SAPIENZA UNIVERSITÀ DI ROMA
DIPARTIMENTO DI SCIENZE DELL'ANTICHITÀ

ECHOES OF AFRICA'S PAST

ARCHAEOLOGICAL EXPLORATIONS IN THE ANTHROPOCENE

Edited by
Savino di Lernia

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Archaeological explorations in the Anthropocene

Edited by
Savino di Lernia

with contributions by

Nabiha Aouadi, Graeme Barker, Sam Challis, Chris Hunt, Chapurukha M. Kusimba, Paul Lane, Sonja Magnavita, David J. Mattingly, Aron Mazel, Peter Mitchell, Andrew B. Smith, Christopher M. Stojanowski, Mustafa Turjman, Marijke Van der Veen, Robert Vernet, Willeke Wendrich

with a comment by
Ann B. Stahl

All'Insegna del Giglio

This book is dedicated to the women and men of the Kel Tadrart, who have allowed us to work in their lands, guided us to hidden places, and shared their knowledge

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8. African rock art and World Heritage: context, safeguarding and prospects for the future

Aron Mazel

Abstract. The first rock art World Heritage Site designated on the African continent was the Ethiopian site of Tiya (1980). It was the third rock art site of this kind globally. Since then, another 12 African rock art sites have been inscribed on the World Heritage List with the last being another Ethiopian site, Gedeo, in 2023. This paper addresses the processes that informed the designation of these African sites as well as their safeguarding. It shows that UNESCO played an important role in encouraging their designation beginning with Tiya. Thereafter, the threats to the rock art sites are investigated followed by issues surrounding their management, including interpretation, community engagement, and the paucity of resources for their protection. This is done by drawing on input from colleagues with responsibilities for their management along with incorporating insights from academic and grey literature. It is shown that these non-renewable sites are vulnerable to damage and destruction from multiple natural (including zoological) and human sources, with the threats deriving primarily from the latter, which appear to be mostly unintended, such as the kicking up of dust and the making of fires within sites, although wilful acts of vandalism and looting are known. Current and possible future community involvement in the safeguarding of resources is addressed along with different ways in which this and other management interventions can be enhanced.

Key Words. Africa; Rock art; World Heritage Sites; Threats; Safeguarding; Management; Community.

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1. Introduction

The first rock art World Heritage Site (WHS) on the African continent, Tiya in Ethiopia, was designated in 1980 (Deacon 2014). Not only was it the first African rock art place to be inscribed on the World Heritage List (WHL) but it was the third rock art WHS globally after Valcamonica (Italy, 1979) and Vézère Valley (France, 1979,). Since 1980, another 12 WHS rock art sites have been designated in Africa with Gedeo (Ethiopia; 2023) being the last (Fig. 8.1).

Many reasons have been advanced for the designation of WHSs under the World Heritage Convention with their safeguarding being paramount. According to Sanz (2012, 492), this Convention «is a treaty of public international law which enjoins the state parties that have ratified it to ensure the protection of their own natural and cultural heritage of outstanding universal value … thus ensuring their conservation through cooperation between nations». Similarly, Brown *et al*. (2019, 288) view inscription on the World Heritage List (WHL) as a mechanism to secure a site's «protection and the maintenance of its integrity through monitoring missions, with the added incentive of international prestige for the State Party». While it is internationally prestigious for State Parties to have sites on the WHL, it is not apparent whether this benefits their safeguarding. Mindful of these perspectives, this paper addresses the safeguarding of the African rock art WHSs along with the processes that informed their WHS designations.

Before proceeding, I would like to acknowledge that I received input from people who have firsthand experience of managing African rock art WHSs. This involved requests for insights and documentation about threats to the rock art and their safeguarding along with community involvement. I secured feedback about Chongoni (Malawi), Ennedi (Chad), Lopé-Okanda (Gabon), Tadrart Acacus (hereafter Tadrart, Libya), Tsodilo (Botswana), and the uKhahlamba-Drakensberg Park (uDP, South Africa). Where appropriate, I quote extensively from the responses obtained to ensure the accurate representation of what was conveyed.

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Fig. 8.1 – Location of African rock art World Heritage Sites (map by A. Macdonald).

2. Context

Notably, from three African rock art WHSs in the 1980s, the number increased to 13 by 2023 (Tab. 8.1; Fig. 8.1), comprising about a quarter of the ca. 50 rock art WHSs globally (Fatás Monforte n.d.). Tellingly, they constitute only 9% of the 151 WHSs on the African continent (UNESCO 2024a), suggesting that rock art is not perceived as a major component of the continent's heritage, resonating with Clottes's (2008, 13) observation that overall rock art is poorly represented on

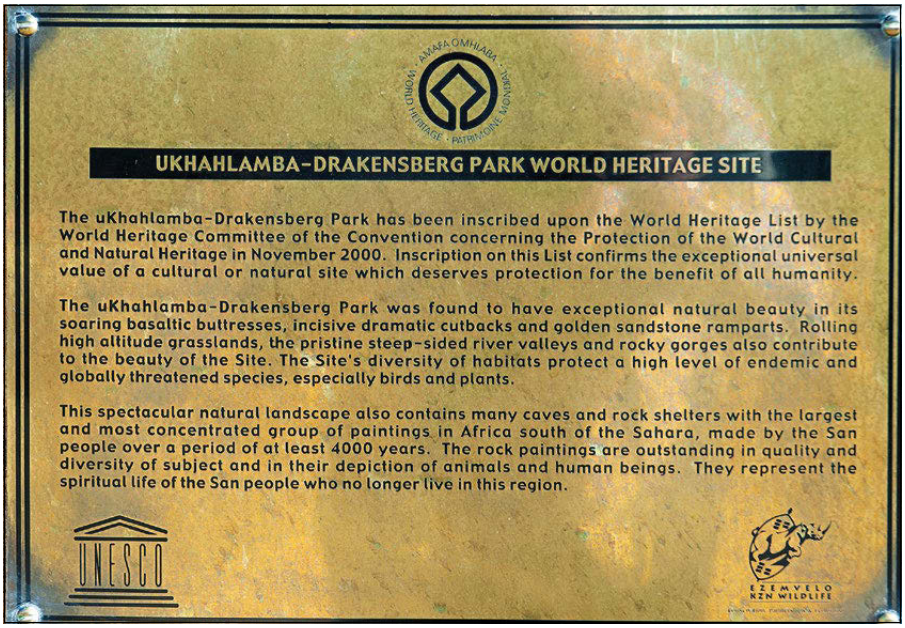

Fig. 8.2 – Plaque at Kamberg Nature Reserve commemorating uDP's inscription as a WHS in 2000 (photo by the Author).

the WHL, which he decries given its position as «the most widespread and most ancient cultural tradition in the world». Noting Clottes's comment, it is appreciated that major rock art assemblages occur in more than 100 natural and cultural sites which are not recognised on the WHL (Sanz 2012). Recognising this, it was proposed at the «Rock Art and the World Heritage Convention» in the uDP, in 2009, that the nature of the inscriptions of World Heritage natural sites with substantial rock art occurrences should be reevaluated (Sanz and Keenan 2011). To the best of my knowledge, this has not occurred. I have not quantified the natural African WHSs falling into this category, but a good example is Aïr and Ténéré, in Niger, which although containing significant rock art was designated solely as a natural WHS. Although Aïr and Ténéré has occasionally been misrepresented as a rock art WHS (e.g. Illiès and Lanjouw 2007) it is excluded from this paper. Another WHS omitted from this paper is the Cliff of Bandiagara, in Mali, as there appears to be only one rock art site within the WHS, as acknowledged by ICOMOS (1988) in its evaluation of the property. Further, the IUCN (1989, 3) reported that the cultural criteria for Bandiagara's mixed heritage property designation revolved around its «architectural ensemble of the Dogon culture» with it being «An outstanding example of a traditional human settlement which is representative of the Dogon culture» without reference to rock art. Notably, Sanz (2012) omitted Bandiagara from her list of rock art sites on the WHL although it is appreciated that Gallinaro (2024) included it on her list of African rock art WHSs. In contrast, Mapungubwe's (South Africa) rock art has been included although it was not specifically listed in the criteria provided in the nomination dossier that highlighted the kingdom of Mapungubwe, which had been occupied between 900-1300 CE (Common Era). Acknowledging that rock art was not «one of the main reasons» for Mapungubwe's inscription, its inclusion in this paper relates to Deacon and Mazel's (2010, 13) comment that «its significance lies in the contribution it makes towards an understanding of the history of settlement in the landscape, and there are details of technique and content in the … rock art that are rare or absent elsewhere in southern Africa».

The first African rock art WHSs were listed in early and mid-1980s. These were the Ethiopean site of Tiya and the Saharan rock art sites of Tassili (1982) and Tadrart (1985) (Fig. 8.1). Following their designation there was a gap of 15 years until the uDP was inscribed in 2000 (Fig. 8.2). In 2013, Sehlathebe National Park (SNP, Lesotho) was joined with the uDP to become a transboundary WHS known as the Maloti-Drakensberg Park (MDP). Between 2001-2007, a further

Tab. 8.1 – List of African rock art World Heritage Sites. Information derived from Sanz (2012), Deacon (2014) and Gallinaro (2024).

Inscription Date	Full name	Country	Criteria	Category
1980	Tiya	Ethiopia	i, iv	Cultural
1982	Tassili n' Ajjer	Algeria	i, ii, vii, viii	Mixed
1985	Rock Art Sites of Tadrart Acacus	Libya	iii	Cultural
2000; 2013	uKhahlamba/Drakensberg Park; Maloti-Drakensberg Park	South Africa, Lesotho	i, iii, vii, x	Mixed
2001	Tsodilo	Botswana	i, iii, vi	Cultural
2003	Mapungubwe Cultural Landscape	South Africa	ii, iii, iv, v	Cultural
2003	Matobo Hills	Zimbabwe	iii, v, vi	Cultural
2006	Chongoni Rock Art Area	Malawi	iii, vi	Cultural
2006	Kondoa Rock Art Sites	Tanzania	iii, vi	Cultural
2007	Ecosystem and Relict Cultural Landscape of Lopé-Okanda	Gabon	iii, iv, ix, x	Cultural
2007	Twyfelfontein or /Ui-//aes	Namibia	iii, v	Cultural
2016	Ennedi Massif: Natural and Cultural Landscape	Chad	iii, vii, ix	Mixed
2023	The Gedeo Cultural Landscape	Ethiopia	iii, v	Cultural

seven sites were inscribed: Tsodilo (2001), Mapungubwe (2003), Matobo Hills (2003), Chongoni (2006), Kondoa (Tanzania, 2006), Lopé-Okanda (2007) and Twyfelfontein or /Ui-//aes (hereafter Twyfelfontein, Namibia, 2007). The eight sites designated between 2000-2007 represent about two thirds of the 13 African rock art WHSs, with all except one (i.e. Lopé-Okanda) located in southern Africa (Fig. 8.1). Thereafter, Ennedi (2016) and Gedeo (2023) were inscribed on the WHL (Fig. 8.1; Tab. 8.1).

WHS designations require a site to have «outstanding universal value» and meet at least one of ten selection criteria, six of which are cultural (UNESCO 2024b). The African rock art WHSs are all solely cultural sites except Tassili, MDP and Ennedi, which are mixed cultural and natural sites. All these WHSs except Tiya and Tassili, the two earliest inscribed African rock art sites, met criterion (iii) requiring them «to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared» (UNESCO 2024b; Tab. 8.1). Most of the sites have this criterion as their primary cultural component, but in most instances they are coupled with other cultural criteria (Tab. 8.1).

Turning to how the African rock art nominations unfolded, it appears that UNESCO has played a key role in most designations, starting with Tiya. Although the site has generally not been recognised as a rock art WHS (e.g. Sanz 2012, Gallinaro 2024, Fatás Monforte n.d.), ICOMOS (1980) reported that «Of the 36 stelae, 32 are sculpted with vaguely representational configurations. These forms, same of them sword-shaped, are for the most part difficult to decipher». Acknowledgement of these sculpted forms has led to the site being included in the paper. Scant information exists about the specific circumstances surrounding Tiya's nomination (Huber 2020), however, it was one of seven Ethiopian heritage sites inscribed on the WHL in 1978 and 1980. And, as Huber (2020, 1 and 2) noted, «The number of heritage sites was remarkable then, in the first years of the World Heritage Programme, and is now, for an African country», particularly as it occurred during the time of considerable social and political upheavel in Ethiopia. The foundation for these designations were laid by UNESCO's «consultants and experts» who worked to develop the country's cultural and natural heritage (Huber 2016, 45). In essence, this enhancement of Ethiopia's heritage not only «demonstrated at once the glorious past and the progress underway in Ethiopia» but was also used as «a stage to showcase the past, present and future of the nation» (Huber 2020, 2). Reflecting on these developments, Huber (2016, 48) pointed out that these developments served three purposes

> «tourism, with heritage sites as key destinations, offered a promising stream of foreign currency and investment; creating legislation and executive agencies bolstered the

> emerging bureaucratic administration on the road to a modernised government; lastly, promoting a strong national identity with an historic legacy to an empire cultivated the desired representation of power for the Ethiopian nation state».

Tassili was one of five Algerian WHSs listed in 1982. As with Tiya, not much information appears to be available regarding Tassili's nomination but interestingly the site was excluded from UNESCO consultant Lézine's 1964 countrywide shortlist of five national monuments (Boudia and Khalki 2021). Around the mid-1960s, however, Tassili's heritage began to be promoted through tourism (Idir 2013, 74). According to Idir (2013, 74), «This valorisation process was initiated by public organizations» such as the Touring Club of Algeria that cared for the first – and increasing – number of foreign tourists «tempted by adventure and expeditions and the mobilization of new resources (crafts, festivals, local cuisine)». Tour operators controlled this tourism market in the 1960s and 1970s. Concurrently with its burgeoning tourism, Algeria experienced a «sustained era of Third World leadership [which] began in October 1967» (Mortimer 2015, 469), where its «prominence on the international stage raised Algeria's profile as an important player in world politics well into the 1980s». It may be that combined these factors contributed to Algeria successfully nominating five properties in 1982, one of which was Tassili, but this requires further investigation.

ICOMOS (1984) had noted that Tassili's natural and cultural area extended well beyond Algeria's borders, leading to the WHC's recommendation that «complementary inclusion requests be submitted by the concerned States». In response, Libya nominated Tadrart, which was inscribed on the WHL in 1985. di Lernia *et al.* (2022, 5; see also di Lernia 2005; di Lernia *et al*. 2010) have proposed that Tadrart's inscription was underpinned by the efforts of Mori, who started researching there in 1955 together «with his Libyan colleagues of the Department of Antiquities and all the people from the Acacus – guides, workers, drivers – who took part in this pioneering phase of the research». The work of Fabrizio Mori, Paolo Graziosi and other members of the Italian-Libyan archaeological missions was recognised in the ICOMOS (1984) assessment of the site's nomination for their documentation of «numerous rock art sites, including hundreds of engravings and thousands [sic] paintings». Particularly significant was their highlighting of the concentration and variety of Tadrart's rock art. Unfortunately, Tadrart was placed on the World Heritage in Danger list in 2016 (UNESCO 2016) due to the intentional destruction of heritage, illegal activities and war. Although this still remains the case (UNESCO 2024c), there is a strong desire for its removal from the list:

> «The State of Libya would like to express its gratitude to the World Heritage Committee (WHC) and its advisory bodies for the efforts and endeavours they have undertaken to monitor the status of the Rock Art sites of Tadrart Acacus in order to remove it from the World Heritage in Danger List» (Department of Antiquities n.d.).

Following Tadrart, the next rock art WHS was the uDP (2000). In 1994, and therefore immediately post-apartheid, the Natal Parks Board (NPB), which controlled the uDP at the time, indicated that it was pursuing mixed natural and cultural WHS status for the area with rock art being central to this aspiration (Mazel 2012). The NPB (1995, np) believed the listing would enhance safeguarding and encourage «tourism and associated benefits», such as «increased employment opportunities and income, improved planning, development and management of the region, and additional Government funding for development and services». The incentive for increased tourism was encouraged by the negative impact international sanctions against apartheid had had on the country's economy (Visser and Rogerson 2004) along with the belief that tourism revenue could facilitate the economic inclusion of previously disenfranchised people (Mazel 2012). Moreover, it was understood that South Africa's natural beauty and wildlife had been promoted at the «expense of the rich diversity of cultural and historical experiences that could become a unique selling point internationally» (Hanekom 1997, 13) and that the promotion of cultural phenomena such as the rock art could begin to rectify this.

Following the uDP's inscription, another seven sites were designated between 2000-2007, with the initial impetus for six of these designations deriving from the World Heritage Committee's (WHC) «Global Strategy for a Representative, Balanced and Credible World Heritage List» (UNESCO 1994). After acknowledging WHL disparities between different regions of the globe, monument types and historic periods, the strategy emphasised the need to move «away from a purely architectural view of the cultural heritage of humanity towards one which was much more anthropological, multi-functional, and

universal» to ensure that the WHL reflected the global diversity of cultural and natural heritage of outstanding universal value (UNESCO 1994). Responding to this initiative, the «African Cultural Heritage and the World Heritage Convention, 1st Global Strategy Meeting» was held in Zimbabwe, in 1995, to tackle the paucity of African WHSs. Reporting on the meeting, Munjeri *et al.* eds (1995, 104) concluded that «No rock art site from Africa was listed despite its richness in this type of archaeological heritage». The reference to the absence of African rock art WHSs may relate to the fact that (i) they did not know about or recognise Tiya as a rock art WHS and (ii) UNESCO considered Algeria and Libya to be part of the "Arab States" even though they are located in North Africa. In this paper Algeria and Libya are considered to be African. The Harare meeting recommended that «a coordination meeting be organized to select the best samples of rock art and harmonize the national tentative lists in a sub-regional framework» through the establishment of a «Working Group on Archaeological Heritage» to select exemplary rock art sites for «national tentative lists in a sub-regional framework» (Munjeri *et al.* eds 1995, 104). Further, the meeting recognised «the need for a regional management strategy for rock art in southern Africa» (Deacon 2006, 308).

UNESCO funding along with assistance from the Getty Conservation Institute, enabled representatives from Zambia, Malawi, Mozambique, Zimbabwe, Lesotho and South Africa to meet in South Africa (1996) and Zimbabwe (1997) to map a way forward (Deacon 1997, 2006). In 1998, the Southern African Rock Art Project was created, as a collaborative programme of the South African National Monuments Council, the National Museums and Monuments of Zimbabwe, the Getty Conservation Institute, and the International Centre for the Study of the Preservation and the Restoration of Cultural Property with the aim to «address a perceived need for regional collaboration in rock art conservation and management …[and] … *assist member states to acquire the necessary skills and expertise to nominate rock art sites for the World Heritage List and draw up management plans*» (Deacon 2006, 308 my emphasis). By 2002, Tsodilo had been inscribed on the WHL and nominations for Chongoni, Kondoa, Matobo Hills, Kasama (Zambia) and Twyfelfontein were being prepared. Reference to Tab. 8.1 shows that all of these sites except for Kasama are WHSs.

Lopé-Okanda was the last of the African rock art WHSs to be designated in the first decade of the 2000s. Its designation as a rock art WHS appears to have been initiated by UNESCO. ICOMOS (2007a) indicated that the WHC referred it's nomination as a natural site back to the State Party in 2005 «to allow it to address the potential of the property as a cultural landscape» with particular reference to archaeological sites. The State Party was requested, among other things, to provide «Information on the enlargement of the nominated property to reflect a coherent group of archaeological and rock art sites that extend to both sides of the River Ogooué» (ICOMOS 2007a). Once done, Lopé-Okanda was inscribed as a mixed natural and cultural site.

After the last of the southern African rock art sites and Lopé-Okanda were inscribed on the WHL, nine years ensued (i.e. to 2016) before the next African rock art WHS, Ennedi, was designated. This nomination resulted from Chad's collaboration with UNESCO, and was underpinned by the State Party's "authorities" being «fully aware that the affirmation of the identity of the people and therefore its development requires the protection and enhancement of the national heritage» (Tchad 2015, 119). Ennedi was one of two Chadian WHSs designated in 2016 (UNESCO 2024d).

The most recent African rock art WHS is Gedeo in Ethiopia (2023). Its nomination appears to have been motivated by the local community's appreciation of its heritage, identity construction as well as the desire to harness and manage tourism. Reflecting on these sentiments, the nomination document noted that

> «All have become aware of the significance of their heritage and self-esteem has begun to emanate from respect for their own cultures. They are all determined to inventory, register, protect and use their heritage as marker of their identity. Specifically, the drive for nomination … is thus, derived from the keen interest of the local community who make up the basis of the heritage management» (The Federal Democratic Republic of Ethiopia 2021,84).

Moreover, Ebabey (2022, 83) noted that the area contains a paucity of tangible historical monuments with «the megalithic sites … [being] … the sole potential resources for heritage tourism … and the main source of collective monumental memory of the past».

Although there are 13 African rock art WHSs on the WHL considerable scope exists for more sites to be inscribed given the abundance and significance of African rock art. At the

2009 «Rock Art and the World Heritage Convention», in the uDP, recommendations, based on ICOMOS's rock art regional thematic study (2007b), were made for serial transboundary nominations in North Africa linking rock art sites in Burkina Faso, Mali, Morocco and other adjoining countries with Tassili. Further, it was proposed that rock art in African countries such as Kenya, Uganda, Mozambique, Sudan and Mauritania would benefit from additional investigations aimed at their rock art sites being inscribed on the WHL (Sanz and Keenan 2011). That the impetus to inscribe African rock art WHSs appears largely to have derived largely from UNESCO needs to be reflected on, and, it is suggested, that mechanisms established to ensure that going forward greater initiative derives from the African continent itself regarding new nominations for rock art WHSs.

3. Safeguarding

This section considers the safeguarding of African WHS rock art. It will initially deal with the threats to rock art before addressing issues of management, including interpretation, community engagement, and the paucity of resources for its safeguarding.

3.1 Threats

According to Clottes (2008, 10), «No matter where, the main threats to the remaining rock art – which each year is the subject of incalculable destruction and damage – are broadly the same». These can be «either human or, more rarely, natural» noting that humans pose the «greatest threats». Nhamo (2018, 59) concurred that «human induced damage is the most detrimental» to rock art highlighting mining, graffiti, and the setting of fires in painted sites as the primary threats in Zimbabwe. More generally, Abungu (2006, 332 and 333) has stated that African rock art is

> «threatened by many factors, ranging from local to international. As the tourism industry expands, more people are visiting rock art sites. As visitorship increases, so do threats to the rock art. People pour water on the art to make it more visible and scrawl graffiti across it to add detail; visitors often touch the paintings, steal engravings on loose stones, or cut pieces of paintings from the rock face».

Further, Abungu (2006, 333) identified the threats from mining, agricultural expansion and the development of roads and dams in environments as being «of even greater concern» especially where it is accompanied by «greedy developers, lack of community participation, ignorance on the part of potential beneficiaries, illicit trafficking, and the assumption by scholars and professionals that they have a monopoly on conservation knowledge and therefore should be the sole players». Sharing Abungu's fears about the threats to rock art of increasing tourism, Little (2011, 67) pointed out that it «is safe to say» that sites have been unprepared to benefit from increased tourism given inadequate infrastructure and to effectively involve local communities in management and «benefits sharing».

Quantifying the threats at two African rock art WHSs, Cremaschi *et al.* (2008, cited in Gallinaro 2014), estimated that nearly 50% of the Tadrart rock art has vanished due to human and natural factors, whereas Topp (2011), who monitored over 500 sites in the uDP, between October 2009-April 2011, reported that 77% of them were either damaged or threatened. These insights are concerning. With this in mind, the threats to the African WHS rock art are now considered drawing on a combination of first-hand accounts, management documents and published and grey literature. I am aware that given the available space it is not possible to address some issues in great depth across all WHSs, however, the following account will give a strong sense of the threats faced by this vulnerable and non-renewable resource. As will become evident, a multifaceted and complex picture emerges, showing, as Clottes (2008) suggested, humans pose the primary threat.

Identification of the threats begins at Chongoni, where Medson Makuru (pers. comm. 29 August 2024) highlighted the range of factors threatening its rock paintings:

a) Loss of vegetative cover which provide shade to the rock paintings. The heritage property is found in Chongoni Forest Reserve which belongs to Department of Forestry. The forest reserve has both natural trees and artificial trees. The artificial trees are harvested at intervals. The trees help to provide shade to the rock paintings. Direct sunlight is a great enemy of rock art because exposure of rock paintings to sunlight makes the rock art to fade through ultra-violet rays.
b) Encroachment is another threat. This is a result of high population growth. This has led to opening up of agriculture

Fig. 8.3 – Dust covering paintings at Eland Cave in the uDP (photo by the Author).

land to places close to rock art sites. The cultivated land … exposes a lot of dust which is eventually blown to the rock art sites and cause fading.

c) Graffiti has also caused damage to some rock art sites. The world heritage area is surrounded by a number of education institutions … [at] … primary, secondary and tertiary levels. Chongoni rock art attracts a lot of visitors. Therefore, the youths also get attracted and develop the desire to visit the rare heritage. If not checked some of them put some marks on the paintings with either chalk or charcoal. Sometimes the herdsmen, who feed their flock in the forest reserve also put some marks especially [on] the images of the rock paintings. It is a serious issue in sites that are open for public visitation.

d) Flaking of rocks in rock art sites is another serious problem. Flaking is caused by weathering which is caused naturally over time due to changes in temperature. However, it is also induced by herd boys who make fires in the caves or shelters with rock art. This is common during the rainy season and also winter. The fires cause the rocks to flake. In addition, smoke from the fires also make the rock paintings to fade or even get lost completely. There are some sites that have been lost completely.

e) Micro-organisms such as lichens have also found their way to some rock paintings. Some rock art has been damaged by the presence of macro-organisms.

f) Another threat … [is] … droppings. Some sites have birds' nests. Droppings from birds of some of the nests reach the rock paintings and cause serious damage to the rock art».

Elaborating on point a), Makuru (pers. comm. 29 August 2024) commented that

> «The large part of the site is within Chongoni Forest Reserve. This means the site has two main key stakeholders, Department of Forestry and Department of Museums and Monuments. Rock art requires vegetative cover. However, the Department of Forestry harvest their trees at will when they are mature regardless of their nearness to rock art sites. This exposes the rock paintings to direct sunlight».

The problems associated with the loss of vegetative cover has also been raised for the uDP where Hall *et al.* (2007, 144) explain that «In some instances, the stresses may be newly introduced as the product of tourist-driven environmental changes at the shelters (e.g. the removal of shading trees)».

Fig. 8.4 – Main Cave North showing the boardwalk and viewing platform erected in 1998 and the area after it was burnt down in 2024 (photos by the Author, 2007, and by D. Whitley, 2024).

The stresses referred are associated with changes to thermal conditions within sites, which may have a harmful impact on «pigment-to-pigment stresses coupled with pigment-to-rock stresses». Needless to say, it is likely that this threat characterises all WHSs rock paintings where there is a loss of vegetative cover.

Several of the issues highlighted by Makuru, were echoed by Djimet Guemona (pers. comm. 30 October 2024 and 1 January 2025) who categorised the Ennedi threats as human, zoological and natural but, *contra* Clottes (2008), identified the main threats as natural following the analysis of 846 rock art sites archived in their WHS database. Guemona (pers. comm. 30 October 2024) reported that about «65% of sites have been damaged by natural factors linked to solar radiation, desquamation [i.e. exfoliation] and erosion, with one site having disappeared completely», while the zoological threats included «droppings, insect nests and rubbing of the wall by domestic animals … [and] … account for around 20% of all rock art sites and human threats relate to about 15% of the sites». Regarding human threats to Ennedi rock art, UNESCO (2024e) reported that a Chadian mission visited the WHS in 2017 «In response to the reported vandalism of rock art sites …. It reported large damage at the entrance … [but that] … No further vandalism has been reported since».

Animal threats to Ennedi's rock art resonates with that of other WHSs. One of these is the SNP component of the MDP, where Challis (2015) identified the dangers of domestic and wild animals in painted sites, which included rubbing the paintings leading to abrasion and flaking, depositing mud over the paintings, causing dust kicked up by their trampling to cover the paintings (Fig. 8.3), along with the possibilities of animals urinating over the paintings, licking them and altering the microclimate in rock shelters.

As at Chongoni, Lebonetse Mathe (pers. comm. 6 August 2024) highlighted the problem of bird droppings and dust at Tsodilo noting that the latter is due to «large school groups which produce a thick dust cloud setting on boulders and exposed wall surfaces». Additionally, Mathe noted that

> «Direct exposure to rainwater causes pigment losses/water wash … affecting many rock art panels…Vegetation abrasion, and extensive secretion from social wasps leaving black marks on and near the rock paintings. There is also growth of micro flora/vegetation (algae, lichen and fungi) which result in dark stains. Veld fires also threaten the rock paintings and also … erosion».

Khumalo *et al.* (2020) reported that a 2019 condition survey of Nswatugi, one of the better-known painted rock shelters in the Matobo Hills WHS, identified several factors impacting the paintings, with dust being one of the most prevalent. In addition, they noted widespread flaking from weathering, leading to the loss of large sections of painted surfaces, with additional damage resulting from the accumulation of lichens around the entrance to the site as well as the increase in bird droppings (Khumalo *et al.* 2020, 34).

Tab. 8.2 – Kaoxa's Shelter in Mapungubwe. According to Gewers *et al.* (2008, 19), «The site is 25 metres in length and was divided into 3-metre sections, making a total of 8 panels. Threats recorded on the panels are listed below. The panels were numbered from left to right when facing the rock shelter (2005)».

THREATS	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7	Panel 8
Water Wash	X		X					
Salt Crystal Activity (Insoluble Salts)	X	X	X	X	X	X	X	X
Mud Wasp Nest	X			X	X	X	X	X
Pigment Flaking	X							
Spider Nests	X							
Black Accretion	X		X		X			
Spalling	X	X		X			X	
Rubbing							X	
Deliberate removal				X				
Graffiti								
Dust	X	X	X	X	X	X	X	X
Plant Growth between the panels								X

As with Chongoni, the growing population in Kondoa has increased the "pressure" on the area's rock art sites deriving from «extensive deforestation, livestock keeping, farming, quarrying and charcoal burning» (Little 2011, 70). Furthermore, Itambu and Bushozi (2021, 76) noted at Kondoa that «Physical weathering includes exfoliation, oxidization, and putrefaction of painted walls» and that "most" of the Mlambalasi «rock paintings are collectively concealed with fungi, mould, foliage, bird and hyrax droppings as well as termite grunges», phenomena which are also prevalent at the site of Tavimienda. Moreover, they reported that the human threats to Kondoa rock art included graffiti and soot on paintings due the making of fires within sites, which are «highly associated with ritual and sacred practices» (Itambu and Bushozi 2021). Graffiti also poses a problem at Lopé-Okanda as «Intruders … alter the rocks with graffiti that they make in places» (pers. comm. Prosper-Prost Ntoutoume, 19 July 2024).

Fire represents a considerable threat to rock art both as fires made within sites (e.g. Chongoni and Kondoa) or veld fires (e.g. Tsodilo). Regarding the latter, Topp (2011, 1) estimated that at least 24% of the sites he and colleagues surveyed in the uDP had been damaged by fire although he appreciated this required further verification. Topp's forewarning about the threat of fire in the uDP recently came to fruition when, despite the management authority's recognition that «grassland fires at rock art sites is [sic] some of the most pressing threats to the rock art» (Ezemvelo 2020, 53), an uncontrolled fire, apparently set by poachers, destroyed the boardwalk and viewing platform at Main Caves North (MCN, Rossouw 2024; Fig. 8.4). The extent of the damage to the paintings is still being assessed.

Multiple threats to Tadrart rock art have been highlighted by di Lernia (2005, 448) including exfoliation primarily caused by wind erosion, damaging chemical and biological factors that may be «associated with insect activity», as well as the loss of paintings resulting from people wetting them to enhance their colours. di Lernia *et al.* (2010, 59-60) have also identified the dangers to rock art linked to desert reclamation for agriculture, infrastructural developments (including residential units), and the uncontrolled growth of tourism. Threats from oil prospecting and extraction have been highlighted by di Lernia (2005; see also di Lernia *et al.* 2010) including the «Cracking and collapse» of engraved rocks, which has been significantly increased by «vibrations produced by bulldozing and seismic research in oil prospecting» (di Lernia 2005, 448), resonating with Abungu's (2006) concerns about the impact of mining on rock art.

Mapungubwe is another WHS where the threat of mining has been raised although it is not mentioned in Gewers *et al.*'s (2008) list of threats to Kaoxa's Shelter (Tab. 8.2) and Mohafa *et al.*'s (2008) threats to Thudwa Shelter, which, in addition to those listed for Kaoxa's Shelter, included animals (e.g. geckos and rock hyraxes) running over rock surfaces and leaving

deposits, bats droppings, and paint removal. Neither does the management authority consider mining and dust to be a threat unlike siltation which «cannot be stopped» (SANParks 2019, 96). In contrast, Malijane (2020, 126) has argued that «Open cast mining and other developments produce dust which affects the rock art sites around the [Mapungubwe] landscape». Furthermore, he proposed that dust resulting from mechanized agriculture «generate[s] considerable dust whose effect on the rock art has so far not been quantified» (Malijane 2020, 126).

It is likely that some or perhaps even many of the abovementioned natural threats are related to climate change, however, this issue was only specifically mentioned by Ntoutoume in relation to Lopé-Okanda (pers. comm. 19 July 2024), particularly that the rock art was «suffering [from] the effects of climate change» mentioning particularly that «lichens, a sort of mushroom, grows on the external part of the rock which houses the engravings». Climate change may also have a damaging impact on the Tiya WHS rock art. UNESCO (1997, 53) noted that the site's safeguarding would be improved by the «maintenance of the grassy surface of the site and the drainage system to avoid flooding during the rainy season». In this respect, Edamo *et al.* (2023) have highlighted that «Future changes in temperature and precipitation» in the lower Bilate catchment, which is close to Tiya, «may be exacerbated by climate change, and this could result in extreme hydrologic events like floods and droughts», thereby posing additional threats to the rock art.

Vandalism is a widespread and significant threat. Perhaps the most outrageous destruction of African WHS rock art occurred in Tadrart in early April 2009 when a «former driver of a fairly well-reputed Italian-Libyan travel agency spray-painted a series of rock art sites for unknown reasons» (di Lernia *et al.* 2010, 62). According to di Lernia *et al.* (2010, 74),

> «most of the sites damaged … were among those routinely visited by the typical tour group. Six out of 10 were fenced, thereby probably confirming the idea of their special importance in the mind of the criminal(s). These sites were not chosen at random: this conclusion is also supported by the distance between sites (over 40 km), and the fact that the criminal(s) operated at night».

di Lernia *et al.* (2010, 59) noted that it is improbable that the paintings can be effectively restored given the severity of the damage, however, some engravings may well be cleaned. This might have been a one-off event, however, it underlines the vulnerability of Africa's rock art to ill-intentioned people. Addressing other reasons for the graffitiing of Tadrart rock art, di Lernia (2005, 448; see also, e.g. Gallinaro 2014), understands that it may represent

> «the claims on this heritage by local people, often in the form of new graffiti … or through the use of the rock art in their own lives, as, for example, in the demarcation of the landscape and the designation of property (grazing) rights, and so forth».

Additionally, di Lernia (2005) explained that Mori's Tuareg guides had, in the 1950s, informed him that the "ancestors" had recently defaced the paintings in order to prevent shepherds being side-tracked by them when they cared for their flocks. In Tassili, the graffiti is generally in Arabic and «appears to have been perpetrated by nationals from the north» many of whom are civil servants or military personnel posted to the area or people on holiday (Keenan 2005, 482). According to Soukopova (pers. comm. 6 September 2024), this type of vandalism is ongoing (Figs. 8.5 and 8.6).

Another major threat to Tassili and Tadrart rock art is looting (Fig. 8.7). Highlighting the «cutting of pieces from the rock face», Keenan (2005, 473) observed that engravings and paintings had been taken from numerous Saharan sites. A Tuareg guide explained to him (2000, 287), that «since he was last there, only a year before [i.e. between May 1997 and May 1998], half of them had gone. Some had clearly been chipped off the rock as souvenirs». This type of damage may also have occurred more recently in the Tadrart given the WHC's apprehension about the safeguarding of rock art «from vandalism and looting» (Department of Antiquities n.d.). As Clottes (2008, 11) has suggested, the theft of rock art globally may be linked to «the exponential growth of tourism, which certainly reflects increased interest in rock art but which is rarely accompanied by adequate protection measures by the authorities». Further, he noted that this included the visiting of sites that were formerly safeguarded by their remoteness. This insight resonates with Le Quellec's (2021) observation that the isolation of many Saharan sites might contribute to their safeguarding although the disadvantage of this relates to the difficulties associated with their regular and ongoing monitoring.

Fig. 8.5 – Graffiti over engravings at Grotte des Ambassadeurs adjacent the Djanet oasis (Tassili) (photo by J. Soukopova).

Fig. 8.6 – Graffiti over paintings at In Truia, which is next to the main asphalt road between two oases (Tassili) (photo by J. Soukopova).

The role of community in safeguarding of rock art will be addressed later, however, it is pertinent that Imalwa (2018, 131) appeared to imply that the community's inadequate management of Twyfelfontein such as maintaining heavily eroded footpaths «threatened to destabilize important rock art panels». Unsurprisingly, this is within the context of increased tourism, which «has had a significant effect on its fragile environment and the rock art itself, especially in the absence of proactive management protocols» (Imalwa 2018, 131).

Fig. 8.7 – Scar on the rockface after painting(s) had been removed from the Cave of Uan Amil in Tadrart (photo courtesy of the Archive of the Archaeological Mission in the Sahara, Sapienza University of Rome).

The final, and unusual, threat to be considered derives from the Kondoa WHS, where Little (2011), Ithambu and Bushozi (2021) and others have highlighted a local belief that German colonisers buried treasures close to rock art during World War 1. Some people believe that rock art indicates its location, leading «to a great deal of destruction through illegal excavations next to the sites. The rock art could soon be completely destroyed» (Little 2011, 70).

3.2 Managing WHS rock art

> «Rock art sites are among the most difficult cultural resources to preserve» (Khumalo *et al.* 2020, 35).

A variety of mechanisms have been used to safeguard African rock art WHSs as will be explored in this section. At the outset, it could be argued that knowing the location of sites, their content and significance is foundational to their protection although it is appreciated that determining significance can be a highly subjective undertaking. As Nhamo (2018, 64 and 65) emphasised «Documenting rock art sites is a very important first step towards protection and conservation. Through recording, the sites become known to the people who can offer them protection». A mixed picture is reflected across the African continent. One WHS that has witnessed intensive survey is the uDP. A survey project undertaken in the late 1970s/early 1980s, and therefore before its WHS

Fig. 8.8 – Members of the Amagugu International Heritage Center documenting paintings in the Matobo Hills (photographs by Mrs Sithole (Ibhayisikopo Film Project) and Mr Ngwenya (top photos).

nomination, was funded by the government department that managed most of the area at the time after it acknowledged that it had insufficient information to underpin a long-term protection programme for the rock art (Mazel 1984; see also Ward 1979). This project, which built on the earlier survey work of Pager (1971) and Vinnicombe (1976), laid the foundation for the cultural aspect of the uDP WHS nomination, which stated that the «area is the most densely painted, significantly large area on the African continent … The number of sites is estimated at 600 and the number of individual images in those sites probably exceeds 35,000» (KwaZulu-Nature Conservation Service and Amafa aKwazulu Natali Heritage 1999). It is likely that over 90% of the uDP sites are on record. In contrast, it is estimated «that almost 20% of the [Ennedi] reserve has been explored» although since the Archaeology Department was established «priority has been given to inventorying archaeological sites», including classifying sites «by typology and state of conservation and identifying the factors of destruction affecting rock art and the priority sites requiring protection», which has provided insights into «the factors of destruction that weigh most heavily on rock art sites» (pers. comm. Guemona, 30 October 2024). Most, if not all, the other African rock art WHSs occupy positions between that of the uDP and Ennedi, as reflected in Mathe's comment

(pers. comm. 6 August 2024) that «we have not documented all the rock paintings in Tsodilo to have a baseline documentation to know the conditions affecting each and every site. Lack of resources is another major challenge».

Site documentation should be an ongoing endeavour. A recently initiated project in the Matobo Hills WHS exemplifies how the local community can assist with this. Supported by the American Ambassador's Fund for Cultural Preservation, the Friends of the Zimbabwe Museum of Human Science Trust, Amagugu International Heritage Trust and Dr Senzeni Khumalo (National Museums & Monuments of Zimbabwe), Amagugu International Heritage Center (2024a) community members are undertaking a «baseline survey aimed at identifying and documenting Rock art sites in the communal area of ward 17» comprising seven villages (Amagugu International Heritage Center 2024b; Fig. 8.8). Although still in its infancy, the project provides a community-based documentation model that could be applied at other African rock art WHSs.

Guidelines that all WHSs required management plans were adopted at the first session of the WHC in 1977 (Cameron and Rössler 2018). It has, however, only been since the mid-1990s that there has been increased pressure on States Parties to submit management plans for nominated properties as they are considered «an important tool for the long-term conservation of the property that should be revised at least every 5 years» (Deacon 2014, 7). State Parties are compelled to honour each plan's monitoring programme and the WHC should ensure five-yearly periodic reporting (Deacon 2014). These requirements have not been completely implemented for African rock art WHSs. To the best of my knowledge, only about half of the WHSs have up-to-date management plans. Interestingly, one of these is the uDP component of the transboundary MDP WHS (Ezemvelo 2020) although the other part of the MDP, the SNP (Challis 2015), has not updated its plan during the last five years. No doubt, the WHSs lacking management plans aspire to put them in place. At Ennedi, for example, a

> «specialist in Saharan rock art was brought in … to propose a strategy for protecting rock art sites, considering the different types of destructive factors… It is on the basis of this report and the observations made that we will reflect on the implementation of a long-term protection plan» (pers. comm. Guemona, 30 October 2024).

Furthermore, the WHC commented about Tadrart that it «Invites again the State Party to continue pursuing the elaboration of a Management Plan … seeking the necessary technical and financial support for its completion, and allocating the necessary resources for its implementation» (UNESCO 2024c).

A paucity of information exists about the extent to which African rock art WHSs with management plans have been being implemented. Some comments are, however, possible. Regarding Twyfelfontein, Imalwa (2016, 2018) remarked that the management plan submitted with the nomination dossier has not been fully implemented, reflected in part by her observation that «Monitoring of the physical condition of … does not occur on a daily or a regular planned basis» (2018, 133). A similar situation characterises Tsodilo where the existence of a management plan appears not to have ensured adequate patrolling. According to Mathe (pers. comm. 6 August 2024), «We have a monitoring program as stipulated in the Tsodilo Core Zone Management Plan and also the maintenance of the firebreaks annually to avoid veld fires from entering into the site». There is, however, a «Lack of adherence to our monitoring plan as the Department does not have a dedicated team to periodically monitor the rock art, currently we have 1 Rock Art Conservator responsible for the entire» WHS (pers. comm. Mathe, 6 August 2024).

Benefits of patrolling and monitoring have been highlighted at Chongoni, as «Recently, the Department of Museums and Monuments recruited Patrol men (Rock Art guards) which have been located in all the sites that have been opened for public visitation. This has helped to reduce damage to the rock paintings» (pers. comm. Makuru, 29 August 24). Moreover, they have been «Practicing controlled visitation to rock art sites. Some of the visitors to the rock art sites come from educational institutions in large numbers. These are put in groups of 15 or 20 in order to … manage the groups» (pers. comm. Makuru, 29 August 24). Although Tadrart lacks a management plan it

> «has witnessed a marked decrease in the scale of vandalism to the rock art, this decrease coincides with setting up of regular inspection patrols by the Tourist Police; these patrols would not have been successful without the coordination and cooperation of the DOA offices in the region, the Tourist Police and the support of the local community» (Department of Antiquities n.d.).

Local community support has also been evident at Lopé-Okanda as it «sometimes participates» in monitoring the rock art close to their villages (pers. comm. Ntoutoume, 19 July 2024).

WHC's insistence on management plans highlights a tension that exists at some, and perhaps many, of the African rock art WHSs as before and during the early colonial periods these places were safeguarded without written laws and plans. Instead, they were managed by «traditional custodians … through a series of taboos, rituals, and restrictions. The traditional custodian was chosen from the clan which used the site for their activities and rituals. Custodians decided who had the right to enter a site» (Bwasiri 2020, 6298; see also, e.g. Ndoro 2006; Thebe 2006; Chirikure *et al.* 2010; Jopela 2010; Hubbard *et al.* 2018; Itambu and Bushozi 2021; Ndlovu 2021). The predicament about different management systems has been clearly articulated by Kisusi and Lwoga (2021, 221)

> «Currently, heritage practitioners are facing a major dilemma over applying the Western conservation system as opposed to the African conservation system, as the Western system is believed to be superior to the African one, leading to the loss of non-renewable resources. However, there is limited empirical evidence concerning the dilemma inherent in the conservation of African living heritage using the dominant Western conservation system».

A particularly poignant reflection on this problem was made by Kgosi Samochao, in 2001, at the official opening of the Tsodilo rock art WHS

> «My ancestors have lived in Tsodilo for centuries. Throughout this time, they have looked after this area. They have not destroyed it. You and I also find an unblemished area. This is important because in future if the area is destroyed, you will have witnessed it in its original form» (Thebe 2006, 312).

As Thebe (2006, 312) reflected, Samochao's comments can be understood in two ways: either reflecting the community's wish to "share" Tsodilo's management «with the rest of the world» or "rhetorically" as indicating the community's unhappiness with the safeguarding of the WHS using what is referred to as western methods of management. This tension will be returned to later when the role of the community in the safeguarding of rock art WHSs is addressed further.

3.3 Interpretation

> «Site presentation and interpretation has worked as another mechanism that is being used to protect Chongoni rock art» (pers. comm. Makuru, 29 August 2024).

It has been long been widely appreciated that persuading people about the importance of archaeological places and the necessity of safeguarding them significantly enhances their protection and decreases their management requirements (see, e.g. Mazel 1982). This sentiment has been incorporated into ICOMOS's Charter for the interpretation and presentation of cultural heritage sites [i.e. Ename Charter], with one of its objectives being to «Facilitate understanding and appreciation of cultural heritage sites and foster public awareness and engagement *in the need for their protection and conservation*» (ICOMOS 2008, my emphasis).

Interpretation at African rock art WHSs has focused on interpretive centres, sometimes referred to as museums, signage and guides and/or custodians. The uDP has experienced substantial interpretive developments since the late 1990s with varied outcomes. Prior to achieving WHS status, MCN (Fig. 8.4) and Main Caves South (1998) experienced on-site development, while following uDP's WHL inscription two purpose-built interpretive centres were developed: Kamberg Rock Art Centre (KRAC, 2002; Fig. 8.9) and Didima Rock Art Centre (DRAC, 2003; Fig. 8.10) (Mazel 2008). All three entities have, however, experienced problems. As already mentioned, the MCN boardwalk and viewing platform (Fig. 8.4) recently burnt down (Rossouw 2024). Reference to Tripadvisor (2025) shows that the DRAC was shut in 2019 as it was in a state of disrepair even though the most recent uDP management plan gives the impression it is still open to the public (Ezemvelo 2020). KRAC experienced the theft of audiovisual equipment shortly after it was opened (Bishop 2005) but remains functional. It appears that Tsodilo (Fig. 8.11), Twyfelfontein and Kondoa are the only two other WHSs with interpretive centres or museums. As with MCN, the Twyfelfontein visitor centre was built prior to its WHS designation, whereas the Kondoa facility was constructed in 2002 as «part of the nomination process» to accommodate staff and house interpretive displays (Bwasiri 2020, 6298). Other WHSs aspire to have visitor centres, such as Tadrart where it has been reported that «Work is … in progress to prepare a cultural and visitors centre in the old fort at Al Aweynat, which will play a vital role

Fig. 8.9 – Kamberg Rock Art Centre in the uDP (photo by the Author).

in the management of the property and increase awareness within the local community» (Department of Antiquities n.d.). Furthermore, Malijani (2019) indicated that the Chongoni Rock Art Information Centre was under construction in 2013, however, Chauma and Ngwira (2022, 149) reported that «the project was abandoned at the roofing level in 2008».

Signage has been erected at several WHSs. At Chongoni «Some of the signage that was developed and mounted at the site provide the dos and don'ts at the site. This has helped to protect the site» (pers. comm. Makuru, 29 August 2024), while at Tadrart 15 old yellow signs were repainted including «guidance and instructions on how to protect the rock art, these signs were written in both Arabic and local language (Tifinagh), which has been welcomed a great deal by the locals and raised their sense of ownership of the property» (Department of Antiquities n.d.; Fig. 8.12). At Tsodilo, the signage has been severely weather beaten and rendered largely unreadable (Fig. 8.13) and requires replacement by the Tsodilo Community Development Trust. In the uDP, «Signage is not permitted in wilderness (although some rock art sites require signage to prevent degradation)» (Ezemvelo 2020). My understanding is that no rock art signage has been erected in the wilderness areas, however, there are posters advertising guides and visitable sites outside of these areas but still within the uDP (pers. comm. Rossouw, 17 January 2025; Fig. 8.14). More prevalent than either interpretive centres/museums or signage is the use of guides and/or custodians at WHSs, which appear to be operative at most of them. At some WHSs, the guides can only take visitors to prescribed sites. At Chongoni, for example, only three of 127 known sites have been opened to the general public (pers. comm. Makuru, 29 August 2024), while in the uDP, 23 out of over 600 sites are open to the public who may visit them if they have a permit or accompanied by accredited and trained custodians (Ezemvelo 2020, 61). In support of this initiative, Amafa, the KwaZulu-Natal provincial heritage agency «trained nearly 100 rock art custodians and wrote more than 30 [site] management plans each year to ensure that preventative care is up to date» (pers. comm. Rossouw, 16 January 2025). As in the uDP, the two trained guides at Kondoa act as custodians of the rock paintings (Bwasiri 2020, 6298). At Tsodilo, about 20 local guides have been trained with the assistance of the

Fig. 8.10 – Didima Rock Art Centre in the uDP (photo by the Author).

Fig. 8.11 – Tsodilo Site Museum (photographer's name withheld by request).

Fig. 8.12 – One of the 15 yellow signs in the Tadrart that were repainted, which includes information about how to protect the rock art (photo courtesy of the Archive of the Archaeological Mission in the Sahara, Sapienza University of Rome).

Botswana National Museum, which together with «restricted access combined with guided tours has proved beneficial for the protection of rock art» (pers. comm. Mathe, 6 August 2024). At Tassili, guides «need permits, part of their job is to watch tourists and tell them what to do and not do» (pers. comm. Soukopova, 6 September 2024).

At some African rock art WHSs, the training of guides appears to have been problematic. At Twyfelfontein, for example, Imalwa (2018, 135) noted that «Although the guides receive training about rock art, this is not carried out on a regular basis and the majority of the guides from all three sites lacked interpretation skills» while at Tadrart, di Lernia (2005, 454) commented of the importance and necessity of training local guides because «too often members of the Italian-Libyan Joint Mission saw accompanying guides touching the paintings and collecting archaeological artefacts … scattered on the surface simply to please the tourists».

A difficulty expressed for the Matobo Hills is that businesspeople from outside the area operate privately owned tour services, which leads to the «minimum fees paid to offer tour operating services … [being] … beyond the reach of local people as such access to "decent employment" is left in the hands of those with adequate financial capital to pay for operating licences from ZPWMA [i.e. Zimbabwe Parks and Wildlife Management Authority]» (Muringa *et al.* 2022, 70). On a related financial matter, tourist fees are the only income the KRAC guides/custodians obtained as they are not allowed to secure other employment in order to be constantly ready to guide tourists (Maphalala 2022). Maphalala (2022, 68) noted that «One custodian would sometimes receive as few as three tourists per month» rendering it financially unviable; this has resulted in the high turnover custodians (Duval and Smith 2012). These difficult financial experiences emphasise Ndoro's (2021, 109) point that

> «although some heritage sites have generated forms of economic development, it is generally perceived in Africa that most of the benefits do not trickle down to local communities. In this regard, it is telling that many of Africa's famous heritage sites are surrounded by a sea of poverty».

3.4 Community engagement

> «Furthermore, the local community initially saw the World Heritage listing as an "apple from heaven"; now, they fail to see its benefits» (Thebe 2006, 320).

Aspects of community engagement with African rock art WHSs such as guiding, custodianship, site recording and patrolling/monitoring have already been treated. This section will address other facets of the relationship between communities and the safeguarding of WHS rock art. Although community involvement with the safeguarding of African heritage has a lengthy history (e.g. Chirikure and Pwiti 2008), the last few decades have witnessed a notably increased focus on this phenomenon, appearing to correspond chronologically with a paradigm shift, in the 1990s, in UNESCO's and the WHC's approach to this matter. According to Cameron and Rössler (2013, 7 and 8), UNESCO and the WHC after «deliberately … [choosing] … to minimize participation of interested stakeholders» began to encourage «site nominations that emphasize human experiences on land and in society» signalling a change in appreciating the role that stakeholders and therefore communities have to play in the identification and safeguarding of heritage. Moreover, as Diaz-Andreu (2016) has pointed out the WHC's revised Operational Guidelines not only made local community participation compulsory in the site nomination process in 1995 but then, in 2008, prescribed that they should be involved in WHS management. It is understood that the nature of the connections, if they even exist, between the

Fig. 8.13 – Signage at Tsodilo (photographer's name withheld by request).

various phenomena highlighted above requires further exploration.

African heritage managers have increasingly appreciated that meaningful community engagement enhances the safeguarding and hence sustainability of heritage resources (e.g. Chirikure and Pwiti 2008; Chirikure *et al.* 2010; Deacon 2014). Alongside this, it has also been progressively recognised that «community participation is not just about engagement, it is about giving power to the local communities in all aspects of heritage, including research and management» (Chirikure *et al.* 2010, 31). In a similar vein, Thebe (2006, 320) suggested that «we need to be less patronizing and more inclusive», which in the case of Tsodilo, he argued, should combine the «training of heritage managers and the community». Especially, as the «government has the duty to conserve the site using "modern technology"» while «the community sees the site as its "spiritual home"», which it had protected "very well" for a lengthy period. Considering this predicament, Ndlovu (2021, 170) characterised the "Eurocentric approach" to present-day heritage management as "material-centric" linked to concepts of integrity and authenticity. In his view, South African heritage practitioners are beginning to consider different approaches to heritage management including emphasising «the spiritual significance of the place» and its associated heritage resources. Moreover, Ndlovu (2021, 170) argued that «even if contemporary use required the physical exhaustion of the given heritage resource this would not be regarded as "destruction" although that is how such use would be understood within a Eurocentric framework of thinking». This perspective would, however, benefit from further debate especially when considering Nhamo's (2018, 61) comment that «People who use shelters with rock art … [e.g. for religious gatherings] … are not aware of the importance of the art. They also do not realise the impact of some of their actions on the continued survival of the rock art».

The benefits of involving communities have been appreciated at African rock art WHSs although this has not been without challenges. At Chongoni, Makuru (pers. comm. 29 August 24) noted that

> «The community is very much involved in various ways. There are Community Cultural Based Organisations that were formed to help in the co-management of the site. Whenever the Department of Museums and Monuments mobilise resources for implementation of some projects, such as maintenance of access roads to the sites, the community is involved to provide labour so that they benefit from the heritage that their ancestors left for them. Some community members run businesses that are touristic in nature such as artists. These are supported by the management of the heritage property. For instance, most businesses

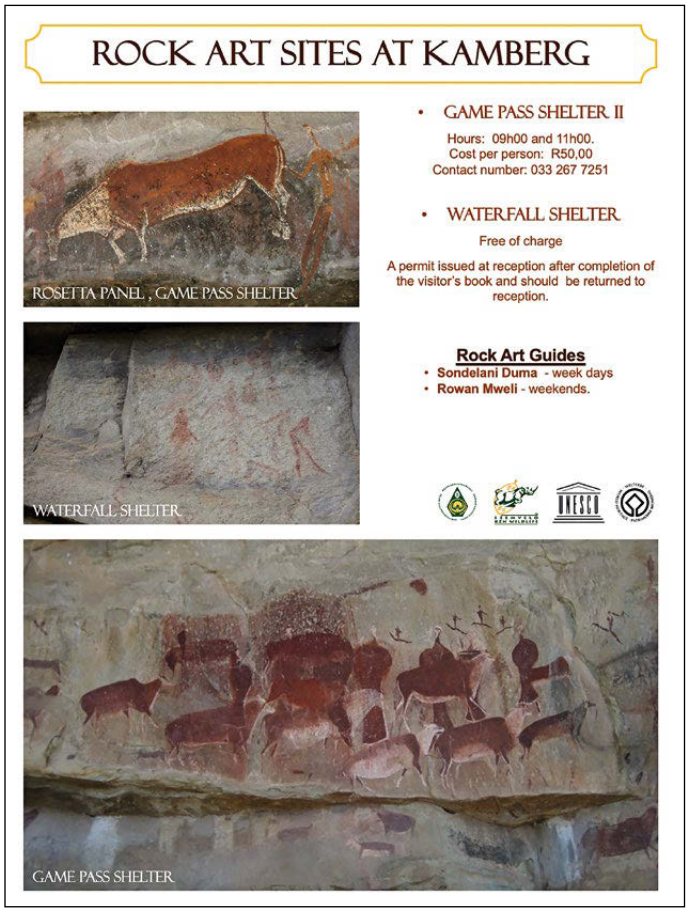

Fig. 8.14 – Poster advertising guides and visitable sites in the uDP (poster created by C. Rossouw).

> were supported with mulching grants from an ADB project to support the artists after the effects of covid-19».

In a different context, Lemunge *et al*. (2025, citing Bensadek 2019) refer to a community-based tourism project in Tassili which combines the safeguarding and promotion of the different features of the national park. According to Lemunge *et al.* (2025), «The involvement of local communities as guides, artisans, and providers of accommodation and food creates economic opportunities while ensuring the protection of the park's natural and cultural resources».

Different perspectives, however, exist on the involvement of the local community at Chongoni as Chauma and Ngwira (2022, 151) explained that the paucity of «economic benefits has choked» the expectations and interest in tourism of residents «to the extent that they perceive tourism as a tool to enrich government officials and not the local communities». They concluded that rock art tourism has only benefitted the Nyau Secret Society and local guides economically. At Kondoa, Bwasiri noted, in 2008 (p. 60) that «The local community is so angry at present that some are threatening to destroy the paintings», however, just over a decade later Kisusi and Lwoga (2021, 221) reported that their detailed interviews with 25 local people and 12 focus group sessions combined with non-participant observations at Kondoa showed that residents valued the rock art

> «as an active cultural construct, reflecting their connectivity with the past, identity, and future expectations. The residents employ the conservation system that is built on the principles of intangibility, change, and continuity»

although they contended that

> «the dilemma still prevails with modern conservation principles of materiality, permanency, and durability of rock art, and aesthetics and artistic values. The study argues for an integrated approach, mixing modern and traditional conservation tenets, and for the significance of community engagement methods».

Another example of community involvement derives from Ennedi where it

> «is involved in safeguarding the archaeological heritage, particularly through the awareness campaigns organised by the archaeology department and the community department, which organises events in all the villages in the reserve. In primary schools, an archaeology module is included in the environmental education curriculum» (pers. comm. Guemona, 30 October 2024).

Involving schoolchildren in protecting rock art was evident in SNP where they helped build a stone wall to prevent animals entering a painted rock shelter (pers. comm. Monyatsi Mohau, 28 March 2017; Fig. 8.15). At Tadrart, Department of Antiquities staff participated in a training project, between 2016-2018, that, as with Ennedi, included community engagement and outreach activities, «focusing on education of school children and disseminating print material» (Department of Antiquities n.d.). The project also involved a cleaning

campaign, together with travel NGOs, to remove tourist waste in wadis and valleys with rock art.

3.5 Resources

Addressing the lack of resources to safeguard cultural WHSs, Thiaw (2014, 70) argued that their management has been marginalised in most African countries: «Rather than considered a priority, generally, the management and protection of World Heritage Sites in Africa is seen as a luxury and important only for the rich people who can afford to visit them». In a related comment, Abungu (2006, 333) has highlighted that many African countries «are suffocating under the burden of foreign debts … Rock art conservation is not a government priority in countries requiring the provision or improvement … of basic services … As a result, there is little if any investment in rock art heritage».

Ample evidence exists about the dearth of resources to effectively look after African rock art WHSs, such as only about half of them having up-to-date management plans, insufficient staffing to update plans, inadequate implementation of plans, and the incomplete rock art centre at Chongoni. Unsurprisingly, Makuru (pers. comm. 29 August 2024) considers the paucity of resources as the primary challenge to the safeguarding of Chongoni's paintings

> «to implement various activities that are lined up for implementation. Usually funds are not enough to implement various activities at the site. Staff at the world heritage property is inadequate. There is need to increase staff in order to manage the site well».

The lack of sufficient personnel was also mentioned for Lopé-Okanda where it was reported that the rock art «distribution area is large and they need personnel, financial and technical means to ensure their protection and development. Their location off-centre from the main protection area complicates the task, given the current number of ecoguards. Specific personnel must be designated for their management» (pers. comm. Ntoutoume, 19 July 2024). Acknowledging the insufficient resources for protecting its rock art, the Lopé-Okanda

Fig. 8.15 – Stone walling built in the Sehlathebe National Park (SNP, Lesotho) with the help of school children to prevent animals from entering the painted rock shelter (photo by the Author).

WHS «contacted UNESCO to find a solution to the degradation of the engravings which risk disappearing, perhaps in less than a decade. We are still waiting for their return. We must find a safeguarding strategy for this heritage» (pers. comm. Ntoutoume, 19 July 2024).

4. What happens next – challenges and prospects for the future

It is apparent that African rock art WHSs are vulnerable to damage and destruction from multiple natural (including zoological) and human threats. Information presented about the nature of the threats supports the perception that they derive primarily from people although it is likely they are mostly unintended (e.g. the kicking up of dust and making of fires in sites) as suggested by Nhamo (2018). Many approaches can be taken to reduce or even remove some of the threats but, as Little (2011, 76) has suggested

> «The best barrier is a community who has an emotional or economic link to the heritage. By engaging local communities in the management, conservation and valorization of sites and ensuring that they are beneficiaries of the heritage, you are building the foundations of those protective barriers».

Similarly, Keenan (2005, 473) has argued that «The ideal form of protection, at least at sites near to human habitation [in the Sahara], comes from the local communities themselves» although this requires support from heritage authorities to ensure the sustainability of rock art and other types of heritage that can be used to generate a long-term income stream. While acknowledging the value of community support of and participation in the safeguarding of WHS rock art it needs to be acknowledged there have been instances of friction between, on the one hand, heritage managers and authorities and, on the other, local communities. As already mentioned, Bwasiri (2008) reported that the Kondoa community threatened to obliterate the rock art, whereas 80% of the people interviewed by Thebe (2006) at Tsodilo were dissatisfied with it being a WHS. It is recognised that these comments are about two decades old and that the circumstances at these WHSs might have changed, however, Baillie and Sørensen (2021, 24) reflecting on community involvement in the management of African heritage more generally have suggested that while this is «frequently called for … we have learned that this is not necessarily easy or without its own problems» especially as it has become evident that the presence of numerous

> «stakeholders, with varied attitudes, interests, and positions converge around a particular expression of heritage, those who become most marginalized in decision-making are usually those most directly involved with and affected by said heritage. Despite the many good intensions, and a handful of "best practice cases" our ability to involve community members in the management of heritage is still poor».

They argued that management practices are partially responsible for this "inadequateness". Particularly as the "languages" and words used by heritage practitioners act as major obstacles to ensuring the «equal or equitable participation» of communities who are unfamiliar with the language and terms used, and who do not recognize themselves as "stakeholders" (Baillie and Sørensen 2021, 24). Alongside this, Ndoro (2006, 336) has emphasised that the ambitions and systems of local people need to be appreciated and incorporated into the planning and implementation processes in order to ensure the "meaningful" management of rock art sites. In particular, in places such as Chongoni and Kondoa where, as noted by Ndoro (2006, 337; see also Itambu and Bushozi 2021), rock art sites are perceived to be "shrines" by neighbouring communities together with the fact that in some southern Africa traditions «caves and rocks are the abode of ancestral spirits».

Although the significant role that communities can play in safeguarding African rock art WHSs is now largely accepted, it still needs to be determined how best to include these constituencies in the process bearing in mind, as has been shown, this has sometimes or perhaps even often been beset by difficulties. Sinamai (2014, 66) and others have advocated that communities should be essential partners involved in management planning, which he believes is the «only way we can sustainably preserve and develop heritage sites and force business to be socially responsible to communities whose heritage they use to generate profits». Adopting this approach, he argued, will enhance trust between various role players and promote the viable management of

heritage sites together with their development. Agreeing with Sinamai's sentiments, Imalwa (2016) suggested that the Twyfelfontein management plan would be more effective if its development process was inclusive and involved various constituencies such as the National Heritage Council of Namibia, heritage preservation specialists as well the local community, particularly the tour guides who should be considered significant participants in decision-making about the WHS. Supporting an inclusive approach, Abungu (2006, 335) argued that initiatives of this nature should be of a participatory nature where the

> «voices and needs of local communities are given as much – if not more – weight as the others. It is imperative that local people be empowered through capacity building; the day-to-day management of sites can be in their hands when it is not provided by other agencies»

Notwithstanding the widespread support for community involvement in the safeguarding of African rock art WHSs at all the stages of management planning and implementation, there doesn't appear to an overarching set of guidelines specific to the continent about how best to achieve this. In this regard, Agnew *et al.* (2015) offers a good starting point given its focus on meaningful community engagement in the safeguarding of rock art in southern Africa as well as Australia. It is appreciated, however, that the WHSs will reflect different sets of circumstances (e.g. historical, management systems and economic), which will need to be considered in any engagement process. Despite these challenges, it would nonetheless be beneficial to establish an underlying set of guidelines and values that could be used by heritage authorities, site managers etc. to underpin the process of meaningfully involving communities in the management of African WHS rock art.

Managing expectations will need to be central to these guidelines given the risk of negative outcomes (e.g. Abungu 2006) along with being mindful of Jopela's (2023, 88) observation that community engagement with heritage appears to reveal that negative outcomes are far more common than positive ones, including the marginalisation of communities leading to the «loss of social capital and access to heritage sites». Additionally, defining what constitutes a "community" or "communities" needs to addressed because, as Namono (2018a: 272), has pointed out

> «it is difficult to define as it is both an inclusive and exclusive term. It may take cognisance of locality and refer to people who live in close proximity to the heritage and own it; or to shared beliefs and values and refer to people who no longer live in the area but have attachments to it; or simply anybody who has an interest in it».

Investigations of how to significantly involve communities in managing African rock art WHSs would benefit from not only reflecting on past and ongoing practices at these sites themselves but also drawing on insights from non-WHS rock art community engagement programmes such as The Makgabeng Community Rock Art Project (South Africa; Namono 2018a, b), the Abasuba Community Peace Museum (Kenya; Little and Borona 2014) and Nsangwini (Eswatini; Maphalala 2022). Maphalala (2022, 3) has proposed that Nsangwini represents a good example of community upliftment given that their initiative has not only drawn in visitors but has remained open since its launch generating «an income that is useful to the community. The site is protected, managed and run by the local community and the money made from the tours to the site are ploughed back into community upliftment».

In addition to the direct impact that communities can make to protect rock art (e.g. discouraging vandalism and the lighting of fires in the sites, preventing domestic animals from entering sites, and participating in the recording and monitoring of rock art), there may be a role for community advocacy such as opposing deforestation around rock art sites and, in the case of Chongoni, encouraging the Department of Forestry to change its policy regarding the harvesting of trees to try and avoid sunlight shining directly on the paintings. Furthermore, it may be useful to engage the communities about what could be done about the threats to rock art associated with population encroachment and development schemes although it is appreciated that this may be something they are unable to influence. Similarly, it is unlikely that communities can prevent or influence oil prospecting and extraction mining especially as some community members might be in favour of them if they offer job opportunities. Nonetheless, it would be beneficial for community members to appreciate the risks these activities pose to rock art in case they are in a position to help obviate unnecessary damage to rock art.

While some or perhaps even many of the threats to African rock art WHSs may be prevented or reduced through community engagement, we cannot ignore the fact that a

variety of other types of interventions are also required to ensure more effective protection. Thiaw (2014) and Abungu (2006) have emphasised that the management of heritage sites and rock art respectively are not considered priorities by African countries given the debt burdens of some and the pressing needs of their populations. One way of improving the economic situation of rock art WHSs is creating sustainable tourism to these places mindful of (i) the challenges and difficulties that have already been highlighted (see, e.g. Abungu 2006; Little 2011; Duval and Smith 2012), particularly the paucity of benefits to communities and (ii) that the contexts will be very different for the individual WHSs. Referring to African rock art WHSs, Little (2011, 67) has noted that their inscription has raised appreciation of them along with increasing tourism in some instances, but overall this has not been successful as «most sites have not been prepared to take advantage of or deal with the issues of increased tourism (e.g. undeveloped infrastructures, lack of models of how to involve local communities in management and benefit sharing)». Another drawback is ineffective marketing. In the uDP, for example, the rock art tourism developments, of the 1990s and early 2000s, have been undermined by the management authority's tourism marketing focus on the WHS's natural heritage resulting in these facilities not receiving substantial numbers of visitors (Duval and Smith 2012). This has caused the rock art offer to have «not yet developed into a major attraction and source of social empowerment» (Duval and Smith 2012, 145). No doubt many other challenges exist to achieving sustainable rock art tourism that benefits communities, but it is worth pursuing further given its potential impact on them. Perhaps there could be a continent-wide tourism initiative linking African rock art WHSs into some form of rock art route. Authorities will, however, need to carefully consider the dangers associated with the uncontrolled growth of tourism (e.g. Abungu 2006; Clottes 2008; di Lernia *et al.* 2010; Little 2011). Moreover, it needs to be emphasised that this endeavour should be complemented by, among other things, more effective training of guides and site custodians coupled with appreciation of what the guides can bring to the process (e.g. Basinyi and Sagiya 2018).

If tourism was able to provide additional resourcing of African rock art WHSs it would not only help support community involvement in the safeguarding process but also, for example, the development of management plans and their regular updating as well as the provision of additional staffing to document and monitor sites. All of which are critical processes required to underpin the sound management of WHS rock art. In addition to the meaningful involvement of communities in the safeguarding of WHS rock art, it is acknowledged that specialist knowledge is required to tackle some of the threats that have been highlighted such as graffiti removal, which if not done properly could itself damage the rock art. Other threats posed by, for example, insects, lichen/fungi, mould and foliage will also require specialist assessment and possible interventions. It is unlikely that this expertise exists within communities and heritage agencies responsible for the safeguarding of African rock art WHSs, however, there are other options that could be explored, such as approaching universities within the countries to see if they can assist. A good example of this is Ancila Nhamo and Welcome Takunda Chigwende's collaborative interdisciplinary research with colleagues in the Biology and Chemistry departments, at the University of Zimbabwe, to better understand the threats to Zimbabwean rock paintings (Nhamo per. comm. 13 February 2025). If this avenue of research and collaboration is not possible, heritage authorities could seek assistance from other countries given that one of the purposes of the WHC is promote the safeguarding and conservation through national collaborations (Sanz 2012). Evidence of this already exists (e.g. pers. comm. Ennedi, Guemona, 30 October 2024) but there is scope for it to be extended. Threats associated with bird and bat droppings could be reduced or perhaps even eliminated by the removal of their nests, however, this is also likely to require specialist advice about how best to achieve this without possibly compromising the animals. It would also be useful to obtain specialist advice on the prospect of inhibiting or perhaps even preventing exfoliation on the rocks that house rock art from weathering and decay and how to prevent and, where necessary, remove dust covering the paintings.

As mentioned earlier, the threats from climate change are likely to be beyond the control of heritage authorities and managers in individual countries. There is, however, scope for them to advocate to their respective governments about the importance of adhering to and promoting climate change goals, particularly as this phenomenon is increasingly being recognised internationally as a growing threat to rock art (e.g. Huntley *et al.* 2021; Scott and Sloggett 2023).

5. Conclusion

Rock art constitutes a valuable component of the African continent's history and heritage as recognised by among other things the inscription of 13 sites on the WHL. Further, there is scope for more sites to be designated. It has not been determined how many African rock art sites are on the WHS Tentative List but ascertaining this represents an area of future research along with ascertaining why they are still languishing there.

The inscription of heritage sites on the WHL is intended inter alia to enhance their safeguarding and preserve their integrity. This aspiration seems to only partially characterise African rock art WHSs. There are instances where there appears to be improved safeguarding although, as shown, much still needs to be done in this regard, particularly ensuring greater community support in all facets of the management process as well as obtaining specialist input to contribute to their protection. Of concern, however, are the occurrences where increased knowledge of WHS rock art via, for example, their increased international status, has resulted in visitation without adequate protection making them targets for vandalism and looting. The challenge that lies ahead for all concerned about the safeguarding of these non-renewable resources is to create the conditions that enhances their protection so that they endure far into the future. More attention needs to be paid about how best to achieve this.

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Marking the 70th anniversary of the Libyan-Italian archaeological Mission in the Tadrart Acacus and Messak, this volume offers a multidisciplinary reflection on Africa's deep past and its enduring legacies in the Anthropocene. By tracing the echoes of human-environment interactions across time, it highlights how archaeological research continues to reshape our understanding of adaptation, resilience, and transformation in African societies. Drawing on interdisciplinary approaches — including palaeoecology, bioarchaeology, rock art analysis, the archaeology of food production, and their various connections and networks — this book challenges outdated, Eurocentric narratives by foregrounding African agency and complexity. Key themes include – among others – the Holocene environmental changes that influenced settlement patterns, the significance of rock art in interpreting past belief systems, and the impact of colonial trade and imperial expansion on indigenous communities. *Echoes of Africa's Past* serves as a resource for archaeologists, historians, anthropologists, and heritage scholars, offering fresh perspectives on Africa's dynamic past and its relevance to debates on sustainability and cultural heritage in the Anthropocene.

«Archaeological knowledge is incremental and hard won. It is assembled through time-intensive study of fragmentary evidence and its corpus represents intergenerational effort. Though sometimes based on the study of stones, our interpretations are not written in them. Our working hypotheses typically run ahead of the evidence needed to assess them. Expanded investigations, new methods and changing premises compel revision and sometimes outright rejection of earlier ideas. Typological aids deemed useful by earlier generations may outlive their usefulness, at the same time as the evidence they organize remains pertinent and available for rethinking. The cumulative character of archaeological knowledge enables scalar perspectives across space and through time, casting what we know of one location in relief through comparison to others. These revisions, rethinkings and scalar reflections encourage us to appreciate the complexity and diversity of past contexts, as amply illustrated in contributions to this volume. In short, resuscitating echoes of Anthropocene Africa is painstaking work. In this way and others, archaeology is — and should be — slow science».

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