REHABILITATION OF ROCK ART SITES, SCHRODA, AND K2 AT THE MAPUNGUBWE CULTURAL LANDSCAPE

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INTRODUCTION

Mapungubwe is a well-known cultural heritage site in the northern part of South Africa, near the border with Botswana and Zimbabwe (figure 1). The area has been excavated over many years (figure 2), with enthusiasts and professional archaeologists studying the artefacts to gain insights into the lifeways of the people who lived at Mapungubwe and surroundings. The landscape was inscribed into the list of World Heritage Sites in 2003 following recognition for its cultural significance. Noting its significance, there is a need to continuously preserve the authenticity and integrity of the area in order to safeguard the World Heritage Site.

Figure 1: The famous Mapungubwe Hill from which much archaeological knowledge has been gained over the years.

While the landscape was inscribed for its cultural significance, particularly based on the area having been the locality for the development of social stratification in southern Africa, it is not extensively known for its rock art. There is a need, therefore, that an active conservation programme not only focuses on the rich Iron Age of the area, but also includes a focus on its Stone Age rock art. This will further allow visitors to Mapungubwe Cultural Landscape to be exposed to the vast rock art that exists within this area.

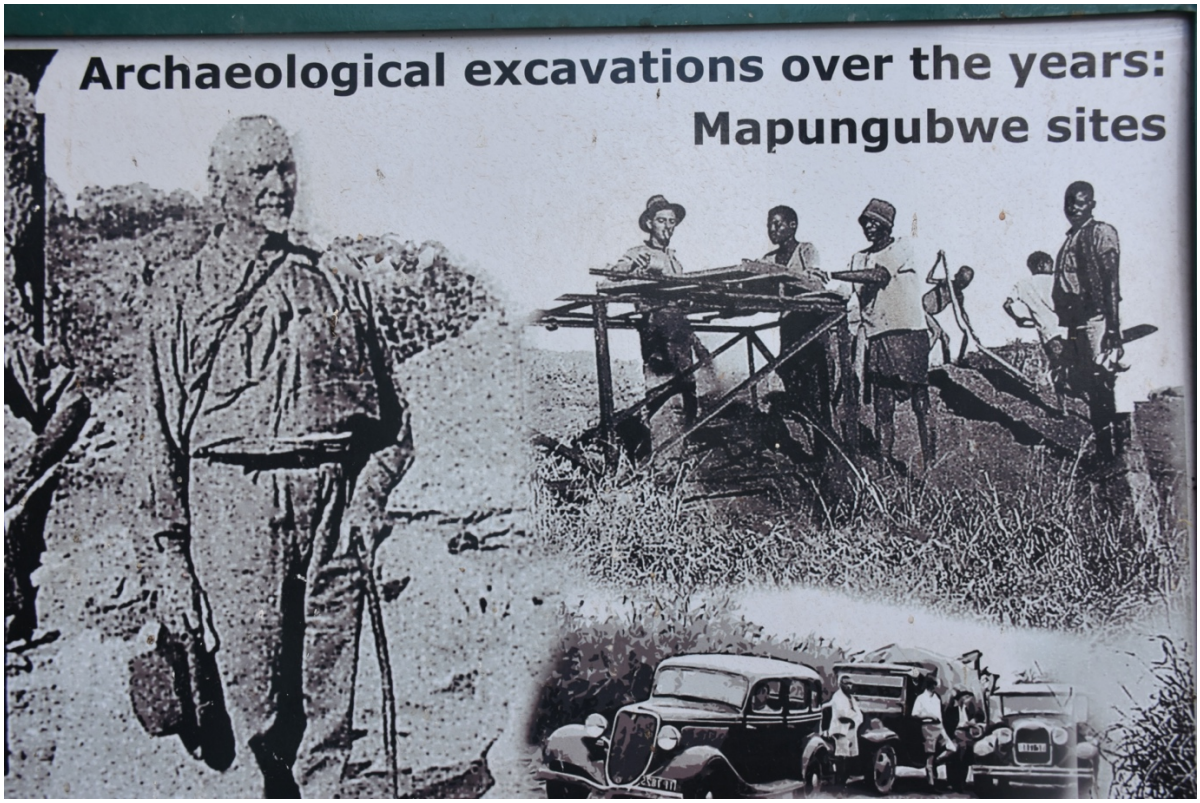

Figure 2: An image from an archaeological display near the Mapungubwe Hill. This collage of three images show Jan Smuts (at one stage the Prime Minister of South Africa), the African labourers and vehicles that were used to access the site itself.

There are interventions that are needed at Mapungubwe to deal with a number of conservation concerns that have been noted. Before any conservation measures can be implemented, however, a legislative approval must be granted by the heritage authorities. It is within this context that this application is being made with the national agency, the South African Heritage Resources Agency (SAHRA), for the necessary review and approval.

PROPOSED INTERVENTIONS ON ROCK ART SITES

As per the approved Mapungubwe Conservation Management Plan, there are five rock art sites that have been deemed suitable for visitors into the park. These are Dyambila (Jambila), Battis I, Battis II, Battis III, and Aardvark Rock. The section below described each rock art site and provides recommendations on what is necessary to mitigate against existing challenges. It should be further noted that these recommendations are aimed at ensuring that the natural aspects of the landscape are preserved. The recommended measures are therefore minimal and do not significantly change the landscape.

DYAMBILA (JAMBILA)

Named after the Venda name for a snake, this site has aprons, human figures, animals, and a big eland to the extreme right of the site (figure 3a, b). Dyambila (Jambila), which is about 23m long, 5m deep, and 6m high (figure 4a, b, c), has a clear evidence of elephant presence as per the dung found at the site. The major threat at this site is elephants rubbing against rock art and the dust element. Other evident threats are exfoliation, water run-off, and fading.

Figure 3a: The image of an eland from Dyambila (Jambila).

Figure 3b: The fading image of an antelope at Dyambila (Jambila).

Figure 4a: The frontal view of Dyambila (Jambila).

Figure 4b: The view inside Dyambila (Jambila).

Figure 4c: The vegetation cover within and nearby the site of Dyambila (Jambila).

RECOMMENDED INTERVENTIONS

It is important to note that while measures may be undertaken to prevent elephants from entering the site, other smaller animals would still be able to access the site. These smaller animals do not seem to have caused much damage over time because rock art is found beyond a metre above ground. A number of interventions are recommended for Dyambila (Jambila). These are:

i. To protect the archaeological deposit of the site, lay the geotextile and cover it with soil to protect lessen the dust factor. The geotextile and soil cover should cover the full area underneath the water dropline. In addition, it is recommended that polymer is applied on the 'new soil cover' to bind the particles together, thus further assisting in curbing erosion and significantly lowering dust levels (Teo *et al.* 2001; Yakupoglu *et al.* 2019).
ii. Cobbling the surroundings of the site: it is recommended that cobble stones are used to curb the presence of elephants at the site. In cobbling the site with these stones, the natural shrubs of mopani is not to be interfered with.

BATTIS II AND BATTIS III

These two sites are geographically located nearby each other, separated by a space of about 3 metres, and face each other (Figure 5). Like Battis I, they are all named after Walter Whall Battiss (1906-1982). He was one of the most famous South African artists with a keen interest in southern African rock art. Both these sites have been affected by the challenge of elephants. Evidence of their presence was found from dung and sandy patches where elephants had been laying on the ground. There is a far greater threat from elephants at these two sites than was identified to be the case at Dyambila (Jambila). Noting the closeness of these sites to each other, the idea is to block elephants from both ends.

Figure 5: The two rock art sites, Battis II and Battis II faces each other.

RECOMMENDED INTERVENTIONS

i. To protect the evident archaeological deposit of the site, lay the geotextile and soil covering the whole surface in front of both sites. This intervention will help to lessen the dust factor. The proposed geotextile and soil cover should cover the full area underneath the water dropline. In addition, it is recommended that polymer is applied

on the ‘new soil cover’ to bind the particles together, thus further assisting in curbing erosion and significantly lowering dust levels (Teo *et al.* 2001; Yakupoglu *et al.* 2019).

ii. There are two entrances, on either end of the sites, used by elephants to access them. It will be an important measure to block both these access routes. As a measure to deal with the elephant threat, it is recommended that the floor area between the sites is cobbled. In cobbling this specific area, it is important to note that the natural shrubs of mopani would not to be interfered with.

iii. No plants should be up-rooted nor boulders moved. The natural look of the area in front of the sites and the surrounding landscape should thus stay as it currently is.

BATTIS I

This site is much larger than the others within its close vicinity, offering a convenient resting area with views of the surrounding landscape. Due to its location within the landscape, the site is heavily exposed to the sun in the afternoon, making it difficult to be visited during a hot day. Battis 1 is characterised by a number of paintings made in a black colour, and this is a relatively rare phenomenon for the area (figure 6). In terms of conservation matters, there was no clear evidence that elephants may be a threat to rock art motifs. However, they do access the site, but rock art images are better protected from elephant damage by the large sandstone rocks defining the immediate front of the painted rockface (figure 7). Similarly, there are other animals (particularly smaller antelopes) that access the site but currently pose no immediate threat to the painted rock art imagery. Even the evident bird droppings do not seem to have damaged rock art, but constant monitoring is needed to ensure that the status quo does not change. Dealing with the threat of bird droppings is not an easy intervention, as seen from the many rock art sites around southern Africa (Katsetse and Namono, in press).

The evidence for fading can, therefore, not be directly attributed to animals that visit Battis 1 from time to time. Images found at this site are fading as a result of natural factors.

RECOMMENDED INTERVENTIONS

i. There are no measures to be undertaken at Battis I at this stage. However, there is a need to continuously monitor the painted images particularly because of the potential damage that could arise from the bird droppings.

Figure 6: The black antelope images from Battis I.

Figure 7: The boulders of rock art at Battis I.

AARDVARK ROCK

More an overhang rather than a rock shelter (figure 8), Aardvark Rock is about 13m long, 2.5m deep, and has a height of 5m. While the approved Mapungubwe Cultural Management Plan provides a list of a number of images at this specific site, not much rock art is clearly visible, particularly to the untrained eye. As a result, Aardvark Rock may not be among those sites that leaves significant impression to visitors. The aardvark, after which the site is named, is the biggest attraction (figure 9). It is not an animal that dominates the painted or engraved rock art imagery, whether in South Africa or other southern African countries with rock art.

Because of the nature of the site, being an overhang, rock art images at Aardvark Rock are not well protected from the water surface run-off. This may be one of the greatest natural threats to the images, leading to most of them fading as a result of their exposure to various elements. Elephants also visit the site, adding to the other potential threats to rock art. Other than animals, and from an anthropogenic point of view, there is evidence for human destruction of the site. This has led to the presence of one graffiti dated 1966 at the boulder which probably fell from the main one housing rock art images within this site (figure 10).

Figure 8: The boulders housing the paintings at Aardvark Rock.

Figure 9: The aardvark after which the site is named.

Figure 10: The one recorded graffiti, with a date of 11 July 1966.

RECOMMENDED INTERVENTIONS

i. Besides rock art, the site is further defined by an archaeological deposit of the site. To protect this deposit, it is thus recommended that the geotextile and soil is used to cover the front of the site (about 3m from the back of the rockface with rock art). This intervention will help to lessen the dust factor. In addition, it is recommended that polymer is applied on the 'new soil cover' to bind the particles together, thus further assisting in curbing erosion and significantly lowering dust levels (Teo *et al.* 2001; Yakupoglu *et al.* 2019).
ii. To address the issue of elephants, it is recommended that the floor area few metres away from the rockface with the paintings are cobbled. In cobbling the surrounding of the site with cobble stones, the natural shrubs of mopani and boulders to the extreme left of the site are not to be interfered with.

PROPOSED INTERVENTIONS AT IRON AGE SITES

Other than interventions and monitoring activities specifically targeted at four of the five rock art sites at Mapungubwe, it has been considered important to undertake specific activities in order to help preserve the integrity and authenticity of other archaeological sites within the inscribed landscape. Among the many archaeological sites within Mapungubwe, two have been considered to be under severe threats. These two archaeological sites, Schorda and K2, are currently threatened by soil erosion. Such a threat is severely impacting the integrity of the sites even though interventions to curb this problem have been made previously.

Various interventions undertaken to rehabilitate and stabilise the two important sites have made an important contribution to helping the management authority for the World Heritage Site to adequately safeguard the integrity and authenticity of the landscape. For example, a November 2005 report was authored by Coen Nienaber and titled *"Rehabilitation and stabilization of old excavation trenches and erosion damage at Mapungubwe, K2, Schroda and Little Much"*. It was after the review of this report by SAHRA (Case ID: 3260) that an archaeological permit (Permit ID: 586) for the necessary interventions were made (figure 11). This archaeological permit was for one calendar year (31 January 2006 to 01 February 2007).

Figure 11: The sandbags being used to stabilise excavated walls.

Other than the activities undertaken under the permit issues in 2006 project aimed at conserving K2 and Schroda, there have been a number of rehabilitation efforts (see Meyer 1998, 2000). First, and following evidence of surface depressions at previously excavated locations, cement filled sandbags were inserted along the walls with additional material used to restore old excavations in the 1980s (see also Nienaber & Hutten 2006). Second, there were rehabilitation interventions that were made at Mapungubwe, Schroda, and K2 localities: between July 2001 and September 2003 under three different archaeological permits (Permit ID: 80/01/01/002/51;

Permit ID: 80/02/11/012/51; Permit ID: 80/03/03/016/51). The proposed interventions at K2 and Schroda should thus be reviewed in the context of what measures have been undertaken in the past to preserve the significant heritage resources in the area.

SCHRODA

This is a Zhizo/Leokwe settlement in the Limpopo Valley. Its existence is largely linked to the rise of complex societies in southern Africa, principally influenced by the early Indian Ocean trade networks with the interior of southern Africa. Its continued dominance was affected by the establishment of K2 (Huffman 2000; Antonites 2016).

A number of gabions were installed a few years ago to prevent soil erosion that was becoming severe, thus threatening the continued existence of the site. While these gabions have played an important role in curbing the threat of soil erosion, they need to be either strengthened or in some instances redone properly to improve their effectiveness. Specifically, and to illustrate this point, there are two areas of significant concern. First, the gabions which were previously installed at these localities are not able to properly address the issue of soil erosion. This is either because there is not enough of them or some were seemingly never finished, thus lessening their efficiency. Second, and in addition to gabions, some areas had sandbags used to help deal with the water damage. In actual fact, some of the gabions are installed directly above these sandbags. These sandbags have disintegrated over time, leading to their inefficiency in protecting the site from the continued erosion of soil after rains. To deal with conservation issues at Schroda, a number of specific recommendations are thus being made:

<u>RECOMMENDED INTERVENTIONS</u>

i. Strengthen the gabions that have become damaged over the years.
ii. Ensure that all gabions are properly finished. There is evidence of one specific gabion structure, to the west of the site, which seem not to have ever been finished.
iii. Add to the existing gabion structures, strategically locating the new ones such that they prevent surface run-off.
iv. Mark up the location of graves that were reburied following the repatriation.

K2

Early excavations at K2 dates back to the 1930s (see figures 12 and 13). Important insights into the occupation of the area during the Iron Age has been gained from the many excavations at

K2 and other archaeological sites in the vicinity (Antonites 2016). At the time, these K2 excavations were left open, with the sites not properly stabilised nor were the sections properly recorded (Huffman & Murimbika 2001). To address these conservation challenges, and also per recommendations of the Archaeology Action Group that led efforts to have Mapungubwe inscribed into the World Heritage List, rehabilitation programme was undertaken between July and November 2001 (Permit ID: 80/01/01/002/51). After these rehabilitation interventions, the old excavations walls were exposed in order for them to be drawn, and thus properly recorded. These efforts did not address the large central midden. Following the process to properly record the walls that were previously unrecorded during the 1930s excavations, they had to be secured to ensure their conservation over a long term.

Figure 12: The view of the display at K2.

Sifted soil from the old archaeological dumps was placed in bio-degradable sandbags that were then used as a protective frame against the exposed walls. The use of these sandbags subsequently extended the excavation walls out a few metres to adequately safeguard them. As a result, it should be known that none of the artefacts and bone evident in this area are in the appropriate archaeological context. As such, they are not *in situ*. The bio-degradable bags were thus meant to disintegrate over time, forming a base for grass seeds (palatable grass *Cenchrus*

ciliaris) and succulent tree *Euphorbia cooperi* that were planted to help prevent soil erosion (see Gotze *et al.* 2008 on dominant plant species in the area). Some of the palatable grass grew in wet years, but the desired vegetation cover was not possible, presumably due to limited availability of water during the winter months. With the considerable failure of the grass, soil erosion has become intensified over the recent past and necessary interventions must be undertaken.

Figure 13: The display at K2, giving insightful details about social relations dating back to the Iron Age.

This concern has been noted, with various discussions undertaken to come up with meaningful interventions. As per the advice of the UNESCO Monitoring Mission to Mapungubwe in 2012, ongoing threats resulting from soil erosion might have a negative bearing on the inscription of the site, leading to it being listed under the Sites in Danger. In addition, the SAHRA has been constantly noting the same concern in their annual site inspection reports. To highlight the severity of soil erosion and the significance of developing mitigating measures to deal with soil erosion at K2, it is important to indicate that the landscape around the site impacts on the drainage of the surroundings, including the Mapungubwe Hill and the Limpopo River (see figure 14).

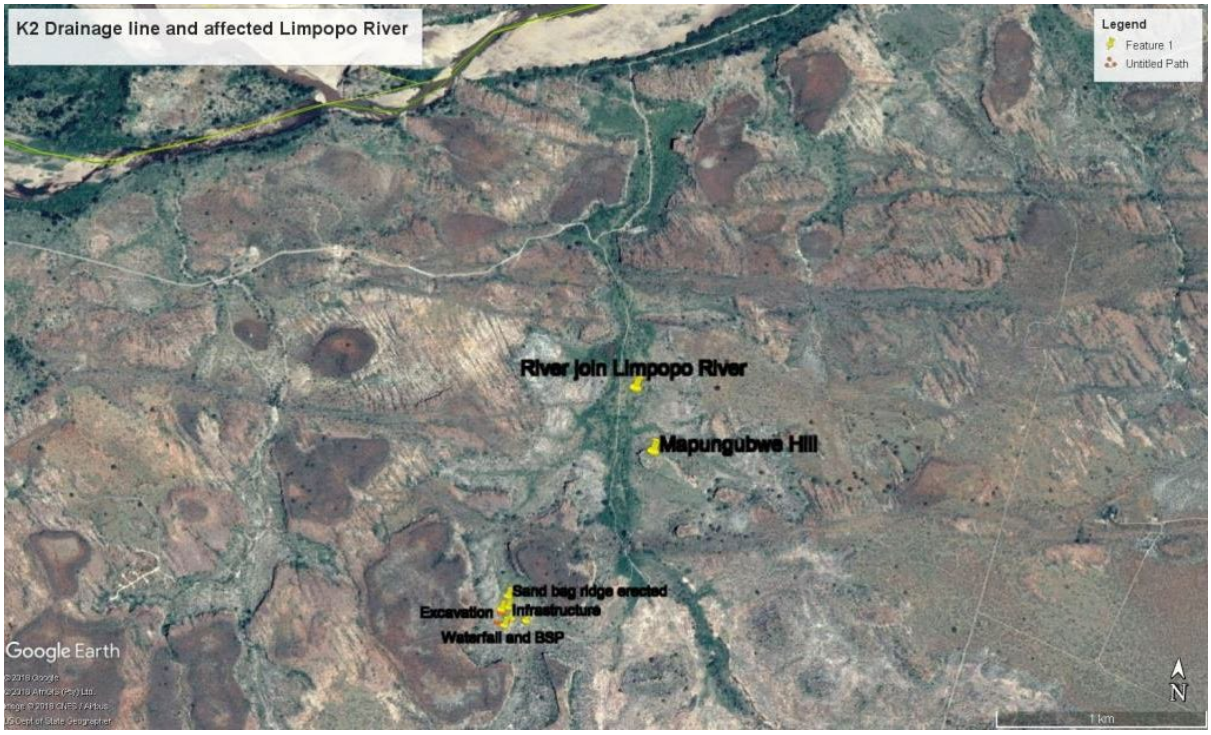

Figure 14: Drainage lines and Limpopo River drainage system (after Bezuidenhout *et al.* 2018).

According to Huffman (2020, pers. comm.), the erosion does not only result from grass seeds that failed to grow. In addition to the challenges related to water availability, it has been reported that some of the disintegrating bags were removed by people who were unaware of their purpose while some of the protective sides were also damaged by elephants. Due to the increasing threat of soil erosion, it has become necessary that interventions are applied. It must be noted, however, that due to the thickness of the sandbag frames, there is no immediate threat to the original archaeological deposit. As the result, it would be a significant threat to this deposit if the protective soil covering it were to be intentionally removed. In addition, it is vital that monitoring of the excavated area and the related K2 tourist infrastructure (figure 13) is constantly undertaken. Such measures shall be undertaken with assistance from the University of Venda (School of Humanities and Social Sciences), as per the Memorandum of Agreement with the institution to provide experiential training to archaeology students. Any failure to adequately address the erosion issue will severely alter the area especially because it is prone to flooding, with the level of water rising to about one metre above the existing ground following thunderstorms (Bezuidenhout *et al.* 2018).

A number of interventions are thus recommended to address the issue of soil erosion which has a potential of threatening the integrity and authenticity of K2 and the greater World Heritage

Site. The basis for these recommendations is to have a long-term solution defined by regular monitoring of the mitigation measures.

RECOMMENDED INTERVENTIONS

i. Place ecologs within the eroded areas to effectively break the velocity of the water runoff while capturing sediments and seeds for vegetation cover. Over time, these logs will be a source of soil through natural degradation. There is need for constant seasonal monitoring to gauge the success of this intervention.
ii. Replant grass seeds on the slopes to lessen the threat of soil erosion. This intervention would also help improve the visual appearance of the area concerned. The ideal period for replantation is June/July to allow the seeds to germinate when the rains begin.
iii. Mark up the location of graves that were reburied following the repatriation in 2007.

CONCLUSION

This permit application is made as per the national legislation governing the management of heritage resources in the country. It is the intention of SANParks to ensure that heritage resources mentioned in this application are properly conserved. This requires that SANParks secures the necessary permit approvals from the heritage authority tasked with the management of heritage resources of national significance in the country. Such would go a long wat towards ensuring that the World Heritage status of Mapungubwe Cultural Landscape is kept intact, and thus not threatened by the various natural and anthropogenic factors active within the landscape of the World Heritage Site.

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