kraals had dropped back to the percentage seen in Group I SWS, there were many more inner enclosures of different sizes which may indicate the splitting of communal herds and/or more reliance on small livestock. The multiple entrances to the central kraals afforded by the many gaps in the discontinuous outer wall of Group II SWS can be read as another indication of more 'privatization,' at least as far as living space and access to central kraals was concerned.

Overall, the spatial statistics of the three groups of SWS in Pam 1 suggest population drifted within the SKBR through time towards the northwest and western part of the hills, and a gradual evolution in settlement patterns from small egalitarian dispersed homesteads, towards more aggregated, larger, ranked settlements overlooking the fertile floodplain of the Klip River.

Discussion

Three decades ago Mike Taylor (1979) interpreted the distribution of Group I, II and III SWS in this general area as a record of migration and contact. He thought the earliest type, Group I SWS, were built by Sotho-speaking immigrants who had come from the south. Group II SWS represented a different set of immigrants according to Taylor, Tswana-speakers who had come from the west during the eighteenth and nineteenth centuries. Group III represented the eighteenth and nineteenth centuries descendants of Group I people whose architecture was transformed by contact with the immigrant Group II (Taylor 1979: 107). Whereas Group I sites are

small and dispersed, Group II sites tend to form very large clusters of aggregated ruins.

In Jan Boeyens' and Simon Hall's recent research on SWS in the North West Province, where similar architectural trends and settlement patterns are recorded, migrations and warfare carry less explanatory weight. Around Kaditshwene, Boeyens (2003: 69) has observed that the dispersed sites from AD 1675–1750 had no scallops in their outer walls, while aggregation was a feature of settlement patterns from AD 1750-1790, followed by a move to defensible hill-top mega-sites which took place in AD 1790-1823. Large ash middens in the mega-sites were associated with men and political courts, reflecting a centralization and enlargement of authority (*ibid.*: 68; see also Boeyens & Plug, 2011: 4). Initially, Boeyens (2000:15) attributed this aggregation to widespread conflict between neighboring Tswana chiefdoms (see also Huffman 1986b), but other capitals from that time are smaller and located in open plains, so widespread conflict may not be a sufficient explanation (Fred Morton, pers. comm. 2011). More recently, Jan Boeyens (2003: 75) and Simon Hall (Boeyens & Hall 2009: 479) have interpreted the mega-sites as evidence for incipient state formation among the pre-colonial Tswana. Accumulation of wealth and centralization of political power, population growth, droughts, and conflict probably all contributed to drive this evolution (Hall et al. 2008, 2006: 5).

The KRK Project provides an opportunity not only to document the history of changes in SWS in the Highveld between the Witwatersrand and the Vaal River, but also potentially to correlate an archaeological sequence with linguistic and genetic history. The historical linguist Chris Ehret (1982, 2008) has suggested that a now extinct Limpopo Khoekhoe language and its associated culture had a major impact on cattle-raising in the south-eastern Bantu cultures. Ehret finds linguistic evidence in Sotho to support the hypothesis that the Limpopo Khoekhoe cattle pastoralists, after influencing the proto-Southeast Bantu cultures in the first half of the first millennium AD, continued to be a significant presence in northern South Africa into the second half of the first millennium AD, and that the descendants of the Limpopo Khoekhoe probably constituted a major element in the demographic

ancestry of the proto-Sotho. Although not all linguists agree with Ehret's propositions, his hypothesis resonates with some recent genetic studies. Himla Soodyall and her team have suggested that Bantu-speaking groups in southern Africa who have L0d and L0k mtDNA lineages most likely acquired them as a result of recent gene flow from San and Khoe (Soodyall et al. 2008). This suggests that today's Sotho populations on the Highveld may be descendants, in one sense or another, of a fusion between Bantu and Khoe-San cultures of a thousand or more years ago. Of course, more specific research into the genetics of populations in this part of South Africa is required before any definite answers can be proposed (Mitchell 2010). Such studies are now under way and it will not be long before the results are published. Preliminary indications are that Soodyall's work will be corroborated to show considerable genetic mixing between autochthonous 'Khoisan' and southeast Bantu speakers such as the Tswana and the Sotho.

The KRK project, by tracing the evolution of stone walled structures in the southern Gauteng Province, hopes to add an archaeological dimension to these intriguing linguistic and genetic hypotheses. That the earliest known builders of SWS in Pam 1 survey area, the Group I, were more herders than farmers is clearly indicated by their settlement patterns. That there is an architectural link between their structures and those of LSA herders, such as is known from the Seacow Valley, is tantalizingly suggested by Tom's Kraal. The next step is to find and closely examine more examples of the type of SWS represented by Tom's Kraal, to date them and clarify their association with stone tools, in order to test the hypothesis that they represent an older and original stratum of SWS in this landscape. If that can be achieved, the next challenge will be to isolate the southeastern Bantu cultural elements that contributed to the fusion which ultimately resulted in the Group I, II and III sequence of SWS which describe the pre-colonial peopling of the Highveld south of Johannesburg. The results reported here are but a small preliminary glimpse into what can be expected when the distribution of SWS in the entire KRK Project study area has been subjected to detailed spatial and statistical analysis.

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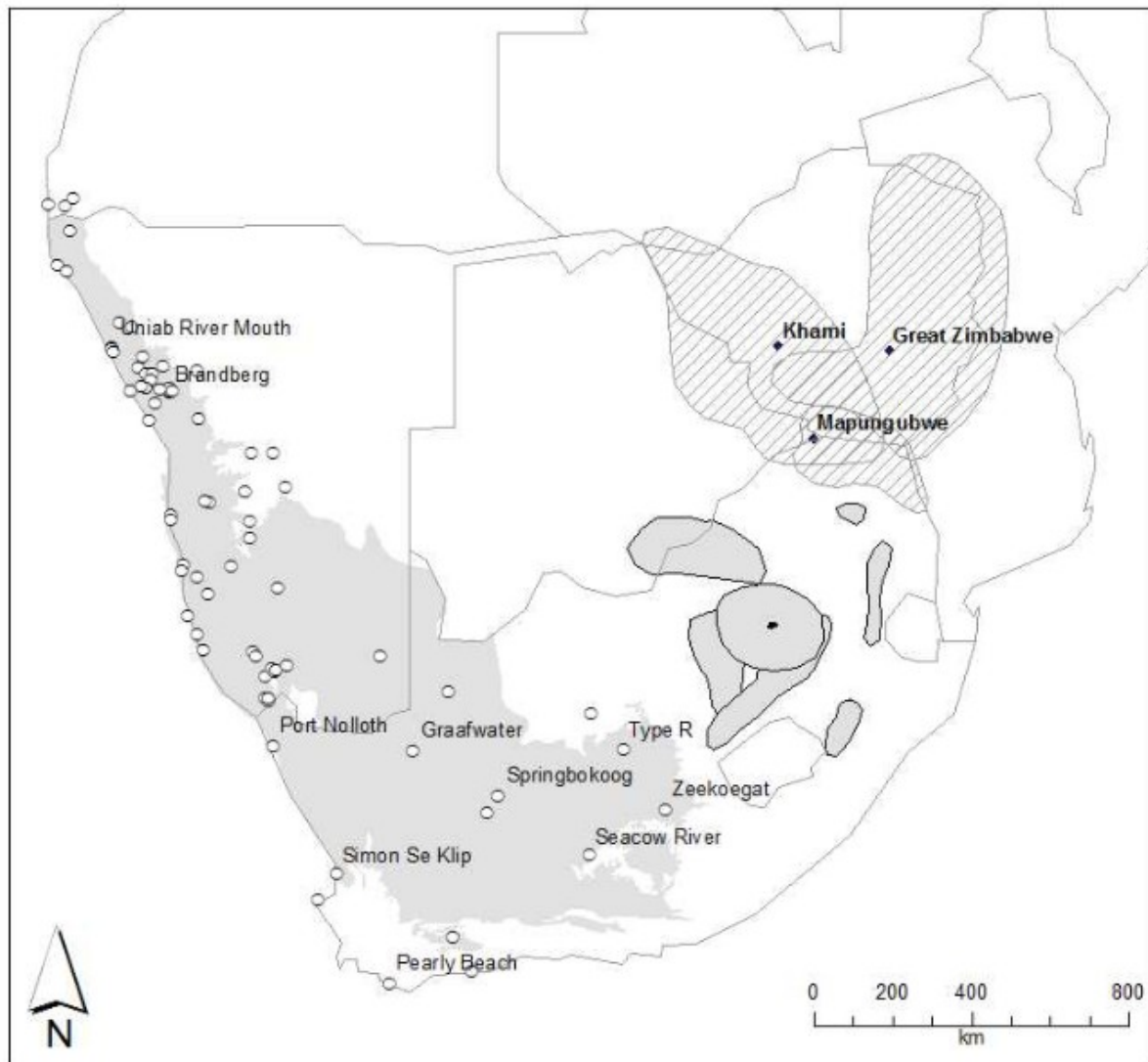


Fig 1 The distribution of Later Stone Age stone-walled structures (open circles) in southern Africa shown against the Nama-Karoo Biome (grey background). The hatched shapes in the north-east show the distribution of Zimbabwe pattern walling, while the grey shapes to the south show the distribution of Central Cattle walling (both after Huffman 2007). The black spot in the middle of the central grey shape shows the location of the KRK Project survey area.

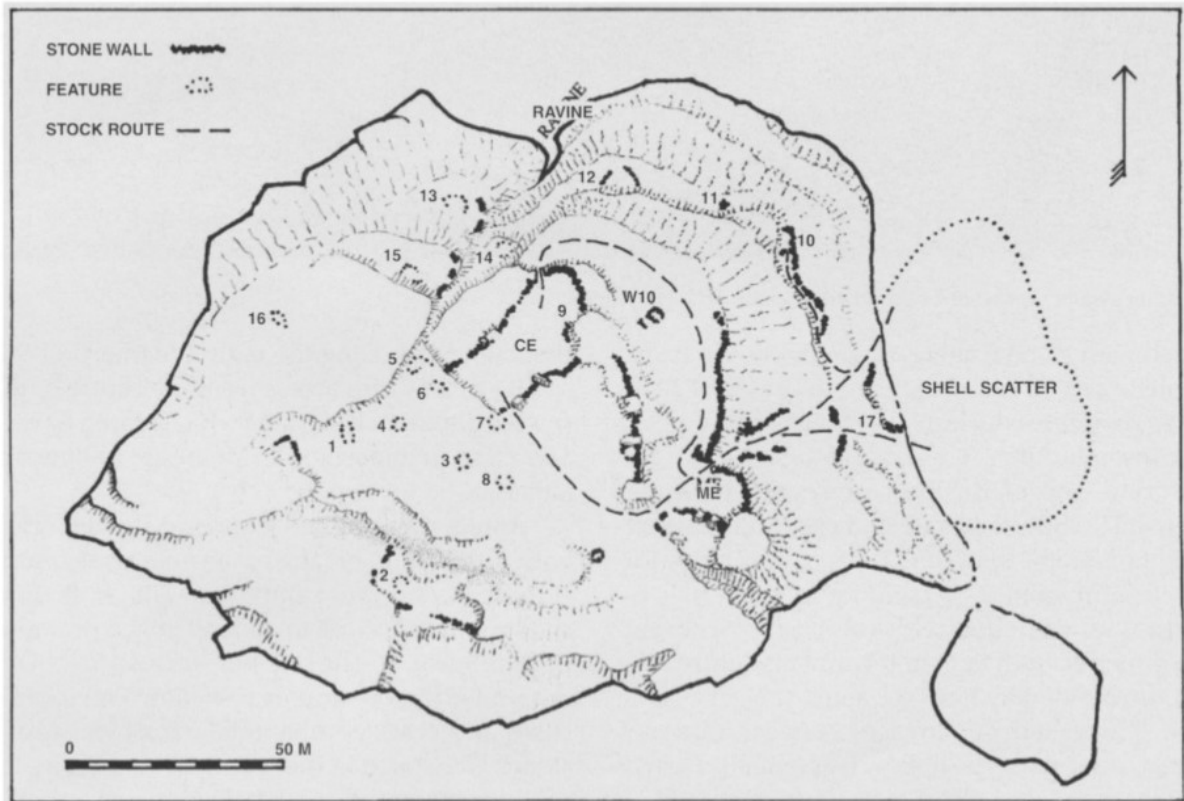


Fig 2 The stone walls at Simon se Klip (from Jerardino & Maggs 2007).

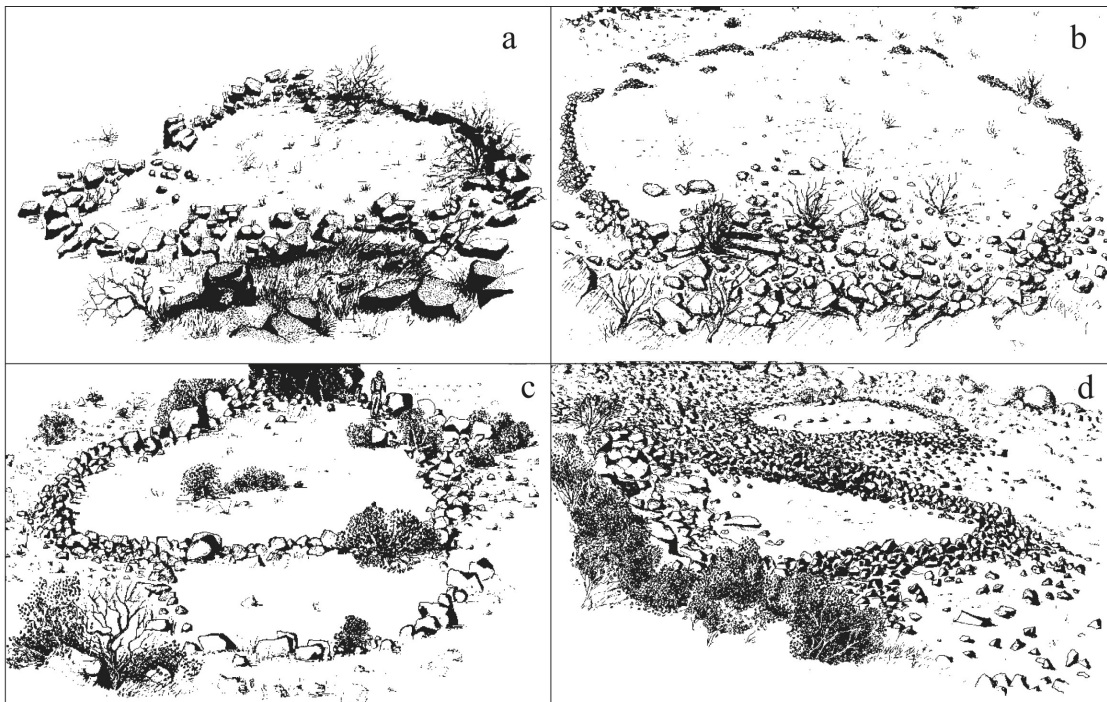


Fig 3 Seacow River valley large sub-circular alignments of collapsed dry-stone walling often have a distinctive smaller sub-circular enclosure attached (from Sampson 2010).

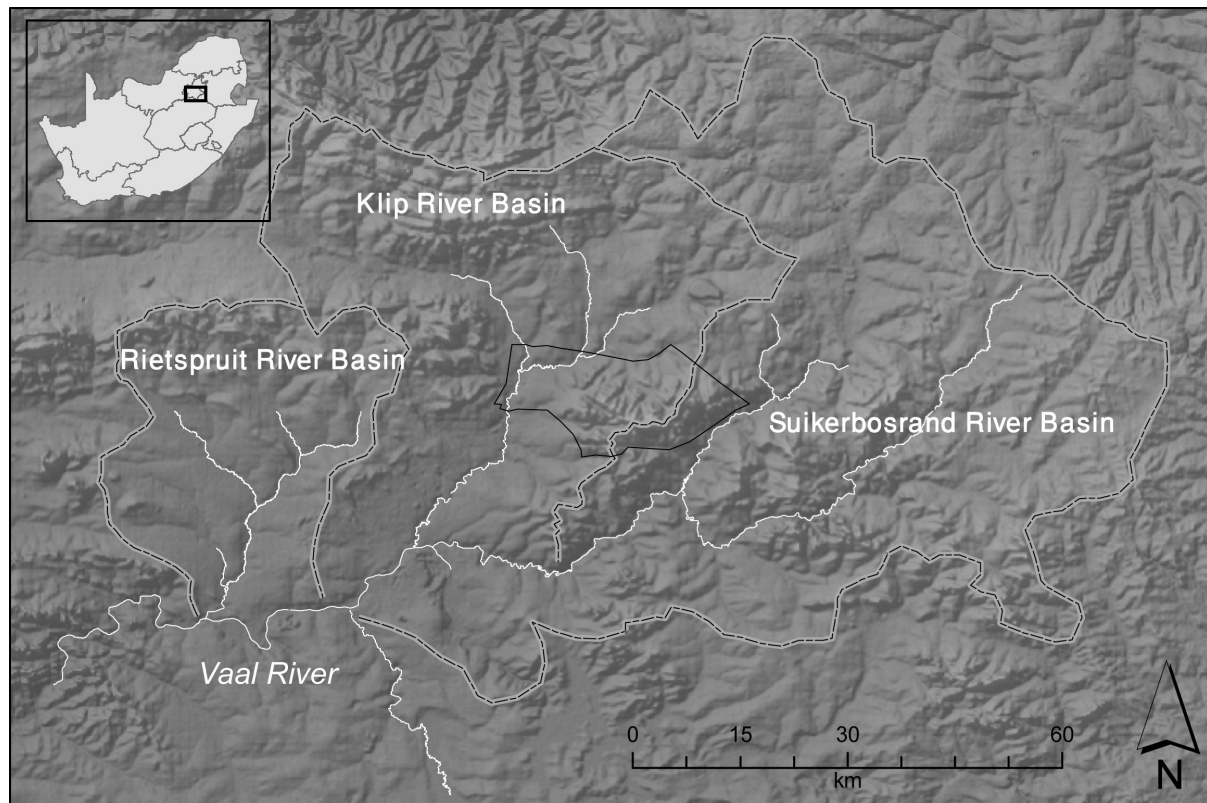


Fig 4 The KKR Project survey area: three adjacent drainage basins between Johannesburg and the Vaal River. The Pam 1 survey polygon in the centre of the project area is outlined in black.

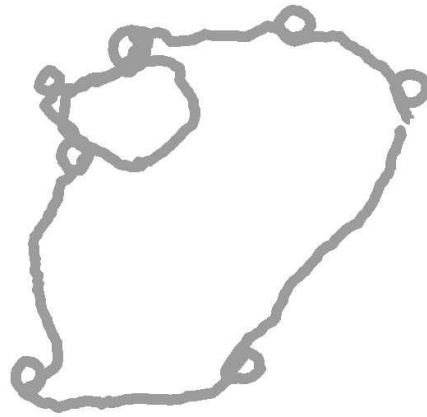


Fig 5 Tom's kraal. Lower image is from Google Earth and the scale bar represents 50 m. Outline at top was obtained by field mapping with a hand held GPS devise. Note the small circles along the outer wall which are not visible on the Google Earth image.

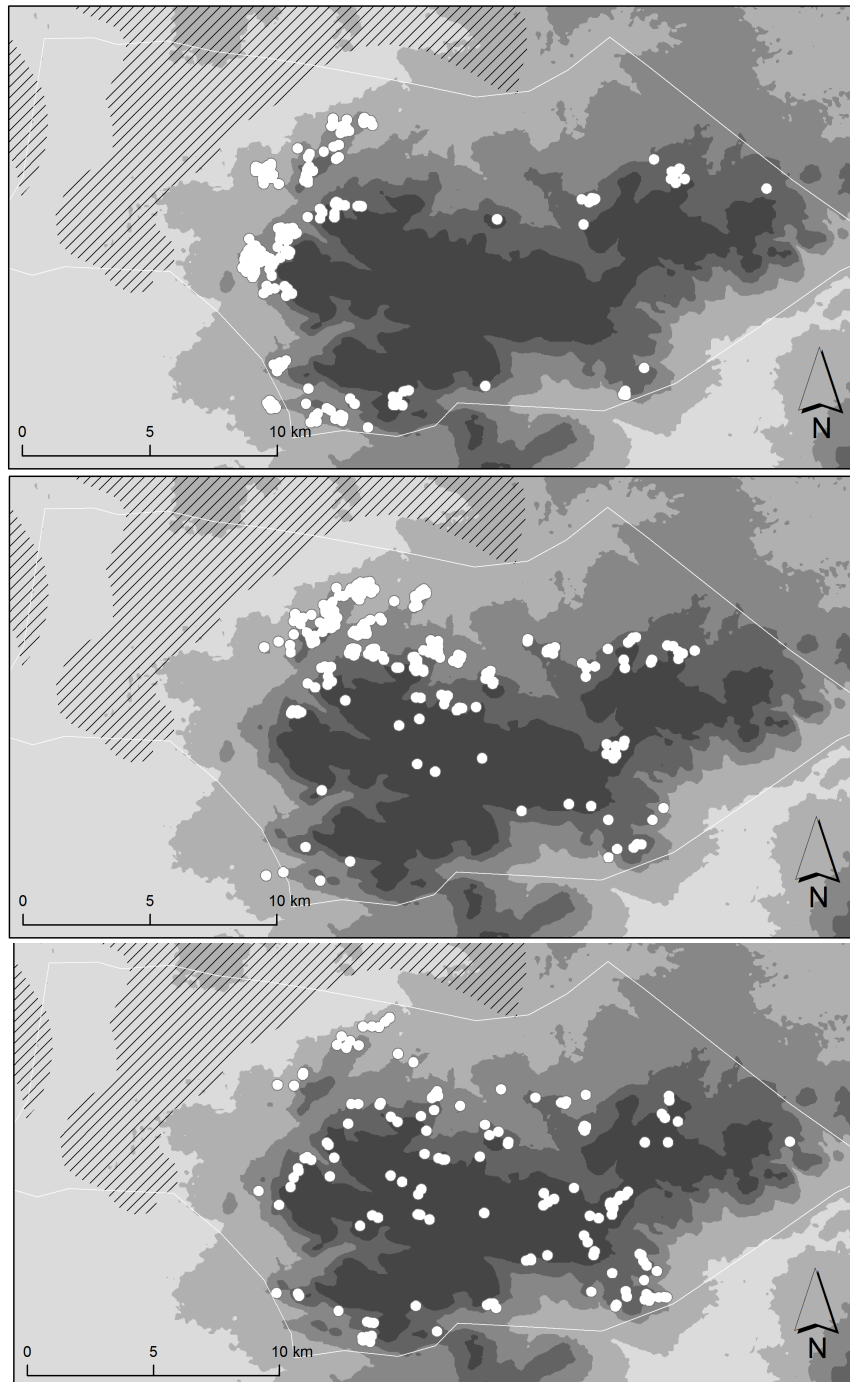


Fig 6. Distribution of Group I (bottom), Group III (middle) and Group II (top) SWS in the Pam 1 survey polygon of the KRK Project. Note the trend towards nucleation and aggregation in the north-west sector near prime agricultural lands (hatched lines).