World Heritage Scanned Nomination

File Name: 1099.pdf **UNESCO Region:** AFRICA

SITE NAME: **Mapungubwe Cultural Landscape**

DATE OF INSCRIPTION: 5th July 2003

STATE PARTY: SOUTH AFRICA

CRITERIA: C (ii)(iii)(iv)(v)

DECISION OF THE WORLD HERITAGE COMMITTEE:
Excerpt from the Report of the 27th Session of the World Heritage Committee

Criterion (ii): The Mapungubwe Cultural Landscape contains evidence for an important interchange of human values that led to far-reaching cultural and social changes in Southern Africa between AD 900 and 1300.

Criterion (iii): The remains in the Mapungubwe cultural landscape are a remarkably complete testimony to the growth and subsequent decline of the Mapungubwe state which at its height was the largest kingdom in the African sub-continent.

Criterion (iv): The establishment of Mapungubwe as a powerful state trading through the East African ports with Arabia and India was a significant stage in the history of the African sub-continent.

Criterion (v): The remains in the Mapungubwe cultural landscape graphically illustrate the impact of climate change and record the growth and then decline of the kingdom of Mapungubwe as a clear record of a culture that became vulnerable to irreversible change

BRIEF DESCRIPTIONS
Mapungubwe is set hard against the northern border of South Africa, joining Zimbabwe and Botswana. It is an open, expansive savannah landscape at the confluence of the Limpopo and Shashe rivers. Mapungubwe developed into the largest kingdom in the sub-continent before it was abandoned in the 14th century. What survives are the almost untouched remains of the palace sites and also the entire settlement area dependent upon them, as well as two earlier capital sites, the whole presenting an unrivalled picture of the development of social and political structures over some 400 years

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1.b State, Province or Region: Northern Province

1.d Exact location: S22 11 33 E29 14 20

MAPUNGUBWE CULTURAL LANDSCAPE

World Heritage Nomination Dossier

Submitted to the
WORLD HERITAGE COMMITTEE

By the
Department of Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

January 2002

EXECUTIVE SUMMARY

State Party	South Africa
State, Province or Region	Northern Province
Name of Property	Mapungubwe Cultural Landscape
Geographical coordinates to the nearest second	NW corner 22°12'56"S 29°08'22"E NE corner 22°10'10"S 29°29'04"E SE corner 22°14'15"S 29°31'35"E SW corner 22°17'40"S 29°12'00"E
Textual description of the property boundaries	Proposed boundaries correspond to the Vhembe-Dongola National Park: in the north the Limpopo River; in the west the Alldays-Pont Drift road; in the south the Messina-Pont Drift road and the boundary of the farm Riedel; in the east the boundary of the farm Riedel and an as yet unsurveyed line up the western side of the irrigated lands on the farm Weipe
A4 size Map of property nominated, showing boundary of area proposed for inscription	A4 map attached
Justification **Summary Statement of significance**	▪ The Mapungubwe Cultural Landscape was the centre of the first powerful indigenous kingdom in Southern Africa. It was established by the cultural ancestors of the present-day Shona and Venda between AD 900 and 1300. Evidence for its history is preserved in over 400 archaeological sites. The dynamic interaction between society and landscape laid the foundation for a new type of social organisation in the region. ▪ The kingdom grew as a result of wealth that accrued to its leaders from trade with the Indian Ocean network, combined with ideal landscape conditions for agriculture that provided for a population of over 9000 people. ▪ Trade goods included gold, glass beads, cotton cloth, Chinese ceramics, ivory, copper and hides. ▪ By the thirteenth century AD, a social hierarchy had developed and impacted on the landscape. Mapungubwe Hill was occupied and modified to separate the elite from the commoners below. ▪ The onset of the Little Ice Age caused drought and crop failures. The kingdom dispersed after AD 1300, new social and political alliances were formed and the centre of regional power shifted to Great Zimbabwe.
Criteria under which property proposed to be inscribed	(ii), (iii), (iv), (v)
Name and contact information of official local Institution/agency	Organization: Department of Environmental Affairs and Tourism Address: Private Bag X447, Pretoria 0001 Republic of South Africa Tel: +27 (12) 310 3829, Fax: +27 (12) 320 7026 E-mail: mmakgolo@ozone.pwv.gov.za Web site: environment.gov.za

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The Nomination Document was prepared by a Nomination Task Group consisting of Johan Verhoef of SANParks (Pretoria), Ron Viney of SAHRA (Pietersburg), Dirk de Wit of Northern Province Dept of Sports, Arts & Culture (Pietersburg), Makgolo Makgolo of Dept of Environmental Affairs & Tourism (Pretoria), Peter Norton of Peter Norton & Associates (Pretoria), and Janette Deacon, heritage consultant (Stellenbosch) and formerly of SAHRA, the South African Heritage Resources Agency. Additional inputs were obtained from Prof Victor Ralushai, Ed Eastwood and the Peace Parks Foundation.

Synnove Vinsrygg and Birgitta Hoberg of the Nordic World Heritage Office (Stockholm, Sweden), Roger Porter of KwaZulu-Natal Conservation Service (Pietermaritzburg) and Melinda Swift of Gauteng Dept of Agriculture, Conservation, Environment and Land Affairs (Johannesburg) advised on the nomination process.

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Management and research on the cultural resources of the Mapungubwe Cultural Landscape has been coordinated by the Vhembe-Dongola National Park Archaeological Task Group, which has played a vital role during the transition phase. It consists of representatives of SANParks, Wits University, University of Pretoria, University of Venda, SAHRA, Northern Province Sports, Arts and Culture, Pietersburg Museum, the National Cultural History Museum and Dept of Environmental Affairs and Tourism.

Photographic material was provided by the Mapungubwe Museum, University of Pretoria, who also gave permission to use the video and CD presentation on Mapungubwe, as well as Dr Peter Norton, Dr Janette Deacon, Prof Tom Huffman, Ed Eastwood and Marilee Wood.

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MAPUNGUBWE WORLD HERITAGE SITE NOMINATION

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1. IDENTIFICATION OF THE PROPERTY

a. Country: South Africa

b. Province Northern Province

c. Name of property Mapungubwe Cultural Landscape

d. Exact location NW corner 22°12'56"S 29°08'22"E
NE corner 22°10'10"S 29°29'04"E
SE corner 22°14'15"S 29°31'35"E
SW corner 22°17'40"S 29°12'00"E

e. Maps – in roll

- South Africa 1:250 000 Topographical Sheet 2228 Alldays Second Edition 1986
- South Africa 1:50 000 Sheets 2229AA Pontdrif, 2229AB Mapungubwe, 2229AC Evangelina, 2229AD Coila, all Second Edition 1980

Maps - in file and on CD

- Figure 1 Orientation Map of the Limpopo Valley
- Figure 2 Road map of the Mapungubwe Area
- Figure 3 South Africa 1:250 000 Topographical Sheet 2228 Alldays Second Edition 1986
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- Figure 5 Properties for inclusion in the Mapungubwe Cultural Landscape ±1:250 000
- Figure 6 Middle Iron Age archaeological sites in the Mapungubwe Cultural Landscape ±1:250 000
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f. Area of property proposed for inscription 28 168.66 ha

Note: There are additional Mapungubwe Period sites on the Zimbabwe and Botswana side of the Limpopo River that formed part of the original Mapungubwe Cultural Landscape. A joint nomination to include these sites maybe considered in a future submission to the World Heritage Committee.

MAPUNGUBWE CULTURAL LANDSCAPE

Chapter 2

JUSTIFICATION FOR INSCRIPTION

2. JUSTIFICATION FOR INSCRIPTION

a Statement of significance

The name Mapungubwe means the place of many jackals. The Mapungubwe Cultural Landscape, situated to the south of the confluence of the Limpopo and Shashe rivers on the border between South Africa, Zimbabwe and Botswana, is nominated for the World Heritage List as a cultural landscape that retains both tangible and intangible traces of the first powerful indigenous kingdom in Southern Africa that evolved between AD 900 and 1300. The people whose culture shaped and was shaped by the landscape laid the foundation for subsequent Southern African class-based societies and settlement patterns, including those at Great Zimbabwe and Khami.

The kingdom flourished as a result of new social and ideological values brought about primarily by participation in the Indian Ocean trade network along the east coast of Africa, combined with rich natural resources and ideal climatic conditions that allowed sustainable agriculture for a large population.

Fundamental social adjustments to the consequences of accumulated wealth in products such as gold, ivory, glass beads and cotton cloth, were reflected in the social and physical separation of an elite class and sacred leader on the top of Mapungubwe Hill, with commoners on the plains below. The power of the ruling class is evident from their distinctive hilltop graves, and grave goods such as a golden rhinoceros.

Over 400 archaeological sites in the core area of nearly 30 000 hectares contain tangible evidence for the evolution of this indigenous kingdom. It had its roots in changes that began when Early Iron Age farming people migrated southwards from West Africa between 350 and 600 AD and came into contact with San hunter-gatherers. Three main phases of subsequent development are recognised in the Mapungubwe Cultural Landscape.

The first phase, known as Zhizo, lasted from about AD 900-1020 and is best preserved at the site of Schroda. The second phase, known as Leopard's Kopje or K2, has been investigated in most detail at the site known as K2 on the farm Greefswald and dated from about AD 1020-1220. The most elaborate settlement during the third phase was on Mapungubwe Hill and the adjacent Southern Terrace and dated from AD 1220-1300. The power of the kingdom ended abruptly with the onset of the Little Ice Age at the end of the 13th century AD. Resultant drought made it no longer possible to sustain the growing population and the power base for trade shifted to Great Zimbabwe. Some of the cultural practices of the present-day Shona and Venda peoples originated during this historical process.

At the height of its importance, between AD 1220 and 1300, the Mapungubwe Cultural Landscape sustained a population of at least 9000 people. Regular flooding of the Limpopo River provided silt and water for crops. Grazing lands enabled stock to be kept. Elephants were hunted for their ivory and other animals for their hides, while several steep-sided hills were used as ritual sites for rain-making. At least one of them, Mapungubwe Hill, was gradually modified over the years by the addition of tonnes of soil carried to the hilltop to provide the foundations for the elite homesteads and burial ground. The sites retain much of their original integrity as well as the intangible values with which they were imbued more than 700 years ago.

b. Comparative analysis

The Mapungubwe Cultural Landscape is the cultural and historical precursor to two sites on the World Heritage List, namely Great Zimbabwe and Khami, both of which are in Zimbabwe. Great Zimbabwe (the word *dzimbahwe* is a sixteenth century Karanga term for all capital towns) is about 250 km to the north-east and Khami is about 220 km north-north-west of Mapungubwe (Figure 1). In culture-historical terms, the pottery at Mapungubwe represents the early phase of the Zimbabwe Culture (Huffman 1996b).

Climatic changes during the Little Ice Age in the fourteenth century AD were accompanied by lower rainfall in this part of Africa. As a consequence, it was no longer possible to sustain agriculture to feed a large population in the Mapungubwe Cultural Landscape and the inhabitants of Mapungubwe dispersed at the end of the thirteenth century. A new trade axis was established and Great Zimbabwe (which was occupied from at least the 11th century until about AD 1450) gained the ascendancy from the beginning of the fourteenth century AD. Thereafter the power shifted to Khami which was occupied between about 1450 and 1640 AD.The Portuguese established themselves at trading posts on the East African coast only from the sixteenth century onwards.

Mapungubwe is the precursor to Great Zimbabwe in the sense that both belonged to the same regional culture and the leader at Great Zimbabwe took over as the major east coast trading partner. However, there is no evidence that either the Mapungubwe people or the sacred leader or his lineage moved to Great Zimbabwe from Mapungubwe.

The physical remains at the two sites are different, but nevertheless have the same origin. The most obvious contrast is that large-scale stone walling is not well developed at Mapungubwe, but is a strong feature at Great Zimbabwe. The style of the walling is nevertheless the same. At Mapungubwe there are neatly built walls with coursing and many of the stones have been deliberately squared off by chipping. There is also a similarity in the placement of the coursed stone walls. At Mapungubwe Hill, as at Great Zimbabwe, the high quality walling relates to the royal areas and to the main entrance to the hill. By the end of the period of occupation at Mapungubwe the inhabitants had already established a ruling class that lived apart from the commoners. At Great Zimbabwe, the clearly identified ancestors of the Shona-speaking people developed the physical separation of commoners and sacred rulers to an even greater extent, using large and elaborate stone-walled structures to emphasise this separation. The architectural design and stone-working skills were carried through to Khami when the power of the ruling class at Great Zimbabwe waned. There is historical support for the archaeological and ethnographic evidence of stratification of Mutapa society into sacred leaders and commoners in eastern Zimbabwe in the sixteenth century. The details come from reports by Portuguese traders in 1506, 1512 and 1551 and by the Dominican priest Father Joao dos Santos who visited the area between 1586 and 1597 (Huffman 1996b:9).

Mapungubwe, Great Zimbabwe and Khami each represents a different stage in the inter-twined historical process of external trade and social stratification. Whereas the two Zimbabwean sites each cover a period of about two centuries, the core area of the Mapungubwe Cultural Landscape includes a series of three capitals that were occupied over a period of about 400 years. The story they tell is amplified with evidence from hunter-gatherer rock paintings, and follows the process of development from Central Cattle

Pattern settlements at Schroda and K2, to Mapungubwe Hill and the Southern Terrace where social stratification became entrenched.

The sophisticated stone walled structures at both Great Zimbabwe and Khami are in a good state of conservation. They have been partly reconstructed and have been open to the public for well over 50 years. Archaeological excavations have been conducted at both places. Although both Great Zimbabwe and Khami are visually more impressive than Mapungubwe because of their stone walling, the Mapungubwe Cultural Landscape retains a greater degree of integrity because of the lower impact of tourism and the minor level of intervention.

In a broader global context, Mapungubwe can be compared with the early city states in Central America and the Near East that record the origins of civilisation in those continents. Although Mapungubwe is much more recent than its counterparts, and there are similarities in the effects of sedentary agriculture, trade, population increase and class distinction, the cognitive use of the landscape is different. Whereas successive populations elsewhere built settlements on top of each other to emphasise dominance by ethnic replacement, in the Mapungubwe Cultural Landscape different parts of the landscape were selected at different times. Archaeological deposits therefore tend to represent a limited time period of a century or two, although cultural material from more than one tradition is found at several sites.

c. Authenticity/Integrity

The remains of the design, material, workmanship and setting of individual sites, and the distinctive character and components of the Mapungubwe Cultural Landscape, are largely intact, despite the passage of between 700 and 1100 years.

There has been little intervention at any of the sites in the Mapungubwe Cultural Landscape. Archaeological excavations have removed artefacts from deposits at Schroda, Pont Drift, K2, Mapungubwe Hill and the adjacent Southern Terrace, Den Staat, Leokwe Hill, Samaria, Little Muck shelter, Balerno, Blyklip and Skutwater. The excavations have been stabilised and filled in where possible and the materials recovered are curated at the University of Pretoria, at the University of the Witwatersrand in Johannesburg and at the African Window Museum in Pretoria.

The natural landscape has been modified along the Limpopo River where commercial farming has been undertaken during the past century. Cattle ranching was the main source of income for the past century or more and since the 1970s has been gradually replaced by game ranching and irrigation crop farming. Farm houses, farm buildings and staff accommodation have been built and various irrigation measures have been installed. Much of this development post-dates 1980 when electricity became available to farmers along the river and when local roads were upgraded and tarred. Large sections of the Limpopo floodplain were cleared and irrigation agriculture replaced game and cattle ranching along the river. Properties in the core area that have been or will soon be acquired in order to avoid conflicting land use, will be managed by SANParks. Farming in the core area has either ceased already or will be phased out over the next five years. Where contractual agreements are in existence with the diamond mining company De Beers, access is

permitted for the maintenance of a water pipeline from the Limpopo to the Venetia mine in the buffer zone about 50 km to the south.

Once the properties in the core area have been acquired by the State, or the owners have entered into a contractual agreement with SANParks, and the properties have been consolidated, all fences will be removed to allow elephants and other game animals to range freely. The flow of game will be extended further with the establishment of the proposed Trans Frontier Conservation Area that will extend across the Limpopo into Botswana and Zimbabwe.

d. Criteria under which inscription is proposed

The following criteria apply to the Mapungubwe Cultural Landscape.

(ii) it exhibits an important interchange of human values, over the time period between AD 900 and 1300 in Southern Africa, on developments in technology, and town-planning ; and

(iii) it bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which has disappeared; and

(iv) it is an outstanding example of a type of architectural and technological ensemble and landscape which illustrates a significant stage in human history; and

(v) it is an outstanding example of a traditional human settlement and land-use which is representative of a culture that became vulnerable under the impact of irreversible change.

Furthermore, under Article 39, as a *cultural landscape* it falls into the category of an:*organically evolved landscape, and into the sub-categories of*

(ii) a relict (or fossil) landscape in which an evolutionary process came to an end at some time in the past, either abruptly or over a period. Its significant distinguishing features are, however, still visible in material form;

(iii) an associative cultural landscape … by virtue of the powerful religious, artistic and cultural associations of the natural elements of the landscape rather than material cultural evidence, which may be insignificant or even absent.

Justification for inscription in terms of these criteria is as follows.

(ii) It exhibits an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture, or technology, monumental arts, town-planning or landscape design.

The Mapungubwe Cultural Landscape contains authentic evidence for an important interchange of human values that led to cultural and social changes in Southern Africa between AD 900 and 1300. These values are reflected in evidence for international trade in

the Indian Ocean network that created wealth in the community, causing ideological adjustments and changes in architecture and town-planning. The archaeological evidence shows a shift from a 'central cattle pattern' town layout to a pattern influenced by an elite class with sacred leadership in which the king was secluded on the top of Mapungubwe Hill, away from the commoners (Figure 11).

(iii) It bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which has disappeared

Until its demise at the end of the thirteenth century AD, Mapungubwe was the most important inland settlement in the subcontinent. The distribution of Mapungubwe pottery shows that in its heyday between AD 1220 and 1300 the kingdom extended over an area of about 30 000 sq km on either side of the Limpopo and Shashe rivers. The cultural landscape contains a wealth of information in archaeological sites that record the development of the kingdom from relatively small settlements based on a central cattle kraal to a capital with separate areas for the elite and commoners. High status burials containing several unique gold leaf items (Photo 36) that once covered wooden sculptures, as well as thousands of gold beads, provide the earliest physical evidence of substantial gold working in the sub-continent (Arab written records mention trading with gold on the east coast in AD 927). The gold work and related trade network is the indigenous precursor to the subsequent European exploitation of this precious metal in Southern Africa that began more than 500 years later. Glass beads, spindle whorls and fragments of Chinese porcelain are evidence for a flourishing trade with the east coast of Africa and, from there, with India, Indonesia and China (Photos 23, 31-34).

The power-base of the Zimbabwe-type culture that developed along the Limpopo later shifted to Great Zimbabwe when the rainfall regime altered and it was no longer possible to support a large sedentary population.

Although farming communities continued to live on and off in the Mapungubwe region after AD 1300, they never again reached the same high population density or political power. As a result of subsequent social and political events and colonial intervention in the last 400-500 years, direct linkages with the original population at Mapungubwe have become obscured. Current royal lineages and genealogies of descendant Shona and Venda people cannot be convincingly traced back to AD 1300, although some of their current cultural practices have their roots in the Mapungubwe cultural landscape. Oral history confirms that the name Mapungubwe means the place of many jackals, but recent consultation with local communities was not able to establish the significance of the name (Ralushai 2001).

The significance of Mapungubwe as a sacred rain-making site has remained in the intangible heritage of local people. According to folklore recorded by Professor Victor Ralushai (2001), long ago some *mashonzha* worm catchers slept close to Mapungubwe Hill and made a big fire for roasting the worms. Late at night they heard voices of people and the sound of drums and singing on the Hill. After an hour, rain began to fall and their fireplace was filled with rainwater. There was great thunder and lightning and they were very scared. They heard noises of wild animals in the neighbourhood and were even more frightened. The noise and thunder stopped immediately when one of the oldest members of

the group appealed to the ancestors to save them. She poured snuff on the ground and began to pray "We did not know that this was a burial ground. We are your children".

(iv) It is an outstanding example of a type of architectural and technological ensemble and landscape which illustrates a significant stage in human history

The Mapungubwe Cultural Landscape is an important addition to the World Heritage List because in the Southern African context it is where international trade, combined with ideal climatic conditions for agriculture, most effectively changed human settlement and cultural traditions and led to the establishment of sacred leadership. In developing international contacts with Islamic traders on the east coast who were part of a larger Indian Ocean network, African gold and elephant ivory, as well as animal hides and hippo ivory, were worked and exchanged for glass beads and ceramics that derived from as far afield as the Indo-Pacific region, including India and Indonesia, and China (Figure 9).

It is also the only geologically defined cultural landscape in the region that includes such a full set of successive stages in the early history of this process. Its nomination completes an historical triangle from Mapungubwe to Great Zimbabwe and Khami that continues to influence African society today.

Hunter-gatherer and herder rock paintings record some of the ideological and economic changes and new metaphors of power that arose when Iron Age farmers settled in their territory in the first millennium AD. By AD 500, rain-making was being practised by cattle farmers at several sites, but unfavourable climatic conditions and a lower rainfall halted further agricultural activities for several hundred years.

During the first phase of international trade, the community at Schroda was in control of the regional trade in ivory for glass beads which they obtained from traders operating along the east coast between AD 900 and 1000. The settlement was laid out according to the Central Cattle Pattern. A large cache of baked clay figurines indicates that the village was at times an important centre for female initiation.

Between AD 1020 and 1220, the most powerful chief in the region lived at K2 about 7 km from Schroda (Figure 6). The significantly increased wealth of his community derived from not only participating in, but also controlling, international trade. These ancestors of present-day Shona-speakers abandoned the Central Cattle Pattern village layout in the course of their stay at K2 and began to separate activities associated with cattle from the rest of society. They developed a unique method of making their own glass beads – called garden rollers by archaeologists because of their shape (Photo 32) – by melting glass from smaller imported beads that derived from the Indo-Pacific region.

As a result of the expanded trade network, a new indigenous social order based on class distinction developed and the move away from the long-established Central Cattle Pattern was completed. The social order became stratified into an upper and lower class that restructured the kinship pattern and gave the upper class economic and political power. The capital moved to Mapungubwe Hill where, between AD 1220 and 1300, the elite lived on the hilltop and the commoners lived below on the flat lands around the hill, now generally referred to as the southern terrace and the northern plateau (Figure 11). It is probable that

the minor royals lived on the slopes of the hill. Architectural features in the form of dry stone walling and differentiation in the placement of elite and commoner living spaces emphasised the new social order. Indigenous gold was worked and traded, ceramics from China indicate that trade had expanded and spindle whorls (Photo 23) are evidence for the spinning and cultivation of cotton.

> *39 (ii) The Mapungubwe Cultural Landscape is an organically evolved landscape that has resulted from an initial social, economic, administrative, and religious imperative and developed by association with and in response to its natural environment. Such landscapes reflect that process of evolution in their form and component features. The Mapungubwe Cultural Landscape falls into the sub-category of a relict (fossil) landscape in which an evolutionary process came to an end at some time in the past, either abruptly or over a period. Its significant distinguishing features are, however, still visible in material form.*
>
> *39 (iii) an associative cultural landscape … by virtue of the powerful religious, artistic and cultural associations of the natural elements of the landscape rather than material cultural evidence, which may be insignificant or even absent.*

The Mapungubwe Cultural Landscape evolved in response to:

- Social imperatives that required a regional population of sufficient size to enable a hierarchy of settlements to develop that would maintain political control and a critical mass for the exchange of goods and marriage partners;
- Subsistence imperatives that utilised ideal climatic, hydrological and geomorphological conditions to develop agricultural production and sustain the largest population ever to have lived in the core area of the Mapungubwe Cultural Landscape.
- Economic imperatives that drove the internal trade in hides, ivory and gold and, later, cotton, and enabled these to be traded outside the kingdom and exchanged for exotic products such as glass beads, glazed ceramics and cloth so that wealth could be accumulated by political leaders; and
- Administrative and religious imperatives that sought to maintain the hierarchy of elite sacred leaders vs commoners once it had developed.

Physical features of the landscape both influenced the placement of settlements and were selected for particular purposes at different times in the Mapungubwe Cultural Landscape, while changing climatic conditions affected the time span of the settlements. The close proximity of the capitals at Schroda, K2 and Mapungubwe probably reflects other factors that played a part, such as the location of preferred east-west and north-south trade routes or the proximity of agricultural land or fresh water. Intangible meanings, now lost, may also have been attached to certain landscape features. Some of the more obvious factors are:

- Geographically, the Mapungubwe Cultural Landscape is centred on the confluence of the Limpopo and Shashe rivers (Figure 4). . For several hundred years the confluence has been on a route for north-south movement of people from central to southern Africa and for west-east traffic from the interior of the sub-continent to the east coast about 600 km away Although for much of the year the sandy beds can now be crossed on foot because of dams and irrigation upstream, it is more than likely that the river ran the whole year round between AD 900 and 1300. The geographical situation has ensured

that the rivers brought water from different catchment areas with different rainfall regimes. Rocky outcrops narrow the valley near the confluence causing interruption of the flow of water so that rich silt is dumped on the floodplain. Higher terraces and hills kept settlements above the flood level.

- Geologically, the Mapungubwe Cultural Landscape closely corresponds to an outcrop of cave sandstone on the outer rim of the Karoo System. The sandstone has weathered into caves that were occupied by Stone Age hunter-gatherers and have been decorated with rock art that records the changing ideology of the people who lived there. Early Iron Age settlements were situated on elevated terraces away from the Limpopo River and were laid out according to the classic Southern African Central Cattle Pattern with cattle kraals surrounded by households. The sandstone has also weathered into unusual steep-sided hills that rise dramatically out of the flatter surrounding land. Some of the higher hills were used for rain-making by the earliest Iron Age inhabitants. Later, a few of these same rock formations provided natural landscape features for the elite members of society with high status to be elevated and separated from the commoners.

- Climatically, at times of reliable and moderately high rainfall in the past, alluvial soils brought downstream by the Limpopo and Shashe rivers in flood were used in floodplain agriculture. Similar climatic conditions enabled the local red mudstone soils to be used for dry land crops such as millet and promoted reliable stands of natural grasses for stock grazing.

(v) The Mapungubwe Cultural Landscape is an outstanding example of a traditional human settlement and land-use pattern which is representative of a culture or human interaction with the environment that became vulnerable under the impact of irreversible change.

During the past two millennia, periods of warmer and wetter conditions suitable for agriculture in the Limpopo/Shashe valley were interspersed with cooler and drier pulses. Tyson & Lindsey (1992) and Huffman (1996a) summarise these as follows (see Figure 10):

YEARS AD	CLIMATE
100-250	cool and dry
250-600	mostly warm and wet, but variable
600-900	variable but cooling and drier
900-1300	variable but warmer and wetter, coinciding with the Medieval Warm Epoch in the northern hemisphere
1300-1500	cooler and drier, corresponding with the Little Ice Age
1500-1800	cool initially, but warming

When rainfall decreased after 1300 AD, the Mapungubwe Cultural Landscape could not continue to sustain a high population using traditional agricultural methods, and the inhabitants were obliged to disperse.

The occupation of areas like Schroda, K2 and the Mapungubwe southern terrace by thousands of people for a century or more changed the contours irrevocably too. Pole and

daga (clay) houses thatched with grass collapsed or were burnt and others were built on top of them. Middens of ash and dung built up to substantial depths alongside the houses and the accretion of occupation debris created new platforms for further expansion of settlements.

The move from K2 to the southern terrace below Mapungubwe Hill was necessary because the layout had become out of step with the socio-political change that had occurred. The Central Cattle Pattern was no longer appropriate and topographically K2 could not be adapted to the new ideology as this required physical separation of the sacred leader from the commoners. At Mapungubwe Hill, this spatial separation could be expressed from the beginning to reflect the new socio-political order (Huffman 2000:26).

During the period of intensive occupation, the hilltop at Mapungubwe was gradually modified. Large quantities of soil were carried up to create an artificial platform for houses and for graves (Photos 7 and 8). Low walls were built to demarcate the entrance to the hill and to strengthen and clearly demarcate terraces and pathways. Where required, holes were drilled into the rock to anchor house poles. Adjustments were also necessary to acknowledge the changes in rain-making practices in which the sacred leader no longer made rain himself, but called on his ancestors to intercede with God on his behalf to make rain. He built his palace on top of the old rainmaking site to appropriate the power of the place and thus to strengthen and legitimate his new role. In the process the transformation from a ranked to a class-based society involved a change in practice and theology as well as a physical change to the landscape (Huffman 2000:27).

The Mapungubwe Cultural Landscape records the sequence of spatial changes that reflect the evolution of class distinction and sacred leadership in the settlements from Schroda to K2 and finally to Mapungubwe. These are the only places where exotic trade and non-utilitarian items have been found in such large quantities. The combination of accumulated wealth from trade, annual renewal of agricultural soil on the floodplain, population growth during a period of favourable climate, and a landscape that lent itself to the spatial expression of class distinction allowed a complex society to evolve here. By the same token, the shifting of the trade centre when drier climatic conditions reduced the population meant that the population necessary to maintain the power of the sacred leader could not be sustained beyond AD 1300.

MAPUNGUBWE CULTURAL LANDSCAPE

Chapter 3

DESCRIPTION

3. DESCRIPTION

a. Description of property

i. General description of the property

The Mapungubwe Cultural Landscape is situated in the physiographic region known as the Lowveld in an ancient valley that includes the confluence of the Shashe and Limpopo Rivers. These rivers drain an extensive area and form the international border between South Africa in the south, Botswana in the north west and Zimbabwe in the north east.

Geologically, the core area of the Mapungubwe Cultural Landscape (MCL) is centred on a relatively isolated outcrop of sandstone hills, underlain by red mudstones and intruded by dolerite dykes. The formation is part of the Karoo System. The sandstones are up to 300 m thick in places. They are stratigraphically correlated with the Clarens Sandstone Formation, formerly known as Cave Sandstone, that formed during the Triassic between 225 and 190 million years ago and they contain fossils of that time period (Kent 1980:542). Partial skeletons of *Massospondylus* sp. have been found on Greefswald, Weipe and Schroda and across the border in Zimbabwe, and their footprints at Pont Drift have been declared a national monument. The sandstones have been used in other parts of South Africa as well as in the MCL as ideal surfaces for rock paintings. The dolerites are intrusive and date to between the late Triassic and the Cretaceous. Most of the land in the core area is between 500 and 630 m above mean sea level.

The climate is sub-tropical with rare frost and mean daily temperatures of about 17°C in winter and 25°C in summer. Rain falls mainly in summer but is erratic both seasonally and from year to year and ranges from 140 to 500 mm per annum. Part of the reason for the low rainfall is that the MCL lies at a low altitude of less than 500 m above sea level and is in the rain shadow of the higher and more extensive Soutpansberg range to the south and east.

Vegetation on the soils derived from mudstones and sandstones is classified as Mopane Veld, a Savannah Bushveld dominated by the shrub *Colophospermum mopane*. The mopane tree grows to a full height of 6 metres when it is established on deep sandy soils, but in most of the Mapungubwe Cultural Landscape its growth is stunted by shallow soil and limited water. Along the Kalompe River on the farms Little Muck and Den Staat, there are numerous tall mopane trees in the deep alluvial soils, together with a variety of acacias and other trees such as marula and baobab (*Adansonia digitata),* riverine species and grasses. A list of plants recorded and expected in the area is included in the Preliminary Park Management Plan.

The combination of soils derived from the rocks of the Karoo System, regular flooding of the Limpopo and its tributaries, good grazing and browsing lands and dry mopane leaves for fodder during the winter, provided the natural resources for both agriculture and stock farming that were needed to sustain a large population when the leaders at Mapungubwe were at the height of their power.

The core area is about 35 km from Pont Drift in the west to Schroda in the east, and is mostly less than 10 km from the Limpopo River in the north to the tarred road linking Pont Drift and Messina in the south (Figures 3 and 5). The 24 original farms, some of which have been subdivided over the years, comprise 28 168.66 ha.

The principal properties are the Vhembe-Dongola National Park in which some land is owned by SANParks and the rest is owned privately but is managed by SANParks as a contractual park. The farms in the core area are listed in Table 4.1.

The following properties are in the buffer zone which, added to the core, comprises a total of about 100 000 ha.

Venetia-Limpopo Nature Reserve	De Beers
Vhembe Nature Reserve	Leif Rahmqvist
Limpopo Valley Game Reserve	Various private owners

During the twentieth century large tracts of land along the Limpopo River were developed for commerical farming where irrigation was possible. This has changed the character of the floodplain in certain areas, particularly on farms on the eastern border of the core area. Over the past few decades, however, there has been increasing interest in nature conservation. Most of the properties acquired by SANParks and those contracted to it are now exclusively devoted to nature conservation and game viewing and most of the land in the buffer zone has similar land use.

As a result of the establishment of the Peace Parks Foundation in 1997, government has entered into discussions with Botswana and Zimbabwe about the possibility of establishing a Trans-Frontier Conservation Area (TFCA). It is envisaged that this will include the Mapungubwe Cultural Landscape core area and buffer zone on the South African side. The intention would be to add the Tuli Block and Southern Tuli Game Reserve in Botswana and the Tuli Circle, Maramani Communal area, Sentinel Ranch and Nottingham Estates in Zimbabwe to the buffer zone (Figure 2). On-going negotiations with Botswana and Zimbabwe will help to identify management issues and how these should be addressed.

When this conservancy area has been consolidated, fences will be removed. The Park area will then include a large number of game animals such as elephant, giraffe, hippopotamus, impala, waterbuck, kudu, eland, bushbuck, mountain reedbuck, klipspringer, blue wildebeest, bushpig, warthog, aardvark, leopard, lion, cheetah, zebra, monkey, baboon and a variety of smaller mammals.

The TFCA has excellent potential as a "big five" conservation area. Viable populations of lion, leopard, and cheetah still occur, and the population of 900 (September 2000 census) elephants in the Tuli Block in Botswana is the largest population on private land in Africa. Ungulates already present include eland (*Taurotragus oryx*), impala (*Aepyceros melampus)*, blue wildebeest (*Connochaetes taurinus*), Burchell's zebra (*Equus burchelli)*, Sharpe's grysbok (*Raphicerus sharpei)*, and steenbok (*Raphicerus campestris)*, and there is suitable habitat for both black and white rhino (*Diceros bicornis* and *Ceratotherium simum)*. The area also has 19 Red Data Book mammals. No detailed information is available on birds, reptiles and amphibians found specifically within the TFCA, although the area around the confluence of the two rivers is known to have a great diversity of birdlife. Three main vegetation communities are recognized in the region: the riparian fringe occurs along the main rivers and their tributaries, the *Acacia-Salvadora* community occurs on the Limpopo flats and vlei areas, and the mixed western mopane veld occurs on ridges and flats south of the riparian fringe and flood plains. Twenty-six Red Data Book plant species have been recorded in the area. Large areas of the proposed TFCA have been severely disturbed and degraded due to previous intensive agricultural farming activities in the core area.

Introductions of mammals into the Venetia Limpopo Nature Reserve in the buffer zone include 44 elephants from 1991-1994, 10 roan *Hippotragus equinus*, 10 sable *Hippotragus niger* and 20 tsessebe *Damaliscus lunatus* in 1994. A major constraint to the movement of animals in the area is the presence of the veterinary cordon fence and an electrified military barrier on the South African side of the Limpopo River, and this needs to be addressed urgently. Once established, this TFCA has the potential to be a significant sanctuary for wild dog, black rhino and elephant and for the 16 other Red Data Book species. Wild dog and elephants in particular would benefit from the larger area of the TFCA.

The Limpopo/Shashe TFCA with its wealth of wildlife and scenery and its cultural/historical assets has the potential to become a major new tourist destination in southern Africa. Existing tourist facilities are mainly restricted to a small number of privately run lodges in Botswana (which already attract about 20,000 visitors each year), and an even smaller number within South Africa. In Zimbabwe, the Tuli Circle Safari Area in Zimbabwe is used extensively for hunting under permit. The proposed national park on the South African side of the TFCA could attract 30,000 additional visitors per year. All three countries have potential for private sector investment in ecotourism development.

b. History and development

i. History of research in the Mapungubwe Cultural Landscape

Mapungubwe was the largest settlement in the sub-continent in the thirteenth century AD before it was abandoned. Various communities settled in the vicinity over the next 600 years. Legends and rumours about the place were passed on from generation to generation. Karel Moerschell, a German farmer based at the western end of the Soutpansberg in the area of present-day Vivo, knew about the gold by 1911. He published a book called *Der Wilde Lottrie* about a man named Lotrie Lottry, an elephant hunter who left Schoemansdal and lived as a recluse in the Limpopo Valley. Lottry is reputed to have stayed in the rock shelter on the western end of Mapungubwe Hill and to have removed a pot filled with gold from the hilltop (Edwin Hanisch, pers. comm. December 2001). It is said that he buried it somewhere below the hill, but it was not until the 1930s that the reasons for the significance of Mapungubwe became more widely known.

On 31 December 1932, the son of a local informant, Mowena, led E.S.J. van Graan, his son and three other men to Mapungubwe Hill on the farm Greefswald. They saw stone walls, gold and iron artefacts, pottery and glass beads there and realised its importance. They returned on New Years Day 1933 and recovered more items, including the contents of a grave with more gold objects. The finds, which received wide publicity in the media, were reported to the head of the Department of History at the University of Pretoria, Professor Leo Fouché. As a result of his intervention, the University negotiated with the owner of the property, E.E. Collins. In a legal agreement the University took ownership of the gold and other artefacts and secured an option and contract for excavation rights. The University also successfully requested a postponement of prospecting, mining and related activities on Greefswald. In June 1933, Greefswald was bought by the Government and excavation rights were granted to the University of Pretoria (Meyer 1998:19-20).

As there was no Department of Archaeology at the University of Pretoria at that time, the University established an Archaeological Committee from 1933 to 1947 to oversee

research and excavations that began in 1934. Rev. Neville Jones from Zimbabwe and J.F. Schofield were appointed to undertake the first fieldwork in 1934 and 1935 and they were advised by Professor C van Riet Lowe, Director of the Bureau of Archaeology. Their work focused on Mapungubwe Hill, the southern terrace and the midden then known as Bambandyanalo, but later named K2. They also noted the stone walling, now known to belong to the later Venda period, on Bambandyanalo Hill that lies between K2 and Mapungubwe, and they briefly surveyed other similar sites in the vicinity.

From 1935-1940 six excavation seasons at K2 and Mapungubwe Hill were directed by Guy A. Gardner who was called up for military service in 1940 and was unable to continue after the War. The results of his work were published nearly 25 years later (Gardner 1963). Without the benefit of comparative studies, and influenced by incorrect conclusions from the analysis of human skeletal remains from graves at K2 by Galloway (1959), Gardner believed that the earliest inhabitants at K2 and Mapungubwe Hill were Khoekhoe ("proto-Hottentot" in his terminology) who were supplanted by Iron Age Nguni immigrants. Galloway's conclusions were later corrected by Rightmire (1970) who demonstrated that all the people buried on Greefswald fell within the range of variation of the negroid population associated with the Iron Age throughout Southern Africa.

Meyer (1998:23) describes the excavations on Greefswald between 1933 and 1940 as "rapid, large scale excavations resulting in the recovery of valuable artefacts". Research was hampered by "the lack of professional archaeologists in South Africa, the lack of full-time supervision of the excavations by efficient, trained staff, the fact that adequate scientific methods for Iron Age research had not yet been developed and that the Iron Age in South Africa was virtually unknown to archaeologists. Consequently, many of the deposits on the sites were removed without the meticulous excavation and recording required … These problems inevitably resulted in a loss of irreplaceable deposits and eventually also of excavated materials [and] a lack of scientific data".

The next phase of archaeological investigation, in 1953-1954 and 1968-1970, under the direction initially of the Department of Anthropology, and then of Professor J F Eloff who was appointed as Head of the newly-formed Department of Archaeology at the University of Pretoria in 1970, was more systematic and focused mainly on the southern terrace.

Over the next 25 years from 1970 to 1995, the Department of Archaeology at the University of Pretoria recognised that their first priority was to establish a firm data base by testing, correcting and supplementing the earlier research, and concentrating on reconstructing the way of life of the site inhabitants (Eloff 1979). A summary of the results of this work was published by Professor Andrie Meyer (1998) who became Head of the Department of Archaeology several years after the retirement of Professor Eloff. Specialist reports have been published on the faunal remains (Voigt 1983), human skeletal remains (Steyn & Henneberg 1994, 1995b, 1996, 1997; Steyn & Nienaber 2000), Chinese porcelain (Meyer & Esterhuizen 1994), gold objects (Oddy 1984; Miller et al. 2000), glass beads (Saitowitz et al. 1995; Wood 2000) and radiocarbon dating (Vogel 1998, 2000).

In addition to the fieldwork and research done on Greefswald, sites on neighbouring farms were also investigated by students of the University of Pretoria during the 1970s and 1980s. The most significant of these were Schroda and Pont Drift (Hanisch 1980, 1981a, 1981b) and Skutwater (Van Ewyk 1987). Since the early 1990s, Professor T N Huffman, Dr Simon Hall and students from the Department of Archaeology at the University of the

Witwatersrand in Johannesburg have been surveying and excavating sites to the west of Greefswald at Leokwe Hill, Little Muck and Balerno (Calabrese 1997, 1998, 2000a, b; Hall & Smith 2000; Huffman 2000; Smith & Hall 1999).

A comprehensive list of known sites in the core area of the Mapungubwe Cultural Landscape, in the buffer zone, and in Botswana and Zimbabwe, has been compiled by Huffman and is synthesised in Figures 6-8. The list alsocontains all rock art sites recorded during field surveys in the core area and adjacent properties in Zimbabwe by Palaeo-Art Services, a voluntary organisation co-ordinated by Ed Eastwood.

Greefswald has remained the property of the State since the 1930s. Access was restricted during the 1970s, 1980s and early 1990s when the property was used by the South African Defence Force because of its strategic position on the border with Botswana and Zimbabwe. Management of the farm was taken over by the provincial Department of Nature Conservation in 1992, and control was transferred to SANParks in 1999.

ii. History and development of the Mapungubwe Cultural Landscape

The significance of the geographical positioning of the Mapungubwe Cultural Landscape is evident from the large number of archaeological sites that cover a wide range of time periods from the Earlier Stone Age at least 500 000 years ago, through to the nineteenth century AD. The combination of the riverine environment and the sandstone hills has provided a focus for human settlement whenever climatic conditions have been favourable.

The Southern African landscape was occupied for hundreds of millennia by indigenous Stone Age hunter-gatherers who were the ancestors of the San (Bushmen). Withn the core area there are at least 26 sites that they were occupied during the Stone Age. Earlier Stone Age people camped near the river between about 0.5 million and 250 000 years ago. They were followed by Middle Stone Age groups who occupied open sites and used rock shelters as well. From about 20 000 years ago, Later Stone Age people were also using both rock shelters and open sites. Their artefact assemblages began to include tools such as bows and arrows and ornaments such as ostrich eggshell beads that were still being used by their San descendants up to a few centuries ago. Within the last five or ten thousand years, the hunter-gatherers also made rock paintings and engravings (see Figure 7).

When Bantu-speaking Iron Age farmers with domesticated crops and livestock migrated southwards into the region from West Africa about two millennia ago, some hunter-gatherers acquired domesticated stock from them and became herders with sheep and cattle. These early herders may have been people of San descent and are usually referred to as the Khoekhoe. The term Khoisan refers to both the San and the Khoekhoe as the first indigenous people of the sub-continent. Apart from characteristic Bambata pottery which is the earliest pottery in the regional sequence, and the rock art which includes paintings of sheep (Photo 17) and ‘finger’ paintings ascribed to herders, however, there is no archaeological evidence of Khoekhoe herder settlement in the Mapungubwe Cultural Landscape. It is generally assumed that the herders moved fairly rapidly southwards ahead of the Iron Age migration and settled mainly in the south-western part of Southern Africa.

The earliest Iron Age farmers in the Mapungubwe Cultural Landscape (MCL) have left archaeological traces of their presence in the form of pottery and middens dating from

about AD 350 in the region. The pottery is classified as Happy Rest after the name of the site in the Soutpansberg where it was first described. The population remained small and was constrained by changes in the rainfall regime so that at times, such as between AD 600 and 900 when temperatures were cooler and rainfall was low, there is no evidence for the presence of farmer settlements.

Three phases can be identified within the main occupation period of the MCL. The dating, economy, origins of the people, settlement pattern and characteristic artefact traditions are summarised in the Table below.

PHASE	**DATING**	**ECONOMY**	**PEOPLE**	**SETTLEMENT PATTERN**	**MATERIAL CULTURE**
MCL Phase 1: Zhizo	900-1020 AD	Iron Age agriculturists	Bantu-speakers. Population in MCL estimated at 1900	Central Cattle Pattern. 23 Recorded sites on Schroda (1) Den Staat (1) Greefswald (6) Little Muck (6) Pont Drift (3) Hamilton (1) Samaria (3) Modena (1) Weipe (1)	Zhizo pottery; clay figurines, Ivory objects, imported glass beads, iron and copper working
MCL Phase 2: K2	1020-1220 AD	Iron Age agriculturists	Ancestors of Shona-speakers. Population in MCL estimated at 5300	Central Cattle Pattern. 87 Recorded sites on Den Staat (26) Greefswald (6) Hamilton (8) Little Muck (9) Machete (3) Rhodes Drift (1) Reidel (1) Samaria (23) Pont Drift (2) Modena (2) Schroda (4) Weipe (2) LK on Machete (1) Samaria (1)	K2 / Leopard's Kopje pottery, ivory objects, imported and reworked glass beads, iron and copper working
MCL Phase 3: Mapun-gubwe	1220-1300	Iron Age agriculturists and traders	Ancestors of Shona-speakers. Population estimated in MCL: 9000	Zimbabwe pattern with elite on hilltop, and commoners below. 25 Recorded sites on: Den Staat (3) Greefswald (4) Hamilton (2) Little Muck (1) Samaria (13) Weipe (1) Skutwater (1)	Mapungubwe pottery, gold objects, copper, iron glass beads, imported ceramics

The transition from Stone Age to Iron Age in the Mapungubwe Cultural Landscape began during the first millennium AD. It is not the main focus of this nomination, but as the San

recorded aspects of this change in their rock art, some background is provided before proceeding with a detailed description of the sites dating to the Mapungubwe Cultural Landscape period from AD 900-1300. The description is divided into the following time periods:

- **Transition** from Stone Age to Iron Age between AD 250-900 when indigenous Later Stone Age foragers (San hunter-gatherers) were gradually replaced and absorbed by immigrant herders and agriculturists as the main inhabitants of the Limpopo Valley. The herders and agriculturists are associated with pottery known as Bambata and Happy Rest respectively.

- **Phase 1:** the Zhizo Period. Iron Age farming communities, whose settlements were organised around a central cattle kraal, established themselves when climatic conditions improved after AD 900 and grew in number between AD 900-1020, developing trade links with the east coast;

- **Phase 2:** the Leopard's Kopje / K2 Period. Ancestors of the Shona-speaking people of Southern Africa replaced the Zhizo people but remained organised around the central cattle pattern between about AD 1020 and 1220. As commoner and ruling classes became differentiated, the integrity of the central cattle pattern began to weaken towards the end of this phase.

- **Phase 3**: the Mapungubwe Period. A socially stratified Late Iron Age kingdom at Mapungubwe, dating to AD 1220-1300, developed strong trade links with the east coast and dominated the landscape for at least 70 years.

After the onset of less favourable climatic conditions, it was no longer possible to sustain a large population and the Mapungubwe kingdom dispersed, although small communities stayed behind. During later power struggles, especially in what is now the country of Zimbabwe, small groups of people moved in and out of the Mapungubwe area. Within the Mapungubwe Cultural Landscape these movements are recorded in the various pottery styles and settlement layouts at more than 100 sites dating to the Icon/Zimbabwe, Khami and Venda periods of occupation between AD 1300 and 1800. Even though population numbers and alliances did not remain static, the ideology for social stratification that developed at Mapungubwe remained a strong element in subsequent Zimbabwe, Khami, Shona and Venda culture.

The archaeological evidence that has enabled these generalisations to be made is summarised below.

iii. Transition from Stone Age to Iron Age

Early Iron Age people are known to have lived in the MCL between about AD 500 and 700 when the region received sufficient rainfall for sorghum to be grown and grass to grow for cattle and small stock. Happy Rest pottery that dates to this period has been found on the southern terrace and in eroded areas north of the hill at Mapungubwe (Meyer 1997, 1998) and on the top of several steep-sided hills that were apparently used at that time for rain-making. Little more is known about this time period, however, as an episode of lower

rainfall between about AD 700 and 900 led to a population reduction and there is little physical evidence of the presence of Iron Age people during that time.

In a survey by Palaeo-Art Field Services (Eastwood 2001; see Appendices), 150 rock art sites have been recorded in the Limpopo Shashe Confluence Area. These include 40 sites in Zimbabwe. There are therefore 110 rock art sites in the MCL and on adjacent farms. The sample of 150 includes 139 painted sites and 56 engraving sites, with most of the engravings found at the same sites as paintings. There are several different traditions that can be correlated with the cosmology of San hunter-gatherers and Khoekhoe herders and there are two examples of paintings by Iron Age people. The Limpopo valley is one of the rare instances in the sub-continent where rock paintings and rock engravings occur at the same place. In the MCL they are found together in rock shelters on the farms Balerno and Schroda.

Three rock art sites have been excavated and the deposits provide detailed information on the sequence of events during the transition from the Stone Age to the Iron Age. The excavated sites are Little Muck and Balerno shelters in the MCL and Salt Pan Shelter about 100 km to the south in the Soutpansberg, outside of the proposed MCL. Additional detail about the transition can be inferred from the rock art.

Little Muck Shelter (Hall & Smith 2000), with occupation deposits about 1 m thick, provides the most complete sequence from which to gauge the nature and tempo of the process of change from foraging to agriculture in the MCL. Like Salt Pan Shelter, Balerno and sites on the Botswana side of the Limpopo, the first occupation was in the period just prior to the introduction of pottery about 2000 years ago. Activity intensified thereafter because the foragers established an interactive relationship with their agriculturist neighbours at Leokwe Hill (in the case of Little Muck). A similar symbiosis has been recorded between foragers and early Iron Age communities further south in the Soutpansberg at Salt Pan Shelter and in the Waterberg (Van der Ryst 1998).

When compared with the pre-ceramic deposits at the base of the Little Muck sequence that are dated by inference to pre-250 AD, the deposits associated with the earliest Happy Rest/Bambata pottery have higher numbers of stone scrapers. These stone tools were used for preparation of hides. This suggests to Hall and Smith (2000:34) that the foragers were preparing hides for exchange with agriculturists. In the overlying deposit with Leokwe-Zhizo pottery that dates between 1000 and 1100 AD, this activity was further intensified. In contrast, in the uppermost layers associated with K2 and Mapungubwe pottery, dating between 1100 and 1300 AD, formal stone tools, worked bone, shell and ochre are either absent or occur in very small quantities.

The interpretation is that these uppermost layers that post-date 1050 AD, and include glass beads, iron artefacts and K2 and Mapungubwe period pottery, were the result of occupation of the shelter not by the Later Stone Age foragers, but by people from the agriculturist community that was established by that time at nearby Leokwe Hill. After that time, foragers became excluded from barter and craft exchanges and their sites were appropriated by farmers. This appropriation is further emphasised by the presence of fourteen gaming ‘boards’ that were carved into the sandstone in front of Little Muck Shelter (Photo 19). These ‘boards’ are often found associated with Zhizo and Leopard’s Kopje sites. In the recent past, they have been made and used exclusively by men in Shona, Venda, Shangaan and Tsonga-speaking communities. It is likely that this tradition has been a common

practice for a long time. Schmidt (1995) makes reference to the fact that some Khoekhoe peoples believed that this "cloud game" or "African chess" was placed on the rock by their god, Heiseb, and was mystically linked to rain.

Although the rock paintings at Little Muck Shelter cannot be directly dated, the absence of ochre in the uppermost deposits is strong circumstantial evidence that the paintings were done prior to about 1050 AD when the site was taken over by Iron Age farmers.

Three traditions of rock painting have been identified in the MCL, Limpopo-Shashe Confluence Area and surrounding Soutpansberg region.

1. The majority of the paintings are in the **earliest tradition** of finely detailed images that reflect beliefs and cosmology common to the San diaspora of the past five thousand years or more. Most are in red ochre, with some in black and white. Eastwood's (2001:25) survey shows that human figures are more common than any other category (45.7%), followed by animals (42.3%), items of clothing such as loin cloths and aprons (8.8%), and lines, dots, nets, animal spoor and therianthropes (3.2%). The analysis of human figures in the rock paintings shows that those of uncertain gender were the most common (48%), followed by women (28%) and men (24%). This is unusual in the southern African context as images of men usually predominate. Another unusual feature in the rock art that is also related to gender, is the high incidence of paintings of women's leather aprons (Photo 18) with smaller numbers of paintings that probably represent loin cloths worn by men. In the animal category, indeterminate animals were most common, followed by kudu, giraffe, elephant, impala, tssessebe, fish, eland, ostrich, locust, rhinoceros, fat-tailed sheep.and other animals of lesser significance. The paintings of domesticated fat-tailed sheep can be dated because they were introduced by herders and immigrant farmers in the first millennium AD. As the sheep are in the same style as the more conventional San paintings, they were probably done by the hunter-gatherers rather than the herders.

2. Mostly overlying the San tradition images, but sometimes underlying them, are **geometric paintings**. The paint, in red, orange and white, was applied with a finger. Paintings in this tradition are less common than those of the San, but are distributed throughout the region. There is no clear evidence of who the artists were, but they are generally thought to have been herders with sheep who moved through the region briefly between the time of the first establishment of Iron Age agriculturist communities and about AD 900. Similar geometric paintings and engravings are found in other regions of Southern Africa as well. They may be the work of Khoe-speaking herders, related to the San, who acquired sheep and, later, cattle from Iron Age farmers. They moved southwards into the western half of what is now South Africa about 2000 years ago. Apart from the rock art there is as yet no other archaeological trace known of Khoekhoe presence in the MCL.

3. Overlying the earlier rock art traditions are what have been called **'late white' paintings**. They are typical of those done by Bantu-speaking people in east, central and southern Africa, and more specifically by ancestors of the modern Sotho-Tswana cultural group. They are considered to date to the period after 1300 AD (Hall & Smith 2000:39) and are further evidence for the appropriation of places that had previously been used by others.

The rock art, particularly that done in the San tradition, together with the archaeological evidence from Little Muck Shelter, provides a valuable commentary by the indigenous people themselves on the historical process in the MCL in the first millennium AD. In general terms, the process culminated in the appropriation by herders and farmers of places that had been used exclusively by hunter-gatherer-foragers. It led to the disappearance (and/or assimilation) of the San and ultimately to the rise of social stratification and attendant cultural and economic development at Mapungubwe. More specifically, the covering of San art by the art of herders and farmers symbolically cut off the power of the older images of the spirit world and the religious beliefs that generated them. In this context, argue Hall & Smith (2000:43), San paintings of sheep "may represent a San attempt to neutralise or overcome the power of the herders; certainly they symbolise the extent to which the new herder population threatened San life."

The distribution map of rock art sites (Figure 7) illustrates, too, that from the first millennium AD, Iron Age people were occupying much the same landscape as the hunter-gatherers. The absence of San paintings of images that could be linked to the Mapungubwe period is further evidence that the power and presence of the hunter-gatherers had been changed radically by early in the second millennium. Historical records, however, relate that people of mixed San and Sotho descent were living in the wider area in the nineteenth century and that they were engaged in rainmaking, a practice that was carried on by San people in many parts of Southern Africa. The assimilation of hunter-gatherers into the dominant economy of the farmers was therefore a long and complex process.

iv. Phase 1: the Zhizo Period

By AD 900, communities recognised archaeologically by their characteristic Zhizo-style pottery had established themselves in the Mapungubwe Cultural Landscape and in south-west Zimbabwe and parts of eastern Botswana. Zhizo is named after the site in Zimbabwe where this pottery was first described (Robinson 1960, 1966; Huffman 1974). There are 23 recorded Zhizo sites in the MCL (Figure 5). By this time, the climate had improved with more reliable rainfall for crops after a 200-year period of cooler temperatures and persistent drought. Later Stone Age communities had either moved away or assimilated with the farmers, possibly intermarrying and assisting them with rain-making. Herders seem to have moved southwards, and trade – initially with ivory and hides in exchange for glass beads and possibly woven cloth – had begun with people along the east coast.

Excavated sites with characteristic Zhizo pottery have calibrated radiocarbon dates within the time range from 790-1020 in Zimbabwe, the Limpopo Valley (including the MCL) and adjacent regions of Botswana (Vogel 2000). The pots have bands of oblique incision and comb-stamping on the lower rim, stamped triangles on the upper shoulder, followed by a horizontal line of stamping (Huffman 2000). Excavations at Pont Drift (Hanisch 1980) show that the Zhizo pottery decoration motifs persisted in the region for about 200 years and were replaced around 1000 AD by what has been called K2 or Leopard's Kopje.

The largest Zhizo site thus far excavated is on the farm Schroda, immediately east of the farm Greefswald on the eastern side of the MCL core area (22.11.29 South, 29.25.45 East). It is situated on top of a rocky plateau overlooking the Limpopo Valley to the north (Hanisch 1981). The site, about 500 x 300 m in extent, is a Central Cattle Pattern complex that consists of middens and fragments of gravel house floors that built up over a period of

about 100 years from 900 AD. A series of natural rock outcrops have been interfilled with deposit giving the impression of natural terraces.

The landscapes selected by Zhizo people for settlement tend to be set back from the Limpopo River, like Schroda. As they were the first pioneer farmers to entrench themselves in this environment, it is likely that they had to overcome a number of obstacles before they could farm successfully. These obstacles would have included damage to their crops by elephants and hippo, flooding along the river, and woodland that had to be cleared for crops and villages. The successful utilisation of the natural resources required sustained social organisation so that the people could generate enough food for the growing population. Trade and agriculture therefore went hand-in-hand at this time and farming practices were focused on the cultivation of crops as well as on herding cattle, sheep and goats.

Schroda is significant for the history of the MCL because of its size and its midden contents, because it is the earliest site in the Limpopo Valley with exotic glass beads and a large amount of worked ivory, and because it yielded an extraordinary cache of ceramic (baked clay) figurines. The implications of these characteristics are:

- **Size:** Judging from the size of the site at Schroda, which is at present the largest known Zhizo site in Southern Africa, it is estimated to have housed between 300 and 500 people. This in turn implies a level of political power that is not evident at any other sites in the MCL at this time. From information currently available, there are twenty-five smaller Zhizo sites within a 40km radius of Schroda on both sides of the Limpopo and the Shashe. The system of political hierarchy in place at that time implies that a chief would have been resident at the Schroda capital, with lesser leaders such as headmen in charge of the smaller settlements.

- **Middens**: Ashy middens with refuse consisting of broken potsherds and food remains were found throughout the site. A large quantity of faunal remains – in excess of 140 000 bone fragments - was examined, of which just over 19 000 bones were identifiable. They represented 263 sheep/goats, 201 cattle, 6 dogs, two species of fish and 701 individuals from 52 species of mainly small, non-domesticated animals (Voigt 1983). This is one of the larger samples of identifiable faunal remains from any site in the MCL (Plug 2000). The remains indicate that the primary source of meat was sheep, goats and cattle (in that order), supplemented by game, fish from the river. The staple food was cultivated sorghum.

- **Pottery**: Over 100 000 potsherds were recovered from the excavations at Schroda. The decorative motifs and shapes were essentially similar to Zhizo ware first described in Zimbabwe, but the majority were bowls rather than pots, and black and red wares were rare.

- **Glass beads** were found in sufficient quantity (664) (Wood 2000) to suggest that they were the result of direct trade with the east coast (Huffman 2000). Although similar beads have been recovered from Chibuene on the Mozambique coast, (Sinclair 1982), their ultimate origins are unknown (Wood 2000:87). They are comparable with beads of similar antiquity from several Zhizo sites in south-eastern Zimbabwe, including Makuru and Zhizo Hill.. This, and the presence of cowrie shells, implies that Schroda was already part of a regional trade network.

- **Worked ivory** indicates a surplus over immediate needs, with the implication that this surplus was used as an item of exchange in trade with the east coast.

- **Clay figurines:** Clay figurines were found in small numbers throughout the site, but nearly 2000 fragments were recovered in one small area. The evidence suggests that the figurines – of animals, humans and combinations of both – were used there in a special ritual and were broken prior to burial. Distinct clusters of figurines of mainly domesticated animals usually associated with male initiation were found on one side of this special area, and on the other side were mainly larger figurines of mythical wild animals usually associated with female initiation in ritual practices amongst early twentieth century Venda (Hanisch 1981). . The most common form is a stylised bird, followed by human-like figures and animals of various kinds, both wild and domesticated. The large quantity and sophistication of the figurines implies rites-of-passage ceremonies controlled by the chief that included young women and men from settlements beyond Schroda itself. Huffman (2000:17) notes this as evidence of Schroda's chiefly status.

- **Metal working:** Fragments of copper and iron were recovered from middens, in addition to small pieces of tuyère and slag, probably relating to copper and iron forging on a small scale.

Taken together, the information gathered from the excavations at Schroda and the distribution of other Zhizo sites indicates that a hierarchy related to growing political power and the unequal distribution of wealth had begun to form in the region, but the Central Cattle Pattern still dominated. Men and cattle and associated activities were placed in the centre of the settlement together with the court of the chief. This was surrounded by houses where the women lived. The senior leader was able to accumulate wealth in the form of cattle by imposing death dues, court fines, forfeits, tributes, raids and a high bride-price for his daughters (Huffman 2000:17). As a result, he had more wives, followers, court officials and associated houses in his settlement than the headmen in surrounding settlements who paid tribute to him and did not accumulate tribute themselves.

Judging from the large number of glass beads and cowrie shells, and from the quantity of ivory worked at Schroda, the chief was already engaged in direct trade with the east coast and the Indian Ocean network. According to Arab documents quoted by Huffman (Burke 1962; Freeman-Grenville 1975; Huffman 2000:19), Swahili traders reported finding new ivory sources in the Sofala-Bazaruto area of present-day Mozambique in the 9th century AD. Some of the early coastal trading stations have been found (Sinclair 1982). At the other end of the trade network, sites in the Waterberg to the south and in Botswana to the west that were occupied contemporaneously with Schroda and have related pottery styles, and have the same kind of glass beads as those from Schroda, but in much smaller quantities. As Schroda is the only likely source for these beads (Huffman 2000:20), its influence was wider than the MCL and buffer zone.

After about a century, Schroda was abandoned. In its place, a new capital was established and a new pottery style was introduced by an immigrant group. Schroda's chief probably left with the majority of his people. One of the successors to Zhizo pottery is found at Toutswe in Botswana, suggesting that Schroda people moved westwards as a result of this takeover.

v. Phase 2: The Leopard's Kopje / K2 Period

The K2 phase in the MCL dates from about AD 1020-1220 (Huffman 2000). Of the 89 sites in the MCL where Leopard's Kopje / K2 pottery has been recorded, only a few (e.g. Hanisch 1980), were occupied previously by Zhizo people. This indicates that there was little or no continuity between the two periods and in a detailed regional study of pottery by Huffman (1984) he has concluded that Zhizo and Leopard's Kopje had separate origins. The implication is that a new group of people – believed to be the ancestors of the present-day Shona - moved into the area and usurped the power of the chief at Schroda around AD 1000. They then established a capital about 7 km to the south-west at the site known as K2 on the farm Greefswald.

- **K2 Midden**. A huge midden complex on the farm Greefswald dominates the landscape and shows the location of the capital that replaced Schroda as the largest settlement during the K2 period. The site was called K2 by Gardner when he excavated there in the 1930s. He had excavated in Egypt where a midden was called a '*kom*' and he used the same word for this one as a matter of convenience. The word has no local significance. Calibrated radiocarbon dates at K2 have a fairly tight range between AD 1000 and 1220 (Meyer 1998; Vogel 2000).

  The deposits at K2 cover an area of about 5 ha (Figure 12) and consist not only of settlement debris and refuse, but also of ash and of weathered manure in the central cattle kraal. Huffman (2000) estimates that between 1000 and 2000 people lived there. The midden complex is at least 100 m long and up to 6 m deep. Analysis of the spatial distribution of the remains indicates that the site began with a central cattle kraal surrounded by pole and daga houses and grain bins as would be expected in a settlement laid out according to the Central Cattle Pattern. The cattle were later moved elsewhere, partly because their value changed when beads and cloth replaced them as status symbols. The debris that then accumulated in the kraal probably relates to an increase in the number of court cases heard by the chief and his councillors as their power grew. The court is traditionally placed adjacent to the kraal and African hospitality ensures that visitors must be given sufficient food and drink during their stay. Excavations away from the central kraal have shown burnt pole and daga houses and mudstone gravel floors with associated smaller middens in homestead areas to the east, west, north and south, and on the slope of Bambandyanalo Hill. A midden on the eastern side, labelled K1, is another dump area related to K2 (Meyer 1998).

  The midden at K2 gives the first evidence of substantial impact on the natural landscape. In addition to the physical presence of the remains of the settlement there and at contemporary sites in the valley, there was a considerable impact on the natural vegetation caused by clearing of land for crops, dumping of refuse, burning of old houses and house floors and vitrification of burnt dung in cattle kraals. The samples of vitrified cattle dung from K2 sites that have been analysed by palynologist Louis Scott do not include mopane tree pollen. As the dung includes only grass pollen, this indicates that the ubiquitous mopane and all other trees had been cleared from some of the sites before the establishment of the settlement. This implies that by K2 times ivory hunting had been so successful that elephants were no longer a serious threat to large agricultural fields that were widespread on the flat lands between the hills where they could take advantage of the seasonal flooding of tributaries and the replenishment of

silt. Even today, the middens and kraals are easily identifiable because little vegetation is established on them

- **Subsistence**. All the middens at K2 show that the farming community established there was settled and successful. Burnt seeds of domesticated crops indicate that sorghum, beans and millet were grown nearby. The products were stored in small pole and daga grain bins (Eloff & Meyer 1981). Analysis of nearly 50 000 bone fragments (Voigt 1983) showed a pattern similar to Schroda with 3 dogs, 226 cattle and 290 sheep/goats, together with the remains of 45 species of wild animals, mostly caught in snares, as well as birds and a few fish.

- **Pottery**. The sophisticated K2 Vessel Series described by Meyer (1998; see also Schofield 1937; Gardner 1963) consists of spherical pots with short necks and mostly incised decoration motifs; hemi-spherical open bowls; spherical bowls with restricted openings, often combined with spouts; deep beaker-shaped bowls with incised decoration and beakers with incised decoration.

- **Clay figurines.** Baked clay figurines were recovered from the K2 midden, including whistles. Most common are elongated human figurines with stumpy heads, arms and legs, and cattle, sheep and goats (Meyer 1998).

- **Metal.** Small quantities of iron and copper ore and slag show that metal working took place nearby. The metal workers would have had to travel far to obtain the ore and probably brought in partly processed copper ingots and iron as there is no evidence there for smelting. Iron, associated with men, was traditionally worked outside settlements, whereas copper was associated with women and was worked inside settlements, with smithing done in the centre. Artefacts include arrowheads, spearheads, hoe blades, beads, bangles and wire (Meyer 1998; Calabrese 2000).

- **Shell.** Cowrie shells from the east coast were found, in addition to beads made of ostrich eggshell, snail and freshwater mussel shell.

- **Bone and ivory artefacts.** Bone needles and awls (Photo 25) and a large number of ivory bangles and armbands (Photo 24) as well as the debris from ivory working are further evidence of items made for trade.

- **Burials**. The 94 human skeletons, of which 76 were juveniles, came from graves among the houses next to the central cattle kraal at K2 and from the midden which later covered it. Isolated human remains outside of formal graves were also recovered within the midden, as were so-called beast burials in which cattle bones were ritually buried in pots. K2 burials were sometimes associated with large quantities of beads and other grave goods. Some of the burials at K2 date to the later Mapungubwe period indicating that the midden was still used as a burial ground after the K2 settlement was abandoned. Twentieth century ethnography gives some insight into the burial tradition. In most cases people were buried beneath their houses. However, it was necessary to ‘cool’ certain individuals who had died ‘hot’ deaths, in which case the grave was placed in the ash of a midden because ash was regarded as ‘cool’. This was done most often for children (Huffman 1986a, b).

- **Glass beads**. Over 6500 glass beads have been recovered from deposits dating to the main occupation of the settlement and midden at K2 (Wood 2000) confirming that trade with the east coast had increased substantially. Horton (1996:329) has estimated that there was a mass introduction of glass beads on the east coast dating from c. AD 1050. The K2 beads would fall within this time period.

  The most characteristic of the beads from the K2 period are small transparent to translucent drawn glass beads that range from turquoise to blue-green and green-blue in colour. They are related in colour and opacity, but not in size, to larger beads that are found in a number of sites on the East African coast. Wood (2000:87) concludes that these smaller beads, which are of unknown origin, were probably preferred by the people who lived at K2 as they were more suitable for beadwork panels than the larger beads found on the coast. If this is the case, it gives a useful starting date in this part of the sub-continent for the practice of beadwork that continues to be a characteristic of Southern African craft today. Some of the drawn beads are of Indo-Pacific origin and probably derived from south-eastern India (Wood 2000), demonstrating the geographical range of the trade network of the time.

- **Garden Rollers**. Of special interest amongst the beads from K2 are the so-called Garden Rollers (Photo 32. Nearly 300 were found at K2, representing the largest collection in the region. They are usually barrel-shaped and turquoise to blue-green in colour and have been found in association with broken, finely-made pottery moulds. Davison (1973) demonstrated that the chemical composition of the Garden Rollers and the small imported beads is the same. They were therefore made on the site in individual moulds from glass melted down from the imported beads (Gardner 1963; Wood 2000). The technology is not only unique to the Mapungubwe Cultural Landscape, but it is one of the earliest instances of glass reworking in Africa south of the Sahara. Garden Rollers were made at other K2 sites as well and were widely traded within the Shashe/Limpopo region. They have also been found in small quantities at sites in Botswana, Zimbabwe and Zambia (Wood 2000).

Moving of the cattle kraal away from the centre of the settlement at about AD 1100 reflects a deliberate shift in the principles governing the settlement layout of K2. As the kraal was not re-established next to the court at Mapungubwe, Huffman (2000:21) interprets this as indicating new restricted ownership of cattle and a change in the function of the court from a place for all men, to a place for commoners. This is therefore the first indication of a major change away from the Central Cattle Pattern that developed further when K2 was abandoned and Mapungubwe became the regional capital.

Other K2 phase sites that have been excavated in the MCL are Den Staat, Pont Drift, Leokwe Hill and others on the farm Little Muck about 13 km west of Mapungubwe. Excavations at Leokwe Hill were conducted on the western hilltop (Area A) and on the north-eastern terrace (Area B). Calibrated radiocarbon dates for the hilltop site range from AD 1160 to 1215. For house posts from the terrace site the range is between AD 1180 to 1215, and for a midden on the terrace to between AD 1050 and 1150 (Vogel & Calabrese 2000).

The Leokwe-Zhizo pottery from the terrace site is not K2/Leopard's Kopje, but is derived from Zhizo (Vogel & Calabrese 2000). It is contemporary with the Zhizo-derived site of

Toutswe in eastern Botswana, but is much later than the Zhizo phase itself. The pottery from the hilltop site belongs to the K2 phase. It has therefore been suggested that the people at Leokwe Hill represent some of the people who stayed behind when the Shona-speaking Leopard's Kopje people settled at K2 (Huffman 2000).

It is possible that Leopard's Kopje/K2 elite inhabited the high status area on the hilltop with Zhizo commoners below, but it is also possible that the two sites were not occupied simultaneously. Calabrese (Vogel & Calabrese 2000) interprets it as reflecting a more complex regional sociopolitical system than a simple replacement of Zhizo with Leopard's Kopje and one that incorporated some Zhizo elements.

A third scenario is that the Zhizo people who remained may have formed a reciprocal relationship with the new immigrants while still maintaining their cultural identity as expressed in their pottery. Huffman (pers. comm.) suggests they could have maintained this identity as healers and rainmakers. With an older link to the landscape than the immigrants had, they would have been ritually closer to the spirits that control rain and healing. Current research projects are aimed at trying to distinguish between rainmaking and residential debris at both rainmaking hills and commoner sites near Leokwe Hill and on Rhodes Drift.

vi. Phase 3: The Mapungubwe Period

Apart from success in trade and agriculture, the substantial increase in population density between the K2 and Mapungubwe phases was a critical factor in the development of a class structure and of Mapungubwe as a capital and a site of sacred leadership. This is reflected in the number of sites in phase 3 compared with phase 1. There are 39 recorded Mapungubwe period sites thus far in and around the MCL, about 20 on the Zimbabwe side of the Limpopo and a further 5 in Botswana (Huffman, pers. comm.; Figure 6). There is a hierarchy amongst these sites (Huffman 2000:22) with five administrative levels within a radius of 100 km of Mapungubwe. At the upper end of the scale, Mapela Hill in Zimbabwe is a large elite settlement; at the next level there are hilltop settlements at Little Muck A and Mmamagwe in Botswana; and the lowest two levels are commoner settlements. These smaller settlements are located on open terraces and do not include hilltop components. As the separation of commoners and elite was not present there, the Central Cattle Pattern continued to prevail. The commoner sites are recognisable by the characteristic Mapungubwe pottery and a relatively narrow range of radiocarbon dates between about AD 1250 and 1300 (Huffman 2000). The significant features of the Mapungubwe culture are detailed below.

- **Town planning**. The settlement, town, or metropolis at Mapungubwe, situated 2.5 km south-east of the Limpopo/Shashe confluence, is several times larger than Mapela Hill so was clearly the regional capital and controlled an area of about 30 000 sq km. This is comparable with the size of the Zulu Kingdom in the 19th century and as it pre-dates this kingdom by several centuries, Mapungubwe can be regarded as the first state in Southern Africa. In the 80 homesteads associated with Mapungubwe pottery that have been recorded within 40 km of Mapungubwe, it is estimated that there were about 9000 people paying allegiance to the senior leader. This was a five-fold increase in population from the beginning of occupation at Schroda (Huffman 2000).

At the end of the period of occupation of K2, the commoner population moved to the southern terrace and to plateaus to the eastof Mapungubwe Hill , about a kilometre to the north-east of K2. A smaller elite group occupied the hilltop. Together the terrace, plateaus and the hill cover an area of about 10 ha and it is estimated that between 3000 and 5000 people lived there (Huffman 1996:185).

The southern terrace consists of up to 5 m of accumulated midden and occupation deposits, the result of considerable activity during the 60 or 70 years of occupation.. The sandstone-capped hill has vertical cliffs around the summit which is 30 m high and 300 m long.

As inadequate records were kept before and during the excavations on Mapungubwe Hill in the 1930s, it is not possible to reconstruct the settlement with any accuracy. There are nevertheless some parallels with Venda and Shona settlements that enable a tentative interpretation of some of the key features to be made (Figure 11). Remains of a special building complex, probably a palace, have been found in the centre of the hilltop demarcated by an arc of prestige revetment walls. In front of it were several houses and stone gaming boards suggesting that this is where the king's male retinue of soldiers, praisers and musicians lived (Huffman 1996:182). This part of the royal complex was connected to the court on the southern terrace below by a steep and narrow rock passageway that used to have wooden steps set into holes in the rock. On the other side of the hill, away from the lower court, was a second passage-way that led to a cluster of houses at the top where the king was established by AD 1250. The only grindstone found on the hilltop was recovered here. As grindstones are used by women, this was possibly the entrance used by some royal wives or the king's ritual sister. The two passage-ways leading to different activity areas parallel the status and gender divisions of the hill at Great Zimbabwe, Khami and other similar sites (Huffman 1996:183).

In the Central Cattle Pattern, the rain-making area where ritual rain pots are kept is traditionally upslope and behind the residence of the chief who is responsible for organising the rain-making ceremonies. On Mapungubwe Hill there is an area with large numbers of potsherds near a group of broken boulders on the highest point behind the palace and this was probably the place where rain-making rituals took place. Another access route probably served this ritual area. It is on the eastern end of the hill and goes past a few short walls that designate the 'eye' of the king (Huffman 1996:184).

Although insufficient evidence remains to fully reconstruct the layout and structures on and below Mapungubwe Hill, recent ethnographies and oral histories have provided enough pointers to enable the tangible elements that remain to be 'read' and understood as a cultural landscape.

- **Use and modification of Mapungubwe Hill**. The earliest use of Mapungubwe Hill by Iron Age people was during the Early Iron Age. Small quantities of Happy Rest pottery found on the hilltop suggest the hill was used for rain-making. At the base of the Hill K2 pottery and burnt house remains indicate that the site was initially occupied at the same time as K2 (AD 1000-1220), but the main occupation was during the Mapungubwe period between AD 1220 and 1290.

Unlike similar hills in the vicinity, the top of Mapungubwe Hill has up to 2 m of midden and occupation deposits (Photos 7 and 8). The soil that makes up these deposits could not have accumulated naturally on the hilltop. The deposits have been greatly disturbed, initially by uncontrolled excavations in the 1930s that removed the graves and associated grave goods, and later by controlled excavations, and this has destroyed some of the evidence. However, it is clear that large quantities of soil must have been carried to the summit from the surrounding plain to provide clay for house walls and floors and soil for a solid foundation for houses and graves. Stone, apparently carried from the hill slopes, has been used for low free-standing walls and for terrace walling. There are no obvious source pits from which soil could have been dug, perhaps because it was taken over an extended period as the need arose and not all at one time.

Occupation of the combined terrace and hilltop settlement dates from AD 1220 to 1300 (Meyer 1998; Vogel 2000). At the end of this period almost all Mapungubwe sites were abandoned as climatic conditions deteriorated and there was insufficient rainfall to sustain such a large population. Intensive agriculture that is scheduled according to predictable seasonal changes is a prerequisite for providing a sustainable food supply and research into the details of this scheduling is ongoing (Huffman pers. comm.). The location of Great Zimbabwe in an area of higher rainfall was critical for its success in becoming the next regional capital.

- **Separation of elite from commoners**. Evolution of the spatial organisation from Central Cattle Pattern to Zimbabwe Pattern was first evident when the central cattle kraal at K2 was abandoned between AD 1060 and 1100 and the cattle were moved outside of the settlement. The layout of the settlement at Mapungubwe was in two distinct areas: the commoners on the Southern Terrace at the foot of the hill and the elite rulers on the hilltop (Figure 11). The cattle remained outside the settlement after the move to Mapungubwe as there is no cattle dung anywhere in the vicinity of the southern terrace and the hill. The reason is that in the Mapungubwe social hierarchy, the royals owned all the cattle. As the court on the southern terrace was a place for commoners, no cattle could be kept there. This was in contrast to the Central Cattle Pattern in which cattle bound men together in and around the central cattle kraal. By AD 1250 a palace area on the hilltop separated the leader from his family and followers. and entrances to elite areas were demarcated with low stone walls (Fouché 1937; Gardner 1963; Huffman 2000).

  This process of separation of the elite from the commoners was the result of accumulated wealth in an upper class of hereditary sacred leadership. The wealth was not only a direct result of greater productivity in cattle or agricultural products and a consequent rise in population, but of east coast trade that the K2 people had successfully exploited. Huffman (2000:25) suggests that so much wealth accumulated from the trade that the normal channels of distribution within the social hierarchy of the Central Cattle Pattern were inadequate and ruling families became an upper class.

- **Pottery.** A gradual change in ceramic style occurred soon after the move to Mapungubwe as a result of evolutionary changes rather than replacement of one population by another. Mapungubwe pottery is therefore a later phase in the Leopard's Kopje Tradition. More complex designs, a better surface finish and new types replaced the old ones, possibly because they were now made by full-time specialist potters who emerged as part of the developing class structure. Of particular interest are finds on

Mapungubwe Hill in the 1930s and at the main entrance on the southern terrace in 1991 of three sherds of Chinese Celadon from a small, spherical vessel typical of a type made in China during the Sung Dynasty between AD 960 and 1279 (Meyer 1998:203).

- **Ceramic figurines and spindle whorls.** Baked clay figurines similar to those from K2 were also found at Mapungubwe, but in smaller numbers. They included cattle, stylised human figures, a giraffe and conical shapes with decorated bases (Photo 23). From about AD 1250, ceramic spindle whorls were made at Mapungubwe. They are strong evidence that cotton yarn was spun here, and may have been woven here too (Huffman 2000:11). The cotton plants *Gossypium herbaceum* and *Gossypium arboreum* and the technique of spinning were possibly introduced from India or Asia along with other trade items (Davison & Harries 1980). They were probably grown semi-wild behind homesteads as is done in rural communities today. Cotton clothing would have been an additional status symbol amongst the elite at Mapungubwe.

- **Glass beads**. If ever there was any doubt about the elite nature of the occupation of Mapungubwe Hill in comparison with the southern terrace, it would be dispelled by the enormous quantity of glass beads found on the hilltop, particularly associated with graves. More than 104 000 beads are in the collection from the hill, compared with less than 4 000 from the southern terrace (Wood 2000). In one hilltop grave (No. 14), the distribution and quantity of beads led Fouché (1937) to suggest that the body had been wearing bead garments or girdles. He also noted a cylindrical pile of beads 300 x 200 mm as though a bag of beads had been placed in the grave with the body. Just over 26 000 beads came from this burial, of which nearly 25 000 are black (Saitowitz 1996; Wood 2000). The difference in the quantity of glass beads from the hilltop and southern terrace may also be due to the placement of the excavations, however, as it is clear that commoners could have beads as well. The beads from Mapungubwe include a new series of small, uniform glass oblates of unknown origin and several large and decorated beads that may have originated in Egypt or some other Middle Eastern Islamic centre (Wood 2000).

- **Gold**. The finds from Mapungubwe that have caught the most public attention are the gold and gold objects recovered from graves during uncontrolled and poorly documented excavations on the hilltop between 1933 and 1935 (Meyer 1998; Photo 36). Although they are the oldest dated indigenous gold objects in Southern Africa, the gold trade in this region had been reported on the Sofalan coast of Mozambique as early as the 10th century and into the mid-12th century (Huffman 1998; Miller *et al*. 2000). The source of the gold was probably alluvial gold nuggets and gold extracted from crushed quartz from numerous gold-belts in surface quartz reefs in Zimbabwe. Some of these sources are along the Shashe River.

  The gold at Mapungubwe was found in the form of foil, wire, bangles, strips, beads, coiled helix and pins, as well as a few globules and small discs. The foil was made by hammering globules into thin sheets on a stone anvil. It was then folded and smoothed and engraved over carved wooden forms such as the famous rhinoceros. Other foil-covered carvings found (all minus the original carved wooden core) included parts of two other rhinos, part of what may be a crocodile head, a mace and a bowl. The foil was fixed into position with gold tacks and some of these were also recovered (Fouche 1937; Meyer 1998). The goldsmiths at Mapungubwe were skilled in their craft,

although there was no evidence at the site for working the metal beyond melting and hammering.

The symbolic significance of the golden rhinoceros is intriguing, but only tantalisingly oblique oral traditions are of assistance. Meyer 1998:21). In Shona ethnography the black rhino, *Diceros bicornis*, is highly respected for its solitary lifestyle and fierce and aggressive behaviour. As these characteristics were admired in Zimbabwe rulers, the rhino is likely to have been a symbol of leadership (Huffman 1996:188-190).

- **Iron and copper working**. A few iron items were found at Mapungubwe, but most of the metal artefacts were made of copper and all the slag is copper. The artefacts included rods, arrowheads, spear blades, hoes, chisels, rings, an awl, spikes and coiled or wound bangles. The excavations at Mapungubwe yielded ten times the number of iron and copper artefacts than were recovered from K2 and a hundred times more than were found at any other site, such as Leokwe Hill. Remains of tuyeres were noted on Mapungubwe Hill by the early excavators and copper slag was also found (Fouché 1937; Gardner 1963), but they are more likely to have been associated with secondary forging than with primary smelting.

  There is a discrepancy between the large number of metal items found at Schroda, K2 and Mapungubwe, and their rare occurrence at commoner sites of similar age. It is apparent that people of low status had restricted access to finished, non-utilitarian metal artefacts because there was a strong association between metallurgy, fertility and leadership. Non-utilitarian metal artefacts were therefore highly potent symbols which may have signified nearness to leaders and thus to the sources of fertility and power (Calabrese 2000:110).

- **Graves.** A total of 27 graves are reported to have been excavated on Mapungubwe Hill, but the remains and contents from only 12 are currently in the collection at the University of Pretoria Department of Anatomy (Steyn & Nienaber 2000). Most of the gold items were found with three of these elite graves confirming the high status of the individuals during life and emphasising again the difference between the hilltop elite and the commoners who lived on the terraces below, and between Mapungubwe and earlier phases when elite graves were placed in the cattle byre.

  Burial 14 was that of a woman who had been interred in a sitting position facing west, an indication of high status in the Central Cattle Pattern even today. There were at least a hundred gold bangles around her ankles and over twelve thousand gold beads in the grave. In Burial 10 was a middle-aged man, also in a sitting position facing west. The grave goods included a necklace of gold beads and cowrie shells amd some carvings covered in gold foil. One of these resembles the head of a crocodile. The position of the third burial with gold objects was not recorded by the excavators. The man had been buried with a headrest and three wooden carved objects covered with gold foil: the rhinoceros, the mace and the bowl (Huffman 1996:188). As noted above, the rhino is a symbol of leadership amongst some southern African communities and the association of the rhinoceros with an elite burial at Mapungubwe confirms that it had symbolic status even in the thirteenth century.

- **Bone and ivory artefacts**. Included in the deposits on the hilltop and southern terrace were large numbers of polished bone arrow points and linkshafts, some of which were

decorated, and ivory armlets, rings and rough bone spoons. Voigt (1981) suggests that because large numbers of the polished bone arrow points and linkshafts were found in one place, they may have been made for trade by specialist bone tool makers. The presence both the arrowheads and linkshafts and of ivory armlets that were very likely used as wrist guards by archers, suggests that an elite guard may well have protected the king.

- **Middens**. Very extensive middens and occupation deposits built up on the southern, eastern and northern terraces below Mapungubwe Hill. A witness section through about 5 m of deposits on the southern terrace has been preserved and a portion of the trench has been left open. Layers of house floors, some of them burnt, are interspersed with midden refuse.

  Analysis of the animal bones from the southern terrace and Mapungubwe Hill (Voigt 1983) confirms the observations at K2 and Schroda that the bulk of the meat eaten came from adult cattle, sheep and goats rather than from hunted wild animals, and fish made a negligible contribution to the diet. Bones of two kinds of domesticated dogs were also found.

In summary, there is abundant evidence from both Mapungubwe Hill and the southern terrace excavations to support the conclusion that between AD 1220 and 1290 powerful sacred leaders were established on top of the hill and were supported by a substantial commoner population below. This physical separation of classes in different parts of the landscape symbolised the social, religious and political hierarchy that developed when successful trade and agriculture made it economically feasible to sustain a large population. As the population grew, so did the manifestation of class distinction. Agriculture ceased to be sustainable when climatic change altered the rainfall regime after AD 1290 and people were forced to move away and consequently the power related to east coast trade shifted to Great Zimbabwe.

Although there may be few monumnetal structures to demonstrate how the inhabitants of the Mapungubwe Cultural Landscape changed the landscape, much can be gleaned from sensitive readings of the archaeological and ethnographic records:

- There is clear symbolism evident in the choice of sites to reflect social status, such as the placement of the commoner court at the base of the hill, the leader's entourage on the sides of the hill and the king and elite class on the top of the hill;
- There is evidence of manipulation of natural features to reflect ritual practices, such as the routes up Mapungubwe hill and the accumulation of occupation deposits there;
- The unprecedented wealth of the sacred leader at Mapungubwe is more than evident in the placement of elite graves and the quality of grave goods;
- The farming practices and huge middens that resulted from sustained use of the landscape have changed the original contours of the land; andThe vegetation changed because of human activity so that middens and kraal sites with vitrified dung remain largely bare of plant cover.

c. Form and date of most recent records of property

The most recent records of the site are summarised as follows:

i. Research publications

a. Summaries of research projects in the Limpopo Valley, edited by Mary Leslie and Tim Maggs, have been published in the South African Archaeological Society Goodwin Series, Vol. 8. December 2000, entitled *African Naissance: the Limpopo Valley 1000 years ago.* The individual papers are listed in the bibliography in Chapter 7c.

b. A book on *The Archaeological sites of Greefswald: Stratigraphy and chronology of the sites and a history of investigations* has been published by Meyer (1998).

c. An illustrated publication intended for the general public summarising the results of the University of Pretoria excavations on Greefswald was published by Meyer (1996).

d. A comprehensive report on *The Rock Art of the Limpopo-Shashe Confluence Area* has been prepared for the World Heritage nomination dossier by Eastwood (2001) (see Appendices).

e. The relationship between the Limpopo Valley sites and those in Zimbabwe is described in the book *Snakes and Crocodiles: power and symbolism in ancient Zimbabwe* by Huffman (1996).

ii. Unpublished Reports, Surveys and Pamphlets

a. An initial scoping of the tourism potential of the Mapungubwe area was undertaken for the Mapungubwe Tourism Development Initiative (Norton et al. 2000). This included extensive community consultation.

b. Between 1995 and 1998, Archaeological Resources Management at the University of the Witwatersrand undertook a review for De Beers Consolidated Mines Ltd of the archaeology of precolonial farming societies in the Shashe-Limpopo Basin (Huffman 1999).

c. A programme to catalogue the Mapungubwe archive and collections at the University of Pretoria was begun in the mid-1990s. In 1997, the artefacts from the so-called gold burials on top of Mapungubwe Hill were declared a national cultural treasure and a full inventory with photographs of all the items was compiled by Professor Meyer.

d. In 1999, the University of Pretoria placed many of the objects on permanent display in their SASOL African Heritage Exhibition. An illustrated pamphlet was published. As part of this initiative, conservation work was undertaken on the gold objects by a professional conservator at the British Museum.

e. In 2000, some of the gold objects were loaned for an exhibition entitled *Musuku: Golden Links with our Past* at the South African National Gallery in Cape Town, sponsored by AngloGold. A colour catalogue was produced for the exhibition.

f. A catalogue and analysis of the baked clay figurines from Schroda has been undertaken by Edwin Hanisch of the University of Venda and Dr J van Schalkwyk of the African Window Museum in Pretoria and is nearing completion. It will be published with illustrations when the collection is put on display at the museum in March 2002.

g. SANParks have compiled a Draft Management Plan for the Vhembe Dongola National Park (Maphasa 2001).

h. The Peace Parks Foundation has prepared a report on the *Current status of the properties in the proposed 'core area' of the Limpopo / Shashe Transfrontier Conservation Area* (Coetzee 2001).

i. Professor V. Ralushai undertook an oral history project in the Mapungubwe Cultural Landscape and surrounding area to establish the nature and extent of cultural and genealogical links between present-day communities and the Mapungubwe period (Ralushai 2001).

d. Present state of conservation

Two sites within the MCL were declared national monuments under the National Monuments Act (Act No. 28 of 1969). The site known as K2 was declared on 9 September 1983 in Government Gazette Notice No. 1936, and Mapungubwe Hill and the adjacent southern terrace was declared on 17 August 1984 in Government Gazette Notice No. 1756. In terms of the same legislation, the collection of cultural artefacts associated with the settlements at Mapungubwe and K2 was declared a National Cultural Treasure on 10 October 1997 in Government Gazette Notice No. 1306.

On 1 April 2000, the National Monuments Act was replaced by the National Heritage Resources Act (Act No. 25 of 1999). All previously declared national monuments automatically became provincial heritage sites. Provincial heritage resources authorities must do an audit of heritage sites and recommend to the S A Heritage Resources Agency (SAHRA) which of these are of national significance. This process is underway in the Northern Province and it will be recommended to the SAHRA Council that the entire core area of the Mapungubwe Cultural Landscape – in effect the Vhembe-Dongola National Park - be declared a national heritage site.

In terms of the National Heritage Resources Act, all national heritage sites must have a management plan. A management plan is also a requirement for all sites nominated for world heritage status in terms of the South African World Heritage Convention Act. This management plan is being drafted for comment.

With the exception of farms that are not yet part of the contractual park, all cultural resources within the Vhembe-Dongola National Park that form the largest part of the core

area of the Mapungubwe Cultural Landscape, are managed by SANParks. Principles for a draft management plan were drawn up and circulated for comment in mid-2001.

i. Conservation of natural resources

A comprehensive management plan, based on the pro forma used in all national parks in South Africa, has been drafted (Maphasa 2001) and is being implemented in the Vhembe Dongola National Park. Management will extend to properties in a contractual relationship with .

ii. Trans-Frontier Conservation Area

During the early 1990s the idea of establishing Trans-Frontier Conservation Areas (TFCAs) was proposed. The proposed Limpopo-Shashe TFCA is 5,040 km^2 in extent, of which 2,671 km^2 (53%) is in South Africa, 1,411 km^2 (28%) is in Botswana, and 958 km^2 (19%) is in Zimbabwe (Figure 2). The TFCA is centered at the confluence of the Limpopo and Shashe Rivers. It is made up of a complex mosaic of land ownership, including privately owned land in Botswana (including the Northern Tuli Game Reserve and cattle/game ranches), land owned by the state, South African National Parks and private landowners in South Africa, and a mixture of communal lands, privately owned game farming operations and a government owned safari area in Zimbabwe.

In South Africa, after a long and often acrimonious debate dating back to 1944, an agreement that paved the way for the proclamation of a national park in the vicinity of the Limpopo–Shashe confluence was signed on 9 June 1995 between the central government, the Northern Province and the Board of SANParks. The Peace Parks Foundation has been involved in working with SANParks and with the private landowners to establish an agreed South African position on land ownership issues related to the proposed TFCA. The consolidation of the farms in this area will help create an essential corridor between two of the biggest conservation areas within the TFCA, namely the Northern Tuli Game Reserve (NOTUGRE) in Botswana and the Venetia Limpopo Nature Reserve in South Africa, which will provide a corridor for SANParks to link their eastern and western Dongola properties. Should the properties ultimately form part of the proposed transfrontier park, this coupled with the transfer of the farm Greeswald to the SANParks, will give them sufficient land to proclaim the Vhembe-Dongola National Park. Most of the private landowners on the Botswana side have indicated their willingness to participate in the TFCA, and they have the support of Botswana's Department of Wildlife and National Parks. Prospects appear equally encouraging in Zimbabwe. Both the privately owned farms Sentinel Ranch and Nottingham Estates are critical components of the Zimbabwe section of the TFCA. The government-owned Tuli Safari Circle in Zimbabwe was gazetted in 1963. Preliminary discussions in the term of planning meetings on the establishment of the TFCA between the three neighbouring countries has commenced in September 2000, but no formal agreements have been concluded, and no joint development plan exists. An International Agreement has been drafted and presented to the different representative conservation agencies for comment and reviewal. A full-time facilitator has been appointed to assist in the establishment of the TFCA.

e. Policies and programmes related to presentation and promotion of the property

A tourism and development study for the Mapungubwe area is presently in progress. This will provide a detailed Tourism Master Plan and Interpretation Plan, which will be submitted when they are available.

MAPUNGUBWE CULTURAL LANDSCAPE

Chapter 4

MANAGEMENT

4. MANAGEMENT

The overall management of the Vhembe-Dongola National Park, and therefore of the Mapungubwe Cultural Landscape, is outlined in the Preliminary Park Management Plan (Maphasa 2001), which was drawn up in consultation with a representative stakeholder committee. This Plan outlines the main policies guiding the establishment and management of the Park. Operational details are to be found in the Annual Plan for the Park area.

When (and if) the Mapungubwe Cultural Landscape is inscribed on the list of World Heritage Sites, this Park Management Plan will be expanded to fulfil the role of an Integrated Management Plan, as contemplated in Chapter IV of the South African World Heritage Convention Act.

a. Ownership

The proposed boundaries of the Mapungubwe Cultural Landscape for World Heritage listing coincide with the proposed boundaries of the Vhembe-Dongola National Park. The Park is still in the process of formation, and only three properties have so far been gazetted in terms of the National Parks Act. A number of other properties have recently been purchased by organisations linked to SANParks, with the specific aim of being included in the Park on a contractual basis. In addition, negotiations are well-advanced for several properties owned by De Beers Consolidated Mines Ltd to become part of the park by contractual agreement. The other properties in the identified core area are still in private ownership, and negotiations with the landowners are on-going. Details of ownership, size and contact details are given in Table 4.1.

In order to simplify the management of the proposed World Heritage Site, and the application of the approved Park Management Plan, properties will only be declared under the South African World Heritage Convention Act as and when they are gazetted as National Park (either as full ownership or by contractual agreement). If all goes according to plan, all the properties proposed for the National Park will have been gazetted before the meeting where the Mapungubwe Cultural Landscape is finally considered for listing as a World Heritage Site. In the event that this does not happen, “in principle” approval for the whole area is sought, so that properties can be added administratively later, as soon as they are gazetted as national park.

Map 1 shows the following boundaries:
Category I: Properties already gazetted as National Park (as of December 2001)
Category II: Properties where there is a verbal or “in principle” agreement to form a contractual park.
Category III: Proposed eventual boundaries of the Mapungubwe Cultural Landscape World Heritage Site, which concides with the proposed boundaries of the Vhembe-Dongola National Park.

An open meeting with exsting landowners was held at Pont Drift on 17 November 2001 to explain the National and World Heritage Nomination processes, and management arrangements.

Table 4.1 Property ownership within the Mapungubwe Cultural Landscape

Farm	Farm No.	Ptn No.	Registered Owner(s)	Size (ha)	Contact Persons	TEL/FAX	Current Status
Pont Drift	12	0	Borganum A B	1044.3854	Ed Hannan	T 015 575 1364 F 015 575 1364	Only a portion within core area, negotiations ongoing
Modena	13	0	Modena Citrus Pty Ltd	213.6827	Burgert van Rooyen	015 345 1671	Entire property within core area, negotiations ongoing
Modena	13	1	Borganum A B	1031.3979	Ed Hannan	T015 575 1364 F 015 575 1364	Only a portion within core area, negotiations ongoing
Welton	16	3	National Parks Board (1/3) National Parks Trust (2/3)	708.0486	Bernard van Lente	015 534 0102	Contractual agreement to be put in place between NPT and SANParks
Tuscanen	17	0	WWF South Africa	867.919	Eugene Strydom	T 021 887 2801 F021 888 2888	Contractual agreement drafted and being finalised with SANParks
Tuscanen	17	1	Rudi Schmidt	867.919	Rudi Schmidt	015 5343327/ 3595	PPF secured option to purchase property in 2010
Balerno	18	0	Susanna Claudina de Beer (1/2)	1074.585	Denis Venter	012 807 3945	Only a portion within core area, negotiations ongoing
			Hendrika Petra Joubert (1/2)		Cobus Joubert	015 297 0716	Only a portion within core area, negotiations ongoing
Mona	19	0	Friends of Peace Parks	560.4003	Graham Main	T053 831 1854 F053 833 1421	Contractual agreement drafted and being finalised with SANParks
Armenia	20	0	Friends of Peace Parks	856.532			
Armenia	20	1	Friends of Peace Parks	69.3806			
Little Muck	26	0	Friends of Peace Parks	2147.6169			
Rhodes Drift	22	0	Peace Parks Foundation	865.0285	Stefan Coetzee	T021 887 6188 F021 887 6189	Contractual agreement drafted and being finalised with SANParks
Den Staat	27	0	SANParks	1842.1763	Bernard van Lente	015 534 0102	Farming to cease end 2001
Den Staat	27	1	George Peter Hodgson	1807.4551	George Hodgson	015 575 1435	Negotiation to purchase property ongoing
Samaria	28	0	Hendrik Daniel Heyns	431.9858	Hennie Heyns	015-5751390 031-5022222 082-9756100	Negotiation to purchase property ongoing
Samaria	28	3	Hendrik Daniel Heyns	431.9858			
Samaria	28	1	Gerard Michel Tomby Moerdyk	863.9716	Philip Swart Annemarie Friedrich	082-7831356 018-4623995	Negotiation ongoing
Samaria	28	2	Irma Leonora Vermeulen	863.9716			Negotiation ongoing

Farm	Farm No.	Ptn No.	Registered Owner(s)	Size	Contact Persons	TEL/FAX	Current Status
Machete	29	0	Alexander Duncan MacWhirter	959.1188	Duncan MacWhirter	015 575 1416 015 575 1338	Negotiations ongoing, only portion north of tarred road within core area
Hackthorne	30	0	Magdalena Dorothea Cathrina Venter	1034.2024	Frans Venter	015 575 1102	Negotiations ongoing, only portion north of tarred road within core area
Athens	31	0	Magdalena Dorothea Cathrina Venter	532.84			
Welton	34	0	Kariba Trust	184.8249	Piet Boshoff	015 575 1518	Negotiations ongoing
Greefswald	37	0	RSA	2503.8386	Bernard van Lente	015 534 0102	Gazetted as National Park
Cerberus	38	3	De Beers Consolidated Mines Ltd	665.3322	Graham Main	053 831 1854 F053 833 1421	Contractual agreements drafted, to be finalised with SANParks
La Reve	39	3	De Beers Consolidated Mines Ltd	388.2191			
Parma	40	0	Borganum A B	2165.6744	Ed Hannan	015 575 1364	Negotiations ongoing
Hamilton	41	0	De Beers Consolidated Mines Ltd	359.4617	Graham Main	T053 831 1854 F053 833 1421	Contractual agreements drafted, to be finalised with SANParks
Hamilton	41	1	De Beers	462.5086			
Hamilton	41	2	De Beers	65.114			
Janberry	44	0	De Beers	1409.5878			
Schroda	46	0	De Beers	929.0942			
Schroda	46	4	De Beers	929.0942			
Schroda	46	7	De Beers	419.9119			
Schroda	46	8	De Beers	419.9119			
Weipe	47	0	Roos Trust	1077.4028	Kobus Hugo	013-7123011/ 5294 083-2262009	Only portion within core area, contractual agreement to be put in place
Riedel	48	0	Limpopo Diamonds Pty Ltd	352.2413	Faan Lemmer	015-5342850	
Riedel	48	1	National Parks Trust	2569.772	Bernard van Lente	015 534 0102	

b., c. Legal status and protective measures.

i. Legal status of properties: National Parks Act

The first three properties of the Vhembe-Dongola National Park have already been gazetted as "national park" in terms of the National Parks Act (No.57 of 1976 as amended) , as follows:-

- Den Staat on 9 April 1998 in Government Notice No.490 of 1998
- Greefswald on 7 April 2000 in Government Notice No.339 of 2000
- Reidel on 26 April 2001 in Government Notice No 355 of 2001.

The goal is either to purchase the properties outright, or to proclaim them as national park by contractual agreement with the landowners.

Properties proclaimed as national park enjoy the highest protection status in conservation legislation in South Africa, and are managed in terms of the National Parks Act.

ii. Legal status of properties: National Heritage Resources Act

The site known as K2 was declared a National Monument on 9 September 1983, and Mapungubwe and its southern terrace were declared on 17 August 1984, under the National Monuments Act (Act No. 28 of 1969). During 1997/8, the sites of Schroda and Little Muck (Leokwe Hill) were recommended to the Minister of Arts, Culture, Science and Technology for declaration as National Monuments. The declarations were not approved pending the new legislation.

When the National Monuments Act was superseded by the National Heritage Resources Act (Act No. 25 of 1999) on 1 April 2000, all national monuments became provincial heritage sites. These sites remain protected and may not be disturbed or altered without a permit from the South African Heritage Resources Agency (SAHRA), which is the statutory body responsible for implementing the National Heritage Resources Act. At the time of writing, the heritage resources authority responsible for the monitoring and management of provincial heritage sites is the provincial heritage resources authority of the Northern Province. This provincial authority has not yet been formally established and the work in the province is being done by the SAHRA Provincial Manager.

In view of the significance of the area within the Vhembe-Dongola National Park, it was recommended to the SAHRA Council in November 2001 that the entire core area of the Mapungubwe Cultural Landscape, which is the same as the proposed Vhembe-Dongola National Park, to be declared a National Heritage Site. At a Council Meeting on 28-29 November 2001 Mapungubwe and another site in the Northern Province, Makapans Valley, were the first sites in South Africa to be approved in principle for National Heritage Site status under the new legislation. The sites will now follow the approved process to formal proclamation in approximately six months time. When it becomes a national heritage site, the national office of SAHRA will be responsible for its protection.

In terms of the National Heritage Resources Act, there are several implications for places that are declared National Heritage Sites.

- Section 27 of the National Heritage Resources Act specifies that:
  (4) a written motivation for the declaration must be prepared and kept on record by SAHRA;
  (15) SAHRA is responsible for the protection of national heritage sites;
  (18) No person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any national heritage site without a permit issued by SAHRA;
  (19) SAHRA may make regulations, with the consent of the owner, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees.
  (20) Any branch of the State or supported body which is the owner of a heritage site [in the case of Mapungubwe this would be SANParks] must maintain it according to a minimum standard and according to a procedure prescribed by SAHRA after consultation with the relevant Department of Works.
  (21) SAHRA may, by agreement with the owner, conserve or improve any national heritage site, construct fences, walls or gates around it, acquire or construct and maintain an access road to a national heritage site, and erect signs on or near it.
  (22) No person other than the owner of a national heritage site may make reproductions in two or three dimensions of the site for profit without a permit issued by SAHRA and the agreement of the owner. SAHRA may prescribe the fees payable for these reproduction rights and must deposit such fees in a trust fund dedicated to the conservation of the site or of heritage resources in general.

- Section 38 of the National Heritage Resources Act allows SAHRA to call for a heritage impact assessment report if certain activities, such as road or bridge building, subdivision or consolidation of erven, or re-zoning are likely to impact on heritage resources. This is done only if an impact assessment is not required under any other law, such as the Environment Conservation Act (No. 73 of 1989) or the National Environmental Management Act (Act No. 107 of 1998).

- Section 44(2) of the National Heritage Resources Act states that when any person plans to present a national heritage site to the public, or erect a plaque or other permanent display or structure associated with the presentation, the contents of the interpretive material or programmes must be submitted to SAHRA at least 60 days in advance so that SAHRA may comment as part of the consultative process,

- In terms of Section 47(2), SAHRA is responsible for adopting a plan for the management of each national heritage site in accordance with the best principles that can be applied. In addition, sub-section (3) states that a conservation management plan may at the discretion of SAHRA and for a period not exceeding 10 years, be operated solely by SAHRA or in conjunction with an environmental or tourism authority on such terms as SAHRA may determine. In terms of Section 42, the responsibility for implementing such a management plan can be delegated to the owner of the property, or to another authority or conservation body, if a formal heritage agreement is drawn up between SAHRA and that body with the agreement of the owner. SANParks must therefore enter into a formal heritage agreement with SAHRA and with the Minister of Environmental Affairs and Tourism when drawing up a management plan for the Mapungubwe Cultural Landscape.

- In addition, all heritage resources in the country are legally protected by the general provisions for archaeology and palaeontology under Section 35. No person may destroy, damage, excavate, alter, deface or other wise disturb any archaeological or palaeontological site, and no person may remove from its original position, collect, own or export, any archaeological or palaeontological material or object that has come from a site that is more than 100 years old, without a permit issued by SAHRA.

iii. Legal status of properties: World Heritage Conservation Act

The World Heritage Convention Act (Act No. 49 of 1999) provides for the enforcement and implementation of the World Heritage Convention in South Africa. It allows, *inter alia*, for the establishment of Authorities to safeguard the integrity of World Heritage Sites and for integrated management plans and other controls.

The Minister of Environmental Affairs and Tourism is responsible for implementing the Act, but must consult with the Minister of Arts, Culture, Science and Technology and with interested parties [such as SANParks and SAHRA] when establishing an Authority. An Authority is a juristic person with a Board that may be appointed by the Minister to manage a world heritage site if the Minister deems it necessary. An existing organ of state that is already managing the site may be declared an Authority. The Act specifies the powers and duties that may be given to such an Authority and its executive staff component.

Every Authority must prepare and implement an integrated management plan for the world heritage site under its control (Section 21). The plan must be submitted to the Minister for approval within six months of the establishment of an Authority. Approval of the plan must also be sought from the Minister of Arts, Culture, Science and Technology and the Council of SAHRA. The plan must be reviewed and amended as and when necessary. Provision is made for the Minister to prepare model integrated management plans and norms and standards in consultation with the Minister of Arts, Culture, Science and Technology.

An Authority is required to submit an annual report to the Minister that includes an assessment of the implementation of the management plan and information about the extent to which the Authority succeeded or failed to meet its obligations in terms of the World Heritage Convention, the Operational Guidelines and the World Heritage Convention Act.

iv. Legal status in terms of the Environment Conservation Act and the National Environmental Management Act

The Environment Conservation Act (Act No. 73 of 1989) enables the Minister of Environmental Affairs and Tourism to call for an environmental impact assessment if a development will have a significant impact on the natural and cultural environment. The Regulations and Guidelines for this legislation have had a significant impact and have increased public awareness of the need for environmental management. The legislation also has weaknesses, particularly with regard to monitoring of cumulative impacts. The National Environmental Management Act (Act No. 107 of 1998), which will come into force when the Regulations for integrated environmental management are published in 2002, overcomes most of the problems and makes environmental impact assessments mandatory. Any development on, or rezoning of, properties within the Mapungubwe Cultural Landscape and the Vhembe-Dongola National Park will therefore require an

independent integrated environmental assessment before the development can take place. This will include an assessment of cultural heritage sites that may be affected.

v. Summary

All four Acts require a management plan for a world heritage site, and provide for consultation with other relevant Ministers and statutory bodies during the preparation, implementation and monitoring of the plan. It is the intention that the Park Management Plan be formulated in such a way that it fulfils the requirements of all of the Acts, and can therefore be declared as the approved management plan under each Act.

There is also legislation in place, and legislation that will come into force soon, to ensure that an impact assessment will be done before any developments take place within the Vhembe-Dongola National Park.

Note that, until the properties are declared in terms of the National Heritage Resources Act, the World Heritage Convention Act or the National Parks Act, the properties are protected under provincial conservation legislation, and changes to land use are regulated under the Environmental Conservation Act and the Water Act.

d. Agencies with management authority

SANParks will automatically be the management authority for proclaimed National Park properties, and it is the intention that SANParks will also be appointed as the management authority for the National Heritage Site and the World Heritage Site in terms of the two acts. In practice, management authority will be as follows:

- On SANParks property it will be the sole management authority, with reporting responsibilities according to the National Heritage Resources Act and the World Heritage Convention Act.
- On Contractual National Park properties management will take place according to the contractual agreement with the landowner. In practice SANParks will carry out most of the day-to-day management functions.

e. Level at which management is exercised and responsible person

Park Manager, Mr Bernard van Lente, Vhembe-Dongola National Park, P O Box 383, Messina 0900. Tel/fax 015 534 0102, e-mail bernardv@limpopo.co.za

f. Agreed plans related to property

- The core property, Greefswald, is managed under a signed agreement between the Premier of the Northern Province and the National Minister of Environmental Affairs and Tourism.
- The Preliminary Park Management Plan has been approved by the Representative Stakeholder Committee.
- A preliminary tourism evaluation entitled An Overview of Tourism Development Potential in the Mapungubwe Area was accepted at a stakeholder Workshop in

November 2000, but this is now being followed up by a more detailed Tourism Master Plan, which is not yet complete.
- Tourism development in the Northern Province takes place within the "Golden Horseshoe Macro Spatial Development Concept", which has been accepted by the Northern Province Government.
- A Tri-lateral Memorandum Of Understanding to set the basis for the establishment of the Limpopo-Shashe Transfrontier Conservation Area is due to be signed soon.
- The local authorities throughout South Africa have been newly delineated, and all district councils are obliged to prepare Integrated Development Plans early in 2002. However, these have not yet been completed or accepted.
- The Environmental Impact Assessment and Environmental Management Plan for the Venetia Mine development has been approved by the Northern Province Department of Environment.

g. Sources and levels of finance

- The property receives an annual operating budget from SANParks, as part of the overall SANParks budget. For the 2000/01 financial year the total operating budget is R1,16m (US$116 000 at an exchange rate of R10.0 = $1.0), including R662 000 for human resources. There is also a R165 000 capital budget for smaller capital improvements.
- Development planning of the area is being conducted with funds from the National Government managed by the Dept of Environmental Affairs and Tourism.
- Site rehabilitation measures are being funded through the Poverty Alleviation Programme administered by the Dept of Environmental Affairs and Tourism.
- The Draft Park Management Plan was put together with financial assistance from DANCED.
- The compilation of this Nomination Document is being funded by NORAD.

h. Sources of expertise and training in conservation and management techniques

As with most park managers in South Africa, the Park Manager has a BSc Hons degree. Scientific support is provided by the Conservation Services (Social Ecology and Biodiversity Scientific Services), which has a number of Ph D level scientists with a range of, mostly ecological, expertise. The overall Project Coordinator of the various initiatives in the Mapungubwe area is the head of the Cultural Resources Management Section of SANParks, who has a BA Honours degree in cultural resources management.

As the establishment increases in response to the increasing area under SANParks control, it is intended to appoint a qualified archaeologist at the Deputy Park Manager level. The field rangers employed by SANParks have all been through the rigorous Field Ranger Training Course, which includes a wide range of management skills, including patrolling and recording observations on natural and cultural aspects.

Some years ago an Archaeological Task Group (ATG) was established by the Joint Management Committee to advise on and coordinate all aspects of research and management of the cultural resources of the Mapungubwe Area. The ATG includes archaeologists or representatives from the Universities of Pretoria, Wits and Venda; SAHRA, Northern Province Dept of Sports, Arts and Culture, Northern Province Nature

Conservation, Provincial Museums, and the National Cultural History Museum. This pool of expertise is available to the Park Manager to advise on all issues to cultural resources management.

i. Visitor facilities and statistics

Minimal visitor facilities are presently available in the core area of the Park, but the provision of tourism facilities and experiences is the main theme of the tourism master planning exercise which is presently in process. This plan has to make recommendations on tourist accommodation, interpretation centre/s, tourist flows, information, non-motorised experiences etc. There are several tourist lodges in properties proposed to be included, as well as in the surrounding area (Table 4.2).

Table 4.2 Existing tourism facilities in the Mapungubwe area (from Peter Norton & Associates 2000)

Facility name	Core activities/ markets	Beds	Price	First opened	Notes
Within the Mapungubwe Cultural Landscape					
Machete	International	12	R650	2000	
Machete campsite	Drifters campsite (exclusive use)			1999	
Little Muck Lodge	Hunting at present	20	R250 sc		
Little Muck (Mona Lodge)	hunting	12	R250 sc	1999	
Samaria Safaris	Fishing, gameviewing	20	R350c R165sc		Fishing on 14 ha dam Airstrip
Pont Drift Farmers Association Hall	Camping		R25pppn		
Surrounding areas					
Vhembe N R Kruidfontein	Game viewing	16	R180sc R550c	1998	
Vhembe N R Somerville	Lodge (planned)	10			4 x airstrips
Vhembe N R Parma	Accom in mgr's house	10			
Ratho	Domestic family market Self-catered camping 4x4 groups	12 own tents	R650/4 +R75pp R75pppn	1997	Tuli elephants in river bush Game drives Some rock art, Croc farm River stones an attraction
Dongola N R	3xConference rooms (80+) caravan park planned also hunting	28 14 40	± R125sc	2000	
Klein Bolayi	Self-drive	16	R140 bed R130 meals		Large granite rock an attraction
Abend Ruhe Gotha	Catered/self-catering Conference	40			
Bandur – Mopane – Matoppie lodge – Maroela lodge		7 6 8	R50pppn R120sc/ R300 c		Lion camp
Mashatu – Botswana Main Camp Luxury tented camp	Corporate, local Mostly international	24 10 14	R924pppns R792 R660pppns	1995	Archaeological tours to Mmamagwe Cycling tours close to big game

For several years the Mapungubwe Site has been closed to the public. However, in response to numerous requests, a part-time tourism officer has been appointed and trained, and she now provides tours to the Mapungubwe and K2 sites, for a nominal fee.

j. Property management plan and statement of objectives

The Preliminary Park Management Plan gives the following vision, mission and objectives for the area:-

Vision
"To acquire land to consolidate and manage the Vhembe-Dongola National Park as part of a world-class Trans Frontier Conservation Area and World Heritage Site.

Mission
"The Vhembe-Dongola National Park will be developed to maintain the faunal and floral assemblages, ecological processes and cultural landscape characteristics representative of the area, to foster international co-operation and offer long term benefit to the whole society in keeping with the mission of the SANParks.

Objectives to achieve the mission and vision
"The main objectives ot achieve the mission and vision of the Vhembe-Dongola National Park are to:

1. *Consolidate the core area into a national park.*
2. *Ensure and develop the ecological and cultural viability of the area.*
3. *Develop the area for social and economic sustainability.*
4. *Re-establish and maintain the biodiversity of the area in all its facets and fluxes.*
5. *Identify, assess and manage the cultural resources in the area.*
6. *Maintain a balance between the demands of the natural and cultural environments.*
7. *Provide human benefits in keeping with the mission of the South African National Parks.*
8. *Develop the park to be a core of the proposed Limpopo-Shashe TFCA.*
9. *Facilitate the process of World Heritage Nomination for the Mapungubwe Cultural Landscape."*

Principles of Cultural Resource Management
The principles of Cultural Resource Management in the Vhembe-Dongola National Park are to:

1. *Maintain the significance, values and integrity of the physical and intangible remains of the rich and diverse cultural heritage of the park;*
2. *Accept responsibility for safeguarding, conserving and managing this heritage as an integral part of sustainable environmental management in the Park;*
3. *Incorporate and honour the needs and values of local and neighbouring communities in development programmes; and*
4. *Promote the MCL as a place of symbolic pilgrimage to instil national and international pride in the achievements of indigenous African people in pre-colonial times.*

Objectives of cultural resource management
1. *Develop a cultural resource management policy for the Vhembe-Dongola National Park as an extension of the newly developed national cultural resource management system.*
2. *Establish and manage a cultural resource management system which should incorporate as a matter of priority in its database:*
   - *An inventory of cultural resources in all parks*

- *Relevant documentation*
- *Status reports, and*
- *Management priorities.*

3. *Formulate and implement a cultural resource management plan for the park as soon as inventorisation is completed. This process should again be participatory and consultative, involving internal and external stakeholders.*
4. *Include cultural resource management strategies, procedures, codes of practice, guidelines, norms and standards and mitigation techniques and methods.*
5. *Design and implement a suitable and practical monitoring system for cultural resources in the national park in order to determine the state or condition of resources, and enable decision-making in terms of conservation measures or improved management to be made.*
6. *Identify research needs and priorities as well as recommendations with regard to research contracts, partnerships or concessions to individuals or institutions.*
7. *Direct and co-ordinate research projects and ensure adherence to standards of practice and operational efficiency. Interpret and disseminate reports and results.*
8. *Manage an impact assessment system to aid developmental work in the national park with regard to the evaluation of heritage sites or structures.*
9. *Channel adequate funding to cultural resource management, to manage the cultural resource management budget according to appropriate standards, and to provide support and motivation for research and development.*
10. *Co-operate with other departments to register Mapungubwe as a World Heritage Site and develop it as a tourist destination and educational resources in the park in order to further enrich tourist experience and to promote cultural resources as an integral part of tourism.*
11. *Optimise the role and value of cultural resources in further improving relationships and stakeholdership with neighbouring communities.*

k. Staffing levels

The present establishment of the Park is as follows:
1 x Park Manager
1 x Regional Ranger
1 x Administration and tourism officer
1 x Ranger corporal
5 x Field Rangers (one post presently vacant)
2 x student conservators (from 2002 onwards)
Contract workers for specific projects
21 part-time workers for site rehabilitation under the Poverty Alleviation Programme
21 part-time workers under the Working for Water Alien Plant Eradication Programme

MAPUNGUBWE CULTURAL LANDSCAPE

Chapter 5

FACTORS AFFECTING THE PROPERTY

5. FACTORS AFFECTING THE PROPERTY

a. Development pressures

i. Agriculture

The satellite photograph of the Mapungubwe Cultural Landscape (Map 7) shows clearly where intensive agriculture is being practised on irrigation lands along the Limpopo River. These fall into three main areas, those upstream of the Park, those within the proposed Park, and those downstream of the Park. The main impacts that they are likely to have are:-

- Removal of water
- Eutrophication due to fertilisers
- Waterborne invasive alien plants
- Bush clearing and ploughing of natural bush
- Ploughing of cultural sites.

All of these impacts are likely to have the most effect close to the river, which is a habitat that has already been extensively disturbed by flooding over the centuries, and more recently by several decades of agriculture. The agriculture upstream and downstream of the Park is likely to continue, but is unlikely to expand substantially because of pressures under the new Government. Under the new Water Act the Government will be far stricter on use of water for irrigation, and may even require farmers to pay for it. Recent initiatives to repatriate Zimbabweans has also put pressure on the economics of farming, because these people were mostly prepared to work for lower wages than their South African counterparts. In addition, the cost of fertilisers and machinery is increasing faster than the prices of crops.

Within the Park the lands presently in use will be decommissioned and gradually rehabilitated, and therefore the Park will halt any further agricultural encroachment. Generally most of the sites are away from the river, and therefore the direct impact of agriculture will be minimal, although the visual impact of crops in certain vistas will remain.

Grazing, particularly by cattle, has had a substantial impact on the vegetation in the past. However, the numbers of stock are substantially lower than they were in the middle of last century, and are therefore unlikely to have significant new impacts.

ii. Mining

There are two mining operations with a potential impact on the Mapungubwe Cultural Landscape, the small Riedel diamond mine, and the major Venetia Mine.

A small portion of the farm Riedel in the eastern part of the Park has been kept on in the hope that it will yield profitable mining operations. This site is in the ancient river course of the Limpopo River. All indications are that it is worked out and unlikely to have an impact on the Mapungubwe Cultural Landscape.

The Venetia Mine is a major diamond mining operation opened in the 1990s by De Beers

Consolidate Mines Ltd. Because it is new it was subject to the Environment Conservation Act of 1989, and a full Environmental Impact Assessment and Environmental Management Plan was prepared. The information on impacts and mitigation is being obtained, and will be included in the final document.

Most of the staff of the mine live in Messina and are bussed in on a daily basis, so there is limited development pressure at the mine itself. However, the bright lights of the mine are highly visible from many kilometres away, and this may have a negative impact on tourism experiences.

The Messina area is a fairly rich mining area, and there is a possibility that deposits of other valuable minerals may be found. The exact ownership of most of the mining rights in the Park has not yet been sorted out, apart from the above two mines. However, the new Minerals and Energy Act returns all mining rights to the State, and the Government will therefore be in a far better position than it has been for over a century to make an informed decision on whether any new deposits should be mined or not.

b. Environmental pressures

Very limited environmental pressures are expected. Pollution is very limited in the area, and what there is is waterborne along the river. A five-year Alien Invasive Plant Eradication Programme is being carried out under the Working For Water Programme, aimed mostly at waterborne invasives such as *Nicotiana*, as well as some cacti.

The impact of opening up the property to big game, especially elephants, needs to be considered. There is some argument for fencing off the most important sites from elephant damage. However, elephants have been part of the picture for thousands of years, and the counter-argument says that some elephant impact should be accepted as part of the natural processes. In any case the impact of rodents and other burrowing animals appears to have a far more noticeable impact than occasional elephant damage. Nevertheless, this issue will be debated. A monitoring programme to detect elephant impacts has already been initiated.

Climate change is clearly a major factor in the Mapungubwe Cultural Landscape, and Chapter 3 outlines how the main settlements grew in response to optimal climatic conditions. We are presently at the drier end of the cycle for this part of the Limpopo Valley, and higher rainfall periods can be expected in any case. No specific impacts are expected.

c. Natural disasters and preparedness

The main natural disasters to be considered are flooding and fire.

Flooding occurs periodically in the Limpopo Valley as a natural phenomenon. Although it will clearly affect cultural sites close to the river, flooding has occurred here for thousands of years, and most of the sites have been extensively damaged some time ago. The main consideration is that any new excavations close to the river should take into account the potential impact of flooding if the deposits are left exposed during the rainy season.

Under the influence of climate and a long history of heavy grazing by domestic stock over the last century the vegetation of this part of the Limpopo Valley is such that fires are only likely under exceptional conditions, such as those that occur at present. The Park has a fire management policy in place, fire assistance agreements have been made with neighbours, and firefighting equipment such as a water cart and trained team are on standby. The main impact on the Mapungubwe Cultural Landscape is that, under particular conditions, it is possible that a fire could get into the thick vegetation around rock shelters and damage the rock art. This will have to be monitored, and action taken if impacts are likely.

d. Visitor/Tourism pressures

This is likely to be one of the main factors affecting the property, and inadequately controlled tourism pressure could have a substantial impact on the sites, through trampling of deposits, graffiti, damage to paintings and other artefacts, and removal of archaeological material such as pottery and beads. These issues must be addressed specifically in the Tourism Master Plan presently being drawn up.

A particular issue that will have to be addressed is whether visitors will be allowed on to the top of Mapungubwe Hill itself. Without very good interpretation it is not as exciting a tourism experience as first expected, and there is an argument for keeping all but special groups off the hill.

Additional impacts are those of the workers themselves, whether construction workers building tourism facilities, archaeologists, site rehabilitation teams or SANParks staff.

e. Number of inhabitants

There are presently several hundred farm workers living within the boundaries of the Planned Mapungubwe Cultural Landscape, but they will gradually move off as farming operations are wound up in accordance with negotiations with landowners.

In the total TFCA area there are several thousand inhabitants, mostly in the Maramani area in Zimbabwe. These rural people are very poor, and providing economic opportunities is a key component of the development of the TFCA. It is essential that, in exchange for these economic benefits, the communities undertake to implement responsible environmental practices that minimise impacts on the environment.

f. Other

The process of Land Restitution has been continuing since the advent of the New South Africa 1994. There are a number of land claims in the Mapungubwe area of varying levels of credibility. Although the Land Claims Commission is trying to speed up the process as much as possible, it has proved to be more complex than expected, and is likely to take several more years before clarity is obtained. This lack of clarity is hampering development in many rural areas of South Africa.

In the meantime, SANParks is following an open approach, and is acceding to most

realistic requests for visits to the area by traditional and cultural groups. Any rituals or traditional practices on or near sites are carefully negotiated and monitored.

Natural erosion is leading to removal of deposits in many old excavations, and the Archaeological Task Group has taken on the planning and supervision of a Site Rehabilitation Programme funded by the Poverty Alleviation Fund (Photos 14 and 15).

Cross-border crime, particularly stealing of stock and building materials from temporarily unoccupied infrastructure is a particular problem of the TFCAs, and cooperative policing agreements are an important part of TFCA implementation. At the same time, programmes will be instituted to increase awareness of local communities of the potential benefits of the TFCA and increased tourism that

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Chapter 6

MONITORING

6. MONITORING

As part of the NORAD-funded Mapungubwe World Heritage Site Nomination Project a Cultural Resources Management Plan framework was drawn up, and this has been incorporated into the Preliminary Park Management Plan. A key recommendation is that a Monitoring Programme must be formulated, but the details of this have not yet been worked out. As outlined in Chapter 4, this Park Management Plan will be expanded to become the Integrated Management Plan required by the South African World Heritage Convention Act.

At an Archaeological Task Group Meeting on 8 November 2001 the ATG will be asked to set up a Working Group to make recommendations on a structured Monitoring Programme for the cultural sites in the Mapungubwe Cultural Landscape, including indicators, administrative arrangements and reporting.

a. Key Indicators for measuring state of conservation

At a general level for the management and conservation of Mapungubwe Cultural Landscape the area the following indicators are applicable:-

- Properties identified for the core area either purchased or contractual agreements in place.
- Properties identified or proclaimed as National Park under the National Parks Act.
- Mapungubwe Cultural Landscape gazetted as a National Heritage Site under the National Heritage Resources Act
- Mapungubwe Cultural Landscape listed on the World Heritage List
- Mapungubwe Cultural Landscape gazetted as a World Heritage Site under the South African World Heritage Convention Act.
- SANParks appointed as the Authority for the Mapungubwe Cultural Landscape under the World Heritage Convention Act
- Integrated Management Plan contemplated in the World Heritage Convention Act approved.
- Detailed Cultural Resources Monitoring Programme completed and incorporated into the Integrated Management Plan.

Site-specific indicators will be developed by the Monitoring Working Group of the Archaeological Task Group.

b. Administrative arrangements for monitoring property

In terms of the National Heritage Resources Act, the South African Heritage Resources Agency is responsible for the management and monitoring of all proclaimed National Heritage Sites. If management on the ground is carried out by another management agency, that agency must submit an annual report to SAHRA on an annual basis. In terms of national legislation SANParks will be required to submit an Annual Report to SAHRA, which includes a report on the state of conservation of the sites included in the Mapungubwe Cultural Landscape.

In terms of the South African World Heritage Convention Act the management authority is required to submit an annual report to the Minister of Environmental Affairs and Tourism regarding the implementation of the Integrated Management Plan. SANParks will therefore have to report to this Minister as well.

As part of the Integrated Management Plan, future reporting will be linked directly to progress on indicators identified in the Monitoring Programme.

c. Results of previous reporting exercises

In terms of the National Parks Act, monthly and annual reports must be submitted to SANParks Headquarters. Monthly reports for the last year are available, with irregular reports before that. These deal with a range of issues regarding the state of conservation of the property.

Records of discussions on the state of conservation of the cultural sites are included in the Minutes of the Archaeological Task Group.

MAPUNGUBWE CULTURAL LANDSCAPE

Chapter 7

DOCUMENTATION

7. DOCUMENTATION

The following documentation is attached as appendices.

- Preliminary Park Management Plan, Vhembe Dongola National Park, SANParks (2001)
- *African Naissance: the Limpopo Valley 1000 years ago*, edited by M Leslie & T Maggs (2000)
- *The Archaeological sites of Greefswald: stratigraphy and chronology of the sites and a history of investigations*, by A Meyer (1998)
- Oral history of the Mapungubwe area, by V Ralushai (2001)
- The rock art of the Limpopo-Shashe Confluence Area, by E Eastwood (2001)
- An overview of tourism development potential in the Mapungubwe area, by Peter Norton & Associates (2000)
- *National Heritage Resources Act* (No 25 of 1999)
- *World Heritage Convention Act* (No 49 of 1999)
- *National Parks Act* (No 57 of 1976, as amended)

- Consent forms from Landowners in the Mapungubwe Cultural Landscape

Addresses where inventory, records and archives are held

1. Collections from Greefswald, Mapungubwe Hill, Southern Terrace, K2 and Den Staat: Department of Anthropology and Archaeology, University of Pretoria, and the SASOL African Heritage Exhibition: Mapungubwe Museum, University of Pretoria, Pretoria 0002,
2. Van Riet Lowe Bead Collection, and site inventories and artefacts excavated from Leokwe Hill, Little Muck, Balerno and certain sites on Greefswald: Archaeology Department, University of the Witwatersrand, 1 Jan Smuts Ave, Private Bag 3, Wits, Johannesburg, 2050
3. Collections from Schroda and Pont Drift: National Cultural History Museum, P O Box 28088, Sunnyside, Pretoria, 0132
4. Rock art tracings, photographs and maps: Palaeo-Art Field Services, P O Box 168, Louis Trichardt, 0920

MAPUNGUBWE
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Chapter 8

CONTACT INFORMATION

8. CONTACT INFORMATION

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c. Other Local Institutions

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Mapungubwe Museum
University of Pretoria
Pretoria 0002, RSA
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Email: mapungubwe@postino.up.ac.za

d. Official web site

The main Mapungubwe website is not yet in operation or registered, but when ready there will be links to the general website of the Department of Environmental Affairs and Tourism:

http://www.environment.gov.za
Responsible contact: Piet Leso:
E-mail: lleso@ozone.pwv.gov.za

MAPUNGUBWE CULTURAL LANDSCAPE

Chapter 9

SIGNATURE ON BEHALF OF THE STATE PARTY

9. SIGNATURE ON BEHALF OF THE STATE PARTY

I, DR PATRICK MATLOTLENG MAILOU

the undersigned, hereby submit this Nomination File on behalf of the Government the **Republic of South Africa**, in my capacity as the Acting Director–General of the **Department of Environmental Affairs and Tourism.**

PRETORIA	24 JAN. 2002	
Place	**date**	**Signature**

MAPUNGUBWE CULTURAL LANDSCAPE

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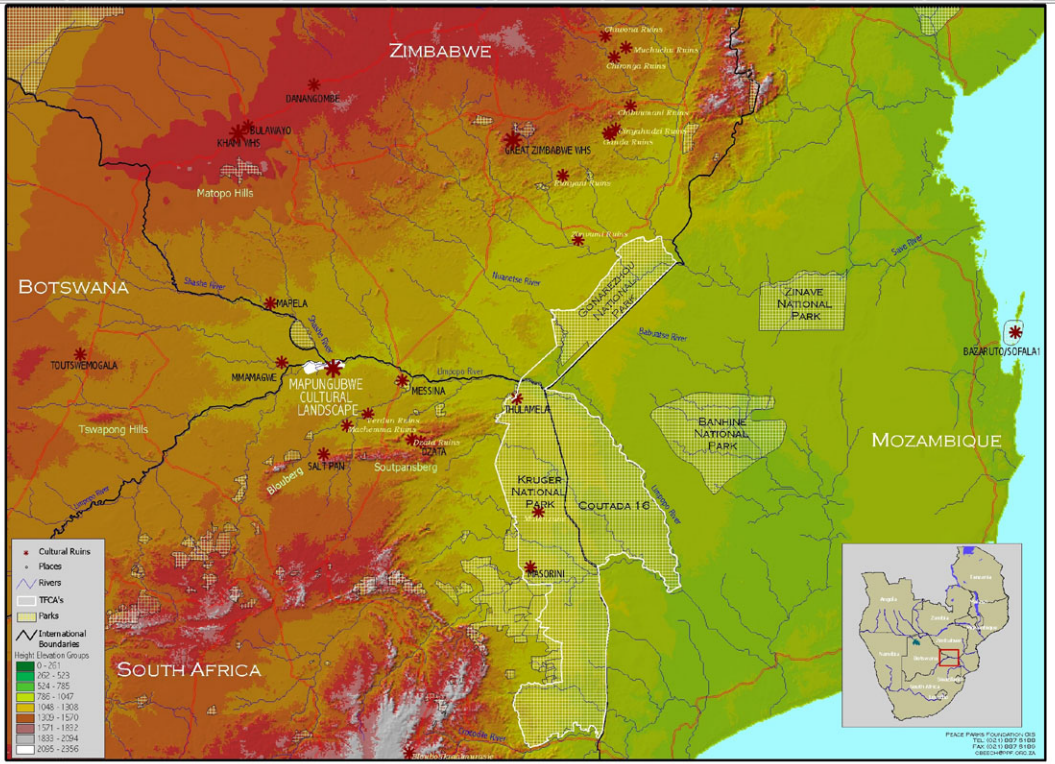
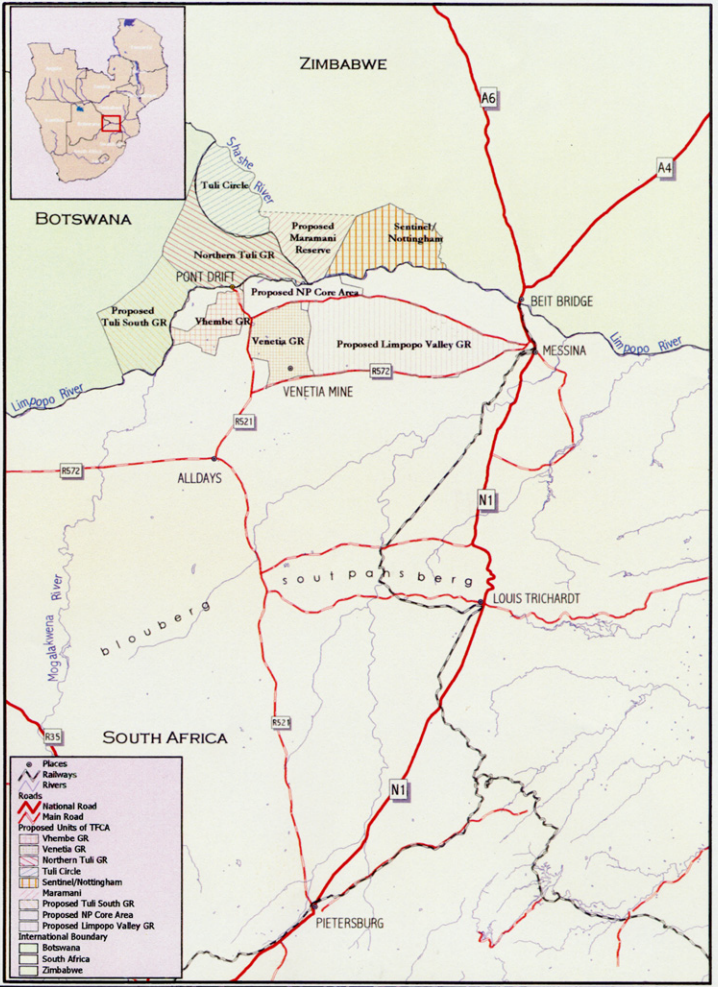
MAPUNGUBWE CULTURAL LANDSCAPE

FIGURES AND PHOTOGRAPHS

FIGURES AND PHOTOGRAPHS



Orientation Map of the Limpopo Valley



Road Map of the Mapungubwe Area

Prof. Willem van Riet
Craig Beech

November 2000.

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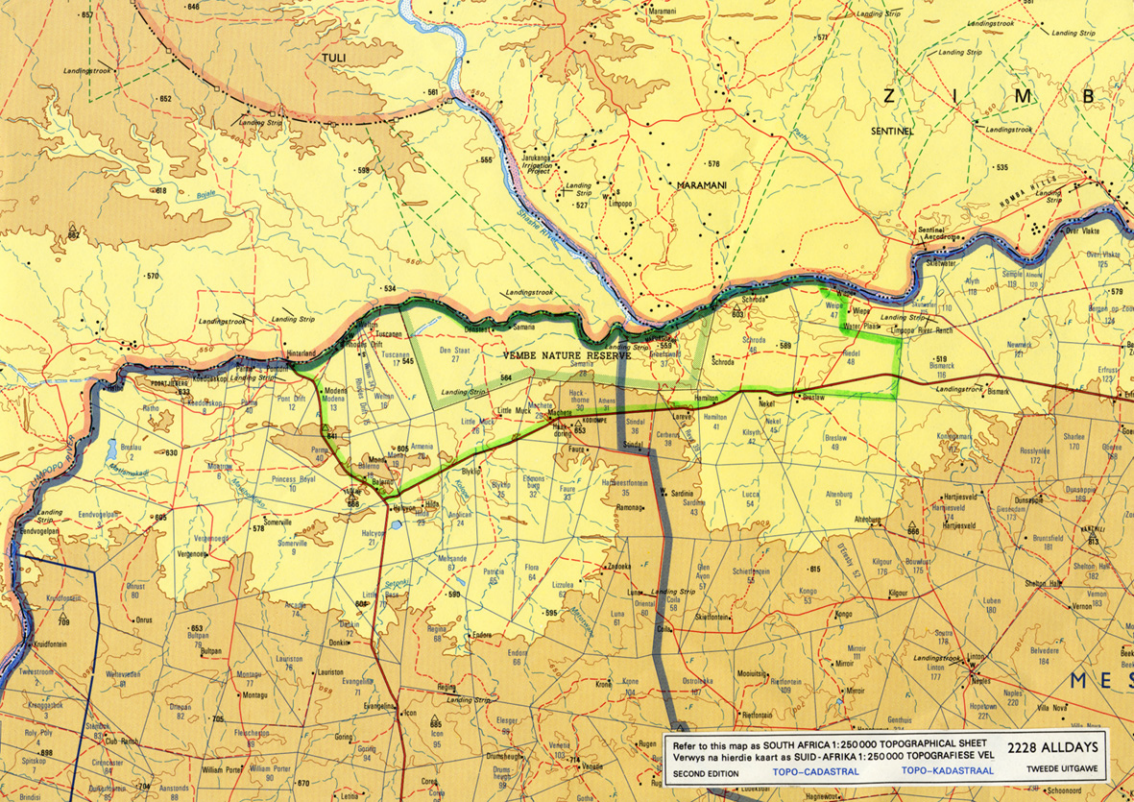
TULI
MARAMANI
SENTINEL
Z I M B
VEMBE NATURE RESERVE
Limpopo River
Shashe River
Landingstrook
Landing Strip
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Verwys na hierdie kaart as SUID-AFRIKA 1:250 000 TOPOGRAFIESE VEL
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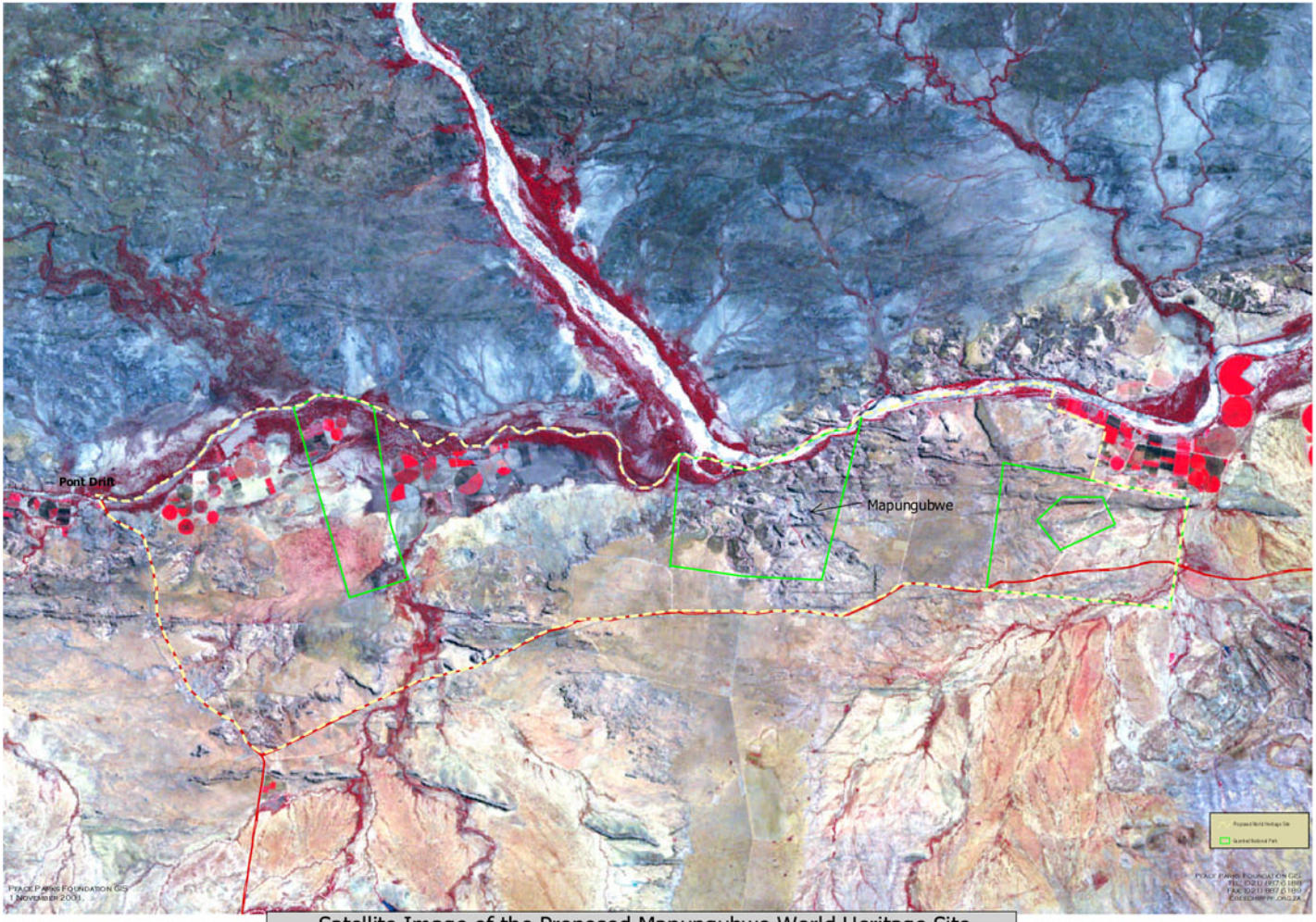
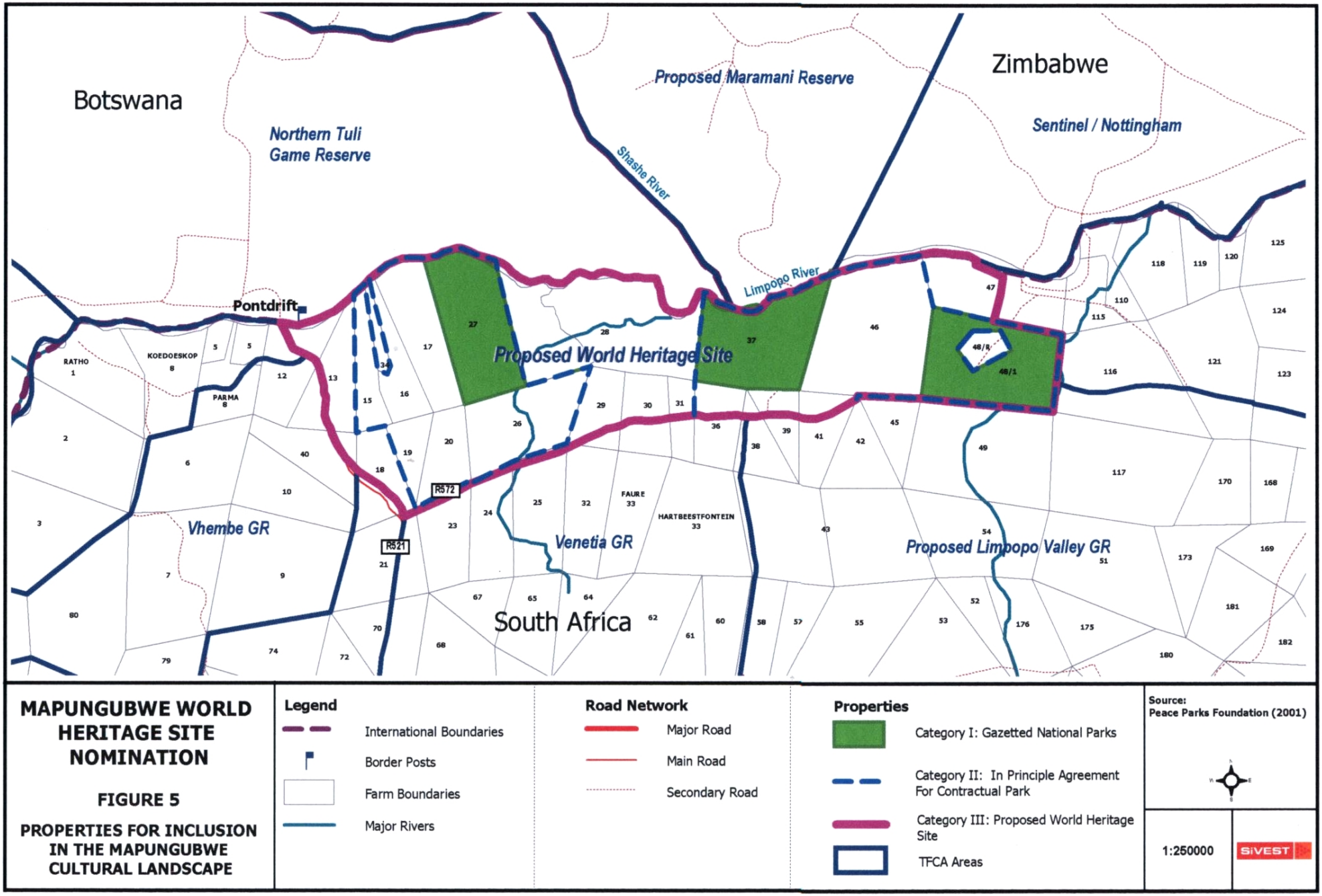


Satellite Image of the Proposed Mapungubwe World Heritage Site


Botswana
Zimbabwe
South Africa
Proposed Maramani Reserve
Northern Tuli
Game Reserve
Shashe River
Sentinel / Nottingham
Limpopo River
Pontdrift
Proposed World Heritage Site
Vhembe GR
Venetia GR
Proposed Limpopo Valley GR
R572
R521
RATHO
KOEDOESKOP
PARMA
FAURE
HARTBEESTFONTEIN
MAPUNGUBWE WORLD HERITAGE SITE NOMINATION
FIGURE 5
PROPERTIES FOR INCLUSION IN THE MAPUNGUBWE CULTURAL LANDSCAPE
Legend
International Boundaries
Border Posts
Farm Boundaries
Major Rivers
Road Network
Major Road
Main Road
Secondary Road
Properties
Category I: Gazetted National Parks
Category II: In Principle Agreement For Contractual Park
Category III: Proposed World Heritage Site
TFCA Areas
Source:
Peace Parks Foundation (2001)
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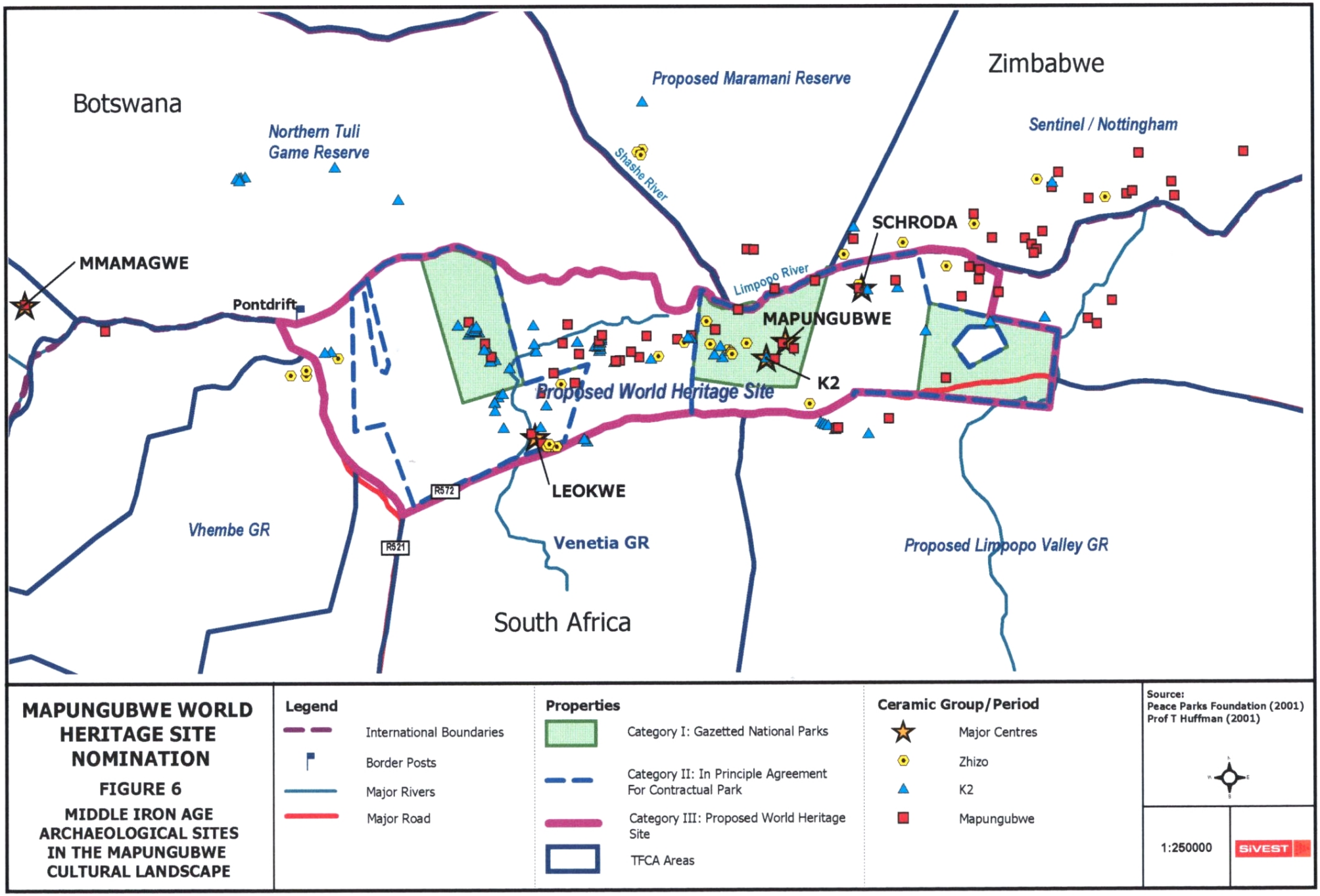
SiVEST



MAPUNGUBWE WORLD HERITAGE SITE NOMINATION

FIGURE 6

MIDDLE IRON AGE ARCHAEOLOGICAL SITES IN THE MAPUNGUBWE CULTURAL LANDSCAPE

Legend

- International Boundaries
- Border Posts
- Major Rivers
- Major Road

Properties

- Category I: Gazetted National Parks
- Category II: In Principle Agreement For Contractual Park
- Category III: Proposed World Heritage Site
- TFCA Areas

Ceramic Group/Period

- Major Centres
- Zhizo
- K2
- Mapungubwe

Source:
Peace Parks Foundation (2001)
Prof T Huffman (2001)

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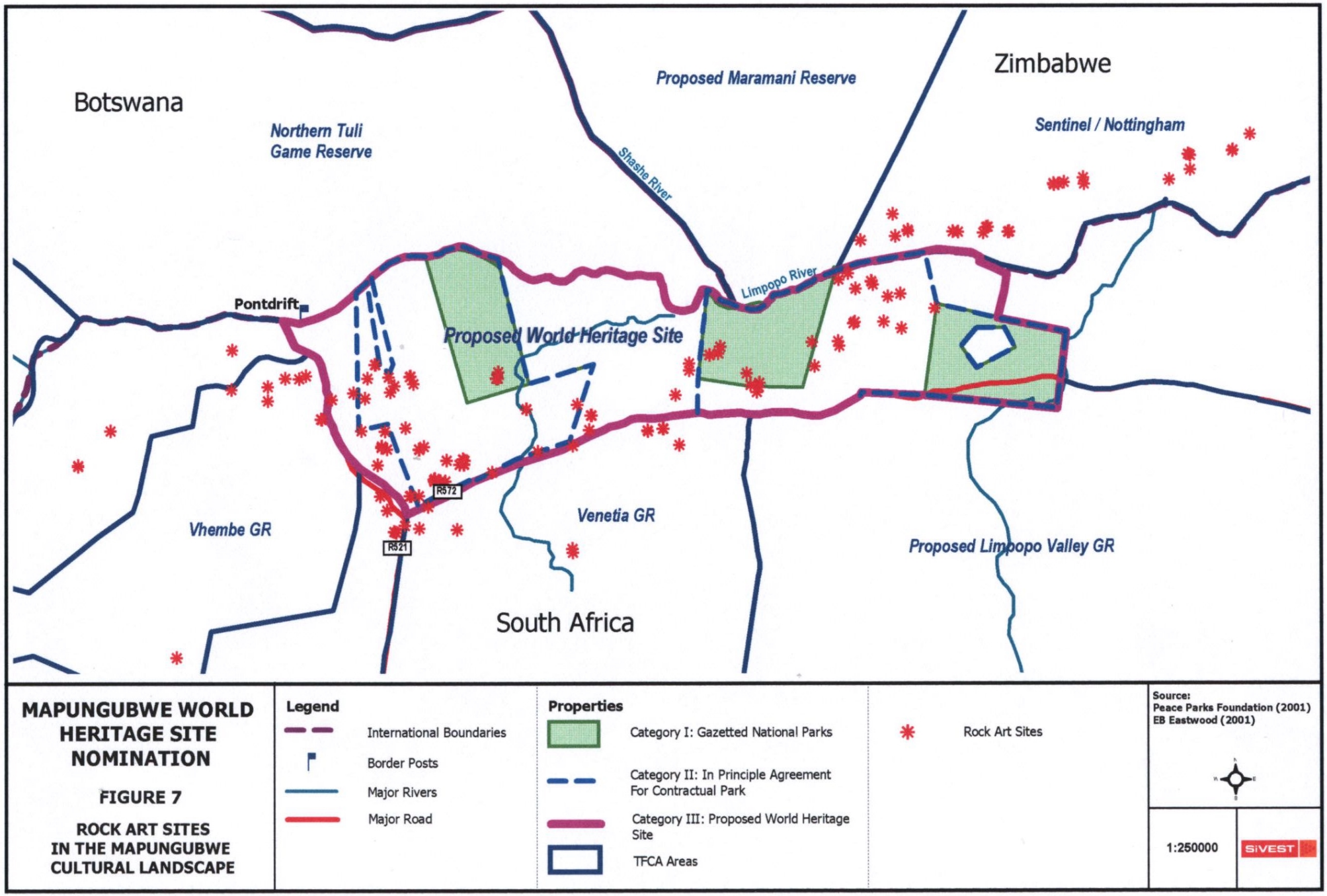
Botswana
Zimbabwe
Proposed Maramani Reserve
Northern Tuli
Game Reserve
Shashe River
Sentinel / Nottingham
Limpopo River
Pontdrift
Proposed World Heritage Site
R572
R521
Vhembe GR
Venetia GR
Proposed Limpopo Valley GR
South Africa
MAPUNGUBWE WORLD HERITAGE SITE NOMINATION
FIGURE 7
ROCK ART SITES IN THE MAPUNGUBWE CULTURAL LANDSCAPE
Legend
International Boundaries
Border Posts
Major Rivers
Major Road
Properties
Category I: Gazetted National Parks
Category II: In Principle Agreement For Contractual Park
Category III: Proposed World Heritage Site
TFCA Areas
Rock Art Sites
Source:
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EB Eastwood (2001)
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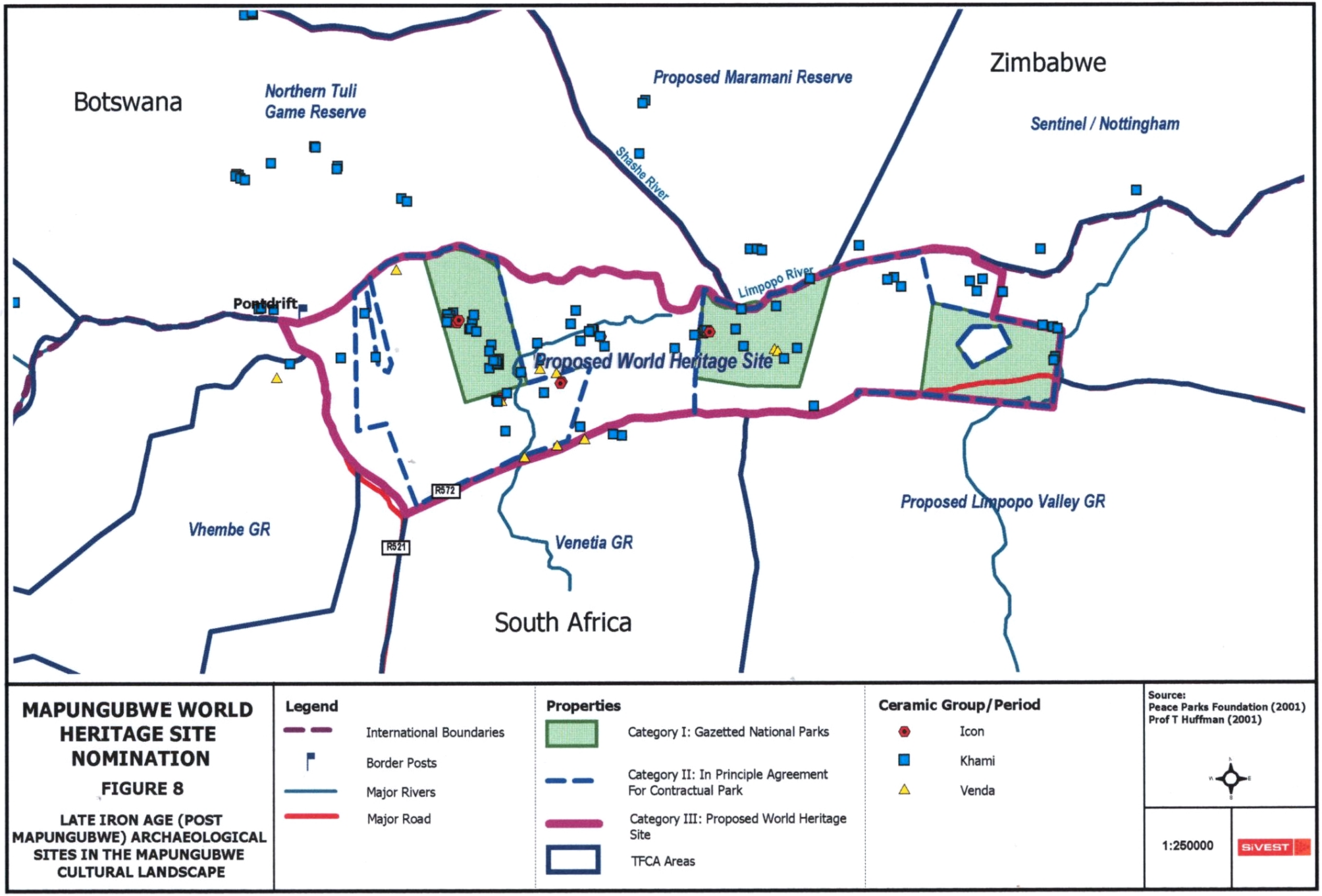
Botswana
Northern Tuli Game Reserve
Proposed Maramani Reserve
Zimbabwe
Sentinel / Nottingham
Shashe River
Limpopo River
Pontdrift
Proposed World Heritage Site
R572
R521
Vhembe GR
Venetia GR
Proposed Limpopo Valley GR
South Africa
MAPUNGUBWE WORLD HERITAGE SITE NOMINATION
FIGURE 8
LATE IRON AGE (POST MAPUNGUBWE) ARCHAEOLOGICAL SITES IN THE MAPUNGUBWE CULTURAL LANDSCAPE
Legend
International Boundaries
Border Posts
Major Rivers
Major Road
Properties
Category I: Gazetted National Parks
Category II: In Principle Agreement For Contractual Park
Category III: Proposed World Heritage Site
TFCA Areas
Ceramic Group/Period
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Source:
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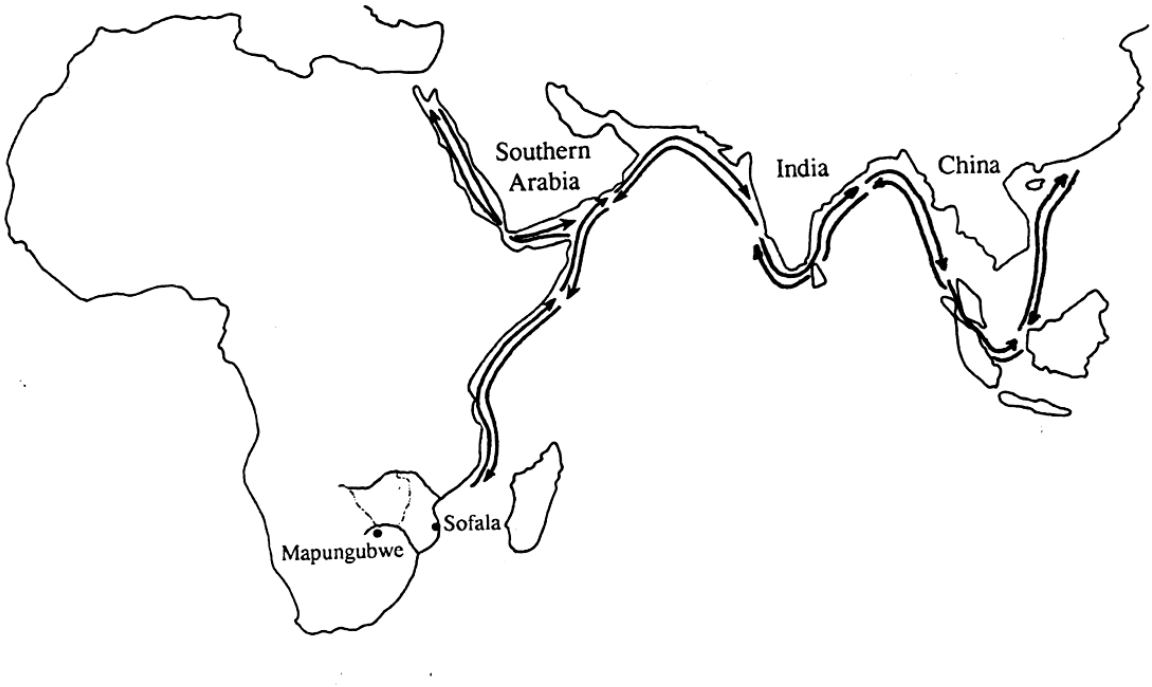

Figure 9 From Mapungubwe they linked into the Indian Ocean Trade Network, and traded as far afield as China and Indonesia

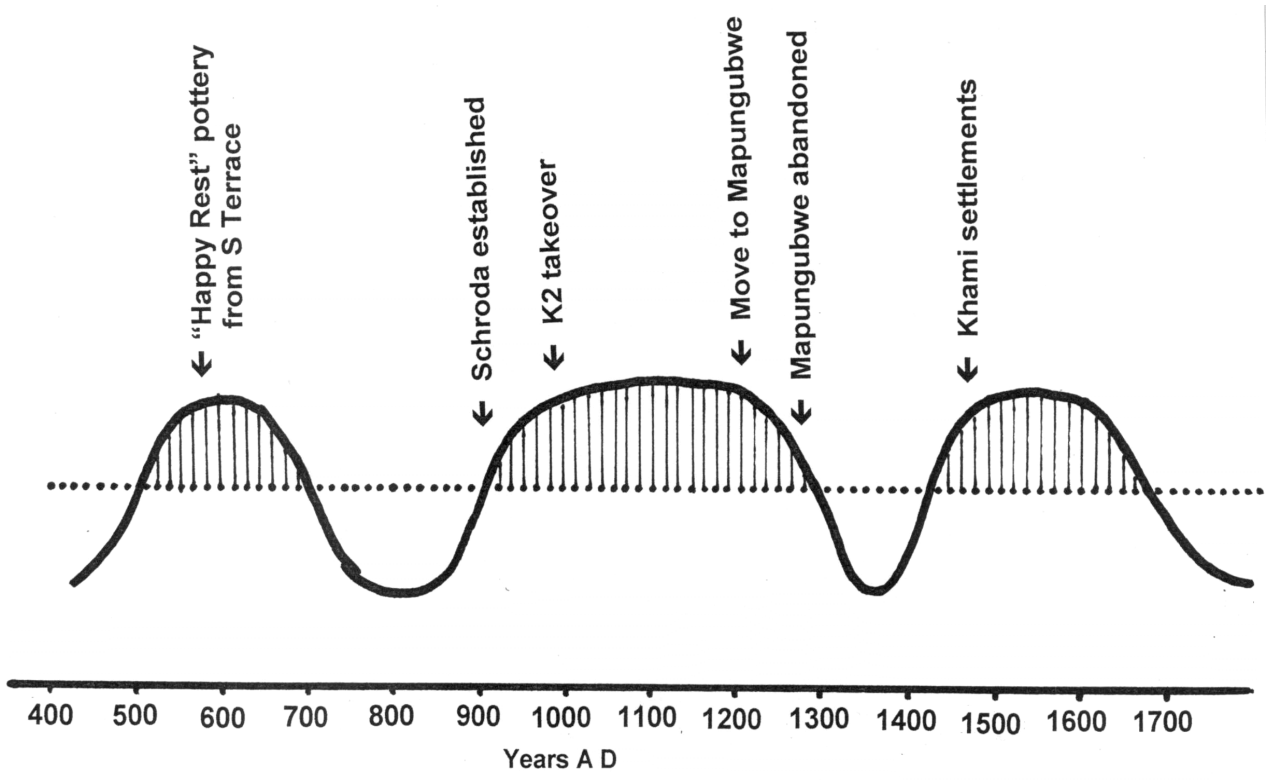

Figure 10 Generalised climate pattern related to settlement at Mapungubwe (based on information from Huffman 1996)

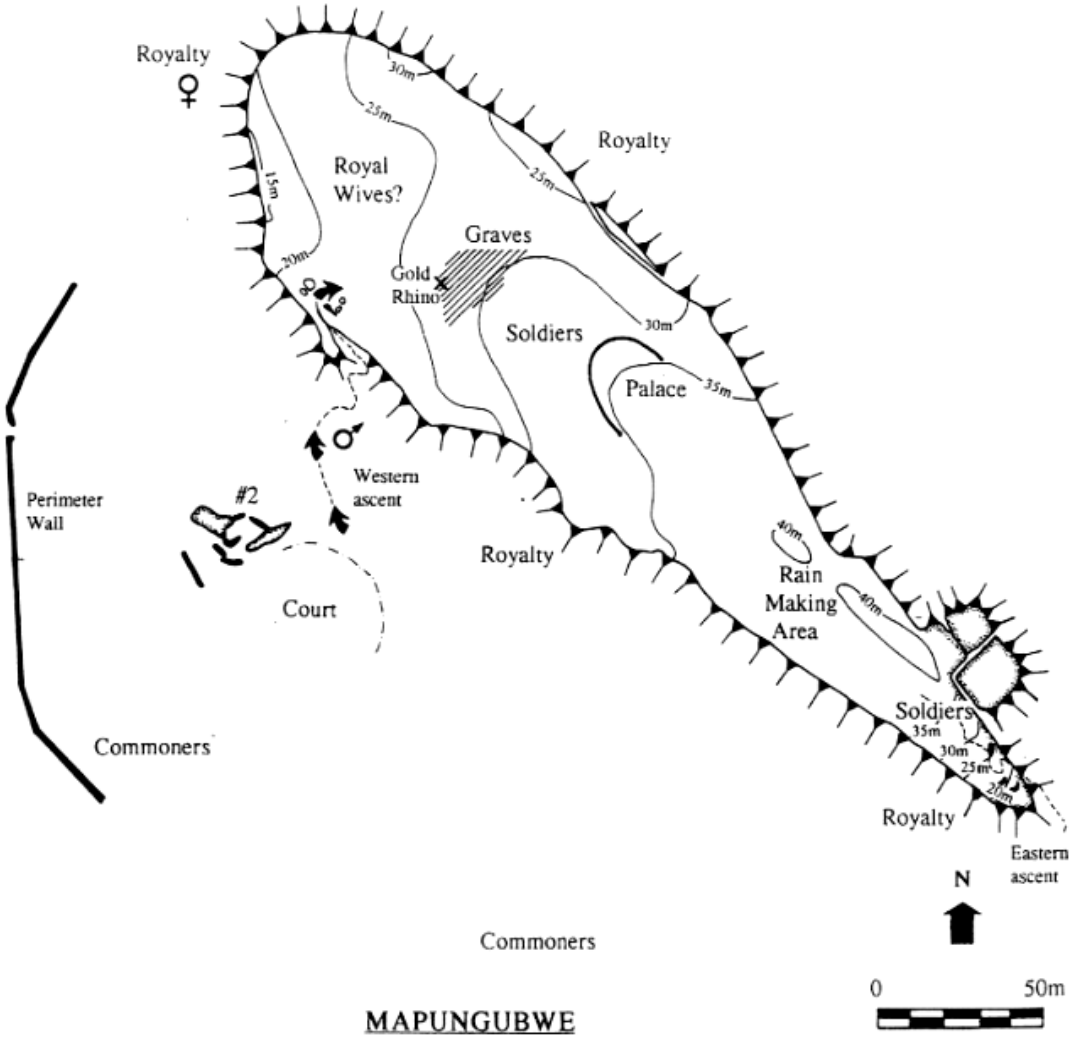

Figure 11 Schematic settlement pattern at Mapungubwe (from Huffman 2000)

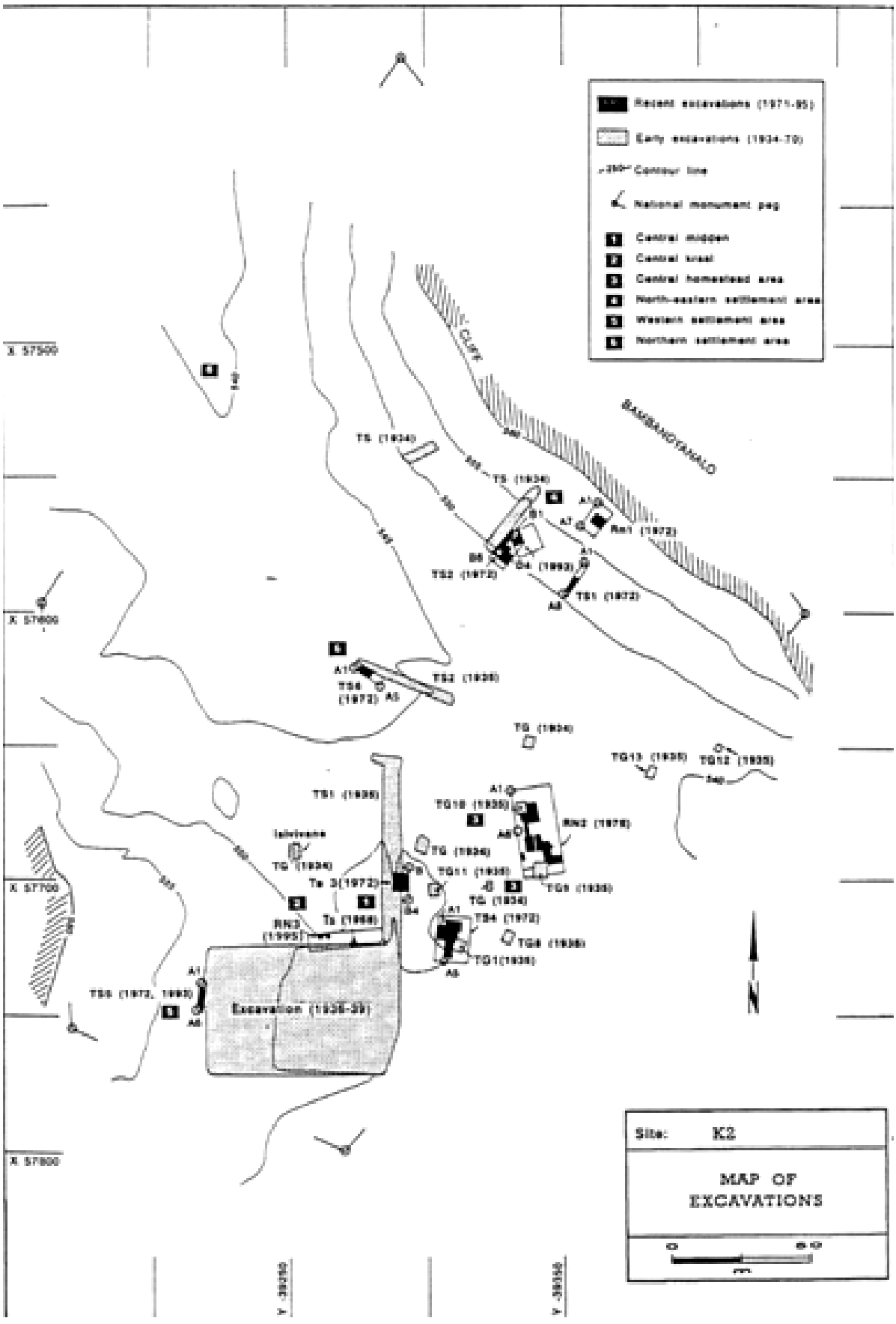

Figure 12 Map of excavations at K2 (from Meyer 1998)

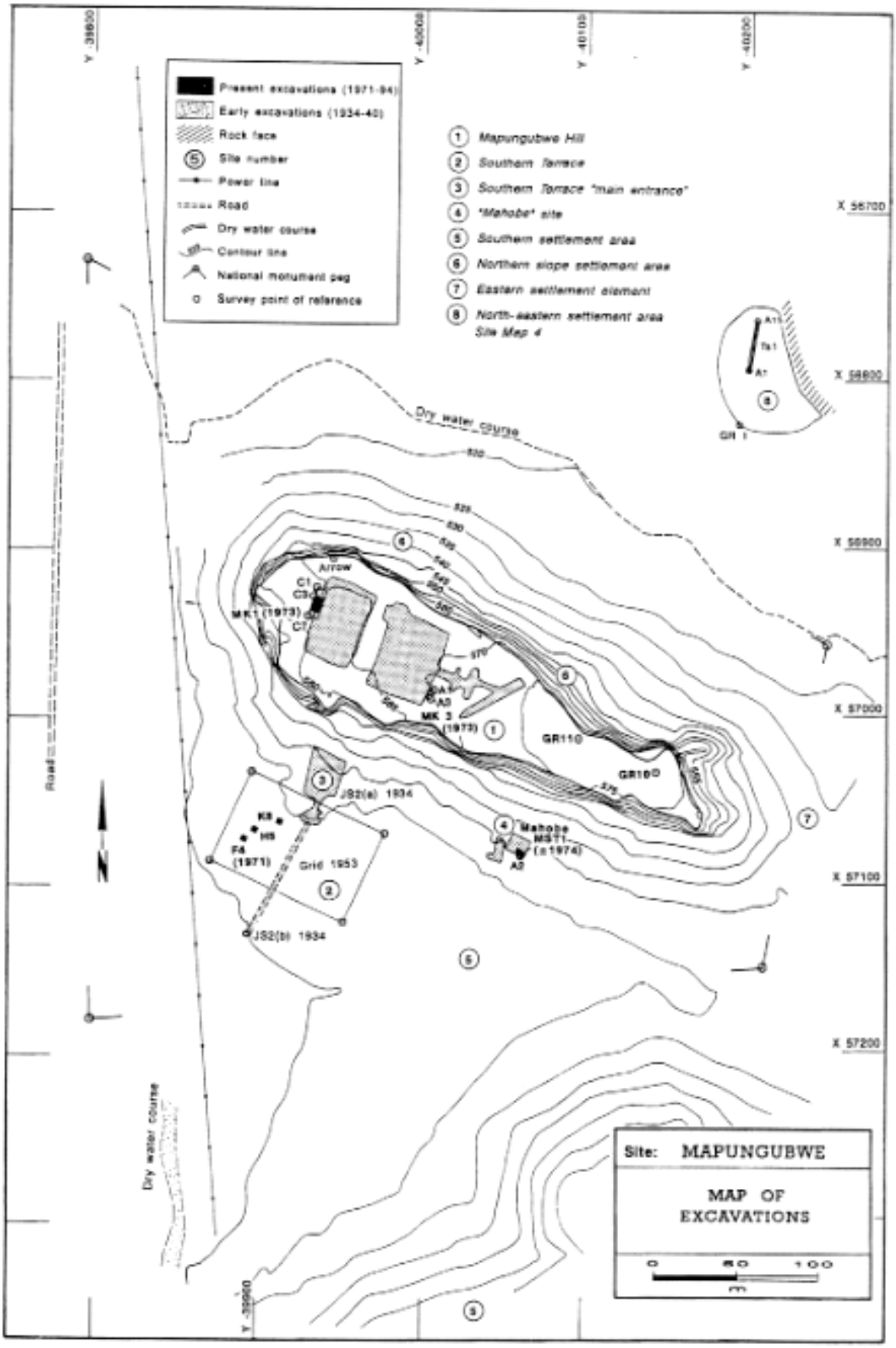

Figure 13 Map of excavations at Mapungubwe (from Meyer 1998)

MAPUNGUBWE PHOTOGRAPHS

Page 1

1. Viewpoint at the Limpopo-Shashe confluence, showing the dry Shashe River
2. From the confluence, looking down the Limpopo River
3. Schroda site, looking north towards the Limpopo
4. The K2 Valley, from Bambandyanalo Hill
5. Mapungubwe Hill from the southwest
6. Approach to the Mapungubwe Hill
7. Aerial view of Mapungubwe Hill in 1933, before excavations (note rounded top, from soil added)
8. Historical photograph of Gardner's excavations on top of Mapungubwe Hill in 1939, showing depth of soil on the northern part of the hill

Page 2

9. Excavation on the Southern Terrace at Mapungubwe, showing stone platform features *in situ*
10. Excavation on Mapungubwe Hill, showing hut floors and post holes.
11. Excavation on the Southern Terrace in 1934, showing stone walling
12. The main access to the top of Mapungubwe Hill was via this narrow cleft
13. Pottery sherds and hut anchor holes on top of Mapungubwe Hill
14. Rehabilitation work in progress at K2 (2001)
15. Sandbagging to stabilize the slopes

Page 3

16. An important San rock shelter on Little Muck
17. Rock art of a Khoe herder with fat-tailed sheep
18. Aprons and loin cloths such as these are particularly common in the rock art of the Mapungubwe area
19. Gameboard carved into the rock on Little Muck
20. Scoops in the rock for grinding sorghum and millet at Schroda.
21. Polychrome giraffes from Little Muck
22. Venda Period stone walling on Bambandyanalo, above K2

Page 4

23. Clay figurines and spindle whorl from Mapungubwe and K2
24. Decorated ivory bangle fragment from K2
25. Bone needle and arrow heads from K2
26. Musuku copper trade ingot from Samaria
27. Small ceramic beaker or drinking cup
28. 22 cm terracotta bowl from the royal burial site
29. Straight sided ceramic pot
30. 19cm shallow black ceramic bowl from the royal burial site
31. Fragments of Chinese celadon from the Sung Dynasty (960-1279 AD), next to a whole celadon wine kettle from the University of Pretoria Van Tilburg Collection
32. Trade beads from K2, including manufactured "garden-roller" beads and mould
33. Trade beads from Schroda
34. A variety of beads from Mapungubwe
35. The golden rhinoceros
36. Golden rhino, bowl, sceptre and beads

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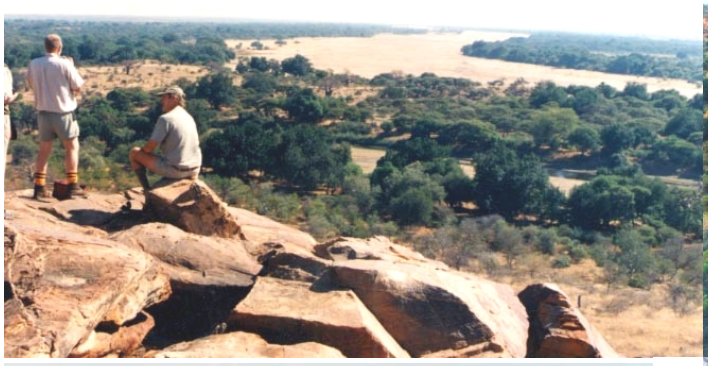

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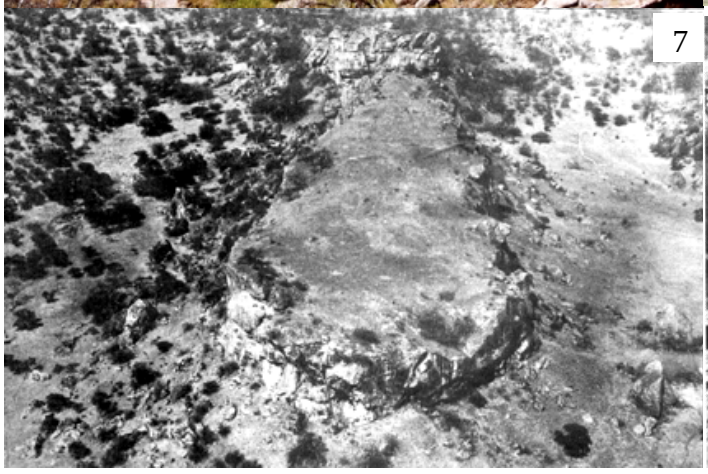

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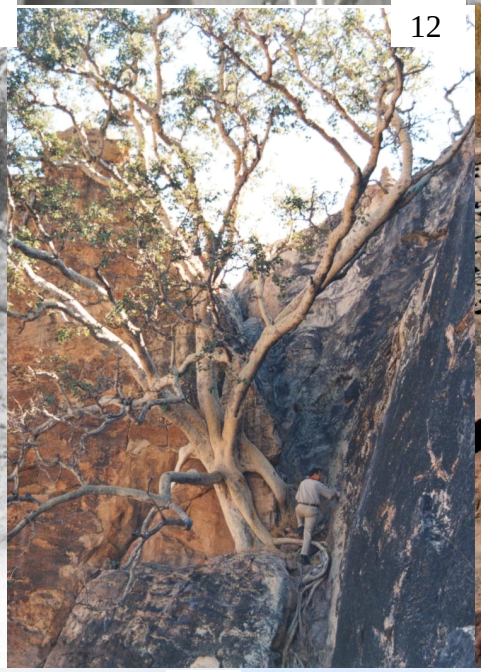
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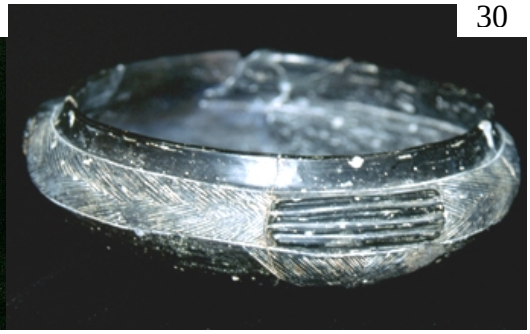

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MAPUNGUBWE CULTURAL LANDSCAPE South Africa

SITE MANAGEMENT PLANS

FOR KEY CULTURAL HERITAGE SITES IN THE
MAPUNGUBWE CULTURAL LANDSCAPE
VHEMBE/DONGOLA NATIONAL PARK
SOUTH AFRICA

Department of Environmental Affairs and Tourism
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These site management plans were complement the South African National Parks' Preliminary Park Management Plan for the Vhembe/Dongola National Park that was compiled in 2001. It is currently under revision to better integrate management of the cultural and natural resources in the Park.

The Park is synonymous with the Mapungubwe Cultural Landscape that was nominated by South Africa as a World Heritage Site in 2002. The general principles for management of the cultural landscape are outlined, followed by individual site management plans presented in order of antiquity, and by generic plans for rock art and other cultural heritage sites.

1. General principles
2. Schroda
3. K2 and Bambandyanalo
4. Leokwe Hill
5. Mapungubwe Hill and surrounding terraces
6. Rock art sites
7. Other Cultural heritage sites

GENERAL PRINCIPLES GUIDING MAPUNGUBWE CULTURAL LANDSCAPE SITE MANAGEMENT PLANS

MISSION

The Mission for the Vhembe-Dongola National Park, which is synonymous with the Mapungubwe Cultural Landscape as nominated for World Heritage listing, is to:
maintain the significance, values and integrity of the physical and intangible remains of the rich and diverse cultural and natural heritage resources of the Park and the MCL;
accept responsibility for safeguarding, conserving and managing these heritage resources in an integrated manner to ensure sustainability of the Park;
incorporate and honour the needs and values of local and neighbouring communities in development programmes; and
promote the Park and the MCL as a place of biodiversity and symbolic pilgrimage to instil national and international pride in the achievements of African people.

SIGNIFICANCE OF THE MAPUNGUBWE CULTURAL LANDSCAPE

Summary of significance in the nomination dossier for the MCL[1]

- *The Mapungubwe Cultural Landscape was the centre of the first powerful indigenous kingdom in Southern Africa. It was established by the cultural ancestors of the present-day Shona and Venda between AD 900 and 1300. Evidence for its history is preserved in over 400 archaeological sites. The dynamic interaction between society and landscape laid the foundation for a new type of social organisation in the region.*
- *The kingdom grew as a result of wealth that accrued to its leaders from trade with the Indian Ocean network, combined with ideal landscape conditions for agriculture that provided for a population of over 9000 people.*
- *Trade goods included gold, glass beads, cotton cloth, Chinese ceramics, ivory, copper and hides.*
- *By the thirteenth century AD, a social hierarchy had developed and impacted on the landscape. Mapungubwe Hill was occupied and modified to separate the elite from the commoners below.*
- *The onset of the Little Ice Age caused drought and crop failures. The kingdom dispersed after AD 1300, new social and political alliances were formed and the centre of regional power shifted to Great Zimbabwe.*

In addition to these values, the Vhembe/Dongola National Park is significant because:

- *It will be a core component of a Trans-Frontier Conservation Area with Botswana and Zimbabwe;*
- *It is a centre for biodiversity;*
- *It incorporates evidence from a richly layered history that includes dinosaur fossils and footprints, traces of human habitation spanning almost a million years from the Earlier, Middle and Later Stone Ages, rock paintings and rock engravings, pre- and post-Mapungubwe Iron Age occupation sites, and buildings and sites significant in the colonial history of the region.*

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[1] *The World Heritage Site criteria proposed for the Mapungubwe Cultural Landscape are:*

(ii) *it exhibits an important interchange of human values, over the time period between AD 900 and 1300 in Southern Africa, on developments in technology, and town-planning ; and*

(iii) *it bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which has disappeared; and*

(iv) *it is an outstanding example of a type of architectural and technological ensemble and landscape which illustrates a significant stage in human history; and*

(v) *it is an outstanding example of a traditional human settlement and land-use which is representative of a culture that became vulnerable under the impact of irreversible change.*

Under Article 39, as a cultural landscape it falls into the category of

(ii) *an organically evolved landscape,* and into the sub-category of
a relict (or fossil) landscape in which an evolutionary process came to an end at some time in the past, either abruptly or over a period. Its significant distinguishing features are, however, still visible in material form; and
an associative cultural landscape ... by virtue of the powerful religious, artistic and cultural associations of the natural elements of the landscape rather than material cultural evidence, which may be insignificant or even absent.

ISSUES FOR THE VHEMBE-DONGOLA NATIONAL PARK

The following issues were identified in the course of preparing the Preliminary Management Plan and during meetings of the Vhembe-Dongola National Park Committee, ATG and JMC, at public meetings and at workshops with stakeholders:

- *Protection of World Heritage values*
- *Acquisition of land and consolidation of the Vhembe-Dongola National Park and TFCA*
- *Park management and appropriate staffing*
- *Disaster management*
- *Monitoring and law enforcement*
- *Cultural heritage resources management – significance and priorities*
- *Procedures for protection and rehabilitation of archaeological and historical sites*
- *Curation of excavated archaeological material*
- *Oral history, intangible heritage and indigenous knowledge*
- *Bio-diversity and environmental management*
- *Integration of natural and cultural heritage resources to maintain the landscape*
- *Liaison with local communities, land claimants and other stakeholders*
- *Budgeting and project financing*
- *Access*
- *Scientific research*
- *Tourism and marketing*
- *Visitor management*
- *Public education and social ecology*
- *Mining and agriculture*

OBJECTIVES FOR THE VHEMBE-DONGOLA NATIONAL PARK

The general objectives to achieve the mission and vision and address the issues that have been identified for the Vhembe-Dongola National Park are to:

A. *Maintain and enhance the significance of the Vhembe/Dongola National Park as a National Heritage and World Heritage Site by:*

1. *Establishing and maintaining an integrated management plan that enhances both the significance of the Mapungubwe Cultural Landscape as a National Heritage and World Heritage Site, and protects all natural and cultural heritage resources within the Park;*
2. *Establishing and maintaining efficient infrastructure and administration in the Park;*
3. *Implementing and refining operational plans, including a monitoring and disaster management strategy;*
4. *Acquiring land and entering into contractual agreements to consolidate the National Park; and*
5. *Developing the Park as the core of the proposed Limpopo-Shashe Trans-Frontier Conservation Area with Botswana and Zimbabwe.*

B. *Integrate management of cultural and natural values by:*

6. *Identifying, assessing and managing the archaeological sites and other cultural heritage resources in the park to maintain their integrity within the cultural landscape;*
7. *Improving the bio-diversity of the park in all its facets and fluxes through integrated environmental management;*
8. *Clarifying rights and responsibilities of mining interests in the Park;*
9. *Planning for the rehabilitation of former agricultural and mining land and related structures; and*
10. *Offering long-term benefits to the descendants of the pre-colonial inhabitants of the MCL and to local communities in keeping with the mission of SANParks.*

C. *Sustain the Park and MCL through responsible tourism by:*

11. *Creating a viable and sustainable tourism management framework for the Park; and*
12. *Optimising the role and value of the full range of cultural and natural heritage resources by presenting the MCL as a wilderness experience and place of symbolic pilgrimage.*

SCHRODA

Site Management Plan

SUMMARY OF KEY ISSUES FOR SCHRODA

- Integrity and authenticity of site features and landscape
- Impact assessments required before intervention according to relevant legislation
- Permits required from SAHRA for all interventions, with separate permits for rehabilitation, development of paths and infrastructure, and research
- Rehabilitation of excavations and natural erosion features
- Management of poverty relief project
- Recording of all interventions
- Research policy and priorities, including review of moratorium on new excavations
- Safety of surface artefacts and features
- Return of artefacts removed during excavations
- Access routes and paths
- Carrying capacity of the site
- Presentation of the site to visitors
- Visitor facilities, information and signage
- Integrating cultural heritage resources with wildlife and environmental management
- Disaster, fire and waste management

1 STATEMENT OF SIGNIFICANCE

The Zhizo phase of Iron Age occupation in the Mapungubwe Cultural Landscape dates from about AD 900-1020. The Zhizo-style pottery was first described in south-west Zimbabwe and is also found in parts of eastern Botswana and at least 23 sites in the MCL.

The Central Cattle Pattern complex on the farm Schroda, which dates from about AD 900-1020, is the largest site of this time period that has been excavated in the MCL. It is significant because of its association with an unusually high number of clay figurines of mainly stylised birds and humans (over 2000 fragments were recovered), ivory objects, imported glass beads, and iron and copper working. The 664 glass beads are the oldest yet found in the Limpopo Valley and, together with cowrie shells, are a clear indication that trade with the east coast of Africa had already become established by this time. Amongst the bones recovered during the excavations were those of 36 wild carnivores that were probably hunted for their pelts which were prized in the east coast trade network.

Analysis of the layout of the settlement and its contents suggests that a hierarchy related to growing political power of the inhabitants and the unequal distribution of wealth had begun to form in the region. The chiefs who lived at Schroda would have been more powerful than headmen in surrounding settlements.

The only physical signs of occupation of the site and its immediate environs during the colonial period, apart from paths and access routes used by archaeologists, the Defence Force and visitors, are the stone foundations of a small two-roomed house with an outside kitchen. There were no associated middens or cultural remains that would enable the house to be dated.

Stone artefacts in the vicinity indicate that the site was favoured by Stone Age hunter-gatherers as well.

2 SITE DESCRIPTION

2.1 Site information

Farm name and number	Schroda MS 46, Messina Magisterial District, Limpopo Province
Co-ordinates	22.11.29 South, 29.25.45 East
Altitude	554 m a.s.l.
Owner	De Beers Consolidated Mines Ltd, with contractual agreement with SANParks
Contact person	Bernard van Lente, SANParks, Tel/fax 015 534 0102 Graham Main, De Beers, Tel. 053 831 1854, Fax 053 833 1421
Archaeological permit holders since 1989	K Kuman permit no. 80/01/03/006/51, expiry 01/05/2002, for excavation and collection of Stone Age artefacts
Designated respositories	National Cultural History Museum
Public access and visitation	Guided visits by appointment only
SANParks zonation	Special Protection Zone
Grading status	Mapungubwe Cultural Landscape declared a National Heritage Site in July 2002

2.2 Locality and description

The Schroda archaeological site is situated on the northern slope of a rocky sandstone plateau overlooking the Limpopo River valley. It is partly enclosed on both the western and eastern margins by lower rock outcrops. The ashy settlement deposits cover an area about 500 x 300 m with a maximum depth of 1.2 m and are extensively disturbed in parts by springhare burrows. In other parts much of the ashy deposit has eroded away leaving only potsherds and similarly durable materials. It is estimated that the site was occupied by between 300 and 500 people at any one time.

After the site was abandoned in about AD 1020, the chief and his court probably moved westwards into Botswana as Zhizo-derived pottery of this time period is found at Toutswe. There was a two-fold increase in the number of settlements at that time.

2.3 Access

Vehicle access to the site is along a branch from a track that leads from the main road down towards the Limpopo River. No vehicles are permitted on the surface of the site today, although a track at one time bisected the settlement.

2.4 Physical environment

Analysis and subsequent zonation of the natural and cultural resources by the Vhembe-Dongola National Park staff has placed Schroda in the following management zone:

"(a) Special Protection Zones

Sensitive areas that merit special exceptional protection because they represent or support unique, rare or threatened elements, or are otherwise regarded as of particular quality. No man-made structures will be permitted in such areas and access will either be strictly limited or totally forbidden. "

No interpretive displays are planned at the site.

2.5 Previous and ongoing research

The only excavations undertaken at Schroda were done in the 1970s by Edwin Hanisch, now at the University of Venda. The material recovered from the excavations is housed at the National Cultural History Museum in Pretoria.

Six trenches, ranging from test squares to extensive horizontal excavations, sampled the deposits from west to east. At least eight occupation levels were identified, spread over several excavations.

More than 100 000 potsherds were recovered. The most typical form was a globular pot with everted rim and stamped decoration under the rim or on the neck, or in single bands on the shoulder. A cache of nearly 2000 fragments of fired clay figurines was found in Area 6. They had been broken prior to burial, probably as part of an initiation ritual.

There was no evidence for iron smelting on site, but fragments of tuyère and pieces of slag indicate that metal smiths re-worked both iron and copper there.

Although fragments of burnt daga were found in several of the excavations, only two fairly complete house floors were located. The basic house was a cone-on cylinder structure between 1.2 and 2.6 m in diameter built of a framework of poles covered with clay plaster. The roof rested on the walls and hearths were inside.

About 140 000 bones from the excavations were analysed by Elizabeth Voigt. They represented 263 sheep/goats, 201 cattle, 6 dogs, two species of fish and about 52 species of mainly small wild animals. The staple food was cultivated sorghum.

2.6 Site sensitivities and threats

There is not much for the casual visitor to see at Schroda apart from the setting of the site. For this reason, and because of the fragility of the deposits, it will probably not be one of the major attractions for tourism, although visitors with a special interest in archaeology will be allowed there under supervision of a guide.

All developments and interventions must be subject to an impact assessment process that includes a survey and statement of significance of both cultural and natural heritage resources that will be affected.

It is important that a record of all interventions, including reports on the rehabilitation process, be kept on file in the Park so that changes can be monitored.

2.6.1 Sensitivities

It is uncertain how much undisturbed *in situ* deposits remain at Schroda because of the patchy nature of the deposit, the springhare burrows and the constant wind and sheet erosion that removes the finer ash and soil. It is therefore imperative that no additional erosional processes are introduced, such as may be associated with vehicle tracks, on-site displays and footpaths.

Restricting access to certain parts of the site may help to protect deposits and should be carefully monitored. Monitoring is best done against a base-line condition report so that change can be measured and controlled.

The vegetation on the site is different from that to the south of the sandstone ridge and should be monitored to ensure the continued integrity of the microenvironment.

2.6.2 Threats

The following threats could damage the integrity of the archaeological deposits:

- Old excavation trenches that are inadequately protected;
- Unskilled workers may inadvertently damage deposits while working on the rehabilitation of erosion gullies and old excavations;
- Vehicles can damage middens and other cultural deposits;
- Visitors with unrestricted access could damage or disturb *in situ* deposits, move or remove surface artefacts, and leave litter;
- Elephants and other large game could affect cultural deposits in the midden by denuding vegetation and eroding the surface;
- Unco-ordinated research can lead to unnecessary removal of irreplaceable deposits;
- Base-line condition reporting should identify and mark places where photographs are taken so that changes can be accurately measured.

2.7 Existing site management

The farm Schroda is owned by De Beers Consolidated Mines Ltd. It is managed by SANParks according to a contractual agreement and forms part of the Vhembe-Dongola National Park that was formally gazetted on 7 April 2000. The property is managed, monitored and funded within the framework applied to all national parks. In terms of the South African World Heritage Convention Act, SANParks will be the management authority appointed by the Department of Environmental Affairs and Tourism for the Mapungubwe Cultural Landscape if it is declared a World Heritage Site.

The Mapungubwe Cultural Landscape was declared a National Heritage Site in July 2002 by the South African Heritage Resources Agency (SAHRA). In terms of the National Heritage Resources Act: (No. 25 of 1999), SAHRA is responsible for the protection of the site in the following ways:

- a conservation management plan must be submitted for each national heritage site and responsibility for implementing such a plan can be delegated to the owner of the property if a formal heritage agreement is drawn up, in this case between SAHRA and SANParks;
- no person may destroy, damage, deface, excavate, alter, disturb, remove from its original position, subdivide or change the planning status of the site or archaeological and palaeontological deposits within it, without a permit issued by SAHRA;
- conditions pertaining to these permits are monitored by SAHRA in collaboration with SANParks;
- SANParks is responsible for maintaining the site according to minimum standards and a procedure to be prescribed by SAHRA in consultation with SANParks;
- SAHRA may make regulations, with the consent of SANParks, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees;
- SAHRA may call for a heritage impact assessment report if certain activities are likely to impact on heritage resources;
- the contents of on-site interpretive material or programmes for presentation of a national heritage site to the public must be submitted to SAHRA for approval at least 60 days in advance

The Schroda site and surrounding farm, as part of the Vhembe-Dongola National Park, is managed contractually by the JMC with the Park Manager as the mandated official responsible for:

- regular monitoring of the site;

- reporting threats or damage to heritage resources;
- preparedness for natural disasters;
- implementing legal requirements for environmental impact assessments in advance of development;
- ensuring that heritage impact assessments are done prior to any developments that may affect heritage resources;
- informing permanent staff and contract workers of the significance of the site;
- preparing sites for tourism access;
- allowing access only to visitors who have made prior arrangements;
- ensuring that visitors may enter only with a guide approved by SANParks.

De Beers is a member of the Joint Management Committee and is guided by the terms of the contract signed with SANParks and by the terms of reference of the Joint Management Committee.

3 MANAGEMENT OBJECTIVES FOR SCHRODA

The objectives are to retain the significance of the site by;

- retaining the integrity of the views and vistas of the landscape so that it is not interrupted by buildings, power lines or vehicle access roads;
- appointing a permanent staff member to manage the cultural heritage resources in the Park;
- integrating cultural heritage resources management and strategies with those for natural heritage resources at Schroda;
- conserving *in situ* deposits and excavations against natural and human-induced erosion by completing the rehabilitation programme;
- minimising the visual impact of interventions;
- recording all interventions;
- protecting artefacts and features that are exposed on the surface;
- controlling visitor access to minimize impact on the fragile and non-renewable deposits;
- developing low-key signage that will allow visitors to appreciate the setting of Schroda and its significance in the history of the MCL;
- displaying artefacts removed during excavations at the Park interpretation centre;
- developing a policy for research at the site;
- commissioning or undertaking a base-line condition report of the site; and
- closely monitoring change against the condition report so that policies and strategies can be altered if they are not working.

4 MANAGEMENT AND MONITORING

4.1 *Management of site rehabilitation: Key issues:* Conserving deposits against erosion; rehabilitation of excavations and natural erosion features; management of poverty relief project; reporting on rehabilitation process

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Assess impact before rehabilitation	Potential damage to *in situ* deposits if assessment not done	▪ Appoint independent Archaeologist to assess need for, and impact of, rehabilitation of old excavations on Schroda	Immediate Completed 2001	SANParks, SAHRA, PC (as advised by ATG)	▪ SAHRA to review assessment report prior to permitting	On receipt
Appoint experienced contractor	Inexperienced contractor may damage sites	▪ Advertise for tenders and draw up terms of reference and detailed plan. VUKA EMS Inc. appointed. Funding from Poverty Relief Programme. Training programme essential.	Necessary Appointed 2002	SANParks and PC (as advised by ATG)	▪ Evaluate applicants according to previous experience	As required
Appoint professional Archaeologist	Inexperience can damage sites or lead to unnecessary removal of deposits.	▪ Archaeologist to apply to SAHRA for permit and submit action plan for review. Make it clear that the purpose is protection of deposits, not research.	Necessary Appointed 2002	SAHRA and PC (as advised by ATG)	▪ Appoint experienced person. No additional excavation allowed without a permit.	As required
Co-ordinate project planning	Un-coordinated rehabilitation work is inefficient	▪ Planning and co-ordination must be done in conjunction with SANParks, Environmental Control Officer (ECO), SAHRA and Archaeology Task Group (ATG)	Immediate Plans approved 2002	SANParks, SAHRA, Contractor and permitted Archaeologists	▪ All parties to report to SANParks and ATG	Weekly
Draw up specifications for rehabilitation	Poor quality materials and workmanship will create further problems in the future	▪ Archaeologist to be present throughout rehabilitation of old excavations; ▪ Sieve all deposit and sort, package and label finds; ▪ Fill sandbags with sieved residue; ▪ Bio-degradable sand bags to be used below ground and stronger bags above ground. ▪ Protect sandbags from sun and trampling.	Necessary Plans implemented 2002	Contractor, Archaeologist, ECO, PC (as advised by ATG), SAHRA	▪ Regular inspections by ECO, SANParks, SAHRA and ATG. ▪ Check site is kept tidy and sand bags are covered at all times. ▪ Progress and final reports to be delivered.	As often as possible
Disseminate information to heritage resources authorities	Loss of information through inadequate recording	▪ Any archaeological or historical material found accidentally must be reported to responsible Archaeologist or SAHRA ▪ Sections must be logged ▪ All work sites to be photographed before and after rehabilitation	Necessary Reports submitted to SAHRA in 2002	Archaeologist, SAHRA, PC (as advised by ATG)	▪ Check sections are recorded and photographs are taken. ▪ Reports to be peer-reviewed	As required on permit

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
EMP Training for rehabilitation workers	Workers not aware of significance and sensitivity of site. Theft and damage leads to loss of information and site integrity	▪ Ensure that all personnel are familiar with the aims of the Environmental Management Plan (EMP) and the statement of significance. ▪ No artefacts or other material may be moved, picked up or removed from the site without a permit.	Immediate Training by Vuka completed 2002 and 2003	All parties involved in the archaeological restoration project. The contractor shall familiarise all employees with the EMP contents, either in writing or verbally.	▪ ECO shall require written proof or confirmation from the contractor that EMP training has been done. ▪ Spot checks to ensure personnel are not removing artefacts.	Monthly
Delimit contract areas	Impact beyond areas requiring rehabilitation	▪ SANParks and Archaeologists must indicate to contractors the area of work for the duration of the contract, including access road to be used, construction lay-down areas, materials storage and delivery requirements, work stations, pedestrian routes and operational demarcation, etc.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ Maps to be signed off at the start of each contract. ▪ Check contractor works within demarcated areas	Immediate
		▪ Boundaries of the site and rehabilitation areas shall be demarcated by the Contractor, as instructed by SANParks and the Archaeologist, prior to any work commencing on the site. ▪ Any changes must be recorded in writing. ▪ Changes may require re-permitting	Immediate Completed in 2002 and ongoing in 2003	SANParks, SAHRA and Archaeologists	▪ No encroachment beyond the demarcated boundaries to be permitted. Contractor must ensure all labour and materials remain within the boundaries of the site.	Weekly
Demarcate sensitive areas	Damage to archaeological site	▪ Sensitive areas identified by SANParks and/or Archaeologists to be demarcated with danger tape. No activity may take place in such areas.	Immediate Ongoing	SANParks and Archaeologists	▪ Check that danger tape is in correct place	Weekly
	Damage to ecologically sensitive resources	▪ Sensitive areas identified by SANParks to be demarcated with danger tape. No activity shall take place in these areas and no trees or bushes may be damaged or cut down unless by written consent of the ECO	Immediate Ongoing	SANParks, ECO and Contractor	▪ Check camps for contractor and employees only on sites approved by SANParks.	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Agree on hours of operation	Work at unauthorised times can lead to un-coordinated activities	▪ Contractor's and labourers' hours shall be the same as the operating hours of the Park	Necessary Ongoing	Contractor	▪ Contractor to confirm hours of operation in writing	On-going
Control erosion	Ongoing water and wind erosion leads to loss of deposit, topsoil and vegetation	▪ Stockpile topsoil for later re-use ▪ Exposed surfaces that are not archaeologically sensitive to be re-vegetated and/or sandbagged ▪ Protect all areas susceptible to erosion ▪ Slopes identified for protection should be stabilised at no steeper than 1(V):3(H)	Necessary Partially completed 2002 and ongoing	SANParks, Contractor and ECO	▪ Contractor shall not allow erosion to develop before effecting repairs and all erosion damage to be repaired a.s.a.p	On-going
Indicate access roads	Damage to sites and deposits if correct access routes not used	▪ Only those roads agreed to between SANParks, Archaeologists and Contractor may be used ▪ Access roads must be planned to deviate around trees or other natural features marked out in an approved manner by SANParks ▪ Close road that bisects Schroda site	Immediate Ongoing	Contractor, ECO, SANParks and Archaeologists	▪ ECO to check access roads regularly	Weekly
Provide access for construction vehicles	Temporary roads and off-road access can damage sites and interfere with integrity of cultural landscape	▪ No off-road driving allowed; temporary access roads must be rehabilitated after usage and width of roads restricted to maximum of 3 m.	Necessary Ongoing	Contractor and SANParks	▪ Check rehabilitation of temporary access roads against those agreed to satisfaction of SANParks.	As required
Demarcate areas for construction personnel	Un-coordinated movement can lead to damage of sites and landscape	▪ Contractor must ensure that all construction personnel, labourers and equipment remain within demarcated restoration sites at all times. Movement outside boundaries may be done only with permission from the ECO	Necessary Ongoing	Contractor and ECO	▪ Check that all work is done within demarcated areas.	Weekly
	Constant use of paths causes erosion	▪ Conveyor belts can be used to outline pedestrian routes and prevent impact on archaeological deposits. Confine pedestrian routes to paths maximum 1 m wide	Necessary On-going	Contractor and Archaeologist	▪ Monitor effect of conveyor belting to prevent undue erosion.	Weekly
Reduce impact of construction camps	Impact of camps can damage cultural landscape	▪ If construction camps or working stations are established, the camp must conform to all contractual issues and standards, include issues related to fires, ablution, sleeping facilities and waste management	Necessary On-going	Contractor, ECO and SANParks	▪ Inspect camps and working stations and check against contractual issues	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Provide efficient toilet facilities	Could be unsightly and a health hazard	▪ Minimum of one chemical toilet per 10 persons at sites to be agreed with the ECO. ▪ No abluting anywhere other than in toilets. ▪ Waste shall be disposed of at a location and in a manner that involves no pollution or degradation of the environment. ▪ If spillage occurs, toilets must be placed on a solid base.	Necessary Ongoing	Contractor, ECO	▪ Check construction site is maintained in a sanitary condition and all toilet facilities are maintained in good order. There shall be no spillage of chemicals at any time.	Weekly
Delimit living areas for contract workers	Damage to cultural landscape and archaeological deposits	▪ The contractor may not house any labourers except for security personnel at any stage on the sites to be rehabilitated.	Necessary On-going	Contractor, ECO	▪ No habitation on sites	Weekly
Provide water for construction purposes	Pollution and erosion	▪ Indicate to contractors where water can be obtained, for example for cement mixing as well as for drinking.	Necessary On-going	Contractor, ECO, SANParks	▪ Contractors shall only make use of or collect water from indicated sources	On-going
Prevent and control fires	Damage to vegetation and sites	▪ No fires permitted on construction sites without authority of the ECO. Cooking permitted only in areas designated by the ECO.	Necessary On-going	Contractor, Site Manager, ECO	▪ No fires	Weekly
Efficient waste disposal and handling	Litter	▪ Waste and litter bins to be provided at regular and strategic positions. No waste or litter to be burnt on site.	Necessary On-going	Contractor, Site Manager, ECO	▪ Waste and litter to be disposed of at a suitably registered and licensed disposal site.	Weekly
Provide safety on site for contract workers	Risk of injury to personnel	▪ First aid facilities to be on hand at all times. ▪ Adequate and mandatory safety precautions to be taken. ▪ Warning and advisory signage to be implemented. ▪ All workers must be aware that litter attracts certain animal pests ▪ Establish communication between remote camps and rangers for emergency situations ▪ Support sides of deep excavations to prevent collapse during rehabilitation	Necessary On-going	Contractor, ECO	▪ Contractors shall adhere to the prescriptions of the Occupational Health and Safety Act (Act 85 of 1993) and safety measures and work procedures and instructions shall be communicated to construction workers	On-going

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Set standards for use and storage of chemicals	Environmental damage	▪ Mixing of solvents, sealants, adhesives, paints, chemicals or other noxious materials shall only be undertaken in designated areas on aprons that have spillage control channels and separate storage areas. Provide for controlled loading and unloading areas with appropriate protection against soil and water pollution.	Necessary On-going	Contractor, ECO	▪ Equipment using fuel and/or oil must be placed on impervious paved storage. Fuel to be stored in bunded safe areas with 150% of the full capacity of the tank/s. Chemicals to be stored in weatherproof, secured facilities.	Weekly
Set standards for earthworks	Damage to cultural landscape and archaeological deposits	▪ No compaction and excavation activities (trenching, access road construction, site clearance and pedestrian pathways) allowed without approval of Archaeologist who has under taken an assessment of impact of earthworks. ▪ Replacement and rehabilitation should be progressive with construction and not left until the end.	Necessary On-going	Contractor, Archaeologist, ECO	▪ An archaeologist will be required on site during all earthworks to supervise and stop the work if necessary.	As required
Protect fauna	Adverse impact on wildlife	▪ No animals may be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors' employees ▪ No domesticated animals may be brought on site ▪ No poaching of fauna or flora will be tolerated ▪ Contractor shall advise workers of the penalties set out in the Animals Protection Act (Act 71 of 1962)	Necessary On-going	SANParks, ECO, Contractor	▪ Check for signs of poaching ▪ Check for evidence of animal kills ▪ Check for signs of domesticated animals	On-going
Protect chance finds and burials	Loss of information	▪ Ensure that all personnel are aware that no artefacts, burials or other material may be removed without a permit from SAHRA ▪ Criteria for issuing permit will depend on rarity of find, risk to safety of material and relationship to rehabilitation programme	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that chance finds and burials are removed only with a SAHRA permit	On-going
Protect trenches, sections and walling	Loss of *in situ* deposits; damage by rodents; impact of visitors	▪ Clean sections, sieve deposit, log sections, stabilize with sand bags and cover; ▪ Ask advice from zoologist to assess impact of rodents and elephants	Necessary Ongoing	Archaeologist, Contractor, SANParks	▪ Check that work is done according to specifications ▪ Take advice of zoologist as required	Ongoing
Report on rehabilitation process	Materials may need to be replaced or adjusted in future	▪ Ensure reports are received from VUKA and archaeologists and are placed on file	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that reports are received	Annually

4.2 Management of research: Key issues: Research policy and priorities; safety of surface artefacts and features; collections management and return of artefacts removed during excavations

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify research needs and priorities	Research opportunities may be lost if embargo is retained and clear policy is not in place	▪ Continue to suspend research until rehabilitation of site is complete ▪ Develop a research policy and priorities in consultation with all stakeholders, including De Beers ▪ Draft a 5-year plan ▪ Ensure publication of results of rehabilitation and research	Necessary Complete by end of 2003	SANParks, SAHRA, PC (as advised by ATG)	▪ Deliver policy before end of 2003 ▪ Assess research applications on merit ▪ Check publications	Annual, and every 3 and 6 years for mid-term and World Heritage review process
Protect and retain artefacts exposed by erosion	Loss of information and temptation for visitors to remove souvenirs	▪ Archaeologist/s to remove surface artefacts exposed by erosion in areas not frequented by tourists ▪ Advise guides and all visitors not to move or remove any artefacts ▪ Take fixed point photographs on surfaces with artefacts that are frequented by visitors and compare distribution of artefacts annually ▪ Remove artefacts from view if more than 75% of artefacts are lost over 3 years	Necessary Annual report on surface artefacts to ATG	SANParks, Archaeologists, SAHRA, PC (as advised by ATG)	▪ Advise archaeologists of exposed artefacts ▪ Check surface artefacts against photographs and list those missing ▪ Take new photographs as required.	Annually Assess impact of tourism on surface artefacts after three years
Collections management policy for return of artefacts from previous excavations to the site	Political pressure to return artefacts that have become provincial and national icons	▪ Budget for a world-class facility that will keep the artefacts safe at Hamilton ▪ Draft a collections policy for the facility; ▪ Assist the province to apply for the return of key artefacts	Necessary Establish protocol by end-2003	SANParks, SAHRA and PC (as advised by ATG)	▪ Check delivery of protocol ▪ Check facilities planned ▪ Facilitate return of key artefacts	Annual
Liaison with SAHRA permitting authority	SAHRA and SANParks could have differing policies	▪ SAHRA to send applications to the Park Manager and SANParks for approval	Necessary On-going	SANParks, Park Manager and SAHRA	▪ Review permits and reports	Annually

4.3 *Management of cultural landscape: Key issues*: Integrity and authenticity of features and landscape; intangible heritage of local communities; integration of cultural heritage resources management with wildlife and environmental management; procedures for management of disasters, fire and waste

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Retain significance of site features and landscape	Lack of integrity and authenticity diminishes visitor experience and significance of site	▪ Identify elements in the landscape that have tangible and intangible significance and ensure they retain their integrity ▪ Remove structures and power line ▪ Use boardwalks only when necessary to protect in situ deposits ▪ Draw up specifications for materials that blend with the landscape for paths, steps, stabilization, signage and on-site exhibits	Necessary Plans agreed 2002 Refine specifications by end 2003	SANParks, SAHRA, PC (as advised by ATG)	▪ Mark places of significance on a map of the site ▪ Check planned installations against specifications	On-going
Engage with local communities	Lack of consultation leads to dissatisfaction and adverse publicity from affected communities	▪ Engage with land owners and claimants; ▪ communicate with local communities; and ▪ involve them in promotion and conservation	Necessary	SANParks	▪ Check that meetings have been held and relevant people have been identified for consultation	On-going
Integrate cultural heritage resources with environmental management	Lack of co-ordination with cultural resources management leads to misunderstandings	▪ Integrate environmental and cultural heritage conservation management	Necessary Integrate plans by end 2003	SANParks and Park Committee	▪ Check that plans dovetail	Annually
Develop disaster planning and fire management	Lack of planning can add to damage caused by disasters	▪ Identify high risk areas and plan for potential problems caused by fire and natural and unusual erosion events	Necessary	SANParks	▪ Check that plans have been drawn up and are known to all staff	Annually
Efficient waste management	Litter detracts from significance of site	▪ Warn all visitors against littering ▪ Remove all litter from the site	Necessary	SANParks	▪ Check for litter and remove	Daily and weekly

4.4 *Management of tourism: Key issues:* Presentation of the site to visitors as a pilgrimage and wilderness experience; signage; establish carrying capacity of the site and control access; access routes and paths; information nodes for visitors

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
World-class presentation of site to visitors	Lack of a common vision and incorrect information can lead to bad visitor experience	▪ Workshop a common vision based on the World Heritage nomination and tourism report ▪ SAHRA to check printed information ▪ Distribute information to organisations responsible for guide training ▪ Train SANParks guides ▪ Prepare and print information leaflets on Schroda ▪ Inform all SANParks staff, land owners, tour guides and tour operators	Necessary Print basic information for all stake-holders by Dec 2003	SANParks, SAHRA, PC (as advised by ATG)	▪ Conduct workshop ▪ Check presentations by tour guides ▪ Check content of publications ▪ Publish and distribute leaflets	On-going
Stimulate a sense of pilgrimage and a wilderness experience for visitors	Guides and visitors may respond to different stimuli	▪ Agree on the principles to be included in a pilgrimage and wilderness experience ▪ Design a recommended route accordingly ▪ Make the concept known to all guides and tour operators	Necessary Principles March 2004 Implement end 2004	SANParks, SAHRA, PC (as advised by ATG)	▪ Check process is being followed ▪ Check all relevant stakeholders are involved and informed	Annually
Develop signage that blends with the landscape and offers accurate and interesting information	Poorly worded or decaying signage detracts from visitor experience	▪ Use low maintenance natural materials that blend with the environment ▪ Place signage in unobtrusive places ▪ Use wording that contributes to the common vision for the site ▪ National Heritage Resources Act requires that SAHRA check the wording of all signage at national heritage sites	Necessary Deliver plan for signage by March 2004. Erect signage by June 2004	SANParks, SAHRA, PC (as advised by ATG)	▪ ATG to approve materials ▪ SAHRA to approve wording 60 days before production ▪ Check for deterioration of materials ▪ Check for vandalism	Monthly
Establish and maintain carrying capacity of site to retain the ambience of the site	Over-use can lead to erosion, litter and loss of fabric and integrity	▪ Set initial upper limits to number of vehicles per day, group numbers and the number of groups per month ▪ Keep daily records of numbers of visitors to individual sites through entrance ticket or permit system ▪ Assess impact in annual review ▪ Review limits annually	Necessary Set initial upper limits by October 2003	SANParks, PC (as advised by ATG)	▪ Do not exceed limits ▪ Spot-check numbers ▪ Check paths, slopes, walling, artefacts and litter for change ▪ Review carrying capacity according to impact	Monthly and annually
Control access to site	Over-use will damage *in situ* deposits	▪ Limit size of visiting parties if necessary	Necessary Plan accepted 2002	SANParks	▪ Check for signs of over-use such as damage to in situ deposits	Annually

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Restrict visitors to paths	Unrestricted access leads to damage of *in situ* deposits and loss of surface artefacts	▪ Establish well designed paths with non-invasive and removable materials ▪ Inform all guides and tour operators that visitors may not step off designated paths ▪ Establish a path maintenance plan ▪ Monitor paths after heavy rains ▪ Consider using boardwalks if necessary	Necessary Path plans accepted 2002 Maintenance plan October 2003	SANParks, PC (as advised by ATG)	▪ Check path surrounds for signs of non-compliance ▪ Check state of path surfaces	Annually
Establish protocols regarding who is allowed to take visitors to sites and what charges will be made	Visitor numbers may not be properly recorded and controlled	▪ Archaeologists and other contractors and specialists may only take visitors to sites with permission from the Park Manager ▪ All visits and visitor numbers must be logged to indicate where they have been given permission to go ▪ Fees or free access for specialist visits to be reviewed annually by Park Manager according to level of use	Necessary Protocol to be established by October 2003	SANParks, PC (as advised by ATG), JMC	▪ Spot checks on visitor groups ▪ Analyse information in Park Manager's log book	Annually
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	▪ Do not erect toilets or any other structures that require foundations in the vicinity of Schroda site. ▪ Design information boards and displays with low visual impact on the views and vistas ▪ Consult SAHRA at least 60 days prior to installation on all displays and signage	Necessary Complete plans by March 2004	SANParks, SAHRA, PC (as advised by ATG)	▪ Check that no structures are planned or erected	Annually
Establish emergency procedure for visitor accidents	Park may be liable for damages if emergency procedure is not in place.	▪ Draw up written instructions for all tour leaders, specialists, contractors and other individuals and organisations responsible for visitor safety. ▪ Investigate indemnity forms, verbal warnings, signage and other forms of visitor safety information. ▪ Make all staff aware of emergency procedures by testing the system regularly.	Necessary Complete procedure by October 2003`	SANParks, JMC, PC	▪ Check that all relevant people and organisations have copies of emergency procedure. ▪ Check warning signage regularly ▪ Practise procedure annually	Annually

5. RECOMMENDATIONS FOR DEVELOPMENT

5.1 Park and Tourism Infrastructure: Key Issues: Management and monitoring programme; condition reporting; dissemination of information; appointment of professional officer for cultural resources

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Water	None available on site	Water should be brought in in containers only when required for specific projects such as drinking water for staff during rehabilitation	Necessary As required	SANParks	Check contractors remove containers when work has finished.
Energy	None available	None needed for tourism or cultural heritage resources management.	Not necessary		
Sanitation	None available	Portable toilets as required for staff for special projects	Necessary Check monthly	SANParks	Permanent toilets not permitted. Check that temporary toilets are not leaking.
Waste	No bins on site	No bins on site. Guides and tour operators to carry bags in which to remove waste	Necessary Check weekly	SANParks	Check sites and remove litter
Access road	Vehicle access onto site deposit was stopped in 2002	No vehicle access onto site deposits	Done Check monthly	SANParks	Spot check that visitors walk onto the site from vehicles parked east of deposits. Reinforce with information to guides.
Transport	Self-drive vehicles park east of site	Limit number of vehicles near site to avoid damage to vegetation and deposits	Necessary Check monthly	SANParks	Spot check that vehicles use designated parking area. Reinforce with information to guides.
Car park	Casual parking along access road	Demarcate parking area to avoid vehicles damaging vegetation or creating erosion spots	Necessary Oct 2003	SANParks	Check that demarcation is subtle and does not spoil the wilderness experience
Safety – fire	SANParks fire policy in place.	Avoid use of water to extinguish fires on archaeological sites	Necessary Check monthly and in drought	SANParks	Monitor vegetation for possible increase in fire risk.
Security and fencing	SANParks policy in place	No fencing required. Main gate to sites to be kept locked and manned once tourism increases	Necessary Oct 2003	SANParks	A gate keeper will be necessary to monitor visitor numbers and assist visitors without guides.
Paths	Paths are being created and upgraded as part of the rehabilitation programme	Paths must be made according to specifications and with minimum impact on *in situ* deposits	Necessary March 2004 and check monthly	SANParks	Check that paths are functional and repair when necessary

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	▪ Do not erect toilets or any other structures that require foundations in the vicinity of the site ▪ Design information boards and displays with low visual impact on the views and vistas	Necessary Complete plans by March 2004	SANParks	Check that no structures are planned or erected
Rehabilita-tion of old excavations	Vuka have implemented the rehabilitation plan in collaboration with archaeologists	Archaeologists to do detailed illustrated reports on what was done, where and how, for on-going management reference	Necessary March 2004 and check annually	SANParks	Use the report as a base-line condition report for annual monitoring until a detailed condition report is commissioned
Condition report	Report on rehabilitation work could serve as a temporary base-line	Commission or undertake an illustrated condition report on all cultural heritage resources at Schroda to serve as a base-line against which to measure and monitor change	Necessary October 2004	SANParks, SAHRA, PC (as advised by ATG)	Check that all cultural heritage resources are included and that photographs are taken of the present condition of each resource for comparative purposes. Keep report on file and make copies for use in the field.
Information leaflets	None available yet for Schroda	Basic information leaflet that includes statement of significance and visitor rules required. Check with SAHRA at least 60 days before printing.	Necessary Oct 2003 with annual update	SANParks, SAHRA,, PC (as advised by ATG)	Draft by the ATG and should include all the information a visitor must know to conserve the cultural and natural resources of the place and to enhance their experience
Information boards and displays	None at present	Planning to be done by a tourism expert in collaboration with SANParks, SAHRA and ATG	Necessary March 2004 and check annually	SANParks, SAHRA, PC (as advised by ATG)	Close collaboration with SAHRA required for information to be included. Check that boards and displays are in good repair and replace when necessary
Permanent staff	Manager, but no Archaeologist	A professional Archaeologist should be appointed to monitor and manage the cultural heritage resources in the Park	Necessary October 2003 and monthly	SANParks	Check on progress through monthly and annual reports.

K2 AND BAMBANDYANALO

Site Management Plan

SUMMARY OF KEY ISSUES FOR K2 AND BAMBANDYANALO

- Integrity and authenticity of site features and landscape
- Intangible heritage of local and pre-colonial communities
- Impact assessments required before intervention according to relevant legislation
- Permits required from SAHRA for all interventions, with separate permits for rehabilitation, development of paths and infrastructure, and research
- Rehabilitation of unfilled excavations and natural erosion features
- Management of poverty relief project
- Recording of all interventions
- Research policy and priorities, including review of moratorium on new excavations
- Safety of surface artefacts and features
- Return of artefacts removed during excavations
- Access routes and paths
- Carrying capacity of the site
- Presentation of the site to visitors
- Visitor facilities, information and signage
- Integrating cultural heritage resources with wildlife and environmental management
- Disaster, fire and waste management

1 STATEMENT OF SIGNIFICANCE

The Leopard's Kopje or K2 phase of occupation in the Mapungubwe Cultural Landscape dates from about AD 1020-AD 1220. The huge midden complex at K2 is by far the largest site of this time period and is significant because of its size, layout and contents.

In terms of layout, the K2 midden and its satellite homesteads is the largest known example in the MCL of a farming settlement arranged according to the Central Cattle Pattern with a central cattle kraal surrounded by pole and daga houses, middens and grain bins. This pattern changed during the period of occupation. After AD 1100, the cattle were no longer kept in the central kraal. After AD 1220, K2 was abandoned and the ruling elite moved to Mapungubwe Hill where they were separated from the commoners living below.

Analysis of the contents of the K2 midden shows increasing sophistication of pottery, metal and other artefacts. It also records the development of trade with the east coast of Africa that eventually led to the establishment of a ruling class and a fundamental change in social organisation. Some of the glass beads introduced by trade were subsequently melted down and re-formed into larger 'garden-roller' beads that are unique to the MCL. Excavations into the residential area also uncovered almost 100 human burials, mostly of children. Some of these date to the Mapungubwe period which indicates that the midden was still used for this purpose after the site was abandoned.

A more recent layer of history is present in the form of stone walling and occupation debris on Bambandyanalo Hill dating to the more recent Venda period, post AD 1500.

There is no physical evidence of occupation of the site and its immediate environs during the colonial period, apart from paths and access routes used by archaeologists, the Defence Force and visitors.

2 SITE DESCRIPTION

2.1 Site information

Farm name and number	Greefswald 37, Messina Magisterial District, Limpopo Province			
Co-ordinates	22.13.02.3S; 29.22.50.8E			
Altitude				
Owner	Republic of South Africa, Department of Environment Affairs and Tourism, SANParks			
Contact person	Bernard van Lente, SANParks, Tel/fax 015 534 0102			
Archaeological permit holders since 1989	A Meyer A Meyer A Meyer A. Meyer WC Nienaber WC Nienaber TN Huffman	Greefswald Greefswald Greefswald K2 Greefswald K2 K2	80/90/12/003/51 80/93/06/002/51 80/94/06/005/51 80/94/06/005/51 80/98/07/011/51 80/98/07/010/51 80/01/04/002/51	Exp. 01/12/1993 Exp. 01/07/1994 Exp. 01/07/1995 Exp. 01/07/1995 Exp. 01/08/1999 Exp. 01/08/1999 Exp. 01/06/2004
Designated respositories	University of Pretoria, University of the Witwatersrand, National Cultural History Museum			
Public access and visitation	Guided visits by appointment only			
SANParks zonation	Special Protection Zone			
Grading status	K2 declared a National Monument on 9 September 1983 Mapungubwe Cultural Landscape declared a National Heritage Site in July 2002			

2.2 Locality and description

The K2 complex is situated about 1km south-west of Mapungubwe Hill in a shallow valley between a sandstone ridge known as Bambandyanalo to the north-east, and a lower ridge to the south-west. The main site, situated in the middle of the valley, covers an area of about 5 hectares and is up to 6 m deep in places. The site is composed of ash, dung, burnt daga and soil that incorporates a large quantity of occupational debris including the bones of animals and the seeds of domesticated and wild plants eaten by the community, pottery, stone, bone, metal and clay artefacts, ceramic figurines, glass and ostrich eggshell beads, copper and ivory rings and bangles, and animal and human burials.

Satellite homesteads and middens surrounded the main kraal and extend to the southern slopes of Bambandyanalo Hill. The smaller midden, K1, lies less than 100m to the south-east and was probably part of the same complex.

The site was occupied between AD 1010 and 1220. At its zenith the settlement is estimated to have accommodated about 2 000 people.

2.3 Access

Vehicle access to the site is along a branch from the track to Mapungubwe Hill that leads to the south side of K2.

No vehicles are permitted on the surface of the midden.

2.4 Physical environment

Analysis and subsequent zonation of the natural and cultural resources by the Vhembe-Dongola National Park staff has placed K2 and Bambandyanalo in the following management zone:

"(a) Special Protection Zones

Sensitive areas that merit special exceptional protection because they represent or support unique, rare or threatened elements, or are otherwise regarded as of particular quality. No man-made structures will be permitted in such areas and access will either be strictly limited or totally forbidden."

Although no man-made structures are permitted in this zone, an exception has been made in the case of K2. An interpretive display is planned in one corner of the Gardner excavation where part of the original trench will be roofed over with a flat concrete slab covered with soil to create a secure environment for the display. The visual impact of the structure will be very low. Rehabilitation of the old excavations has included sandbagging and the construction of paths.

2.5 Previous and ongoing research

The first archaeological work was undertaken at K1 and K2 between 1934 and 1940 by Guy Gardner who investigated the stone walling on Bambandyanalo at the same time. He and his team excavated 13 trial pits around the perimeter of K2 and two test trenches through the midden during 1935, and followed this with much larger trenches from 1936 to 1940. In the course of the work in 1935 he concluded that K1 was not in primary context and consisted of material washed down from K2 by erosion after heavy rains. This assessment has been shown by subsequent research to be incorrect as most of K1 is in fact *in situ*.

The next fieldwork at K2 took place nearly 30 years later under the direction of Professor J F Eloff who excavated a test pit in the collapsed wall of Gardner's excavation in 1968. The University of Pretoria team conducted further excavations at K2 in 1972 and 1975, both in the main midden and on the southern slope of Bambandyanalo.

The site was surveyed and mapped from 1991-1995, and during this period further excavations were undertaken between 1993 and 1995 in collaboration with the Department of Anatomy at the University of Pretoria to recover burials and refine information on their association with the cattle kraal.

In 1998, following a recommendation by the Archaeology Task Group and SANParks, the National Monuments Council [now SAHRA] put a moratorium on all new research excavations in order to focus on the conservation of the deposits. In the course of the conservation work, sections of Gardner's and the University of Pretoria excavations were exposed, cleaned and logged before being stabilised with sand bags. Some rescue excavation of burials was necessary during this operation. The tender for the rehabilitation at K2 was awarded to Professor T N Huffman of the University of the Witwatersrand. W C Nienaber of the University of Pretoria has received separate permits for research excavations following the discovery of human burials that were under threat from erosion.

2.6 Site sensitivities and threats

Apart from the Venda walling on Bambandyanalo, most of the evidence for the Leopard's Kopje phase of occupation of K2 is buried below the present-day surface of the ground. Management must therefore be sensitive to the on-going processes that may threaten the integrity of *in situ* deposits and the spatial relationships between different parts of the site.

All developments and interventions must be subject to an impact assessment process that includes a survey and statement of significance of both cultural and natural heritage resources that will be affected.

It is important that a record of all interventions at the site be kept, including the rehabilitation process.

2.6.1 Sensitivities

The size of the K2 and related middens and homesteads makes them vulnerable to damage by vehicles, people, animals, water and wind. The vegetation is also a factor because not many plants grow on the ashy deposits and this increases the risk of wind and sheet erosion in drought years. With the change of land use to a National Park and the plans to re-introduce elephant and other large game, there is the additional risk of denudation of vegetation and the creation of dust bowls and other erosion features that expose the archaeological deposits beneath the surface.

Restricting access to certain parts of the site may help to protect deposits and should be carefully monitored.

In addition to the artefacts and other material recovered from the site, the University of Pretoria has a large archive consisting of thousands of documents, field notes and photographs relating to the history of K2, Bambandyanalo and Mapungubwe. If artefacts or documents are be moved from the University to the MCL, equally suitable premises must be provided for their safekeeping and long-term curation.

Monitoring of the site is best done against a base-line condition report so that change can be measured and controlled.

2.6.2 Threats

The following threats could damage the integrity of the archaeological deposits:

- Old excavation trenches that have not been filled in or are inadequately protected;
- Erosion gullies alongside paths, at the edge of the site in the floor of the valley and on the slopes of Bambandyanalo;
- Unskilled workers may inadvertently damage deposits while working on the rehabilitation of erosion gullies and old excavations;
- Vehicles can damage middens and other cultural deposits;
- Visitors with unrestricted access to K1, K2 and Bambandyanalo could damage walling, disturb *in situ* deposits, move or remove surface artefacts and leave litter;
- *In situ* deposits could be damaged if the walls and roof of the proposed viewing tunnel are not well designed;
- Stone walling on Bambandyanalo could collapse through gradual attrition from natural erosion;
- Signage can be intrusive;
- Elephants and other large game could affect cultural deposits in the site by denuding vegetation and eroding the surface;
- Unco-ordinated research can lead to unnecessary removal of irreplaceable deposits;
- Base-line condition reporting must identify and mark places where photographs are taken so that changes can be accurately measured.

2.7 Existing site management

The farm Greefswald is owned by the State and was transferred to SANParks to form part of the Vhembe-Dongola National Park that was formally gazetted on 7 April 2000. The property is managed, monitored and funded within the framework applied to all national parks. In terms of

the South African World Heritage Convention Act, SANParks will be the management authority appointed by the Department of Environmental Affairs and Tourism for the Mapungubwe Cultural Landscape if it is declared a World Heritage Site.

The Mapungubwe Cultural Landscape was declared a National Heritage Site in July 2002 by the South African Heritage Resources Agency (SAHRA). In terms of the National Heritage Resources Act: (No. 25 of 1999), SAHRA is responsible for the protection of the site in the following ways:

- a conservation management plan must be submitted for each national heritage site and responsibility for implementing such a plan can be delegated to the owner of the property if a formal heritage agreement is drawn up, in this case between SAHRA and SANParks;
- no person may destroy, damage, deface, excavate, alter, disturb, remove from its original position, subdivide or change the planning status of the site or archaeological and palaeontological deposits within it, without a permit issued by SAHRA;
- conditions pertaining to these permits are monitored by SAHRA in collaboration with SANParks;
- SANParks is responsible for maintaining the site according to minimum standards and a procedure to be prescribed by SAHRA in consultation with SANParks;
- SAHRA may make regulations, with the consent of SANParks, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees;
- SAHRA may call for a heritage impact assessment report if certain activities are likely to impact on heritage resources;
- the contents of on-site interpretive material or programmes for presentation of a national heritage site to the public must be submitted to SAHRA for approval at least 60 days in advance

K2 and Bambandyanalo, as part of the Vhembe-Dongola National Park, are managed by the Park Manager who is responsible for:

- regular monitoring of the site;
- reporting threats or damage to heritage resources;
- preparedness for natural disasters;
- implementing legal requirements for environmental impact assessments in advance of development;
- ensuring that heritage impact assessments are done prior to any developments that may affect heritage resources;
- informing permanent staff and contract workers of the significance of the site;
- preparing sites for tourism access;
- allowing access only to visitors who have made prior arrangements;
- ensuring that visitors may enter only with a guide approved by SANParks.

Tourism management will be addressed in more detail once the Park Interpretive Plan has been developed and accepted by all stakeholders.

3 MANAGEMENT OBJECTIVES FOR K2 AND BAMBANDYANALO

The objectives are to retain the significance of the site by;

- restoring, within reason, the integrity of the views and vistas of the landscape so that it is not interrupted by buildings, power lines or vehicle access roads;
- appointing a permanent staff member to manage the cultural heritage resources in the Park;
- integrating cultural heritage resources management and strategies with those for natural heritage resources at K1, K2 and Bambandyanalo;
- conserving *in situ* deposits and excavations against natural and human-induced erosion;
- minimising the visual impact of the archaeological excavations conducted between the 1930s and 1990s;
- protecting the artefacts and features that are exposed on the surface, particularly on the hilltop;
- controlling visitor access to minimize their impact on the fragile and irreplaceable deposits that still remain;
- developing an on-site exhibition that will allow visitors to experience the depth and complexity of the midden and residential deposits at K2;
- displaying artefacts removed during excavations;
- developing a policy for research and rehabilitation of archaeological deposits [e.g. continue the moratorium on archaeological excavations?];
- commissioning or undertaking a base-line condition report of the K2 site, rehabilitation areas and Bambandyanalo stone walling; and
- closely monitoring change against the base-line condition report so that policies and strategies can be altered if they are not working.

4 MANAGEMENT AND MONITORING

4.1 *Management of site rehabilitation: Key issues:* Conserving deposits against erosion; rehabilitation of unfilled excavations and natural erosion features; management of poverty relief project; reporting on rehabilitation process

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Assess impact before rehabilitation	Potential damage to *in situ* deposits if assessment not done	▪ Appoint independent Archaeologist to assess need for, and impact of, rehabilitation of old excavations on K2	Immediate Completed 2001	SANParks, PC (as advised by ATG). SAHRA	▪ SAHRA Archaeologist to review assessment report before issuing a permit	On receipt
Appoint experienced contractor	Inexperienced contractor may damage sites	▪ Advertise for tenders and draw up terms of reference and detailed plan. VUKA EMS Inc. appointed. Funding from Poverty Relief Programme. Training programme essential.	Necessary Appointed 2002	SANParks, PC (as advised by ATG), SAHRA	▪ Evaluate applicants according to previous experience with	As required
Appoint professional Archaeologist	Inexperience can damage sites or lead to unnecessary removal of deposits.	▪ Archaeologist to apply to SAHRA for permit and submit action plan for review. Make it clear that the purpose is protection of deposits, not research.	Necessary Appointed 2002	SAHRA with advice from ATG	▪ Appoint experienced person. No additional excavation allowed without a permit.	As required
Co-ordinate project planning	Un-coordinated rehabilitation work is inefficient	▪ Planning and co-ordination must be done in conjunction with SANParks, Environmental Control Officer (ECO) and Archaeology Task Group (ATG)	Immediate Plans approved 2002	SANParks, Contractor and permitted Archaeologists	▪ All parties to report to SANParks and ATG	Weekly
Draw up specifications for rehabilitation	Poor quality materials and workmanship will create further problems in the future	▪ Archaeologist to be present throughout rehabilitation of old excavations; ▪ Clean vertical sections and log stratigraphy; ▪ Sieve all deposit and sort, package and label finds; ▪ Fill sandbags with sieved residue; ▪ Bio-degradable sand bags to be used below ground and stronger bags above ground. ▪ Protect sandbags from sun and trampling.	Necessary Plans implemented 2002	Contractor, Archaeologist, ECO	▪ Regular inspections by ECO, SANParks, SAHRA and ATG. ▪ Check site is kept tidy and sand bags are covered at all times. ▪ Progress and final reports to be delivered.	As often as possible

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
EMP Training for rehabilitation workers	Workers not aware of significance and sensitivity of site. Theft and damage leads to loss of information and site integrity	▪ Ensure that all personnel are familiar with the aims of the Environmental Management Plan (EMP) and the statement of significance. ▪ No artefacts or other material may be moved, picked up or removed from the site without a permit.	Immediate Training by Vuka completed 2002 and 2003	All parties involved in the archaeological restoration project. The contractor shall familiarise all employees with the EMP contents, either in writing or verbally.	▪ ECO shall require written proof or confirmation from the contractor that EMP training has been done. ▪ Spot checks to ensure personnel are not removing artefacts.	Monthly
Disseminate information to heritage resources authorities	Loss of information through inadequate recording	▪ Any archaeological or historical material found accidentally must be reported to responsible Archaeologist or SAHRA ▪ Sections must be logged ▪ All work sites to be photographed before and after rehabilitation	Necessary Reports submitted to SAHRA in 2002	SANParks, Archaeologist, SAHRA	▪ Check sections are recorded and photographs are taken. ▪ Reports to be peer-reviewed	As required on permit
Delimit contract areas	Impact beyond areas requiring rehabilitation	▪ SANParks and Archaeologists must indicate to contractors the area of work for the duration of the contract, including access road to be used, construction lay-down areas, materials storage and delivery requirements, work stations, pedestrian routes and operational demarcation, etc.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ Maps to be signed off at the start of each contract. ▪ ▪ Check contractor works within demarcated areas	Immediate
		▪ Boundaries of the site and rehabilitation areas shall be demarcated by the Contractor, as instructed by SANParks and the Archaeologist, prior to any work commencing on the site. ▪ Any changes to the plans may necessitate re-permitting by SAHRA. ▪ Any changes must be recorded in writing.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ No encroachment beyond the demarcated boundaries to be permitted. Contractor must ensure all labour and materials remain within the boundaries of the site.	Weekly
Demarcate sensitive areas	Damage to archaeological sites	▪ Sensitive areas identified by SANParks and/or Archaeologists to be demarcated with danger tape. No activity may take place in such areas.	Immediate Ongoing	SANParks and Archaeologists	▪ Check that danger tape is in correct place	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
	Damage to ecologically sensitive sites	▪ Sensitive areas identified by SANParks to be demarcated with danger tape. No activity shall take place in these areas and no trees or bushes may be damaged or cut down unless by written consent of the ECO	Immediate Ongoing	SANParks, ECO and Contractor	▪ Check camps for contractor and employees only on sites approved by SANParks.	Weekly
Control erosion	Ongoing water and wind erosion leads to loss of deposit, topsoil and vegetation	▪ Stockpile topsoil for later re-use ▪ Exposed surfaces that are not archaeologically sensitive to be re-vegetated and/or sandbagged ▪ Protect all areas susceptible to erosion ▪ Slopes identified for protection should be stabilised at no steeper than 1(V):3(H)	Necessary Partially completed 2002 and ongoing	SANParks, Contractor and ECO	▪ Contractor shall not allow erosion to develop before effecting repairs and all erosion damage to be repaired as soon as possible.	On-going
Agree on hours of operation	Work at unauthorised times can lead to un-coordinated activities	▪ Contractor's and labourers' hours shall be the same as the operating hours of the Park.	Necessary Ongoing	Contractor	▪ Contractor to confirm hours of operation in writing	On-going
Indicate access roads	Damage to sites and deposits if correct access routes not used	▪ Only those roads agreed to between SANParks, Archaeologists and Contractor may be used	Immediate Ongoing	Contractor, ECO, SANParks and Archaeologists	▪ ECO to check access roads regularly	Weekly
		▪ Access roads must be planned to deviate around trees or other natural features marked out in an approved manner by SANParks	Immediate Ongoing	SANParks, ECO and Contractor	▪ ECO to check access roads regularly	Weekly
Provide access for construction vehicles	Temporary roads and off-road access can damage sites and interfere with integrity of cultural landscape	▪ No off-road driving allowed; temporary access roads must be rehabilitated after usage and width of roads restricted to maximum of 3 m.	Necessary Ongoing	Contractor and SANParks	▪ Check rehabilitation of temporary access roads against those agreed to satisfaction of SANParks.	As required
Demarcate areas for construction personnel	Un-coordinated movement can lead to damage of sites and landscape	▪ Contractor must ensure that all construction personnel, labourers and equipment remain within demarcated restoration sites at all times. Movement outside boundaries may be done only with permission from the ECO	Necessary Ongoing	Contractor and ECO	▪ Check that all work is done within demarcated areas.	Weekly
	Constant use of paths causes erosion	▪ Conveyor belts can be used to outline pedestrian routes and prevent impact on archaeological deposits. Confine pedestrian routes to paths maximum 1 m wide	Necessary On-going	Contractor and Archaeologist	▪ Monitor effect of conveyor belting to prevent undue erosion.	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Reduce impact of construction camps	Impact of camps can damage cultural landscape	▪ If construction camps or working stations are established, the camp must conform to all contractual issues and standards, include issues related to fires, ablution, sleeping facilities and waste management	Necessary On-going	Contractor, ECO and SANParks	▪ Inspect camps and working stations and check against contractual issues	Weekly
Provide efficient toilet facilities	Could be unsightly and a health hazard	▪ Minimum of one chemical toilet per 10 persons at sites to be agreed with the ECO. ▪ No abluting anywhere other than in toilets. ▪ Waste shall be disposed of at a location and in a manner that involves no pollution or degradation of the environment. ▪ If spillage occurs, toilets must be placed on a solid base.	Necessary Ongoing	Contractor, ECO	▪ Check construction site is maintained in a sanitary condition and all toilet facilities are maintained in good order. There shall be no spillage of chemicals at any time.	Weekly
Delimit living areas for contract workers	Damage to cultural landscape and archaeological deposits	▪ The contractor may not house any labourers except for security personnel at any stage on the sites to be rehabilitated.	Necessary On-going	Contractor, ECO	▪ No habitation on sites	Weekly
Provide water for construction purposes	Pollution and erosion	▪ Indicate to contractors where water can be obtained, for example for cement mixing as well as for drinking.	Necessary On-going	Contractor, ECO, SANParks	▪ Contractors shall only make use of or collect water from indicated sources	On-going
Prevent and control fires	Damage to vegetation and sites	▪ No fires permitted on construction sites without authority of the ECO. Cooking permitted only in areas designated by the ECO.	Necessary On-going	Contractor, Site Manager, ECO	▪ No fires	Weekly
Efficient waste disposal and handling	Litter	▪ Waste and litter bins to be provided at regular and strategic positions. No waste or litter to be burnt on site.	Necessary On-going	Contractor, Site Manager, ECO	▪ Waste and litter to be disposed of at a suitably registered and licensed disposal site.	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Provide safety on site for contract workers	Risk of injury to personnel	▪ First aid facilities to be on hand at all times. ▪ Adequate and mandatory safety precautions to be taken. ▪ Warning and advisory signage to be implemented. ▪ All workers must be aware that litter attracts certain animal pests ▪ Establish communication between remote camps and rangers for emergency situations ▪ Support sides of deep excavations to prevent collapse during rehabilitation	Necessary On-going	Contractor, ECO	▪ Contractors shall adhere to the prescriptions of the Occupational Health and Safety Act (Act 85 of 1993) and safety measures and work procedures and instructions shall be communicated to construction workers	On-going
Set standards for use and storage of chemicals	Environmental damage	▪ Mixing of solvents, sealants, adhesives, paints, chemicals or other noxious materials shall only be undertaken in designated areas on aprons that have spillage control channels and separate storage areas. Provide for controlled loading and unloading areas with appropriate protection against soil and water pollution.	Necessary On-going	Contractor, ECO	▪ Equipment using fuel and/or oil must be placed on impervious paved storage. Fuel to be stored in bunded safe areas with 150% of the full capacity of the tank/s. Chemicals to be stored in weatherproof, secured facilities.	Weekly
Set standards for earthworks	Damage to cultural landscape and archaeological deposits	▪ No compaction and excavation activities (trenching, access road construction, site clearance and pedestrian pathways) allowed without approval of Archaeologist who has under taken an assessment of impact of earthworks. ▪ Replacement and rehabilitation should be progressive with construction and not left until the end.	Necessary On-going	Contractor, Archaeologist, ECO	▪ An archaeologist will be required on site during all earthworks to supervise and stop the work if necessary.	As required
Protect fauna	Adverse impact on wildlife	▪ No animals may be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors' employees ▪ No domesticated animals may be brought onto the site ▪ No poaching of fauna or flora will be tolerated ▪ Contractor shall advise workers of the penalties set out in the Animals Protection Act (Act 71 of 1962)	Necessary On-going	SANParks, ECO, Contractor	▪ Check for signs of poaching ▪ Check for evidence of animal kills ▪ Check for signs of domesticated animals	On-going

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Protect chance finds and burials	Loss of information	▪ Ensure that all personnel are aware that no artefacts, burials or other material may be removed without a permit from SAHRA ▪ Criteria for issuing permit will depend on rarity of find, risk to safety of material and relationship to rehabilitation programme	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that chance finds and burials are removed only with a SAHRA permit	On-going
Protect trenches, sections and walling	Loss of *in situ* deposits; damage by rodents; impact of visitors	▪ Clean sections, sieve deposit, log sections, stabilize with sand bags and cover; ▪ Ask advice from zoologist to assess impact of rodents and elephants	Necessary Ongoing	Archaeologist, Contractor, SANParks	▪ Check that work is done according to specifications ▪ Take advice of zoologist as required	Ongoing
Report on rehabilitation process	Materials may need to be replaced or adjusted in future	▪ Ensure reports are received from VUKA and archaeologists and are placed on file	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that reports are received	Annually

4.2 *Management of research: Key issues*: Research policy and priorities; safety of surface artefacts and features; collections management and return of artefacts removed during excavations

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify research needs and priorities	Research opportunities may be lost if embargo is retained and clear policy is not in place	▪ Continue to suspend research until rehabilitation of major sites is complete ▪ Develop a research policy and priorities in consultation with all stakeholders ▪ Draft a 5-year plan ▪ Ensure publication of results of rehabilitation and research	Necessary Complete by end of 2003	SANParks, PC (as advised by ATG), SAHRA	▪ Deliver policy before end of 2003 ▪ Assess research applications on merit ▪ Check publications	Annual, and every 3 and 6 years for mid-term and World Heritage review process
Protect and retain artefacts exposed by erosion	Loss of information and temptation for visitors to remove souvenirs	▪ Archaeologist/s to remove surface artefacts exposed by erosion in areas not frequented by tourists ▪ Advise guides and all visitors not to move or remove any artefacts ▪ Take fixed point photographs on surfaces with artefacts that are frequented by visitors and compare distribution of artefacts annually ▪ Remove artefacts from view if more than 75% of artefacts are lost over 3 years	Necessary Annual report on surface artefacts on K2 and Bamban-dyanalo	SANParks, PC (as advised by ATG), Archaeologists, SAHRA	▪ Advise archaeologists of exposed artefacts ▪ Check surface artefacts against photographs and list those missing ▪ Take new photographs as required.	Annually Assess impact of tourism on surface artefacts after three years
Collections management policy for return of artefacts from previous excavations to the site	Political pressure to return artefacts that have become provincial and national icons	▪ Budget for a world-class facility that will keep the artefacts safe at a facility in the Park; ▪ Draft a collections policy for the facility; ▪ Assist the province to apply for the return of key artefacts	Necessary Establish protocol by end-2003	SANParks, SAHRA and PC (as advised by ATG)	▪ Check delivery of protocol ▪ Check facilities planned ▪ Facilitate return of key artefacts	Annual
Liaison with SAHRA permitting authority	SAHRA and SANParks could have differing policies	▪ SAHRA to send applications to the Park Manager and SANParks for approval	Necessary On-going	SANParks, Park Manager and SAHRA	▪ Review permits and reports	Annually

4.3 *Management of cultural landscape: Key issues*: Integrity and authenticity of features and landscape; intangible heritage of local communities; integration of cultural heritage resources management with wildlife and environmental management; procedures for management of disasters, fire and waste

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Retain significance of site features and landscape	Lack of integrity and authenticity diminishes visitor experience and significance of site	▪ Identify elements in the landscape that have tangible and intangible significance and ensure they retain their integrity ▪ Use boardwalks only when necessary to protect in situ deposits ▪ Draw up specifications for materials that blend with the landscape for paths, steps, stabilization, signage and on-site exhibits	Necessary Plans agreed 2002 Refine specifications by end 2003	SANParks, PC (as advised by ATG), SAHRA	▪ Mark places of significance on a map of the site ▪ Check planned installations against specifications	On-going
Engage with local communities	Lack of consultation leads to dissatisfaction and adverse publicity from affected communities	▪ Engage with land owners and claimants; ▪ Communicate with local communities; and ▪ involve them in promotion and conservation	Necessary	SANParks	▪ Check that meetings have been held and relevant people have been identified for consultation	On-going
Integrate cultural heritage resources with environmental management	Lack of co-ordination with cultural resources management leads to misunderstandings	▪ Integrate environmental and cultural heritage conservation management	Necessary Integrate plans by end 2003	SANParks and PC (as advised by ATG)	▪ Check that plans dovetail	Annually
Develop disaster planning and fire management	Lack of planning can add to damage caused by disasters	▪ Identify high risk areas and plan for potential problems caused by fire and natural and unusual erosion events	Necessary	SANParks	▪ Check that plans have been drawn up and are known to all staff	Annually
Efficient waste management	Litter detracts from significance of site	▪ Warn all visitors against littering ▪ Remove all litter from the site	Necessary	SANParks	▪ Check for litter and remove	Daily and weekly

4.4 *Management of tourism: Key issues:* Presentation of the site to visitors as a pilgrimage and wilderness experience; signage; establish carrying capacity of the site and control access; access routes and paths; information nodes for visitors

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
World-class presentation of site to visitors	Lack of a common vision and incorrect information can lead to bad visitor experience	▪ Workshop a common vision based on the World Heritage nomination and tourism report ▪ Prepare and print information leaflets on K2 and Bambandyanalo ▪ SAHRA to check printed information ▪ Distribute information to organisations responsible for guide training ▪ Train SANParks guides ▪ Inform all SANParks staff, land owners, tour guides and tour operators	Necessary Print basic information for all stake-holders by Dec 2003	SANParks, SAHRA, PC (as advised by ATG)	▪ Conduct workshop ▪ Check presentations by tour guides ▪ Check content of publications ▪ Publish and distribute leaflets	On-going
Stimulate a sense of pilgrimage and a wilderness experience for visitors	Guides and visitors may respond to different stimuli	▪ Agree on the principles to be included in a pilgrimage and wilderness experience ▪ Design a recommended route accordingly ▪ Make the concept known to all guides and tour operators	Necessary Principles March 2004 Implement end 2004	SANParks, PC (As advised by ATG), SAHRA	▪ Check process is being followed ▪ Check all relevant stakeholders are involved and informed	Annually
Develop signage that blends with the landscape and offers accurate and interesting information	Poorly worded or decaying signage detracts from visitor experience	▪ Use low maintenance natural materials that blend with the environment ▪ Place signage in unobtrusive places ▪ Use wording that contributes to the common vision for the site ▪ National Heritage Resources Act requires that SAHRA check the wording of all signage at national heritage sites at least 60 days before installation	Necessary Deliver plan for signage by March 2004. Erect signage by June 2004	SANParks, PC (as advised by ATG), SAHRA	▪ ATG to approve materials ▪ SAHRA to approve wording 60 days before production ▪ Check for deterioration of materials ▪ Check for vandalism	Monthly
Establish and maintain carrying capacity of site to retain the ambience of the site	Over-use can lead to erosion, litter and loss of fabric and integrity	▪ Set initial upper limits to number of vehicles per day, group numbers and the number of groups per month ▪ Keep daily records of numbers of visitors to individual sites through entrance ticket or permit system ▪ Assess impact in annual review ▪ Review limits annually	Necessary Set initial upper limits by October 2003	SANParks, PC (as advised by ATG)	▪ Do not exceed limits ▪ Spot-check numbers ▪ Check paths, slopes, walling, artefacts and litter for change ▪ Review carrying capacity according to impact	Monthly and annually

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Control access to K1, K2 and Bamban-dyanalo	Over-use will damage original fabric and *in situ* deposits	▪ Limit size of visiting parties	Necessary Plan accepted 2002	SANParks	▪ Check for signs of over-use such as damage to walling, in situ deposits and features	Annually
Restrict visitors to paths	Unrestricted access leads to damage of *in situ* deposits and loss of surface artefacts	▪ Establish well designed paths with non-invasive and removable materials such as concrete ▪ Inform all guides and tour operators that visitors may not step off designated paths ▪ Establish a path maintenance plan ▪ Monitor paths after heavy rains ▪ Consider using boardwalks if necessary	Necessary Path plans accepted 2002 Maintenance plan October 2003	SANParks, PC (as advised by ATG)	▪ Check path surrounds for signs of non-compliance ▪ Check state of path surfaces	Annually
Establish protocols regarding who is allowed to take visitors to sites and what charges will be made	Visitor numbers may not be properly recorded and controlled	▪ Archaeologists and other contractors and specialists may only take visitors to sites with permission from the Park Manager ▪ All visits and visitor numbers must be logged to indicate where they have been given permission to go ▪ Fees or free access for specialist visits to be reviewed annually by Park Manager according to level of use	Necessary Protocol to be established by October 2003	SANParks, PC (as advised by ATG), JMC	▪ Spot checks on visitor groups ▪ Analyse information in Park Manager's log book	Annually
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	▪ Do not erect toilets or any other structures that require foundations in the vicinity of K2 and Bambandyanalo ▪ Design information boards and displays with low visual impact on the views and vistas ▪ Consult SAHRA at least 60 days prior to installation on all displays and signage	Necessary Complete plans by March 2004	SANParks, SAHRA, PC (as advised by ATG)	▪ Check that no structures are planned or erected	Annually
Establish emergency procedure for visitor accidents	Park may be liable for damages if emergency procedure is not in place.	▪ Draw up written instructions for all tour leaders, specialists, contractors and other individuals and organisations responsible for visitor safety. ▪ Investigate indemnity forms, verbal warnings, signage and other forms of visitor safety information. ▪ Make all staff aware of emergency procedures by testing the system regularly.	Necessary Complete procedure by October 2003`	SANParks, JMC, PC	▪ Check that all relevant people and organisations have copies of emergency procedure. ▪ Check warning signage regularly ▪ Practise procedure annually	Annually

5. RECOMMENDATIONS FOR DEVELOPMENT

5.1 Park and Tourism Infrastructure: Key Issues: Management and monitoring programme; condition reporting; dissemination of information; appointment of professional officer for cultural resources

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Water	None available on site	Water should be brought in in containers only when required for specific projects such as drinking water for staff during rehabilitation	Necessary As required	SANParks	Check contractors remove containers when work has finished.
Energy	None available, but ensure that re-routing of De Beers power line does not interfere with visual impact	None needed for tourism or cultural heritage resources management. Power line to be re-routed. Negotiate with Eskom re re-routing of powerline and commission impact assessment for new route. SAHRA to assess impact assessment and issue permits if required	Necessary Complete by March 2004	SANParks, Eskom, SAHRA	▪ Check that new route does not interfere with cultural heritage or natural heritage resources. ▪ Check that relevant permit has been obtained from SAHRA if required.
Sanitation	None available	▪ Portable toilets as required for staff for special projects ▪ Eco-friendly toilets to be situated away from key sites ▪ Establish regular cleaning regimen for toilets	Necessary Check monthly	SANParks	▪ Permanent toilets not permitted in view of key sites. ▪ Check that temporary toilets are not leaking. ▪ Check eco-friendly toilets weekly
Waste	No bins on site	No bins on site. Guides and tour operators to carry bags in which to remove waste	Necessary Check weekly	SANParks	Check sites and remove litter
Access road	Vehicle access onto terrace deposits was stopped in 2002	No vehicle access onto terrace deposits	Done Check monthly	SANParks	Spot check that visitors walk onto the site from vehicles parked south of the water course. Reinforce with information to guides.
Transport	Self-drive vehicles park south of site	Limit number of vehicles near site to avoid damage to vegetation and deposits	Necessary Check monthly	SANParks	Spot check that vehicles use designated parking area. Reinforce with information to guides.
Car park	Casual parking at entrance gate. Limited parking in vicinity of K2	Demarcate parking area near K2 to avoid vehicles damaging vegetation or creating erosion spots	Necessary Oct 2003	SANParks	Check that demarcation is subtle and does not spoil the wilderness experience
Safety – fire	SANParks fire policy in place	Avoid use of water to extinguish fires on archaeological sites	Necessary Check monthly and in drought	SANParks	Monitor vegetation for possible increase in fire risk.

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Security and fencing	SANParks policy in place	No fencing required. Main gate to sites to be kept locked and manned once tourism increases	Necessary Oct 2003	SANParks	A gate keeper will be necessary to monitor visitor numbers and assist visitors without guides.
Paths	Paths are being created and upgraded as part of the rehabilitation programme	Paths must be made according to specifications and with minimum impact on *in situ* deposits	Necessary March 2004 and check monthly	SANParks	Check that paths are functional and repair when necessary
Design suitable access routes around K2 and Bamban-dyanalo	Over-use of access routes could cause further damage to original fabric and could be a safety hazard	▪ Use materials that are removable and non-invasive ▪ Monitor effect of increased traffic on route ▪ Warn visitors that they use the route at their own risk	Necessary Implement by October 2003	SANParks	▪ Check that materials used are non-invasive Check insurance risks
Rehabilita-tion of old excavations	Vuka are implementing the rehabilitation plan in collaboration with archaeologists	Archaeologists to do detailed illustrated reports on what was done, where and how, for on-going management reference	Necessary March 2004 and check annually	SANParks	Use the report as a base-line condition report for annual monitoring until a detailed condition report is commissioned
Condition report	Report on rehabilitation work could serve as a temporary base-line	Commission or undertake an illustrated condition report on all cultural heritage resources at K1, K2 and Bambandyanalo to serve as a base-line against which to measure and monitor change	Necessary October 2004	SANParks, PC (as advised by ATG), SAHRA	Check that all cultural heritage resources are included and that photographs are taken of the present condition of each resource for comparative purposes. Keep report on file and make copies for use in the field.
Information leaflets	None available yet for K2 and Bambandyanalo	Basic information leaflets that include statement of significance and visitor rules are required Check with SAHRA at least 60 days before printing.	Necessary Oct 2003 with annual update	SANParks, PC (as advised by ATG), SAHRA	Draft by the ATG and should include all the information a visitor must know to conserve the cultural and natural resources of the place and to enhance their experience
Information boards and displays	None at present, apart from the national monument plaque	Planning to be done by a tourism expert in collaboration with SANParks, SAHRA and ATG	Necessary March 2004 and check annually	SANParks, PC (as advised by ATG), SAHRA	Close collaboration with SAHRA required for information to be included. Check that boards and displays are in good repair and replace when necessary
Permanent staff	Manager, but no Archaeologist	A professional Archaeologist must be appointed to monitor and manage the cultural heritage resources in the Park	Necessary October 2003 and monthly	SANParks	Check on progress through monthly and annual reports.

LEOKWE HILL

Site Management Plan

SUMMARY OF KEY ISSUES FOR LEOKWE HILL

- Integrity and authenticity of site features and landscape
- Impact assessments required before intervention according to relevant legislation
- Permits required from SAHRA for all interventions, with separate permits for rehabilitation, development of paths and infrastructure, and research
- Rehabilitation of natural erosion features, especially alongside paths
- Recording of all interventions
- Research policy and priorities
- Conservation of features associated with rain making
- Safety of surface artefacts and features
- Access routes and paths
- Carrying capacity of the site
- Presentation of the site to visitors
- Visitor facilities, information and signage
- Integrating cultural heritage resources with wildlife and environmental management
- Disaster, fire and waste management

1 STATEMENT OF SIGNIFICANCE

Leokwe Hill has many layers of history from the Stone Age through Zhizo, K2, Mapungubwe and Venda periods of the Iron Age. The Iron Age sites on and around Leokwe Hill are significant because they offer an insight into the complexities of the sociopolitical system in the area at around AD 1200. On the high status hilltop are Leopard's Kopje ceramics like those at K2, while on the terrace below the ceramics incorporate Zhizo elements derived from earlier settlements such as Schroda.

The Leokwe-Zhizo pottery from the terrace site is contemporary with the Zhizo-derived site of Toutswe in eastern Botswana, but is much later than the Zhizo phase itself at Schroda. Because the pottery from the hilltop site belongs to the later Leopard's Kopje K2 phase, it has been suggested that the Leokwe-Zhizo people on the Leokwe Hill terrace represent some of the original population that stayed behind when immigrant Shona-speaking Leopard's Kopje people settled at K2 and most of the Zhizo people from Schroda moved westwards to Botswana.

It is possible that Leopard's Kopje/K2 elite inhabited the high status area on the hilltop with Leokwe-Zhizo commoners below, but it is also possible that the two sites were not occupied simultaneously. Calabrese interprets it as reflecting a more complex regional sociopolitical system than a simple replacement of Zhizo with Leopard's Kopje and one that incorporated some Zhizo people.

Zhizo people who remained may have formed a reciprocal relationship with the new immigrants while still maintaining their cultural identity as expressed in their pottery. Huffman suggests they could have maintained this identity as healers and rainmakers. With an older link to the landscape than the immigrants had, they would have been ritually closer to the spirits that control

rain and healing. The implication is that the archaeological remains on the hill may relate to rain-making rather than to residential occupation.

Venda walling is present on the hill to the north-east and is possibly related to occupation of the area by the Venda chief, Machete.

The only physical signs of occupation of the site and its immediate environs during the colonial period are paths and access roads.

2 SITE DESCRIPTION

2.1 Site information

Farm name and number	Little Muck 26, Messina Magisterial District, Limpopo Province
Co-ordinates	22.15.20 South, 29.16.00 East
Altitude	
Owner	Friends of Peace Parks, with contractual agreement with SANParks
Contact person	Bernard van Lente, SANParks, Tel/fax 015 534 0102 Graham Main, De Beers, Tel. 053 831 1854, Fax 053 833 1421
Archaeological permit holders since 1989	J. Calabrese, permit no. 80/96/04/006/51, expiry 01/05/1999, for excavation
Designated respositories	University of the Witwatersrand
Public access and visitation	Guided visits by appointment only
SANParks zonation	Special Protection Zone
Grading status	Mapungubwe Cultural Landscape declared a National Heritage Site in July 2002

2.2 Locality and description

Leokwe is a long narrow east-west ridge with a saddle at the western end that separates it from a lower hilltop (Area A) overlooking the Kolope River draining towards the Limpopo River about 7 km to the north. Mapungubwe Hill and K2 lie about 13 km to the east. A collapsed dry stone wall at one time restricted access to the saddle and the hilltop. Terraces with further evidence for Iron Age habitation are located to the north of the hill.

Excavations at Area A on the western hilltop have revealed remnants of hut floors, daga walling, mostly Leopard's Kopje ceramics but with 4% belonging to the Zhizo tradition, glass, metal and shell beads, metal artefacts and grindstones, but no signs of cattle kraals.

In Area B on the terrace below and north-east of the hill, excavations sampled an ash midden and cattle kraal and at least one hut. In addition to artefacts similar to those found in Area A were spindle whorls. However, the ceramics were mostly of the Zhizo tradition with 5% Leopard's Kopje/K2.

Calibrated radiocarbon dates place both the Area A and Area B settlements within the time span from AD 1160-1215, i.e. towards the end of the period of occupation of K2 and contemporary with the Zhizo site at Toutswe in Botswana.

2.3 Access

Vehicle access to the site is along a track that leads from the main road down towards the Limpopo River.

2.4 Physical environment

Analysis and subsequent zonation of the natural and cultural resources by the Vhembe-Dongola National Park staff has placed Leokwe Hill and adjacent terraces in the following management zone. No displays are planned at the site.

(a) Special Protection Zones

Sensitive areas that merit special exceptional protection because they represent or support unique, rare or threatened elements, or are otherwise regarded as of particular quality. No man-made structures will be permitted in such areas and access will either be strictly limited or totally forbidden.

2.5 Previous and ongoing research

The first excavations undertaken at Leokwe Hill were done in the 1990s by John Calabrese, formerly at the Department of Archaeology, University of the Witwatersrand. The material recovered is housed at the Archaeology Department at the University of the Witwatersrand.

In the 1990s programme, 65 sq m were excavated on the western hilltop (Area A). The deposits were relatively shallow and no change through time in the ceramics were noted indicating that the site was not occupied over a long period. In Area B on the northern terrace, 30 sq m were excavated to bedrock and, again, no changes were detected through time.

A current research project by Alex Schoeman of the University of the Witwatersrand is aimed at trying to distinguish between rainmaking and residential debris at both rainmaking hills and commoner sites around Leokwe Hill and at sites on the farm Rhodes Drift.

2.6 Site sensitivities and threats

There is not much for the casual visitor to see at Leokwe Hill apart from the setting of the site and the Venda walling. For this reason, and because of the fragility of the deposits, it should not be one of the major attractions for tourism.

All developments and interventions must be subject to an impact assessment process that includes a survey and statement of significance of both cultural and natural heritage resources that will be affected.

It is important that a record of all interventions, including reports on the rehabilitation process, be kept on file in the Park so that changes can be monitored.

2.6.1 Sensitivities

Restricting access to certain parts of the site may help to protect deposits and should be carefully monitored. Monitoring is best done against a base-line condition report so that change can be measured and controlled.

The access road should not go over *in situ* deposits on the terrace. Some minor erosion around paths needs to be addressed.

2.6.2 Threats

The following threats could damage the integrity of the archaeological deposits:

- Unskilled workers may inadvertently damage deposits while working on the rehabilitation of erosion gullies and access roads;
- Vehicles can damage middens and other cultural deposits;

- Visitors with unrestricted access could damage or disturb *in situ* deposits, move or remove surface artefacts, and leave litter;
- Signage can be intrusive;
- Elephants and other large game could affect cultural deposits in the midden by denuding vegetation and eroding the surface;
- Unco-ordinated research can lead to unnecessary removal of irreplaceable deposits;
- Base-line condition reporting should identify and mark places where photographs are taken so that changes can be accurately measured.

2.7 Existing site management

The farm Little Muck, on which Leokwe Hill is situated, is owned by the Friends of Peace Parks and is used predominantly for game ranching. It is managed by SANParks according to a contractual agreement with De Beers Consolidated Mines Ltd and forms part of the Vhembe-Dongola National Park that was formally gazetted on 7 April 2000. The property is managed, monitored and funded within the framework applied to all national parks. In terms of the South African World Heritage Convention Act, SANParks will be the management authority appointed by the Department of Environmental Affairs and Tourism for the Mapungubwe Cultural Landscape if it is declared a World Heritage Site.

The Mapungubwe Cultural Landscape was declared a National Heritage Site in July 2002 by the South African Heritage Resources Agency (SAHRA). In terms of the National Heritage Resources Act: (No. 25 of 1999), SAHRA is responsible for the protection of the site in the following ways:

- a conservation management plan must be submitted for each national heritage site and responsibility for implementing such a plan can be delegated to the owner of the property if a formal heritage agreement is drawn up, in this case between SAHRA and SANParks;
- no person may destroy, damage, deface, excavate, alter, disturb, remove from its original position, subdivide or change the planning status of the site or archaeological and palaeontological deposits within it, without a permit issued by SAHRA;
- conditions pertaining to these permits are monitored by SAHRA in collaboration with SANParks;
- SANParks is responsible for maintaining the site according to minimum standards and a procedure to be prescribed by SAHRA in consultation with SANParks;
- SAHRA may make regulations, with the consent of SANParks, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees;
- SAHRA may call for a heritage impact assessment report if certain activities are likely to impact on heritage resources;
- the contents of on-site interpretive material or programmes for presentation of a national heritage site to the public must be submitted to SAHRA for approval at least 60 days in advance

Little Muck, as part of the Vhembe-Dongola National Park, is managed contractually by the Joint Management Committee with the Park Manager as the mandated official who is responsible for:

- regular monitoring of the site;
- reporting threats or damage to heritage resources;
- preparedness for natural disasters;
- implementing legal requirements for environmental impact assessments in advance of development;
- ensuring that heritage impact assessments are done prior to any developments that may affect heritage resources;

- informing permanent staff and contract workers of the significance of the site;
- preparing sites for tourism access;
- allowing access only to visitors who have made prior arrangements;
- ensuring that visitors may enter only with a guide approved by SANParks.

3 MANAGEMENT OBJECTIVES FOR LEOKWE HILL

The objectives are to retain the significance of the site by:

- retaining the integrity of the views and vistas of the landscape so that it is not interrupted by buildings, power lines or vehicle access roads;
- appointing a permanent staff member to manage the cultural heritage resources in the Park;
- integrating cultural heritage resources management and strategies with those for natural heritage resources at Leokwe Hill;
- conserving *in situ* deposits and excavations against natural and human-induced erosion by completing the rehabilitation programme;
- minimising the visual impact of interventions;
- recording all interventions;
- protecting artefacts and features that are exposed on the surface;
- controlling visitor access to minimize impact on the fragile and non-renewable deposits;
- developing low-key signage that will allow visitors to appreciate the setting of Leokwe Hill and its significance in the history of the MCL as a rainmaking site;
- displaying artefacts removed during excavations at the information centre on Hamilton;
- developing a policy for research at the site;
- commissioning or undertaking a base-line condition report of the site; and
- closely monitoring change against the condition report so that policies and strategies can be altered if they are not working.

4 MANAGEMENT AND MONITORING

4.1 *Management of site rehabilitation: Key issues:* Conserving deposits against erosion

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Assess impact before conservation	Potential damage to *in situ* deposits if assessment not done	▪ Appoint independent Archaeologist to assess need for, and impact of, rehabilitation of erosion features on Leokwe Hill	Immediate Completed 2001	SANParks, SAHRA, PC (as advised by ATG)	▪ Review of assessment report by SAHRA prior to permitting	On receipt
Appoint experienced contractor	Inexperienced contractor may damage sites	▪ Advertise for tenders and draw up terms of reference and detailed plan. VUKA EMS Inc. appointed. Funding from Poverty Relief Programme. Training programme essential.	Necessary Appointed 2002	SANParks and ATG	▪ Evaluate applicants according to previous experience with	As required
Appoint professional Archaeologist	Inexperience can damage sites or lead to unnecessary removal of deposits.	▪ Archaeologist to apply to SAHRA for permit and submit action plan for review. Make it clear that the purpose is protection of deposits, not research.	Necessary Appointed 2002	SAHRA and PC (as advised by ATG)	▪ Appoint experienced person. No additional excavation allowed without a permit.	As required
Co-ordinate project planning	Un-coordinated rehabilitation work is inefficient	▪ Planning and co-ordination must be done in conjunction with SANParks, Environmental Control Officer (ECO) and Archaeology Task Group (ATG)	Immediate Plans approved 2002	SANParks, Contractor and permitted Archaeologists	▪ All parties to report to SANParks and ATG	Weekly
Draw up specifications for rehabilitation	Poor quality materials and workmanship will create further problems in the future	▪ Archaeologist to be present throughout rehabilitation of old excavations; ▪ Sieve all deposit and sort, package and label finds; ▪ Fill sandbags with sieved residue; ▪ Bio-degradable sand bags to be used below ground and stronger bags above ground. ▪ Protect sandbags from sun and trampling.	Necessary Plans implemented 2002	Contractor, Archaeologist, ECO	▪ Regular inspections by ECO, SANParks and ATG. ▪ Check site is kept tidy and sand bags are covered at all times. ▪ Progress and final reports to be delivered.	As often as possible

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
EMP Training for rehabilitation workers	Workers not aware of significance and sensitivity of site. Theft and damage leads to loss of information and site integrity	▪ Ensure that all personnel are familiar with the aims of the Environmental Management Plan (EMP) and the statement of significance. ▪ No artefacts or other material may be moved, picked up or removed from the site without a permit.	Immediate Training by Vuka completed 2002 and 2003	All parties involved in the archaeological restoration project. The contractor shall familiarise all employees with the EMP contents, either in writing or verbally.	▪ ECO shall require written proof confirmation from the contractor that EMP training has been done. ▪ Spot checks to ensure personnel are not removing artefacts.	Monthly
Disseminate information to heritage resources authorities	Loss of information through inadequate recording	▪ Any archaeological or historical material found accidentally must be reported to responsible Archaeologist or SAHRA ▪ Sections must be logged ▪ All work sites to be photographed before and after rehabilitation	Necessary Reports submitted to SAHRA in 2002	Archaeologist, SAHRA PC (as advised by ATG)	▪ Check sections are recorded and photographs are taken. ▪ Reports to be peer-reviewed	As required on permit
Delimit contract areas	Impact beyond areas requiring rehabilitation	▪ SANParks and Archaeologists must indicate to contractors the area of work for the duration of the contract, including access road to be used, construction lay-down areas, materials storage and delivery requirements, work stations, pedestrian routes and operational demarcation, etc.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ Maps to be signed off at the start of each contract. ▪ Check contractor works within demarcated areas	Immediate
		▪ Boundaries of the site and rehabilitation areas shall be demarcated by the Contractor, as instructed by SANParks and the Archaeologist, prior to any work commencing on the site. ▪ Any changes must be recorded in writing.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ No encroachment beyond the demarcated boundaries permitted. Contractor must ensure all labour and materials remain within the boundaries of the site.	Weekly
Demarcate sensitive areas	Damage to archaeological site	▪ Sensitive areas identified by SANParks and/or Archaeologists to be demarcated with danger tape. No activity may take place in such areas.	Immediate Ongoing	SANParks and Archaeologists	▪ Check that danger tape is in correct place	Weekly
	Damage to ecologically sensitive resources	▪ Sensitive areas identified by SANParks to be demarcated with danger tape. No activity shall take place in these areas and no trees or bushes may be damaged or cut down unless by written consent of the ECO	Immediate Ongoing	SANParks, ECO and Contractor	▪ Check camps for contractor and employees only on sites approved by SANParks.	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Control erosion	Ongoing water and wind erosion leads to loss of deposit, topsoil and vegetation	▪ Stockpile topsoil for later re-use ▪ Exposed surfaces that are not archaeologically sensitive to be re-vegetated and/or sandbagged ▪ Protect all areas susceptible to erosion ▪ Slopes identified for protection should be stabilised at no steeper than 1(V):3(H)	Necessary Partially completed 2002 and ongoing	SANParks, Contractor and ECO	▪ Contractor shall not allow erosion to develop, and all erosion damage to be repaired as soon as possible.	On-going
Agree on hours of operation	Work at unauthorised times can lead to un-coordinated activities	▪ Contractor's and labourers' hours shall be the same as the operating hours of the Park	Necessary Ongoing	Contractor	▪ Contractor to confirm hours of operation in writing	On-going
Indicate access roads	Damage to sites and deposits if correct access routes not used	▪ Only those roads agreed to between SANParks, Archaeologists and Contractor may be used ▪ Access roads must be planned to deviate around trees or other natural features marked out in an approved manner by SANParks ▪ Close road that bisects Leokwe Hill site	Immediate Ongoing	Contractor, ECO, SANParks and Archaeologists	▪ ECO to check access roads regularly	Weekly
Provide access for construction vehicles	Temporary roads and off-road access can damage sites and interfere with integrity of cultural landscape	▪ No off-road driving allowed; temporary access roads must be rehabilitated after usage and width of roads restricted to maximum of 3 m.	Necessary Ongoing	Contractor and SANParks	▪ Check rehabilitation of temporary access roads against those agreed to satisfaction of SANParks.	As required
Demarcate areas for construction personnel	Un-coordinated movement can lead to damage of sites and landscape	▪ Contractor must ensure that all construction personnel, labourers and equipment remain within demarcated restoration sites at all times. Movement outside boundaries may be done only with permission from the ECO	Necessary Ongoing	Contractor and ECO	▪ Check that all work is done within demarcated areas.	Weekly
	Constant use of paths causes erosion	▪ Conveyor belts can be used to outline pedestrian routes and prevent impact on archaeological deposits. Confine pedestrian routes to paths maximum 1 m wide	Necessary On-going	Contractor and Archaeologist	▪ Monitor effect of conveyor belting to prevent undue erosion.	Weekly
Reduce impact of construction camps	Impact of camps can damage cultural landscape	▪ If construction camps or working stations are established, the camp must conform to all contractual issues and standards, include issues related to fires, ablution, sleeping facilities and waste management	Necessary On-going	Contractor, ECO and SANParks	▪ Inspect camps and working stations and check against contractual issues	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Provide efficient toilet facilities	Could be unsightly and a health hazard	▪ Minimum of one chemical toilet per 10 persons at sites to be agreed with the ECO. ▪ No abluting anywhere other than in toilets. ▪ Waste shall be disposed of at a location and in a manner that involves no pollution or degradation of the environment. ▪ If spillage occurs, toilets must be placed on a solid base.	Necessary Ongoing	Contractor, ECO	▪ Check construction site is maintained in a sanitary condition and all toilet facilities are maintained in good order. There shall be no spillage of chemicals at any time.	Weekly
Delimit living areas for contract workers	Damage to cultural landscape and archaeological deposits	▪ The contractor may not house any labourers except for security personnel at any stage on the sites to be rehabilitated.	Necessary On-going	Contractor, ECO	▪ No habitation on sites	Weekly
Provide water for construction purposes	Pollution and erosion	▪ Indicate to contractors where water can be obtained, for example for cement mixing as well as for drinking.	Necessary On-going	Contractor, ECO, SANParks	▪ Contractors shall only make use of or collect water from indicated sources	On-going
Prevent and control fires	Damage to vegetation and sites	▪ No fires permitted on construction sites without authority of the ECO. Cooking permitted only in areas designated by the ECO.	Necessary On-going	Contractor, Site Manager, ECO	▪ No fires	Weekly
Efficient waste disposal and handling	Litter	▪ Waste and litter bins to be provided at regular and strategic positions. No waste or litter to be burnt on site.	Necessary On-going	Contractor, Site Manager, ECO	▪ Waste and litter to be disposed of at a suitably registered and licensed disposal site.	Weekly
Provide safety on site for contract workers	Risk of injury to personnel	▪ First aid facilities to be on hand at all times. ▪ Adequate and mandatory safety precautions to be taken. ▪ Warning and advisory signage to be implemented. ▪ All workers must be aware that litter attracts certain animal pests ▪ Establish communication between remote camps and rangers for emergency situations ▪ Support sides of deep excavations to prevent collapse during rehabilitation	Necessary On-going	Contractor, ECO	▪ Contractors shall adhere to the prescriptions of the Occupational Health and Safety Act (Act 85 of 1993) and safety measures and work procedures and instructions shall be communicated to construction workers	On-going

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Set standards for use and storage of chemicals	Environmental damage	▪ Mixing of solvents, sealants, adhesives, paints, chemicals or other noxious materials shall only be undertaken in designated areas on aprons that have spillage control channels and separate storage areas. Provide for controlled loading and unloading areas with appropriate protection against soil and water pollution.	Necessary On-going	Contractor, ECO	▪ Equipment using fuel and/or oil must be placed on impervious paved storage. Fuel to be stored in bunded safe areas with 150% of the full capacity of the tank/s. Chemicals to be stored in secured, weatherproof facilities.	Weekly
Set standards for earthworks	Damage to cultural landscape and archaeological deposits	▪ No compaction and excavation activities (trenching, access road construction, site clearance and pedestrian pathways) allowed without approval of Archaeologist after assessment of impact. ▪ Replacement and rehabilitation should be progressive with construction and not left to the end.	Necessary On-going	Contractor, Archaeologist, ECO	▪ An archaeologist will be required on site during all earthworks to supervise and stop the work if necessary.	As required
Protect fauna	Adverse impact on wildlife	▪ No animals may be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors' employees ▪ No domesticated animals may be brought on site ▪ No poaching of fauna or flora will be tolerated ▪ Contractor shall advise workers of the penalties set out in the Animals Protection Act (Act 71 of 1962)	Necessary On-going	SANParks, ECO, Contractor	▪ Check for signs of poaching ▪ Check for evidence of animal kills ▪ Check for signs of domesticated animals	On-going
Protect chance finds and burials	Loss of information	▪ Ensure that all personnel are aware that no artefacts, burials or other material may be removed without a permit from SAHRA ▪ Criteria for issuing permit will depend on rarity of find, risk to safety of material and relationship to rehabilitation programme	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that chance finds and burials are removed only with a SAHRA permit	On-going
Protect trenches, sections and walling	Loss of *in situ* deposits; damage by rodents; impact of visitors	▪ Clean sections, sieve deposit, log sections, stabilize with sand bags and cover; ▪ Ask advice from zoologist to assess impact of rodents and elephants	Necessary Ongoing	Archaeologist, Contractor, SANParks	▪ Check that work is done according to specifications ▪ Take advice of zoologist as required	Ongoing
Report on rehabilitation process	Materials may need to be replaced or adjusted in future	▪ Ensure reports are received from VUKA and archaeologists and are placed on file	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that reports are received	Annually

4.2 *Management of research: Key issues:* Research policy and priorities; safety of surface artefacts and features; collections management and return of artefacts removed during excavations

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify research needs and priorities	Research opportunities could be lost without clear policy and priorities	▪ Develop a research policy and priorities in consultation with all stakeholders, including De Beers ▪ Draft a 5-year plan ▪ Ensure publication of results of rehabilitation and research	Necessary Complete by end of 2003	SANParks, SAHRA, PC (as advised by ATG)	▪ Deliver policy before end of 2003 ▪ Assess research applications on merit ▪ Check publications	Annual, and every 3 and 6 years for mid-term and World Heritage review process
Protect and retain artefacts exposed by erosion	Loss of information and temptation for visitors to remove souvenirs	▪ Archaeologist/s to remove surface artefacts exposed by erosion in areas not frequented by tourists ▪ Advise guides and all visitors not to move or remove any artefacts ▪ Take fixed point photographs on surfaces with artefacts that are frequented by visitors and compare distribution of artefacts annually ▪ Remove artefacts from view if more than 75% of artefacts are lost over 3 years	Necessary Annual report on surface artefacts to ATG	SANParks, Archaeologists, SAHRA, PC (as advised by ATG	▪ Advise archaeologists of exposed artefacts ▪ Check surface artefacts against photographs and list those missing ▪ Take new photographs as required.	Annually Assess impact of tourism on surface artefacts after three years
Collections management policy for return of artefacts from previous excavations to the site	Political pressure to return artefacts	▪ Budget for a world-class facility that will keep the artefacts safe at Hamilton ▪ Draft a collections policy for the facility;	Necessary Establish protocol by end-2003	SANParks, SAHRA and PC (as advised by ATG	▪ Check delivery of protocol ▪ Check facilities planned ▪ Facilitate return of key artefacts	Annual
Liaison with SAHRA permitting authority	SAHRA and SANParks could have differing policies	▪ SAHRA to send applications to the Park Manager and SANParks for approval	Necessary On-going	SANParks, Park Manager and SAHRA	▪ Review permits and reports	Annually

4.3 ***Management of cultural landscape: Key issues***: Integrity and authenticity of features and landscape; intangible heritage of local communities; integration of cultural heritage resources management with wildlife and environmental management; procedures for management of disasters, fire and waste

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Retain significance of site features and landscape, particularly rainmaking evidence	Lack of integrity and authenticity diminishes visitor experience and significance of site	▪ Identify elements in the landscape that have tangible and intangible significance and ensure they retain their integrity ▪ Use boardwalks only when necessary to protect in situ deposits ▪ Draw up specifications for materials that blend with the landscape for paths, steps, stabilization, signage and on-site exhibits	Necessary Plans agreed 2002 Refine specifications by end 2003	SANParks, SAHRA, PC (as advised by ATG	▪ Mark places of significance on a map of the site ▪ Check planned installations against specifications	On-going
Engage with local communities	Lack of consultation leads to dissatisfaction and adverse publicity from affected communities	▪ Engage with land owners and claimants; ▪ communicate with local communities; and ▪ involve them in promotion and conservation	Necessary	SANParks	▪ Check that meetings have been held and relevant people have been identified for consultation	On-going
Integrate cultural heritage resources with environmental management	Lack of co-ordination with cultural resources management leads to misunderstandings	▪ Integrate environmental and cultural heritage conservation management	Necessary Integrate plans by end 2003	SANParks and Park Committee	▪ Check that plans dovetail	Annually
Develop disaster planning and fire management	Lack of planning can add to damage caused by disasters	▪ Identify high risk areas and plan for potential problems caused by fire and natural and unusual erosion events	Necessary	SANParks	▪ Check that plans have been drawn up and are known to all staff	Annually
Efficient waste management	Litter detracts from significance of site	▪ Warn all visitors against littering ▪ Remove all litter from the site	Necessary	SANParks	▪ Check for litter and remove	Daily and weekly

4.4 Management of tourism: Key issues: Presentation of the site to visitors as a pilgrimage and wilderness experience; signage; establish carrying capacity of the site and control access; access routes and paths; information nodes for visitors

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
World-class presentation of site to visitors	Lack of a common vision and incorrect information can lead to bad visitor experience	▪ Workshop a common vision based on the World Heritage nomination and tourism report ▪ SAHRA to check printed information ▪ Prepare and print information leaflets on Leokwe Hill ▪ Distribute information to organisations responsible for guide training ▪ Train SANParks guides ▪ Inform all SANParks staff, land owners, tour guides and tour operators	Necessary Print basic information for all stake-holders by Dec 2003	SANParks, SAHRA and PC (as advised by ATG	▪ Conduct workshop ▪ Check presentations by tour guides ▪ Check content of publications ▪ Publish and distribute leaflets	On-going
Stimulate a sense of pilgrimage to rainmaking site and a wilderness experience for visitors	Guides and visitors may respond to different stimuli	▪ Agree on the principles to be included in a pilgrimage and wilderness experience ▪ Design a recommended route accordingly ▪ Make the concept known to all guides and tour operators	Necessary Principles March 2004 Implement end 2004	SANParks, SAHRA, PC (as advised by ATG	▪ Check process is being followed ▪ Check all relevant stakeholders are involved and informed	Annually
Develop signage that blends with the landscape and offers accurate and interesting information	Poorly worded or decaying signage detracts from visitor experience	▪ Use low maintenance natural materials that blend with the environment ▪ Place signage in unobtrusive places ▪ Use wording that contributes to the common vision for the site ▪ National Heritage Resources Act requires that SAHRA check the wording of all signage at national heritage sites	Necessary Deliver plan for signage by March 2004. Erect signage by June 2004	SANParks, SAHRA, PC (as advised by ATG	▪ ATG to approve materials ▪ SAHRA to approve wording 60 days before production ▪ Check for deterioration of materials ▪ Check for vandalism	Monthly
Establish and maintain carrying capacity of site to retain the ambience of the site	Over-use can lead to erosion, litter and loss of fabric and integrity	▪ Set initial upper limits to number of vehicles per day, group numbers and the number of groups per month ▪ Keep daily records of numbers of visitors to individual sites through entrance ticket or permit system ▪ Assess impact in annual review ▪ Review limits annually	Necessary Set initial upper limits by October 2003	SANParks, PC (as advised by ATG	▪ Do not exceed limits ▪ Spot-check numbers ▪ Check paths, slopes, walling, artefacts and litter for change ▪ Review carrying capacity according to impact	Monthly and annually

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Control access to site	Over-use will damage *in situ* deposits	▪ Limit size of visiting parties if necessary	Necessary Plan accepted 2002	SANParks	▪ Check for signs of over-use such as damage to in situ deposits	Annually
Restrict visitors to paths	Unrestricted access leads to damage of *in situ* deposits and loss of surface artefacts	▪ Establish well designed paths with non-invasive and removable materials ▪ Inform all guides and tour operators that visitors may not step off designated paths ▪ Establish a path maintenance plan ▪ Monitor paths after heavy rains ▪ Consider using boardwalks if necessary	Necessary Path plans accepted 2002 Maintenance plan October 2003	SANParks, PC (as advised by ATG	▪ Check path surrounds for signs of non-compliance ▪ Check state of path surfaces	Annually
Establish protocols regarding who is allowed to take visitors to sites and what charges will be made	Visitor numbers may not be properly recorded and controlled	▪ Archaeologists and other contractors and specialists may only take visitors to sites with permission from the Park Manager ▪ All visits and visitor numbers must be logged to indicate where they have been given permission to go ▪ Fees or free access for specialist visits to be reviewed annually by Park Manager according to level of use	Necessary Protocol to be established by October 2003	SANParks, PC (as advised by ATG), JMC	▪ Spot checks on visitor groups ▪ Analyse information in Park Manager's log book	Annually
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	▪ Do not erect toilets or any other structures that require foundations in the vicinity of Leokwe Hill ▪ Design information boards and displays with low visual impact on the views and vistas ▪ Consult SAHRA at least 60 days prior to installation on all displays and signage	Necessary Complete plans by March 2004	SANParks, SAHRA, PC (as advised by ATG)	▪ Check that no structures are planned or erected	Annually
Establish emergency procedure for visitor accidents	Park may be liable for damages if emergency procedure is not in place.	▪ Draw up written instructions for all tour leaders, specialists, contractors and other individuals and organisations responsible for visitor safety. ▪ Investigate indemnity forms, verbal warnings, signage and other forms of visitor safety information. ▪ Make all staff aware of emergency procedures by testing the system regularly.	Necessary Complete procedure by October 2003`	SANParks, JMC, PC	▪ Check that all relevant people and organisations have copies of emergency procedure. ▪ Check warning signage regularly ▪ Practise procedure annually	Annually

5. RECOMMENDATIONS FOR DEVELOPMENT

5.1 Park and Tourism Infrastructure: Key Issues: Management and monitoring programme; condition reporting; dissemination of information; appointment of professional officer for cultural resources

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Water	None available on site	Water should be brought in in containers only when required for specific projects such as drinking water for staff during rehabilitation	Necessary As required	SANParks	Check contractors remove containers when work has finished.
Energy	None available	None needed for tourism or cultural heritage resources management.	Not necessary		
Sanitation	None available	Portable toilets as required for staff for special projects	Necessary Check monthly	SANParks	Permanent toilets not permitted. Check that temporary toilets are not leaking.
Waste	No bins on site	No bins on site. Guides and tour operators to carry bags in which to remove waste	Necessary Check weekly	SANParks	Check sites and remove litter
Access road	Vehicle access onto site deposit stopped in 2002	No vehicle access onto site deposits	Done Check monthly	SANParks	Spot check that visitors walk onto the site from vehicles parked east of deposits. Reinforce with information to guides.
Transport	Self-drive vehicles park west of site	Limit number of vehicles near site to avoid damage to vegetation and deposits	Necessary Check monthly	SANParks	Spot check that vehicles use designated parking area. Reinforce with information to guides.
Car park	Casual parking along access road	Demarcate parking area to avoid vehicles damaging vegetation or creating erosion spots	Necessary Oct 2003	SANParks	Check that demarcation is subtle and does not spoil the wilderness experience
Safety – fire	SANParks fire policy in place.	Avoid use of water to extinguish fires on archaeological sites	Necessary Check monthly and in drought	SANParks	Monitor vegetation for possible increase in fire risk.
Security and fencing	SANParks policy in place	No fencing required. Main gate to sites to be kept locked and manned once tourism increases	Necessary Oct 2003	SANParks	A gate keeper will be necessary to monitor visitor numbers and assist visitors without guides.

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Paths	Paths are being created and upgraded as part of the rehabilitation programme	Paths must be made according to specifications and with minimum impact on *in situ* deposits	Necessary March 2004 and check monthly	SANParks	Check that paths are functional and repair when necessary
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	▪ Do not erect toilets or any other structures that require foundations in the vicinity of the site ▪ Design information boards and displays with low visual impact on the views and vistas	Necessary Complete plans by March 2004	SANParks	▪ Check that no structures are planned or erected Annually
Condition report	Report on rehabilitation work could serve as a temporary base-line	Commission or undertake an illustrated condition report on all cultural heritage resources at Leokwe Hill to serve as a base-line against which to measure and monitor change	Necessary October 2004	SANParks, SAHRA, PC (as advised by ATG)	Check that all cultural heritage resources are included and that photographs are taken of the present condition of each resource for comparative purposes. Keep report on file and make copies for use in the field.
Information leaflets	None available yet for Leokwe Hill	▪ Basic information leaflet that includes statement of significance and visitor rules required. ▪ Check with SAHRA at least 60 days before printing.	Necessary Oct 2003 with annual update	SANParks, SAHRA, PC (as advised by ATG)	Draft by the ATG and should include all the information a visitor must know to conserve the cultural and natural resources of the place and to enhance their experience
Information boards and displays	None at present	Planning to be done by a tourism expert in collaboration with SANParks, SAHRA and ATG	Necessary March 2004 and check annually	SANParks, SAHRA, PC (as advised by ATG)	Close collaboration with SAHRA required for information to be included. Check that boards and displays are in good repair and replace when necessary
Permanent staff	Manager, but no Archaeologist	A professional Archaeologist should be appointed to monitor and manage the cultural heritage resources in the Park	Necessary October 2003 and monthly	SANParks	Check on progress through monthly and annual reports.

MAPUNGUBWE HILL AND TERRACES

Site Management Plan

SUMMARY OF KEY ISSUES FOR MAPUNGUBWE HILL AND TERRACES

- Integrity and authenticity of site features and landscape
- Intangible heritage of local and pre-colonial communities
- Rehabilitation of unfilled excavations and natural erosion features
- Management of poverty relief project
- Impact assessments required before intervention in compliance with relevant legislation
- Permits required from SAHRA for all interventions, with separate permits for rehabilitation, development of paths and infrastructure, and research
- Recording of all interventions
- Research policy and priorities, including review of moratorium on new excavations
- Safety of surface artefacts and features
- Return of artefacts removed during excavations
- Access routes and paths
- Carrying capacity of the site
- Presentation of the site to visitors
- Visitor facilities, information and signage
- Integrating cultural heritage resources with wildlife and environmental management
- Disaster, fire and waste management

1 STATEMENT OF SIGNIFICANCE

Mapungubwe Hill and the surrounding terraces below it were occupied mainly between AD 1220 and AD 1290 at a time when the Mapungubwe culture was at its zenith. It is the best known example in this cultural landscape of the effects of accumulated wealth on social stratification that led to separation of the ruling class from the commoners. The elite hilltop settlement, with royal graves, gold, copper and other ceremonial artefacts and trade goods, is physically and cognitively distinct from the larger commoner agricultural settlement at the base of the hill. Wealth in the ruling class grew from trade with the east coast of Africa and the Indian Ocean network centuries before Europeans found the sea route to India. While ideal climatic conditions for agriculture prevailed in the thirteenth century, Mapungubwe was the centre of the first powerful indigenous kingdom in Southern Africa.

Oral history amongst Venda and North Sotho communities in the region suggests that the hill – whose name today is said to mean the place of many jackals – still evokes powerful symbolic associations of intangible heritage related to rain and the presence of ancestral spirits. The site therefore needs to be managed as an integrated unit to retain its significance and authenticity within the larger relict and associative cultural landscape.

An important part of the significance of Mapungubwe lies in the artefacts that have been removed from the site. The gold rhino has become a powerful symbol for African pride and renaissance in Limpopo Province and in a variety of organisations. The collection includes more gold objects and glass beads than from any other site dating to this time period in the Southern

African region. There are also quantities of exceptionally well made pottery, metal artefacts, spindle whorls, ivory, polished bone tools, clay figurines and trade items such as Chinese ceramics. They are housed mostly at the University of Pretoria.

There is no physical evidence of occupation of the site and its immediate environs during the colonial period, apart from excavations, and paths and access routes used by archaeologists, the Defence Force and visitors.

2 SITE DESCRIPTION

2.1 Site information

Farm name and number	Greefswald 37, Messina Magisterial District, Limpopo Province			
Co-ordinates				
Altitude				
Owner	Republic of South Africa, Department of Environment Affairs and Tourism, SANParks			
Contact person	Park Manager, SANParks, Tel/fax 015 534 0102			
Archaeological permit holders since 1989	A. Meyer A. Meyer A Meyer A. Meyer A. Meyer WC Nienaber TN Huffman WC Nienaber WC Nienaber J Verhoef with WC Nienaber	Greefswald Greefswald Greefswald Mapungubwe Mapungubwe Mapungubwe Mapungubwe dump Mapungubwe Mapungubwe Mapungubwe paths and ladder	80/90/12/003/51 80/93/06/002/51 80/94/06/005/51 80/99/03/018/51 80/99/08/005/51 80/00/06/002/51 80/99/04/009/51 80/02/11/012/51 80/03/03/016/51 80/03/06/005/51	Exp. 01/12/1993 Exp. 01/07/1994 Exp. 01/07/1995 Exp. 01/04/2000 Exp. 01/08/2001 Exp. 01/07/2001 Exp. 01/05/2001 Exp. 01/01/2006 Exp. 01/05/2004 Exp. 01/07/2004
Designated respositories	University of Pretoria, University of the Witwatersrand, National Cultural History Museum			
Public access and visitation	Guided visits by appointment only			
SANParks zonation	Special Protection Zone			
Grading status	Hill and Southern Terrace declared a National Monument 17 August 1984. Mapungubwe Cultural Landscape declared a National Heritage Site in July 2002			

2.2 Locality and description

Mapungubwe Hill and the surrounding terraces and plateaus, consisting of cultural deposits with the remains of dwellings, low stone walling, middens and graves on the hilltop and southern slope, and dwellings, cattle kraals, middens and agricultural activities on the surrounding valley floor and plateau, is about 10 hectares in extent. It is situated on the farm Greefswald about 5 km from the south bank of the Limpopo River.

Mapungubwe Hill itself is a flat-topped sandstone hill with steep vertical sides rising up to 40 m above the plain. It is about 300 m long and about 100 m across at its widest point on the north-west end, narrowing to less than 20 m in the south-east. It provides an excellent view of the surrounding landscape.

Features on the hilltop include the remains of low stone walling representing the first palace, post holes that have been dug into the bedrock, marabaraba game boards consisting of parallel rows of holes ground into the bedrock, lower grindstones or mortars, and large quantities of potsherds lying on the surface. The remains of grain storage huts were found at the eastern end of the hill associated with grindstones.

The surrounding terrace is fairly flat, with smaller sandstone hills and elevated platforms rising from it. The most prominent of the hills, sometimes referred to as Little Mapungubwe, lies to the east, and a much larger hill, Bambandyanalo, lies parallel to Mapungubwe to the south and west.

2.3 Access

Until recently, vehicle access to the site was by a track from the west along the valley floor to the south of the hill. After flooding damaged the track, vehicle access has been limited to protect the occupation deposits. Access is also possible along a track from the south.

Access to the hilltop is usually via the western ascent, a cleft in the south wall into which a wooden staircase has recently been constructed. The steps have not used or obscured the holes drilled into the rock by the original inhabitants to support wooden steps. An alternative route is planned up the eastern ascent, a steeply sloping route at the south eastern end of the hill. A third route, also used in the past, may be developed on the northern side of the hill.

2.4 Physical environment

Analysis and subsequent zonation of the natural and cultural resources by the Vhembe-Dongola National Park staff has placed Mapungubwe Hill and adjacent terraces in the following management zone:

"(a) Special Protection Zones

Sensitive areas that merit special exceptional protection because they represent or support unique, rare or threatened elements, or are otherwise regarded as of particular quality. No man-made structures will be permitted in such areas and access will either be strictly limited or totally forbidden."

A low-impact interpretive display is planned in the University of Pretoria excavation on the Southern Terrace which will be covered at ground level with a sliding roof. Steps and a below-ground viewing platform will be constructed in the hole. Paths and staircases have been, or will be, installed to guide visitors to the top of the hill and along routes that have minimum impact on *in situ* deposits.

2.5 Previous and ongoing research

Excavations on the top of Mapungubwe Hill that began in the 1930s, first by amateurs and then by Guy Gardner, focused on occupation deposits and burials on the western half of the hilltop. Large quantities of soil had been brought up to the hilltop by the inhabitants to enable huts to be built and graves to be made. Some of these deposits were up to 2 m deep. Within them were the remains of numerous burnt clay hut floors and walls, low stone walls and gravel hut floors. Much of this deposit at the north-western end of the hilltop was removed by the early excavators because it was here that the leaders of the community were buried with gold and other valuable objects. The deposit was partially sieved and discarded down the western slope of the hill.

The remaining deposits closer to the centre of the hill have been cut into by both early trenches and excavations conducted in the 1970s by the University of Pretoria. The *in situ* deposits have been extensively disturbed by rodents in places.

Jones, Schofield, Fouche and Gardner also undertook excavations on the slope of the southern terrace in deposits associated with stone walling. Although they were filled in either deliberately or by natural erosion, they are no longer stable.

A series of excavations begun in the 1970s and continued in the 1980s by the University of Pretoria on the southern and eastern terraces below Mapungubwe Hill yielded cattle kraal and

midden deposits, as well as successive layers of hut floors and occupation debris. The results of this work indicate that the ground level of the terrace gradually built up during the period of occupation to a depth of over 5 m in places. All but one of these excavations has been filled in.

The exception is K8 on the southern terrace which was left open to allow visitors to see the depth of the deposit and complexity of the stratigraphy. Alongside it is the bronze plaque and badge erected by the National Monuments Council when the site was declared a national monument in 1984. The excavation was roofed but was extensively damaged by baboons. When the corrugated iron roof was stolen in 1996 it was decided to remove the superstructure and cover the top of the excavation with a removable metal grid.

In 1998, the Archaeology Task Group agreed to a moratorium on all new research excavations in order to conserve the deposits for the future. Exceptions were made for emergency rescue work, rehabilitation of sections and projects that did not involve disturbance of *in situ* deposit. This work was put out to tender.

Permits issued since 1999 have been primarily for the cleaning out of collapsed excavations and the logging of sections prior to their stabilization. All the *ex situ* deposits were sieved so that the cultural material could be retained for study. The soil was used to fill sand bags. Where burials were encountered in the course of this work, permits were issued for their removal. Rehabilitation at Mapungubwe Hill has been done under permits issued to Prof Andrie Meyer and Mr W C Nienaber, both of the University of Pretoria.

In order to ascertain whether there had been metal smelting and working on Mapungubwe Hill, a permit was issued to T N Huffman in 1999 to sieve part of the 1930s dump on the western slope of the hill. This excavation yielded evidence for copper smelting that was described by John Calabrese.

Oral history about Mapungubwe was recorded in 2001 and 2002 by Professor Ralushai who intends broadening the geographic range of his project to interview people in the eastern part of Limpopo Province who may have more information to contribute.

2.6 Site sensitivities and threats

Most of the remaining evidence for the Mapungubwe culture is buried below the present-day surface of the ground. Management must therefore be sensitive to the on-going processes that may threaten the integrity of *in situ* deposits and the spatial relationships between different parts of the site. It should also be sensitive to ways in which original physical features on the Hill were modified by the people who lived there.

All developments and interventions must be subject to an impact assessment process that includes a survey and statement of significance of both cultural and natural heritage resources that will be affected.

A detailed record of all interventions must be kept on file in the Park.

2.6.1 Sensitivities

The widespread occurrence of deep middens and cultural debris over the entire area makes it vulnerable to damage by vehicles, people, animals, water and wind. The vegetation is also a factor because, although grass cover in summer helps to protect deposits, in winter and drought years there is the added risk of fire and sheet erosion. With the change of land use to a National Park and the plans to re-introduce elephant and other large game, there is the additional risk of

denudation of vegetation and the creation of dust bowls and other erosion features that expose the archaeological deposits beneath the surface.

Restricting access to certain parts of the site may help to protect deposits and should be carefully monitored.

Monitoring of the site is best done against a base-line condition report so that change can be measured and controlled.

2.6.2 Threats

The following threats could damage the integrity of the archaeological deposits:

- Old excavation trenches have not been filled in or are inadequately protected;
- Erosion gullies have formed at the edge of the terrace deposits in the floor of the valley;
- Unskilled workers may inadvertently damage deposits while working on the rehabilitation of erosion gullies and old excavations;
- Vehicles damage middens and other cultural deposits;
- Visitors with unrestricted access to Mapungubwe Hill and the terraces could damage walling, disturb *in situ* deposits, move or remove surface artefacts and leave litter;
- Signage should not be intrusive;
- Elephants and other large game could affect cultural deposits on the terraces surrounding the hill by denuding vegetation and other damage;
- Baboons have done damage to the open excavation in the past;
- Rodents are burrowing into the *in situ* deposits on Mapungubwe Hill;
- Unco-ordinated research can lead to unnecessary removal of irreplaceable deposits

2.7 Existing site management

The farm Greefswald is owned by the State and was transferred to SANParks to form part of the Vhembe-Dongola National Park that was formally gazetted on 7 April 2000. The property is managed, monitored and funded within the framework applied to all National Parks. In terms of the South African World Heritage Convention Act, SANParks will be the management authority appointed by the Department of Environmental Affairs and Tourism for the Mapungubwe Cultural Landscape if it is declared a World Heritage Site.

The Mapungubwe Cultural Landscape was declared a National Heritage Site in July 2002 by the South African Heritage Resources Agency (SAHRA). In terms of the National Heritage Resources Act: (No. 25 of 1999), SAHRA is responsible for the protection of the site in the following ways:

- a conservation management plan must be submitted for the national heritage site and responsibility for implementing such a plan can be delegated to the owner of the property if a formal heritage agreement is drawn up, in this case between SAHRA and SANParks;
- no person may destroy, damage, deface, excavate, alter, disturb, remove from its original position, subdivide or change the planning status of the site or archaeological and palaeontological deposits within it, without a permit issued by SAHRA;
- conditions pertaining to these permits are monitored by SAHRA in collaboration with SANParks;
- SANParks is responsible for maintaining the site according to minimum standards and a procedure to be prescribed by SAHRA in consultation with SANParks;
- SAHRA may make regulations, with the consent of SANParks, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees;
- SAHRA requires that archaeological impact assessments must precede permitting of all developments that may affect sites;

- SAHRA may call for a more detailed heritage impact assessment report if certain activities are likely to impact on heritage resources;
- the contents of interpretive material or programmes for presentation of a national heritage site to the public must be submitted to SAHRA for approval at least 60 days in advance of manufacture.

Mapungubwe Hill and the surrounding terraces, as part of the Vhembe-Dongola National Park, are managed by the Park Manager who is responsible for:

- regular monitoring of the site;
- reporting threats or damage to heritage resources;
- preparedness for natural disasters;
- implementing legal requirements for environmental impact assessments in advance of development;
- ensuring that heritage impact assessments are done prior to any developments that may affect heritage resources;
- informing permanent staff and contract workers of the significance of the site;
- preparing sites for tourism access;
- allowing access only to visitors who have made prior arrangements;
- ensuring that visitors may enter only with a guide approved by SANParks.

3 MANAGEMENT OBJECTIVES FOR MAPUNGUBWE AND TERRACES

The objectives are to retain the significance of the site by;

- restoring, within reason, the integrity of the views and vistas of the landscape so that it is not interrupted by buildings, power lines or vehicle access roads;
- appointing a permanent staff member to manage the cultural heritage resources in the Park;
- integrating cultural heritage resources management and strategies with those for natural heritage resources at Mapungubwe Hill and associated terraces and plateaus;
- conserving *in situ* deposits and excavations against natural and human-induced erosion;
- minimising the visual impact of the archaeological excavations conducted between the 1930s and 1990s;
- protecting the artefacts and features that are exposed on the surface, particularly on the hilltop;
- developing a coherent plan for presenting the site to the public as a pilgrimage and wilderness experience;
- controlling visitor access to minimize their impact on the fragile and irreplaceable deposits that still remain;
- conserving the original access routes to the top of Mapungubwe Hill;
- designing appropriate low-impact signage;
- developing an on-site exhibition that will allow visitors to experience the depth and complexity of the midden deposits on the Southern Terrace;
- entering into negotiations for the return and display of artefacts removed from the site;
- displaying artefacts removed during excavations at the proposed Park interpretation centre, possibly on the farm Hamilton;
- developing a policy for research and rehabilitation of archaeological deposits [e.g. continue the moratorium on archaeological excavations?];
- commissioning or undertaking a base-line condition report of Mapungubwe Hill, the associated terraces and adjacent plateau deposits, including the dump on the western slopes;
- closely monitoring change against the base-line condition report so that policies and strategies can be altered if they are not working.

4 MANAGEMENT AND MONITORING

4.1 *Management of site rehabilitation: Key issues:* Conserving deposits against erosion; rehabilitation of unfilled excavations and natural erosion features; management of poverty relief project; reporting on rehabilitation process

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Assess impact before rehabilitation	Potential damage to *in situ* deposits if assessment not done	▪ Appoint Archaeologist to assess need for, and impact of, rehabilitation of old excavations on Mapungubwe Hill and the Southern Terrace	Immediate Completed 2001	SANParks, ATG	▪ Peer review of assessment report	On receipt
Appoint experienced contractor	Inexperienced contractor may damage sites	▪ Advertise for tenders and draw up terms of reference and detailed plan. VUKA EMS Inc. appointed. Funding from Poverty Relief Programme. Training programme essential.	Necessary Appointed 2002	SANParks and ATG	▪ Evaluate applicants according to previous experience with	As required
Appoint professional Archaeologist	Inexperience can damage sites or lead to unnecessary removal of deposits.	▪ Archaeologist to apply to SAHRA for permit and submit action plan for review. Make it clear that the purpose is protection of deposits, not research.	Necessary Appointed 2002	SAHRA and ATG	▪ Appoint experienced person. No additional excavation allowed without a permit.	As required
Co-ordinate project planning	Un-coordinated rehabilitation work is inefficient	▪ Planning and co-ordination must be done in conjunction with SANParks, Environmental Control Officer (ECO) and Archaeology Task Group (ATG)	Immediate Plans approved 2002	SANParks, Contractor and permitted Archaeologists	▪ All parties to report to SANParks and ATG	Weekly
Draw up specifications for rehabilitation	Poor quality materials and workmanship will create further problems in the future	▪ Archaeologist to be present throughout rehabilitation of old excavations; ▪ Clean vertical sections and log stratigraphy; ▪ Sieve all deposit and sort, package, and label finds ▪ Fill sandbags with residue; ▪ Bio-degradable sand bags to be used below ground and stronger bags above ground. ▪ Protect sandbags from sun and trampling.	Necessary Plans implemented 2002	Contractor, Archaeologist, ECO	▪ Regular inspections by ECO, SANParks and ATG. ▪ Check site is kept tidy and sand bags are covered at all times. ▪ Progress and final reports to be delivered.	As often as possible

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
EMP Training for rehabilitation workers	Workers not aware of significance and sensitivity of site. Theft and damage leads to loss of information and site integrity	▪ Ensure that all personnel are familiar with the aims of the Environmental Management Plan (EMP) and the statement of significance. ▪ No artefacts or other material may be moved, picked up or removed from the site without a permit.	Immediate Training by Vuka completed 2002 and 2003	All parties involved in the archaeological restoration project. The contractor shall familiarise all employees with the EMP contents, either in writing or verbally.	▪ ECO shall require written proof or confirmation from the contractor that EMP training has been done. ▪ Spot checks to ensure personnel are not removing artefacts.	Monthly
Disseminate information to heritage resources authorities	Loss of information through inadequate recording	▪ Any archaeological or historical material found accidentally must be reported to responsible Archaeologist or SAHRA ▪ Sections must be logged ▪ All work sites to be photographed before and after rehabilitation	Necessary Reports submitted to SAHRA in 2002	Archaeologist, ATG, SAHRA	▪ Check sections are recorded and photographs are taken. ▪ Reports to be peer-reviewed	As required on permit
Delimit contract areas	Impact beyond areas requiring rehabilitation	▪ SANParks and Archaeologists must indicate to contractors the area of work for the duration of the contract, including access road to be used, construction lay-down areas, materials storage and delivery requirements, work stations, pedestrian routes and operational demarcation, etc.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ Maps to be signed off at the start of each contract. ▪ Check contractor works within demarcated areas	Immediate
		▪ Boundaries of the site and rehabilitation areas shall be demarcated by the Contractor, as instructed by SANParks and the Archaeologist, prior to any work commencing on the site. ▪ Any changes must be recorded in writing.	Immediate Completed in 2002 and ongoing in 2003	SANParks and Archaeologists	▪ No encroachment beyond the demarcated boundaries to be permitted. Contractor must ensure all labour and materials remain within the boundaries of the site.	Weekly
Demarcate sensitive areas	Damage to archaeological sites	▪ Sensitive areas identified by SANParks and/or Archaeologists to be demarcated with danger tape. No activity may take place in such areas.	Immediate Ongoing	SANParks and Archaeologists	▪ Check that danger tape is in correct place	Weekly
	Damage to ecologically sensitive sites	▪ Sensitive areas identified by SANParks to be demarcated with danger tape. No activity shall take place in these areas and no trees or bushes may be damaged or cut down unless by written consent of the ECO	Immediate Ongoing	SANParks, ECO and Contractor	▪ Check camps for contractor and employees only on sites approved by SANParks.	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Control erosion	Ongoing water and wind erosion leads to loss of deposit, topsoil and vegetation	▪ Stockpile topsoil for later re-use ▪ Exposed surfaces that are not archaeologically sensitive to be re-vegetated and/or sandbagged ▪ Protect all areas susceptible to erosion ▪ Slopes identified for protection should be stabilised at no steeper than 1(V):3(H)	Necessary Partially completed 2002 and ongoing	SANParks, Contractor and ECO	▪ Contractor shall not allow erosion to develop before effecting repairs and all erosion damage to be repaired as soon as possible.	On-going
Agree on hours of operation	Work at unauthorised times can lead to un-coordinated activities	▪ Contractor's and labourers' hours shall be the same as the operating hours of the Park	Necessary Ongoing	Contractor	▪ Contractor to confirm hours of operation in writing	On-going
Indicate access roads	Damage to sites and deposits if correct access routes not used	▪ Only those roads agreed to between SANParks, Archaeologists and Contractor may be used	Immediate Ongoing	Contractor, ECO, SANParks and Archaeologists	▪ ECO to check access roads regularly	Weekly
		▪ Access roads must be planned to deviate around trees or other natural features marked out in an approved manner by SANParks	Immediate Ongoing	SANParks, ECO and Contractor	▪ ECO to check access roads regularly	Weekly
Provide access for construction vehicles	Temporary roads and off-road access can damage sites and interfere with integrity of cultural landscape	▪ No off-road driving allowed; temporary access roads must be rehabilitated after usage and width of roads restricted to maximum of 3 m.	Necessary Ongoing	Contractor and SANParks	▪ Check rehabilitation of temporary access roads against those agreed to satisfaction of SANParks.	As required
Demarcate areas for construction personnel	Un-coordinated movement can lead to damage of sites and landscape	▪ Contractor must ensure that all construction personnel, labourers and equipment remain within demarcated restoration sites at all times. Movement outside boundaries may be done only with permission from the ECO	Necessary Ongoing	Contractor and ECO	▪ Check that all work is done within demarcated areas.	Weekly
	Constant use of paths causes erosion	▪ Conveyor belts can be used to outline pedestrian routes and prevent impact on archaeological deposits. Confine pedestrian routes to paths maximum 1 m wide	Necessary On-going	Contractor and Archaeologist	▪ Monitor effect of conveyor belting to prevent undue erosion.	Weekly
Reduce impact of construction camps	Impact of camps can damage cultural landscape	▪ If construction camps or working stations are established, the camp must conform to all contractual issues and standards, include issues related to fires, ablution, sleeping facilities and waste management	Necessary On-going	Contractor, ECO and SANParks	▪ Inspect camps and working stations and check against contractual issues	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Provide efficient toilet facilities	Could be unsightly and a health hazard	▪ Minimum of one chemical toilet per 10 persons at sites to be agreed with the ECO. ▪ No abluting anywhere other than in toilets. ▪ Waste shall be disposed of at a location and in a manner that involves no pollution or degradation of the environment. ▪ If spillage occurs, toilets must be placed on a solid base.	Necessary Ongoing	Contractor, ECO	▪ Check construction site is maintained in a sanitary condition and all toilet facilities are maintained in good order. There shall be no spillage of chemicals at any time.	Weekly
Delimit living areas for contract workers	Damage to cultural landscape and archaeological deposits	▪ The contractor may not house any labourers except for security personnel at any stage on the sites to be rehabilitated.	Necessary On-going	Contractor, ECO	▪ No habitation on sites	Weekly
Provide water for construction purposes	Pollution and erosion	▪ Indicate to contractors where water can be obtained, for example for cement mixing as well as for drinking.	Necessary On-going	Contractor, ECO, SANParks	▪ Contractors shall only make use of or collect water from indicated sources	On-going
Prevent and control fires	Damage to vegetation and sites	▪ No fires permitted on construction sites without authority of the ECO. Cooking permitted only in areas designated by the ECO.	Necessary On-going	Contractor, Site Manager, ECO	▪ No fires	Weekly
Efficient waste disposal and handling	Litter	▪ Waste and litter bins to be provided at regular and strategic positions. No waste or litter to be burnt on site.	Necessary On-going	Contractor, Site Manager, ECO	▪ Waste and litter to be disposed of at a suitably registered and licensed disposal site.	Weekly
Provide safety on site for contract workers	Risk of injury to personnel	▪ First aid facilities to be on hand at all times. ▪ Adequate and mandatory safety precautions to be taken. ▪ Warning and advisory signage to be implemented. ▪ All workers must be aware that litter attracts certain animal pests ▪ Establish communication between remote camps and rangers for emergency situations ▪ Support sides of deep excavations to prevent collapse during rehabilitation	Necessary On-going	Contractor, ECO	▪ Contractors shall adhere to the prescriptions of the Occupational Health and Safety Act (Act 85 of 1993) and safety measures and work procedures and instructions shall be communicated to construction workers	On-going

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Set standards for use and storage of chemicals	Environmental damage	▪ Mixing of solvents, sealants, adhesives, paints, chemicals or other noxious materials shall only be undertaken in designated areas on aprons that have spillage control channels and separate storage areas. Provide for controlled loading and unloading areas with appropriate protection against soil and water pollution.	Necessary On-going	Contractor, ECO	▪ Equipment using fuel and/or oil must be placed on impervious paved storage. Fuel to be stored in bunded safe areas with 150% of the full capacity of the tank/s. Chemicals to be stored in secured, weatherproof facilities.	Weekly
Set standards for earthworks	Damage to cultural landscape and archaeological deposits	▪ No compaction and excavation activities (trenching, access road construction, site clearance and pedestrian pathways) allowed without approval of Archaeologist who has under taken an assessment of impact of earthworks. ▪ Replacement and rehabilitation should be progressive with construction and not left to the end.	Necessary On-going	Contractor, Archaeologist, ECO	▪ An archaeologist will be required on site during all earthworks to supervise and stop the work if necessary.	As required
Protect fauna	Adverse impact on wildlife	▪ No animals may be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors' employees ▪ No domesticated animals may be brought on site ▪ No poaching of fauna or flora will be tolerated ▪ Contractor shall advise workers of the penalties set out in the Animals Protection Act (Act 71 of 1962)	Necessary On-going	SANParks, ECO, Contractor	▪ Check for signs of poaching ▪ Check for evidence of animal kills ▪ Check for signs of domesticated animals	On-going
Protect chance finds and burials	Loss of information	▪ Ensure that all personnel are aware that no artefacts, burials or other material may be removed without a permit from SAHRA ▪ Criteria for issuing permit will depend on rarity of find, risk to safety of material and relationship to rehabilitation programme	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that chance finds and burials are removed only with a SAHRA permit	On-going
Protect trenches, sections and walling	Loss of *in situ* deposits; damage by rodents; impact of visitors	▪ Clean sections, sieve deposit, log sections, stabilize with sand bags and cover; ▪ Ask advice from zoologist to assess impact of rodents and elephants	Necessary Ongoing	Archaeologist, Contractor, SANParks	▪ Check that work is done to specifications ▪ Take advice of zoologist as required	Ongoing
Report on rehabilitation process	Materials may need to be replaced or adjusted in future	▪ Ensure reports are received from VUKA and archaeologists and are placed on file	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that reports are received	Annually

4.2 *Management of research: Key issues*: Research policy and priorities; safety of surface artefacts and features; collections management and return of artefacts removed during excavations

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify research needs and priorities	Research opportunities may be lost if embargo is retained and clear policy is not in place	▪ Continue to suspend research until rehabilitation of major sites is complete ▪ Develop a research policy and priorities in consultation with all stakeholders ▪ Draft a 5-year plan ▪ Ensure publication of results of rehabilitation and research	Necessary Complete by end of 2003	SANParks, ATG, SAHRA	▪ Deliver policy before end of 2003 ▪ Assess research applications on merit ▪ Check publications	▪ Annual, and every 3 and 6 years for mid-term and World Heritage review process
Protect and retain artefacts exposed by erosion	Loss of information and temptation for visitors to remove souvenirs	▪ Archaeologist/s to remove surface artefacts exposed by erosion in areas not frequented by tourists ▪ Advise guides and all visitors not to move or remove any artefacts ▪ Take fixed point photographs on surfaces with artefacts that are frequented by visitors and compare distribution of artefacts annually ▪ Remove artefacts from view if more than 75% of artefacts are lost over 3 years	Necessary Annual report on surface artefacts on Hill and terraces to ATG	SANParks, ATG, Archaeologists, SAHRA	▪ Advise archaeologists of exposed artefacts ▪ Check surface artefacts against photographs and list those missing ▪ Take new photographs as required.	▪ Annually ▪ Assess impact of tourism on surface artefacts after three years
Collections management policy for return of artefacts from previous excavations to the site	Political pressure to return artefacts that have become provincial and national icons	▪ Budget for a world-class facility that will keep the artefacts safe at Mapungubwe; ▪ Draft a collections policy for the facility; ▪ Assist the province to apply for the return of key artefacts	Necessary Establish protocol by end-2003	SANParks, SAHRA and ATG	▪ Check delivery of protocol ▪ Check facilities planned ▪ Facilitate return of key artefacts	▪ Annual
Liaison with SAHRA permitting authority	SAHRA and SANParks could have differing policies	▪ SAHRA to send applications to the Park Manager and SANParks for approval	Necessary On-going	SANParks, Park Manager and SAHRA	▪ Review permits and reports	▪ Annually

4.3 *Management of cultural landscape: Key issues*: Integrity and authenticity of features and landscape; intangible heritage of local communities; integration of cultural heritage resources management with wildlife and environmental management; procedures for management of disasters, fire and waste

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Retain significance of site features and landscape	Lack of integrity and authenticity diminishes visitor experience and significance of site	▪ Identify elements in the landscape that have tangible and intangible significance and ensure they retain their integrity ▪ Remove structures and power line ▪ Use boardwalks only when necessary to protect in situ deposits ▪ Draw up specifications for materials that blend with the landscape for paths, steps, stabilization, signage and on-site exhibits	Necessary Plans agreed 2002 Refine specifications by end 2003	SANParks, ATG, SAHRA	▪ Mark places of significance on a map of the site ▪ Check planned installations against specifications	On-going
Engage with local communities	Lack of consultation leads to dissatisfaction and adverse publicity from affected communities	▪ Engage with land owners and claimants; ▪ communicate with local communities; and ▪ involve them in promotion and conservation	Necessary	SANParks	▪ Check that meetings have been held and relevant people have been identified for consultation	On-going
Integrate cultural heritage resources with environmental management	Lack of co-ordination with cultural resources management leads to misunderstandings	▪ Integrate environmental and cultural heritage conservation management	Necessary Integrate plans by end 2003	SANParks and Park Committee	▪ Check that plans dovetail	Annually
Develop disaster planning and fire management	Lack of planning can add to damage caused by disasters	▪ Identify high risk areas such as the western ascent, steep slopes and southern terrace open excavation and plan for potential problems caused by fire and natural and unusual erosion events	Necessary	SANParks	▪ Check that plans have been drawn up and are known to all staff	Annually
Efficient waste management	Litter detracts from significance of site	▪ Warn all visitors against littering ▪ Remove all litter from the site	Necessary	SANParks	▪ Check for litter and remove	Daily and weekly

4.4 *Management of tourism: Key issues:* Presentation of the site to visitors as a pilgrimage and wilderness experience; signage; establish carrying capacity of the site and control access; access routes and paths; information nodes for visitors

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
World-class presentation of site to visitors	Lack of a common vision and incorrect information can lead to bad visitor experience	▪ Workshop a common vision based on the World Heritage nomination and tourism report ▪ Prepare and print information leaflets on the Hill and terraces ▪ Inform all SANParks staff, land owners, tour guides and tour operators	Necessary Print basic information for all stake-holders by Dec 2003	SANParks, ATG	▪ Conduct workshop ▪ Check presentations by tour guides ▪ Check content of publications ▪ Publish and distribute leaflets	On-going
Stimulate a sense of pilgrimage and a wilderness experience for visitors	Guides and visitors may respond to different stimuli	▪ Agree on the principles to be included in a pilgrimage and wilderness experience ▪ Design a recommended route accordingly ▪ Make the concept known to all guides and tour operators	Necessary Principles March 2004 Implement end 2004	ATG, SANParks, SAHRA	▪ Check process is being followed ▪ Check all relevant stakeholders are involved and informed	Annually
Develop signage that blends with the landscape and offers accurate and interesting information	Poorly worded or decaying signage detracts from visitor experience	▪ Use low maintenance natural materials that blend with the environment ▪ Place signage in unobtrusive places ▪ Use wording that contributes to the common vision for the site ▪ National Heritage Resources Act requires that SAHRA check the wording of all signage at national heritage sites	Necessary Deliver plan for signage by March 2004. Erect signage by June 2004	SANParks, ATG, SAHRA	▪ ATG to approve materials ▪ SAHRA to approve wording 60 days before production ▪ Check for deterioration of materials ▪ Check for vandalism	Monthly
Establish and maintain carrying capacity of site to retain the ambience of the site	Over-use can lead to erosion, litter and loss of fabric and integrity	▪ Set initial upper limits to number of vehicles per day, group numbers and the number of groups per month ▪ Keep daily records of numbers of visitors to individual sites through entrance ticket or permit system ▪ Assess impact in annual review ▪ Review limits annually	Necessary Set initial upper limits by October 2003	SANParks, ATG	▪ Do not exceed limits ▪ Spot-check numbers ▪ Check paths, slopes, walling, artefacts and litter for change ▪ Review carrying capacity according to impact	Monthly and annually

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Control access to Hill and adjacent terraces	Over-use will damage original fabric and *in situ* deposits	▪ Do not allow access by helicopter to hilltop ▪ Limit size of visiting parties ▪ Develop an alternative route to the western ascent	Necessary Plan accepted 2002	SANParks	▪ Check for signs of over-use such as damage to walling, in situ deposits and features	Annually
Design suitable access routes to top of Hill	Over-use of western ascent could cause further damage to original fabric on the ascent and at the top and could be a safety hazard	▪ Use materials that are removable and non-invasive ▪ Monitor effect of increased traffic on route ▪ Warn visitors that they use the route at their own risk	Necessary Implement by October 2003	SANParks	▪ Check that holes in rock and ladder are safe; ▪ Check that materials used are non-invasive ▪ Check insurance risks	Annually
Restrict visitors to paths	Unrestricted access leads to damage of *in situ* deposits and loss of surface artefacts	▪ Establish well designed paths with non-invasive and removable materials such as concrete ▪ Inform all guides and tour operators that visitors may not step off designated paths ▪ Establish a path maintenance plan ▪ Monitor paths after heavy rains ▪ Consider using boardwalks if necessary	Necessary Path plans accepted 2002 Maintenance plan October 2003	SANParks, ATG	▪ Check path surrounds for signs of non-compliance ▪ Check state of path surfaces	Annually
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	▪ Do not erect toilets or any other structures that require foundations in the vicinity of the Hill and terraces ▪ Design information boards and displays with low visual impact on the views and vistas	Necessary Complete plans by March 2004	SANParks	▪ Check that no structures are planned or erected	Annually

5. RECOMMENDATIONS FOR DEVELOPMENT

5.1 Park and Tourism Infrastructure: Key Issues: Management and monitoring programme; condition reporting; dissemination of information; appointment of professional officer for cultural resources

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Water	None available on site	Water should be brought in in containers only when required for specific projects such as drinking water for staff during rehabilitation	Necessary As required	SANParks	Check contractors remove containers when work has finished.
Energy	None available, but De Beers power line interferes with visual impact of Hill	None needed for tourism or cultural heritage resources management. Power line to be re-routed. Negotiate with De Beers and Eskom re rerouting of powerline	Necessary Complete by March 2004	SANParks	Commission impact assessment to check that new route does not interfere with cultural heritage or natural heritage resources
Sanitation	None available	Portable toilets as required for staff for special projects	Necessary Check monthly	SANParks	Permanent toilets not permitted. Check that temporary toilets are not leaking.
Waste	No bins on site	No bins on site. Guides and tour operators to carry bags in which to remove waste	Necessary Check weekly	SANParks	Check sites and remove litter
Access road	Vehicle access onto terrace deposits was stopped in 2002	No vehicle access onto terrace deposits	Done Check monthly	SANParks	Spot check that visitors walk onto the site from vehicles parked south of the water course. Reinforce with information to guides.
Transport	Self-drive vehicles park south of site	Limit number of vehicles near site to avoid damage to vegetation and deposits	Necessary Check monthly	SANParks	Spot check that vehicles use designated parking area. Reinforce with information to guides.
Car park	Casual parking at entrance gate and under trees nearer to Hill	Demarcate parking area near Hill to avoid vehicles damaging vegetation or creating erosion spots	Necessary Oct 2003	SANParks	Check that demarcation is subtle and does not spoil the wilderness experience
Safety – fire	SANParks fire policy in place. More details needed	Avoid use of water to extinguish fires on archaeological sites	Necessary Check monthly and in drought	SANParks	Monitor vegetation for possible increase in fire risk.

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Security and fencing	SANParks policy in place More details needed	No fencing required. Main gate to sites to be kept locked and manned once tourism increases	Necessary Oct 2003	SANParks	A gate keeper will be necessary to monitor visitor numbers and assist visitors without guides.
Paths	Paths are being created and upgraded as part of the rehabilitation programme	Paths must be made according to specifications and with minimum impact on *in situ* deposits	Necessary March 2004 and check monthly	SANParks	Check that paths are functional and repair when necessary
Rehabilitation of old excavations	Vuka are implementing the rehabilitation plan in collaboration with archaeologists	Archaeologists to do detailed illustrated reports on what was done, where and how, for on-going management reference	Necessary March 2004 and check annually	SANParks	Use the report as a base-line condition report for annual monitoring until a detailed condition report is commissioned
Condition report	Report on rehabilitation work could serve as a temporary base-line	Commission or undertake an illustrated condition report on all cultural heritage resources at Mapungubwe Hill and surrounding terraces to serve as a base-line against which to measure and monitor change	Necessary October 2004	SANParks, ATG, SAHRA	Check that all cultural heritage resources are included and that photographs are taken of the present condition of each resource for comparative purposes. Keep report on file and make copies for use in the field.
Information leaflets	None available yet for the Hill and related sites	Basic information leaflets that include statement of significance and visitor rules are required	Necessary Oct 2003 with annual update	SANParks	Draft by the ATG and should include all the information a visitor must know to conserve the cultural and natural resources of the place and to enhance their experience
Information boards and displays	None at present, apart from the national monument plaque	Planning to be done by a tourism expert in collaboration with SANParks and ATG	Necessary March 2004 and check annually	SANParks	Close collaboration with SAHRA required for information to be included. Check that boards and displays are in good repair and replace when necessary
Permanent staff	Manager, but no Archaeologist	A professional Archaeologist should be appointed to monitor and manage the cultural heritage resources in the Park	Necessary October 2003 and monthly	SANParks	Check on progress through monthly and annual reports.

ROCK ART

Generic Management Plan for Rock Art Sites

SUMMARY OF KEY ISSUES FOR ROCK ART SITES

- Integrity and authenticity of site location in the landscape
- Survey to be completed
- Impact assessments required before intervention according to relevant legislation
- Permits required from SAHRA for all interventions
- Interventions to be reversible
- Recording of interventions essential
- Research policy and priorities
- Detailed recording and condition reporting
- Protection against dust and water
- Safety of surface artefacts and features
- Criteria for identifying sites suitable for visitation
- Developing sites for a pilgrimage and wilderness experience
- Access routes and paths
- Carrying capacity of individual sites
- Plan for presentation of rock art
- Design of guided and self-guided tourist routes
- Graffiti removal
- Visitor facilities, information and signage
- Integration of rock art into cultural and natural heritage resources management
- Disaster, fire and waste management
- Monitoring
- Staffing
- Training of monitoring staff and tour guides

1 STATEMENT OF SIGNIFICANCE

In a survey by Palaeo-Art Field Services, 150 rock art sites have been recorded in the Limpopo-Shashe Confluence Area. These include 40 sites in Zimbabwe. There are more than 110 rock art sites in the MCL and on adjacent farms. The sample of 150 includes 139 painted sites and 56 engraving sites, with most of the engravings found at the same sites as paintings. There are several different traditions that can be correlated with the cosmology of San hunter-gatherers, Khoekhoe herders and Iron Age farmers. The Limpopo valley is one of the rare instances in the sub-continent where rock paintings and rock engravings occur at the same place. In the MCL they are found together in rock shelters on the farms Balerno and Schroda.

The rock art, particularly that done in the San tradition, together with the archaeological evidence from Little Muck Shelter, provides a valuable commentary by the indigenous people themselves on the historical process in the MCL in the first millennium AD. In general terms, the process culminated in the appropriation by herders and farmers of places that had been used exclusively by hunter-gatherer-foragers. It led to the disappearance (and/or assimilation) of the San and ultimately to the rise of social stratification and attendant cultural and economic development at Mapungubwe. More specifically, the covering of San art by the art of herders and farmers

symbolically cut off the power of the older images of the spirit world and the religious beliefs that generated them. In this context, argue Hall & Smith (2000:43), San paintings of sheep "may represent a San attempt to neutralise or overcome the power of the herders; certainly they symbolise the extent to which the new herder population threatened San life."

From the first millennium AD, Iron Age people were occupying much the same landscape as the hunter-gatherers. The absence of San paintings of images that could be linked to the Mapungubwe period is evidence that the power and presence of the hunter-gatherers had been changed radically by early in the second millennium. Historical records, however, relate that people of mixed San and Sotho descent were living in the wider area in the nineteenth century and that they were engaged in rainmaking, a practice that was carried on by San people in many parts of Southern Africa. The assimilation of hunter-gatherers into the dominant economy of the farmers was therefore a long and complex process.

2 SITE DESCRIPTION

2.1 Site information

Farm name and number	See list of sites in Table 1
Co-ordinates	Various
Altitude	
Owner	Republic of South Africa, Department of Environment Affairs and Tourism, SANParks
Contact person	Park Manager, Bernard van Lente, SANParks, Tel/fax 015 534 0102
Archaeological permit holders since 1989	See list in Table 2
Designated respositories	Rock Art Research Institute, University of the Witwatersrand; Palaeoart Services, Louis Trichardt
Public access and visitation	Guided visits by appointment only; self-guided routes planned
SANParks zonation	Various
Grading status	Mapungubwe Cultural Landscape declared a National Heritage Site in July 2002

2.2 Locality and description

Information on the location, distribution and content of rock art sites in the Park has been collected systematically since 1992 by Palaeo-Art Field Services, a non-governmental organisation led by Ed Eastwood from Louis Trichardt. He works closely with the Rock Art Research Institute at the University of the Witwatersrand.

Three traditions of rock painting have been identified in the MCL, Limpopo-Shashe Confluence Area and surrounding Soutpansberg region.

1. The majority of the paintings are in the **earliest tradition** of finely detailed images that reflect beliefs and cosmology common to the San diaspora of the past five thousand years or more. Most are in red ochre, with some in black and white. Eastwood's (2001:25) survey shows that human figures are more common than any other category (45.7%), followed by animals (42.3%), items of clothing such as loin cloths and aprons (8.8%), and lines, dots, nets, animal spoor and therianthropes (3.2%). The analysis of human figures in the rock paintings shows that those of uncertain gender were the most common (48%), followed by women (28%) and men (24%). This is unusual in the southern African context as images of men usually predominate. Another unusual feature in the rock art that is also related to gender, is the high incidence of paintings of women's

leather aprons with smaller numbers of paintings that probably represent loin cloths worn by men. In the animal category, indeterminate animals were most common, followed by kudu, giraffe, elephant, impala, tsessebe, fish, eland, ostrich, locust, rhinoceros, fat-tailed sheep and other animals of lesser significance. The paintings of domesticated fat-tailed sheep can be dated because they were introduced by herders and immigrant farmers in the first millennium AD. As the sheep are in the same style as the more conventional San paintings, they were probably done by the hunter-gatherers rather than the herders.

2. Mostly overlying the San tradition images, but sometimes underlying them, are **geometric paintings**. The paint, in red, orange and white, was applied with a finger. Paintings in this tradition are less common than those of the San, but are distributed throughout the region. There is no clear evidence of who the artists were, but they are generally thought to have been herders with sheep who moved through the region briefly between the time of the first establishment of Iron Age agriculturist communities and about AD 900. Similar geometric paintings and engravings are found in other regions of Southern Africa as well. They may be the work of Khoe-speaking herders, related to the San, who acquired sheep and, later, cattle from Iron Age farmers. They moved southwards into the western half of what is now South Africa about 2000 years ago. Apart from the rock art there is as yet no other archaeological trace known of Khoekhoe presence in the MCL.

3. Overlying the earlier rock art traditions are what have been called **'late white' paintings**. They are typical of those done by Bantu-speaking people in east, central and southern Africa, and more specifically by ancestors of the modern Sotho-Tswana cultural group. They are considered to date to the period after 1300 AD (Hall & Smith 2000:39) and are further evidence for the appropriation of places that had previously been used by others.

Rock engravings include grooves, cupules, representations of animal tracks, geometric patterns and depictions of animals.

2.3 Physical environment

The distribution map of rock art sites correlates closely with the prominent outcrops of cave sandstone in the MCL, although paintings and engravings also occur in small isolated rock shelters away from the higher ridges. Eastwood has remarked that most sites with hunter-gatherer paintings were found at ground level in rock shelters with a flat floor. Larger sites were later used by Iron Age farmers who left stone structures, grain bins and other storage facilities. Some of these larger sites were also used by herders, but the Khoekhoe generally painted at sites with little floor space or sloping floors and low ceilings.

2.4 Previous and ongoing research

Three rock art sites have been excavated and the deposits provide detailed information on the sequence of events during the transition from the Stone Age to the Iron Age. The excavated sites are Little Muck and Balerno shelters in the MCL and Salt Pan Shelter about 100 km to the south in the Soutpansberg, outside of the proposed MCL. Additional detail about the transition can be inferred from the rock art.

Little Muck Shelter (Hall & Smith 2000), with occupation deposits about 1 m thick, provides the most complete sequence from which to gauge the nature and tempo of the process of change from foraging to agriculture in the MCL. Like Salt Pan Shelter, Balerno and sites on the Botswana side of the Limpopo, the first occupation was in the period just prior to the introduction of pottery about 2000 years ago. Activity intensified thereafter because the foragers established an interactive relationship with their agriculturist neighbours at Leokwe Hill (in the case of Little

Muck). A similar symbiosis has been recorded between foragers and early Iron Age communities further south in the Soutpansberg at Salt Pan Shelter and in the Waterberg (Van der Ryst 1998).

When compared with the pre-ceramic deposits at the base of the Little Muck sequence that are dated by inference to pre-250 AD, the deposits associated with the earliest Happy Rest/Bambata pottery have higher numbers of stone scrapers. These stone tools were used for preparation of hides. This suggests to Hall and Smith (2000:34) that the foragers were preparing hides for exchange with agriculturists. In the overlying deposit with Leokwe-Zhizo pottery that dates between 1000 and 1100 AD, this activity was further intensified. In contrast, in the uppermost layers associated with K2 and Mapungubwe pottery, dating between 1100 and 1300 AD, formal stone tools, worked bone, shell and ochre are either absent or occur in very small quantities.

The interpretation is that these uppermost layers that post-date 1050 AD, and include glass beads, iron artefacts and K2 and Mapungubwe period pottery, were the result of occupation of the shelter not by the Later Stone Age foragers, but by people from the agriculturist community that was established by that time at nearby Leokwe Hill. After that time, foragers became excluded from barter and craft exchanges and their sites were appropriated by farmers. This appropriation is further emphasised by the presence of fourteen gaming 'boards' that were carved into the sandstone in front of Little Muck Shelter. These 'boards' are often found associated with Zhizo and Leopard's Kopje sites. In the recent past, they have been made and used exclusively by men in Shona, Venda, Shangaan and Tsonga-speaking communities. It is likely that this tradition has been a common practice for a long time. Schmidt (1995) makes reference to the fact that some Khoekhoe peoples believed that this "cloud game" or "African chess" was placed on the rock by their god, Heiseb, and was mystically linked to rain.

Although the rock paintings at Little Muck Shelter cannot be directly dated, the absence of ochre in the uppermost deposits is strong circumstantial evidence that the paintings were done prior to about 1050 AD when the site was taken over by Iron Age farmers.

Table 1: Assessment of Rock Art sites

Numbers 1-3 refer to grading of interesting sites.
LG = can accommodate larger groups; suitable for tourist & school groups.
SI = special interest groups; inclusion in walking trails.
RS = of significance to rock art researchers.

Reference number and Property	Site/shelter Name	Grading / LG/ SI/ RS	No. of Engravings	No. of Herder (Khoekhoe) paintings	No. of hunter-gatherer (San) paintings
AR/1 Armenia	Tombo-la-Tholo	2 / SI/RS	16		66
AR/2	Alfred's Rock	2 / SI/RS			47
AR/3	Tholo Mbili	3/RS			2
AR/4	Three Y	3			3
AR/5	Lookout	3	14		
AR/6	Jackal	3			3
AR/7	Battiss 1	1/LG/SI/RS	10		46
AR/8	Battiss 2	3	15		5
AR/9	Battiss 3	1/SI/RS			10
AR/10	Giraffe and Apron	3/SI/RS	1		2
AR/11	Jambila	1/SI			37
AR/12	Aardvark Rock	2/SI/RS	2		31
AR/13	Beehive	1/SI/RS	45		2
AT/1	Witte Vloed	2/SI/RS			7
AT/2 Athens		3/RS	41	5	5

BL/1 Balerno	Apron	1/SI/RS	180		63
BL/2	Centre	3			2
BL/3	Warthog	1/SI/RS	3	1	44
BL/4	Petroglyph	1/LG/SI/RS	37		
BL/5	Arch rock	2/SI/RS	18		2
BL/6	Slashmark	3	67		
BL/7	Schoonraad	1/SI/RS			68
BL/8	Rhinoceros	3	30		1
BL/9	Water Trough	3			2
BL/10	Gemsbok petroglyph	2/RS	4		
BL/11	Cow	3/RS		1	8
DS/1 Den Staat		3	9		2
DS/2		3	139		
DS/3	Den Staat Petroglyphs	1/LG/SI/RS	6		
GW/1 Greefswald	Pager	2/SI/RS	1		7
GW/2	Elephant	2/SI/RS	12		4
GW/3	Venus	1/SI/RS			36
GW/4		3			1
GW/5	Eland	1/LG/SI/RS			13
GW/6	Mongoose	1/LG/SIRS	50		44
GW/7	Symbols	2/SIRS		10	13
GW/8	Clan	3	18		17
GW/9		3	19		
GW/10	Vantage	3/RS	116		5
HK/1 Hackthorne		3	12		9
HK/2		3/RS			32
HK/3		3/RS			2
HK/4		3/RS			9
HK/5		3/RS		1	
LM/1 Little Muck	Boulder	3/RS			19
LM/2	Thudwa	1/LG/SI/RS	44		147
LM/3	Red Dune	1/SI/RS			81
LM/4	Kolope Hill	3/RS		36	
MC/1 Machete	Kaoxa	1/LG/SI/RS	32	9	173
MC/2	Mabala Boulder	3			3
MC/3	Machete Kop	3/RS			7
MC/4	Machete Boulder	3			6
MD/1 Modena	Kaross	1/SI/RS	78	84	99
MD/2	Ngoma	1/LG/SI/RS			138
MD/3	Giraffe Cave	3/RS		3	13
MD/4	Antelope	3			1
MD/5	Dam	3			3
MD/6	Kopje	3	3		
MN/1 Mona	Zebra	2/RS	1	1	5
MN/2	Apron Rock	3/RS			1
MN/3	Sweetheart	3/RS	3		4
MN/4	Antelope Rock	3/RS			7
MN/5	Bird	2/RS	66		1
MN/6	Early White	3/RS			8
PA/1 Parma	Mulambo Boulder	2/SI/RS		220	10

PA/2	Tombo-la-Thudwa	2/SI/RS	20		19
PD/1 Pont Drift	Mussel	3	5		
PD/2	Tshisiku	3/RS	16		1
PD/3	Poort	3	23		
PD/4	Two Rivers	3	15		
PD/5	Zebra	3			1
RD/1 Reidel	Main	1/LG/SI/RS	13		86
RD/2		3			2
RD/3		3/RS			23
SA/1 Samaria		3/RS	16		15
SA/2		3	16		
SC/1 Schroda	River	2/LG/SI/RS	25		22
SC/2	Beacon 1	2/RS		48	
SC/3	Beacon 2	3/RS		12	
SC/4	Beacon 3	1/LG/SI/RS	83	107	
SC/5	Game Scout	3/RS			19
SC/6	Amphitheatre	3/RS	3		7
SC/7	Vhembe Road	3/RS			21
SC/8	Boundary	3	7		
SC/9	Tampan Cave	2/RS		2	
SC/10	Spur Boulders 1	2/RS			6
SC/11	Spur Boulders 2	3/RS			4
SC/12	Phoku	3			3
SC/13	Mosadi	3/RS			8
SC/14	Y	3/RS			5
SC/15	Giraffe & Zebra	3			9
SC/16	Shedo-ya-Musadzi	1/LG/SI/RS			23
WL/1 Welton		3			4
WL/2	Tunnel	1/LG/SI/RS	450	21	9
WL/3		3			1
WL/4		3			7
WL/5		3			5
WL/6		3			8

2.5 Site sensitivities and threats

All developments and interventions at rock art sites, including the installation of boardwalks and notice boards, must be subject to an impact assessment process that includes a survey and statement of significance. A detailed record of all interventions must be kept.

2.5.1 Sensitivities

Rock paintings are especially vulnerable to dust that may be generated by people visiting the site. The dust adheres to moist surface and is permanently fixed by salts precipitating on the rock face.

Rock engravings are vulnerable to people walking on them if they are placed on horizontal rock surfaces.

All rock art is vulnerable to touching as oil and moisture adheres to the surface and cannot be removed.

The ambience of rock art sites is easily disturbed by over-use and litter.

2.6.2 Threats

The following threats could damage the integrity of the rock paintings and engravings:

- Increased dust has a permanent adverse long-term effect on paintings
- Signage can be intrusive
- Sites close to vehicle access points are most vulnerable to inappropriate visitor behaviour
- Clearing of vegetation to allow more people onto a site may change the micro-climate and adversely affect paintings
- Veld fires can cause paint to flake off if heat is generated by burning vegetation close to painted surfaces

2.7 Existing site management

There are three levels of management for the Park and MCL, namely SANParks, SAHRA and the Park Manager.

The park comprises a range of properties managed, monitored and funded within the framework applied to all national parks. The properties include:

- farms owned by the State and transferred to SANParks for the Vhembe-Dongola National Park that was formally gazetted on 7 April 2000;
- farms owned by the Friends of Peace Parks and managed by SANParks according to a contractual agreement;
- farms that are privately owned and managed by SANParks according to a contractual agreement; and
- privately owned properties that SANParks is negotiating to acquire.

In terms of the South African World Heritage Convention Act, **SANParks** will be the management authority appointed by the Department of Environmental Affairs and Tourism for the Mapungubwe Cultural Landscape if it is declared a World Heritage Site.

The Mapungubwe Cultural Landscape was declared a National Heritage Site in July 2002 by the South African Heritage Resources Agency (SAHRA). In terms of the National Heritage Resources Act: (No. 25 of 1999), **SAHRA** is responsible for the protection of the site in the following ways:

- a conservation management plan must be submitted for the national heritage site and responsibility for implementing such a plan can be delegated to the owner of the property if a formal heritage agreement is drawn up, in this case between SAHRA and SANParks;
- no person may destroy, damage, deface, excavate, alter, disturb, remove from its original position, subdivide or change the planning status of the site or archaeological and palaeontological deposits within it, without a permit issued by SAHRA;
- conditions pertaining to these permits are monitored by SAHRA in collaboration with SANParks;
- SANParks is responsible for maintaining the site according to minimum standards and a procedure to be prescribed by SAHRA in consultation with SANParks;
- SAHRA may make regulations, with the consent of SANParks, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees;
- SAHRA may call for a heritage impact assessment report if certain activities are likely to impact on heritage resources;
- the contents of on-site interpretive material or programmes for presentation of a national heritage site to the public must be submitted to SAHRA for approval at least 60 days in advance

The cultural heritage sites of the Vhembe-Dongola National Park, are managed by the **Park Manager** who is responsible for:

- regular monitoring of the site;
- reporting threats or damage to heritage resources;
- preparedness for natural disasters;
- implementing legal requirements for environmental impact assessments in advance of development;
- ensuring that heritage impact assessments are done prior to any developments that may affect heritage resources;
- informing permanent staff and contract workers of the significance of the site;
- preparing sites for tourism access;
- allowing access only to visitors who have made prior arrangements;
- ensuring that visitors may enter only with a guide approved by SANParks.

3 MANAGEMENT OBJECTIVES FOR ROCK ART SITES

The objectives are to retain the significance of all rock art in the Park by;

- integrating the management of natural and cultural heritage resources;
- ensuring that environmental and heritage impact assessments are done before any development or intervention takes place at a rock art site;
- keeping up-to-date records of sites and resources in an integrated GIS database capable of alerting managers to potential problems;
- demarcating areas and sites (on the ground where necessary) to alert staff and visitors to the presence of sensitive rock art sites in the Park;
- appointing a permanent staff member to manage the cultural heritage resources in the Park and to integrate activities and strategies for rock art with those for natural heritage resources;
- collating existing reports and commissioning new ones to develop a base-line condition report of all rock art in the Park;
- arriving at an arrangement with Palaeo-Art Services to obtain copies of their database for management purposes;
- closely monitoring the state of individual sites against the condition report on an annual basis so that change can be measured and policies and strategies can be altered if they are not working;
- developing protocols to involve private land owners in the identification, care, control and management of rock art on their properties;
- clearly defining areas on private land that may be used for crops and other commercial farming activities;
- conserving *in situ* cultural deposits and excavations at rock art sites against natural and human-induced erosion;
- developing a policy for research and priorities;
- developing a rock art management policy;
- protecting the artefacts and features that are exposed on the surface at rock art sites;
- restoring, within reason, the integrity and authenticity of the views and vistas of the landscape so that they are not interrupted by buildings, power lines or vehicle access roads;
- implementing procedures for the management of natural disasters, fire and waste at rock art sites;
- developing a coherent plan for presenting rock art to the public as an integral part of a pilgrimage and wilderness experience that promotes both natural and cultural resources;
- designing appropriate and low-impact signage;

- controlling access and gathering information on visitor numbers and their impact to assess the carrying capacity of individual sites and areas;
- designing and installing appropriate access roads and paths for tourists and management;
- designing appropriate visitor information leaflets that make a special effort to integrate information about rock art into descriptions of the natural and cultural aspects of the landscape;
- identifying nodes for development of Park and tourism infrastructure and making sure that the developments are sensitive to both natural and cultural heritage resources; and
- disseminating information through leaflets and displays to all stakeholders and visitors so that they are aware of the significance of rock art as an integral part of the natural and cultural heritage resources in the Park and MCL.

The following sites have been suggested by Ed Eastwood as suitable for opening to the public because they are of a suitable size for larger groups, they allow unrestricted pedestrian flow, their vulnerability to damage is low, they have moderate to high potential interest, and they do not pose a threat to visitor safety.

MC/1 – Kaoxa's Shelter on Machete has been open to the public for several years. Information boards were installed in 1999. Although there is no visitors' book at the site, guides reported that over 500 people visited there in 2000. The nearby camp site has subsequently been closed. There are both Khoekhoe and San paintings at the site as well as an engraved *mafuvha* board. Of particular interest are 13 images of locusts – the only paintings of these insects known in Southern Africa.

River Shelter (SC/1) may have been damaged recently by floods but is worth considering. It has engravings and San paintings including an engraving of an antelope and a number of grooves. Interesting paintings include depictions of San loincloths, fish, elephant, feline and kudu. There is substantial deposit that would need protection.

Shedo-ya-Musadzi (SC/16) is a very large boulder with spacious shelter beneath. Paintings include depictions of Kudu, impala, elephant and humans. There is a rare painting of a wild dog and a clear depiction of a San woman's animal-skin apron.

Eland Shelter (GW/5) has very clear beautiful depictions of female eland and a giraffe. There are a number of depictions of male loincloths.

Mongoose Shelter (GW/6) is a very large shelter – almost a rock face. There are paintings of about 11 mongooses and four elaborate women's aprons, as well as a warthog and tsessebe.

Battiss 1 Shelter (AR/7) would be suitable for public viewing – it is large and has natural shelf barriers. There are large paintings of a herd of five female and a male kudu. The female kudu exhibits the head-extended mating posture and they have red genitals. There are paintings of women, and a male loincloth.

Tunnel Shelter (WL/2) has substantial and vulnerable deposit that would need protection. It would however be suitable for visitors because it is spacious and the engravings are not especially vulnerable. There are about 400 cupules pecked into the rock face here.

Beacon 3 (SC/4) has arguably one of the finest examples of Khoekhoe paintings in the Limpopo-Shashe Confluence Area. The paintings consist of hundreds of finger strokes and dots and a large rayed circle and cross motif. It is a fairly large site and could accommodate about 10-12 people. There is no deposit. It is situated high up on the side of a hill.

4 MANAGEMENT AND MONITORING

4.1 ***Identification and documentation: Key issues:*** Integrated management of rock art as part of natural and cultural heritage resources; identification of rock art sites and demarcation of sensitive areas; appointment of permanent staff; access to database and reports; development of base-line condition reports and assessment of threats

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify management tasks relevant to rock art	Potential for non-integration of natural and cultural heritage management tasks and objectives	• Arrange annual workshop for SANParks natural and cultural heritage specialists and ATG to identify areas of mutual concern and interaction and develop meaningful integrated management strategies that include rock art	Necessary Before the end of 2003	SANParks, PC (as advised by ATG)	Check that Workshop has been held and re-schedule if necessary	Annually in November
Collate all site information in a GIS database accessible to managers	Sites cannot be managed if staff do not know where they are	• Make a formal arrangement with Palaeo-Art Services to obtain access to their database and records • Identify properties not yet surveyed for rock art • Commission surveys • Submit information to GIS specialist, give hard copies of maps to Park Manager and make database accessible to head office planners and managers • Copy data to SAHRA for national inventory	Necessary Before the end of 2003	SANParks and specialist contractors; SAHRA	Check that Park Manager has up-to-date maps	Annually in December
Protect and demarcate sensitive areas	Sites may be damaged if staff are not alerted to presence	• Check maps and database before planning any intervention • Devise a means of demarcating sensitive areas before work commences in vicinity	Necessary As required	SANParks	Check that maps and database have been consulted before work begins on site	As required
Appoint professional Archaeologist to permanent staff	Inexperience can lead to ineffective identification, conservation and monitoring	• Include post in Park management and business plan • ensure provision is made in budget for salary and running expenses • advertise and appoint as soon as possible	Immediate Advertise before December 2003	SANParks	Check that provision has been made and advertisement has been placed. If not, check why the delay	Monthly from October 2003
Condition reports for monitoring	Cannot monitor rock art without knowledge of previous condition	• Prioritise sites for condition reporting • draw up a schedule • appoint specialists to do the work	Necessary Start in 2004	SANParks and PC (as advised by ATG)	Check that priority list is being implemented	Annually

4.2 *Management of site interventions: Key issues:* Impact assessment, protection of paintings against dust and water; graffiti removal; signage; reporting on interventions

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Assess impact before intervention	Potential damage to rock art if assessment not done	• Appoint independent rock art specialist to assess need for, and impact of, development or intervention	Immediate As required	SANParks, SAHRA, PC (as advised by ATG)	Peer review of impact assessment by ATG and SAHRA prior to issuing of permits	On receipt of report
Co-ordinate project planning	Un-coordinated rehabilitation work is inefficient	• Planning and co-ordination must be done in conjunction with SANParks, Environmental Control Officer (ECO), SAHRA and Archaeology Task Group (ATG)	Immediate After approval of plans	SANParks, Contractor and permitted Archaeologists, SAHRA	All parties to report to SANParks and ATG	Weekly
Draw up specifications for intervention	Poor quality materials and workmanship will create further problems in the future	• Permit to be obtained from SAHRA • Archaeologist to be present throughout on-site work period; • Protect painted surfaces if dust will be generated or water used; • All installations must be removable with minimum impact; • Use non-flammable materials for boardwalks and signage; • Do not fix any metal, cement or other material to painted or engraved rock wall.	Necessary After approval of plans	SAHRA, Contractor, Archaeologist, ECO, PC (as advised by ATG)	Regular inspections by ECO, SANParks, SAHRA and ATG. Check site is kept tidy at all times. Progress and final reports to be delivered.	Weekly
Assess need to remove graffiti	Only remove if there is no threat to painted or engraved surfaces	• Appoint only experienced specialist; • Permit to be obtained from SAHRA; • Protect painted and engraved surfaces against dust and water; • Re-integrate areas after graffiti removal; • Do not impact on original engraved or painted surfaces	Necessary After approval of plans	SAHRA, Specialist, Archaeologist, PC (as advised by ATG)	Regular inspections by ECO, SANParks, SAHRA and ATG. Check site is kept tidy at all times. Progress and final reports to be delivered.	Annual inspection

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Make all parties aware of interventions and need for monitoring	Loss of information through inadequate recording and monitoring	• Report interventions on database • Monitor changes carefully so that action can be taken if interventions are not successful • Share knowledge and progress with SAHRA and ATG.	Necessary Reports to be submitted to SAHRA and ATG	Archaeologist, SAHRA, PC (as advised by ATG)	Check interventions are recorded and photographs are taken.	Annually or as required on permit
Indicate access roads	Damage to sites and deposits if correct access routes not used	• Only those roads and paths agreed to between SANParks, Archaeologists and specialist contractor may be used	Immediate As required	Contractor, ECO, SANParks and Archaeologists	ECO to check access roads regularly	Weekly during work on site
Provide access for construction vehicles	Temporary roads and off-road access can damage sites and interfere with integrity of cultural landscape	• No off-road driving allowed; temporary access roads must be rehabilitated after usage and width of roads restricted to maximum of 3 m.	Necessary As required	Contractor and SANParks	Check rehabilitation of temporary access roads against those agreed to satisfaction of SANParks.	As required
Demarcate areas for construction personnel	Un-coordinated movement can lead to damage of sites and landscape	• Contractor must ensure that all construction personnel, labourers and equipment remain within demarcated restoration sites at all times. Movement outside boundaries may be done only with permission from the ECO	Necessary As required	Contractor and ECO	Check that all work is done within demarcated areas.	Weekly during work on site
Protect *in situ* deposits	Deposits can be damaged during construction or conservation work	• Cover floor of rock shelter during work period • Avoid unnecessary impact on in situ deposits	Necessary As required	Contractor and Archaeologist	Check that floor is covered	Weekly during work on site
Report on intervention process	Materials may need to be replaced or adjusted in future	• Ensure reports are received from contractor and archaeologists and are placed on file	Necessary On-going	Archaeologist, Contractor, SANParks	Check that reports are received	Annually

4.3 *Management of research: Key issues*: Research policy and priorities; database management policy.

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify research needs and priorities	Information from rock art may not be integrated into history of the landscape	• Develop a research policy and priorities in consultation with all stakeholders • Draft a 5-year plan • Ensure publication of results of survey and research	Necessary Complete by end of 2008	SANParks, SAHRA, PC (as advised by ATG)	• Deliver policy and priorities before end 2005 • Assess research applications on merit • Check publications	Annual, and every 3 and 6 years for mid-term and National Heritage Site review process
Database management policy	Database is privately owned by Palaeo-Art Services	• Consult with SAHRA and Palaeo-Art Services to obtain access to database for Park Management and SAHRA national inventory • Draft a database policy for the facility; • Budget for obtaining and maintaining the rock art database.	Necessary Establish protocol by end-2003	SANParks, SAHRA and PC (as advised by ATG)	• Check delivery of policy • Check facilities planned to maintain database	March 2004 and quarterly
Establish a resource library in the Park	Ignorance of research that has been done can lead to duplication and loss of information	• Obtain copies of all relevant publications and reports on rock art in the Park; • Keep an inventory of publications for easy reference.	Necessary On-going	SANParks, Archaeologist, PC (as advised by ATG)	• Check that publications are received and catalogued	Annually Assess impact of research and publications every three years

4.4 Management of landscape setting: Key issues: Integrity and authenticity of features and landscape; restoring and retaining views and vistas to preserve wilderness experience; engagement with local communities; development of protocols for private land owners; integration of rock art site management with wildlife and environmental management; procedures for management of disasters, fire and waste

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Retain significance of site features and landscape	Lack of integrity and authenticity diminishes visitor experience and significance of sites	• List significant structures, landscape features, views and vistas noted during surveys and condition reporting • Identify interventions if required to restore significance • Prioritise sites for intervention and develop business plans; • Apply for permit from SAHRA for all alterations and interventions • Budget and raise funds required	Necessary List by March 2004 Prioritise by June 2004 Budget and implement according to priorities	SANParks, SAHRA, PC (as advised by ATG)	• Check that list is prepared • Check that priorities are identified • Check permit is obtained • Check budget is appropriate	Quarterly
Preserve wilderness experience with policy of minimal intervention	Insensitive intervention can destroy integrity and authenticity	• Develop a policy and procedure for interventions at rock art sites • Ensure that interventions are reversible and that they are recorded in detail • Draw up specifications for materials that blend with the landscape for paths, steps, signage, boardwalks and on-site exhibits	Necessary Policy by March 2004 Specifications by end 2003	SANParks, SAHRA, PC (as advised by ATG)	• Check policy and procedure is being developed • Check methods and materials to be used • Check reports are received	Quarterly
Engage with local communities	Lack of consultation leads to dissatisfaction and adverse publicity from affected communities	• Engage with land owners and claimants; • Draft a plan for on-going consultation to Involve them in promotion and conservation	Necessary Draft plan by end 2003	SANParks, JMC, PC (as advised by ATG)	• Check that meetings have been held and relevant people have been identified for consultation	Quarterly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Develop protocols for private land owners regarding cultural heritage resources	Owners of properties with contractual agreements with SANParks may not fully understand the need for identification and conservation of rock art sites	• Place matter on Agenda for Joint Management Committee • Arrange meetings collectively or individually with property owners to identify key issues and strategies • Draft protocol for discussion and refine	Necessary Initiate by March 2004 Draft protocol by June 2004	SANParks, Joint Management Committee and PC (as advised by ATG)	• Check that process has been planned and initiated • Check that owners are complying	Quarterly until protocol is agreed, and then Annually
Definition of areas on private land that may be used for commercial farming	Developments may be undertaken without consultation	• Include this matter in the development of protocols and in contractual agreements with property owners	Necessary Before March 2004	SANParks and JMC	• Check that property owners are complying with protocol and agreement	Annually
Integrate rock art and environmental management	Lack of co-ordination with cultural resources management leads to misunderstandings	• Integrate environmental and rock art conservation management	Necessary Integrate plans by end 2003	SANParks and Park Committee	• Check that plans dovetail	Annually
Develop disaster planning and fire management	Lack of planning can add to damage caused by disasters	• Identify high risk areas such as rock paintings in proximity to thick vegetation and horizontal engraved surfaces vulnerable to flooding	Necessary	SANParks	• Check that plans have been drawn up and are known to all staff	Annually
Efficient waste management	Litter detracts from significance of site	• Warn all visitors against littering • Remove all litter from the site	Necessary	SANParks	• Check for litter and remove	Daily and weekly

4.5 *Management of tourism: Key issues:* Presentation of rock art sites to visitors as part of a pilgrimage and wilderness experience; signage; establish carrying capacity of each site and control access; access routes and paths; information nodes for visitors

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
World-class presentation of Parkand rock art to visitors	Lack of a common vision, poor integration of rock art with other cultural and natural resources, and incorrect information can lead to bad visitor experience	• Workshop a common vision based on the World Heritage and national heritage nominations, rock art and other cultural heritage site surveys, natural heritage resources and the tourism report • Prepare and print generic information leaflets on rock art in the Park • SAHRA to check printed information • Distribute information to organisations responsible for guide training • Train SANParks guides • Inform all SANParks staff, land owners, tour guides and tour operators	Necessary Print basic information for all stake-holders by Dec 2003	SANParks, SAHRA, PC (as advised by ATG)	• Conduct workshop • Check presentations by tour guides • Check content of publications • Publish and distribute leaflets	**Quarterly**
Stimulate a sense of pilgrimage and a wilderness experience for visitors	Guides and visitors may respond to different stimuli	• Agree on the principles to be included in a pilgrimage and wilderness experience • Design recommended routes • Recommend only guided visits to rock art sites • Make the concept known to all guides and tour operators	Necessary Principles March 2004 Implement end 2004	SANParks, SAHRA, PC (as advised by ATG)	• Check process is being followed • Check all relevant stakeholders are involved and informed	**Quarterly**
Develop signage that blends with the landscape and offers accurate and interesting information	Poorly worded or decaying signage detracts from visitor experience	• Use low maintenance natural materials that blend with the environment • Place signage in unobtrusive places • Use wording that contributes to the common vision for the site • National Heritage Resources Act requires that SAHRA check the wording of all signage at national heritage sites	Necessary Deliver plan for signage by March 2004. Erect signage by June 2004	SANParks, SAHRA, PC (as advised by ATG)	• ATG to approve materials • SAHRA to approve wording 60 days before production • Check for deterioration of materials • Check for vandalism	Monthly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Establish and maintain carrying capacity to retain the ambience of the Park and individual sites	Over-use can lead to erosion, litter and loss of fabric and integrity	• Set initial upper limits to number of vehicles per day, group numbers and the number of groups per month • Keep daily records of numbers of visitors to individual sites through entrance ticket or permit system • Assess impact in annual review • Review limits annually	Necessary Set initial upper limits by October 2003	SANParks, PC (as advised by ATG)	• Do not exceed limits • Spot-check numbers • Check paths, slopes, walling, artefacts and litter for change • Review carrying capacity according to impact	Monthly and annually
Control access to sites	Over-use will damage original fabric and *in situ* deposits	• Limit size of visiting parties • Design suitable access roads and paths • Inform all guides and tour operators that visitors may not step off designated paths • Establish a path maintenance plan • Monitor paths after heavy rains • Consider using boardwalks or stone floor coverings if necessary • Obtain permits from SAHRA for all interventions	Necessary Plans to be drawn up as required Maintenance plan October 2003	SANParks, SAHRA	• Check for signs of over-use such as damage to paintings, engravings, in situ deposits and graffiti and litter • Check path surrounds for signs of non-compliance • Check state of path surfaces	Annually
Restrict visitors to paths	Unrestricted access leads to damage of *in situ* deposits and loss of surface artefacts	• Establish well designed paths with non-invasive and removable materials such as daga • Inform all guides and tour operators that visitors may not step off designated paths • Establish a path maintenance plan • Monitor paths after heavy rains • Consider using boardwalks if necessary	Necessary Path plans accepted 2002 Maintenance plan October 2003	SANParks, PC (as advised by ATG)	• Check path surrounds for signs of non-compliance • Check state of path surfaces	Annually
Establish protocols regarding who is allowed to take visitors to sites and what charges will be made	Visitor numbers may not be properly recorded and controlled	• Archaeologists and other contractors and specialists may only take visitors to sites with permission from the Park Manager • All visits and visitor numbers must be logged to indicate where they have been given permission to go • Fees or free access for specialist visits to be reviewed annually by Park Manager according to level of use	Necessary Protocol to be established by October 2003	SANParks, PC (as advised by ATG), JMC	• Spot checks on visitor groups • Analyse information in Park Manager's log book	Annually

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Design suitable visitor information nodes	Structures will have a negative impact on the view of the cultural landscape	• Do not erect toilets or any other structures that require foundations in the vicinity of rock art sites. • Design information boards and displays with low visual impact on the views and vistas • Consult SAHRA at least 60 days prior to installation on all displays and signage	Necessary Complete plans by March 2004	SANParks, SAHRA, PC (as advised by ATG)	• Check that no structures are planned or erected	Annually
Establish emergency procedure for visitor accidents	Park may be liable for damages if emergency procedure is not in place.	• Draw up written instructions for all tour leaders, specialists, contractors and other individuals and organisations responsible for visitor safety. • Investigate indemnity forms, verbal warnings, signage and other forms of visitor safety information. • Make all staff aware of emergency procedures by testing the system regularly.	Necessary Complete procedure by October 2003	SANParks, JMC, PC	• Check that all relevant people and organisations have copies of emergency procedure. • Check warning signage regularly • Practise procedure annually	Annually

5. RECOMMENDATIONS FOR DEVELOPMENT

5.1 Park and Tourism Infrastructure: Key Issues: Management and monitoring programme; condition reporting; dissemination of information; appointment of professional officer for cultural resources

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Water, energy, sanitation, waste	Variable availability	• Provide as necessary for infrastructure and contract work	Necessary As required	SANParks	• Check contractors remove temporary containers and structures when work has finished.
Access roads	Vehicle access variable	• Do not allow vehicle access onto sensitive sites	Necessary Check monthly	SANParks	• Spot check that visitors comply with rules. Reinforce with information to guides.
Transport	Self-drive vehicles permitted in some zones	• Limit number of vehicles to avoid damage to vegetation and deposits	Necessary Check monthly	SANParks	• Spot check that vehicles use designated parking areas. Reinforce with information to guides.
Car park	Casual parking not yet a problem	• Demarcate parking areas to avoid vehicles damaging vegetation or creating erosion spots	Necessary Oct 2003	SANParks	• Check that demarcation is subtle and does not spoil the wilderness experience
Safety – fire	SANParks fire policy in place.	• Avoid use of water to extinguish fires on archaeological sites	Necessary Check monthly and in drought	SANParks	• Monitor vegetation for possible increase in fire risk.
Security and fencing	SANParks policy in place	• Fencing may be required in some areas. Main gates to be kept locked and manned once tourism increases	Necessary Oct 2003	SANParks	• A gate keeper will be necessary to monitor visitor numbers and assist visitors without guides.
Paths	Paths are being created and upgraded as part of the rehabilitation programme	• Paths must be made according to specifications and with minimum impact on in situ deposits • Permits from SAHRA may be required	Necessary March 2004 and check monthly	SANParks, SAHRA	• Check that paths are functional and repair when necessary • Check that cultural deposits are not disturbed

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Design suitable visitor information nodes	Visitor information centre planned at Hamilton but budget not yet available	• Grade rock art sites according to information needs and significance • Establish priorities and procedures for each grade • Design generic notice board and leaflet information for each grade • Focus most information at the visitor centre at Hamilton • Where required, design on-site information boards and displays with low visual impact on the views and vistas	Necessary Grade sites by March 2004 Priorities by June 2004 Designs by October 2004	SANParks, SAHRA, PC (as advised by ATG)	• Check that sites are graded • Check that priorities and procedures are agreed • Check that designs are appropriate • Check that SAHRA has been consulted
Condition report	No condition reporting has been done at rock art sites	• Commission or undertake an illustrated condition report on all rock art sites to serve as a base-line against which to measure and monitor change	Necessary October 2004	SANParks, SAHRA, PC (as advised by ATG)	• Check that rock art sites are surveyed and that photographs are taken of the present condition of the paintings and engravings for comparative purposes. • Keep report on file and make copies for use in the field.
Information leaflets	None available yet for rock art sites	• Basic information leaflets that include statement of significance and visitor rules are required .	Necessary Oct 2003 with annual update	SANParks	• Draft by the ATG and should include all the information a visitor must know to conserve rock art and to enhance their experience
Information boards and displays	Information boards at Koaxa's Shelter on Machete	• Planning of rock art visitor sites to be done by a tourism expert in collaboration with SANParks and ATG. • Consult SAHRA on information boards and signage at least 60 days before installation	Necessary March 2004 and check annually	SANParks, SAHRA	• Close collaboration with SAHRA required for information to be included. • • Check that boards and displays are in good repair and replace when necessary
Permanent staff	Manager, but no Archaeologist	• A professional Archaeologist should be appointed to monitor and manage the rock art and other cultural heritage resources in the Park	Necessary October 2003 and monthly	SANParks	• Check on progress through monthly and annual reports.

OTHER CULTURAL HERITAGE SITES

Generic Site Management Plan

1. SUMMARY OF KEY ISSUES FOR CULTURAL HERITAGE SITES

- Integrity and authenticity of site features and landscape
- Intangible heritage of local, colonial and pre-colonial communities
- Mapping of all cultural heritage resources and all layers of history
- Impact assessments required before intervention
- Rehabilitation of natural erosion features
- Maintenance of buildings and structures
- Management of poverty relief project
- Recording of interventions
- Research policy and priorities
- Safety of surface artefacts and features
- Developing the place for a pilgrimage and wilderness experience
- Access routes and paths
- Carrying capacity of individual sites
- Presentation of the site to visitors
- Planning guided and self-guided tourist routes
- Visitor facilities, information and signage
- Integration of cultural heritage resources and wildlife and environmental management
- Disaster, fire and waste management
- Condition reporting
- Staffing

1 STATEMENT OF SIGNIFICANCE

The Vhembe/Dongola National Park is synonymous with the proposed Mapungubwe Cultural Landscape (MCL) World Heritage Site. The significance of the MCL lies primarily in the period AD 900-AD 1300, but there are hundreds of other places with cultural heritage significance in the Park. Together they provide evidence for a richly layered tangible and intangible history of people and landscape in this part of the Limpopo Valley that covers millions of years and places the MCL in historical and geographical perspective.

Between 225 and 190 million years ago the landscape was inhabited, amongst other species, by *Massospondylus* sp. reptiles that have left behind fossil footprints at Pont Drift and partial skeletons on Greefswald, Weipe and Schroda. Between 500 000 and a million years ago, an ancient terrace of the Limpopo River provided raw material for Earlier Stone Age people to make handaxes and other stone tools and thousands of their artefacts have been found there. Middle Stone Age people lived on Leokwe Hill and at several other places in the Park more than 100 000 years ago. In the last few thousand years, Later Stone Age people made rock paintings in nearly 100 rock shelters in the cave sandstone between Pont Drift and Schroda and left stone tools and other signs of habitation in many of these and other places.

Khoekhoe herders moved through the region about 2000 years ago and paintings of their sheep have been recorded in the MCL. They were followed closely by the first Iron Age farmers after about AD 350. Over the next 1000 years, changing climatic and social conditions culminated in the rise and demise of the Mapungubwe kingdom.

After dispersal of the kingdom around AD 1300, smaller Iron Age agricultural communities lived in the area and left behind stone walling, middens and cultural remains in the Icon, Khami and Venda traditions.

European travellers moved through the area with increasing frequency from the mid-nineteenth century, often crossing the Limpopo in the vicinity of Pont Drift on their way northwards. However, the earliest European buildings in the Park date from the 1940s.

In 1922, at the initiative of General J. C. Smuts, the then Prime Minister of South Africa, a block of nine farms was set aside as the Dongola Botanical Reserve, the aim of which was to study the vegetation and assess its agricultural and pastoral potential. In the early 1940s this was extended to the concept of a Dongola Wildlife Sanctuary. The Welsh Botanist, Dr. I. B. Pole-Evans, together with Prime Minister Smuts and Minister Conroy (then Minister of Lands) came to a conclusion that the area was unfit for human settlement, and that saving the land from further ruin would necessitate a "Wildlife Sanctuary for the recreation of the nation". The possibility of linking the sanctuary with conservation areas in Botswana and Zimbabwe was considered. In 1948, the Dongola Botanical Reserve was abolished and allocated for settlement by white farmers. Smuts built a small cottage, the ruins of which still stand on a koppie overlooking the Limpopo.

After discovery of gold objects at Mapungubwe in the early 1930s, the farm Greefswald was bought by the government and in the 1970s became a defence force military base until the early 1990s. Many of the structures relating to this period were destroyed when the military moved out.

In 1967 the Vhembe Nature Reserve (8 746ha) comprising the properties Greefswald, Samaria and Den Staat was proclaimed by the Administrator of the Transvaal (Admin. Proc. 282/1967). Greefswald was state owned but the other two farms remained under private ownership. This conservation effort was, however, undermined in the early 1980s when an intensive irrigation scheme was developed on Den Staat and Samaria, thus destroying part of the riparian woodland. Dams relating to this intervention have altered the flow of the river.

In 1990 De Beers Consolidated Mines established the 26 000ha Venetia Limpopo Nature Reserve in tandem with the development of the Venetia Diamond Mine. At its northern end this reserve borders the R372 road and Greefswald and includes the farm Schroda for the purposes of obtaining water from the Limpopo River.

2. SITE DESCRIPTION

2.1 Site information

Farm name and number	See list of farms
Owner	Republic of South Africa, Department of Environment Affairs and Tourism, SANParks
Contact person	Bernard van Lente, SANParks, Tel/fax 015 534 0102
Archaeological permit holders since 1989	See list
Designated respositories	University of Pretoria, University of the Witwatersrand, National Cultural History Museum
Public access and visitation	Guided visits by appointment only; self-guided routes planned
SANParks zonation	Various
Grading status	Mapungubwe Cultural Landscape declared a National Heritage Site in July 2002

2.2 Locality and description

A partial survey of archaeological sites in the Park has been completed by the University of the Witwatersrand and the University of Pretoria and they have been entered on a GIS database. The distribution of the sites is shown in the Maps.

A partial survey of the rock art sites has been done by Ed Eastwood and his colleagues and the results form part of the GIS database (see Map).

The National Cultural History Museum (Mauritz Naude) has done a survey of buildings and structures relating to the colonial period that will also be entered into the GIS database.

2.3 Access

The majority of the colonial era sites are accessible by road. There is variable vehicle access to pre-colonial sites.

2.4 Physical environment

Analysis and subsequent zonation of the natural and cultural resources by the Vhembe-Dongola National Park staff has placed cultural heritage resources in the following management zones:

Zonation is a growth control and planning technique that is applied by denominating areal units for specific purposes. Zoning as a management technique is a long-term resource allocation technique that guides decisions about resource developments. It should give direction and provide a framework for future management and planning. By definition zoning must be seen as a prospective planning process that can be applied as an information and decision-making framework in the national park. The objective of zonation is to plan, develop and implement a system providing a range of differing degrees of wilderness experience, in a manner that will strive to maximise experiences that make up the wilderness qualities of the Limpopo National Park. When completed, zoning becomes a management tool.

2.4.1 Policy on Zonation

To ensure controlled use by people, zoning forms the basis of the management plan for each park. Where some important features of natural asset can not be completely protected by state ownership, a core area will be proclaimed and the surrounding buffer areas managed in accordance with contractual agreements between the owners and the South African National Parks. These areas will also be included in the management plan.

It has been accepted that SANParks has no Zonation Policy of its own. The Recreational Opportunity Zonation (ROZ) system should be used to define management aimed at preserving differing degrees of wilderness experience. The SANParks, Northern Province government and the Limpopo National Park Committee agreed to a system of zonation that comprises seven different levels of protection. Cultural heritage resources of varying significance will be found in all zones.

(a) Special Protection Zones

Sensitive areas that merit special exceptional protection because they represent or support unique, rare or threatened elements, or are otherwise regarded as of particular quality. No man-made structures will be permitted in such areas and access will either be strictly limited or totally forbidden.

(b) Wilderness Zones

Extensive areas, representative of the landscape and plant communities of the particular

national park, which are conserved in the unspoilt state. Only activities compatible with an authentic wilderness experience and requiring at most a few simple facilities will be permitted. Numbers of visitors will be limited and tourist vehicles excluded.

(c) Natural Environment Zones

Areas maintained as natural environments but capable of tolerating with the least possible damage a selected range of activities of low human density. Only limited facilities that fit into the environment such as trails, camps, bush camps, hides, picnic spots and lookouts are permitted. A controlled movement of vehicles on a limited but well designed road network are allowed.

(d) High Density Development Zones

Rest camps and information centres with a concentration of services for visitors and related facilities, together with infrastructures for administration and management. Outdoor recreation and associated facilities compatible with the natural environment and the ideals of a national park can also be accommodated here. The emphasis is at all times on offering the visitor an experience of educational and spiritual value.

(e) Rehabilitation Zones*

Areas of severely disturbed habitat as a result of historic agricultural development, mining operations or injudicious planning and development by authorities such as building site, borrowing pits, airstrips, roads and unacceptable alignment servitude's of the electricity.

(f) Mining Servitude's Zones*

These are areas that are subject to prospecting and mining activities.

(g). Cultural Landscapes Zones

The Mapungubwe Cultural Landscape with its archaeological artefacts deserves special protection and has been nominated as a World Heritage Site.

2.5 Previous and ongoing research

Research on the location and distribution of cultural heritage resources in the Park is ongoing.

2.6 Site sensitivities and threats

As all layers of history in the Park require management, no sites identified in the archaeological, rock art and colonial era surveys should be altered or destroyed without an impact assessment, consultation with the ATG and a permit from SAHRA.

Most of the evidence for pre-colonial cultural heritage is buried below the present-day surface of the ground. Management must therefore be sensitive to the on-going processes that may threaten the integrity of *in situ* deposits and the spatial relationships between different parts of sites. It should also be sensitive to ways in which physical features in the landscape were modified by the people who lived there, or played a part in the intangible heritage of the place.

All developments and interventions must be subject to an impact assessment process that includes a survey and statement of significance of both cultural and natural heritage resources that will be affected. A detailed record of all interventions must be kept.

2.6.1 Sensitivities

The widespread occurrence of deep middens and cultural debris in many areas of the Park makes them vulnerable to damage by vehicles, people, animals, water and wind.

Restricting access to certain sites may help to protect them.

2.6.2 Threats

The following threats could damage the integrity of the archaeological deposits:

- If cultural heritage sites are not accurately marked on maps they could be ignored or damaged in the course of fencing, building and other infrastructural development of the Park;
- Structures, sites and places that are not significant in the context of the Mapungubwe cultural period may be overlooked or destroyed because their significance in the broader history of the landscape is not appreciated;
- Old excavation trenches have not been filled in or are inadequately protected will continue to erode and deposits will be lost;
- Erosion gullies have formed at the edges and within cultural deposits;
- Unskilled workers may inadvertently damage deposits while working on the rehabilitation of roads, erosion gullies and old excavations;
- Vehicles damage middens and other cultural deposits;
- Visitors with unrestricted access could damage walling, disturb *in situ* deposits, move or remove surface artefacts and leave litter;
- Signage can be intrusive;
- Introduction of game animals should be carefully monitored as elephants and other large game could affect cultural deposits by denuding vegetation;
- Baboons have done damage to the open excavation in the past;
- Unco-ordinated research can lead to unnecessary removal of irreplaceable deposits.

2.7 Existing site management

As indicated on the attached Table, the park comprises a range of properties managed, monitored and funded within the framework applied to all national parks. They include:

- farms owned by the State and transferred to SANParks for the Vhembe-Dongola National Park that was formally gazetted on 7 April 2000;
- farms owned by the Friends of Peace Parks and managed by SANParks according to a contractual agreement;
- farms that are privately owned and managed by SANParks according to a contractual agreement; and
- privately owned properties that SANParks is negotiating to acquire.

In terms of the South African World Heritage Convention Act, SANParks will be the management authority appointed by the Department of Environmental Affairs and Tourism for the Mapungubwe Cultural Landscape if it is declared a World Heritage Site.

Table 2. Property ownership and land use within the Mapungubwe Cultural Landscape

Farm	Farm No.	Ptn No.	Registered Owner(s)	Size (ha)	Contact Persons	Current / Recent land use	Current Status
Pont Drift	12	0	Borganum A B	1044.3854	Ed Hannan	Game farming in a private game reserve	Portion within core area, negotiations ongoing
Modena	13	0	Modena Citrus Pty Ltd	213.6827	Burgert van Rooyen	Irrigation farming	Negotiations ongoing
Modena	13	1	Borganum A B	1031.3979	Ed Hannan	Game farming in a private game reserve	Portion within core area, negotiations ongoing
Welton	16	3	National Parks Board (1/3) National Parks Trust (2/3)	708.0486	Bernard van Lente	National Park (to be proclaimed)	Contractual agreement between NPT and SANParks
Tuscanen	17	0	WWF South Africa	867.919	Eugene Strydom	National Park (to be proclaimed)	Contractual agreement drafted with SANParks
Tuscanen	17	1	Rudi Schmidt	867.919	Rudi Schmidt	Irrigation farming	PPF secured option to purchase property in 2010
Balerno	18	0	SANParks	1074.585	Bernard van Lente	National Parks Conservation (north of main road)	National Park
Mona	19	0	Friends of Peace Parks	560.4003	S. Coetzee for Peace Parks Foundation Graham Main (for De Beers)	Conservation	Contractual agreement drafted and being finalised with SANParks
Armenia	20	0	Friends of Peace Parks	856.532			
Armenia	20	1	Friends of Peace Parks	69.3806			
Little Muck	26	0	Friends of Peace Parks	2147.6169			
Rhodes Drift	22	0	Peace Parks Foundation	865.0285	Werner Myburgh	Conservation	Contractual agreement finalised with SANParks
Den Staat	27	0	SANParks	1842.1763	Bernard van Lente	Conservation	National Park
Den Staat	27	1	George Peter Hodgson	1807.4551	George Hodgson	Irrigation and game farming	Negotiation ongoing
Samaria	28	0	Hendrik Daniel Heyns	431.9858	Hennie Heyns	Irrigation and game farming	Negotiation ongoing
Samaria	28	3	Hendrik Daniel Heyns	431.9858			
Samaria	28	1	Gerard Michel Tomby Moerdyk	863.9716	Philip Swart Annemarie Friedrich	Game farming and conservation	Contractual agreement drafted for inclusion in core area

Farm	Farm No.	Ptn No.	Registered Owner(s)	Size (ha)	Contact Persons	Current / Recent land use	Current Status
Samaria	28	2	Irma Leonora Vermeulen	863.9716	Ms Vermeulen	Game farming and conservation	Contractual agreement drafted for inclusion in core area
Machete	29	0	Alexander Duncan MacWhirter	959.1188	Duncan MacWhirter	Game farming and private game reserve	Negotiations ongoing, only portion north of tarred road within core area
Hackthorne	30	0	Magdalena Dorothea Cathrina Venter	1034.2024	Frans Venter	Game and cattle farming	Negotiations ongoing, only portion north of tarred road within core area
Athens	31	0	Magdalena Dorothea Cathrina Venter	532.84			
Welton	34	0	Kariba Trust	184.8249	Piet Boshoff	Irrigation	Negotiations ongoing
Greefswald	37	0	RSA	2503.8386	Bernard van Lente	National Park	Gazetted as National Park
Cerberus	38	3	De Beers Consolidated Mines Ltd	665.3322	Graham Main for De Beers	Managed by SANParks (portion north of main road)	Purchase agreements drafted, to be finalised with SANParks
La Reve	39	3	De Beers Consolidated Mines Ltd	388.2191			
Parma	40	0	Borganum A B	2165.6744	Ed Hannan	Private game reserve	Negotiations ongoing
Hamilton	41	0	De Beers Consolidated Mines Ltd	359.4617	Graham Main	Managed by SANParks (portion north of main road)	Purchase document drafted
Hamilton	41	1	De Beers	462.5086			
Hamilton	41	2	De Beers	65.114			
Janberry	44	0	De Beers	1409.5878			
Schroda	46	0	De Beers	929.0942	Joint Manage-ment Committee (De Beers & SAN Parks)	Contractual National Park	Contractual agreement signed
Schroda	46	4	De Beers	929.0942			
Schroda	46	7	De Beers	419.9119			
Schroda	46	8	De Beers	419.9119			
Weipe	47	0	Roos Trust	1077.4028	Kobus Hugo	Conserved	Only portion within core area, contractual agreement to be put in place
Riedel	48	0	Limpopo Diamonds Pty Ltd	352.2413	Faan Lemmer	Abandoned diamond mine	Negotiations ongoing
Riedel	48	1	National Parks Trust	2569.772	Bernard van Lente	National Park	National Park

The Mapungubwe Cultural Landscape was declared a National Heritage Site in July 2002 by the South African Heritage Resources Agency (SAHRA). In terms of the National Heritage Resources Act: (No. 25 of 1999), SAHRA is responsible for the protection of the site in the following ways:

- a conservation management plan must be submitted for each national heritage site and responsibility for implementing such a plan can be delegated to the owner of the property if a formal heritage agreement is drawn up, in this case between SAHRA and SANParks;
- no person may destroy, damage, deface, excavate, alter, disturb, remove from its original position, subdivide or change the planning status of the site or archaeological and palaeontological deposits within it, without a permit issued by SAHRA;
- conditions pertaining to these permits are monitored by SAHRA in collaboration with SANParks;
- SANParks is responsible for maintaining the site according to minimum standards and a procedure to be prescribed by SAHRA in consultation with SANParks;
- SAHRA may make regulations, with the consent of SANParks, to safeguard the site, to specify conditions of use and development, and to regulate the admission of the public, including fees;
- SAHRA may call for a heritage impact assessment report if certain activities are likely to impact on heritage resources;
- the contents of on-site interpretive material or programmes for presentation of a national heritage site to the public must be submitted to SAHRA for approval at least 60 days in advance

Mapungubwe Hill and the surrounding terraces, as part of the Vhembe-Dongola National Park, are managed by the Park Manager, at present Bernard van Lente, who is responsible for, among others:

- regular monitoring of the site;
- preparedness for natural disasters;
- implementing legal requirements for impact assessments in advance of development;
- informing permanent staff and contract workers of the significance of the site;
- preparing sites for tourism access;
- allowing access only to visitors who have made prior arrangements;
- ensuring that visitors may enter only with a guide approved by SANParks.

3. MANAGEMENT OBJECTIVES FOR GENERIC CULTURAL HERITAGE RESOURCES

The objectives are to retain the significance of all cultural heritage sites within the Park by;

- integrating the management of natural and cultural heritage resources;
- keeping up-to-date records of sites and resources in an integrated GIS database capable of alerting managers to potential problems;
- demarcating sensitive areas and sites on the ground where necessary to alert staff and visitors to the presence of rare and endangered species, archaeological deposits, fossils or key resources used by animals in the Park;
- appointing a permanent staff member to manage the cultural heritage resources in the Park and to integrate activities and strategies with those for natural heritage resources;
- collating existing reports and commissioning new ones to develop a base-line condition report of all cultural heritage resources in the Park;
- closely monitoring the state of individual sites against the condition report on an annual basis so that change can be measured and policies and strategies can be altered if they are not working;
- developing protocols to involve private land owners in the identification, care, control and management of cultural heritage resources on their properties;
- clearly defining areas on private land that may be used for crops and other commercial farming activities;

- conserving *in situ* cultural deposits and excavations against natural and human-induced erosion;
- rehabilitating erosion features with the assistance of the poverty relief project;
- developing a policy for research and priorities;
- developing a collections management policy;
- protecting the artefacts and features that are exposed on the surface;
- entering into negotiations for the return and display of artefacts removed from the site;
- restoring, within reason, the integrity and authenticity of the views and vistas of the landscape so that they are not interrupted by buildings, power lines or vehicle access roads;
- continuing to investigate the intangible heritage of individuals and communities who have lived in the Park in the past;
- implementing procedures for the management of natural disasters, fire and waste;
- developing a coherent plan for presenting the site to the public as a pilgrimage and wilderness experience that promotes both natural and cultural resources;
- designing appropriate and low-impact signage;
- controlling access and gathering information on visitor numbers and their impact to assess the carrying capacity of individual sites and areas;
- designing and installing appropriate roads and paths for tourists and management;
- designing appropriate visitor information leaflets that make a special effort to integrate information about natural and cultural aspects of the landscape;
- identifying nodes for development of Park and tourism infrastructure that are sensitive to both natural and cultural heritage resources; and
- disseminating information through leaflets and displays to all stakeholders and visitors so that they are aware of the significance of natural and cultural heritage resources in the Park and MCL.

4. GENERIC MANAGEMENT AND MONITORING FOR CULTURAL HERITAGE SITES

4.1 ***Identification and documentation: Key issues:*** Integrated management of natural and cultural heritage resources; identification of cultural heritage sites and demarcation of sensitive areas; appointment of permanent staff; collation of reports and development of base-line condition report

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify management tasks where natural and cultural heritage resources intersect	Potential for non-integration of natural and cultural heritage management tasks and objectives if areas of mutual interest are not identified	▪ Arrange annual workshop for SANParks natural and cultural heritage specialists and ATG to identify areas of mutual concern and interaction and develop meaningful integrated management strategies	Necessary Before the end of 2003	SANParks, ATG	Check that Workshop has been held and re-schedule if necessary	Annually in November
Collate all site information in a GIS database accessible to managers	Sites cannot be managed if staff do not know where they are	▪ Identify properties and cultural heritage resource categories that have not yet been surveyed ▪ Commission surveys ▪ Submit information to GIS specialist, give hard copies of maps to Park Manager and make database accessible to head office planners and managers	Necessary Before the end of 2003	SANParks and specialist contractors	Check that Park Manager has up-to-date maps	Annually in December
Protect and demarcate sensitive areas	Sites may be damaged if staff are not alerted to presence	▪ Check maps and database before planning any intervention ▪ Devise a means of demarcating sensitive areas before work commences in vicinity	Necessary As required	SANParks	Check that maps and database have been consulted before work begins on site	As required
Appoint professional Archaeologist to permanent staff	Inexperience can lead to ineffective identification, conservation and monitoring	▪ Include post in Park management and business plan ▪ ensure provision is made in budget for salary and running expenses ▪ advertise and appoint as soon as possible	Immediate Advertise before December 2003	SANParks	Check that provision has been made and advertisement has been placed. If not, check why the delay	Monthly from October 2003
Condition reports for monitoring	Cannot monitor without knowledge of previous condition	▪ Prioritise sites for condition reporting ▪ draw up a schedule ▪ appoint specialists to do the work	Necessary Start in 2004	SANParks and ATG	Check that priority list is being implemented	Annually

4.2 *Management of site conservation and rehabilitation: Key issues:* Impact assessment, conserving deposits against erosion; rehabilitation of unfilled excavations and natural erosion features; management of poverty relief project; reporting on rehabilitation process

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Assess impact before rehabilitation	Potential damage to *in situ* deposits if assessment not done	▪ Appoint Archaeologist to assess need for, and impact of, development or intervention	Immediate As required	SANParks, ATG	▪ Peer review of impact assessment by ATG	On receipt of report
Appoint experienced contractor	Inexperienced contractor may damage sites	▪ Advertise for tenders and draw up terms of reference and detailed plan. Training programme essential.	Necessary As required	SANParks and ATG	▪ Evaluate applicants according to previous experience	As required
Co-ordinate project planning	Un-coordinated rehabilitation work is inefficient	▪ Planning and co-ordination must be done in conjunction with SANParks, Environmental Control Officer (ECO) and Archaeology Task Group (ATG)	Immediate After approval of plans	SANParks, Contractor and permitted Archaeologists	▪ All parties to report to SANParks and ATG	Weekly
Draw up specifications for rehabilitation	Poor quality materials and workmanship will create further problems in the future	▪ Archaeologist to be present throughout rehabilitation of old excavations; ▪ Clean vertical sections and log stratigraphy; ▪ Sieve all deposit and sort, package and label finds; ▪ Fill sandbags with residue; ▪ Bio-degradable sand bags to be used below ground and stronger bags above ground. ▪ Protect sandbags from sun and trampling.	Necessary After approval of plans	Contractor, Archaeologist, ECO	▪ Regular inspections by ECO, SANParks and ATG. ▪ Check site is kept tidy and sand bags are covered at all times. ▪ Progress and final reports to be delivered.	Weekly
EMP Training for rehabilitation workers	Workers not aware of significance and sensitivity of sites. Theft and damage leads to loss of information and site integrity	▪ Ensure that all personnel are familiar with the aims of the Environmental Management Plan (EMP) and the statement of significance. ▪ No artefacts or other material may be moved, picked up or removed from the site without a permit.	Immediate As required	All parties involved in the archaeological restoration project. The contractor shall familiarise all employees with the contents of the EMP, either in written format or verbally.	▪ ECO shall require written proof/confirmation from the contractor that EMP training has been done. ▪ Spot checks to ensure personnel are not removing artefacts.	Monthly
Disseminate information to heritage resources authorities	Loss of information through inadequate recording	▪ Any archaeological or historical material found accidentally must be reported to responsible Archaeologist or SAHRA ▪ Sections must be logged ▪ All work sites to be photographed before and after rehabilitation	Necessary Reports to be submitted to SAHRA and ATG	Archaeologist, ATG, SAHRA	▪ Check sections are recorded and photographs are taken. ▪ Reports to be peer-reviewed	As required on permit

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Delimit contract areas	Impact beyond areas requiring rehabilitation	▪ SANParks and Archaeologists must indicate to contractors the area of work for the duration of the contract, including access road to be used, construction lay-down areas, materials storage and delivery requirements, work stations, pedestrian routes and operational demarcation, etc.	Immediate As required	SANParks and Archaeologists	▪ Maps to be signed off at the start of each contract. ▪ Check contractor works within demarcated areas	Immediate
		▪ Boundaries of the site and rehabilitation areas shall be demarcated by the Contractor, as instructed by SANParks ECO and the Archaeologist, prior to any work commencing on the site. ▪ Any changes must be recorded in writing.	Immediate As required	SANParks ECO and Archaeologists	▪ No encroachment beyond the demarcated boundaries to be permitted. Contractor must ensure all labour and materials remain within the boundaries of the site.	Weekly
Demarcate sensitive areas	Damage to archaeological sites	▪ Sensitive areas identified by SANParks and/or Archaeologists to be demarcated with danger tape. No activity may take place in such areas.	Immediate As required	SANParks ECO and Archaeologists	▪ Check that danger tape is in correct place	Weekly
	Damage to ecologically sensitive sites	▪ Sensitive areas identified by SANParks to be demarcated with danger tape. No activity shall take place in these areas and no trees or bushes may be damaged or cut down unless by written consent of the ECO	Immediate As required	SANParks, ECO and Contractor	▪ Check camps for contractor and employees only on sites approved by SANParks.	Weekly
Control erosion	Ongoing water and wind erosion leads to loss of deposit, topsoil and vegetation	▪ Stockpile topsoil for later re-use ▪ Exposed surfaces that are not archaeologically sensitive to be re-vegetated and/or sandbagged ▪ Protect all areas susceptible to erosion ▪ Slopes identified for protection should be stabilised at no steeper than 1(V):3(H)	Necessary As required	SANParks, Contractor and ECO	▪ Contractor shall not allow erosion to develop before effecting repairs and all erosion damage to be repaired as soon as possible.	On-going
Agree on hours of operation	Work at unauthorised times can lead to un-coordinated activities	▪ Contractor's and labourers' hours shall be the same as the operating hours of the Park	Necessary As required	Contractor	▪ Contractor to confirm hours of operation in writing	On-going
Indicate access roads	Damage to sites and deposits if correct access routes not used	▪ Only those roads agreed to between SANParks, Archaeologists and Contractor may be used	Immediate As required	Contractor, ECO, SANParks and Archaeologists	▪ ECO to check access roads regularly	Weekly
		▪ Access roads must be planned to deviate around trees or other natural features marked out in an approved manner by SANParks	Immediate As required	SANParks, ECO and Contractor	▪ ECO to check access roads regularly	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Provide access for construction vehicles	Temporary roads and off-road access can damage sites and interfere with integrity of cultural landscape	▪ No off-road driving allowed; temporary access roads must be rehabilitated after usage and width of roads restricted to maximum of 3 m.	Necessary As required	Contractor and SANParks	▪ Check rehabilitation of temporary access roads against those agreed to satisfaction of SANParks.	As required
Demarcate areas for construction personnel	Un-coordinated movement can lead to damage of sites and landscape	▪ Contractor must ensure that all construction personnel, labourers and equipment remain within demarcated restoration sites at all times. Movement outside boundaries may be done only with permission from the ECO	Necessary As required	Contractor and ECO	▪ Check that all work is done within demarcated areas.	Weekly
	Constant use of paths causes erosion	▪ Conveyor belts can be used to outline pedestrian routes and prevent impact on archaeological deposits. Confine pedestrian routes to paths maximum 1 m wide	**Necessary** **On-going**	**Contractor and Archaeologist**	▪ Monitor effect of conveyor belting to prevent undue erosion.	**Weekly**
Reduce impact of construction camps	Impact of camps can damage cultural landscape	▪ If construction camps or working stations are established, the camp must conform to all contractual issues and standards, include issues related to fires, ablution, sleeping facilities and waste management	Necessary On-going	Contractor, ECO and SANParks	▪ Inspect camps and working stations and check against contractual issues	Weekly
Provide efficient toilet facilities	Could be unsightly and a health hazard	▪ Minimum of one chemical toilet per 10 persons at sites to be agreed with the ECO. ▪ No abluting anywhere other than in toilets. ▪ Waste shall be disposed of at a location and in a manner that involves no pollution or degradation of the environment. ▪ If spillage occurs, toilets must be placed on a solid base.	Necessary Ongoing	Contractor, ECO	▪ Check construction site is maintained in a sanitary condition and all toilet facilities are maintained in good order. There shall be no spillage of chemicals at any time.	Weekly
Delimit living areas for contract workers	Damage to cultural landscape and archaeological deposits	▪ The contractor may not house any labourers except for security personnel at any stage on the sites to be rehabilitated.	Necessary On-going	Contractor, ECO	▪ No habitation on sites	Weekly
Provide water for construction purposes	Pollution and erosion	▪ Indicate to contractors where water can be obtained, for example for cement mixing as well as for drinking.	Necessary On-going	Contractor, ECO, SANParks	▪ Contractors shall only make use of or collect water from indicated sources	On-going
Prevent and control fires	Damage to vegetation and sites	▪ No fires permitted on construction sites without authority of the ECO. Cooking permitted only in areas designated by the ECO.	Necessary On-going	Contractor, Site Manager, ECO	▪ No fires	Weekly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Efficient waste disposal and handling	Litter	▪ Waste and litter bins to be provided at regular and strategic positions. No waste or litter to be burnt on site.	Necessary On-going	Contractor, Site Manager, ECO	▪ Waste and litter to be disposed of at a suitably registered and licensed disposal site.	Weekly
Provide safety on site for contract workers	Risk of injury to personnel	▪ First aid facilities to be on hand at all times. ▪ Adequate and mandatory safety precautions to be taken. ▪ Warning and advisory signage to be implemented. ▪ All workers must be aware that litter attracts certain animal pests ▪ Establish communication between remote camps and rangers for emergency situations ▪ Support sides of deep excavations to prevent collapse during rehabilitation	Necessary On-going	Contractor, ECO	▪ Contractors shall adhere to the prescriptions of the Occupational Health and Safety Act (Act 85 of 1993) and safety measures and work procedures and instructions shall be communicated to construction workers	On-going
Set standards for use and storage of chemicals	Environmental damage	▪ Mixing of solvents, sealants, adhesives, paints, chemicals or other noxious materials shall only be undertaken in designated areas on aprons that have spillage control channels and separate storage areas. Provide for controlled loading and unloading areas with appropriate protection against soil and water pollution.	Necessary On-going	Contractor, ECO	▪ Equipment using fuel and/or oil must be placed on impervious paved storage. Fuel to be stored in bunded safe areas with 150% of the full capacity of the tank/s. Chemicals to be stored in weatherproof, secured facilities.	Weekly
Set standards for earthworks	Damage to cultural landscape and archaeological deposits	▪ No compaction and excavation activities (trenching, access road construction, site clearance and pedestrian pathways) allowed without approval of Archaeologist who has under taken an assessment of impact of earthworks. ▪ Replacement and rehabilitation should be progressive with construction and not left until the end.	Necessary On-going	Contractor, Archaeologist, ECO	▪ An archaeologist will be required on site during all earthworks to supervise and stop the work if necessary.	As required

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Protect fauna	Adverse impact on wildlife	▪ No animals may be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors' employees ▪ No domesticated animals may be brought onto the site ▪ No poaching of fauna or flora will be tolerated ▪ Contractor shall advise workers of the penalties set out in the Animals Protection Act (Act 71 of 1962)	Necessary On-going	SANParks, ECO, Contractor	▪ Check for signs of poaching ▪ Check for evidence of animal kills ▪ Check for signs of domesticated animals	On-going
Protect chance finds and burials	Loss of information	▪ Ensure that all personnel are aware that no artefacts, burials or other material may be removed without a permit from SAHRA ▪ Criteria for issuing permit will depend on rarity of find, risk to safety of material and relationship to rehabilitation programme	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that chance finds and burials are removed only with a SAHRA permit	On-going
Protect trenches, sections and walling	Loss of *in situ* deposits; damage by rodents; impact of visitors	▪ Clean sections, sieve deposit, log sections, stabilize with sand bags and cover; ▪ Ask advice from zoologist to assess impact of rodents and elephants	Necessary Ongoing	Archaeologist, Contractor, SANParks	▪ Check that work is done according to specifications ▪ Take advice of zoologist as required	Ongoing
Report on rehabilitation process	Materials may need to be replaced or adjusted in future	▪ Ensure reports are received from contractor and archaeologists and are placed on file	Necessary On-going	Archaeologist, Contractor, SANParks	▪ Check that reports are received	Annually

4.3 *Management of research: Key issues*: Research policy and priorities; collections management policy; protection of surface artefacts and features; intangible heritage;

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Identify research needs and priorities	Research has focused almost exclusively on the Mapungubwe period and other sites and resources may be neglected	▪ Develop a research policy and priorities in consultation with all stakeholders ▪ Draft a 5-year plan ▪ Ensure publication of results of survey and research	Necessary Complete by end of 2008	SANParks, ATG, SAHRA	▪ Deliver policy and priorities before end 2005 ▪ Assess research applications on merit ▪ Check publications	Annual, and every 3 and 6 years for mid-term and World Heritage review process
Close liaison with SAHRA permitting authority	SAHRA and SANParks could have differing policies	▪ SAHRA to send permit applications to the Park Manager and SANParks for approval	Necessary On-going	SANParks, ATG and SAHRA	▪ Review permits and reports	Annually
Collections management policy	Removal of collections from the province may cause problems in future	▪ Consult with SAHRA and the Province ▪ Budget for a world-class facility that will keep the artefacts safe in the Park; ▪ Draft a collections policy for the facility;	Necessary Establish protocol by end-2003	SANParks, SAHRA and ATG	▪ Check delivery of policy ▪ Check facilities planned	March 2004 and quarterly
Protect and retain artefacts, structures and fossils exposed by erosion and excavation	Loss of information	▪ All new excavations must be filled in at cost of permit holder to satisfaction of SANParks and ATG ▪ Archaeologist/s to remove surface artefacts exposed by erosion only if they are in danger of being lost	Necessary On-going	SANParks, ATG, Archaeologists, SAHRA	▪ Check excavations for satisfactory infilling ▪ Advise archaeologists of exposed artefacts	Annually Assess impact of research excavations and collections every three years
Record intangible heritage of the Park	Information is lost as residents move away or die without passing on their memories and knowledge	▪ Develop a research policy and priorities in consultation with all stakeholders ▪ Identify possible informants ▪ Draft a 5-year plan ▪ Ensure publication of results of survey and research	Necessary Complete a report by end of 2008	SANParks, ATG, SAHRA	▪ Deliver policy and priorities before Dec 2004 ▪ Assess research applications ▪ Check publications	Annual, and every 3 and 6 years for mid-term and World Heritage review process

4.4 Management of cultural landscape: Key issues: Integrity and authenticity of features and landscape; restoring and retaining views and vistas to preserve wilderness experience; engagement with local communities; development of protocols for private land owners; integration of cultural heritage resources management with wildlife and environmental management; procedures for management of disasters, fire and waste

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Retain significance of site features and landscape	Lack of integrity and authenticity diminishes visitor experience and significance of sites	▪ List significant structures, landscape features, views and vistas noted during surveys and condition reporting ▪ Identify interventions if required to restore significance ▪ Prioritise sites for intervention and develop business plans; ▪ Engage conservation architect for buildings older than 60 years ▪ Apply for permit from SAHRA for all alterations and interventions ▪ Advise World Heritage Committee if declared a World Heritage site ▪ Budget and raise funds required	Necessary List by March 2004 Prioritise by June 2004 Budget and implement according to priorities	SANParks, ATG, SAHRA	▪ Check that list is prepared ▪ Check that priorities are identified ▪ Check architect's experience ▪ Check permit is obtained ▪ Check WHC is informed ▪ Check budget is appropriate	Quarterly
Preserve wilderness experience with policy of minimal intervention	Insensitive intervention can destroy integrity and authenticity	▪ Develop a policy and procedure for interventions (including repairs) at cultural heritage sites ▪ Ensure that interventions are reversible and that they are recorded in detail ▪ Draw up specifications for materials that blend with the landscape for paths, steps, stabilization, signage and on-site exhibits	Necessary Policy by March 2004 Specifications by end 2003	SANParks, ATG, SAHRA	▪ Check policy and procedure is being developed ▪ Check methods and materials to be used ▪ Check reports are received	Quarterly
Engage with local communities	Lack of consultation leads to dissatisfaction and adverse publicity from affected communities	▪ Engage with land owners and claimants; ▪ Draft a plan for on-going consultation to Involve them in promotion and conservation	Necessary Draft plan by end 2003	SANParks, JMC, ATG	▪ Check that meetings have been held and relevant people have been identified for consultation	Quarterly

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Develop protocols for private land owners regarding cultural heritage resources	Owners of properties with contractual agreements with SANParks may not fully understand the need for identification and conservation of cultural heritage sites	▪ Place matter on Agenda for Joint Management Committee ▪ Arrange meetings collectively or individually with property owners to identify key issues and strategies ▪ Draft protocol for discussion and refine	Necessary Initiate by March 2004 Draft protocol by June 2004	SANParks, Joint Management Committee and ATG	▪ Check that process has been planned and initiated ▪ Check that owners are complying	Quarterly
Definition of areas on private land that may be used for commercial farming	Developments may be undertaken without consultation	▪ Include this matter in the development of protocols and in contractual agreements with property owners	Necessary Before March 2004	SANParks and JMC	▪ Check that property owners are complying with protocol and agreement	Annually
Integrate cultural heritage resources with environmental management	Lack of co-ordination with cultural resources management leads to misunderstandings	▪ Integrate environmental and cultural heritage conservation management	Necessary Integrate plans by end 2003	SANParks and Park Committee	▪ Check that plans dovetail	Annually
Develop disaster planning and fire management	Lack of planning can add to damage caused by disasters	▪ Identify high risk areas such as the western ascent, steep slopes and southern terrace open excavation and plan for potential problems caused by fire and natural and unusual erosion events	Necessary	SANParks	▪ Check that plans have been drawn up and are known to all staff	Annually
Efficient waste management	Litter detracts from significance of site	▪ Warn all visitors against littering ▪ Remove all litter from the site	Necessary	SANParks	▪ Check for litter and remove	Daily and weekly

4.5 *Management of tourism: Key issues:* Presentation of cultural heritage sites to visitors as part of a pilgrimage and wilderness experience; signage; establish carrying capacity of each site and control access; access routes and paths; information nodes for visitors

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
World-class presentation of Park to visitors	Lack of a common vision, poor integration of cultural and natural resources, and incorrect information can lead to bad visitor experience	▪ Workshop a common vision based on the World Heritage nomination, cultural heritage surveys, natural heritage resources and the tourism report ▪ Prepare and print generic information leaflets on the cultural and natural heritage resources of the Park ▪ Inform all SANParks staff, land owners, tour guides and tour operators	Necessary Print basic information for all stake-holders by Dec 2003	SANParks, ATG, SAHRA	▪ Conduct workshop ▪ Check presentations by tour guides ▪ Check content of publications ▪ Publish and distribute leaflets	**Quarterly**
Stimulate a sense of pilgrimage and a wilderness experience for visitors	Guides and visitors may respond to different stimuli	▪ Agree on the principles to be included in a pilgrimage and wilderness experience ▪ Design recommended routes ▪ Make the concept known to all guides and tour operators	Necessary Principles March 2004 Implement end 2004	ATG, SANParks, SAHRA	▪ Check process is being followed ▪ Check all relevant stakeholders are involved and informed	**Quarterly**
Develop signage that blends with the landscape and offers accurate and interesting information	Poorly worded or decaying signage detracts from visitor experience	▪ Use low maintenance natural materials that blend with the environment ▪ Place signage in unobtrusive places ▪ Use wording that contributes to the common vision for the site ▪ National Heritage Resources Act requires that SAHRA check the wording of all signage at national heritage sites	Necessary Deliver plan for signage by March 2004. Erect signage by June 2004	SANParks, ATG, SAHRA	▪ ATG to approve materials ▪ SAHRA to approve wording 60 days before production ▪ Check for deterioration of materials ▪ Check for vandalism	Monthly
Establish and maintain carrying capacity to retain the ambience of the Park and individual sites	Over-use can lead to erosion, litter and loss of fabric and integrity	▪ Set initial upper limits to number of vehicles per day, group numbers and the number of groups per month ▪ Keep daily records of numbers of visitors to individual sites through entrance ticket or permit system ▪ Assess impact in annual review ▪ Review limits annually	Necessary Set initial upper limits by October 2003	SANParks, ATG	▪ Do not exceed limits ▪ Spot-check numbers ▪ Check paths, slopes, walling, artefacts and litter for change ▪ Review carrying capacity according to impact	Monthly and annually

OBJECTIVES	THREATS OR RISKS	ACTION / MANAGEMENT MEASURES	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA	MONITORING FREQUENCY
Control access to sites	Over-use will damage original fabric and *in situ* deposits	▪ Limit size of visiting parties ▪ Design suitable access roads and paths ▪ Where relevant, place pathways over stabilized rather than in situ deposits ▪ Inform all guides and tour operators that visitors may not step off designated paths ▪ Establish a path maintenance plan ▪ Monitor paths after heavy rains ▪ Consider using boardwalks if necessary	Necessary Plans to be drawn up as required Maintenance plan October 2003	SANParks	▪ Check for signs of over-use such as damage to structures, in situ deposits and features, graffiti and litter ▪ Check path surrounds for signs of non-compliance ▪ Check state of path surfaces	Annually
Design suitable visitor information nodes	New structures may have a negative impact on the wilderness experience	▪ Grade cultural heritage sites according to information needs and significance ▪ Establish priorities and procedures for each grade ▪ Design generic notice board and leaflet information for each grade ▪ Focus most information at the visitor centre at Hamilton ▪ Where required, design on-site information boards and displays with low visual impact on the views and vistas	Necessary Grade sites by March 2004 Priorities by June 2004 Designs by October 2004	SANParks, ATG, SAHRA	▪ Check that sites are graded ▪ Check that priorities and procedures are agreed ▪ Check that designs are appropriate	Quarterly

5. RECOMMENDATIONS FOR DEVELOPMENT

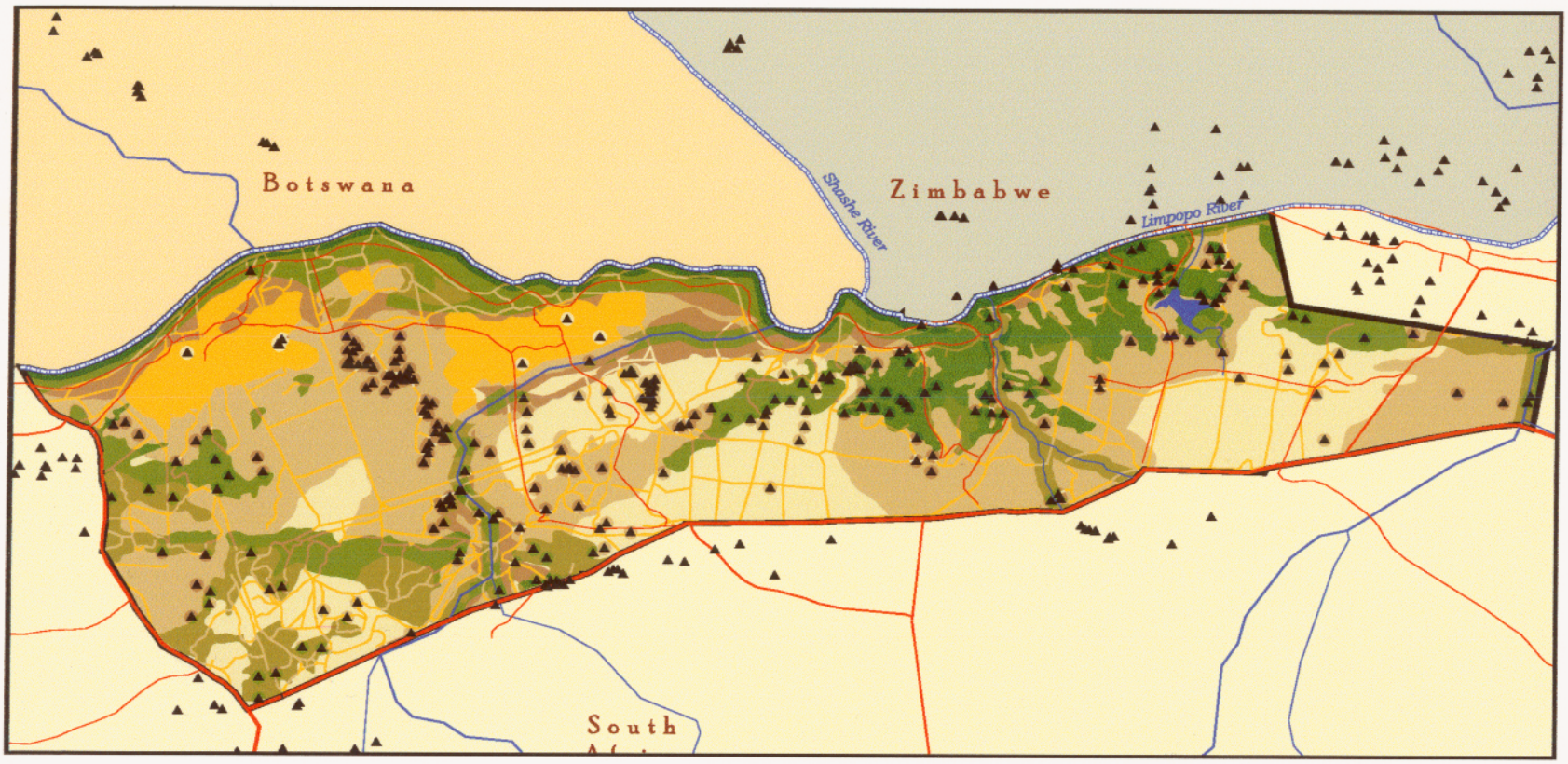
5.1 Park and Tourism Infrastructure: Key Issues: Management and monitoring programme; condition reporting; dissemination of information; appointment of professional officer for cultural resources

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Water, energy, sanitation, waste	Variable availability	Provide as necessary for infrastructure and contract work	Necessary As required	SANParks	Check contractors remove temporary containers and structures when work has finished.
Access road	Vehicle access variable	Do not allow vehicle access onto sensitive sites	Necessary Check monthly	SANParks	Spot check that visitors comply with rules. Reinforce with information to guides.
Transport	Self-drive vehicles permitted in some zones	Limit number of vehicles to avoid damage to vegetation and deposits	Necessary Check monthly	SANParks	Spot check that vehicles use designated parking areas. Reinforce with information to guides.
Car park	Casual parking at entrance gate and under trees nearer to Hill	Demarcate parking area near Hill to avoid vehicles damaging vegetation or creating erosion spots	Necessary Oct 2003	SANParks	Check that demarcation is subtle and does not spoil the wilderness experience
Safety – fire	SANParks fire policy in place. More details needed	Avoid use of water to extinguish fires on archaeological sites	Necessary Check monthly and in drought	SANParks	Monitor vegetation for possible increase in fire risk.
Security and fencing	SANParks policy in place More details needed	Fencing may be required in some areas. Main gates to be kept locked and manned once tourism increases	Necessary Oct 2003	SANParks	A gate keeper will be necessary to monitor visitor numbers and assist visitors without guides.
Paths	Paths are being created and upgraded as part of the rehabilitation programme	Paths must be made according to specifications and with minimum impact on *in situ* deposits	Necessary March 2004 and check monthly	SANParks	Check that paths are functional and repair when necessary

TYPE	PRESENT SITUATION	ACTION	TIME FRAME	RESPONSIBILITY	MONITORING CRITERIA
Condition report	Report on rehabilitation work could serve as a temporary base-line	Commission or undertake an illustrated condition report on all cultural heritage resources to serve as a base-line against which to measure and monitor change	Necessary October 2004	SANParks, ATG, SAHRA	Check that all cultural heritage resources are included and that photographs are taken of the present condition of each resource for comparative purposes. Keep report on file and make copies for use in the field.
Information leaflets	None available yet for the Hill and related sites	Basic information leaflets that include statement of significance and visitor rules are required	Necessary Oct 2003 with annual update	SANParks	Draft by the ATG and should include all the information a visitor must know to conserve the cultural and natural resources of the place and to enhance their experience
Information boards and displays	None at present, apart from the national monument plaque	Planning to be done by a tourism expert in collaboration with SANParks and ATG	Necessary March 2004 and check annually	SANParks	Close collaboration with SAHRA required for information to be included. Check that boards and displays are in good repair and replace when necessary
Permanent staff	Manager, but no Archaeologist	A professional Archaeologist should be appointed to monitor and manage the cultural heritage resources in the Park	Necessary October 2003 and monthly	SANParks	Check on progress through monthly and annual reports.

Vhembe / Dongola NATIONAL PARK

EXCAVATION SITES & SENSITIVITY RANKING

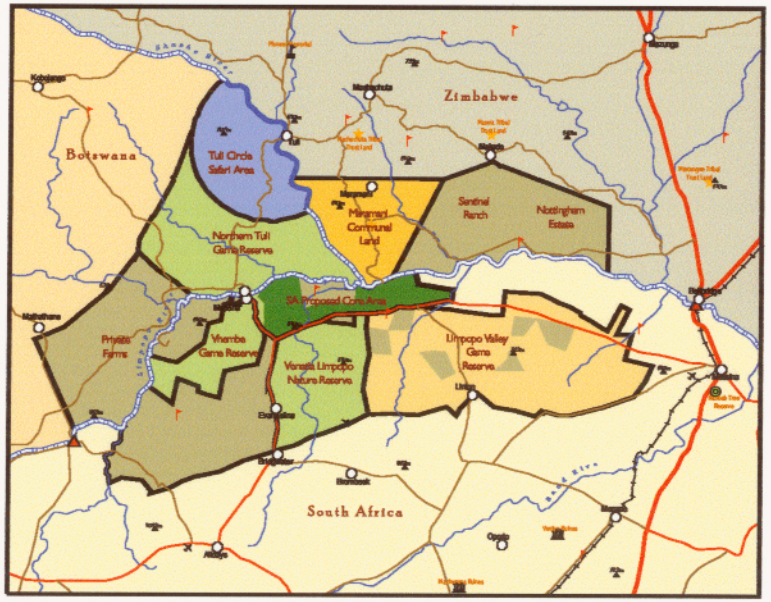


Legend:

- Excavation Sites
- International Boundaries
- Main Road
- Tertiary Road
- Other Road
- Primary River
- Secondary River
- Tertiary River
- Cadastre
- SA Core Area Boundary

Total Sensitivity Ranking

- -2 (Less Sensitive)
- 0
- 1
- 2
- 3
- 4
- 5
- - 8 (Sensitive)



South African NATIONAL PARKS

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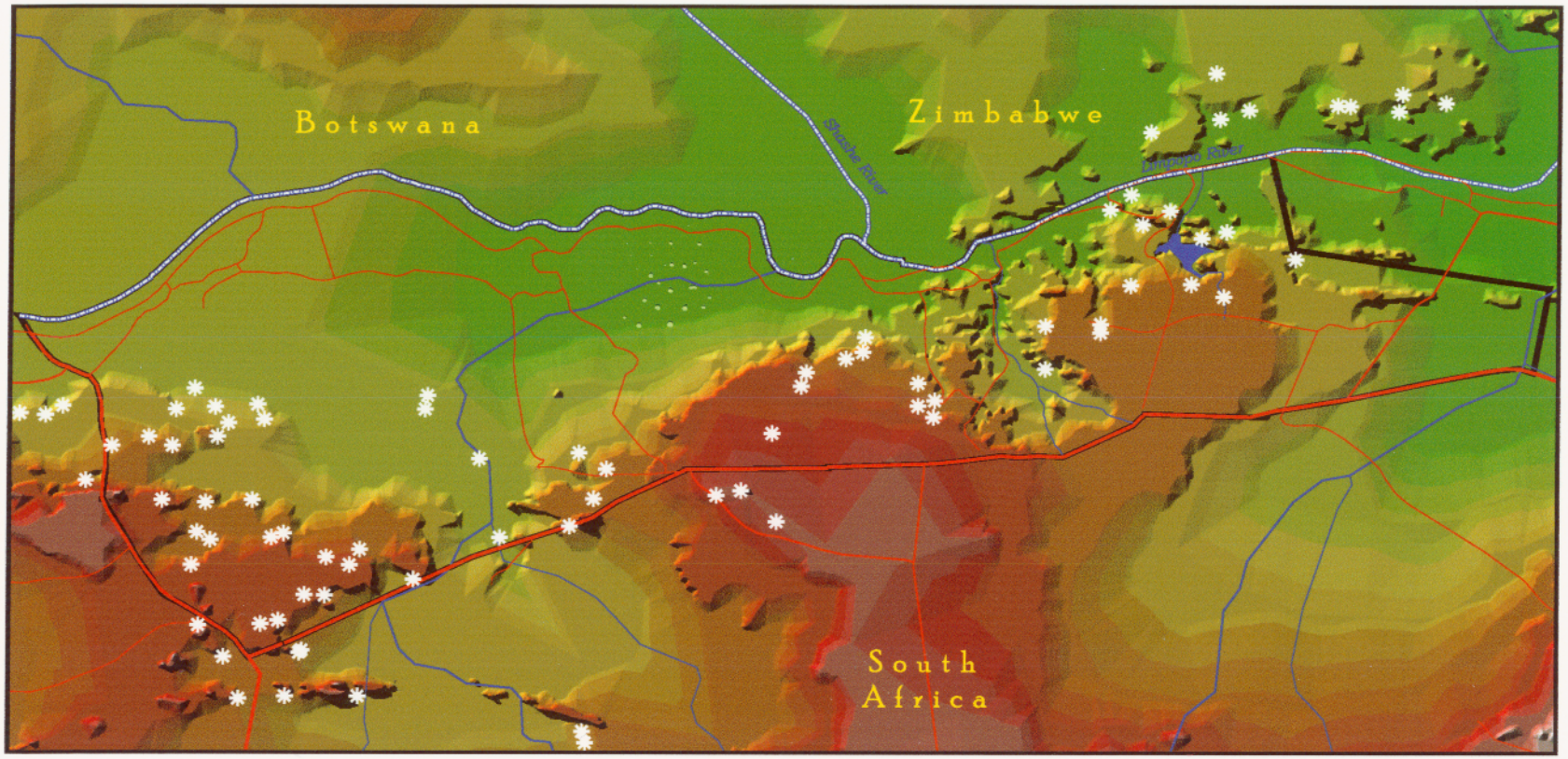
Vhembe / Dongola NATIONAL PARK

DIGITAL ELEVATION MODEL & ROCK ART SITES



Legend:

- Rockart Sites
- International Boundaries
- Main Road
- Tertiary Road
- Other Road
- Primary River
- Secondary River
- Tertiary River
- Water Bodies
- SA Core Area Boundary

Digital Elevation Model (m)

- 661 - 680
- 653 - 661
- 645 - 653
- 637 - 645
- 629 - 637
- 620 - 629
- 612 - 620
- 604 - 612
- 596 - 604
- 587 - 596
- 579 - 587
- 571 - 579
- 563 - 571
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- 555 - 563
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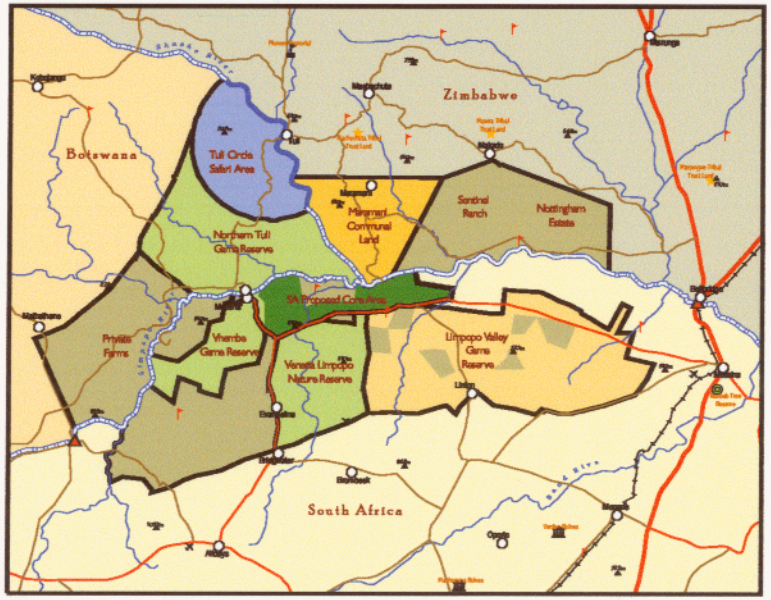
- 538 - 546
- 530 - 538
- 522 - 530
- 514 - 522
- 505 - 514
- 497 - 505



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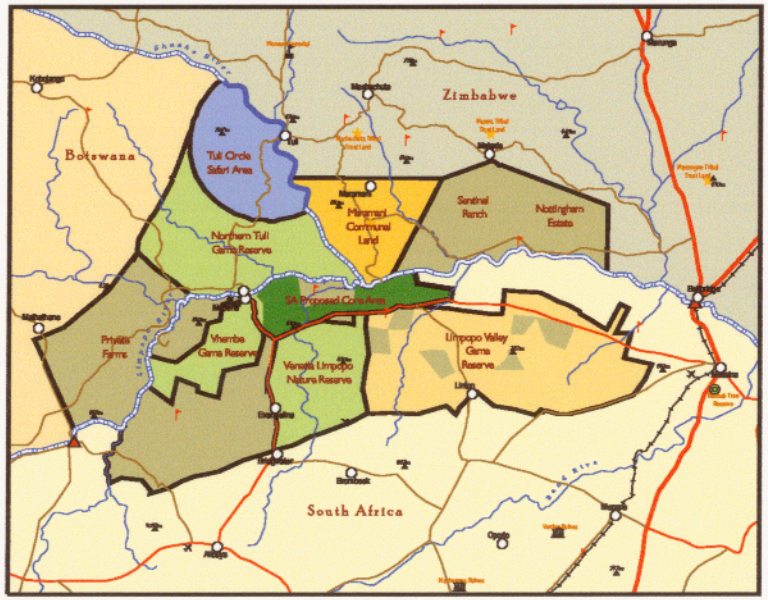
Vhembe / Dongola NATIONAL PARK

OWNERSHIP STATUS CORE AREA



Legend:

- International Boundaries
- Roads
  - Main Road
  - Tertiary Road
  - Other Road
- Rivers
  - Primary River
  - Secondary River
  - Tertiary River
  - Water Bodies
  - Cadastre
  - SA Core Area Boundary
- Ownership Status
  - 8 Years untill purchase
  - Consolidated Property
  - Present Negotiations
  - Private Land Owners
- International Boundaries2
  - Botswana
  - South Africa
  - Zimbabwe

South African NATIONAL PARKS

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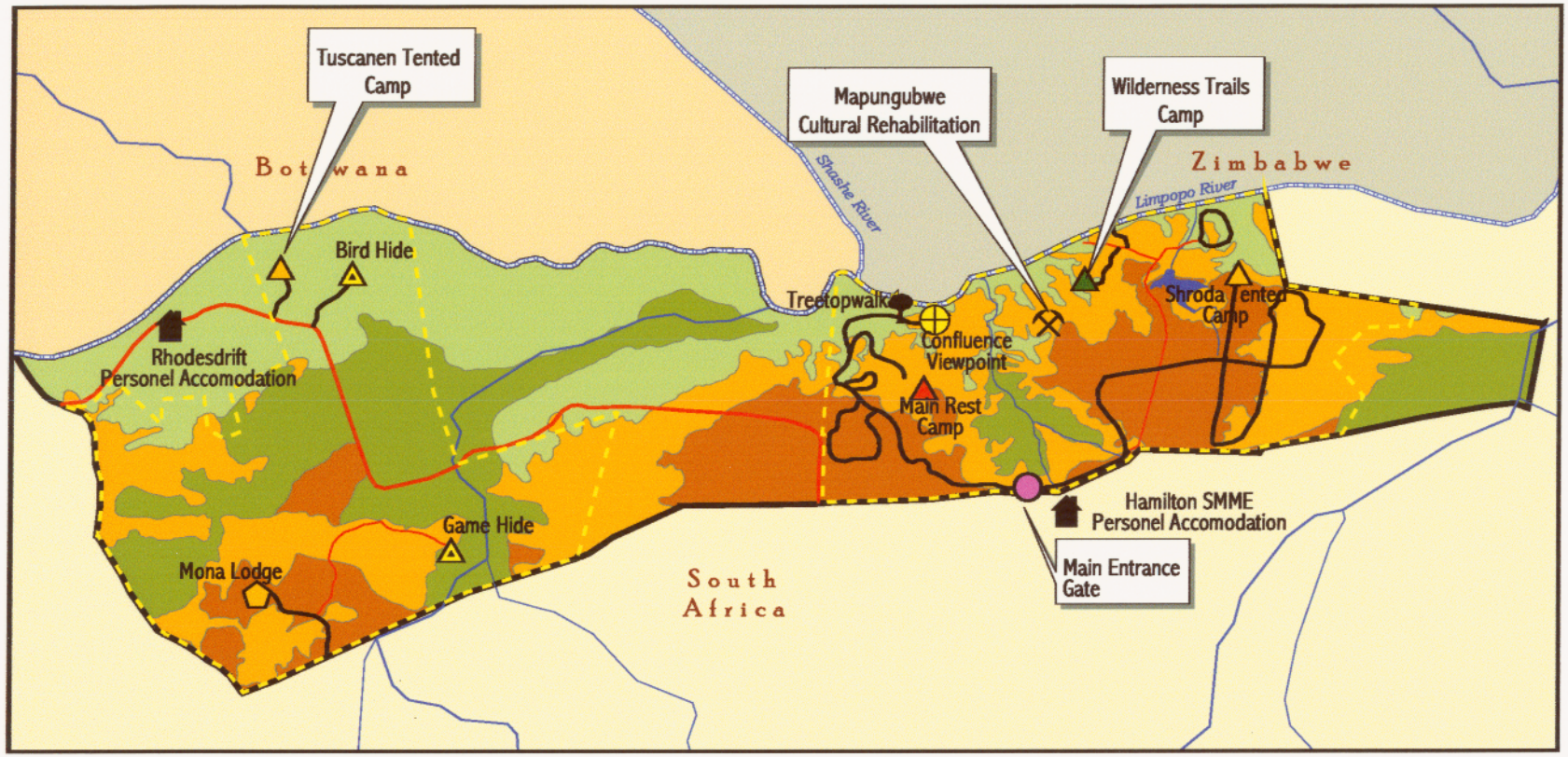
Vhembe / Dongola NATIONAL PARK

INFRASTRUCTURE DEVELOPMENT PROJECTS - FIRST PHASE -



Legend:

Infrastructure Development Projects

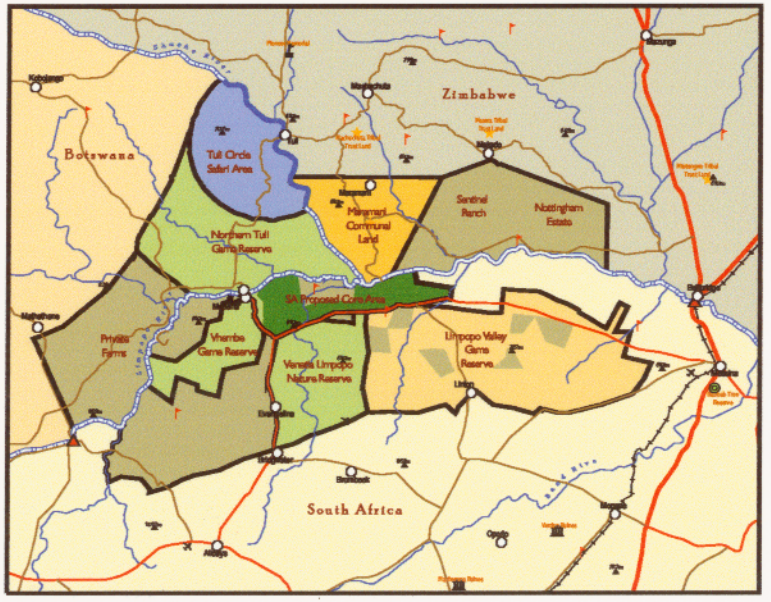
- Confluence Viewpoint
- Entrance Gate and facilities
- Game Hide
- Main Rest Camp - 40 bed
- Mona Lodge
- Personnel housing
- Possible Tented camp - 16 bed
- Tree top walk
- Wilderness Trails Camp
- Rehabilitation of Mapungubwe
- Fence Lines
- Roads to be upgraded
- Rockart Sites

Park Roads

- Den Staat Road
- Tourist Routes
- International Boundaries
- Primary River
- Secondary River
- Tertiary River
- Water Bodies
- SA Core Area Boundary

Landscapes

- Limpopo Floodplain and Riverine Bush
- Kolopi, Mapungubwe and other Floodplains
- Sandstone Ridges
- Plateaus



South African NATIONAL PARKS

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Mapungubwe (South Africa)

No 1099

1. BASIC DATA

State Party: South Africa

Name of property: Mapungubwe Cultural Landscape

Location: Northern Province

Date received: 29 January 2002

Category of property:

In terms of the categories of cultural property set out in Article 1 of the 1972 World Heritage Convention, this is a site. In terms of Operational Guidelines this is also a cultural landscape.

Brief description:

Mapungubwe is set hard against the northern border of South Africa joining Zimbabwe and Botswana. It is an open, expansive savannah landscape sprinkled with trees, some thorns, others statuesque baobabs, around flat sandstone terraces rising above the plain.

Centred on the confluence of the Limpopo and Shashe rivers and straddling the north/south and east/west routes in southern Africa, Mapungubwe developed into the largest kingdom in the sub-continent before it was abandoned in the 14th century.

What survives are the almost untouched remains of the palace sites and also the entire settlement area dependent upon them, as well as two earlier capital sites, the whole presenting an unrivalled picture of the development of social and political structures over some 400 years.

2. THE PROPERTY

Description

The Mapungubwe kingdom had largely faded out of history by the mid 16th century. At the height of its powers between 1220 and 1300, the centralised and hierarchical society encompassed at least 9,000 people and had huge wealth and influence gained from harvesting rich natural resource and trading these, via Indian Ocean ports, with Arabia, India and China.

Sited on the confluence of the Limpopo and Shashe rivers, which flooded to provide fertile alluvial soils, and with almost ideal climatic conditions, Mapungubwe had attracted Iron Age agriculturalists from the middle of the 1st millennium AD, and before that there is much evidence of hunter-gatherers.

What transformed Mapungubwe from a small-scale, rural society into an influential city-state was the development of a social structure that encouraged population growth through comparatively intensive agriculture, and of a hierarchical system that produced specialisation and a trading economy. Mapungubwe had ivory and gold and relatively easy access to the east African coast where it could trade with the Arabs, Indians and Chinese. Chinese porcelain, glass trade beads and cotton all found their way to Mapungubwe.

Mapungubwe's wealth and social structures are evident in the three palaces built on separate sites during the three phases of its growth between 900 and its demise, brought on by a rapid change in the climate, a sort of mini Ice Age. The comparatively sudden change in climate, heralded drought conditions that devastated the agricultural base of the kingdom: it could no longer sustain either its people or its trade. The southern African power base shifted north to Great Zimbabwe.

The overall site thus illustrates successive stages in the creation of the first indigenous kingdom in Southern Africa and its ultimate decline and abandonment.

The Mapungubwe site is magnificent in landscape terms, with superb views in all directions, but the excavated remains are not very impressive. The significance of the landscape and of the individual sites within it are thus not readily apparent, even to an archaeologist who does not have local knowledge. If these sites are to be made intelligible for visitors, that can only be done by means of effective interpretation and signage.

Boundaries

The core site covers nearly 30,000 ha. This is supported by a buffer zone of around 100,000 ha – although this is not marked on the maps supplied. The nominated site contains substantial areas of 'natural' landscape of very high quality – in the north of the area bordering the rivers. To the south the boundary cuts across geometrical citrus farms – which in time will be taken out of agriculture.

The proposed boundaries correspond with those of the Vhembe-Dongola National Park, which is currently in the course of being established (see below). No clear buffer zone is indicated on the maps supplied.

The northern boundary of the nominated property is the Limpopo River, which forms the frontier between the Republic of South Africa and the neighbouring states of Botswana and Zimbabwe. A Trilateral Memorandum of Understanding has been drawn up with the objective of establishing the Limpopo-Shashe Transfrontier Conservation Area (TFCA); this very extensive area (5,040 km^2), will, when established as a TFCA, constitute a very effective buffer zone. It is intended that each country will concentrate on one facet of protection: cultural heritage in South Africa, wildlife in Botswana, and living cultures in Zimbabwe. Considerable progress has been made in Botswana, but developments are slow in Zimbabwe because of the present political situation.

Specifically the site contains:

- Remains of palaces – (Mapungubwe period);
- Archaeological remains testifying to Mapungubwe's growth 900-1200 AD (Zhizo, Leopard's Kopje);
- Remains of early settlement: Stone Age & Iron Age & rock art;
- 'Natural' landscape surrounding the built remains.

Remains of palaces 1220-1290 AD (Mapungubwe period): These are the key remains of the site – reflecting not only Mapungubwe's great wealth but also the social, religious and political hierarchy that developed as a result of population expansion based on successful intensive agriculture and international trade.

On top of Mapungubwe hill are the remains of a settlement, town, or metropolis some 2.5 km south-east of the Limpopo/Shashe confluence. This capital seems to have controlled an area of about 30,000 km^2 (comparable with the size of the Zulu Kingdom in the 19^{th} century). In the 80 recorded homesteads associated through 'Mapungubwe' pottery with this capital, it is estimated that there were about 9,000 people paying allegiance to an overall leader. Furthermore a hierarchy has been discerned in these sites with up to five administrative levels.

In the final phase of development at Mapungubwe the hierarchical system separated the ruler from his subjects. Commoners lived on the southern terrace at the foot of the hill, while above on top of the hill, the elite rulers resided. By 1250 AD the layout of the palace area on the hilltop further separated the leader from his family and followers with entrances to the elite areas demarcated by low stone walls.

Together the terrace, plateaus and hill cover an area of about 10 hectares and it has been estimated that between 3,000 and 5,000 population lived there.

Remains of a special building complex – probably a palace – have been fund in the centre of the hilltop demarcated by an arc of prestigious revetment walls. As inadequate records were kept in excavations of this area in the 1930s, it is not possible to reconstruct this palace with any accuracy. However enough has been found from the buildings, distinctive hilltop graves and from cattle dung remains to suggest royal control of cattle and the amassing of considerable wealth in the palace complex. Finds include Chinese Celadon ware, large quantities of glass beads, possibly from Persia, and gold in the form of foil, wire, bangles, strips, beads, coiled helix and pins. The foil was made by hammering globules into thin sheets and this was then folded over carved wooden forms to produce three dimensional shapes such as the now famous rhinoceros – recovered from a grave in the 1930s.

The wealth was the result of extensive and successful trade through East African Coastal ports with India and China of gold and ivory in return for ceramics, glass beads and other luxury goods. So much wealth seems to have been accumulated that the normal channels of distribution within the more traditional social hierarchy became inadequate, and this led to the emergence of a distinct upper class of apparently hereditary sacred leadership.

Archaeological remains testifying to Mapungubwe's growth 900-1200 AD (Zhizo, Leopard's Kopje): The large population that Mapungubwe sustained in its final phase represented a huge increase from what excavations have revealed about the beginning of the urban period. It seems that there was perhaps a five-fold increase in population between 900 AD and 1200 AD.

As the centre of power at Mapungubwe moved twice, three separate sites remained to be examined and collectively they paint a detailed picture showing the development of Mapungubwe from an incipient city-state in 900 to its full blown power three centuries later as a result the emergence of increasingly sophisticated agriculture and extensive trade links with the Indian Ocean ports.

What are collectively known as Zhizo sites, dating from around 900, represent the first pioneer farmers to settle near the rivers. They cultivated and herded sheep, cattle and goats and begun to trade with the coast. The largest Zhizo site is Schroda on a plateau overlooking the Limpopo valley and housing between 300 and 500 people. This was the focus for 25 smaller sites within a radius of 40 km. A degree of hierarchy was emerging, but the settlements still reflected a very typical southern African pattern – houses encircling a large cattle enclosure. The chief would have been resident at the Schroda capital, with lesser leaders such as headmen in charge of smaller but similarly planned settlements. Large quantities of clay figurines of people and animals – particularly the dense concentration in one area – suggest some sort of centralised ritual ceremonies associated with the chief reinforcing the idea of developing centralised power.

Excavations have revealed evidence of domesticated sheep, goats, cattle and dogs – which with game and fish from the river provided a major source of food. The staple food was Sorghum, which seems to have been the only grain grown.

Imported glass beads and evidence for ivory working imply that Schroda already had trading contacts with the East Coast.

All this evidence suggests that a hierarchy related to growing political power and the unequal distribution of wealth had begun to form in the Region.

After a century Schroda was abandoned and a new centre or capital established by incoming people, believed to be ancestors of the present day Shona people. They established a capital at Leopard's Kopje housing between 1,000 and 2,000 people. Here the cattle were moved away from the centre of the settlement and the land was farmed much more extensively. Excavations show a settled and successful society growing a wider variety of grain, sorghum, beans and millet, stored in pole and daga grain bins, (similar it seems to ones still built in the area), and still keeping domesticated cattle, sheep and dogs.

Over 6500 glass beads have been recovered form the site indicating substantially increased trade with the coast. Many of these beads are tiny – much smaller than those usually found at sites on the East African coast, and could have been preferred for beadwork, a practice still found in the area today. There is also evidence that imported beads were melted down and re-formed into large roller shapes and then widely traded within the region.

Baked clay figurines of people and animals are still found. There is also evidence of iron and copper working.

After another century, the final phase of Mapungubwe emerged around Mapungubwe hill with it seems the population from the earlier phase moving to the bottom of the hill below the newly built palace.

Remains of early settlement – Stone Age & Iron Age & rock art: The combination of a riverine environment and sandstone hills at Mapungubwe seems to have provided a focus for human settlement whenever climatic conditions have been favourable.

Ancestors of the San Bushmen lived in the area for many millennia; Stone Age occupation is evident from 26 sites. Between 250 and 900 AD these hunter-gathers were gradually replaced or absorbed by Iron Age agriculturalists who, after 900, begun to form the foundations of the Mapungubwe state. Rock paintings provide powerful evidence for these changes. Most date from between 10,000 to 5,000 years ago and show itinerant hunters. But the paintings also record the first pastoralists and then are overlaid later by geometric paintings of the settled newcomers who perhaps tried to overpower and neutralise the earlier hunters' images.

'Natural' landscape surrounding the built remains: The extensive landscape surroundings of the archaeological remains are today a back-drop for the site. The huge agricultural enterprise of the final phase at Mapungubwe has vanished and much of the core of the landscape has now been returned largely to its unimproved state with wild grazing game animals. Some farms still remain, growing citrus in irrigated fields. In the valley irrigation allows large scale commercial farming and game ranching but some of this has been cleared and it is planned more will follow.

History

Mapungubwe was the largest settlement in the sub-continent in the 13th century AD before it was abandoned. Various communities settled in the vicinity over the next 600 years. Legends and rumours about the place were passed on from generation to generation. Karel Moerschell, a local German farmer, knew about the gold by 1911, but it was not until the 1930s that the significance of Mapungubwe became more widely known.

On 31 December 1932, a local informant, Mowena, led E.S.J. van Graan, and four others to Greefswald farm on Mapungubwe Hill where they saw stone walls and recovered gold and iron artefacts, pottery and glass beads. The finds, which received wide publicity in the media, were reported to the head of the Department of History at the University of Pretoria, Professor Leo Fouché. As a result of his intervention, the University negotiated with the owner of the property, E.E. Collins.

In a legal agreement the University took ownership of the gold and other artefacts and secured an option and contract for excavation rights. The University also successfully requested a postponement of prospecting, mining and related activities on Greefswald. In June 1933, Greefswald was bought by the Government and excavation rights were granted to the University of Pretoria.

The University established an Archaeological Committee, which from 1933 to 1947 oversaw research and excavations. Rev. Neville Jones from Zimbabwe and J.F. Schofield were appointed to undertake the first fieldwork in 1934 and 1935 and they were advised by Professor C van Riet Lowe, Director of the Bureau of Archaeology. Their work focused on Mapungubwe Hill, the southern terrace and the midden there. They briefly surveyed other similar sites in the vicinity.

From 1935-1940 six excavation seasons at K2 and Mapungubwe Hill were directed by Guy A. Gardner. The results of his work were published nearly 25 years later.

Meyer (1998) describes the excavations on Greefswald between 1933 and 1940 as 'rapid, large scale excavations resulting in the recovery of valuable artefacts'. Research was hampered by 'the lack of professional archaeologists in South Africa, the lack of full-time supervision of the excavations by efficient, trained staff, the fact that adequate scientific methods for Iron Age research had not yet been developed and that the Iron Age in South Africa was virtually unknown to archaeologists. Consequently, many of the deposits on the sites were removed without the meticulous excavation and recording required. These problems inevitably resulted in a loss of irreplaceable deposits and eventually also of excavated materials [and] a lack of scientific data.'

The next phase of archaeological investigation, in 1953-1954 and in 1968-1970, under the direction initially of the Department of Anthropology, and then of Professor J F Eloff who was appointed as Head of the newly-formed Department of Archaeology at the University of Pretoria in 1970, was more systematic and focused mainly on the southern terrace.

Over the next 25 years from 1970 to 1995, the Department of Archaeology at the University of Pretoria recognised that their first priority was to establish a firm data base by testing, correcting and supplementing the earlier research, and concentrating on reconstructing the way of life of the site inhabitants. Between 1979 and 2002 reports have been published on the human and faunal remains, Chinese porcelain, gold objects, glass beads and radiocarbon dating.

In addition, sites on neighbouring farms have been investigated by students of the University of Pretoria during the 1970s and 1980s.

Greefswald has remained the property of the State since the 1930s. Management of the farm was taken over by the provincial Department of Nature Conservation in 1992, and control was transferred to SANParks in 1999.

The proposed boundaries of the world heritage site coincide with the boundaries of the proposed Vhembe-Dongala National Park – which is still in the process of formation. It is being inscribed sequentially – with three areas properties already gazetted. These are Den Staat, Geefswald and Reidal which are areas of 'natural' landscape in which are many of the principal archaeological sites.

The aim is for SANParks eventually to acquire all the land within the proposed park or to have contractual agreement with the owners. This will allow the land to be taken out of agriculture and revert to 'natural' landscape. A chart of the current progress with land negotiations is included in the nomination. Currently there are 'in principle' agreements for 11 of the remaining 29 land units, but the timetable is missing. These are currently used for different purposes: some are being cultivated using irrigation agricultural techniques based on water extracted from the Limpopo river, some are managed as game reserves, and others are owned by the De Beers Corporation and are used to ensure water extraction, storage, and provision for that organization's diamond mining activities, which are estimated to have a maximum working life of twenty years.

Management regime

Legal provision:

The nominated property is protected by overlapping legislation. The 1976 National Parks Act provides stringent controls over all forms of human intervention in designated areas. This currently applies only to the three gazetted areas of Den Staat, Greefswald, and Reidel, but when the Vhembe-Dongola National Park is created the whole area will be protected. All interventions within the Park must be submitted to the government agency, South Africa National Parks (SANParks), for scrutiny and, where appropriate, authorization.

Legislation has been prepared to complete the designation procedure. This is before parliament at the present time and will be completed in the coming session.

The Mapungubwe, K2, Schroda, and Little Muck (Leokwe Hill) are protected by the 1999 National Heritage Resources Act. All interventions are subject to authorization by the South African Heritage Resources Agency (SAHRA). Details of the considerable protection afforded by this statute are set out in the nomination dossier. It is intended to extend protection under this act to the entire area in the near future.

In the event of the of the Mapungubwe cultural landscape being inscribed, it will come within the provisions of the 1999 World Heritage Conservation Act, which imposes an additional level of protection.

Independent environmental impact assessment is a mandatory component of these statutes. This requirement is reinforced by the provisions of the 1998 National Environment Management Act, which relates to all development or rezoning proposals.

Management structure:

Overall management of the existing Park is the responsibility of SANParks, which is represented on site by a professional parks manager, assisted by a small but efficient team.

It is the sole management authority for properties owned by SANParks. For properties that remain in private ownership SANParks will operate in conformity with the contractual arrangements agreed with landowners. These vary in nature: in some cases ownership will revert to SANParks after agreed periods, but agricultural activities with continue on others within agreed limits.

With regard to the sites protected under the National Heritage Resources Act, there is close liaison with the provincial SAHRA manager. There is, however, no member of the Park staff with qualifications in archaeological heritage management (known as cultural resource management in South Africa).

There is a Park Committee, consisting of representatives of all the stakeholders (central and provincial government agencies and private landowners). It is chaired by the chairman of the Representative Stakeholder Committee, set up to ensure public participation in all planning and management decisions.

The mission and objectives of the Preliminary Park Management Plan are in accordance with the requirements of the World Heritage Committee. A number of other plans for the nominated area and the Limpopo Province are listed in the nomination dossier. These are currently being revised and a consolidated plan for the Park, based on the Preliminary Plan and covering inter alia overall site management, cultural heritage management, and tourism, was expected early in 2003. This is in line with the four acts which apply to site and which require a management plan for a world heritage site.

This management plan has so far not been received.

Resources:

The property receives an annual operating budget from SANParks, as part of the overall SANParks budget. For the 2000/01 financial year, the total operating budget is 1.16 million Rand (116,000 US $ at an exchange rate of 10.0 Rand = 1.0 $), including 662,000 Rand for human resources. There is also a 165,000 Rand capital budget for smaller capital improvements.

Development planning of the area is being conducted with funds from the National Government managed by the Dept of Environmental Affairs and Tourism.

Site rehabilitation measures are being funded through the Poverty Alleviation Programme administered by the Dept of Environmental Affairs and Tourism.

The Draft Park Management Plan was put together with financial assistance from DANCED.

The compilation of the Nomination Document was funded by NORAD.

Justification by the State Party (summary)

The Mapungubwe Cultural Landscape was the centre of the first powerful indigenous kingdom in Southern Africa. It was established by the cultural ancestors of the present-day Shona and Venda between AD 900 and 1300. Evidence for its history is preserved in over 400 archaeological sites. The dynamic interaction between people and landscape laid the foundation for a new type of social organisation in the region.

The kingdom grew as a result of wealth that accrued by its leaders from trade with the Indian Ocean network, combined with ideal landscape conditions for agriculture that provided for a population of over 9,000 people. Trade goods included gold, glass beads, cotton cloth, Chinese ceramics, ivory, copper and hides.

By the thirteenth century AD, a social hierarchy had developed which was reflected in settlement planning. Mapungubwe Hill was occupied and modified to separate the elite from the commoners below.

The onset of the Little Ice Age caused drought and crop failures. The kingdom dispersed after AD 1300, new social and political alliances were formed, and the centre of regional power shifted to Great Zimbabwe.

3. ICOMOS EVALUATION

Actions by ICOMOS

An ICOMOS evaluation mission visited the site in October 2002.

Conservation

Conservation history:

Archaeological research in the form of excavations and survey has been in progress in the nominated area for many years. This has been carried out by the archaeological departments of three universities: Witwatersrand, Pretoria, and Venda. There has undeniably been a considerable measure of rivalry between these institutions in the past. The Archaeological Task Group has played an important role in the development of an integrated policy for archaeological research, as well as aspects of conservation and presentation. It is important, however, that this body should be more closely integrated into the overall management of the nominated property. It should be responsible for defining and monitoring research and interpretation policies for the Park in the short, medium, and long term.

Substantial excavation projects have been carried out at the three main sites Mapungubwe, Schroda and Leonards' Kopje, and there are plans for a large project at Den Staat.

The latter two excavated sites have produced much important material, but they are on flat land and have very little to offer the visitor in visual terms. At Leopards' Kopje such conservation work as has been carried out has been confined to stabilizing the boundaries and sections of the open area, whilst there is little to see of archaeological work at Schroda. It is unlikely that Den Staat will produce any major structural remains for display.

There has been a great deal of field survey, which has produced evidence of many habitation sites. However, these can only been identified from surface finds and differential soil colour and vegetation.

State of conservation:

No specific evidence is put forward in the nomination document for the state of conservation of the excavated remains. However mention is made of natural erosion affecting many old excavation sites that is to be addressed by a Site Rehabilitation Programme.

Nor is there generic information on the state of records. A comprehensive list of known sites in the core area of the Mapungubwe Cultural Landscape, in the buffer zone, and in Botswana and Zimbabwe, has been compiled by Huffman and is synthesised in Figures 6-8 of the nomination. The list also contains all rock art sites recorded during field surveys in the core area and adjacent properties in Zimbabwe by Palaeo-Art Services, a voluntary organisation co-ordinated by Ed Eastwood.

Risk analysis:

The following threats are identified in the nomination documents:

- Agriculture;
- Mining;
- Environmental pressure;
- Natural disasters;
- Visitors' pressure;
- Criminal damage.

And these are dealt with separately:

Agriculture: Intensive agriculture is being practised on irrigation lands along the Limpopo River and in the south of the site. The main impact is likely to be the ploughing of cultural sites. Within the proposed boundary, land currently intensively farmed will in time be decommissioned and gradually rehabilitated, halting any further agricultural encroachment (Cf. History section).

Grazing, particularly by cattle, has had a substantial impact on the vegetation in the past. However, the numbers of stock are substantially lower than they were in the middle of the last century and there are unlikely to be any significant new impacts.

Mining: There are two mining operations with a potential impact, the small Riedel diamond mine, and the major Venetia Mine.

A small portion of the farm Riedel in the eastern part of the Park has been kept on in the hope that it will yield profitable mining operations. All indications are however that it is worked out.

The Venetia Mine is a major diamond mining operation opened in the 1990s by De Beers Consolidate Mines Ltd. Because it is new it was subject to the Environment Conservation Act of 1989, and a full Environmental Impact Assessment and Environmental Management Plan was prepared.

Most of the staff of the mine live in Messina and are bussed in on a daily basis, so there is limited development pressure at the mine itself. However, the bright lights of the mine are highly visible from many kilometres away.

The Messina area is a fairly rich mining area, and there is a possibility that deposits of other valuable minerals may be found. The exact ownership of most of the mining rights in the Park has not yet been sorted out, apart from the above two mines. However, the new Minerals and Energy Act returns all mining rights to the State, and the Government will therefore be in a far better position than it has been for over a century to make an informed decision on whether any new deposits should be mined or not.

Environmental pressure: Very limited environmental pressures are expected. A five-year Alien Invasive Plant Eradication Programme is being carried out under the Working for Water Programme, aimed mostly at waterborne invasives such as Nicotiana, as well as some cacti.

The impact of the recent opening up the property to big game, especially elephants, needs to be considered. There is some argument for fencing off the most important sites from elephant damage. However, elephants have been part of the picture for thousands of years, and the counter-argument says that some elephant impact should be accepted as part of the natural processes. A monitoring programme to detect elephant impacts has been initiated.

Climate change is clearly a major factor in the Mapungubwe Cultural Landscape: the main settlements grew and then declined in response to changing climatic conditions. The early 21st century is at the drier end of the

cycle for this part of the Limpopo Valley, and higher rainfall periods may return in the future.

Natural factors: The main natural disasters are flooding and fire.

Flooding occurs periodically and has done for thousands of years. Most of the sites near the river have been extensively damaged before they were discovered. The main consideration is that any new excavations close to the river should take into account the potential impact of flooding.

A long history of heavy grazing by domestic stock over the last century means that the vegetation is prone to fires only under exceptional conditions. The Park has a fire management policy in place, fire assistance agreements have been made with neighbours, and fire fighting equipment on standby.

An ongoing problem is the erosion of old excavations through the actions of wind and rain. This is being addressed by the Archaeological Task Group.

Visitors' pressure: This is one of the main factors affecting the property. Inadequately controlled tourism pressure could have a substantial impact on the sites, through trampling of deposits, graffiti, damage to paintings, and removal of archaeological material such as pottery and beads.

These issues are to be addressed in the Tourism Master Plan presently being drawn up. A particular issue is whether visitors should be allowed on to the top of Mapungubwe Hill.

Authenticity and integrity

Authenticity at Mapungubwe is high. The cultural sites have not been subject to any form of human intervention since they were abandoned apart from archaeological excavations. The excavations have been stabilised and filled in where possible and the recovered materials are curated at the University of Pretoria, at the University of the Witwatersrand in Johannesburg and at the African Museum in Pretoria.

The natural landscape has been modified along the Limpopo River where commercial farming has been undertaken during the past century: cattle ranching, game ranching and latterly, since the 1980s, irrigation crop farming. Farm houses and buildings have been built and various irrigation measures installed.

In the core area some properties have been acquired and others soon will be in order to address conflicting land use. Farming in the core area has either ceased already or will be phased out over the next five years.

Once the properties in the core area have been acquired by the State, or the owners have entered into a contractual agreement with SANParks, and the properties have been consolidated, all fences will be removed to allow elephants and other game animals to range freely. The flow of game will be extended further with the establishment of the proposed Trans Frontier Conservation Area that will extend across the Limpopo into Botswana and Zimbabwe.

The integrity of the site has only been compromised by the standard of the excavations in the 1930s which it could be argued led to valuable evidence being lost – and thus the completeness of the site, in both physical and intellectual terms being compromised.

Comparative evaluation

The Mapungubwe Cultural Landscape is the cultural and historical precursor to two sites already on the World Heritage List: Great Zimbabwe and Khami, in Zimbabwe. Great Zimbabwe is about 250 km to the north-east and Khami is about 220 km north-north-west of Mapungubwe.

Mapungubwe is the precursor to Great Zimbabwe in the sense that both belonged to the same regional culture and Great Zimbabwe took over as the major east coast trading partner after climatic changes undermined the prosperity of Mapungubwe. However, there is no evidence that the Mapungubwe people moved to Great Zimbabwe from Mapungubwe.

The physical remains at the two sites are different, but with strong similarities. At Mapungubwe Hill, as at Great Zimbabwe, high quality walling relates to the royal areas and to the main entrance to the hill. There are also similarities in social structures. By the end of the period of occupation at Mapungubwe the inhabitants had established a ruling class that lived apart from the commoners. At Great Zimbabwe, the physical separation of commoners and sacred rulers was developed to a greater extent, using large and elaborate stone-walled structures to emphasise this separation.

Mapungubwe, Great Zimbabwe and Khami each represent a different stage in the inter-twined historical process of external trade and social stratification. Whereas the two Zimbabwean sites each cover a period of about two centuries, the core area of the Mapungubwe Cultural Landscape includes a series of three capitals that were occupied over a period of about 400 years. The story they tell is amplified with evidence from hunter-gatherer rock paintings. Mapungubwe should therefore be seen as part of a cultural continuum with Khami and Great Zimbabwe rather than as a competing site.

In a broader global context, Mapungubwe could perhaps be compared with the early city states in Central America and the Near East in that their remains chart the origins of centralised settlement in those continents, although Mapungubwe is much more recent than its counterparts. Although there are similarities in the effects of sedentary agriculture, trade, population increase and class distinction with these sites, the cognitive use of the landscape is different. Whereas elsewhere successive populations built settlements on top of each other to emphasise dominance by ethnic replacement, in the Mapungubwe Cultural Landscape different parts of the landscape were selected at different times. Archaeological deposits therefore tend to represent a limited time period of only one century or two.

Outstanding universal value

General statement:

Mapungubwe is of universal value for the way it demonstrates the rise and fall of the first indigenous kingdom in southern Africa. Within the site are the remains of three capitals, their satellite settlements, and the lands

around the confluence of the Limpopo and Shashe rivers, whose fertility supported the large population within the kingdom.

Mapungubwe's position at the crossing of the north/south and east/west routes in southern Africa enabled it to control trade through the East African ports to India and China and within southern Africa. From its hinterland it harvested gold and ivory – commodities in scarce supply elsewhere – which brought it great wealth displayed in such imports as Chinese porcelain and Persian glass beads.

Mapungubwe's comparatively sudden demise, brought about by deteriorating climatic conditions, and the abandonment of the capital, means that the remains of the kingdom have been preserved. Mapungubwe's position as the power base in southern Africa shifted north to Great Zimbabwe and Khami. Mapungubwe must be seen as the forerunner of these two later kingdoms.

Evaluation of criteria:

Mapungubwe is nominated under ***criteria ii, iii, iv*** and ***v***:

Criterion ii*:* The Mapungubwe Cultural Landscape contains evidence for an important interchange of human values that led to far-reaching cultural and social changes in Southern Africa between AD 900 and 1300. International trade through the Indian Ocean ports created wealth in society which was closely linked to ideological adjustments and changes in architecture and town-planning. The archaeological evidence shows a clear shift as trade increased to a pattern influenced by an elite class with sacred leadership in which the king was secluded from the commoners.

Criterion iii*:* Until its demise at the end of the 13th century AD, Mapungubwe was the most important inland settlement in the African subcontinent. In its heyday between 1220 and 1300 AD the kingdom extended over an area of about 30,000 km^2 on either side of the Limpopo and Shashe rivers. The cultural landscape contains a wealth of information in archaeological sites that record the development of the kingdom from relatively small settlements based on a central cattle kraal to a capital with separate areas for the elite and commoners. High status burials provide the earliest physical evidence of substantial gold working in the sub-continent. The gold work and related trade network is the indigenous precursor to the subsequent European exploitation of this precious metal in Southern Africa that began more than 500 years later. Glass beads, spindle whorls and fragments of Chinese porcelain are evidence for a flourishing trade with the east coast of Africa and, from there, with India, Indonesia and China.

The power-base of this culture shifted to Great Zimbabwe when climate change meant it was no longer possible to support a large sedentary population.

Although farming communities continued to live on and off in the Mapungubwe region after 1300 AD, they never again reached the same high population density or political power. As a result of subsequent social and political events and colonial intervention in the last 400-500 years, direct linkages with the original population at Mapungubwe have become obscured. The remains at Mapungubwe are therefore testimony to this once thriving civilisation.

Criterion iv: At Mapungubwe trade, in gold and ivory through the east African ports in exchange for glass beads and ceramics that derived from as far afield as China, combined with ideal climatic conditions for agriculture, led to the establishments of the first indigenous kingdom in the southern African sub-Continent , a significant stage in the history of the area.

Criterion v*:* During the past two millennia, periods of warmer and wetter conditions suitable for agriculture in the Limpopo/Shashe valley were interspersed with cooler and drier pulses. When rainfall decreased after 1300 AD, the Mapungubwe Cultural Landscape could not continue to sustain a high population using traditional agricultural methods, and the inhabitants were obliged to disperse.

The remains at Mapungubwe thus graphically illustrate the impact of climate change and record the growth and then decline of the kingdom of Mapungubwe as a clear record of a culture that became vulnerable to irreversible change.

4. ICOMOS RECOMMANDATIONS

Recommendation for the future

The nominated property contains substantial areas of virtually untouched cultural landscape of very high quality. These are, however, separated by some areas of present-day agriculture (principally citrus plantations and circular irrigated fields) in private ownership. The aim is to transfer ownership of these commercial operations to the SANParks, to enter into management agreements, and thus to allow the land to return to 'natural' landscape. This process is already under way, and some previously worked fields are now fallow, awaiting natural regeneration, but a clear timetable is needed.

Whilst it could be argued that sections of the Park in this latter category should be excluded from the World Heritage site, these sites do contain valuable archaeological material and inscription would provide protection under the provisions of the 1999 World Heritage Conservation Act.

Furthermore, exclusion of certain areas within the proposed National Park from the World Heritage site might cause management and legislative complications.

The inscription of the site is seen as offering potential economic advantages through increased tourism activity. The Mapungubwe Tourism Initiative has been set up by the Department of Trade and Industry to assist regional development and economic growth in the central Limpopo valley with Mapungubwe as the central feature. A baseline scoping study of the tourism potential has been prepared. This is being followed up by a Tourist Destination Development Plan, which is coordinated with the work of the Development Bank of Southern Africa. Project managers from SANParks and DBSA have been to the USA on a fact-finding mission. It is clearly crucial that tourist activities are expanded in a sustainable way.

It is also imperative that there should be a well-designed interpretation centre linked with interpretation panels at the main sites – to explain the significance of the almost invisible remains.

An excellent site for the interpretation centre has been identified alongside the main road that forms the southern boundary of the nominated area. It is planned to erect a suitable building or buildings here that would be screened from the interior of the Park. This would need to be linked

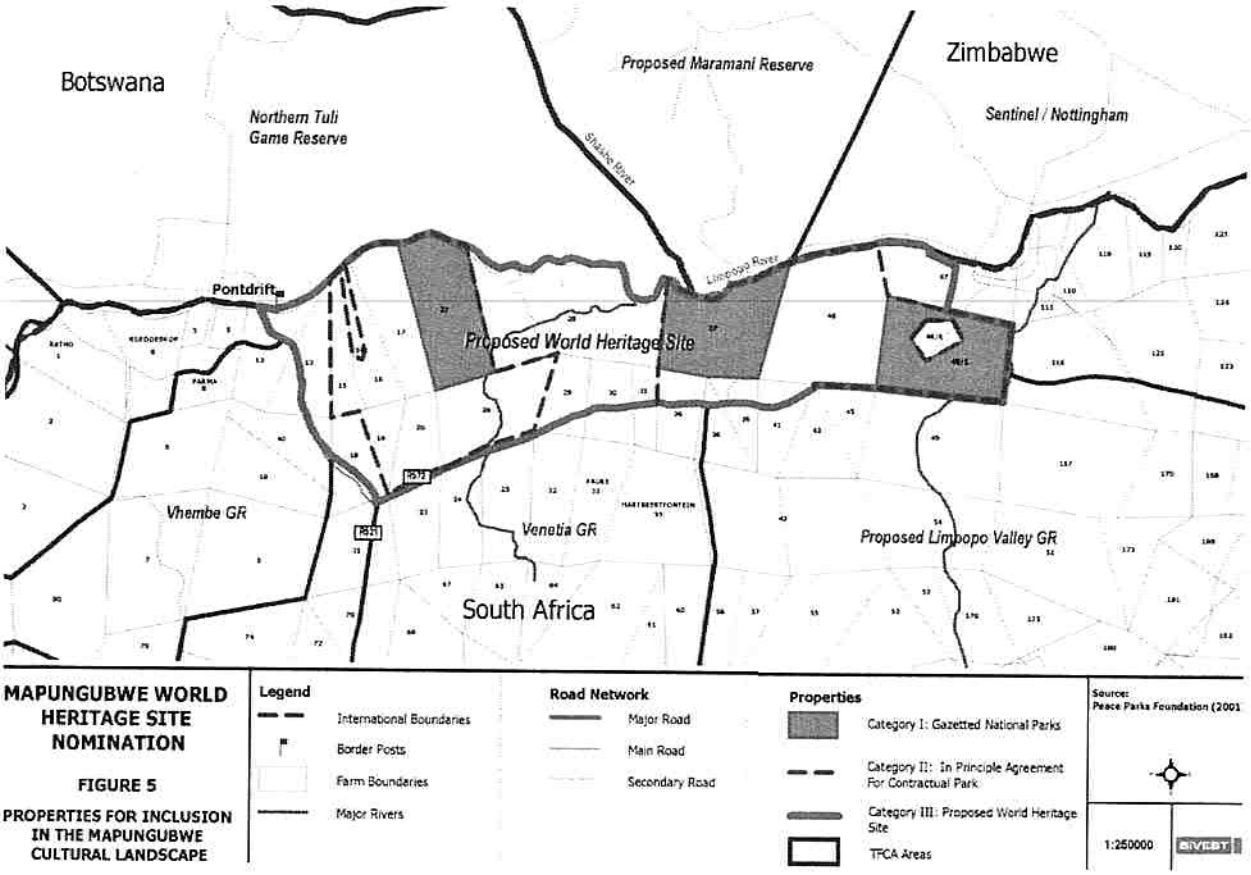
to an overall interpretation strategy for the whole proposed world heritage site.

Recommendation with respect to inscription

That this nomination be ***deferred*** in order to allow the State Party to:

- Provide an updated Management Plan;
- Provide satisfactory progress of the formal designation of the Vhembe-Dongola National Park, of contractual negotiations with private landowners within the nominated property, and of the production of the Management Plan. (All these were originally promised by January 2003);
- Expand the permanent staffing of the Park management team so as to include at least one full-time professional archaeologist with heritage management training;
- Reconstitute the Archaeological Task Group as an integral part of the management scheme, with the responsibility of preparing research policies and authorizing and overseeing excavation and survey projects;
- Commission from consultants, with experience in this field, an integrated interpretation plan, involving the content and display of the interpretation centre, and the presentation and interpretation of individual sites (This might be the subject of a request to the World Heritage Fund. It might also take the form of a bilateral agreement with the US National Park Service).

ICOMOS, March 2003



Map showing the boundaries of the site
Plan de délimitation du site

Mapungubwe (Afrique du Sud)

No 1099

1. IDENTIFICATION

État partie : Afrique du Sud

Bien proposé : Paysage culturel de Mapungubwe

Lieu : Province du nord

Date de réception : 29 janvier 2002

Catégorie de bien :

En termes de catégories de biens culturels telles qu'elles sont définies à l'article premier de la Convention du patrimoine mondial de 1972, le bien proposé est un *site*. Aux termes de l'article 39 des *Orientations devant guider la mise en œuvre de la convention du patrimoine mondial*, il s'agit aussi d'un *paysage culturel*.

Brève description :

Mapungubwe est adossé à la frontière nord de l'Afrique du Sud avec le Zimbabwe et le Botswana. C'est un vaste paysage de savane parsemé d'arbres, de quelques épineux, de baobabs colossaux, autour de terrasses de grès s'élevant au-dessus de la plaine.

Au confluent du Limpopo et de la Shashe et enjambant les routes nord/sud et est/ouest dans le sud de Afrique, Mapungubwe est devenu le plus grand royaume du sous-continent avant son abandon au XVIe siècle.

Ce qui survit, ce sont les vestiges quasiment intouchés des sites des palais, de mê me que toute la zone de peuplement en dépendant, ainsi que deux capitales antérieures. L'ensemble offre un panorama inégalé du développement de structures sociales et politiques sur quelque 400 ans.

2. LE BIEN

Description

Au milieu du XVIe siècle, le royaume de Mapungubwe avait déjà largement disparu de l'Histoire. Pourtant, à l'apogée de sa puissance, entre 1220 et 1300, cette société centralisée et hiérarchique comptait au moins 9 S000 personnes et disposait d'immenses richesses et d'une influence énorme, qu'elle avait gagnées par l'exploitation et le commerce de ses riches ressources naturelles, via les ports de l'océan Indien, avec l'Arabie, l'Inde et la Chine.

Situé au confluent du Limpopo et de la Shashe, qui, inondant les terres, fournissaient des sols alluviaux fertiles, et doté de conditions climatiques quasi idéales, Mapungubwe avait attiré des agriculteurs de l'â ge du fer dès le milieu du premier millénaire avant J.-C. et de nombreuses preuves attestent de la présence, avant cela, de chasseurs-cueilleurs.

De petite société rurale, Mapungubwe est devenue une ville-É tat influente grâ ce au développement d'une structure sociale qui a encouragé la croissance démographique, appuyée par une agriculture relativement intensive et un système hiérarchique qui donna naissance à la spécialisation et à une économie marchande. Mapungubwe possédait de l'ivoire, de l'or et un accès relativement aisé à la cô te d'Afrique de l'Est, à partir de laquelle il pouvait faire commerce avec les Arabes, les Indiens et les Chinois. C'est ainsi que de la porcelaine de Chine, des perles de verre et du coton sont arrivés jusqu'à Mapungubwe.

La richesse et les structures sociales de Mapungubwe transparaissent clairement dans les trois palais construits sur des sites distincts pendant les trois phases de son expansion, entre 900 et sa chute, entraî née par un brusque changement climatique – une sorte de petite ère glaciaire. Il provoqua une sécheresse qui dévasta les bases agricoles du royaume, devenu incapable d'assurer la subsistance de son peuple ou son commerce. Le siège du pouvoir se déplaç a alors vers le nord, vers le Grand Zimbabwe.

L'ensemble du site illustre ainsi les étapes successives de la création du premier royaume indigène du sud de l'Afrique, son déclin et son abandon finaux.

Le site de Mapungubwe est magnifique en termes de paysage, et la vue superbe où que l'on tourne son regard ; mais les vestiges mis au jour ne sont pas très impressionnants. L'importance du paysage et des sites individuels qu'il abrite n'est donc pas évidente, mê me pour un archéologue, s'il n'a pas de connaissances spécifiques sur la région. Pour rendre ces sites intelligibles aux visiteurs, une interprétation et une signalisation efficaces sont nécessaires.

Délimitations

La zone principale du site couvre environ 30 000 hectares, entourés par une zone tampon d'environ 100 000 hectares, bien que celle-ci ne soit pas indiquée sur les cartes fournies. Le site proposé pour inscription contient de vastes parcelles de paysage « naturel » de très haute qualité, au nord de la zone qui longe les fleuves. Au sud, sa frontière traverse des fermes à agrumes aux formes géométriques, qui seront au fil du temps éliminées du système agricole.

Les limites proposées correspondent à celles du parc national de Vhembe-Dongola, actuellement en cours d'établissement (voir ci-dessous). Les cartes fournies n'indiquent clairement aucune zone tampon.

Le Limpopo, frontière entre l'Afrique du Sud et ses voisins, le Bostwana et le Zimbabwe, délimite au nord le bien proposé pour inscription. Un mémorandum d'accord trilatéral a été rédigé en vue de créer *la Limpopo-Shashe Transfrontier Conservation Area* (TFCA – zone de conservation transfrontalière Limpopo-Shashe) ; une fois établie comme TFCA, cette vaste étendue (5 040 km^2) constituera une zone tampon très efficace. Il est prévu que chaque pays se concentre sur une facette de la protection : le patrimoine culturel en Afrique du Sud, la faune au

Botswana et les cultures vivantes au Zimbabwe. Des progrès considérables ont été faits au Botswana, mais ils sont lents au Zimbabwe, du fait de la situation politique actuelle.

Le site abrite plus précisément :

- Les vestiges de palais (période Mapungubwe) ;
- Des vestiges archéologiques attestant de l'essor de Mapungubwe, 900-1200 après J.-C. (Zhizo, Leopard's Kopje) ;
- Les vestiges d'anciens peuplements – Âge de la pierre, â ge du fer et art rupestre ;
- Paysage naturel entourant les vestiges bâ tis.

- Vestiges de palais, 1220-1290 après J.-C. (période Mapungubwe) :

Ce sont les principaux vestiges du site. Ils reflètent non seulement la grande richesse de Mapungubwe, mais aussi la hiérarchie sociale, religieuse et politique qui s'est développée en conséquence de l'essor démographique fondé sur une agriculture intensive et un commerce international prospères.

Au sommet de la colline de Mapungubwe se trouvent les vestiges d'un peuplement, ville ou métropole à quelque 2,5 km au sud-est du confluent Limpopo/Shashe. Cette capitale semble avoir régné sur une région d'environ 30 000 km² (comparable en taille au royaume zoulou du XIXe siècle). Dans les 80 propriétés rurales documentées associées à cette capitale par la découverte de poterie « Mapungubwe », on estime que 9 000 habitants environ prê taient allégeance à un seul souverain. En outre, on a discerné dans ces sites une hiérarchie comptant jusqu'à cinq échelons administratifs.

Dans la dernière phase du développement de Mapungubwe, le système hiérarchique séparait le souverain de ses sujets. Les gens du commun vivaient sur la terrasse méridionale au pied de la colline, tandis que l'élite résidait au sommet. En 1250 après J.-C., la disposition du palais au sommet de la colline séparait aussi le souverain de sa famille et de sa cour, avec des accès aux zones réservées à l'élite et délimitées par des murets de pierre.

La terrasse, les plateaux et la colline couvrent au total une dizaine d'hectares, et l'on estime à 3 000-5 000 le nombre d'habitants qui y vivaient.

Les vestiges d'un ensemble particulier – probablement un palais – ont été découverts au milieu du sommet de la colline, délimités par un demi-cercle de murets aux revê tements élaborés. Les fouilles qui ont eu lieu dans cette zone dans les années 1930 n'ayant pas été correctement consignées, il est impossible de reconstruire ce palais avec une quelconque précision. Toutefois, on a pu déduire, d'après les bâ timents, les tombes particulières en haut de la colline et des restes de fumier, un contrô le royal du bétail et l'entreposage de richesses considérables dans le complexe palatial. On y a en effet trouvé des objets en porcelaine de Chine, quantité de perles de verre, peut-ê tre venues de Perse, et de l'or sous forme de feuilles, bracelets joncs, lamelles, perles, volutes et broches. Les feuilles étaient fabriquées en martelant des particules en feuilles fines, repliées ensuite sur des formes en bois sculpté pour donner naissance à des formes tridimensionnelles telles que le désormais célèbre rhinocéros découvert dans une tombe dans les années 1930.

Ces richesses étaient le fruit d'un commerce étendu et prospère, via les ports de la cô te de l'Afrique de l'Est, avec l'Inde et la Chine : échange d'or et d'ivoire contre de la porcelaine, des perles de verre et autres marchandises de luxe. Il semble que ces richesses aient été accumulées au point de rendre inappropriés les circuits normaux de distribution dans la hiérarchie sociale traditionnelle, ce qui conduisit à l'émergence d'une classe supérieure distincte, apparemment héréditaire et sacrée.

- Vestiges archéologiques attestant de l'essor de Mapungubwe, 900-1200 après J.-C. (Zhizo, Leopard's Kopje) :

L'importante population qu'abritait Mapungubwe dans la dernière phase de son existence représentait une croissance démographique énorme par rapport aux débuts de la période urbaine, d'après ce que les fouilles en ont révélé. La population pourrait avoir été multipliée par cinq entre 900 et 1200 après J.-C.

Le siège du pouvoir de Mapungubwe ayant déménagé à deux reprises, il a laissé trois sites distincts à étudier ; collectivement, ils peignent un tableau détaillé, illustrant le développement de Mapungubwe de ville-É tat naissante en l'an 900 jusqu'à l'apogée de sa puissance, trois siècles plus tard, grâ ce à l'apparition d'une agriculture de plus en plus sophistiquée et à des liens commerciaux étendus avec les ports de l'océan Indien.

Les sites collectivement connus sous le nom de sites de Zhizo, datant des alentours de 900, représentent les premières installations de fermiers pionniers à proximité des rivières. Ils cultivaient la terre et gardaient des moutons, du bétail et des chèvres, et initièrent des relations commerciales avec la cô te. Le plus grand site de Zhizo est Schroda, sur un plateau surmontant la vallée du Limpopo et abritant entre 300 et 500 personnes. Il se dressait au centre de 25 sites plus petits, éparpillés dans un rayon de 40 kilomètres. Un certain degré de hiérarchie émergeait, mais les peuplements reflétaient toujours un schéma typique du sud de l'Afrique : des maisons encerclant un grand enclos à bétail. Le chef résidait probablement à Schroda, la capitale, les dirigeants de rang moindre, tels que ses délégués, étant chargés de peuplements de moindre envergure mais de schéma similaire. Un grand nombre de figurines d'argile représentant des hommes et des animaux, concentrées dans une zone plus particulièrement, suggère une forme de cérémonie rituelle centralisée associée au chef, ce qui renforce l'idée de l'apparition d'un pouvoir centralisé.

Les fouilles ont également prouvé la présence de moutons, de chèvres, de bétail et de chiens domestiques – qui, avec le gibier et les poissons du fleuve, représentaient une importante source de nourriture. Le sorgho, apparemment la seule céréale cultivée, semble avoir été l'aliment de base.

Des perles de verre importées et des preuves du travail de l'ivoire montrent que Schroda entretenait déjà des contacts commerciaux avec la cô te est.

Toutes ces preuves suggèrent qu'une hiérarchie associée à un pouvoir politique en pleine expansion et à une

répartition inégale des richesses commenç ait à prendre forme dans la région.

Après un siècle, Schroda fut abandonnée et une autre capitale fondée par de nouveaux arrivants, qui seraient, croit-on, les ancê tres des Shona actuels. Ils installèrent à Leopard's Kopje une capitale comptant entre 1 000 et 2 000 habitants. Là , le bétail fut éloigné du centre du peuplement et la culture de la terre devint beaucoup plus extensive. Les fouilles révèlent une société installée et prospère, cultivant une plus grande variété de céréales, sorgho, haricots et millet, stockées dans des rondins et des carrés à grain (similaires, semble-t-il, à ceux qui sont encore aujourd'hui construits dans la région), possédant toujours du bétail, des moutons et des chiens domestiques.

On a retrouvé sur le site plus de 6 500 perles de verre, ce qui indique que le commerce avec la cô te s'était considérablement accentué. Beaucoup sont minuscules, bien plus petites que celles que l'on retrouve généralement sur les sites de la cô te d'Afrique de l'Est, et étaient peut-ê tre destinées à la broderie perlée, une pratique qui a toujours cours aujourd'hui dans la région. Des preuves attestent également que les perles importées étaient fondues avant d'ê tre retravaillées en formes plus grandes et échangées dans la région.

On trouve encore des figurines en argile cuite représentant des personnes et des animaux, ainsi que des preuves de travail du fer et du cuivre.

Un siècle plus tard, la dernière phase de Mapungubwe émergea autour de la colline de Mapungubwe, la population de la première phase semblant s'installer au pied de la colline, en contrebas du nouveau palais.

- Vestiges de l'ancien peuplement – â ge de la pierre, â ge du fer et art rupestre :

À Mapungubwe, la combinaison d'un environnement fluvial et de collines de grès semble avoir attiré le peuplement humain chaque fois que les conditions climatiques étaient favorables.

Les ancê tres des San Bushmen ont vécu dans la région pendant de nombreux millénaires ; 26 sites témoignent d'une occupation à l'â ge de la pierre. Entre 250 et 900 après J.-C., ces chasseurs-cueilleurs ont progressivement été remplacés ou absorbés par des agriculteurs de l'â ge du fer qui, après 900, ont posé les premières fondations de l'É tat de Mapungubwe. Les peintures rupestres témoignent avec vigueur de cette évolution. La plupart ont entre 10 000 et 5 000 ans et représentent des chasseurs itinérants, mais elles consignent aussi les premiers bergers, avant d'ê tre recouvertes plus tard par les peintures géométriques des nouveaux arrivants, peut-ê tre dans une tentative de surpasser en pouvoir les images des chasseurs de jadis et de les neutraliser.

- Paysage « naturel » entourant les vestiges bâ tis :

Le vaste paysage entourant les vestiges archéologiques sert aujourd'hui de toile de fond au site. L'énorme entreprise agricole de la phase finale de Mapungubwe a disparu, et une grande partie du paysage est maintenant revenue à son état d'origine, servant de pâ turage aux animaux sauvages. Il reste encore quelques fermes qui cultivent des agrumes dans des champs irrigués. Dans la vallée, l'irrigation permet une agriculture commerciale à grande échelle et l'élevage de gibier mais une partie a déjà disparu et il est prévu que d'autres suivent.

Histoire

Mapungubwe était le plus grand peuplement du sous-continent au XIIIe siècle après J.-C. jusqu'à son abandon. Diverses communautés s'installèrent dans le voisinage sur les 600 ans qui suivirent. Les légendes et rumeurs concernant le lieu se transmettaient d'une génération à l'autre. Karel Moerschell, un fermier allemand de la région, entendit parler de l'or en 1911, mais ce n'est que dans les années 30 que la valeur de Mapungubwe devint plus largement connue.

Le 31 décembre 1932, un informateur local, Mowena, conduisit E.S.J. van Graan et quatre compagnons à la ferme Greefswald, sur la colline de Mapungubwe, où ils découvrirent des murs de pierre et des objets recouverts d'or et de fer, de la poterie et des perles de verre. Leurs trouvailles, qui firent l'objet d'une vaste couverture médiatique, furent signalées au directeur du département d'histoire de l'université de Pretoria, le professeur Leo Fouché. Suite à cette intervention, l'université négocia avec E.E. Collins, propriétaire du bien.

Par contrat légal, l'université devint propriétaire des objets en or et autres, et prit une option et un contrat sur les droits de fouilles. L'université demanda et obtint également que soient différées la prospection, l'extraction minière et autres activités associées à Greefswald. En juin 1933, le gouvernement racheta Greefswald et les droits de fouilles furent accordés à l'université de Pretoria.

L'université mit en place un comité archéologique qui supervisa de 1933 à 1947 les recherches et les fouilles. Le révérend Neville Jones du Zimbabwe et J.F. Schofield furent nommés pour entreprendre les premiers travaux sur le terrain en 1934 et 1935, sur les conseils du professeur C. van Riet Lowe, directeur du bureau d'archéologie. Ils axèrent leur travail sur la colline de Mapungubwe, la terrasse méridionale et le tertre, avant d'étudier brièvement d'autres sites dans le voisinage.

De 1935 à 1940, Guy À. Gardner dirigea six saisons de fouilles à K2 et à la colline de Mapungubwe. Les résultats de son travail furent publiés presque 25 ans plus tard.

Meyer (1998) décrit les fouilles à Greefswald entre 1933 et 1940 comme des « fouilles rapides, à grande échelle, aboutissant à la récupération d'objets précieux » . Les recherches furent entravées par « le manque d'archéologues professionnels en Afrique du Sud, l'absence de supervision des fouilles à plein temps par un personnel compétent et qualifié, le fait que les méthodes scientifiques adéquates en matière de recherche sur l'â ge du fer n'avaient pas encore été mises au point et que l'â ge du fer en Afrique du Sud était quasiment inconnu des archéologues. Par conséquent, nombre des dépô ts des sites ont été mis au jour sans les fouilles et enregistrements méticuleux requis. Des problèmes qui ont inévitablement entraî né la perte de dépô ts irremplaç ables, et, au final, de certains des matériels mis au jour, [et] un manque de données scientifiques » .

La phase suivante des investigations archéologiques, en 1953-1954 et en 1968-1970, sous la direction tout d'abord du département d'anthropologie, puis du Professeur J.F. Eloff, nommé directeur du nouveau département d'archéologie de l'université de Pretoria en 1970, était plus systématique et se concentrait essentiellement sur la terrasse du sud.

Sur les 25 années suivantes, de 1970 à 1995, le département d'archéologie de l'université de Pretoria reconnut que la priorité première était d'établir une solide base de données en testant, corrigeant, complétant les recherches antérieures, et en se concentrant sur la reconstitution du mode de vie des habitants du site. Entre 1979 et 2002, des rapports furent publiés sur les restes humains et animaux, la porcelaine de Chine, les objets en or, les perles de verre et la datation au carbone 14.

En outre, des étudiants de l'université de Pretoria étudièrent les sites situés sur les fermes voisines dans les années 1970 et 1980.

Greefswald est demeuré propriété de l'É tat depuis les années 1930. La gestion de la ferme a été reprise par le département provincial de conservation de la nature en 1992, et le contrô le transféré à*SANParks* en 1999.

Les limites proposées pour le site du patrimoine mondial coï ncident avec celles du parc national de Vhembe-Dongola envisagé, encore en cours d'élaboration. Il est inscrit de faç on séquentielle – trois zones de propriétés ayant déjà été publiées au journal officiel. Il s'agit de Den Staat, Greefswald et Reidel, qui sont des zones de paysage « naturel » où se trouvent bon nombre des principaux sites archéologiques.

L'objectif final est l'acquisition par *SANParks* de toutes les terres comprises dans le parc envisagé, ou la conclusion d'un accord contractuel avec les propriétaires, ce qui permettra de récupérer les terres sur l'agriculture et de revenir à un paysage « naturel ». Le diagramme des progrès actuels concernant les négociations de terres accompagne le dossier de proposition d'inscription. Actuellement, 11 des 29 unités restantes ont fait l'objet d'accords de principe, mais le calendrier n'est pas fourni. Celles-ci sont actuellement utilisées à différentes fins : certaines sont cultivées au moyen de techniques agricoles d'irrigation fondées sur l'extraction d'eau du Limpopo, d'autres sont administrées en qualité de réserves de chasse et d'autres appartiennent à la *De Beers Corporation* et servent à assurer l'extraction, le stockage et l'approvisionnement en eau des activités d'extraction de diamants de cette société, activités dont la durée de vie maximum est estimée à vingt ans.

Politique de gestion

Dispositions légales :

Le bien proposé pour inscription est protégé par plusieurs textes législatifs qui se chevauchent. Ainsi, la loi de 1976 *National Parks Act* stipule des contrô les stricts sur toutes les formes d'intervention humaine dans les zones désignées. Cela ne s'applique actuellement qu'aux trois zones officiellement créées de Den Staat, Greefswald, et Reidel, mais, après la création du parc national Vhembe-Dongola, l'ensemble de la zone sera protégé. Toutes les interventions dans le parc devront ê tre soumises à l'examen et, si nécessaire, à l'autorisation de l'agence gouvernementale, *South Africa National Parks* (*SANParks*).

Une législation a été préparée pour compléter la procédure de classement. Elle est actuellement devant le Parlement et devrait ê tre adoptée lors de la prochaine session.

Mapungubwe, K2, Schroda et Little Muck (Leokwe Hill) sont protégés par la loi de 1999, *National Heritage Resources Act*. Toutes les interventions sont soumises à l'autorisation de *la South African Heritage Resources Agency* (*SAHRA*). Les détails de la protection considérable qu'offre ce texte sont expliqués dans le dossier de proposition d'inscription. Il vise à étendre la protection en vertu de cet acte à la totalité de la zone dans un avenir proche.

Si le paysage culturel de Mapungubwe est inscrit, il tombera sous le coup des dispositions de la loi de 1999, *World Heritage Conservation Act*, qui impose un niveau de protection supplémentaire.

Une évaluation indépendante de l'impact environnemental est un élément obligatoire de ces lois, un impératif que renforcent les dispositions de la loi de 1998, *National Environment Management Act*, qui porte sur la totalité du développement ou des propositions de rezonage.

Structure de la gestion :

La gestion globale du parc existant est sous la responsabilité de *SANParks*, représenté sur le site par un professionnel chargé du parc, assisté d'une équipe de petite taille mais d'une grande efficacité.

C'est la seule autorité de gestion des biens appartenant à *SANParks*. Pour ceux qui demeurent sous propriété privée, *SANParks* travaillera conformément aux dispositions contractuelles convenues avec les propriétaires fonciers, qui sont de nature variée : dans certains cas, la propriété reviendra à SANParks à l'expiration du délais préalablement fixé, mais les activités agricoles se poursuivront avec d'autres dans des limites convenues.

En ce qui concerne les sites protégés par le *National Heritage Resources Act*, il existe une étroite liaison avec le responsable provincial de SAHRA. Toutefois, aucun membre du personnel du parc ne dispose de qualifications en termes de gestion du patrimoine archéologique (appelée gestion des ressources culturelles en Afrique du Sud).

Il existe un comité du parc, composé de représentants de toutes les parties prenantes (agences centrales et provinciales, propriétaires privés) et présidé par le président du comité des représentants des parties prenantes, établi pour assurer la participation du public à toutes les décisions concernant la planification et la gestion.

La mission et les objectifs du plan de gestion préliminaire du parc sont conformes aux exigences du Comité du patrimoine mondial. Plusieurs autres plans pour la zone proposée pour inscription et la province du Limpopo sont répertoriés dans le dossier de proposition d'inscription. Ceux-ci sont en cours de révision et un plan consolidé pour

le parc, fondé sur le plan préliminaire et couvrant entre autres la gestion globale du site, la gestion du patrimoine culturel et le tourisme, était attendu début 2003, conformément aux quatre textes de loi applicables au site et qui exigent un plan de gestion pour un site du patrimoine mondial.

À ce jour, le plan de gestion n'a pas été reçu.

Ressources :

Le bien reçoit un budget d'exploitation annuel de *SANParks*, dans le cadre du budget global de *SANParks*. Pour l'exercice fiscal 2000-2001, le budget d'exploitation total s'élève à 1,16 million de Rand (116 000 dollars US au taux de change 10 Rand = 1 dollar US), dont 662 000 Rand pour les ressources humaines. Il y a également un budget d'équipement de 165 000 Rand pour les améliorations mineures des immobilisations.

La planification du développement de la zone est conduite grâce au fonds du gouvernement national, administrés par le département de l'environnement et du tourisme.

Les mesures de réhabilitation du site sont financées par le programme de lutte contre la pauvreté administré par le département de l'environnement et du tourisme.

Le projet de plan de gestion du parc a été élaboré avec l'appui financier de DANCED.

La compilation du document de proposition d'inscription a été financée par NORAD.

Justification émanant de l'État partie (résumé)

Le paysage culturel de Mapungubwe était le centre du premier grand royaume indigène dans le sud de l'Afrique. Il fut établi par les ancêtres culturels des Shona et des Venda d'aujourd'hui entre 900 et 1300 après J.-C. Les preuves de son histoire sont préservées sur plus de 400 sites archéologiques. Les interactions dynamiques entre les hommes et le paysage ont posé les fondations d'un nouveau type d'organisation sociale dans la région.

Le royaume a grandi grâce aux richesses accumulées par ses dignitaires, grâce au commerce avec le réseau des pays de l'océan Indien, associé à un paysage aux conditions idéales pour l'agriculture, qui nourrissait une population de plus de 9 000 personnes. Le commerce portait, entre autres marchandises, sur des perles de verre, de la toile de coton, de la porcelaine de Chine, de l'ivoire, du cuivre et des peaux.

À la fin du XIIIe siècle, une hiérarchie sociale s'était développée qui se reflétait dans la planification du peuplement. La colline de Mapungubwe a été occupée et modifiée de façon à séparer l'élite des gens du commun, vivant en contrebas.

Le début de la petite ère glaciaire provoqua sécheresse et perte des récoltes. Le royaume se désagrégea après 1300, de nouvelles alliances sociales et politiques virent le jour, et le centre du pouvoir régional passa au Grand Zimbabwe.

3. ÉVALUATION DE L'ICOMOS

Actions de l'ICOMOS

Une mission d'expertise de l'ICOMOS s'est rendue sur le site en octobre 2002.

Conservation

Historique de la conservation :

Des recherches archéologiques sous la forme de fouilles et d'études sont en cours depuis des années dans la zone proposée pour inscription. Elles sont menées par les départements archéologiques de trois universités : Witwatersrand, Pretoria et Venda. Il est indéniable qu'il y a eu par le passé de fortes rivalités entre ces institutions. Le groupe de travail archéologique a joué un rôle important dans le développement d'une politique intégrée de recherche archéologique, ainsi que de conservation et de présentation, pour certains aspects de ces dernières. Il est toutefois important que cette instance soit plus étroitement intégrée à la gestion globale du bien proposé pour inscription. Elle devrait être responsable de la définition et de la supervision des politiques de recherche et d'interprétation pour le parc sur le court, le moyen et le long termes.

Des projets de fouilles d'envergure ont été conduits dans les trois principaux sites de Mapungubwe, Schroda et Leopards' Kopje ; il existe aussi des plans pour un projet important à Den Staat.

Les deux derniers sites fouillés ont produit beaucoup de matériels importants, mais ils sont sur des terrains plats et n'ont que peu à offrir au visiteur en termes visuels. À Leopards' Kopje, les travaux de conservation effectués se sont limités à la stabilisation des limites et des sections de la zone à ciel ouvert, tandis que peu du travail archéologique est visible à Schroda. Il est peu probable que Den Staat produise de quelconques vestiges structurels majeurs qui pourraient être exposés.

Beaucoup d'études du terrain ont été réalisées ; elles ont révélé les traces de nombreux sites d'habitation. Cependant, ceux-ci ne peuvent être identifiés que par des découvertes en surface, des couleurs différentes du sol et la végétation.

Etat de conservation :

Aucune preuve spécifique n'est avancée quant à l'état de conservation des vestiges mis au jour. Toutefois, il est fait mention d'une érosion naturelle affectant beaucoup des anciens sites de fouilles, problème qui doit être résolu par un programme de réhabilitation du site.

Il n'existe aucune information générique sur l'état des archives. Une liste exhaustive des sites connus dans la zone principale du paysage culturel de Mapungubwe, dans la zone tampon, au Botswana et au Zimbabwe, a été élaborée par Huffman et elle est synthétisée dans les figures 6-8 de la proposition d'inscription. La liste contient aussi tous les sites d'art rupestre enregistrés durant les études sur le terrain réalisées dans la zone principale et les biens

adjacents au Zimbabwe par Palaeo-Art Services, une organisation de volontaires coordonnée par Ed. Eastwood.

Analyse des risques :

Les menaces suivantes sont identifiées dans le dossier de proposition d'inscription :

- Agriculture
- Activité minière
- Pression environnementale
- Catastrophes naturelles
- Pression des visiteurs
- Vandalisme

Elles sont traitées séparément :

- Agriculture :

L'agriculture intensive est pratiquée sur des terres irriguées le long du Limpopo et au sud du site. L'impact principal devrait probablement être le labourage des sites culturels. Dans les limites proposées, la terre cultivée de façon intensive sera au fil du temps supprimée et progressivement réhabilitée, pour freiner tout autre défrichement agricole (voir section Histoire).

Le pacage, particulièrement du bétail, a eu un impact notable sur la végétation par le passé. Toutefois, le nombre de têtes a considérablement diminué par rapport au milieu du siècle dernier, et de nouveaux impacts importants sont peu probables.

- Activité minière :

Il existe deux opérations minières susceptibles d'avoir un impact, la petite mine de diamants de Riedel, et la grande mine de Venetia.

Une petite partie de la mine Riedel, dans l'est du parc, a été conservée dans l'espoir qu'elle donnera lieu à des opérations minières rentables. Tout indique cependant qu'elle est épuisée.

La mine de Venetia est une grande exploitation minière de diamants ouverte dans les années 1990 *par De Beers Consolidate Mines Ltd*. Parce qu'elle est nouvelle, elle a été soumise à la loi de 1989,*Environment Conservation Act*, et un document complet sur l'évaluation de l'impact environnemental et de planification de la gestion environnementale a été préparé.

La plupart du personnel de la mine vit à Messina et fait l'aller-retour en car tous les jours ; les pressions du développement liées à la mine elle-même sont donc limitées. Toutefois, son éclairage puissant est visible à des kilomètres à la ronde.

Messina est une région minière assez riche, et la découverte d'autres dépôts de minerais précieux n'est pas impossible. On ne sait pas encore clairement à qui appartiennent la plupart des droits d'extraction dans le parc, à part les deux mines citées. Toutefois, la nouvelle loi, *Minerals and Energy Act*, rend tous les droits miniers à l'État, et le gouvernement sera donc en bien meilleure position qu'il ne l'était depuis un siècle pour prendre une décision éclairée sur la possibilité d'exploitation minière d'éventuels nouveaux dépôts.

- Pression environnementale :

On prévoit des pressions environnementales très limitées. Un programme quinquennal d'éradication des plantes étrangères invasives est conduit sous l'égide du programme de travail pour l'eau, qui vise principalement les plantes aquatiques invasives telles que la *Nicotiana*, ainsi que certains cactus.

L'impact de la récente ouverture du bien au gros gibier, et notamment aux éléphants, doit être pris en compte. Certains arguments tendent à aller dans le sens de l'érection d'un enclos autour des sites les plus importants, pour les protéger contre les dégâts causés par les éléphants. Toutefois, ces animaux font partie du paysage depuis des milliers d'années, et on a fait valoir qu'un certain impact de ce côté devait donc être accepté comme partie intégrante des processus naturels. Un programme de surveillance et de détection des impacts dus aux éléphants a été lancé.

Le changement climatique est clairement un facteur important dans le paysage culturel de Mapungubwe : les principaux peuplements se sont étendus puis ont décliné suite à des changements des conditions climatiques. Le début du XXIe siècle est à la fin d'un cycle de sécheresse pour cette partie de la vallée du Limpopo, et les précipitations pourraient augmenter à l'avenir.

- Facteurs naturels :

Les principales catastrophes naturelles sont les inondations et les incendies.

Les inondations surviennent régulièrement depuis des milliers d'années. La majeure partie des sites près du fleuve ont été largement endommagés avant leur découverte. La principale considération est que de nouvelles fouilles près du fleuve devrait prendre en compte l'impact potentiel des inondations.

Du fait d'un siècle de pacage de bétail domestique, la végétation ne peut prendre feu que dans des conditions exceptionnelles. Le parc a mis en place une politique de gestion des incendies, des accords d'assistance en cas d'incendie ont été passés avec ses voisins, et un équipement de lutte contre les incendies est en place.

Il est un problème permanent: l'érosion des anciennes fouilles par le vent et la pluie, un problème que traite le groupe de travail archéologique.

- Pression des visiteurs :

C'est l'un des principaux facteurs affectant le bien. Une pression touristique mal contrôlée pourrait avoir un impact conséquent sur les sites, par le piétinement des dépôts, les graffitis, les dommages causés aux peintures et l'enlèvement de matériels archéologiques tels que poteries et perles.

Ces questions doivent être traitées dans le plan directeur du tourisme en cours de rédaction. Un point qui pose problème, en particulier, est la question de savoir si les visites doivent être autorisées au sommet de la colline de Mapungubwe.

Authenticité et intégrité

Le degré d'authenticité de Mapungubwe est élevé. Les sites culturels n'ont fait l'objet d'aucune intervention humaine depuis qu'ils ont été abandonnés, à l'exception des fouilles archéologiques. Les fouilles ont été stabilisées et comblées lorsque c'était possible, et les matériels récupérés ont été confiés aux bons soins de l'université de Pretoria, à l'université de Witwatersrand à Johannesburg et au musée africain de Pretoria.

Le paysage naturel a été modifié le long du Limpopo, où un élevage commercial a été entrepris au siècle dernier : élevage de bétail, élevage de gibier et, depuis les années 1980, cultures d'irrigation. Des fermes et des annexes ont été construites et diverses sources d'irrigation mises en place.

Dans la zone principale, certains biens ont été acquis, et d'autres le seront rapidement pour résoudre la question d'occupation conflictuelle des sols. L'agriculture dans la zone principale a soit déjà cessé, soit doit disparaî tre progressivement dans les cinq prochaines années.

Une fois les biens de la zone principale rachetés par l'É tat, ou lorsque les propriétaires auront passé un accord contractuel avec *SANParks*, et que les biens auront été consolidés, toutes les clô tures seront enlevées pour permettre aux éléphants et autres animaux sauvages de se déplacer librement. Leur circulation sera encore étendue avec l'établissement de la zone de conservation transfrontalière envisagée, qui s'étendra au-delà du Limpopo jusqu'au Botswana et au Zimbabwe.

L'intégrité du site n'a été compromise que par la qualité médiocre des fouilles menées dans les années 1930, dont on peut dire qu'elles ont entraî né la perte de traces précieuses, et donc qu'elles ont compromis l'intégrité du site, tant en termes physiques qu'intellectuels.

Evaluation comparative

Le paysage culturel de Mapungubwe est le précurseur culturel et historique de deux sites déjà inscrits sur la Liste du patrimoine mondial : le Grand Zimbabwe et Khami, au Zimbabwe. Le Grand Zimbabwe se trouve à environ 250 km au nord-est, et Khami se trouve à 220 km au nord-nord-ouest de Mapungubwe.

Mapungubwe est le précurseur du Grand Zimbabwe en ce sens que tous deux appartenaient à la mê me culture régionale et que le Grand Zimbabwe est devenu le plus grand partenaire commercial de la cô te est après que des changements climatiques ont mis un terme à la prospérité de Mapungubwe. Cependant, il n'existe aucune preuve que le peuple de Mapungubwe ait quitté Mapungubwe pour s'installer au Grand Zimbabwe.

Les vestiges physiques sur les deux sites sont différents mais présentent néanmoins de grandes similitudes. À la colline de Mapungubwe, comme au Grand Zimbabwe, il existe des murs de grande qualité dans les zones royales et à l'entrée principale de la colline. Il y a aussi des ressemblances dans les structures sociales. À la fin de la période d'occupation à Mapungubwe, les habitants avaient établi une classe de dirigeants vivant à l'écart des gens du commun. Au Grand Zimbabwe, la séparation physique du peuple et des souverains sacrés a été poussée encore plus loin, au moyen de grandes structures en pierre élaborées pour accentuer cette séparation.

Mapungubwe, le Grand Zimbabwe et Khami représentent chacun une étape différente dans le processus historique entremê lé du commerce extérieur et de la stratification sociale. Si les deux sites zimbabwéens couvrent chacun une période d'environ deux siècles, la zone principale du paysage culturel de Mapungubwe comprend une série de trois capitales occupées sur une période d'environ 400 ans. L'histoire qu'elles racontent est amplifiée par les témoignages de peintures rupestres, œuvres de chasseurs-cueilleurs. Mapungubwe devrait donc ê tre considéré dans l'idée d'une continuité culturelle avec Khami et le Grand Zimbabwe plutô t que comme un site concurrent.

Dans un contexte global plus vaste, Mapungubwe pourrait peut-ê tre se comparer aux premières villes-É tats d'Amérique centrale et du Proche-Orient en ce que leurs vestiges dessinent les origines du peuplement centralisé sur ces continents, quoique Mapungubwe soit bien plus récent que ses homologues. En dépit de similitudes dans les effets de l'agriculture sédentaire, du commerce, de la croissance démographique et des distinctions de classes sur ces sites, l'usage raisonné du paysage diffère. Alors qu'ailleurs, des populations successives ont construit des peuplements les uns au-dessus des autres pour souligner la domination par le remplacement ethnique, différentes parties du paysage ont été choisies à diverses époques dans le paysage culturel de Mapungubwe. Les dépô ts archéologiques tendent donc à représenter une période de temps limitée, d'un siècle ou deux seulement.

Valeur universelle exceptionnelle

Mapungubwe possède une valeur universelle en ce qu'il témoigne de l'ascension et de la chute du premier royaume indigène dans le sud de l'Afrique. On trouve sur le site les vestiges de trois capitales, leurs peuplements satellites et les terres au confluent du Limpopo et de la Shashe, dont la fertilité permettait de subvenir aux besoins de la population dense qu'abritait le royaume.

La position de Mapungubwe, au carrefour des routes nord/sud et est/ouest dans le sud de l'Afrique, lui a permis de contrô ler le commerce via les ports d'Afrique de l'Est vers l'Inde et la Chine et dans le Sud de l'Afrique. Il extrayait or et ivoire depuis son arrière-pays – des denrées rares ailleurs – ce qui lui a apporté une grande richesse, comme en témoignent des importations comme de la porcelaine de Chine et des perles de verre perses.

La chute relativement rapide de Mapungubwe, entraî née par une détérioration des conditions climatiques et l'abandon de la capitale, a permis la préservation des vestiges du royaume. La position de Mapungubwe, siège du pouvoir dans le sud de l'Afrique, se déplaç a vers le nord, vers le Grand Zimbabwe et Khami. Mapungubwe doit ê tre considéré comme le précurseur de ces deux royaumes.

Evaluation des critères :

Mapungubwe est proposé pour inscription en vertu des critères ii, iii, iv et v :

Critère ii : Le paysage culturel de Mapungubwe abrite des preuves d'importants échanges de valeurs humaines qui ont conduit à des changements culturels et sociaux aux influences énormes dans le sud de l'Afrique entre 900 et 1300 après J.-C. Le commerce international via les ports de l'océan Indien créa dans la société une richesse étroitement liée aux ajustements idéologiques, aux changements de l'architecture et de l'urbanisme. Les preuves archéologiques montrent clairement le passage, avec l'essor du commerce, à un schéma influencé par une élite sacrée, où le roi se tenait à part des gens du commun.

Critère iii : Jusqu'à sa chute à la fin du XIIIe siècle après J.-C., Mapungubwe était le plus important peuplement à l'intérieur des terres du sous-continent africain. À son apogée, entre 1220 et 1300, le royaume s'étendait sur plus de 30 000 km² de chaque cô té du Limpopo et de la Shashe. Le paysage culturel abrite quantité d'informations, dans des sites archéologiques qui illustrent le développement du royaume, à partir de peuplements relativement petits, construits autour d'un *kraal* à bétail jusqu'à une capitale dotée de quartiers différents pour l'élite et le peuple. Des sites funéraires de dignitaires fournissent les plus anciennes traces physiques de travail d'orfèvrerie sur le sous-continent. Le travail de l'or et le réseau marchand associé sont les précurseurs indigènes de l'exploitation ultérieure de ce précieux métal par les Européens dans le sud de l'Afrique, qui commenç a plus de 500 ans après. Des perles de verre, des fermoirs et des fragments de porcelaine chinoise attestent d'un commerce florissant avec la cô te est de l'Afrique, et à partir de là , avec l'Inde, l'Indonésie et la Chine.

Le siège du pouvoir de cette culture fut transféré au Grand Zimbabwe lorsqu'il devint impossible, à cause d'un changement climatique, de subvenir aux besoins d'une population sédentaire importante.

Bien que des communautés agricoles continuèrent de s'installer ponctuellement dans la région de Mapungubwe après l'an 1300 après J.-C., elles n'atteignirent plus jamais la mê me densité de population ou le mê me pouvoir politique. En conséquence d'événements sociaux et politiques ultérieurs et d'une intervention coloniale dans les dernières 400-500 années, les liens directs avec la population d'origine de Mapungubwe sont devenus obscurs. Les vestiges de Mapungubwe sont donc des témoignages de cette civilisation jadis prospère.

Critère iv : À Mapungubwe, le commerce de l'or et de l'ivoire par les ports d'Afrique de l'Est en échange de perles de verre et de porcelaines venues de pays aussi lointains que la Chine, associé à des conditions climatiques idéales pour l'agriculture, entraî na la fondation du premier royaume indigène sur le sous-continent du sud de l'Afrique, une étape d'importance dans l'histoire de la région.

Critère v : Sur les deux derniers millénaires, dans la vallée du Limpopo et de la Sashe, des périodes de chaleur et d'humidité parfaites pour l'agriculture alternèrent avec des périodes plus froides et plus sèches. Avec la baisse des précipitations après l'an 1300 après J.-C., le paysage culturel de Mapungubwe ne put continuer à subvenir aux besoins d'une population importante au moyen des méthodes de l'agriculture traditionnelle, et les habitants furent contraints de se disperser.

Les vestiges de Mapungubwe illustrent donc de manière vivante l'impact du changement climatique et témoignent de l'essor puis du déclin du royaume de Mapungubwe, illustrant clairement l'histoire d'une culture devenue vulnérable à un changement irréversible.

4. RECOMMANDATIONS DE L'ICOMOS

Recommandations pour le futur

Le bien proposé pour inscription contient de grandes parcelles de paysage culturel virtuellement intact et de très haute qualité. Celles-ci sont toutefois séparées par des zones de cultures (principalement des plantations d'agrumes et des champs à irrigation circulaire) sous propriété privée, le but étant de transférer la propriété de ces opérations commerciales à *SANParks*, pour conclure des accords de gestion et permettre ainsi à la terre de redevenir un paysage « naturel » . Ce processus est d'ores et déjà en cours, et certains champs jadis travaillés sont maintenant en jachère, dans l'attente d'une régénération naturelle ; il convient cependant de fournir un calendrier clair.

Si l'on peut arguer que des sections du Parc dans cette dernière catégorie pourrait ê tre exclues du site du Patrimoine mondial, ces sites n'en contiennent pas moins des matériels archéologiques précieux, et l'inscription leur garantirait la protection en vertu des dispositions de la loi de 1999, *World Heritage Conservation Act*.

En outre, l'exclusion de certaines zones du parc national envisagé du site du Patrimoine mondial pourrait provoquer des complications au niveau de la gestion et de la législation.

L'inscription du site est considérée comme offrant des avantages économiques potentiels par l'augmentation de l'activité touristique. Le département du commerce et de l'Industrie de Mapungubwe a été mis sur pied pour assister le développement régional et la croissance économique de la vallée centrale du Limpopo. Une étude du potentiel touristique a été rédigée. Elle est suivie d'un plan de développement de destination touristique coordonnée avec l'aide de la Banque de développement du sud de l'Afrique. Les responsables de projet de *SANParks* et DBSA ont été aux É tats-Unis pour une mission de recherche. Il est clairement crucial que les activités touristiques soient étendues de faç on durable.

Il est également impératif qu'un centre d'interprétation bien conç u soit mis en place et associé à des panneaux d'interprétation sur les principaux sites – pour expliquer l'importance des vestiges quasi invisibles.

Un excellent site pour le centre d'interprétation a été identifié le long de la route principale qui forme la limite sud de la zone proposée pour inscription. Il est prévu de construire à cet endroit un ou des bâ timents qui seraient

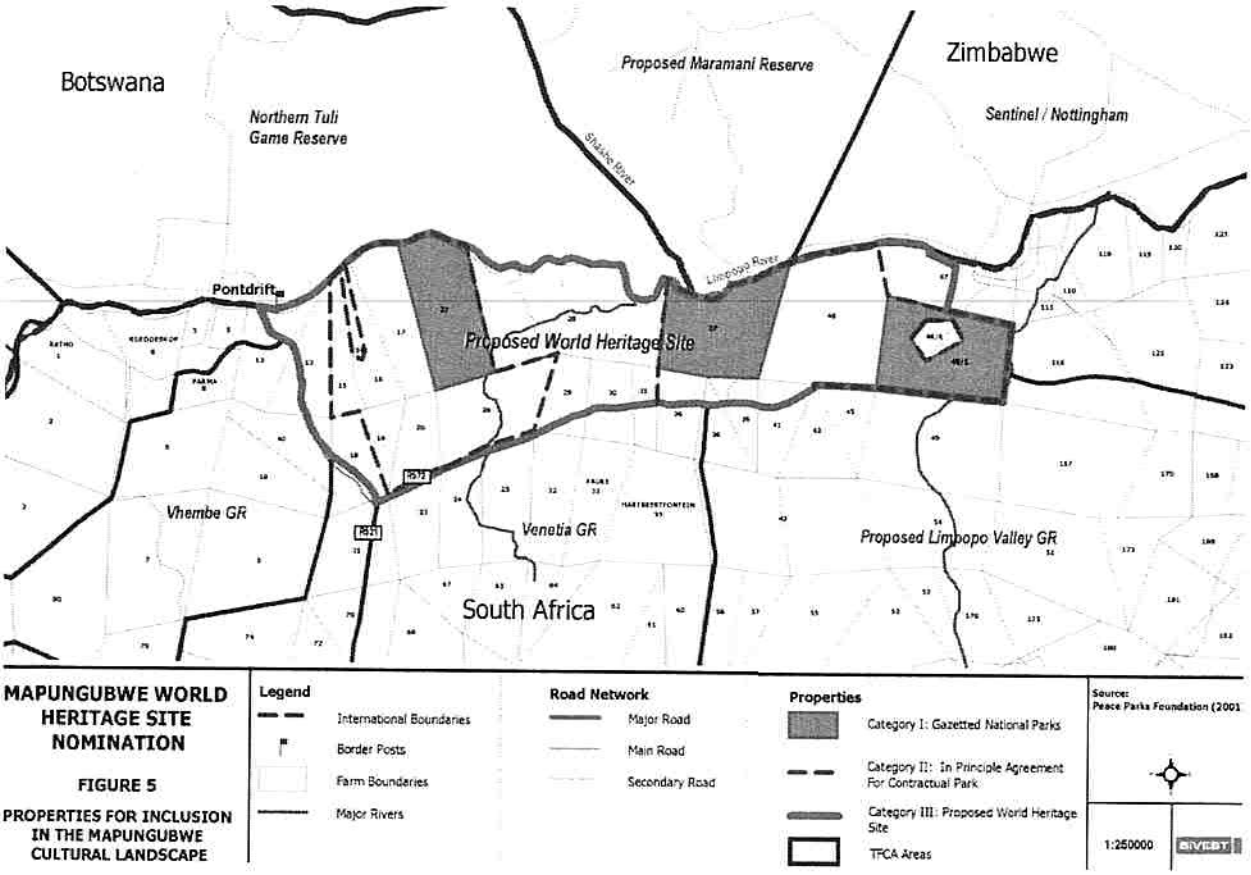
cachés de l'intérieur du parc, et qu'il faudrait associer à une stratégie globale d'interprétation pour l'ensemble du site du patrimoine mondial.

Recommandation concernant l'inscription

Que l'examen de la proposition d'inscription soit ***différé*** afin de permettre à l'État partie :

- De fournir le plan de gestion mis à jour ;
- De faire des progrès satisfaisants quant à la désignation formelle du parc national de Vhembe-Dongola, des négociations contractuelles avec les propriétaires privés au sein du bien proposé pour inscription et de la production du plan de gestion (tous devaient à l'origine avoir été faits pour janvier 2003) ;
- D'accroître le personnel permanent de l'équipe de gestion du parc afin qu'il comprenne au moins un archéologue professionnel à temps plein, avec une formation dans la gestion du patrimoine ;
- De reconstituer le groupe de travail archéologique comme partie intégrante du programme de gestion et chargé de préparer des politiques de recherche et d'autoriser et de superviser les projets de fouilles et d'études ;
- De commander à des consultants possédant une expérience dans ce domaine un plan d'interprétation intégré, impliquant le contenu et la présentation du centre d'interprétation et la présentation et interprétation des sites individuels (Cela pourrait faire l'objet d'une demande au titre du Fonds du patrimoine mondial, mais pourrait aussi reprendre la forme d'un accord bilatéral avec le Service des parcs nationaux des États-Unis).

ICOMOS, mars 2003



Map showing the boundaries of the site
Plan de délimitation du site