

Twyfelfontein

/Ui-//aes

World Heritage Site Nomination Dossier

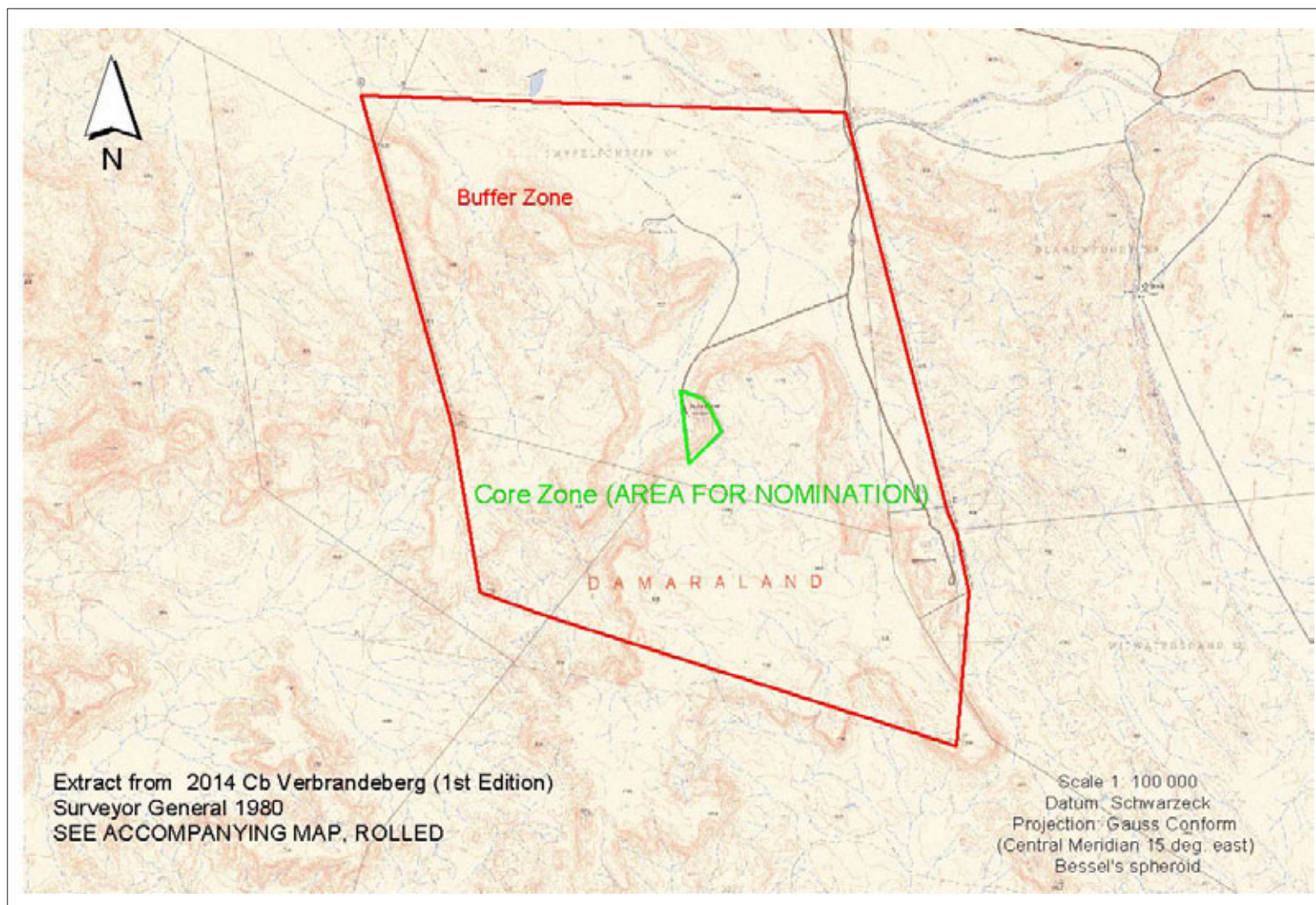


NAMIBIA

2006

EXECUTIVE SUMMARY

State Party	Namibia
State, Province or Region	Kunene
Name of Property	Twyfelfontein, or /Ui-//aes
Geographical coordinates	<p>Central co-ordinates: S20° 35' 44.1" E14°22' 21.3"</p> <p>North corner (Beacon A) S20° 35' 26" E14° 22' 20" NE corner (Beacon B) S20° 35' 31" E14° 22' 34" ENE corner (Beacon C) S20° 35' 35"E14° 22' 38" SE corner (Beacon D) S20° 35' 51" E14° 22' 46" South corner (Beacon E) S20° 36' 10" E14°22' 25"</p>
Textual description of the Property boundaries	<p>The northern boundary of the property runs from Beacon A, marked by a stone cairn adjacent to road D3214, to Beacon B, at the top of a high sandstone cliff overlooking the site from the east. The eastern and south-eastern boundaries proceed from Beacon B to Beacon E, all on top of the sandstone cliff and marked by stone cairns. The western boundary runs from Beacon E to Beacon A.</p> <p>See map of nominated property showing boundary of core area proposed for inscription, and map of proposed buffer zone.</p>
Justification Statement of Outstanding Universal Value	<ul style="list-style-type: none"> • Twyfelfontein has the largest single concentration of prehistoric rock engravings in southern Africa • With over 2000 engravings documented, the site is an order of magnitude larger than any other rock-engraving site in Namibia • The engravings are exceptionally well preserved and show a very wide repertoire of subject matter relating to hunter-gatherer ritual practices • The site represents the final florescence of ritual art under the combined impact of environmental stress and the rapid expansion of nomadic pastoralism • Twyfelfontein engravings show deliberate positioning on the landscape and exemplify the integration of ritual and nature
Criteria under which property is nominated	<p>II.D.77 (iii) Twyfelfontein bears “a unique or at least exceptional testimony to a cultural tradition ... which has disappeared”</p> <p>(v) Twyfelfontein is “an outstanding example of ...human interaction with the environment ... when it has become vulnerable under the impact of irreversible change”</p>
Name and contact information of official local institution/agency	<p>Organization: National Heritage Council of Namibia Address: Private Bag 12043, Ausspannplatz, Windhoek, Namibia Telephone: 061+ 244375; Fax: 061+246872 Email: aribeb.nmc@iway.na Web address: www.natmus.cul.na</p>



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CHAPTER 1

Identification of the property



1. IDENTIFICATION OF THE PROPERTY

a. Country

Namibia

b. Region

Kunene

c. Name of property

Twyfelfontein (*Afrikaans*: “Doubtful fountain”) or /Ui-//aes (*Khoekhoegowab*: “Place among rocks”)

d. Geographical coordinates to the nearest second

North corner (Beacon A) S20° 35' 26" E14° 22' 20"

NE corner (Beacon B) S20° 35' 31" E14° 22' 34"

ENE corner (Beacon C) S20° 35' 35" E14° 22' 38"

SE corner (Beacon D) S20° 35' 51" E14° 22' 46"

South corner (Beacon E) S20° 36' 10" E14° 22' 25"

Central co-ordinate: S20° 35' 44.1" E14° 22' 21.3"

e. Maps and plans, showing the boundaries of the nominated property and buffer zone

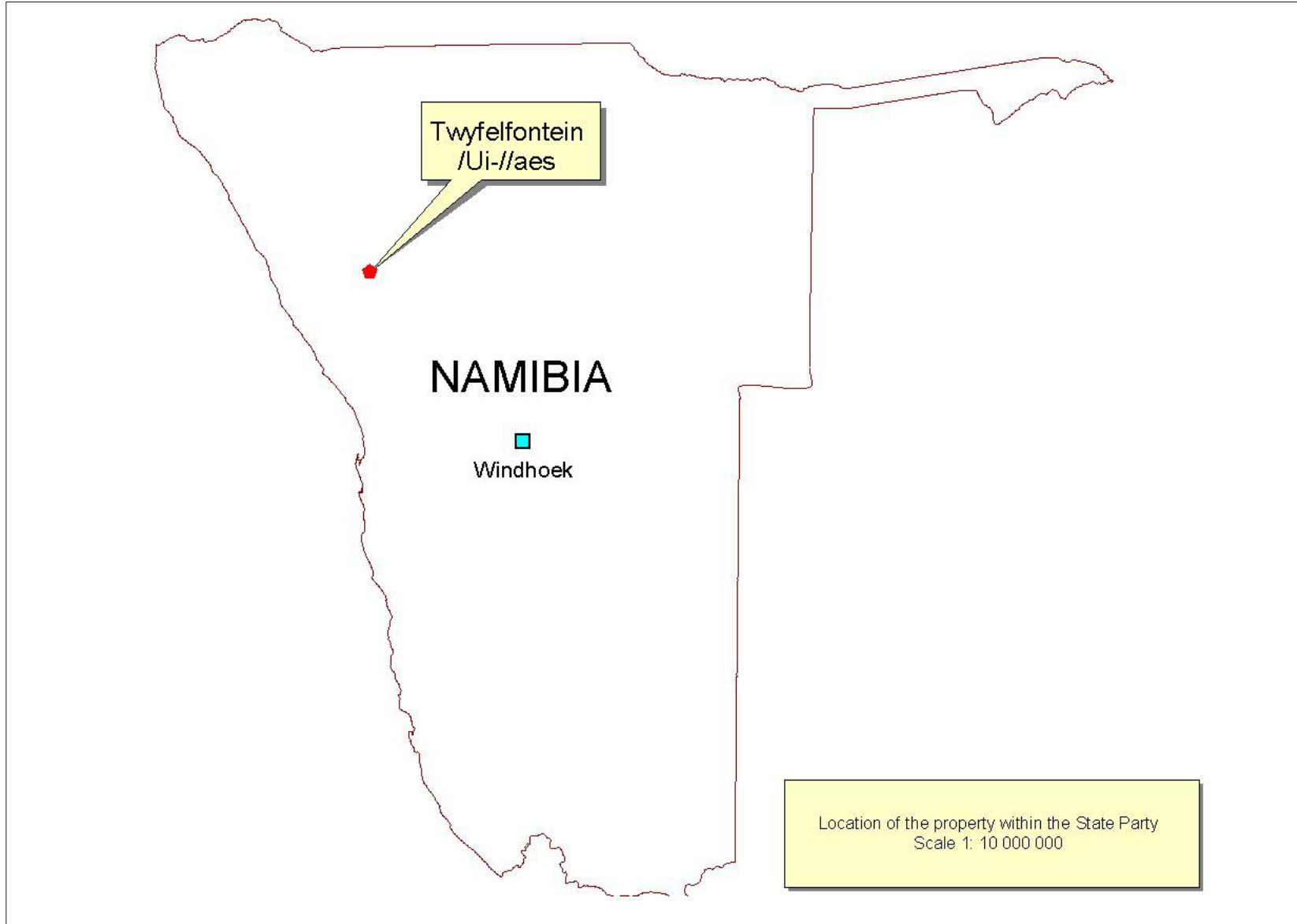
All maps except the topographic map required under subsection (i), and the extract from it, under (iii), appear within this chapter. All maps are also submitted in digital form on the CD bound into the envelope at the back of this dossier.

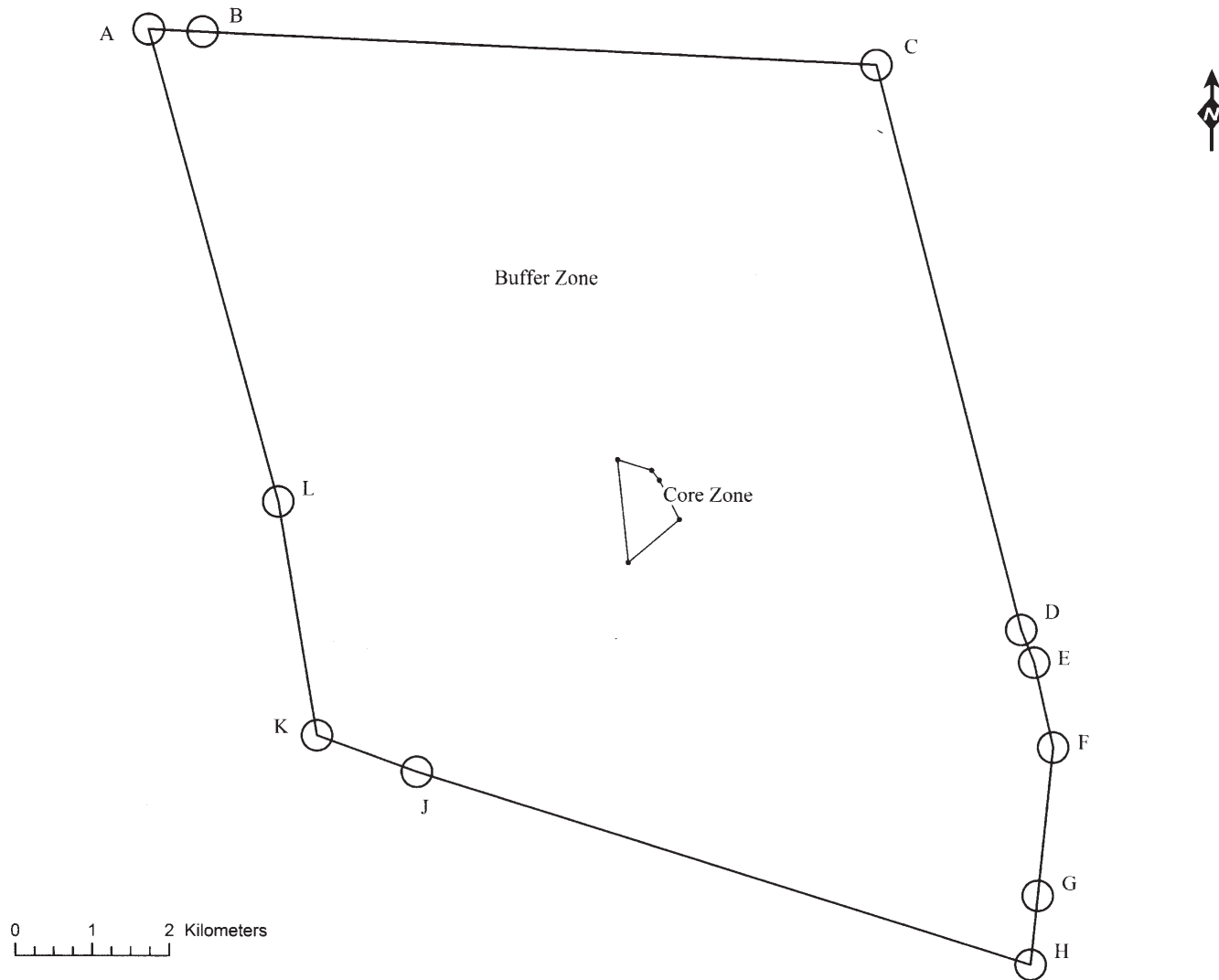
(i) An original copy of a topographic map showing the property nominated:
2014 Cb Verbrandeberg (1st Edition), Surveyor General 1980, scale: 1: 50 000 is annexed and submitted in the accompanying map roll.

(ii) Location Map showing the location of the property within the State Party:
The Location map shows the location of Twyfelfontein within Namibia, scale 1: 10 000 000 (see p. 9)

(iii) Plans and specially prepared maps of the property showing individual features are listed below:

- Extract from the official Surveyor-General topographic map *2014 Cb Verbrandeberg* (1980) of the Twyfelfontein area, on the scale of 1: 100 000, showing area for nomination and buffer zone (see p. 3)
- Namibia Surveyor-General property diagram of Twyfelfontein Reserve (873) buffer zone, showing exact positions of corner beacons
- Namibia Surveyor-General property diagram of Twyfelfontein Prehistoric Reserve (722) core area, showing exact positions of corner beacons
- Twyfelfontein visitor routes and site infrastructure, scale 1: 2 500 (fold-out map)
- Twyfelfontein rock art distribution and access, scale 1: 2 500 (fold-out map)





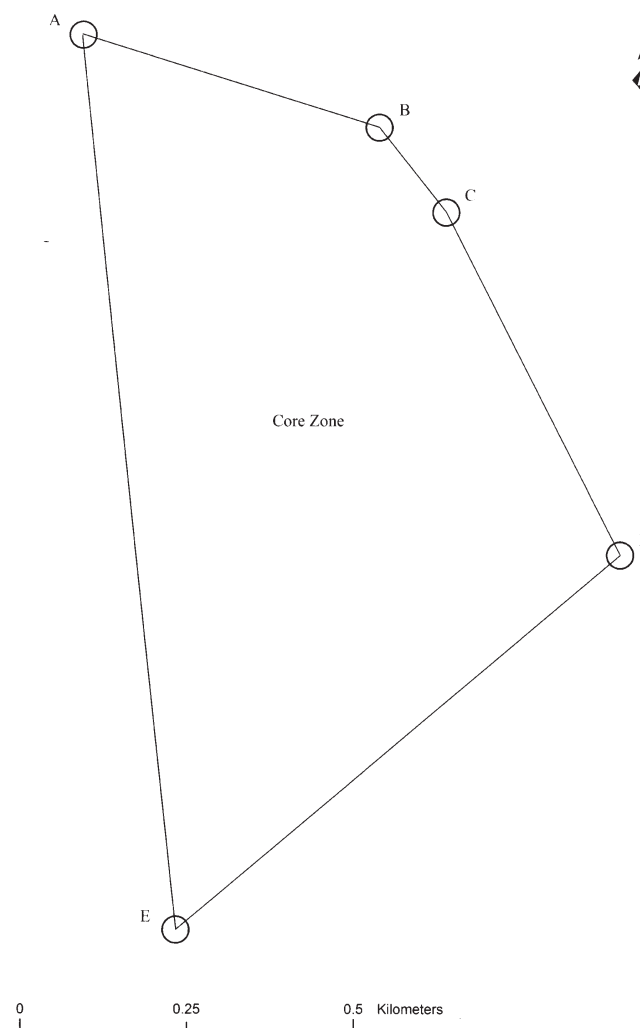
Nambia Surveyor General property diagram Twyfelfontein Reserve (873), sketch A89/87 (12 April 1989), Deeds Office, Windhoek, showing exact positions of buffer zone corner beacons

f. Area of nominated property (ha.) and proposed buffer zone (ha.)

Area of nominated property: 57.4269 ha

Buffer zone: 9 194.4828 ha

TOTAL: 9 251.9097 ha



Namibia Surveyor General property diagram of Twyfelfontein Prehistoric Reserve (722) core zone, sketch A856/56 (May 1954), Deeds Office, Windhoek, showing exact positions of corner beacons

CHAPTER 2 Description



2. DESCRIPTION

a. Description of property

(i) Site name

The name Twyfelfontein was registered in 1951 (National Archives LAN 1588), the site having been known previously as /Ui//aes which refers to a place “among packed stones” (see Scherz 1975: 172 which gives the outmoded orthography). The origins of the name *Twyfelfontein*, Afrikaans for “doubtful fountain”, lie in the following anecdote related by Michiel Levin (*in litt.*):

“My [father, David Levin] sank some wells in an effort to find water...This digging was endless ... Day after day. Month after month... Occasionally neighbours visited [us]. When they arrived my mother would tell them my father is at the fountain. ...Andries Blaauw of Blaauwpoort happened to visit us more often than the other neighbours in those early days. Every time he greeted my father – who was more than likely on his knees somewhere – digging. He would ... ask: *How is it David?* My father would answer, invariably: *Good...but I doubt if the fountain will make October* (when the first rains could be expected). Every time [it was] the same answer. Andries Blaauw, as was common practice in those days, then started to refer to my father in ordinary conversation as *David Twyfelfontein*. That’s it.”



Ella and David Levin, circa 1947

(ii) Location

Twyfelfontein is located in the Khorixas Constituency of the Kunene Region of northwestern Namibia, approximately 90km west of Khorixas, the nearest centre, and 480km northwest of the capital, Windhoek. The core area nominated for inscription under the World Heritage Convention is the Twyfelfontein Prehistoric Reserve (722), measuring 57.4269ha. The buffer zone is a rationalized combination of surrounding properties, known as the Twyfelfontein Reserve (873), measuring 9194.4828ha, and including within its boundaries the proclaimed Verbrandeberg geological monument and a number of important archaeological sites. There is public access to the core area via a gravelled district road, D3214, which ends at the site. Existing infrastructure in the core area is limited to basic site facilities, and there are no people resident on the property.

(iii) Setting

The southern part of the Kunene Region, in the vicinity of Twyfelfontein, is a dry, thinly populated area, mainly given over to communal livestock farming. All land in this part of Namibia is owned by the State, with the exception of certain designated freehold properties. Livestock carrying capacity is estimated at 10-20kg/ha, and a large proportion of the area is considered entirely unsuitable for farming. Population densities are consequently very low, ranging between 0.01 and 1.0/km², and comprising mainly rural Damara, or *Khoekhoegowab* speakers. The area has a poorly developed infrastructure, but in recent years there has been a steady growth of tourism, both formal and community-based, as an additional form of land use and livelihood that supplements farming. Twyfelfontein is the most important single locality for both forms of tourism in northwestern Namibia. Both the core area and buffer zone of the proposed World Heritage site fall within the boundaries of the Twyfelfontein-Uibasen Conservancy. However, the core area, being a proclaimed monument, does not fall under the jurisdiction of the conservancy.

Twyfelfontein lies within the Huab basin, in a minor tributary to the Aba Huab River, part of an important ephemeral stream draining westwards to the Atlantic Ocean. The terrain consists of deeply dissected sedimentary and volcanic deposits, dramatically exposed to view by the thin soil and vegetation

cover. The core area of the site encloses the main concentration of rock engravings and associated archaeological remains, on a west-facing slope below high sandstone cliffs, while the buffer zone encloses a larger area comprising both sides of the valley and a significant portion of the surrounding hills.



Twyfelfontein valley viewed from the north, showing dense annual grass cover after above average rainfall in the summer of 2005

(iv) Geology

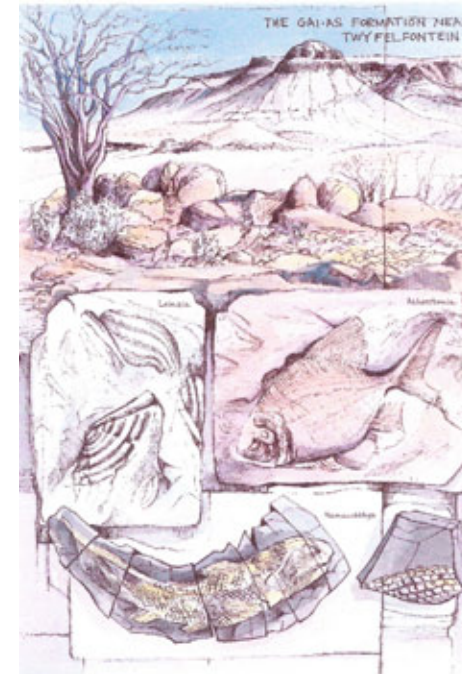
The visual character of the Twyfelfontein valley, and to an extent its attraction for visitors, is largely determined by the local geology. The following remarks are based largely on the specialist contribution of G. Schneider (see technical appendix on CD). There are three main litho-stratigraphic components to the geology: the Etjo Formation sandstones; the Gai-As Formation shales underlying the sandstones, and the Kuiseb Formation schists underlying both of these units (Geological Survey 2001: Sheet 2014 Doros). The schists are Neoproterozoic in age (1 000 to 460 million years) and belong to the Damara Orogen, formed during a tectonic cycle that laid down the basic geological structures underlying much of northwestern and central Namibia. These structures were reduced by erosion and eventually formed large sedimentary basins in which were deposited the rocks of the later Carboniferous to Jurassic Karoo sequence, now exposed in the high cliffs surrounding the Twyfelfontein valley (Schneider 2004: 118).

The Karoo sequence began with an extensive glaciation event, which ended about 280 million years ago, leaving tillite and related meltwater deposits of the Dwyka Formation in the basins of the Damara Orogen. These extensive lake catchments received a succession of shale, mudstone, limestone and coal bearing deposits comprising the Gai-As Formation. Lake Gai-As was approximately 1.5 million km² in extent, covering part of present-day Brazil.

Palaeoenvironmental evidence from the Gai-As Formation sediments indicates a warm to temperate, sub-humid climate, although the extent of the lake body was such that it experienced powerful storms, as is indicated by disturbance and re-deposition of some sedimentary structures. Fossils are abundant, although there have been no significant finds in the core area or buffer zone.

Fossil material includes stromatolites formed by periodic salinization of the lake, as well as bivalves reflecting the existence of episodic freshwater conditions. Two palaeoniscoid fish have been recognized in the deposits, including a predatory species of the *Atherstonia*.

Few remains of tetrapod fauna have been recovered from the Gai-As Formation, one example being a member of the amphibious *Stereospondyli* group of predators.



Gai-As Formation fossils, from Schneider & Marais (2004)

The shores of the lake were well covered with typical Permian flora, including various ferns, cycads and conifers; petrified wood is fairly common in the Gai-As Formation. These moist conditions came to an end about 200 million years ago, with the onset of an extremely arid climate, which prevailed during the Triassic and Jurassic. The Etjo Sandstone Formation, largely composed of fossil sand dunes, dominates the Twyfelfontein landscape and overlies the middle Permian rocks throughout the Huab Basin. It was during this period of increasing aridity that dinosaurs first appeared, becoming more diverse and well adapted over time. But as the climate became drier the reptiles would have concentrated near to the rapidly shrinking bodies of open water. Among the trace fossils most frequently found in the Etjo sandstone are the tracks of dinosaurs, presumably left in wet sediment near standing water and then covered by windblown sand.



Artist's reconstruction of Massospondylus habitat, Etjo Formation after Schneider & Marais (2004)

These conditions were interrupted and dramatically changed by a period of intense volcanic activity beginning about 180 million years ago. In some places lava issued through volcanic pipes, or cracks at the surface, and layers of volcanic debris partly covered the desert landscape. It was at this time that the African and South American continents began to drift apart.

The geology of the Twyfelfontein area directly determines the type of rock available for engravings, as well as their durability under harsh weathering conditions, and the stability of the terrain on which the engraved rocks are situated. Aeolian beds of the Etjo sandstone provide the majority of the engraved surfaces. Surfaces that are parallel to the bedding plane of the rock predominate, although these are often prone to rapid weathering. Engravings also occur on fracture planes running semi-perpendicular to the bedding plane, and these surfaces are generally resistant to weathering.

A minority of engravings occur on rocks of the fluvial Etjo sandstone beds (Krone Member). These rocks are often extremely hard and the engravings tend to be rather shallow. The most important geological influence on the site is, however, the aquifer that feeds the Twyfelfontein spring. The spring emerges on the contact between the permeable Etjo sandstones and the relatively impermeable Gai-As shales.

Analytical results from a sample of water from the spring at Twyfelfontein are listed below. The results indicate a general classification (B) as water good for human consumption. No data are available on the yield of water from the spring, but it appears to be very low. The water emerges as a weak seepage, under gravity. Despite this, there are no records of the spring having ceased to flow at any time in the last 50 years.



Twyfelfontein water quality test results:

Parameter	mg/l	Rating
pH: 7.7		A
Turbidity: 1.6		B
Total Dissolved Solids (calc.)	1273	
Total Alkalinity (CaCO ₃)	236	
Total Hardness (CaCO ₃)	284	A
Chloride	350	B
Fluoride	0.7	A
Sulphate	116	A
Nitrate	10	A
Nitrite	0.08	
Sodium	315	B
Potassium	11	A
Magnesium	49	A
Calcium	33	A
Manganese	0.01	A
Iron	0.51	B

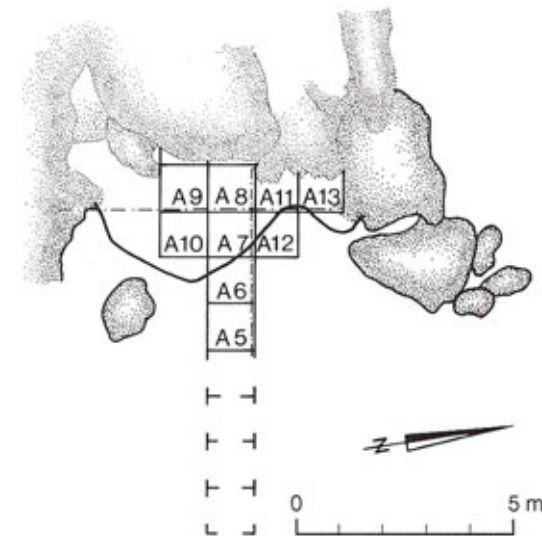
The geological importance of northwestern Namibia is reflected in the number of geological sites in this area which are National Monuments. These include the Verbrandeberg and Petrified Forest sites, as well as the Brandberg, a Cretaceous ring complex that is also a major concentration of rock painting sites.

(v) Archaeology

Core area: Erich Wendt investigated the archaeology of the core area at Twyfelfontein at two sites in 1968 (Wendt 1972; Richter 1991). The first of these sites, Affenfelsen (lit.: ape rock) is named for a line of painted human figures, on all fours, and mistakenly interpreted as apes. This pose is in fact one of the classical attitudes of ritual trance, and signifies the adoption of animal potency.

The Affenfelsen shelter measures only 6m by 3m and faces east, into an open area among the large rocks that litter the hillside. Over the 9m² excavated by Wendt, the deposit hardly exceeded 0.25m in depth, with the deepest point being 0.45m below surface. The deposit was roughly homogenous grey brown sand without clear stratigraphy. Out of this small excavation Wendt recovered over 19 000 stone artefacts, mainly in hydrothermal vein quartz. A relatively high proportion of the artefacts (5.3%) were formal tools, and of these 90% were microlithic types, including segments, points and scrapers. The occupants of the site were evidently diligent producers of ostrich eggshell beads, as indicated by the large quantity of eggshell in various stages of preparation (Richter 1991: 93-100). Only one radiocarbon date was obtained from the site, at 0.2m below surface: 3 450 ± 40 years BP (KN-I 468) (Freundlich *et al.* 1980).

(Opposite): *Affenfelsen shelter, with floorplan reproduced from Richter (1991: 95) showing excavations by W.E. Wendt.*



The second site excavated by Wendt in the core area at Twyfelfontein was Zwei Schneider, another small rock shelter about 150m north of the previous site. Zwei Schneider (lit.: two tailors) is just as small as Affenfelsen and is named for two painted human figures shown sitting “tailor fashion”. As with the previous site, the deposit of grey brown sandy earth was only 0.4m in its maximum depth. The site yielded a total of 4 625 stone artefacts with a typological range similar to that of Affenfelsen. The site yielded only one radiocarbon date, from a hearth in sealed context: $5\ 850 \pm 70$ BP (Pta-2654) (Freundlich *et al.* 1980). Both excavations were of limited scale and yielded no evidence in the way of faunal or plant remains that might reflect on the details of subsistence. There are unfortunately no other sites in the core area of Twyfelfontein with any potential for larger scale excavation.

A striking archaeological feature associated with the engravings at Twyfelfontein are the semi-circular stone windbreaks often surrounded by dense scatters of mainly hydrothermal vein-quartz flake debris. The windbreaks appear to be typical surface features, perhaps representing temporary hunting encampments. The remains have, however, never been investigated in detail. They would certainly appear to be of approximately the same age range as the Affenfelsen and Zwei Schneider deposits, on the grounds that they lack the pottery which is a ubiquitous feature of more recent sites. The apparent association between these remains and the rock art is in-

triguing; if they are approximately the same age there might be a more complex explanation than that of temporary hunting shelters. The windbreak features might have been enclosures for purposes of ritual seclusion, such as in women’s initiation rites, for example. It is also possible, by extension of the female association, that the quartz flakes littering the ground are not simply tool-making debris, but symbolic fat or milk, powerful female substances.



Buffer zone: Wendt made one further excavation at Twyfelfontein, at the rock shelter known as Hasenbild, in the buffer zone. The shelter measures 10m by 3m and faces to the southeast over the course of a dry streambed. This site in fact contains the largest painted frieze in the Twyfelfontein area but it is extremely weathered and much of its complex detail has been lost to spalling of the rock surface. A figure with what appear to be the ears of a hare, after which the site is named, is now barely visible.



Hasenbild

The excavation extended over 8m², to a maximum depth of 0.6m, yielding a broadly similar microlithic assemblage as the previous two sites. Two radiocarbon dates from the site proved comparatively recent, however: 370 ± 50 years BP (KN-I 469) (Freundlich *et al.* 1980), and 180 ± 60 years BP (Pta-2014) (Vogel & Visser 1981).

The surface of the deposit yielded a broken blue glass trade bead, suggesting an age of no more than 300 years (Jill Kinahan 2000), and a possible link with more recent settlement re-

mains in the Twyfelfontein valley. In his description of the valley, Scherz (1975) states that the Damara community who lived at Twyfelfontein when the Levins arrived in 1946 had their huts on the west side of the streambed that bisects the valley floor. There is indeed a string of stone cairns and other features close to the streambed, and several of these could be the remains of huts.

There is also a grave, some 250m south west of the Levin homestead ruin. The grave is a roughly rectilinear arrangement of river cobbles, about 2m in length and aligned east-west. According to Botha (2001) the Damara people of north-western Namibia had been subject to missionary attentions from the nineteenth century and it is quite likely, therefore, that the grave dates from before the arrival of the Levins.



Remains of farm worker's dwelling, circa 1950

Certainly, none of the Levins died at Twyfelfontein (M. Levin, pers. comm.).

The Levin homestead and its associated features are of some historical archaeological interest, firstly because it is one of the very few surviving examples of a settler homestead from the period and secondly, it has a well documented history. The ruins of the three-roomed house have been preserved but there are only traces of the other features, such as what may have been the farm-workers' huts, and the sheep pens. The brick casing of the well excavated by Levin is largely intact, as are the two concrete reservoirs and drinking trough.

There are other features of significance to the settler farming episode, including timber anchor posts for Levin's camp fences and the remains of a primitive gangway, or crush, that was probably used to immobilize the sheep during inoculation.

(vi) Rock art

Core area: Detailed field records were made of rock art in the core area of the site during February 2005 as part of the dossier preparation exercise. These observations are summarized here and a detailed description of methods presented in 7c. Form and date of most recent records (p. 88).

Altogether 235 painted and engraved surfaces were documented in the course of the survey, with a total of 2 075 identifiable images. Within the core area at Twyfelfontein the

rock art, primarily engravings, and associated archaeological remains, occur in several loose clusters among the boulders on the lower slopes of the scarp. There are ten such clusters, of varying density and with varying amounts of rock art, so that this division is a descriptive convenience rather than an immediately apparent spatial structure. The general description of these clusters that follows after a brief account of the techniques and subject matter of the rock art, should be considered as an overview, or summary of the detailed inventory contained in the Property Management Plan submitted with the dossier.

The engravings at Twyfelfontein were produced by two different techniques: pecking, either with a crudely pointed stone, or with a hammer and punch combination, and by grinding, or polishing, possibly with the aid of an abrasive. The pecked engravings vary from very simple designs in which the weathered cortex of the rock is broken by many small blows to create lines and in-filled shapes, to complex works. The simpler examples are often the geometric designs thought to represent phosphenes or entoptic phenomena. Some of these are very lightly engraved and appear comparatively fresh, while others are much deeper and appear very old, with deeply weathered edges and a completely restored surface patina. Indeed, the geometric, or entoptic designs are associated with nearly every variety of subject matter at the site, and exhibiting every stage of weathering, they seem to have been an

important element of the rock art repertoire throughout the history of the site.

There is great variety in the more complex examples of pecked engraving. The most developed applications of this technique are found in the large animal depictions, where a simple type of shading was used. This entailed deep and very precise etching of the outline, with a gradual reduction in the depth of the



engraving in the body of the animal. Commonly the cortex was left intact in the middle of the body, or slightly reduced by polishing. The well-known “Lion Man” engraving is a good example of this technique. The site also has a number of large

giraffe executed in this technique, which is so refined that it might even be the work of a single artist. The pecked technique is also used in a form of false relief engraving. This involves complete removal of the cortex in the central part of the subject and a delicate rounding of the body towards the outline. Again, these engravings might be the work of a single artist. The use of refined pecking techniques only accounts for a small proportion of the Twyfelfontein engravings, most being far less refined in their execution.



A rare example of super-positioning: an antelope over a bird

Many of the panels show a variety of techniques and levels of refinement in one mass of engravings. These panels were clearly cumulative compositions with some elements apparently added in juxtaposition to others already present. Unlike the practice of superpositioning which is so common in

the painted rock art, the engravings generally appear as separate but adjacent or conjoined elements. There are a few very refined examples of superpositioning, however, as well as experimental perspective work such as is found in the painted rock art of this area.

Polished engravings at Twyfelfontein include the very numerous cupule depressions, which seem to have involved rotating a smooth pebble against the inner surface of the depression. Some naturalistic engravings, including the famous “Dancing Kudu”, were made by polishing the area within a sharply defined shape. These are uncommon, and might represent another example of a single artist’s work. Of particular interest are small areas of rock near to engravings, where the surface cortex has been worn away apparently without the intention of creating an image. Some of these patches may have been caused by rubbing, or braying small animal hides on the rock. However, one flat rock is highly polished over an area of about 4m², partially obscuring a number of geometric engravings. It is possible that the rock surface was used in some activity linked to the engravings, such as a ritual dance.

One very clear feature of the rock art at Twyfelfontein is its integration with the terrain. There is a repeated association of engravings such as human footprints and animal spoor with tunnels, deep fissures and inaccessible surfaces. This positioning is clearly deliberate, as is that of engravings in cramped



A footprint, situated at least 5 metres above ground level in a narrow defile between boulders

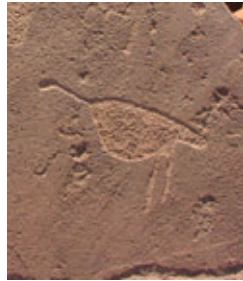
places where the art would have been difficult to view. More subtle but nonetheless common is the association of geometrics with the broken edges of large rock faces (see p. 50). At first glance it appears that the engraving itself has been accidentally broken, but none of these examples have the matching piece of rock and it is clear that the edge is integral to the engraving. In other words, the engraving was deliberately positioned at the sharp edge of the rock face. The fact that nearly all such engravings are entoptics, which are associated with the onset of trance, or the *edge* of consciousness, is probably significant.

The survey of rock art at Twyfelfontein that was conducted for the preparation of this dossier recorded a total of 2 075 engravings, in 38 descriptive categories. This total is somewhat less than the 2 404 engravings recorded by Scherz (1975), the discrepancy being due to his inclusion of all engraving sites in the Twyfelfontein valley (i.e. the core area *and* buffer zone). Other discrepancies between the two surveys are mainly to do with the range of descriptive categories, which are in certain instances rather subjective. For example, Scherz records a number of animal species that were not recognized by the present survey, such as leopard, hyena, warthog and aardvark. On the other hand, Scherz did not recognize the presence of impala, nor that of cattle, in his survey. Easily recognized species, such as lion and rhino, have the same or very similar values in both surveys. Among the subjects iden-

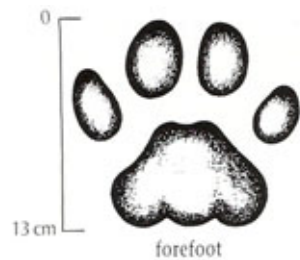
tifiable to species level (comprising about one quarter of the engravings), the most numerically important constituents of the Twyfelfontein imagery are giraffe, at 40% the most important of all, followed by rhino at 19%, zebra at 12%, oryx at 8%, ostrich at 6%, and cattle at 5%. Human figures comprise under 0.5% of the identifiable subjects. The scarcity of human figures is a well-known characteristic of the Namibian engravings, and contrasts with the preponderance of human figures in Namibian rock paintings, where they usually comprise about 80% of identifiable subject matter (Kinahan 2001). A larger estimate of the number of engravings at Twyfelfontein has been suggested by Coulson and Campbell (2001), who consider that the site contains approximately 5 000 figures. However, this figure is not supported by any systematic documentation of the site and cannot be taken as authoritative.

The numerical importance of various subjects in the rock art of Twyfelfontein is an immediate indication that the rock art is a cultural selection of significant species, and not merely a reflection of their natural abundance in the area. Indeed, numerical importance in itself may be misleading, as animals such as giraffe might be more numerous because they were a more common element of ritual art as opposed to being more powerful as, for example, the lion might have been. Another caution against simplistic identification of species is raised by the common occurrence of details that refer to the ritual transformation of humans *into* animals. Among the birds depicted

at Twyfelfontein there are no passerine (hopping/perching) species; all the birds are non-passerine, or striding species, such as the ostrich. In the engravings, the birds are often shown walking in line, as they naturally do, but in a depiction that resembles the ritual dance. Birds are also shown with extended wings, in the classical “arms back” posture of the ritual dance. One of the ostrich in the painted rock art at Twyfelfontein has on its legs the same decoration as human dancers in the same frieze. It appears, therefore, that the birds at Twyfelfontein are actually people.



More subtle examples of species conflation include giraffe with five protrusions on the top of the head, instead of the usual four: two ears and two horns. These giraffe are sometimes juxtaposed with human footprints with five toes, perhaps indicating a transformation from human to giraffe. The most celebrated example among the engravings at Twyfelfontein is the “Lion Man”, a lion with five rather than four toes on each paw. The lion is clearly a man.



Shaded antelope



Impala in false relief



Horizontal rock surface polished, possibly by dancing



Giraffe are among the most important metaphors of trance experience at Twyfelfontein. The giraffe on the left is shown with five (rather than four) protuberances from the head, indicating the human foot, while that on the right is juxtaposed with two footprints

The ten clusters of rock art panels indicated on the accompanying map are briefly described below. Detailed information on the sites is presented in the Property Management Plan. A second accompanying map indicates which of the sites is accessible to visitors and which have been placed off route. These maps should be examined together with the map of the Twyfelfontein core area infrastructure.

1. A loose cluster of 14 engraved panels covering an area of approximately 300m², and mainly associated with a prominent isolated sandstone boulder. The boulder and the immediately surrounding rocks form the site of the Twyfelfontein Visitor Centre.

The engravings in this cluster are almost exclusively geometric, or entoptic images. They are well preserved but in several cases the engravings are deeply weathered. The boulders are surrounded by a light scatter of stone artefact debris. Special protection measures apply to these panels as they form part of the visitor orientation experience (see Property Management Plan, and Twyfelfontein Visitor Centre Management Plan).

2. An extended cluster of 30 engraved panels covering an area of approximately 15 000m², close to the Levin homestead ruin and the former site reception point. Most of the engravings are on boulders less than 3m in height, being loose debris from the cliffs above. A number of the engravings are

on deeply weathered blocks of aeolian Etjo sandstone and some of these have been vandalized in the past. Most of the engravings are on more resistant Krone Member conglomerate rocks and are undamaged. This cluster forms part of the self-guided route for visitors walking between the Visitor Centre, the Levin homestead ruin and the Twyfelfontein spring. The route conducts the visitor to more than ten engraved panels, leaving the majority off route.

3. A cluster of nine engraved panels covering an area of approximately 1 200m², in the near vicinity of the Twyfelfontein spring. The area around the spring has been extensively disturbed in the past, by well-digging and construction work. A number of the engraved panels have been vandalized. None of the panels in this cluster are indicated to visitors.

4. A cluster of nine engraved panels covering an area of approximately 1 000m², centring on the well-known “Dancing Kudu” panel. In this cluster the “Dancing Kudu” is the only panel open to visitor access and is provided with a viewing platform and rest shelter. The “Dancing Kudu” panel is one of the major attractions at Twyfelfontein and is the main example of polished technique engraving that is open to visitor access. Also associated with this cluster are a number of the enigmatic windbreak features with open scatters of stone artefact debris.

5. A dense cluster of seven engraved panels associated with

two painted sites, one being the Zwei Schneider shelter. The cluster covers an area of approximately 3 000m². Because the Zwei Schneider shelter is the only painted site open to visitors at Twyfelfontein, a guard-rail has been installed at the site and coarse gravel has been spread within the shelter as a dust control measure.

6. A small cluster of three engraved panels covering an area of approximately 2 000m², centring on a natural rock tunnel that also serves as a rest shelter. Adjacent to the tunnel is a fine example of a pecked and shaded engraving of a giraffe, and some outline pecked engravings of cattle.

7. This is a major concentration of 53 engraved panels in the near vicinity of the Affenfelsen rock painting shelter, covering an area of approximately 3 000m². This cluster is entirely closed to visitor access following major soil erosion and conservation work. It is envisaged that an extension of the “Dancing Kudu” route will be established in the future when site management permits. Such access would be by way of a loop from the tunnel shelter in cluster 6. Onward access to clusters 8 and 9 is not possible due to the high erosion risk on the slopes below the engraved panels. Cluster 7 contains some very fine examples of pecked and shaded engraving in a wide variety of subject matter. However, good examples of the same technique and subjects may be seen elsewhere on the site.

8. A dense cluster of twenty engraved panels covering an area of approximately 1 200m². The centre of this cluster is on the visitor route to the “Lion Man” panel and contains a wide range of engravings mainly in the pecked and shaded technique. A guard-rail has been installed around the main viewing area in this cluster to discourage visitors from clambering onto the engraved panels.

9. This cluster of 57 engraved panels covers an area of approximately 15 000m², with the main attraction being the “Lion Man” panels and the surrounding engravings. Due to the high pressure of visitors to this particular panel a viewing platform has been erected, as well as a rest shelter. A large number of other engravings are accessible to the visitor in the immediate vicinity of the “Lion Man” panel, although the majority are presently off route due to extensive erosion control and conservation work. As in the case of cluster 7, it is envisaged that a loop will be created to provide visitor access to more engravings at some time in the future. A second viewing platform has been erected in cluster 9 to provide access to another panel.

10. This cluster of four engraved panels and two painted friezes is entirely off route to visitors due to the extreme delicacy of the paintings. One of the painted friezes is a very rare example of shamanistic art and is mainly of specialist interest.

Buffer zone: A basic archaeological survey of the buffer zone was carried out in 2004 as part of a data-gathering exercise to compile an area management GIS. All the rock art sites in the buffer zone had been previously described by Scherz (1975) and for the purposes of the GIS survey these were revisited.

One of the most significant rock engraving sites at Twyfelfontein, the so-called Seremonienplatz, is located in the buffer zone. This site has been incorporated as the entrance to the Twyfelfontein Country Lodge. The site has been severely degraded by this, as is explained elsewhere in the dossier (see chapter 4, section a. Present state of conservation, p. 58). Seremonienplatz is a group of large boulders forming a passage into an open space with a small vestibule-like cave on the one side. The significance of the site, over and above its great wealth of engravings, is the series of men's penises engraved on the side of the passage and again over the entrance of the cave. The association of erect penises as an obvious symbol of maleness and manhood, with the passage suggests that the site was literally a passage to manhood. The vestibule cave with its engraved penises represents a further elaboration of this theme.

Several other significant rock art sites occur in the vicinity of the Seremonienplatz. One of these, the so-called Siebenplatten, lies several hundred metres away to the south-east and consists of a large concentration of engravings among

sandstone boulders on the bank of the same stream where the Hasenbild rock shelter is located. In the opposite direction, to the north-west are two more significant sites, the Klein Seremonienplatz, a large isolated boulder with paintings and engravings, and the so-called Adam and Eve which features a pair of painted bichrome human figures on the underside of a severely weathered sandstone boulder. All of these sites are highly significant components of the archaeology and rock art of the Twyfelfontein buffer zone. Details of the site locations, as well as contents and condition assessments are provided in the Property Management Plan.



Klein Seremonienplatz has paintings and engravings

(vii) Climate

By Namibian standards, Twyfelfontein is a moderately hot location, with an average annual temperature of 20 - 22°C (avg. maximum 34 - 36°C and avg. minimum 8 - 10°C). However, summer maximum temperatures in excess of 45°C have been recorded, mainly due to the effects of re-radiation from the surface of the rocky terrain. Solar radiation levels are moderately high, ranging from 5.8 – 6.0 kWh/m²/day. Average rainfall is approximately 100mm/annum, with a coefficient of variation exceeding 80%.

The average water deficit is in the region of 2 100 – 2 300 mm/annum, meaning that in strict terms of precipitation, Twyfelfontein receives about one twentieth of the amount of water that it loses to evaporation (Mendelsohn *et al* 2002: 78 *ff*).

Direct rainfall is not the only source of moisture at Twyfelfontein, as the Huab Basin is subject to periodic flooding caused by high rainfall events above the Namibian escarpment. Although flooding occurs almost every year, the events are short-lived and generally destructive. Groundwater is generally scarce, and springs such as Twyfelfontein tend to be weak and fickle. Boreholes are needed to obtain water for farming purposes and the rest level of the water supply is frequently more than 100m below surface.

It is possible that the climatic aridity of the last 5 000 years

has been offset by the long-term availability of water from aquifer recharge on a far longer time-scale than that of annual flooding in the Huab basin. Moisture requirements of the Twyfelfontein environment may have been supplied by old reservoirs of subterranean water as well as infrequent rain. Since no sustained period of comparably moist conditions has occurred since the inter-glacial it is possible that water resources several millennia old are being slowly depleted through seaward flow and evaporation, and pumping from boreholes.

(viii) Flora

Flooding of the main watercourses helps to sustain fairly dense riparian vegetation, characterized in this area by large tree species such as the Ana *Faidherbia albida*, Leadwood *Combretum*



Milkbush (*Euphorbia mauretanica*)

imberbe, Camelthorn *Acacia erioloba* and Mopane *Colophospermum mopane*. Vegetation cover diminishes within only a few meters of the watercourses, and on the open sandy plains *Colophospermum mopane* is the dominant species, along with *Maerua schinzii* and *Boscia albitrunca* although the trees tend to be small and widely spaced. The sandy plains support dense stands of annual grasses after rain, and clumps of the

succulent Milkbush *Euphorbia damarana*. Vegetation along small stream courses is dominated by *Colophospermum mopane*, as well as drought tolerant species such as False ebony *Euclea pseudabenus*.

Rocky hillside environments such as that of the core area near Twyfelfontein spring support a specialized tree and shrub flora.



Boscia albitrunca

Foot slope vegetation includes Shepherd's tree *Boscia albitrunca* and Stinkbush *B. foetida*, as well as Camelthorn *Acacia erioloba*, Deurmekaarbos *Terminalia prunoides* and *Maerua schinzii*, as well as occasional specimens of *Welwitschia mirabilis*. The mid-slopes have Mustard tree *Salvadora persica*, Brandberg acacia *Acacia montis-usti* and *Sterculia africana*. The higher slopes and cliff tops have *Sterculia quinqueloba* and the unusual Radio tree *Acacia robynsiana* as a feature of the skyline. The perennial herb *Petalidium variable* occurs in profusion on the rocky slopes, possibly having become established during a succession of

higher than average rainfall events during the last decade (P. Craven, pers. comm.).

Although the Kunene Region contains a significant number of plants endemic to Namibia (Craven 1999), Twyfelfontein itself appears to support only one confirmed local endemic, *Hemizygia floccose* (P. Craven, pers. comm.) Numerous plants in this area have well documented applications in traditional medicine and cosmetics. A



Sterculia africana

A wide range of plants also formed part of the diet until recent times, although collection of plants for food and medicine no longer occurs at Twyfelfontein and traditional knowledge of the plant uses may well have died out. One of the most interesting practices was the collection of underground grass-seed caches from the nests of harvester ants (Sullivan 1999). The seed was used to make gruel and beer, and the first European settler farmers quickly learned from Damara people how to collect and prepare this resource in times of need (M. Levin, pers. comm.).



Brandberg acacia (Acacia montis-usti)

Human impacts on the vegetation of the Twyfelfontein area are difficult to assess. However, since it is clear that prolonged residence was not possible in pre-colonial times, there are unlikely to be any long-lasting anthropogenic features of the vegetation. Permanent settlement was only attempted in the 1940s, and was interrupted by long periods of drought. Matched photography of the farmhouse area in 1964 and then in 2005 shows no substantial difference, and most of the more established trees are still in place after 40 years (see accompanying photographs on p. 33). Fruit trees planted at the farmhouse during the 1950s have all died, and there appear to

be no exotic species within the core area of Twyfelfontein. It is worth noting, however, that when David Levin improved the spring sufficiently to water his 230 sheep and goats, four donkeys and two horses, the pasture near the site was almost immediately exhausted, and the livestock had to be moved down to the Aba Huab River (Michiel Levin *in litt.*).



Mustard tree (Salvadora persica) and Camelthorn (Acacia erioloba)
below the Twyfelfontein spring



Matched photography of the Twyfelfontein valley at Levin's farmhouse (LEFT) in 1964 (E.R. Scherz) and (RIGHT) in 2005, showing little change in vegetation over the intervening 41 years



(ix) Fauna

The fauna of Twyfelfontein is both abundant and diverse, but the presence of species and their population size are prone to severe fluctuation according to season and rainfall. The following remarks are based largely on the specialist contributions of P. Cunningham and T. Bird (see technical appendix on accompanying CD). The mammal fauna includes many small species of shrews, mice, gerbils and bats, which are not readily observed. Larger and more obvious mammal species include the Scrub Hare *Lepus saxatilis*, Cape Ground Squirrel *Xerus inauris*, Dassie Rat *Petromys typicus*, Chacma Baboon *Papio ursinus*, African Wild Cat *Felis lybica*, Black-backed Jackal *Canis mesomelas*, Springbok *Antidorcas marsupialis*, and Gemsbok *Oryx gazella*. Elephant *Loxodonta africana*, Lion *Panthera leo*, Spotted Hyena *Crocuta crocuta*, Leopard *Panthera pardus* and Black Rhinoceros *Diceros bicornis* are all regularly recorded in the area (Griffin 1998).

In the late 1940s elephant, rhinoceros and giraffe occurred at Twyfelfontein, as did lion, leopard and hyena (M. Levin *in litt.*). Contrary to popular opinion, the game was not greatly affected by the arrival of settler farmers such as Levin, for at the end of World War II nearly everything, including rifle

ammunition, was subject to strict rationing. Predators were kept from the livestock with fires and loud noise, and according to Levin, his father did not shoot any wildlife other than occasional antelope that were turned into *biltong* (salted, dried meat) in the winter months.



Namibian rock agama

More than 140 bird species occur in the Twyfelfontein area, and during times of higher than average rainfall, certain migratory species will extend their range to include this part of the country. In both mammal and avian populations, the high species diversity of Twyfelfontein is the result of both an ecotone effect associated with the Namibian escarpment, creating an overlap of environmental niches, and the presence of rather specialized conditions within the patchy environment of the Namib edge. The escarpment of Namibia is associated with a high degree of avian endemism and more than half of the fourteen birds endemic to Namibia are recorded as resident in the vicinity of Twyfelfontein (Brown *et al.* 1998). Among the more common birds of Twyfelfontein are the Grey Hornbill *Tockus nasutus*, Red-crested Korhaan *Eupodotis ruficrista*, Pearl-spotted Owl, *Glaucidium perlatum*, Rock Bunting *Emberiza tabapisi*, Black-chested Prinia *Prinia flavicans*, Plum-coloured

Starling *Cinnyricinclus leucogaster*, Black Eagle *Aquila verreauxi*, Booted Eagle *Hieraetus pennatus*, Rock pigeon *Columba guinea*, Namaqua sandgrouse *Pterocles namaqua*, Pririt Batis *Batis pririt*, Dusky Sunbird *Nectarinia fusca*, Familiar Chat *Cercomela familiaris*, Mountain Chat *Oenanthe monicola* and Bokmakierie *Telophorus zeylonus*. Most of these birds are easily observed within the core area of Twyfelfontein, several having become highly habituated to the presence of people.

Reptiles are well represented at Twyfelfontein, and among the snakes Anchieta's Dwarf Python *Python anchietae*, Angola File Snake *Mehelya vernayi*, Black-necked Spitting Cobra *Naja nigricollis nigricincta* and Horned Adder *Bitis caudalis* have been observed recently. The diversity of reptiles and the presence of several endemics is a reflection of the same escarpment ecotone effect noted for the mammal and avian fauna. A variety of skinks, lizards and geckoes have been recorded, including two large species, the Rock Monitor *Varanus albigularis* and Giant Plated Lizard *Gerrhosaurus validus*. The unusually vocal Common Barking Gecko *Ptenopus garrulous maculates* is a nocturnal feature of Twyfelfontein. Most of the reptile fauna are retiring species and the only species regularly encountered by the visitor are the Namibian Rock Agama *Agama planiceps* and the Striped Skink *Mabuya striata wahlbergi* (Griffin 2003).

Little in the way of detailed information is available on the invertebrate fauna of Twyfelfontein, although it is certain to include a rich diversity of species. Some indication of the

potential richness of the invertebrate fauna is provided by the diversity of scorpions at the site. A total of fourteen species has been identified, with the greatest number found on the predominant red sand substrate. Other scorpions appear to be associated with gravel substrates or rocky slopes, and trees.

Some selected elements of the mammalian, avian and reptile fauna are depicted in the rock art of Twyfelfontein and it is therefore a great asset to the core area and buffer zone of the site that a large proportion of the natural wildlife still exists in the area. It is however important to note that the natural fauna and flora are not maintained as a living backdrop to the rock art. The wildlife of this area is subject to dramatic changes in density and species composition, mainly as a result of variations in rainfall. The good rains during the years 2003 - 2005 have brought both elephant and giraffe back to the general area.

b. History & development

(i) Tenure

The history of land tenure and occupation at Twyfelfontein is an epitome of events and processes in the whole of north-western Namibia during the last one hundred years. The modern history of the site begins in 1946 with the arrival of David Levin from Bethanie (M. Levin *in litt.*). After an insecure beginning, Levin was granted a licence to pasture his livestock at Twyfelfontein in 1952 (National Archives LAN 1588), and for the next twelve years attempted to make a living by

farming in this most unpredictable environment. Levin coined the name Twyfelfontein (doubtful spring), that has become firmly established as an alternative to the *Khoekhoegonab* name /Ui-//aes.

When Levin and his small family arrived at Twyfelfontein by donkey cart, they followed an elephant track, for there was no road. They found a clan of Damara people living close to the spring in a settlement of thirty-two huts, according to information from Levin quoted by Ernst Scherz (1975). Michiel Levin (*in litt.*), who was a six-year old boy at the time relates that there was only one man, named Eliphaz, his wife, three children and an elderly woman. However, soon thereafter the



The Levin twins, Davina and Dirk, born 1952 - products of Twyfelfontein! (M. Levin)

Damara people and their flocks of goats and long-tailed sheep were removed by police truck to Sesfontein, following the government decision to secure the area for settler farmers. Michiel Levin (*in litt.*) recalls that before they left Twyfelfontein the Damara family showed his hard-pressed parents how to dig and winnow wild grass seed to make porridge. As it turned out, Levin and his family spent more time on trek in search of better pasture than they did at Twyfelfontein itself; the arid environment drew no distinction between indigenous nomads and settler farmers.



Michiel Levin, circa 1954

Archival records of David Levin's tenure at Twyfelfontein provide detailed accounts of his efforts to establish a viable sheep farm, producing karakul lamb pelts for the export market. Levin was described by one land inspector as a "*flukse*", or hardworking, farmer: he excavated the spring to a depth of more than 5m, cleaned it and lined the shaft with bricks; he erected fences, reservoirs, drinking troughs, a wool shed and various other improvements, all with very modest resources

(LAN 1588). Water was always in short supply, and according to Susanna Levin (now Kriel), her parents recycled laundry water to mix the mud they needed to make bricks for their house. The Twyfelfontein spring was weak, but it never failed, and the government drilled boreholes for Levin as alternative waterpoints. Pasture was equally scarce, and after repeated requests from Levin whose farming activities were limited more by a shortage of grazing than a shortage of water, an extension to the farm of 3799 ha was grudgingly granted by the authorities in July 1961 (LAN 1807).

Then, in 1964, Levin was informed that Twyfelfontein was to form part of a communal area for Damara farmers, as proposed by the Odendaal Commission (Report of the Commission of Enquiry into South West African Affairs, 1962-1963; RP No. 12/1964). He left the farm one year later and for the next five years it was leased out as additional pasture to a succession of other farmers whose land had not been expropriated. In 1971 the government decided that communal lands such as Twyfelfontein were for the exclusive use of Damara farmers, but despite good rain the farm lay abandoned for almost 20 years, gradually falling into disrepair. There were few incentives to farm and, as the Odendaal Commission itself had noted (Botha 2001), the Damara had become largely urbanized long before the arrival of settler farmers such as Levin. Only a small number of people remained on the land and even more left during the disastrous drought in the early 1980s.

When Levin moved to Twyfelfontein the area was designated Crown Land, and after a brief period as freehold land it reverted to State Land, first under the Damara ethnic authority, and then under the Ministry of Lands, Resettlement and Rehabilitation, following Namibian independence in 1990. These changes in the status of the land did not affect the core area, however, as this was proclaimed a monument in 1952, under Article 7 of Ordinance 13 of 1948. In this way, the core area known as the Twyfelfontein Prehistoric Reserve (722) remained State Land irrespective of the political reapportionment of land during the last 50 years.

Although Twyfelfontein and the adjoining farms became



*Monument proclamation notice on Twyfelfontein gate, 1952
(National Archives of Namibia photograph no. 1256)*

communal land following the implementation of the Odendaal Commission Report, the land remained subdivided into farms for administrative purposes. There were numerous changes in the boundaries of these subdivisions after they were first surveyed in the 1950s (LAN 1588, 1807) and in the case of Twyfelfontein Reserve (873) a final rationalization of boundaries was only decided in 1989 (Title Deed T935/1989, Reference No. 19/5/1/7). This area constitutes the proposed buffer zone and is also designated State Land.

A development that has bearing on the definition of boundaries is the establishment of community-based conservancies, under the Nature Conservation Amendment Act No. 151 of 1996, Section 24A (2)(i). Conservancy status confers limited rights of usufruct, mainly with respect to wildlife resources and tourism, but it does not alter the status of proclaimed areas such as monuments. Twyfelfontein Reserve, as defined above, falls entirely within the Twyfelfontein-Uibasen Conservancy which covers an area of 286km² and includes two neighbouring farms (NACSO 2004).

In this connection it is important to note that in its registration documents the area defined as the Twyfelfontein-Uibasen Conservancy specifically excludes the Twyfelfontein Prehistoric Reserve (722), the core area nominated for World Heritage List inscription. It also excludes the Verbrandeberg (725) geological monument, and two pieces of land subject to Per-

mission To Occupy (PTO) permit numbers 11/3/1/211 and X/2/E, both in the name of Elias Xoagub of Aba-Huab Camp. Currently, in terms of the Communal Land Reform Act, all PTOs are being converted to 99 year leases.

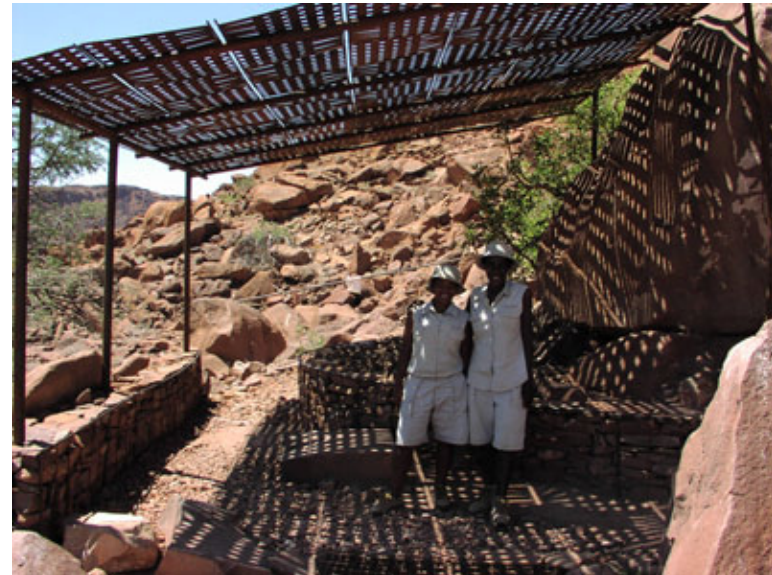
Beyond the bare facts cited above there are no documentary records concerning the Damara clan that lived at Twyfelfontein in 1946. The size of the settlement is no indication of permanency; indeed, it is unlikely that residence could be sustained at any one site in this area for more than one year. Archaeological evidence from the area to the west and south west of Twyfelfontein shows that nomadic pastoralists did congregate at reliable springs after rains because this enabled them to exploit the ephemeral pastures within range of the water (Kinahan 2001). Because the actual distribution of rainfall tended to be very patchy these encampments might not be used during successive years. These are exactly the circumstances experienced by Levin, who found that although he had water for his stock, in most years there was nothing for the animals to eat.

The viability of nomadic pastoralism in arid north western Namibia was entirely destroyed during the last one hundred years, first by the *Rinderpest* epidemic of 1897 (Schneider 1994: 149), and then by a series of government policies which encouraged people to leave the land and take up employment in the growing commercial economy. This means that cultural

and historical links with specific places such as Twyfelfontein tend to be tenuous and limited in their time-depth. Interviews with three elderly men Tomas Taniseb (68), Absolom Gaeb (89) and Herman Goraseb (68) yielded little information about the site and its history (interview notes from P. Ipinge). The interviews were conducted in April 2004 with residents of the farms Blaauwpoort and Morewag, in an effort to collect oral history on the earlier occupation of the area and the significance of the rock art sites.

It emerges from these interviews that over the last three generations people knew of the rock art but stayed away from the sites because they were thought to be powerful places, “like graves”. There was reference to ritual activities being carried out in the mountains but the rock art itself is not mentioned. Although the consensus was that the rock art was the work of the “ancestors”, the fact that there were no specific references to the art or its meaning suggested either that it was the domain of specialists, or that there was no longer a living link with the rock art during the lives of the three informants.

Today, there is a community of about 50 people living immediately outside the eastern boundary of the buffer zone, at what used to be a cattle post of the farm Blaauwpoort (520). Aged between 17 and 35, a number of these people work as guides at the core area site of Twyfelfontein. Others work at



tourist establishments in the near vicinity. Detailed interviews with members of this community revealed that many are from Khorixas, about 100km away, and some are from farms in the Twyfelfontein area (interview notes from J. Molin). To the guides, the site is primarily of economic importance, although the cultural significance of the rock art and their own identity as Damara engenders a strong pride in their work.

As with the older residents mentioned above, the guides have virtually no knowledge of the rock art that does not come from either tourist guidebooks or formal archaeological literature. In other words, there appears to be no living link

with the rock art or with the site as a ritual centre. Some ambivalence exists concerning the cultural affinity of the rock art: while many accept the conventional view that the art is of San (Bushman) origin, others dispute this, usually on the grounds that San never lived at Twyfelfontein. Others believe that since the ancient San and Damara were alike in being hunter-gatherers, both would have made rock art and since Twyfelfontein is their (i.e. Damara) place, it would follow that the rock art was produced by their own ancestors. This contributes to a powerful, yet vague, feeling of ownership.

(ii) History of research

The site of Twyfelfontein first gained the attention of archaeologists when the land surveyor Volkmann wrote to advise Reinhard Maack about a remarkable group of rock engravings at a spring called *Uais* (*/Ui-//aes*). Maack mentioned the site in his 1921 report to the Administrator of South West Africa (Maack 1921), but never visited the engravings in person. The site remained obscure for another thirty years, until the arrival of Ernst Rudolf Scherz in 1950. By that time David Levin had settled at the spring, having trekked there in 1946. Levin showed the engravings to Scherz and although the latter realized their great value, it was not until 1963 that he was able to survey the site and document the images. His wife, Annelise Scherz, a professional photographer, assisted him in this task which took several months. Their associate, Albert Viereck, surveyed the surrounding area for further sites.



Ernst Rudolf Scherz, from an oil painting by Fritz Krampe

Due to the strenuous efforts of Scherz, supported by the Abbé Henri Breuil (National Archives of Namibia HMK 15/1/3), Twyfelfontein was proclaimed a monument in 1952, under Article 7 of Ordinance 13 of 1948. Scherz documented over 2 500 individual engravings and paintings at Twyfelfontein. Most of the rock art was recorded by monochrome photography, with some use of colour. The engravings were described according to criteria set out by Scherz in his lavish publication of the site (Scherz 1975). In addition to the publication, copies of the Scherz photographic record are housed at the National Museum of Namibia and the University of Cologne

in Germany. Additional publications emanating from the survey of Twyfelfontein were the guidebooks of Krynauw (1968) and Viereck (1959), both long out of print. A short paper by Viereck and Rudner (1957) also contributed to the recognition of the site as an important rock art locality.

An archaeological investigation of Twyfelfontein was carried out by Erich Wendt in 1968, with the intention of establishing the age and cultural affinities of the rock art. Two excavations were carried out in the core area of the site, at the sites Affenfelsen and Zwei Schneider, respectively yielding dates of 3 450 and 5 850 years before present. One excavation was carried out in the buffer zone, at the site Hasenbild, yielding dates of 370 and 180 years before present (Richter 1991: 98, 105, 117; Wendt 1972). All three excavations yielded typical Later Stone Age assemblages with some associated pottery in the younger layers, thus confirming an archaeological affinity with late Holocene hunter-gatherers. The archaeological deposits were in all three instances rather shallow and the area offered no immediate prospects for more detailed investigation. More details of this work appear in the previous section 2 (a) (v) on archaeology.

Further investigations of the rock art were carried out in the 1980s, including a detailed archaeological assessment of the site by Kinahan and Kinahan (1988, unpublished report to the National Museum). Selective documentation by Dowson

(1992) was carried out for a regional review of southern African rock engravings; copies of these items are housed at the Rock Art Research Institute at the University of the Witwatersrand in Johannesburg.

During the last few years field research on the social history of the Twyfelfontein area was carried out by Pombili Ipinge, Bennet Kangumu, John Molin and Goodman Gwasira.

(iii) Site developments

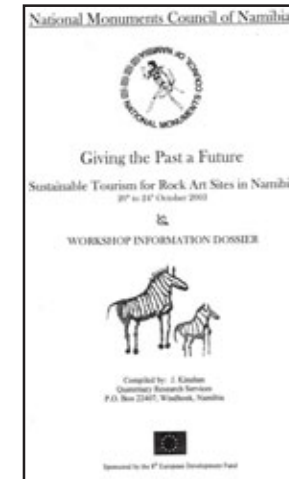
For more than 30 years following its proclamation as a monument in 1952, there were no facilities for visitors to Twyfelfontein. According to the records of the National Archives, David Levin served as honorary curator while he was farming at Twyfelfontein (National Archives HMK 15/1/3 Twyfelfontein). However, the farm was expropriated in 1965 as part of the land set aside by the Odendaal Commission for resettlement of Damara people. After a succession of temporary leaseholders had left the farm (LAN 1807) it fell into disuse. Following a spate of public complaints (RNG 16/S/T-F/1; NMC 14/4/2/5) renewed attempts were made to appoint a caretaker (RNG 16/S/T-F/1 and A664 2/59 Box 7 Correspondence: Damaraland). In 1988, the National Monuments Council and the National Museum of Namibia carried out extensive repairs to the network of paths in the core area of the site and erected a simple information shelter (NMC 14/2/2/5). The paths were constructed with concrete and

local stone, and at certain points ceramic numbers were attached to the rocks with epoxy cement. Direct supervision of the site was lacking until 1995 when the Ministry of Environment and Tourism granted local concession rights to Elias Xoagub, owner of the Aba-Huab Camp (RNG 16/S/T-F/1).

Periodic public complaints continued, mainly with regard to the lack of visitor facilities, the lack of trained guides and the absence of site management. In January 2003, the National Monuments Council in partnership with the Namibia Tourism Development Programme (NTDP) in the Ministry of Environment and Tourism, commissioned a detailed development proposal for the site (Kinahan 2003). The proposal recommended that the site should be taken under direct control of the National Monuments Council, which it was the following year with the appointment of cashiers and the establishment of regular visits to the site by Council head office personnel. The proposal also set out detailed requirements for site management and conservation measures, including a complete revision of the path network, erection of viewing platforms at certain sites, dust control measures, training of guides, and provision of toilet facilities. Finally, the proposal recommended that a purpose designed visitor centre be established at the northern perimeter of the site.

In October 2003 the NMC and NTDP hosted a consultative workshop entitled “*Giving the Past a Future: Sustainable Tourism*

for Rock Art Sites in Namibia”. The workshop was attended by local and foreign experts, as well as representatives of the local community and the tourism sector. The proposal recommendations were discussed in detail and approved in the form of a works agreement. Work commenced on the site in October 2004 and was completed in February 2005. In 2004, cashiers were officially appointed from the ranks of the informal guides and National Monument Council head office personnel began regular visits to the site. Construction of the Visitor Centre commenced in February 2005 and is due for completion in June 2005. Details of the site conservation measures are given below in subsection 4a (p.58).



CHAPTER 3

Justification for Inscription



3. JUSTIFICATION FOR INSCRIPTION

a. Criteria under which inscription is proposed

Twyfelfontein bears “a unique or at least exceptional testimony to a cultural tradition ... which has disappeared” (WHC Operational Guidelines II.D.77 iii).

The site of Twyfelfontein represents the largest concentration of rock engravings in southern Africa. With over 2 000 engravings documented, the site is more than double the size of any other rock-engraving site in Namibia. The engravings are exceptionally well preserved and show a very wide repertoire of subject matter relating to hunter-gatherer ritual practices. As such, the site is without parallel in the rock art of southern Africa and may be regarded as the single most important expression of the engraving tradition. The practice of hunter-gatherer rock art probably died out several centuries ago in Namibia, although related ritual practices still survive in some parts of the country.

Twyfelfontein is “an outstanding example of ... human interaction with the environment ... when it has become vulnerable under the impact of irreversible change” (WHC Operational Guidelines II.D.77 v).

The rock art of Twyfelfontein provides an excellent example of the intimate links between ritual practices and the economic base of hunter-gatherer society. The engravings contain a wide variety of culturally important animal metaphors

by which means shamans or specialist healers were able to draw upon the powers of the supernatural to mediate human relations with the desert environment. The ritual traditions represented in the rock art of Twyfelfontein saw their greatest florescence during the last 5 000 years, in the period since the mid-Holocene inter-glacial. This was a time of increasing aridity during which hunter-gatherer communities developed and perfected a wide range of economic survival strategies.

One of the most important components of the hunter-gatherer economy was a pattern of settlement based on dry season aggregation at reliable water sources such as Twyfelfontein. These sites became important ritual centres associated with rainmaking, initiation and various other ceremonies. There is reason to believe that the aridity of the last 5 000 years was ameliorated, in respect of hunter-gatherer survival, by the long-term availability of water from aquifer recharge at intervals over the last few millennia.

Moisture requirements of the Twyfelfontein environment may thus have been supplied by old reservoirs of subterranean water as well as infrequent rain. It is possible that the climatic aridity of the last 5 000 years has been offset by the long-term availability of water from aquifer recharge on a far longer time-scale than that of annual flooding in the Huab basin. In these circumstances, Twyfelfontein provides an eloquent statement of human strategy under increasingly inimical conditions.

b. Statement of Outstanding Universal Value

Twyfelfontein is a unique rock art site with an exceptional assemblage of images and associated archaeological remains, set in a landscape of surpassing beauty. The value and significance of the site is further improved by the exceptional preservation of the site and its environmental setting. The rock engravings of Twyfelfontein exemplify the great richness of an artistic tradition that has no surviving practitioners, and only the most tenuous links to living communities in this part of northwestern Namibia. The archaeological evidence suggests that the engravings date to within the last five millennia and that they represent an extraordinary florescence of hunter-gatherer ritual art which gradually died out in the last 1 000 years. This site bears a unique and exceptional testimony to a cultural tradition which has disappeared.

The site of Twyfelfontein has the largest single concentration of rock engravings in southern Africa; it is also the most widely known engraving site (Dowson 1992), receiving four times as many visitors as any other rock art

site in the region. Southern African rock art sites receive more visitors than other rock art sites in Africa, so the regional pre-eminence of Twyfelfontein can probably be extrapolated to the continent as a whole, making Twyfelfontein the most frequently visited rock art site in Africa.

In Namibia, more than 150 rock engraving sites have been reported (cf. Scherz 1975), although this is certainly but a fraction of the number that remains to be documented. With more

than 2000 engravings, Twyfelfontein is an order of magnitude larger than the next largest site in Namibia, and contains several times more images than most engraving sites in southern Africa.

Two of the most striking characteristics of Twyfelfontein are the diversity of subject matter in the engravings, and the obviously deliberate placement of the engravings in relation to features of the terrain, such as narrow fissures and tunnels, vantage points and open areas suitable for social gatherings. The diversity of the engravings embraces the full range of animal subjects found on

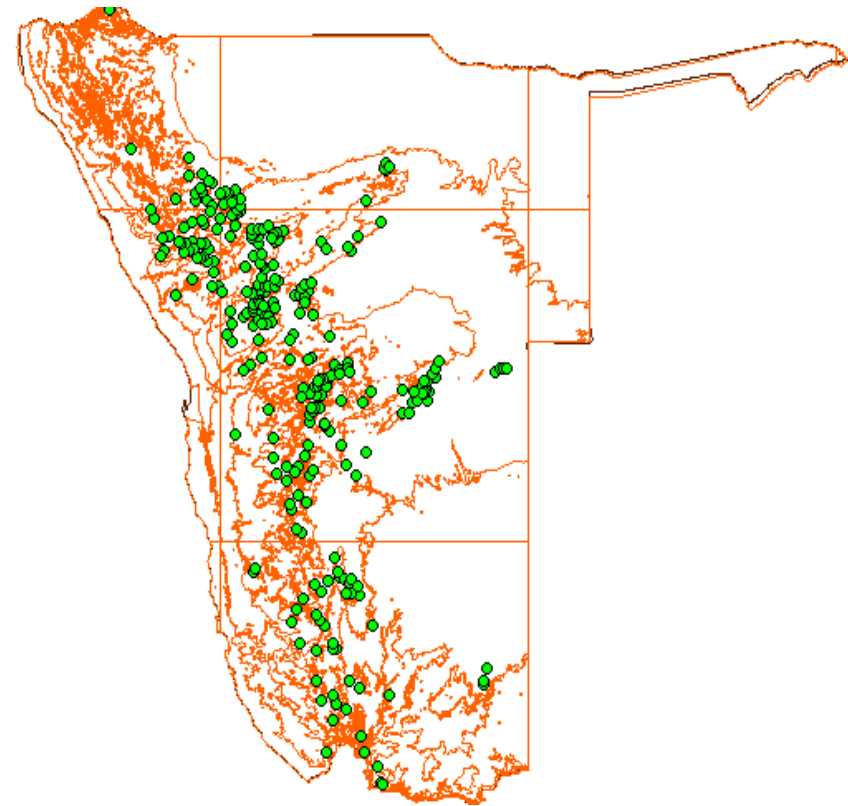


Panel showing the diversity of subjects in the rock art

Namibian sites and includes many of the finest specimens known so far, as well as examples of every technique of engraving and representation. These characteristics elevate the significance of the site well above the ordinary and provide a strong motivation for its protection.

For many visitors, the rich array of animals depicted at Twyfelfontein is made all the more compelling by the seeming paradox of its harsh environmental setting: a wide sandy valley with a sparse semi-desert vegetation and little sign of animal life, surrounded by barren red sandstone cliffs. The existence of a weak but persistent spring provides the reason for its importance to hunter-gatherer bands that roamed the fringes of the Namib Desert in the past. In fact, Twyfelfontein was but one of many remote seepages, ponds and waterholes on which these people depended, especially during the long dry season when much of the area was entirely without water and therefore outside the range of hunters on foot. The site presents an outstanding example of human interaction with the environment when it has become vulnerable under the impact of irreversible change.

Most rock art sites in Namibia are located along the country's broken longitudinal escarpment. Hunter-gatherers set out from these sites into the desert during the brief and unpredictable summer rains. A pattern of social aggregation and dispersal became established during the last 5 000 years, as a finely



Distribution of rock art sites along Namibia's escarpment.

tuned human response to increasing aridity (Kinahan 2005). Excavations at rock shelters in the Namib Desert show that sites with reliable water supplies became vital foci of hunter-gatherer settlement during this period. Cave sediment studies show that this development is associated with increasingly arid conditions from the mid-Holocene to the present day.

Today, the average annual precipitation on the edge of the Namib Desert at sites such as Twyfelfontein is about 100mm, with a coefficient of variation exceeding 80%. Rainfall is unpredictable not only in its quantity, however, but most critically in its distribution. These conditions required that hunter-gatherer bands pursued a highly mobile existence, and this is well reflected in the archaeological evidence for long-range movement and exchange, such as marine shell at interior sites, and other objects found well beyond their expected distribution. Against this background of mobility and chance, the more reliable water sources served as fixed points on the landscape and it is around these that much of the rock art is concentrated.

Archaeological evidence from detailed survey and excavation programmes in the Namib Desert shows that concentrations of rock art are associated with prolonged periods of social aggregation. Rock art reflects a heightened intensity of ritual activity in response to social stress arising from limited, and diminishing, food and water (Kinahan 2001). Indeed, a significant number of depictions are obviously related to rain-making and many others suggest similar, albeit less direct references (Kinahan 1999). A dry season aggregation site such as Twyfelfontein was not merely an ecological lifeline; it was a critical nexus of hunter-gatherer society, showing by its graphic repertoire the human response to nature and vicissitude.

The hunter-gatherer way of life that is intimately associated with the rock art and its ritual context, gave way to the rise of nomadic pastoralism during the last 1 000 years. The overlap between these two greatly contrasting economies is shown at Twyfelfontein by a small number of cattle depictions among the rock engravings. Further changes followed in more recent times, and nomadic pastoralism in turn collapsed under the impact of colonial rule, cattle disease, drought and the appropriation of land for settler farming. Although these events and processes disrupted traditional links with the site, it retains the alternative name of */Ui-//aes*, meaning “among the rocks”, from */ui* meaning rock and *//aes* something in the



Depictions of cattle show the overlap between hunter-gatherer and

centre (Aribeb, pers. com.). Recently, the site has begun to recover its social significance as Namibia's premier cultural tourism destination.

Twyfelfontein has considerable research potential, owing to its large size among rock engraving sites, and its central position within a much wider distribution of rock art and related archaeological sites. As suggested in the following section c., there are significant differences between the rock engravings of Twyfelfontein and its surrounding area that may provide a basis for important revision of current interpretative models applied to southern African rock art. It is a measure of its importance when a single site such as Twyfelfontein can serve as a basis for commentary on the regional rock art.

As is elaborated in the comparative analysis below, the site of Twyfelfontein is an exceptional representative of the southern African rock engraving genre, in its size, complexity, degree of preservation and its acknowledged importance in the field of rock art studies. Its importance extends beyond the region, to the rock art of Africa as a whole, and from this vantage point it may be favourably compared with major sites elsewhere in the world. On these grounds, Twyfelfontein is considered to be a rock art site of outstanding universal significance.

c. Comparative analysis

(i) *Regional and global context*

Several major rock art sites in southern Africa are listed or tentatively listed under the World Heritage Convention. These are Tsodilo in Botswana, Matobos in Zimbabwe and Drakensberg in South Africa. One other site, Brandberg, is tentatively listed for Namibia. All of these are rock-painting sites, with associated archaeology: none contain appreciable numbers of engravings, and Twyfelfontein would therefore be the first southern African rock-engraving site to be listed under the World Heritage Convention.

However, the significance of Twyfelfontein as a rock art site extends well beyond the immediate southern African region. Major concentrations of rock engravings occur in both West and North Africa (Coulson & Campbell 2001), but few of these can rival Twyfelfontein in size, state of preservation or accessibility. It is important also to note that the rock engravings of West and North Africa do not refer to the same ritual and artistic traditions as those of southern Africa. The southern African rock art, of which Twyfelfontein is a premier example, has benefited from long and sustained research, leading to advances in understanding which have greatly increased the significance of the art.

The sustained research effort focused on southern African rock art and the cognate fields of folklore, historical ethnography and archaeology has had a cumulative impact on rock art studies around the world. It is generally acknowledged that southern African rock art is the most comprehensively understood of the various rock art traditions known worldwide. Now, the advantage of this superior understanding has been used to suggest important new interpretations of the European Upper Palaeolithic rock art and its relation to the evolution of human cognitive capacity in post-glacial Europe. Southern African rock art has in this way contributed to a major advance in our knowledge of how the human intellect developed during the last 20 000 years. Large sites, among them Twyfelfontein, are the crucial repositories of evidence reflecting the process.

The global value of southern African rock art is increasingly appreciated. Within this context, the importance of Twyfelfontein is assured, not only because it is the most significant representative of the engraving genre; its size and complexity is such that the site contains some elements of the art that challenge generally agreed views on the production of the art, its social and vocational context, and the ideology of hunter-gatherer communities. As studies in this field advance, sites such as Twyfelfontein will need to be studied over and over again, underlining the critical need to protect the site. At the same time, as the wider importance of the rock

art is recognized, increasing numbers of people will be motivated to visit the site, as is reflected by statistics presented elsewhere in this nomination dossier

(ii) Special features

There are important general differences between rock painting and rock engraving traditions in southern Africa which merit special consideration of the engravings. Although both belong to the same Khoisan cultural complex (with the exception of Bantu rock art, a relatively minor component), the content, techniques and physical placement of rock engraving imagery differs from that of rock paintings. For example, while human figures are the predominant component of rock painting imagery throughout southern Africa, they are uncommon in the rock engravings, and entirely absent from some important sites.



Antelope spoor leading into a fissure in the rock

The techniques employed in rock painting and rock-engraving imagery present a more obvious point of distinction. Rock paintings are generally, but not always, finer in their execution, with highly developed techniques evident among shaded polychrome work and in complex superpositioning of images. The pigments themselves are sophisticated preparations, often with remarkable durability. While the techniques of engraving are more limited, their application at Twyfelfontein shows advanced mastery of the medium, with the use of polishing, false relief and experimental superpositioning.

To most observers, the third most striking difference between the paintings and engravings is that while the former are generally found in rock shelters, frequently with archaeological evidence of occupation, the latter occur in the open air, on hillsides and valley bottoms, most often without any accompanying evidence of occupation. The clearly domestic context of most rock paintings, and their well-known ritual associations, form the empirical basis of current con-



The famous "Dancing kudu" is a polished engraving full of movement

sensus on the interpretation of southern African rock art. The rock engravings are thus of special importance because they provide a number of distinctions which, in turn, may lead to new developments in rock art interpretation. In the specific context of Twyfelfontein, the rock engravings confirm many of the key ritual characteristics of southern African rock art: the site shows culturally mediated selection of subject matter, with emphasis on species of known ritual importance such as eland and giraffe; the images show certain points of detail that are diagnostic of ritual activity or supernatural transformation; and the sites are closely associated with late Holocene archaeological deposits that are attributable to hunter-gatherer groups who were probably the authors of the engravings. There are,

however, some features of the Twyfelfontein rock art that are of special significance for a comparative view of the site, and these need to be emphasized here. So-called abstract images,

comprising circles and other geometric patterns, are an important component of the Twyfelfontein rock-engraving repertoire. These patterns are associated with meandering lines, and large numbers of what are commonly known as cupules, or cup-marks. Many interpretations have been offered for these engravings, ranging from suggestions that they represent calendars, counting systems of various kinds, or waterholes. It has also been suggested that since the geometric items are so different from the animal images, often appearing rather crude in their execution, that they might not belong to the same artistic tradition.

Close examination of the abstract engravings shows that not only are they closely associated with the animal engravings, but that some are in fact derived from the animal images, as is the case of grid patterns that resemble the marking of giraffe. Moreover, there appears to be no basis for the view that the abstract items are younger and that

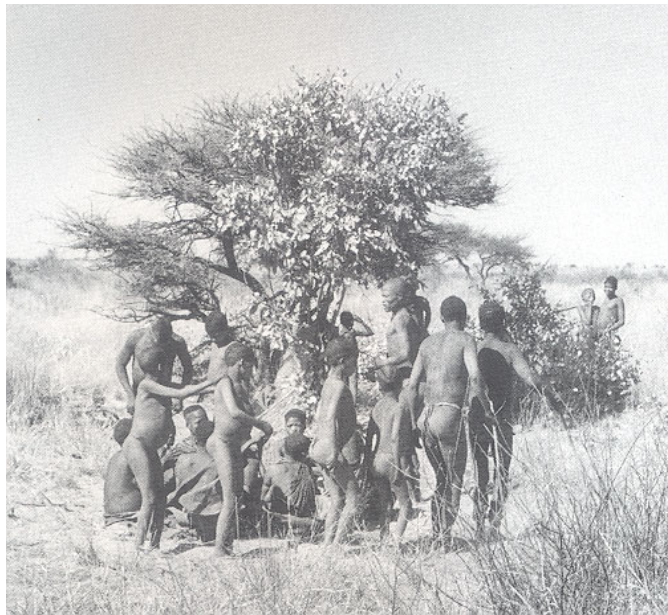


they might therefore belong to a group of immigrant pastoral people. When engravings are made, the natural patina of the rock is removed, exposing a fresh surface. With time and the process of weathering, a new patina is formed, and the degree of patination on the rock therefore provides a measure of relative age. Seen in this way, some of the geometrics are among the oldest engravings at Twyfelfontein, while some of the animal images are clearly much younger.

On this basis, it seems that the engravings at Twyfelfontein all belong to the same tradition. Since it is now generally agreed that the rock art of southern Africa is overwhelmingly concerned with ritual matters it is necessary to enquire as to the meaning of a class of images, the abstract forms mentioned above, that is more closely associated with the engravings than the paintings. Where similar geometrics have been identified in the rock paintings of southern Africa they

have been recognized as representations of phosphenes, which are entoptic phenomena associated with the onset of trance. This would confirm that abstract or geometric images resembling phosphenes refer to the same ritual concerns generally found in the southern African rock art.

Where an important point of difference may lie is in the interpretation of abstract engravings in relation to the actual practice of ritual. It is generally agreed on the basis of evidence



Trance dancers in the Kalahari photographed by Lorna Marshall in the 1950s

from rock paintings that the art was produced in the aftermath of ritual experience. This is held as an explanation for the fact that most of the art is found in the domestic setting of a rock shelter where all could see, but not necessarily understand its content. Part of this argument rests on the view that ritual was a communal undertaking, and that group participation was necessary to its success. What this does not satisfactorily explain is why the rock art at Twyfelfontein depicts imagery from the onset of trance, rather than its fully developed state. This, together with some other characteristics of the Twyfelfontein engravings suggests that the site may provide a different explanation of ritual practice.

In contrast to the rock art found elsewhere in southern Africa, that of Twyfelfontein and certain other Namibian sites, includes a significant number of hidden images. These occurrences contradict the general view that the art was openly displayed because it was part of a communal ritual practice. The Twyfelfontein examples, described in detail elsewhere in the dossier suggest a contemplative rather than performance-based approach to achieving altered consciousness for ritual activity. At Twyfelfontein some ritual specialists isolated themselves in rock niches and may have practised a form of sensory deprivation as a means to attaining the required state of trance.

This possibility suggests an alternative explanation for the occurrence of abstract or entoptic images related to the onset

of trance. The abstract engravings may have been part of the preparation carried out by the ritual specialist in isolation rather than in the context of a social gathering. The notion that ritual practitioners could achieve trance by themselves would explain the presence of the abstract images if they were used as an aid to altered consciousness.

Contemplating, or even executing such images may have been a powerful aid to achieving the first stage of trance. Indeed, the method of percussion used in most of the engravings would have been rhythmic and repetitive, as is the clapping of women at the ritual trance dance. This more satisfactorily explains images relating to the onset of trance than the commonly held view that the art depicted, in the sense of Wordsworth, “powerful emotion recollected in tranquillity” (Lewis-Williams 1995: 147). The evidence at Twyfelfontein allows for the possibility that rock art and ritual traditions in Namibia developed a degree of specialization beyond that which has been recognized elsewhere in the southern African rock art.

d. Integrity and Authenticity

(i) Motivation

The site of Twyfelfontein provides a uniquely comprehensive expression of the hunter-gatherer rock engraving tradition in Namibia and the southern African region. The site exemplifies the intimate connection between ideology and nature, and between artistic practice and its physical setting. The most

important components of the religious framework of the rock art tradition are represented at Twyfelfontein, thus clearly establishing its authenticity within the southern African genre.

The nomination of Twyfelfontein for inclusion in the World Heritage List is supported by a detailed documentation of the rock art at the site; including its contents, archaeological associations, physical setting and current state of preservation. This documentation is the result of field surveys carried out specifically for the nomination process. The site documentation is the most recent of several successive documentation efforts, all of which are described in a later section of this dossier.

During the preparation of the nomination dossier several attempts were made to investigate the possible existence of surviving links between the rock art and the modern inhabitants of the area surrounding the site. Studies elsewhere in southern Africa (e.g. Ndoro 2001) have shown such links to exist in certain specific localities. At a more general level, the widely accepted correspondence between southern African rock art and the cultural traditions of the San have encouraged the articulation of claims to cultural and intellectual ownership of the art (Geingos & Oreseb 2005).

Investigations in the Twyfelfontein area included selective interviews by National Heritage Council staff with elderly residents, as well as research by the National Museum of

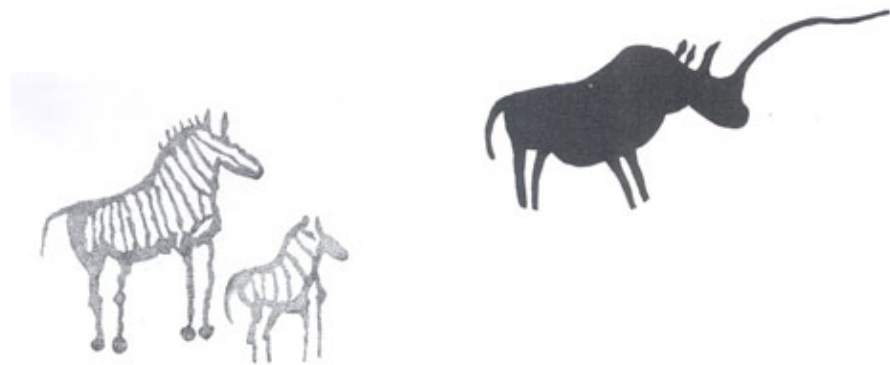
Namibia, and a protracted field study by a postgraduate student of Uppsala University in Sweden (see 2. DESCRIPTION b.(i) Tenure and accompanying CD: Technical Reports). None of the investigations succeeded in identifying surviving links with the rock art or the ritual practices concerned. It would appear that any such links have been disrupted by population movement and the decline of traditional religious practices, especially during the last one hundred years.

Due to the fact that no living cultural link is known to exist between the rock art at Twyfelfontein and traditional communities at the site and elsewhere in the area, the authenticity of the site and its contents must be judged on archaeological grounds. In this respect, the authenticity of the site is not in doubt; it is internationally acknowledged as one of the most outstanding examples of the southern African hunter-gatherer rock art tradition.

The repertoire of rock art at Twyfelfontein provides many clear examples of the cognitive and social attributes of the tradition. These are overwhelmingly related to supernatural experience, in either the process of achieving altered consciousness for ritual purposes, or in reflection of such experiences after they have occurred. A ubiquitous example is the many engravings of geometric forms that resemble phosphenes, entoptic phenomena associated with the onset of trance. There are also many examples of entoptics construed as common

subjects, mainly animals, drawn from the concrete world.

Trance-related imagery abounds in the rock art of Twyfelfontein. The selection of animal subjects relates to known cultural criteria of ritual significance, widely recognized in the rock art of the region. The animal images frequently show certain embellishments or other modifications, which directly refer to the trance experience. Cultural significance rather than natural abundance is therefore the explanation for the preponderance of giraffe, to name but one striking example from Twyfelfontein. Certain details of depiction such as raised tails, exaggerated horns, atrophied or buckled legs likewise refer to the human experience of trance rather than artistic whim.



Even though the rituals associated with the rock art are no longer performed in the area around Twyfelfontein, and local residents have no traditional knowledge of the content or purpose of the art, it nonetheless has a strong significance for the people of the area. Its significance is well understood and notions of respect for the art as a religious artefact are well grounded in the local community. There is however no reliable evidence that the site was used for ritual purposes during historical times, and there is no indication that elements were added to the corpus of rock art in living memory.

(ii) Conservation

As a final reflection of its authenticity, the site has not been subject to any attempt at reconstruction, and appears to be quite unaltered apart from the effects of erosion and a few minor acts of vandalism and inappropriate management attempts. The integrity of the site can therefore be regarded as intact apart from some



damage that is either remediable or of minor concern: some digging and opening up of the natural spring, carried out in the 1940s and 1950s; some poorly backfilled archaeological excavations in the 1960s (now stabilized); and some inappropriate signage applied to the rocks in the 1980s. Remains of a farmhouse and related structures built between the late

1940s and early 1960s are considered to be part of the historical record of the site, rather than an unwanted legacy. These remains have been stabilized to retard their natural deterioration. However, a number of poorly planned amenities, including picnic tables, an information shelter and pit latrines are to be demolished and the area surrounding the old farmhouse will be restored to a natural appearance.

Likewise, approximately 450m of dirt road leading to the house will be removed.

The integrity of the site was seriously threatened by uncontrolled tourist access until the late 1980s. In 1988, a shortened and rationalized path network was installed as a site conservation measure. In 2005, new paths were constructed using a minimally invasive approach following the Burra Charter (1999) principles, and dry compost toilets as well as resting shelters were installed. A new visitor centre has been constructed on the periphery of the core area of the site, also with a view to minimizing the impact of visitors.

Although these measures have greatly reduced the vulnerability of the rock art, some damage to the integrity of the site has not been repaired and may be considered irreversible. Such damage includes vandalism in the form of graffiti, and some fragmentation resulting from attempts by thieves to remove parts of engraved panels. One large engraved slab was removed to the National Museum for safekeeping in the 1980s; it is unknown whether any other pieces have been removed from the site.

CHAPTER 4 STATE OF CONSERVATION & FACTORS AFFECTING THE PROPERTY



4. STATE OF CONSERVATION & FACTORS AFFECTING THE PROPERTY

a. Present state of conservation

The incidence of graffiti and other vandalism in the core area of the site was documented in 1988 (Kinahan & Kinahan 1988). Damage of various kinds was noted at a small number of panels during the 1988 survey, and a few further examples were noted during the 2005 survey. Records of the vandalism are incorporated within the site data lodged with this dossier.

Considering the lack of effective supervision at the site and the extreme vulnerability of the rock art there is remarkably little damage due to direct and intentional vandalism. Of more concern is the evidence of increasing wear and tear at certain key sites where visitors tended to clamber over some of the minor engravings in order to reach suitable viewpoints for taking photographs. Equally serious is the development of deep erosion gullies in pathways that are perpendicular to the slope of ground. The first indications of severe soil erosion were noted at Twyfelfontein during the field survey of Kinahan and Kinahan in 1988. This neglect, together with the lack of formal reception facilities, toilets and other amenities contributed to the steady deterioration of the site during the last two decades.



Severely eroded pathway showing depth of gulleying prior to restoration work in 2005

In view of the fact that damage to the engravings is practically impossible to repair, and that the presence of graffiti seems to engender further vandalism, new access paths in the core area of the site were deliberately routed away from damaged art. One exception to this rule is a panel on the self-guided trail where the visitor is intentionally led to an example of severe vandalism, in order to illustrate the seriousness of the problem. The strategy behind the design



Dry compost toilet erected during site restoration work in 2005

of the new pathways, viewing platforms and other amenities at the site, is to show the visitor by positive example that the site is valued by its custodians, and that the area is under formal management.

The poor state of the site prior to the present interventions was attributable to two main causes: uncontrolled movement of visitors, and inappropriate management and conservation

practices. Both of these problems have been solved and the present state of conservation in the core area can be described as good: eroded pathways have been repaired or re-routed; pathways have been constructed to minimize the impact of visitor traffic; paths have been laid out to enable efficient one-way flow of visitors; shaded rest areas have been provided on the site, with toilet facilities available on each walking route; viewing platforms have been constructed at three of the most popular (and vulnerable) panels. Added to this, the guides are now uniformed and properly trained to conduct visitors around the site.

Two further points regarding the present conservation status of the site are that documentation of the rock art is integrated within the site management plan, and that a large proportion of the site (in extent about 50%, and in terms of accessible rock art about 75%) is currently out of bounds to visitors. The rock art that is out of bounds falls into three categories: damaged and therefore not suitable for viewing; highly vulnerable to damage; or beyond the present capacity of the guides to control. Rock art in the latter category is held in reserve for future development and elaboration of the present routes.

Residents of the buffer zone and adjacent conservancy area have put the buffer zone environment and its archaeological sites at risk. The Twyfelfontein Country Lodge has incorporated Seremonienplatz, one of the major rock art sites of the

area, as part of its entrance. The site has been seriously damaged in the process and is placed continually at risk by the fact that the rock art forms part of a passage without any protection for the engravings. These activities are in contravention of the National Heritage Act, Part V, Section 46. The fact that the lodge was built in this location indicates the previous lack of co-ordination and foresight amongst the responsible authorities, in the face of a suddenly booming entrepreneurial tourism after national independence. Repair and rehabilitation of the site is a major conservation challenge. The use of the site as an entranceway disrupts the “sense of place” at the site and more seriously presents a direct contradiction of the authorities' intentions with regard to preservation of the national heritage.

The Twyfelfontein Country Lodge also provides tourist access to a number of rock art sites within the buffer zone: Klein Seremonienplatz and Adam and Eve shelter, and guided walking trails to Hasenbild Shelter and the Siebenplatten engravings. The lodge guides are not trained to interpret rock art, and there are no site management arrangements for any of these sites. Consequently, these sites are at risk and a number of acts of vandalism have been committed. Neither the Twyfelfontein-Uibasen Conservancy, nor the National Heritage Council has made any attempt to protect the sites. However, the protection measures and developments at the core zone of Twyfelfontein have been well received, con-



Use of rock art site as entrance to the Twyfelfontein Country Lodge

sciousness of the vulnerability of the rock art has been heightened, and there is a better appreciation of what must be done to use the archaeology as a tourist attraction. The owner of the Twyfelfontein Country Lodge has expressed willingness to support an initiative to better conserve sites in the buffer zone, and the National Heritage Council has the financial resources of the gate fees charged at the core zone.

b. Factors affecting the property

(i) Development Pressures

The core area of Twyfelfontein is effectively protected by its status as a national monument and this, together with the fact that no people live within the core area, should ensure that it will not be subjected to development pressures without due process. In terms of the National Heritage Act, Part V, activities which may negatively affect the monument are proscribed, and in terms of Part VI, Section 58, the Council is obliged to formulate and implement an appropriate site management plan. Protection of the buffer zone at Twyfelfontein is at present limited to archaeological sites, although the Act, Part VI, Section 54 empowers the Council to declare the buffer zone a Conservation Area. Under this provision all developments are subject to environmental impact assessment. To ensure smooth implementation of the buffer zone concept and resolve potential conflicts, the conservancy, Kunene Regional Land Board, ǀAa Daman Traditional Authority and tourism concession holders in the buffer zone should be consulted as interested and affected parties (K. Aribeb, pers. com.)

Tourism is Namibia's fastest growing economic sector. Since there are no other significant economic activities in the vicinity of Twyfelfontein it follows that development pressures are most likely to be in some way linked to the tourism sector. Twyfelfontein is also an important tourism hub in the north-

western part of Namibia and is therefore likely to attract developments that have a wider focus than the site of Twyfelfontein itself. Expected development pressures will include expansion of tourist accommodation facilities, improved road access, construction of power transmission lines and other demands. Without appropriate planning such developments tend to spawn smaller, related developments such as informal settlements, shops and places of entertainment. The existing Joint Management Agreement between the Council, the Twyfelfontein Country Lodge, Tour Guides Association and Twyfelfontein-Uibasen Conservancy with its limited brief of liaison and co-ordination among the stakeholders, does not provide an adequate forum for development planning (see also (vi), Other, below).

The main concerns as far as development pressure in the buffer zone is concerned, are: that development will directly encroach on archaeological sites located in the buffer zone; that it will generally diminish the attractiveness of the area; that it will encroach visually on the core area; and that it will disturb the natural environment by driving out sensitive species such as elephant, rhino and giraffe that are an important component of the core area environment. At present the buffer zone is highly vulnerable to all of these threats: there is no agreed management plan for the area; there are no protection measures at archaeological sites in the buffer zone; there are no

limitations on environmentally disturbing activities such as game drives; there is no effective monitoring of tourism activity in the Twyfelfontein-Uibasen Conservancy (see also (vi) Other, below).



(ii) Environmental Pressures

The core area of Twyfelfontein is highly vulnerable to environmental pressures related to the geology of the terrain. The high cliffs overlooking the site are made up of fossilized dunes belonging to the Etjo Formation sandstones. Large sections of the cliff have broken away and fallen onto the lower slopes below the scarp. Here they provide the majority of the rock surfaces on which the engravings and paintings were executed.

The rock surfaces themselves are somewhat fragile and prone to weathering, as will be emphasized below. The fallen sections of cliff sandstone have broken apart on impact or as a result of weathering and the lower slopes are densely covered with large rocks up to the size of a modest house.

The slopes below the scarp are made up of alternating shale, dolomite and sandstone beds belonging to the Gai-As Formation. At Twyfelfontein, the shale is uppermost and this provides the impermeable layer that conducts groundwater to the surface at the Twyfelfontein spring. Where it is exposed to the elements the shale weathers to mudstone and forms a greasy clay. Protection from weathering is provided by a surface lag, composed mainly of dolomite rubble. The lag gradually moves down the slope (gradient varies from 13° to 18°), exposing the shale to rapid weathering. It is on this unstable inclined surface that many of the engraved rocks are found. Although no dramatic movements have been recorded in the last fifty years there is evidence of shifting at some stage in the past, mainly in the form of engraved surfaces where it would not be possible to execute the engraving in the present position of the rock.

Calving of large rocks from the cliffs is an entirely natural process that is neither predictable nor preventable. The instability of the lower slopes is likewise geologically determined and cannot be engineered to prevent the gradual retreat of

the scarp. However, these natural conditions are exacerbated by soil erosion, particularly the displacement of the surface lag by uncontrolled human traffic, and the development of erosion gullies in steep footpaths. Both of these processes were uncontrolled until recently, but now all paths on the steep slopes are specially constructed to retard erosion, and all gullies from old footpaths have been secured with gabions and backfilled. Furthermore, the paths and viewing platforms prevent visitors from clambering on unstable rocks that might eventually topple over.

Natural weathering processes affect all archaeological remains in the core area and buffer zone. Engravings on rocks from the aeolian beds of the Etjo Formation are either positioned on surfaces parallel to the bedding of the rock, or semi-perpendicular to the bedding. In some instances engravings in the parallel position are subject to rapid spalling of the surface, and sometimes the engraved surface comes off entirely as a result of a parting in the rock. Where such surfaces are still intact they sound hollow if gently tapped and will certainly break free at some stage. The time-scale of weathering on these surfaces is difficult to assess and varies according to small variations in the quality of the rock itself. Occasionally it is possible to see that the engraving was executed on a surface that was already severely weathered.

In general, engravings on surfaces semi-perpendicular to the bedding plane appear to be most resistant to weathering. Sur-

faces parallel to bedding show rapid weathering. Two exceptions are surfaces parallel to bedding where the surface is the fossil slip-face of the dune, and others (possibly fluvial), where the bedding planes are separated by extremely thin successive layers of minerals heavier than the prevailing quartz sand. A third type of surface that appears highly resistant to weathering is that of the rocks belonging to the fluvial Krone Member of the Etjo Formation. These rocks show clear deposition cycles and the engravings are confined to the fine-grained beds which tend also to be very hard.



Spalling of rock surface parallel to bedding planes

The paintings both in the core area and buffer zone at Twyfelfontein are all executed beneath low overhanging sandstone shelters. These shelters have been formed by differen-

tial weathering of sedimentary beds lying approximately horizontal; most therefore have a pedestal, or mushroom shape. The quality of the rock surface is in all cases rather poor and the paintings show extensive spalling due to wind abrasion as well as fracturing of the surface possibly caused by the mechanical effect of recrystallization by dissolved salts and other minerals. In all cases significant parts of the painted friezes have disappeared. Added to this, the extensive use of unstable pigments such as whites have reduced the visual impact of the paintings. Only one painted site, Zwei Schneider, is now open to visitors in the core area, the others being considered too fragile. Paintings in the buffer zone are highly vulnerable to the combined effects of natural weathering and visitor impact (see (iv), below).



Rocks belonging to the fluvial Krone member tend to be very hard

(iii) Natural disasters and risk preparedness

The Twyfelfontein area is considered to be inactive in seismic terms. However, the stability of the cliffs above the site is in question and it is possible that seismic activity propagated from elsewhere might cause a sudden fall of rock. There are some instances where engravings on precarious rocks might be braced or reinforced but in general the size of the engraved rocks and the instability of the surface precludes such measures.

Seasonal flooding of the Aba-Huab River does not affect the core area of the site, although it may temporarily prevent access to the buffer zone. The low risk of natural disaster at Twyfelfontein means that there is a correspondingly low level of preparedness. However, some of the Guides are trained in elementary first aid skills and there is an airstrip at the Twyfelfontein Country Lodge which would be suitable for evacuation purposes.

(iv) Visitor/tourism pressures

The pressure of visitors on the core area has been greatly reduced through the construction of suitable paths, steps and viewing platforms. Without these measures the site would have continued to suffer from rapid wear and tear in the form of eroded paths, displaced engravings and actual wear of the engravings themselves where visitors clambered over them.

Under the present layout of paths and general access arrangements there are no engravings subject to this sort of wear. Furthermore, a large proportion of the site is no longer accessible to visitors and will be held in “reserve” pending demand for extended walking routes or possible reorganization of access at some future date.

Visitor impact has also been greatly reduced by the provision of toilets on the site, where previously there were none. This has also greatly reduced the volume of tourist litter on the site. There are no litter bins on the site due to the presence of baboons, and visitors are simply requested to carry all refuse away with them. This is not effective in the case of cigarette ends, however, which continue to be a nuisance at some of the engravings. It appears that where groups are brought to a halt by the Guide in order to point out some or other attraction, many of the visitors immediately light cigarettes which they simply discard on the site.

The viewing platforms have notices requesting visitors to put aside any food or drink they may be carrying before mounting the platform. Shelves have been provided at the viewing platforms for this purpose. It is intended that this will greatly reduce the risk of food or drink being spilled on the engravings, although Guide supervision is essential for this to work. At the rock paintings (only *Zwei Schneider* in the core area) gravel has been laid within the shelter to reduce the amount

of dust stirred up by visitors. The dust adheres to the paintings and eventually forms a permanent crust, which obscures the images. A knee-high barrier has been installed at this site to indicate the area where visitors may stand to view the paintings.

Visitor pressure in the form of large noisy groups or very frequent groups has the main effect of detracting from the experience of other visitors. The paths, viewing platforms and other facilities in the Twyfelfontein core area are designed for a capacity of approximately 350 visitors per 8 hour day, with a capacity of 5 eight-person groups on the guided routes at any one time. This will ensure a pleasant, peaceful walk for the visitor. It is the task of the Site Manager and other staff



Two local guides at the Zwei Schneider site

to manage the flow of visitors by making use of regulating options such as prior reservations for large groups; the facilities at the Visitor Centre to retard movement onto the site, and the self-guided route as an option for excess visitors.

If visitor numbers continue to grow as steeply as they have over the last ten years it will be necessary to impose a strict carrying capacity limit on the core area at Twyfelfontein. Before doing this, however, it will be possible to develop two extensions of the guided routes, thus absorbing an extra 25% visitor flow. At the same time, it will be necessary to develop alternative attractions at rock art sites in the buffer zone. There are several suitable sites and these could cope with about 100 visitors per day, altogether. The present arrangements at Twyfelfontein allow for an approximate doubling of visitor numbers before these modifications need be considered.

(v) Number of inhabitants within the property and the buffer zone

Estimated population located within:

Area of nominated property: 0

Buffer zone: 95

Total: 95

Year: 2005

There are no people resident in the core area at Twyfelfontein. In the buffer zone approximately 80 people are in residence as staff of the Twyfelfontein Country Lodge, and 15 as staff of

the Aha Huab Camp. The Guides and their families, numbering approximately 50 people, live immediately outside the eastern boundary of the buffer zone, on a portion of the property Blaauwpoort (520), a part of the Twyfelfontein-Uibasen Conservancy area.

(vi) Other

A further two factors affecting the property are the lack of institutional capacity among the key stakeholders, and a general lack of clarity regarding the powers and functions of the different parties. The key problems of institutional capacity in the National Heritage Council have already been described; these amount to a lack of appropriately qualified staff and a lack of direct experience in site management.

There is a very serious lack of capacity in the Twyfelfontein - Uibasen Conservancy, which cannot at the moment function as an active stakeholder. In view of the fact that the buffer zone of the Twyfelfontein site falls entirely within the boundaries of the conservancy it will be necessary to obtain the commitment of the conservancy to the Management Plan. A joint management arrangement would be desirable if the conservancy took upon itself certain specific functions in the buffer zone. These are set out in the Management Plan. However, the poor capacity of the conservancy is a compelling reason for the buffer zone to be given Conservation Area status under the National Heritage Act, Part VI, Section 54.

CHAPTER 5

Protection & Management of the Property



5. PROTECTION & MANAGEMENT OF THE PROPERTY

a. Ownership

The core area and the buffer zone of Twyfelfontein are both State Land, and therefore property of the Government of Namibia. The core area, originally registered as Twyfelfontein Prehistoric Reserve (722), title deed A856/56, is now subsumed within the Twyfelfontein Reserve (873), title deed T935/1989.

b. Protective designation

The core area of Twyfelfontein is a national monument, originally proclaimed under Article 7 of Ordinance 13 (1948) (Official Gazette of SWA, Govt Notice 234), as repealed by the National Monuments Act, 1969 (Act No. 28 of 1969), its subsequent amendments (Act No. 22 of 1970; Act No. 30 of 1971; Act No. 7 of 1979; Act No. 35 of 1979), all repealed by the National Heritage Act, 2004 (Act No. 27 of 2004). The same status applies to the Verbrandeberg geological monument (725), originally proclaimed under Article 7 of Ordinance 13 (1948). These and the remainder of the buffer zone, constituting the Twyfelfontein Reserve (873), have the legal status of State Land.

The core area of Twyfelfontein is served by a proclaimed road, D3214, which has the legal status of Government property

(Official Gazette 1/08/64, issued under Section 5 of the Roads Ordinance No. 28 of 1962). The road terminates at the Levin ruin and the last 500 metres of the road have been de-proclaimed and erased, so that the road will end at the Twyfelfontein Visitor Centre. A 4x4 track bypassing the core area provides access to Doros Crater and is a public right of way. Roads constructed and maintained within the buffer zone by the Twyfelfontein Country Lodge also have public rights of way. Boreholes in the buffer zone, registered (e.g. ZB20030) and unregistered, are all Government property.

Since it constitutes a possible source of confusion, it is helpful to clarify the legal relationship between the site and the Twyfelfontein-Uibasen Conservancy. The core area and buffer zone fall within the boundaries of the Twyfelfontein-Uibasen Conservancy (registered 1999, in terms of Section 24A(2)(i) of the Nature Conservation Amendment Act No. 151 of 1996). However, the registered boundaries of the Twyfelfontein-Uibasen Conservancy specifically exclude the core area of Twyfelfontein. The archaeological sites located in the buffer zone, which are defined in terms of Section 46 of the National Heritage Act (No. 27 of 2004) also lie outside the jurisdiction of the Conservancy, as do certain other pieces of land falling within its boundaries that are subject to PTO permit 11/3/1/211 and X/2/E, issued in the name of Elias Xoagub.

c. Means of implementing protective measures

The principal instrument of protection for the site is the National Heritage Act (No. 27 of 2004), particularly Section 46 (1) (a) in terms of which it is prohibited to (a) remove or demolish; (b) damage or despoil; (c) develop or alter; or (d) excavate all or any part of a *protected place*. A protected place is defined as a place declared and registered as a heritage place under Division 3, Part IV of the Act. Implementation mechanisms for these measures are set out under Division 4, Part VII, Section 63, which defines the offences and penalties in terms of the Act.



Some engravings at Twyfelfontein do not require artificial barriers for protection

A comprehensive management plan has been compiled as a practical framework for the protection of the site, covering issues such as access control, monitoring, maintenance, visitor flow, provision of visitor information and amenities. The management plan is outlined below in section **h Visitor facilities and statistics**. Rules and conditions of admission to the site are made known to the visitor upon arrival, and access to the site is strictly supervised, all visitors being accompanied by an official, uniformed guide. Certain physical protection measures such as barriers are also in place.

d. Existing plans related to property

The National Heritage Council has no formal plans regarding the property. There was, however, an agreement, now lapsed, covering issues of joint management between the Council, the Twyfelfontein Tour Guides Association, the Twyfelfontein-Uibasen Conservancy, and the Twyfelfontein Country Lodge. The agreement could serve as a framework for mutual consultation as well as practical administration.

At the country level, the general issues of cultural development and tourism are considered in the *Second National Development Plan (NDP2)* (National Planning Commission 2001/2002 – 2005/2006). At the regional level, the site is considered under the *North-west Region Tourism Master Plan (Volume 1)* (Ministry of Environment and Tourism, 2000). Section 2.5 of the plan provides an overview of tourism facilities and

development options in the whole of the north-west of Namibia. Unfortunately, the plan is very weak in its treatment of cultural heritage sites.

A second document *North-west Tourism Options Plan (Phase II)* (NACOBTA, 2002) provides a more detailed treatment of the regional picture but is equally weak with regard to the management of cultural heritage sites. Both documents appear to have been compiled without any consultation involving the National Monuments Council (now Heritage Council) or professional archaeological advice. The result is that the documents are almost entirely useless as a basis for planning tourism activity at cultural heritage sites such as Twyfelfontein.

e. Property management plan and statement of objectives

(i) Summary of key management objectives

1. To maintain the integrity of the site and its setting
2. To present the site in a clear and informative way
3. To promote rock art and related research at the site
4. To develop a sustainable visitor attraction
5. To provide appropriate training and employment

(ii) Summary of management measures

For immediate attention (mid- to late 2005):

1. Formulate and implement a property management scenario
2. Facilitate business planning and a common vision for stakeholders
3. Adopt and implement the site database management system
4. Train and appoint management and support staff
5. Effect proclamation of buffer zone as a Section 54 Conservation Area

Medium-term management priorities (end 2006):

1. Establish an environmental monitoring baseline
2. Establish a digital visitor data system.
3. Facilitate a local enterprise participation scheme
4. Develop and implement a training scheme for guides
5. Develop a code of conduct and licensing scheme for guides

Long-term management priorities (no later than 2010):

1. Complete the extension of visitor access routes and related facilities
2. Articulate a national rock art tourism network centred on Twyfelfontein

3. Provide on-site training facilities for rock art management in Namibia
4. Achieve global visibility as a rock art tourism and research destination
5. Develop management capacity to perform site audit

f. Sources and levels of finance

The activities of the National Heritage Council are financially supported by an appropriation of Parliament, as well as by fees levied, interest accrued and other money received according to the stipulations of the National Heritage Act (Part III). The level of finance provided by the appropriation of Parliament is proportionate to the staff establishment and its functions. As a statutory body, the Council is able to supplement its financial resources, principally through the collection of gate fees.

Currently the Council has a staff establishment of 17, excluding the Twyfelfontein site manager, and receives approximately N\$1.7 million with which to manage monuments throughout Namibia. Of these monuments Twyfelfontein receives the largest number of visitors; see **i**, below. In gate fees, the site generated just under N\$1million between March 2004 and February 2005. Of this amount 20% is paid to the Twyfelfontein Tour Guides Association, and 5% to the Twyfelfontein-Uibasen Conservancy.

The costs of site management interventions and various repairs and constructions during 2004 and 2005 have been almost entirely financed by donor contributions, principally the European Community support to the Namibia Tourism Development Programme, implemented through the Ministry of Environment and Tourism and the National Monuments (now Heritage) Council of Namibia. The fact that income generated through gate fees has not been committed to site development work thus far means that from 2005 the operations of the Council at Twyfelfontein may be considered financially sustainable on the basis of gate fees alone.

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

The National Heritage Council of Namibia does not have a trained archaeologist or appropriately trained heritage site manager on its staff establishment. No training facilities or programmes currently exist in Namibia to fill this requirement. For this reason, all professional and technical activities undertaken by the Council at Twyfelfontein have relied on contract archaeological services. Competent professional expertise is available only on a contract/consultancy basis in Namibia. In view of these circumstances the site management plan **e.**, outlined above, is devised for practical implementation by staff who do not possess the necessary training to manage a large archaeological site or to develop the site to its full potential.

To be fully independent in its management of the site, the Council should make certain to avail itself of training opportunities offered by UNESCO and subsidiary bodies such as ICOMOS for the long term development of skills. At the same time it can endeavour to obtain appropriate professional advice within Namibia and in the southern African region for immediate requirements. While attempting to secure training and professional experience for its staff, the Council must retain local archaeological support in a programme of staff mentoring. The staff mentoring arrangement should be subject to formal agreement and implemented concurrently with the appointment of a site manager at Twyfelfontein.

h. Visitor facilities and statistics

(i) Design and construction

Facilities in the core area at Twyfelfontein consist of a specially designed Visitor Centre, three established walking routes, shaded rest areas on the site and on site emergency toilet facilities (dry compost type), all under the supervision of uniformed guides.

The Visitor Centre and all other physical installations have been designed in accordance with the Burra Charter (Australia ICOMOS 1999), to have the least possible physical and aesthetic impact on the site, and to be reversible. No concrete has been employed in any of the constructions. Walls, as well as steps and other constructions of similar type use reinforced



Visitor Centre under construction, showing combination of building materials and techniques (Nina Maritz Architects)

ing steel weld mesh and wire diamond mesh gabions, filled with dry-packed stone. Where possible the inner packing has been made up with building rubble from demolished structures.

The faces of the gabions are made from hand-selected local stone, collected from designated sites where the removal of stone would have the least impact on the physical surroundings. An additional advantage of the dry-



Steel gabion and gravel steps

packed gabions is that they do not prevent surface runoff of water after rain. Previous experience on the site showed that stone and concrete steps, in particular, initially presented a barrier to the flow of water, but tended to become undermined by gully erosion, as described in 4b. (ii), above.

Roof structures at the Visitor Centre and elsewhere on the site consist of steel tubing pillars, beams and truss frameworks with a covering of various materials ranging from treated gum poles to recycled oil drums. On the site itself, extensive use is made of recycled steel water pipes. The use of recycled and rusted steel has the additional advantage of blending visually

with the surrounding red and brown rock. It is a principle of the Burra Charter that construction should be designed *with* the environment rather than attempting to make an architectural statement in spite of the environment. In this the Twyfelfontein Visitor Centre and related constructions admirably succeed. Recycled materials were deliberately not used in the toilet facilities or the on-site viewing platforms at Twyfelfontein. The toilets are all dry compost “enviro-loos”, chosen with the local scarcity of water in mind. All taps/faucets in the Visitor Centre toilets are of the demand valve type.



Resting shelter made from rusted metal



Visitor platform at the "Dancing Kudu"

The viewing platforms are constructed from standard modular design materials used for steps, platforms and raised walkways on industrial sites, and therefore conform to the highest safety standards. These are South African-made “Mentis” systems comprising rigid steel grid sections for platforms and steel tubing stanchions and railings, as well as standard pre-fabricated steps. The platforms are supported on large diameter square steel tubing frames. The frames rest on sheet-metal footplates, held in place with heavy stones, or guyed with lengths of steel bar. The platforms are easily removable, should this be required.

Pathways on the site have been laid out and constructed with minimal disturbance of the surface. Where possible, all paths are simply raked open routes defined on either side with loose packed stones. This means it is possible to erase and re-route paths with minimum effort. Direction, warning and information signs have been placed where needed. These are cast aluminium panels approximately 100x150mm, made from recycled engine parts. Where necessitated by steep slopes or uneven, difficult surfaces, gabions have been used to construct dry packed steps as described above. These, too, can be removed, although this would require more effort. The paths have been kept to an average width of about 1m, again to minimize the impact on the site. The narrow paths are only practicable because all movement on the site is based on one-way flows, as described below.

(ii) Visitor flow

The Twyfelfontein Visitor Centre is situated in the northernmost corner of the core area. From the parking area, the visitor walks approximately 100m to the Centre, on a narrow footpath through rocky terrain with typical Twyfelfontein flora of low herbaceous plants such as *Petalidium*. The initial walk is intended to break the link between the visitor and the car, and bring the visitor into the world of the site: the path passes through a narrow passage among the rocks, some with clearly visible engravings, and into the entrance area of the Visitor Centre. At this point the visitor sees the Twyfelfontein valley for the first time.

In the Centre, the flow of visitors is first directed to an open area with seating and shade. At this point the visitor can choose to proceed via the reception and orientation area, to the site, or make use of the toilets, kiosk and rest area. The orientation area presents a three-part experience: first a series of simple displays on the site and the rock art; then an “experience chamber” where the visitor sees some of the visual effects of altered consciousness expressed in the rock art; and finally the visitor is shown the link between the visual effects and the concrete world. With this orientation the visitor is able to comprehend the basic purpose and meaning of the art.

There is a one-way flow from the Visitor Centre to the start of a self-guided trail, which proceeds to a series of easily ac-

cessible engravings, via the ruin of the Levin house, to the Twyfelfontein spring and back to the Centre. The purpose of the self-guided route is two-fold: to allow for the visitor who is unable to climb to the less accessible engravings, and to provide an alternative during peak times when there are not enough guides available to conduct visitors over the site. The self-guided route is clearly indicated, and signs have been erected to show where the guided routes commence. Entry and exit points to the guided routes have turnstile barriers.

Two guided routes extend from the furthest point of the self-guided route. Visitors wishing to take one or both of the guided walks will meet their guide either at the Twyfelfontein spring or at the Levin ruin. The first or “Dancing Kudu” guided route proceeds from the spring to a small plain below the scarp. Looking down into the Twyfelfontein valley from this vantage point the visitor will not be able to see the Visitor Centre or park-



Visitor Centre northeast aspect and detail (Nina Maritz Architects)



ing area. The visitor is conducted to the Dancing Kudu viewing platform to view one of the two chief attractions of Twyfelfontein. There is a rest shelter and toilet close to the platform. The path continues via several other engravings, to the Zwei Schneider rock shelter where the visitor can view one of the two rock painting sites at Twyfelfontein. From the shelter the path returns to the spring and rejoins the self-guided route.

The second, or “Lion Man” guided route proceeds from the Levin ruin up a rocky defile to the Lion Man viewing platform. This is an equally famous panel that most visitors know about before they arrive at the site. The viewing platform is constructed for optimum photography while fully protecting the rock art. There is a rest shelter close to the platform, and a toilet further along the route. From the Lion Man panel the visitor follows a path looping around to the south-west, taking in a large number of fur-

ther engravings. These have been selected to present the visitor with as wide a selection of subject matter as possible. The “Lion Man” route caters for the visitor with a slightly stronger interest in the rock art, whereas the “Dancing Kudu” route is shorter and has a more general interest attraction.

Group size on *all* routes, guided and self-guided, as well as on the viewing platforms has been set at a maximum of eight persons. This number is based on the following observations: the median group size for visitors to Twyfelfontein is less than ten; a guide is not able to control effectively a group of more than eight; larger groups tend to spread out and clamber over the rocks, thus endangering the engravings. Large groups very clearly spoil the experience for smaller groups and present an unacceptable threat to the rock engravings.

To optimise visitor flow it is intended that group tours of any size, but most particularly groups of more than ten, should make advance arrangements to visit the site. This presents no difficulty as most coach tours run on a strict schedule. Advance reservations are particularly required in the case of visitors staying over at one of the local lodges or campsites. On arrival at the Visitor Centre large groups will be broken up and dispatched at intervals of five minutes. There is no minimum group size: if a guide is available it is possible to have a guided walk for one person.

(iii) Facilities in the buffer zone

The buffer zone has one tourist accommodation establishment, the Twyfelfontein Country Lodge, and one tourist campsite, the Aba-Huab Camp. The lodge has 114 beds and caters mainly for the middle market foreign tourist, including coach groups. The camp caters mainly for self-drive parties, small coach groups and budget travellers in general. The lodge has its own airstrip and receives fly-in parties, which are conducted to the engravings at Twyfelfontein in the lodge’s gameviewing vehicles. The lodge also sells petrol.

Several other tourist establishments are located in the near vicinity, two within the Twyfelfontein-Uibasen Conservancy area. These are the Mowani Mountain Camp, catering to the upper middle market, with accommodation for 26, and Francolino Fly-Ins, which provides scenic balloon, micro-light and fixed-wing flights, with accommodation for eight guests. An upper market establishment, Damaraland Camp, is situated near the Huab River with accommodation for 20 guests. Good all weather gravel roads connect Twyfelfontein with several regional centres and tourist routes.

The movement of tourists in the buffer zone is not subject to effective control. Several rock art sites are located in the near vicinity of the Twyfelfontein Country Lodge and the lodge offers guided access to the sites as one of its services. This is

in the form of visits by game viewing vehicle to two sites, Klein Sermonien-platz and Adam and Eve shelter, and one guided walking trail to Hasenbild Shelter and the Siebenplatten engravings. The lodge guides are not trained to interpret rock art, and there are no site management arrangements for any of these sites.

(iv) Visitor statistics

Irregular and somewhat contradictory visitor statistics are available for Twyfelfontein over the years 1988 to 2002, with more regular information becoming available only in the last two years. Although David Levin was issued with a visitor's register in the 1950s when he was honorary curator of the site (National Archives HMK 15/1/3 Twyfelfontein), these records appear to have been lost. It was probably from 1964, with the construction of the road (D3214), that the site began to receive regular visitors. However, Levin left Twyfelfontein in 1965, and there was no caretaker to collect visitor statistics at the site until the late 1980s.

Visitor figures from the 1980s indicate an increase from 11 030 in 1988 to 18 103 in 1991. This growth of almost 40% probably reflects an overall increase in tourism to Namibia after independence in 1990. Visitor numbers have grown steeply over the last ten years, first reaching 20 000 in 1994 (Mäscher 1996). Projections based on sampling of visitor statistics for 2002 indicate that numbers had begun to approach

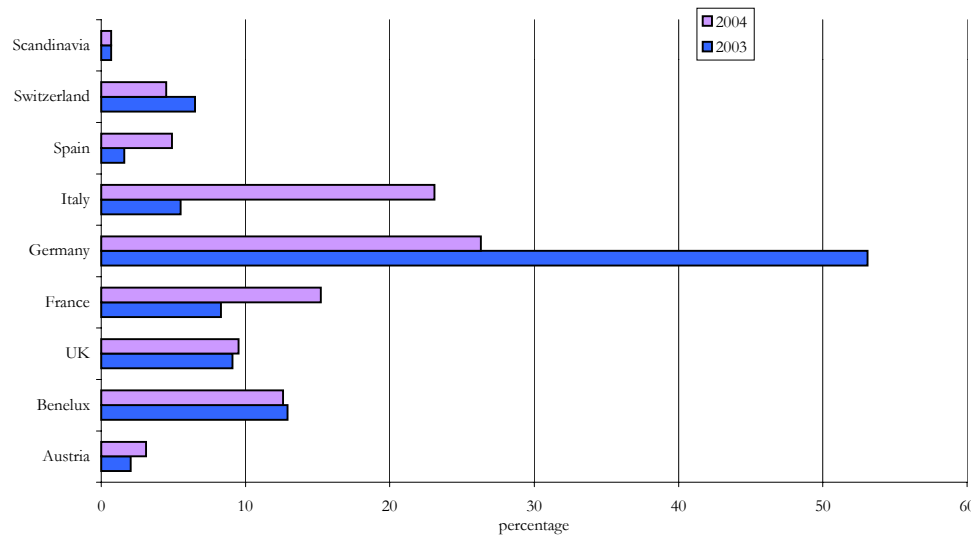
40 000 per year (W. Schalken, pers. comm.). The growth pattern that emerges from these statistics is as follows: from 1990 to 1996 numbers grew by 44%; between 1996 and 2002 numbers grew by 64%; and overall growth during the last ten years has been approximately 70% (Kinahan 2003).

Detailed visitor records are collected by the Twyfelfontein Tour Guides Association on behalf of NACOBTA, the Namibian Association of Community Based Tourism Enterprises. Unfortunately the records are not systematically analysed or archived. The most recent available records cover the period November 2003 to August 2004. During this period 32 817 visitors were received at the site, indicating an average of 3 281 per month, or 109 per day. The flow of visitors varies considerably through the year, however. The peak season is during the months of July and August; visitors at this time account for 38% of all arrivals. There is a sharp decline in visitor numbers during the hot months; between November and the end of January arrivals drop by 33%.

More than 80% of visitors to Twyfelfontein are from Europe. German visitors represent the largest national group. During the peak season, Germans comprise 26% of all visitors from Europe, and 21% of the visitor total. The picture changes during the low season, when Germans comprise 52% of all visitors from Europe, and 44% of the visitor total. In contrast, Namibians comprise approximately 1% of visitors, irre-

spective of season. It must be emphasized that visitor patterns are highly dynamic: while the German component is solid and reliable, Italian visitors showed a dramatic seven-fold increase from 2003 to 2004.

The available visitor figures unfortunately do not reflect the actual flow of visitors through the day. However, there is a marked mid-morning peak, which probably accounts for at least 50% of the daily flow, and a lesser peak of about 15% in the late afternoon. This means that guides may have to conduct fifty or more visitors at the same time during peak flow, requiring six to eight guides on duty. If the peak flow consists of small groups, even more guides will be required. Even with very detailed visitor statistics the flow of visitors is somewhat unpredictable. It is for this reason that larger groups will be required to make advance reservations.

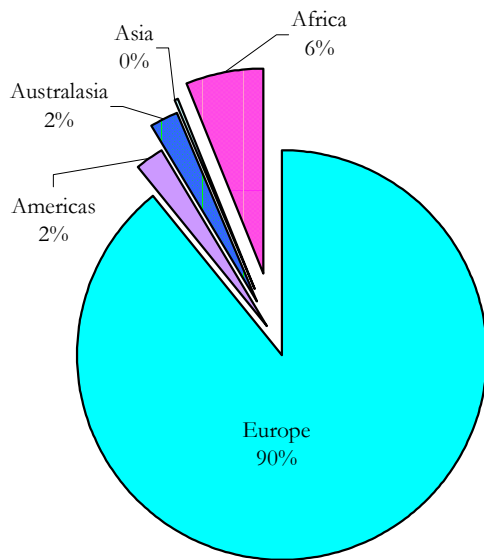


Visitors from Europe to Twyfelfontein during 2003 and 2004

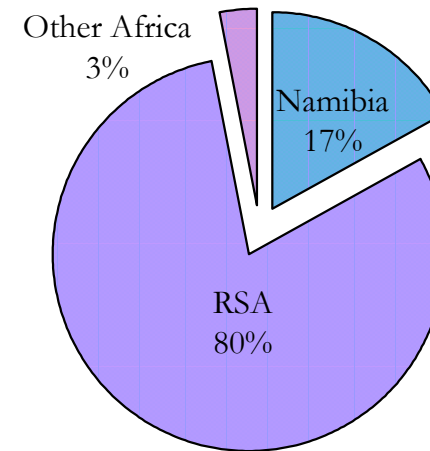
The relative size of visitor groups is to a large extent determined by the capacity of vehicle transport. Couples arriving by car or pick-up account for just over 15% of all visitors. Large coaches carrying between 30 and 40 passengers account for slightly less than 4% of all visitors. Between these extremes there are four different coach sizes. If the group sizes are simplified as follows: small (5 or fewer passengers), medium (6 to 20 passengers), and large (21 or more passengers), these account for 37%, 50% and 12% of visitors, respectively. These figures show that small and medium groups predominate, although the small groups obviously represent a larger number of parties.

Mini-buses carrying six to eight people represent the median group size, and this corresponds with the maximum group size for visitors entering the site.

The visitor statistics reveal certain variations of group size according to nationality, although the mean group size only varies between four and six persons, overall. This is comfortably within the maximum group size for visitors entering the site. The largest recorded group of German visitors was 39, but even in the case of German visitors, the median is three, and large groups comprise only 2.5% of all German visitors. Austrian, French and Italian visitors account for some large



International visitors to Twyfelfontein, 2003 - 2004



Visitors from Africa to Twyfelfontein, 2003 - 2004

groups in the range of 25 to 30, but the median does not exceed four. Although no figures are collected to reflect this, at least 50% of visitors are middle- and late middle-aged. The site attracts many young budget travellers, but remarkably few children visit the site whether in family or school groups.

i. Programmes & policies

There are at present no established programmes or policies for the site of Twyfelfontein, as stipulated in Articles 4 and 5 of the Convention. It is intended that such programmes and policies will be developed on the basis of the present document and within the framework of the Management Plan.

It must however be noted that the National Museum of Namibia has a public education programme which addresses the need for community involvement in rock art site management (Gwasira 2003). The programme, although presently dormant, involves consultation with local communities, slide shows and workshops, all prompted by the gradual move by communities to use rock art sites as visitor attractions.

j. Staffing levels (professional, technical, maintenance)

Staffing of the Twyfelfontein site and Visitor Centre will fall within the administrative framework of the National Heritage Council (see Act 27, Part II, Division 2, Section 17). The staff forming part of the Council establishment will comprise a Site Manager and two Cashiers. The Site Manager will have at least a bachelor's degree in an appropriate field, preferably archaeology, and several years experience at a lower management or professional officer level. The Cashiers (officially appointed as casual workers) are Grade 10/12 level clerical employees with some basic experience in office administration.

The duties of the Site Manager will include local responsibility for site management based on the Property Management Plan accompanying this dossier, as well as day-to-day supervision of the Cashiers and the Guides. The Site Manager will

be directly answerable to the Director of the National Heritage Council and will have peace officer status, including powers of arrest. The Site Manager will be required to supervise daily reconciliation of gate fee income and receipts issued. The supervisory duties of the Site Manager will also include collection and basic analysis of visitor statistics for the Council; deployment of Guides on a day-to-day basis; liaison with the Guides Association, Twyfelfontein-Uibasen Conservancy and other stakeholders; and implementation of the Property Management Plan audit scheme. The Site Manager will be expected to have a sound working knowledge of the site, of the rock art and its basic interpretation, and to answer routine queries from visitors.

The Cashiers are responsible for the reception of visitors, including correct recording of details, receipt of gate fees, issuing of receipts and tickets, and allocation of Guides to visitor groups. The Cashiers will collect visitor data and pass it on to the Site Manager. Where necessary the Cashiers will help to subdivide visitor groups and despatch them to the site at correct intervals, thus ensuring a smooth flow of visitors. The Cashiers will also be responsible for the overall cleanliness of the Visitor Centre, including the basic housekeeping component of the Site Management Plan as it applies to the Visitor Centre. The Cashiers will fall under the direct supervision of the Site Manager.

Guiding services at Twyfelfontein are exclusively supplied by members of the Twyfelfontein Tour Guides Association, who presently number 24. These guiding services are subject to an agreement between the Council and the Association, which sets out a basic code of conduct for the Guides, as well as the terms and conditions of work. The Association receives 20% of the gate fees levied and this is divided among the Guides according to days worked each month. The Guides are to be individually licensed by the Council to work on the site, each Guide being issued with a licence in the form of an identity card. Guides will be expected to perform according to a basic standard set out in the Site Management Plan. In addition to guiding visitors, the Guides are expected to render service in the general maintenance of the site, including litter collection and repairs to pathways, as determined by the Site Manager.

Regular and timely maintenance of the site infrastructure, including the Visitor Centre, is essential. There are alternative ways of ensuring this. The maintenance could be outsourced and placed on a renewable annual contract basis. The contract should include a simple checklist of maintenance tasks, which could be forwarded to the contractor by the Site Manager. The contractor would be expected to estimate time and costs for additional tasks, as may be determined by the Council and the Site Manager from time to time. Alternatively, the National Heritage Council could recruit a maintenance technician. In the intervening period, "call-out arrangements"

could be made as the need arises (K. Aribeb, pers. com.).

The Council will formulate an appropriate staff development plan for Twyfelfontein. This will enable the Site Manager to improve his/her professional qualifications and remain up to date with developments in the field of rock art in general and site management in particular. The Council will ensure that the Site Manager and Cashiers are provided with proper support in carrying out their functions. The Council will consider a professional mentoring arrangement for the Site Manager, to ensure a smooth implementation of the Site Management Plan. The Council will also take responsibility for the training and provision of uniforms for the Guides.

CHAPTER 6

Monitoring



6. MONITORING

a. Key indicators for measuring state of conservation

The implementation of the Property Management Plan is the most important indicator of the state of conservation at Twyfelfontein. In particular, the implementation of the plan will ensure that there is no avoidable deterioration in the rock art of Twyfelfontein, its most significant asset.

In practical terms, the state of conservation would be reflected by the annual audit of the site as set out in the plan. The key items of the audit to be carried out by the Heritage Council are:

- the condition of the rock art, primarily those panels that are accessible to the visitor
- the state of paths, viewing platforms, toilets and other installations, including the Visitor Centre

Additional indicators include the institutional state of the site, as reflected by:

- the existence of a formal working agreement among key stakeholders at the site, including the Council, Guides, Conservancy and lodge owners
- an acceptable level of competence among the Guides conducting visitors to the engravings

- the proclamation of the Twyfelfontein buffer zone as a conservation area in terms of the National Heritage Act, Part VI, Section 54

Key indicators of the biophysical state of the site include:

- high diversity of invertebrate fauna, to be determined periodically by sampling
- maintenance of vegetation diversity and structure, to be determined by sampling (after rains) and matched photography of pre-selected views
- stability of soil lag surface, to be determined by measurement of permanent reference pegs
- stability of large sandstone blocks, to be determined by laser theodolite positioning of permanent reference pegs

A final indicator of the conservation status of the site is the response of visitors, as reflected by:

- the number of visitors in relation to national trends
- the continued importance of the site as a destination in the local tourism industry
- visitor comments compiled from annual exit interviews
- visitor comments extracted from checklist data on visitor response forms

b. Administrative arrangements for monitoring property

The National Heritage Council will implement the Property Management Plan in full, carrying out an annual site audit. The site audit will be the responsibility of the Site Manager, but until such time as the Site Manager has the requisite professional qualifications, the audit will be contracted out to an established archaeologist with site assessment and audit experience. The annual audit will be carried out as an in-house training exercise for Heritage Council staff.

Name and contact information:

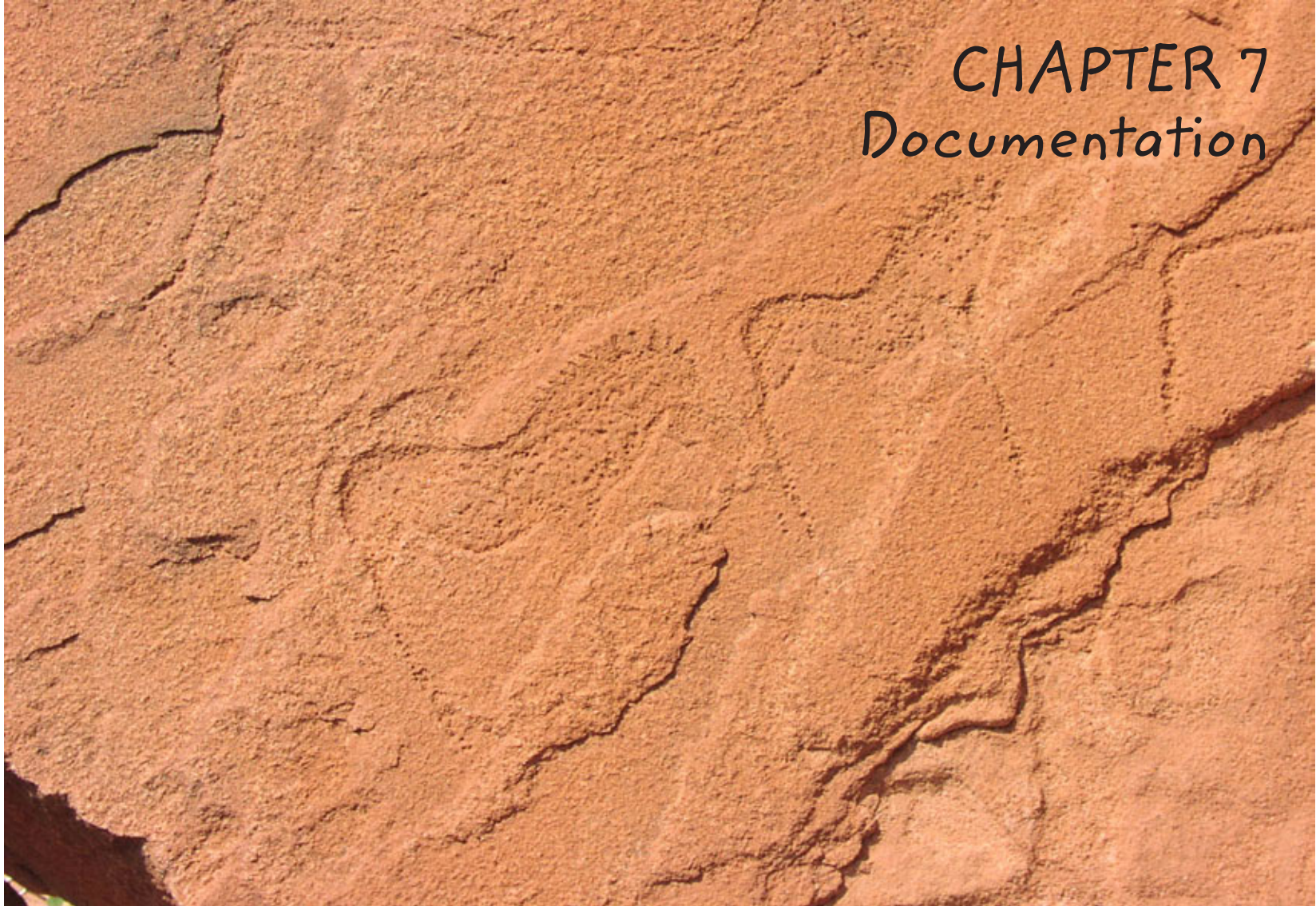
Mr Karl Aribeb
Director
National Heritage Council of Namibia
Private Bag 12043
Ausspannplatz
Windhoek

c. Results of previous reporting exercises

Previous reporting exercises have not been carried out within the framework of the Property Management Plan. However, these provide useful background assessment data:

- site description and photographic documentation carried out by E.R. Scherz in 1964 (published Scherz 1975). Copies of photographic documentation housed at the National Museum of Namibia.
- site survey, description and condition assessment, with limited photographic documentation and tracing, carried out by J. & J. Kinahan in 1988 (unpublished data, housed Quaternary Research Services, P.O. Box 22407, Windhoek, Namibia)
- site description and condition assessment carried out by S. Ouzman, results available at:

http://www.bradshawfoundation.com/twyfelfontein/appendix_k.html
- buffer zone GIS survey carried out by J. Kinahan in 2004 (limited circulation by Namibia Tourism Development Programme, digital data housed National Heritage Council)
- core area digital survey and digital photographic record with data base of rock art, carried out by J. & J. Kinahan in 2005 for World Heritage Convention dossier and management plan compilation (data housed National Heritage Council)



7. DOCUMENTATION

a. Image inventory and photograph authorization form

ID. No	Format	Caption	Date	Photographer & Copyright holder^a	Cession of rights
A1-6	35mm	Views of site from north	12/05	J. Kinahan	granted
A7-16	35mm	Visitor Centre	12/05	J. Kinahan	granted
A17-19	35mm	Access pathway	12/05	J. Kinahan	granted
A20-22	35mm	Levin house	12/05	J. Kinahan	granted
A23-29	35mm	Access pathways	12/05	J. Kinahan	granted
A30-31	35mm	Visitor barriers	12/05	J. Kinahan	granted
A32-33	35mm	Visitor toilet, exterior	12/05	J. Kinahan	granted
A34-36	35mm	Visitor rest shelter	12/05	J. Kinahan	granted
B1	35mm	Viewing platform	12/05	J. Kinahan	granted
B2-13	35mm	Views of site terrain	12/05	J. Kinahan	granted
B14-21	35mm	Protective barriers	12/05	J. Kinahan	granted
B22	35mm	Engraving of zebra	12/05	J. Kinahan	granted
B23	35mm	Engraving of antelope	12/05	J. Kinahan	granted
B24	35mm	Engraving of giraffe	12/05	J. Kinahan	granted
B25	35mm	Engraving of zebra	12/05	J. Kinahan	granted
B26-27	35mm	Engravings of cup marks	12/05	J. Kinahan	granted
B28-35	35mm	Views of “Dancing kudu”	12/05	J. Kinahan	granted
B36	35mm	Engraving of giraffe	12/05	J. Kinahan	granted
C1	35mm	Engraving of giraffe	12/05	J. Kinahan	granted
C2-3	35mm	Engraving of cattle	12/05	J. Kinahan	granted
C4	35mm	Engraving of bird	12/05	J. Kinahan	granted
C5	35mm	Visitors at rock paintings	12/05	J. Kinahan	granted
C6-10	35mm	Visitors at “Zwei Schneider”	12/05	J. Kinahan	granted

a. Image inventory (cont.)

C11-14	35mm	Various engravings	12/05	J. Kinahan	granted
C15-17	35mm	Views of “Lion Man”	12/05	J. Kinahan	granted
C18-20	35mm	Engraving of elephant	12/05	J. Kinahan	granted
C21-23	35mm	Engravings of rhino	12/05	J. Kinahan	granted
C24-34	35mm	Various engravings	12/05	J. Kinahan	granted
D1-8	35mm	Various engravings	12/05	J. Kinahan	granted
D9	35mm	View of dance platform	12/05	J. Kinahan	granted
D10-12	35mm	Views of cup marks	12/05	J. Kinahan	granted
D13-22	35mm	Views of entoptic images	12/05	J. Kinahan	granted

(Footnotes)

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fax: +264+61+236216
Email jkinahan@iafrica.com.na

b. Texts relating to protective designation, &c.

The Property Management Plan is annexed as a separate document. Digital copies of the Management Plan and protective legislation (National Heritage Act 27 of 2004) are on the CD in the pocket bound into the back of this document.

c. Form & date of most recent records

Core area: Detailed field records were made of rock art in the core area of the site during February 2005 as part of the dossier preparation exercise. Altogether 235 painted and engraved surfaces, with a total of 2 075 identifiable images, were documented. The latitude, longitude and elevation of each panel were determined by hand-held GPS instrument. Orientation of the panel was determined by compass, and inclination by Abney level. The position, orientation and inclination data are intended to aid relocation of the panel for purposes of periodic site audit as set out in the Property Management Plan.

To aid recognition of each panel, the dimensions of the engraved surface were recorded, as well as the proportion of the surface covered by paintings or engravings. With some isolated exceptions, the panels were photographed in natural light with a board indicating the panel number and including a centimetre scale and a standard IFRAO colour scale. In the course of the site survey, each panel was assessed to deter-

mine its condition and the presence of any damage, especially in the form of graffiti, or in the form of surface damage resulting from visitor traffic. A condition assessment and risk exposure assessment carried out in 1988 (Kinahan & Kinahan 1988) was revised according to the new layout of paths. All measurements, descriptions and images are included with the dossier in either hardcopy, digital format or both. An interactive GIS version of the core area site survey is included with the dossier. Copies of all the documentation referred to above are lodged with the National Heritage Council in Windhoek.

Buffer zone: All the rock art sites in the buffer zone previously described by Scherz (1975) were revisited and inspected for damage in 2004 as part of an area management GIS survey. Position co-ordinates were established by hand-held GPS. The area management GIS is lodged with the National Heritage Council of Namibia in Windhoek.

d. Address where inventory, records and archives are held

The National Heritage Council of Namibia
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e. Bibliography

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HMK 15/1/3/ Twyfelfontein; 22.05.1954 Letter of thanks to owner of Twyfelfontein for his co-operation, to appoint him honorary curator and to furnish him with a visitor's book.

Minutes of Historical Monuments Commission meeting A.23 Lemmer Collection vol.1. 17.11.1951

Fourth Annual Report of the Historical Monuments Commission. A.23 Lemmer Collection vol. 1

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LAN 1807 G.A. 534 1959-1972

DALB 4. 6/19/5/1

A664 2/59

CHAPTER 8

Contact information



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CHAPTER 9
Signature on behalf of the State party

9. SIGNATURE ON BEHALF OF THE STATE PARTY

I, John Mutorwa, the undersigned, hereby submit this nomination file on behalf of the Government of the Republic of Namibia, in my capacity as Minister of Youth, National Service, Sports and Culture.

Place Date Signature

Twyfelfontein

/Ui-//aes



World Heritage Site

Volume 2: Property Management Plan

National Heritage Council of Namibia
June 2005

Twyfelfontein

/Ui-//aes

Property Management Plan

Annexure to

World Heritage Site Nomination Dossier

Submitted to the

World Heritage Committee

By the

National Heritage Council of Namibia

30 June 2005

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Commissioned by:

National Heritage Council of Namibia

&

National Committee for the Implementation of
the World Heritage Convention in Namibia.

QRS Job No. 63

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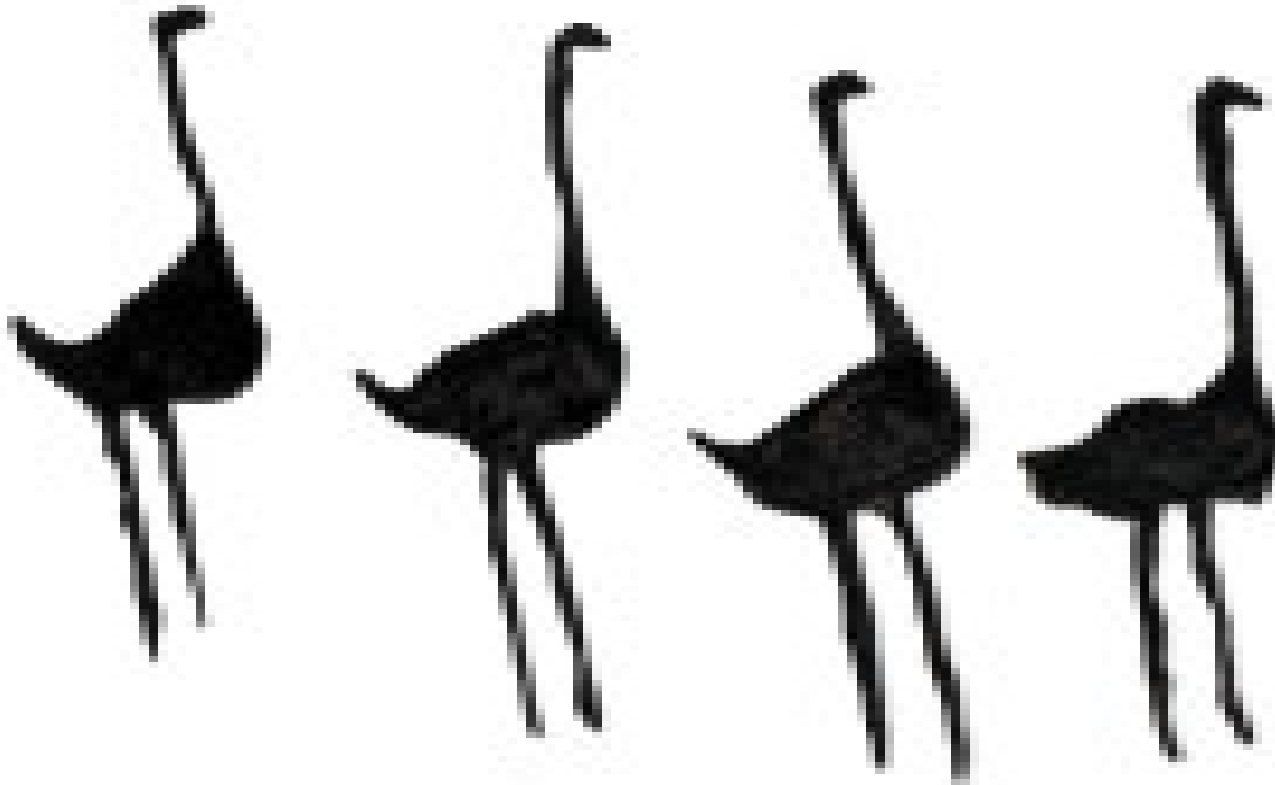
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INSIDE BACK COVER:

CD with data, image, software and text files

CHAPTER 1

Outline of Property Management Plan



1. OUTLINE

The Property Management Plan document has five chapters: the first providing summaries of management objectives and measures discussed in the body of the document, as well as a list of materials to be found on the accompanying CD. The contents of the CD are all presented in common formats, which can be opened and consulted using a variety of operating systems. One exception is the Area Management GIS, which requires a reader to be installed. For this reason, the CD has a copy of the fGIS freeware software, with a readme file giving instructions for installation.

Chapter 2 is an overview containing information that is also presented in the Site Nomination Dossier. The information is repeated here in summarized form so that the Property Management Plan can be consulted by itself. The Site Nomination Dossier contains a summary of the Property Management Plan to allow that document to be consulted in isolation.

Chapter 3 presents the management tools and resources that have been developed for Twyfelfontein. There is a brief discussion of the application of the Area Management GIS and the use of the site and rock art databases as well as the rock art image archive. Two items in this chapter, the policy on zonation and the outline of management scenarios have

the status of proposals for implementation rather than existing policy.

Chapter 4 presents six key property management issues that need to be dealt with through a process of consultation involving a variety of stakeholders. Each of these issues is briefly reviewed in the light of the present situation on the site, and developments during the last year. The situation at Twyfelfontein is set against some of the more important management requirements for World Heritage status. These are listed as a series of key management measures, with a suggested time frame and institutional responsibility.

Chapter 5 looks mainly to the future of the site, in concentric fashion, first considering the development possibilities for the core area, followed by the buffer zone. Finally, the possibilities for articulating a regional rock art tourism network in northwestern Namibia are set out as long-term management goals.

a. Summary of key management objectives

1. To maintain the integrity of the site and its setting
2. To present the site in a clear and informative way
3. To promote rock art and related research at the site
4. To develop a sustainable visitor attraction
5. To provide appropriate training and employment

b. Summary of management measures

For immediate attention (mid- to late 2005):

1. Formulate and implement a property management scenario
2. Facilitate business planning and a common vision for stakeholders
3. Adopt and implement the site database management system
4. Train and appoint management and support staff
5. Effect proclamation of buffer zone as a Section 54 Conservation Area

Medium-term management priorities (end 2006):

1. Establish an environmental monitoring baseline
2. Establish a digital visitor data system
3. Facilitate a local enterprise participation scheme
4. Develop and implement a training scheme for guides
5. Develop a code of conduct and licensing scheme for guides

Long-term management priorities (no later than 2010):

1. Complete the extension of visitor access routes and related facilities
2. Articulate a national rock art tourism network centred on Twyfelfontein

3. Provide on-site training facilities for rock art management in Namibia
4. Achieve global visibility as a rock art tourism and research destination
5. Develop management capacity to perform site audit

c. Contents of accompanying CD

List of folders

Area Management GIS

Site Databases and Image Archive

Nomination Dossier

Property Management Plan

Technical Reports

Heritage Act No. 27 of 2004

Maps:

Plan showing the buffer and core zones at Twyfelfontein

Plan showing the Twyfelfontein core zone

Site infrastructure map

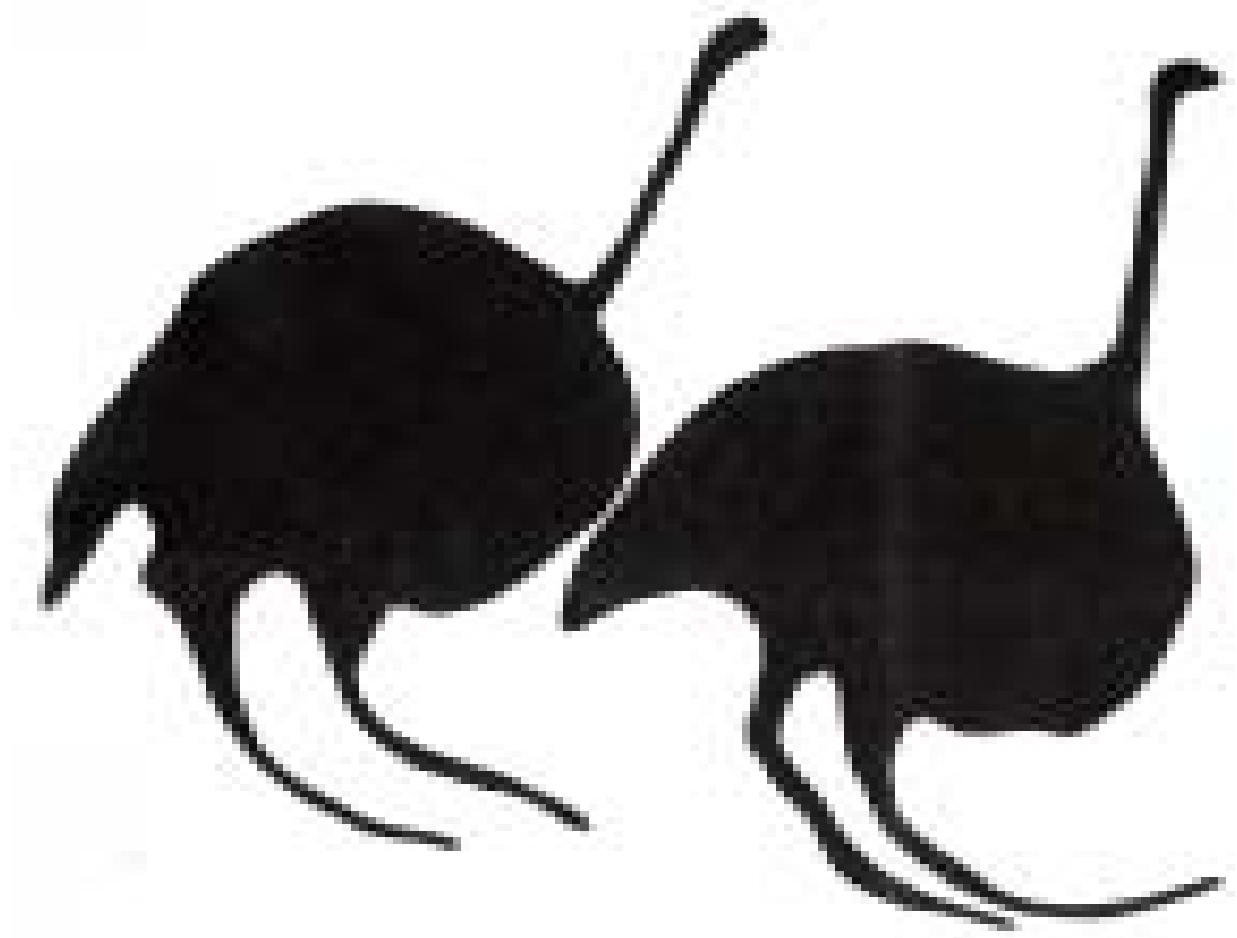
Rock art distribution and access map

Orthophoto map 2014 Cd Twyfelfontein 1: 50 000

Trig. Survey map 2014 Fransfontein 1: 250 000

CHAPTER 2

Overview of site particulars



a. Summary of site information

Core area name: Twyfelfontein Prehistoric Reserve (722)

Buffer zone name: Twyfelfontein Reserve (873)

Core area co-ordinates:

North corner (Beacon A) S20° 35' 26" E14° 22' 20"

NE corner (Beacon B) S20° 35' 31" E14° 22' 34"

ENE corner (Beacon C) S20° 35' 35" E14° 22' 38"

SE corner (Beacon D) S20° 35' 51" E14° 22' 46"

South corner (Beacon E) S20° 36' 10" E14° 22' 25"

Owner:

Government of the Republic of Namibia

Authority responsible for core area:

National Heritage Council of Namibia

Address:

Private Bag 12043, Ausspannplatz, Windhoek, Namibia

Tel: 061+ 244375; Fax: 061+246872

Email: aribeb.nmc@iway.na

Contact person: The Director, Mr Karl Aribeb

Designated repositories:

The National Heritage Council of Namibia

The National Museum of Namibia

The Surveyor General of Namibia

Public access & visitation: Access via Visitor Centre, accompanied by designated guide.

Status: National Monument status, cf. National

Heritage Act (No. 27 of 2004), Part IV, Division 3, Section 36. Buffer zone to be proposed as Conservation Area, Part VI, Section 54.

b. Statement of Significance

Twyfelfontein is a unique rock art site with an exceptional assemblage of images and associated archaeological remains, set in a landscape of surpassing beauty. The rock engravings of Twyfelfontein exemplify the great richness of an artistic tradition that has no surviving practitioners, and only the most tenuous links to living communities in this part of northwestern Namibia. The archaeological evidence suggests that the engravings date to within the last five millennia and that they represent an extraordinary florescence of hunter-gatherer ritual art which gradually died out in the last 1 000 years.

The site of Twyfelfontein has the largest single concentration of rock engravings in southern Africa; it is also the most widely known engraving site (Dowson 1992), receiving four times as many visitors as any other rock art site in the region. In Namibia, more than 150 rock engraving sites have been reported (cf. Scherz 1975), although this is certainly but a fraction of the number that remains to be documented. With more than 2 000 engravings, Twyfelfontein is an order of magnitude larger than the next largest site in Namibia, and contains several times more images than most engraving sites in southern Africa.

Two of the most striking characteristics of Twyfelfontein are the diversity of subject matter in the engravings, and the obviously deliberate placement of the engravings in relation to features of the terrain, such as narrow fissures and tunnels, vantage points and open areas suitable for social gatherings.

The diversity of the engravings embraces the full range of animal subjects found on Namibian sites and includes many of the finest specimens known so far, as well as examples of every technique of engraving and representation. These characteristics elevate the significance of the site well above the ordinary, and provide a strong motivation for its protection.

The rich array of animals depicted at Twyfelfontein is made all the more compelling by the seeming paradox of its harsh environmental setting: a wide sandy valley with a sparse semi-desert vegetation and little sign of animal life, surrounded by barren red sandstone cliffs.

The existence of a weak but persistent spring provides the reason for its importance to hunter-gatherer bands that roamed the fringes of the Namib Desert in the past. In fact, Twyfelfontein was but one of many remote seepages, ponds and waterholes on which these people depended, especially during the long dry season when much of the area was entirely without water and therefore outside the range of hunters on foot.

c. Locality & Description

Twyfelfontein is located in the Kunene Region of northwestern Namibia, approximately 90km west of Khorixas, the nearest centre, and 480km northwest of the capital, Windhoek. The core area nominated for inscription under the World Heritage Convention is the Twyfelfontein Prehistoric Reserve (722), measuring 57.4269ha (see Figure 1). The buffer zone is a rationalized combination of surrounding properties, known as the Twyfelfontein Reserve (873), measuring 9194.4828ha, and including within its boundaries the proclaimed Verbrandeberg geological monument and a number of important archaeological sites (see Figure 2). There is public access to the core area via a gravelled road, D3214, which ends at the site. Existing infrastructure in the core area is limited to basic site facilities, and there are no people resident on the property. The buffer zone contains two developments, the Twyfelfontein Country Lodge, with a resident staff complement of about 80, and the Aba-Huab Camp, with a resident staff of about 15. There are no other people permanently residing in the buffer zone.

The southern part of the Kunene Region, in the vicinity of Twyfelfontein, is a dry, thinly populated area, mainly given over to communal livestock farming. All land in this part of Namibia is owned by the State, with the exception of certain designated

freehold properties. Livestock carrying capacity is estimated at 10-20kg/ha, and a large proportion of the area is considered entirely unsuitable for farming. Population densities are consequently very low, ranging between 0.01 and 1.0/km², and comprising mainly rural Damara, or *Khoekhoegowab* speakers. The area has a poorly developed infrastructure, but in recent years there has been a steady growth of tourism, both formal and community-based, as a viable supplement to farming. Twyfelfontein is the most important single locality for both forms of tourism in northwestern Namibia. Both the core area and buffer zone of the proposed World Heritage site fall within the boundaries of the Twyfelfontein-Uibasen Conservancy. However, the core area, being a proclaimed monument, does not fall under the jurisdiction of the conservancy.

Twyfelfontein lies within the Huab basin, in a minor tributary to the Aba Huab River, part of an important ephemeral stream draining westwards to the Atlantic Ocean. The terrain consists of deeply dissected sedimentary and volcanic deposits, dramatically exposed to view by the thin soil and vegetation cover.

The core area of the site encloses the main concentration of rock engravings and associated archaeological remains, on a west-facing slope below high sandstone cliffs, while the buffer zone encloses a larger area comprising both sides of the valley and a significant portion of the surrounding hills.

d. Previous & ongoing research

The site of Twyfelfontein first gained the attention of archaeologists when the land surveyor Volkmann wrote to advise Reinhard Maack about a remarkable group of rock engravings at a spring called /Ui-//aes. Maack mentioned the site in his 1921 report to the Administrator of South West Africa (Maack 1921), but never visited the engravings in person. The site remained obscure for another thirty years, until the arrival of Ernst Rudolf Scherz in 1950, who surveyed the site in detail in 1963 (Scherz 1975).

Scherz documented over 2 500 individual engravings and paintings at Twyfelfontein. Most of the rock art was recorded by monochrome photography, with some use of colour. The engravings were described according to criteria set out by Scherz in his lavish publication of the site (Scherz 1975). Additional publications emanating from the survey of Twyfelfontein were the guidebooks of Krynauw (1968) and Viereck (1959), both long out of print. A short paper by Viereck and Rudner (1957) also contributed to the recognition of the site as an important rock art locality.

An archaeological investigation of Twyfelfontein was carried out by Erich Wendt in 1968, with the intention of establishing the age and cultural affinities of the rock art. Two excavations were carried out in the core area of the site, at the sites Affenfelsen and Zwei Schneider, yielding dates of 3450 and

5850 years before present, respectively. One excavation was carried out in the buffer zone, at the site Hasenbild, yielding dates of 370 and 180 years before present (Richter 1991: 98, 105, 117; Wendt 1972). All three excavations yielded typical Later Stone Age assemblages with some associated pottery in the younger layers, thus confirming an archaeological affinity with late Holocene hunter-gatherers. The archaeological deposits were in all three instances rather shallow and the area offered no immediate prospects for more detailed investigation.

Further investigations of the rock art were carried out in the 1980s, including a detailed archaeological assessment of the site by Kinahan and Kinahan (1988). Selective documentation by Dowson (1992) was carried out for a regional review of southern African rock engravings; copies of these items are housed at the Rock Art Research Institute at the University of the Witwatersrand in Johannesburg.

Detailed field records were made of rock art in the core area of the site during February 2005 as part of the dossier preparation exercise. Altogether 235 painted and engraved surfaces were documented, with a total of 2 075 identifiable images. This is considered to be an underestimation of the total number of engravings and paintings by approximately 5%. The approach taken during the present survey was rather more conservative than that of previous surveys such as that of Scherz (1975), both in terms of the total number of images counted and the diversity of subject matter recorded.

The most numerically important constituents of the Twyfelfontein imagery among the subjects identifiable to species level (comprising about one quarter of the engravings), are giraffe, at 40% the most important of all, followed by rhino at 19%, zebra at 12%, oryx at 8%, ostrich at 6%, and cattle at 5%. Human figures comprise under 0.5% of the identifiable subjects. The scarcity of human figures is a well-known characteristic of the Namibian engravings, and contrasts with the preponderance of human figures in Namibian rock paintings, where they usually comprise about 80% of identifiable subject matter (Kinahan 2001).

A basic archaeological survey of the buffer zone was carried out in 2004 as part of a data gathering exercise to compile an area management GIS. The rock art sites in the buffer zone had all been described previously by Scherz (1975). Apart from the research described here, and the field survey work carried out as part of the dossier compilation exercise, there are no currently registered archaeological research projects at Twyfelfontein, in either the core area or buffer zone.

e. Site sensitivities & threats

The core area site and buffer zone are sensitive to disturbance or destruction of rock art and archaeological remains by uncontrolled or poorly planned tourism activities. Uncontrolled movement of visitors on the core area site had resulted in a proliferation of informal pathways, gully erosion, wear on the

engravings themselves, litter and other negative impacts. These have been almost entirely checked or reversed by a programme of emergency conservation measures to construct appropriate pathways, repair erosion damage, provide viewing platforms and construct toilet facilities. The site remains sensitive to these particular impacts and it is of utmost importance that the volume and flow of visitor traffic is maintained according to the design specifications. Should the number of visitors to the site greatly increase it will be possible to enlarge the facilities accordingly.

Apart from the direct threat of uncontrolled visitor movement, the rock art sites of the Twyfelfontein valley may be damaged or degraded by poorly planned visitor facilities, by disregard of area zoning guidelines and by a growth of visitor traffic to the point that the site loses its “sense of place”. It is for this reason that in the Management Issues section below emphasis is placed on the need to develop a common vision among the various stakeholders in the area.

Natural threats to the rock art and archaeological remains of the area include progressive deterioration of painted and engraved rock faces, and the movement of unstable rocks. The site survey located a number of engraved rocks that had moved or fractured since the rock art was executed. It is likely that such movements would be very sudden, and probably disastrous, should they occur on a large scale. There seems no

practical possibility of preventing or accurately predicting such movements. However, the contribution of human induced soil erosion to such movements has been excluded by the recent site conservation measures.

f. Existing site management

Management authority is vested in the National Heritage Council of Namibia, in terms of Part II, Division 1, Section 5 of the National Heritage Act (No. 27 of 2004). The principal instrument of protection for the site is the National Heritage Act (No. 27 of 2004), particularly Section 46 (1) (a) in terms of which it is prohibited to (a) remove or demolish; (b) damage or despoil; (c) develop or alter; or (d) excavate all or any part of a *protected place*. A protected place is defined as a place declared and registered as a heritage place under Division 3, Part IV of the Act. Implementation mechanisms for these measures are set out under Division 4, Part VII, Section 63, which defines the offences and penalties in terms of the Act. The rules and conditions of admission to the site are made known to the visitor upon arrival. Access to the site is strictly supervised, all visitors being accompanied by an official, uniformed guide.

Facilities in the core area at Twyfelfontein consist of a specially designed Visitor Centre, three established walking routes, shaded rest areas on the site, and emergency toilet facilities (dry compost type) on site. The Visitor Centre and all other physical

installations have been designed in accordance with the Burra Charter (1999), to have the least possible physical and aesthetic impact on the site, and to be reversible. Walls, as well as steps and other constructions of similar type use reinforcing steel weld mesh and wire diamond mesh gabions, filled with dry-packed stone.

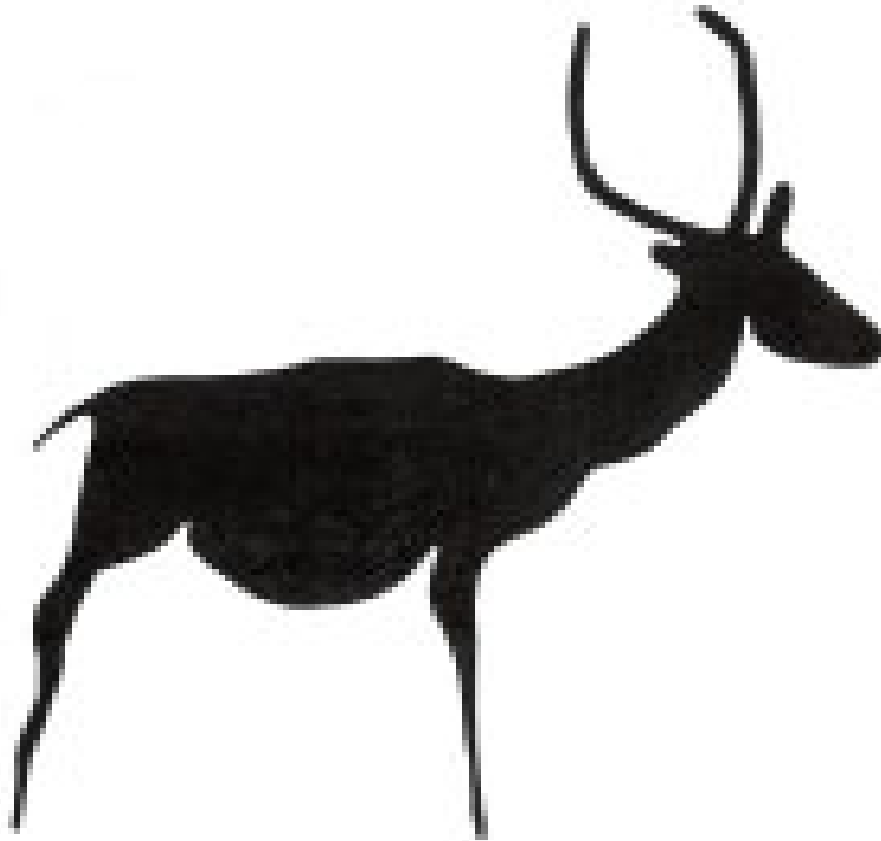
Steel modular platforms have been used for steps, platforms and raised walkways on the site. These are South African-made “Mentis” systems comprising rigid steel grid sections for platforms and steel tubing stanchions and railings, as well as standard pre-fabricated steps. The platforms are supported on large diameter square steel tubing frames. The frames rest on sheet-metal footplates, held in place with heavy stones, or guyed with lengths of steel bar. The platforms are easily removable, should this be required.

Pathways on the site have been laid out and constructed with minimal disturbance of the surface. Where possible, all paths are simply raked open routes defined on either side with loose packed stones. This means it is possible to erase and re-route paths with minimum effort. Direction, warning and information signs have been placed where needed. Where necessitated by steep slopes or uneven, difficult surfaces, gabions have been used to construct dry packed steps as described above. These, too, can be removed, although this would require more effort.

Visitors to the site are conducted along the walking routes by members of the Twyfelfontein Tour Guides Association, of which there are 24 members. This organization has an agreement with the Council to provide guiding services for a fixed proportion of the gate income received. Gate fees are collected by two cashiers, appointed by the Council as casual workers. All personnel at the site will be under the supervision of the Site Manager. A detailed management plan has been prepared for the Visitor Centre and is to serve as an operational guide for the Site Manager. The Visitor Centre Management Plan (see under Technical Reports on the accompanying CD) includes guidelines on water and waste management, cleaning, maintenance, supply and staffing. The Area Management GIS (also on the accompanying CD) provides a basis for planning and monitoring development activity within the core area and buffer zone.

CHAPTER 3

Property Management Resources



a. Area Management GIS

The Area Management GIS folder on the accompanying CD contains data and image files for proclaimed roads, private roads, airstrips, hiking trails, informal tracks, lodges and camps, monument corner beacons, natural features, archaeological (including rock art) sites, boreholes, borrow pits, farm boundaries, small buildings, and miscellaneous visitor facilities. The image files are in *tiff* format, while the data files are provided in *dbf*, *prj*, *shn*, *shx*, *shp* and *shx* formats. These data provide the empirical basis for common decision-making and clear demarcation of land-use and activity zones as set out below.

b. Outline policy on zonation

The core area at Twyfelfontein, as nominated for inscription, and the surrounding buffer zone, represent two clearly defined and formally proclaimed properties. These are defined as follows: Core area (57.4269 hectares); being the full extent of the area defined as the Twyfelfontein Prehistoric Reserve (722) and proclaimed as such on 15th August 1952 under Article 7 of Ordinance 13 (1948) (Official Gazette of SWA, Govt Notice No. 234). The boundaries of the area are indicated on sketch A856/56, dated May 1954 and lodged at the Deeds Office, Ministry of Lands, Resettlement and Rehabilitation, Robert Mugabe Avenue, Windhoek.

The buffer zone (9194.4828 hectares), is represented by the full extent of the area defined as the Twyfelfontein Reserve (873), as indicated on sketch A89/87, dated 12th April 1989 and lodged at the Deeds Office, Ministry of Lands, Resettlement and Rehabilitation, Robert Mugabe Avenue, Windhoek. The Title Deed T935/1989 (Reference No. 19/5/1/7) for Twyfelfontein Reserve (873) supersedes that of Twyfelfontein Prehistoric Reserve (722), which now forms part of the property Twyfelfontein Reserve (873). Other components of the consolidated property comprise certain portions of Farm Rendezvous (533), Title No. T3912/1987; Farm Twyfelfontein (534), Title No. T3910/1987; Farm Blaauwpoort (520), Title No. T3914/1987; Farm Verbrandeberg (725), Title No. 655/1957; Farm Witwatersrand (521), Title No. T3913/1987; Farm 535, Title No. T3911/1987; Farm 741, Title No, T3915/1987.

Within the framework of these boundaries it is necessary to define a series of activity and land-use zones which will allow for the conservation of the heritage assets of the area as well as provide space for tourism activities and their related services. Since the physical setting of the rock art sites is integral to the experience of the visitor and the rock art itself, it is also necessary to conserve this setting as a visual asset, rather than as a compilation of plant species, animals or geological exposures.

The basic concept underlying the following proposal is that of the “viewscape”, an area defined by what is visible from one or more points, rather than an arbitrary zone of exclusion based on distance from the point or object to be conserved. This allows the zonation of the Twyfelfontein valley to make use of the terrain to locate and even conceal developments such as buildings and roads, in this way maximizing the impression of unspoilt space.

To conserve and enhance the value of the core area at Twyfelfontein it is proposed that a zone of exclusion should be defined within the view of the vantage point represented by the Dancing Kudu site. This core viewscape does not correspond with the boundaries of the core area as defined by proclamation (see above). The viewscape would encompass the whole of the Twyfelfontein valley to the west of the core area, up to and including the horizon, and extending to the northwest as far as the spur, which conceals the site of the Twyfelfontein Country Lodge from this viewpoint. The area thus described represents an irregular polygon.

Excluded from the viewscape are the area above the cliffs overlooking the site, and the area to the immediate north and south of the site, all being out of sight from the vantage point mentioned above. This would mean that some, albeit very small, parts of the proclaimed core area would fall outside the zone of exclusion defined on this basis. It is proposed that all

new developments should be excluded from this core viewscape, including buildings, roads, fences and powerlines. Where such developments are unavoidable they should be designed to preserve the viewscape. Where developments such as rock art conservation measures and minor visitor facilities are needed these should be concealed from view.

The core area viewscape has been applied as a working concept in the development of the new Visitor Centre and in the conservation and rehabilitation of the immediate surroundings of the site. The site of the new Visitor Centre was chosen partly because it is largely invisible from the Dancing Kudu vantage point. Likewise, the final 500m of the proclaimed road has been removed and the ground rehabilitated so that the landscape visible from the vantage point is restored as far as possible. The ruins of the Levin homestead have been retained because they are considered to be an integral part of the landscape, and necessary to the visitor experience.

The viewscape concept should also be applied on the smaller scale of the rock art sites in the buffer zone, e.g. Hasenbild and Siebenplatten. The situation of Twyfelfontein Country Lodge and the Seremonienplatz site requires special consideration, as it will represent an exception to all guidelines of site conservation and planning in the core area and buffer zone. This issue is emphasized in the relevant section of Chapter 4. The other buffer zone sites mentioned above are to be



protected in much the same way as those in the core area, by provision of viewing platforms, barriers, pathways and toilet facilities. Zonation principles that apply to the buffer zone sites would include prohibition of access without a guide, and exclusion of toilet and picnic facilities within 50m of the sites.

To some degree the viewscape principle has been applied already in the siting of the Twyfelfontein Country Lodge, although without consideration of the rock art at the Seremonienplatz site. The lodge development has sited junior staff accommodation, workshops, fuel stores on the south bank of the Aba-Huab River where the facilities are largely concealed by the dense tree cover. The Aba-Huab Camp is also situated on the south bank of the river, slightly further upstream. This siting is appropriate to the zonation approach proposed here, and it is proposed that the area along the south bank of the Aba-Huab River should be set aside for future development of accommodation and related facilities, not only for lodge employees but also for Council staff at Twyfelfontein. The river siting is evidently preferred and such zoning is unlikely to meet any objection.

There is at present no clear planning or zonation of activities in the remaining part of the buffer zone. It is proposed that appropriate guidelines for this area are developed by the local stakeholders, as set out in Chapter 4. Such zonation should take care to manage the proliferation of informal tracks by

prohibiting off-road driving wherever possible (including game and site-seeing excursions by tour operators) and promoting low impact access such as by planned hiking trails. Further development of zonation policy should address the rehabilitation of borrow pits and unwanted tracks, as well as the siting of landfill and refuse pits, among other issues.

c. Outline of management scenarios

Management of Twyfelfontein as a World Heritage Site requires a combination of technical and business skills, as well as the personnel capacity to provide year-round service at a fairly remote location. No other site in Namibia presents the same challenges of scale and management ability, and the Council has no comparable previous experience. Since the management of the site requires an integrated team approach, the solution might not be found by appointing promising individuals directly to the site without having experienced the wider range of the Council's activities.

Apart from its specialized rock art and archaeological content, the management needs of the site are comparable to those of many other tourism destinations in remote parts of Namibia. These include staffing and maintenance of facilities such as a reception, refreshment kiosk, toilets and parking, with services including staff supervision, cash handling, issuing of receipts and information, co-ordination of supplies, guiding and cleaning. Certain of these skills are available in the community-

based organizations that already operate in the area as part of the local tourism industry. The skills base and overall capacity of the formal (commercial) tourism operators are better developed, however, and this is evident from their greater success in the tourism sector.

The range and particular combination of skills and management capacity required by the site is such that the Council is not presently in a position to manage the site by itself. Some of the site management requirements do exist among other tourism stakeholders in the area. It may therefore be advisable for the Council to consider a range of site management scenarios for Twyfelfontein.

Three possible management scenarios are set out below, each reflecting different combinations of Council and local stakeholder involvement. The three scenarios are essentially different points on a continuum of possibilities ranging from full management by the Council to full management by a concessionaire.

Scenario 1: The Council could manage the site by itself if a suitably qualified and experienced site manager was appointed, and if certain management functions and services were provided on an agency basis. In this scenario, the site manager would co-ordinate day-to-day activities on the site with respect to the visitor centre and guiding services. The manager would

be subject to direct supervision from the Council in Windhoek. Specialist archaeological services would be provided by an appropriate local institution or consultancy service.

Scenario 2: The Council could lease the site to a concessionaire under a renewable agreement and subject to strict compliance with a detailed management plan. In this scenario the Council would remain in overall control of the site without any responsibility for its day-to-day running. Intending concessionaires would be required to show that they have the capacity to run the site according to the management plan and as a successful enterprise. The concession could also be subject to conditions of local employment creation. Specialist archaeological services would be provided by an appropriate local institution or consultancy service.

Scenario 3: The Council might consider a combination of the above two scenarios, with business management in the hands of a concessionaire and site management in the hands of a Council official. This scenario would have to consider not only the respective capacities of the Council and prospective concessionaires, but also the need to present the concessionaire with an attractive business opportunity. It should also be possible in this scenario to identify certain services and opportunities that could be reserved for local community-based operators, including craft sales, guiding and cleaning. Specialist

archaeological services would be provided by an appropriate local institution or consultancy service.

Key management measures (time frame and responsibility):

- Conduct detailed analysis of Council strengths and weaknesses in relation to site management needs (Mid-2005, Council, possibly with assistance of management consultant)
- Conduct detailed analysis of site management services for outsourcing (Mid-2005, Council)
- Conduct detailed analysis of service capacity in local community and commercial tourism enterprises (Mid-2005, Council in cooperation with local stakeholders)
- Compile detailed duty sheet for site manager and support staff (Mid-2005, Council)
- Recruit appropriately qualified site manager and support staff (Mid-2005, Council)

As part of whatever management scenario is adopted, certain business plan considerations need to be taken into account. Management of the site needs to incorporate a workable business plan that enables the Council to keep track of income and expenditure, to pay dividends and levies to local stakeholders, and to project income patterns for purposes of annual planning. A detailed business plan for the site would

ideally incorporate a number of smaller component business plans, produced by the individual stakeholders and then harmonized as part of the site management plan. Here it is only possible to set out certain business plan considerations that are essential for the conservation and management of the rock art and other archaeological resources of the site.

Twyfelfontein is the most frequently visited rock art site in southern Africa and has an assured income from admission fees. The flow of visitors to the site closely reflects the general pattern of tourism both in northwestern Namibia and in the country as a whole. It is therefore possible to plan tourism development at Twyfelfontein and to predict visitor numbers on the basis of national patterns for the tourism sector. This fortunate situation means that it is also possible to implement a business plan at Twyfelfontein in almost exactly the same way as a business plan would be implemented for any other medium to large-scale tourism operation in Namibia.

A workable business plan for the site would have to be based on full participation by all stakeholders, as well as complete transparency of financial administration. Sharing of income from the site between the Council, stakeholders and service providers has to be based on a mutually agreed formula. This formula has to take into consideration a range of factors, including the need to generate a maintenance and development fund for the site infrastructure; the need to provide an

acceptable level of income and benefits for guides and casual workers, and a reserve fund to cover unforeseen expenses.

Twyfelfontein can and should be run as an entirely self-sustaining operation, covering its own recurrent costs and generating sufficient surplus to cover site maintenance development costs. The maintenance and development fund for the site infrastructure should be based on the current value of installations, and a realistic estimate of repair and replacement costs. Projected development costs should be budgeted against expected income and the actual implementation of new developments should be planned with close attention to the flow of income and expenditure at the site. If the site is run according to a properly formulated business plan there should be no need for outside financing.

Agreement as to an acceptable level of income and benefits for guides and casual workers has to be based on a general evaluation of skills, services and working conditions, with full participation of stakeholders. This will require complete transparency on the part of the Council in order that other stakeholders can appreciate the need to finance site maintenance and development as well as provide for local income generation.

In this regard it would be advisable for the Council to establish a separate enterprise for the management of the site, with separate financial administration. While Council would probably staff the site (manager and assistants) from its own

establishment, these costs could be recovered to the Council via income generated from the site. Related costs, such as transport of Council staff, uniforms for guides, and sundry supplies could be accounted in the same way.

Important as it is that Twyfelfontein should be financially self-sustaining, and that local stakeholders should see maximum local benefit from the site, this does not mean that income from the site is spent only on Twyfelfontein. It would be a sensible decision to allow for a certain degree of investment from site income to develop visitor facilities at other rock art and archaeological sites, preferably in the same general area. This would make conservation sense in that visitor pressure on Twyfelfontein would be reduced; it would also make business sense by providing a range of related (and linked) visitor destinations in the same area.

A guiding principle for the formulation of business plans and division of business opportunities is that business participation should be closely tied to business capacity. This might mean that local community participation is at first limited to guiding services and kiosk operation. Depending on the nature of the goods sold, community participation might also extend to the operation of a craft shop. However, the capacity of the Council is also rather limited, and due consideration should be given to business participation by other partners, at least in the medium term.

Key management measures (time frame and responsibility):

- Council to facilitate business management discussions with stakeholders (mid- to late 2005, Council and stakeholders)
- Council to formulate general business plan principles for site (late 2005, Council)
- Council to develop own business plan for site (late 2005, Council)
- Stakeholders to develop business plans for own enterprises (late 2005, stakeholders)
- Council to facilitate general business plan incorporating above (end 2005, Council and stakeholders)

d. Twyfelfontein core area site database

The core area site database is presented in MS Access *dbf* format on the accompanying CD. The database is ready to use and it is only necessary to transfer the coordinates to a standard handheld GPS in order to locate the rock art sites on the ground. The database fields providing details of the rock art panels, their size, orientation and inclination will help to confirm identification of the panels on the ground. Additional database fields include details of surface condition as well as previous instances of damage by vandalism. These fields, together with the image archive described below, provide baseline data for periodic auditing of the site.

The core area site database makes provision for periodic auditing, with fields for the date of the audit, confirmation of previous damage records and a field for extensive notes on the condition of the rock art of each panel. It is to be noted that sites in the core area database have three unique and independent identifiers: one is the automatic sequential record number imposed by the database; the second is the GPS waypoint number which is attached to the co-ordinates of the site record; the third is the panel number which relates to the description and image archive record of the panel. The database ensures that these identifiers cannot be assigned to the wrong data.

e. Twyfelfontein core area rock art database and image archive

The core area rock art database is presented in MS Access *dbf* format on the accompanying CD. The database is ready to use and it is only necessary to transfer the coordinates to a standard handheld GPS in order to locate the rock art sites on the ground. A total of 40 fields representing identifiable motif classes are included in the database. Some of the motif classes are self-evident, especially where unmistakable animal species are depicted. Some are stylised to the extent that they are only recognizable from certain diagnostic characteristics, while others are assigned to simple descriptive classes.

The descriptive criteria used in the inventory are more conservative than those of Scherz (1975) who recognized a greater number of actual species in the rock art of Twyfelfontein. However, the fact that Scherz did not recognize species such as cattle and impala indicates that a degree of subjectivity is always present in descriptions of rock art motifs.

Antelope species considered here to be unmistakable, are: oryx, springbuck, impala, eland, wildebeest and kudu. To these are added separate classes for antelope spoor, and unidentified antelope. Among the birds, only ostrich were considered to be reliably identified, as were ostrich spoor. A further three classes were added for proportionately tall birds, short birds and unidentifiable birds. It is noteworthy that all of the birds were non-passerine, or striding species, and therefore probably represent people. Among felines, only lion were identified with certainty, with lion spoor and unidentified felines as additional classes. Almost all lion spoor were shown with five rather than four toes, indicating that they probably represent people.

Other easily recognized species include rhinoceros, elephant and zebra, all with clearly identifiable spoor. The rhinoceros were not separated into species because the depictions appeared too highly stylised to allow reliable identification. Cattle, giraffe and baboon were also clearly identifiable. Separate fields were made for animal back-lines (profiles), as well as unidentifiable animals and unidentifiable spoor. Human figures are notably

scarce at Twyfelfontein, although human footprints and handprints are a feature of the rock engravings. Hybrid bird/human figures also occur at Twyfelfontein and these are identified for database purposes as “coat-hangers”.

Among the abstract and crudely geometric motifs at Twyfelfontein are loops, circles, lines, scallops and depressions, or cupules. These motifs are highly variable and occur in every combination, so that more specific identification would serve little purpose in a database of this nature. These motifs are also difficult to count reliably and have been recorded as present or absent. One particular abstract motif that deserves special mention is represented by strings of ranked depressions, recorded here as //huus, due to its similarity to the traditional Damara game which is a variant of the more widely known *mankala*. For present purposes, any repetitive occurrence of ranked depressions was recorded as //huus, although it is possible that the resemblance is merely accidental.

f. Twyfelfontein site audit procedure

A full audit of the core area site should be carried out once every year, and selectively in the context of planning extensions to visitor access routes or any other infrastructure developments. In the latter case the audit should form part of the environmental assessment required under the National Heritage Act (2004).

The basic procedure to be adopted involves transferring to a hand-held GPS all waypoint position data and then physically examining every rock art panel against the relevant database entry. The core area site database includes site audit data fields which should be updated with each audit. Where damage is noted during the audit the image archive should be consulted as well as the relevant database entry.

The site audit procedure should form the basis of all decisions regarding impact of visitors and planning of extensions to access routes. In Chapter 4, Section a. it is suggested that the Council consider using numbered tags attached to discretely positioned pegs (in soil, not rock-face) to aid identification of rock art panels. However, it should be emphasized that such tagging is not a substitute for maintaining a digital database with systematic audit records.

g. Twyfelfontein technical report archive

A further management resource provided on the accompanying CD is an archive of detailed technical reports prepared in the research stage of the nomination dossier exercise. The documents are as follows:

List of members of the Technical Committee for the Implementation of the World Heritage Convention in Namibia: by F. Kanime (UNESCO, Windhoek)

Geology: by G. Schneider (Geological Survey of Namibia)

Reptiles, mammals and birds: by P. Cunningham (Polytechnic of Namibia)

Arachnida (spiders and scorpions): by T. Bird (National Museum of Namibia)

- with additional report on the use of scorpion sampling as an environmental monitoring tool.

Flora: by M. Hochobes (National Botanical Research Institute)

Archival sources: by Jill Kinahan (Quaternary Research Services)

Notes on local history: by P. Ipinge (National Monuments Council of Namibia)

Summary of cultural anthropology survey: by J. Molin (University of Uppsala)

Overview of NW tourism: by E. Humphries (Ministry of Environment & Tourism)

Notes on history of the Levin family: by M. Levin (George, South Africa)

Environmental Management Plan for Visitor Centre: by P. Tarr (SAIEA)

Architectural notes: by N. Maritz (Nina Maritz, Architect)

CHAPTER 4

Property Management Issues



a. Identification and documentation

The Council needs to maintain an integrated database for the management and conservation of the archaeology and rock art of the Twyfelfontein valley. The database should be linked to an interactive GIS system for ease of use, and all responsible officials should be adequately trained to consult the system where their duties require this. The Council should also consider implementing a system of fixed point tagging at archaeological and rock art features in order to simplify the correct identification of features during the course of site management and conservation work.

Two database systems are submitted with this Management Plan (see accompanying CD): one is a GIS-based Area Management Plan, and the other is an MS Access database comprising all locational, descriptive and photographic records for the rock art sites of the Twyfelfontein core area. The Area Management GIS is based on current aerial photography (Surveyor General, Namibia) for the buffer zone area (Twyfelfontein Reserve). The GIS incorporates as separate layers all infrastructure and current boundaries for the core area and buffer zone, viz. proclaimed roads, private roads, informal tracks, hiking trails, roads maintenance borrow pits, refuse disposal sites (land-fill), accommodation establishments, airfields, fuel supply points, and settlement and housing areas. The GIS is based on direct GPS route and waypoint measurement rather than

published data sources, and is therefore an accurate reflection of the actual situation existing at the time of the Twyfelfontein nomination. Regular updating of the Area Management GIS will be required.

The MS Access database for rock art sites in the Twyfelfontein core area is an interactive management tool intended as the basis for day-to-day site management, periodic site audits, as a repository of records for site conservation work, and as the baseline for future conservation and development work on the site. The database will require regular updating. At present, the database does not include records of rock art sites outside the Twyfelfontein core area. Recording of these sites should form part of a documentation exercise for the buffer zone. Neither does the database contain detailed records of archaeological (i.e. settlement remains) and recent historical material. It is envisaged that these sites will also be documented in the course of the buffer zone survey.

To maintain and expand the database systems established for Twyfelfontein, the Council should embark on a training exercise for site management staff. This may require modification of the database systems to allow for ease of operation. It is therefore necessary that the Council formally adopt the database systems as a management tool and adapt them accordingly. The database systems will need expansion to monitor the deterioration of rock art by weathering (spalling). This

will require highly detailed photographic recording, particularly at the small number of painted sites in the Twyfelfontein valley. The Council will also need to consider implementing a system of direct tagging (numbered aluminium/bronze tags attached to steel marker pegs) to simplify on-the-ground monitoring by guides and site management staff.

Key management measures (time frame and responsibility):

- Adopt existing database systems as basis of site management (Immediate (mid-2005), Council)
- Expand and modify database systems for ease of implementation (on-going, but requires planning and decision by Council)
- Train guides and site management staff in use of database systems (on-going, but initial familiarization must follow immediately from Council adoption of database system)
- Complete archaeological survey of buffer zone (end-2005, Council in collaboration with buffer zone stakeholders.)

b. Management of site conservation & interventions

Efficient planning and periodic assessment of site conservation work must be based on comprehensive records of all interventions. The Council must maintain a documentary record of site conservation work, with details of all decisions, de-

signs, costing and monitoring. All such interventions should be subject to a process of consultation and site inspection. All designs should be assessed in terms of their impact, conservation effectiveness, reversibility and maintenance cost.

Where conservation work might have any impact on the archaeological resources of the site, Council shall, in accordance with the provisions of the National Heritage Act, commission an archaeological study to guide the planning process. Such studies may only be carried out internally if the Council has suitably trained staff to do so. Where conservation works are considered to have no implications for the archaeological resources of the site these may be carried out by artisans. However, all conservation work will be subject to proper guidance as to the location and sensitivity of the rock art and associated archaeological remains.

Conservation and other development work on the site should observe the general guidelines implicit in the existing conservation and development interventions, viz.: all construction will be carried out with the least impact, visual as well as physical; all works will be fully reversible; all works will be fully documented, with records held by the Council. All conservation and development work must be subject to impact assessment as required under the National Heritage Act (No. 27 of 2004).

As far as possible, site conservation work should be carried out during the low season, and interim arrangements must be

made to allow for continued visitor access. Major site conservation works must be scheduled in advance and due notice given to the tourism industry through the media and direct communication. All conservation and development work should be carried out under the direct and continuous supervision of the site manager.

Key management measures (time-frame and responsibility):

- Council to maintain systematic records of site management, conservation and development activities (Council, with immediate effect, and continuously)
- Council to adhere to provisions of the National Heritage Act (2004) regarding impact assessment (Council, with immediate effect, and continuously)
- Council to schedule site conservation and development work considering visitor access requirements, and to provide due warning of works that may hinder access (Council, with immediate effect, and continuously)

c. Management of research

As the responsible authority, Council should endeavour to promote and facilitate research at Twyfelfontein. The necessity of research in the development of knowledge about the site and the rock art in general must form a core item in all development and site management activities, the key precept be-

ing that Twyfelfontein is primarily an archaeological site, and secondarily a tourism attraction.

To stimulate research interest in the site, Council should commission an archaeological position paper and host a seminar on rock art and related research at Twyfelfontein. To facilitate research activity Council should re-examine the research permit application procedure and accelerate the processing of applications. A revised permit system would incorporate a reporting loop to enhance the application of research results to the management of the site. Council should also manage research activity by means of a digital database that will allow full integration of research results.

In addition to research that is directly archaeological, Council should encourage, or if necessary, solicit research in fields that have a bearing on the management of archaeological sites in Namibia and elsewhere in the region. These fields might range from the behavioural psychology of problem visitors on archaeological sites, to the performance of materials and designs in site conservation. As far as possible, all research activities on the site should allow for participation by guides, visitors and students from tertiary institutions in Namibia.

The archaeological position paper should identify and frame two main projects. One would be a “flagship” project on the rock art of the Twyfelfontein valley, involving full documentation and an integrated approach that will attempt to develop

an explanation for the content of the art and its positioning on the landscape. The other might be a more wide-ranging investigation, centred on Twyfelfontein, but taking into account the rock art and associated archaeology of the surrounding area, mainly within the degree square 20°S 14°E.

Key management measures (time frame and responsibility):

- Commission archaeological research position paper and host research seminar (mid-2006; co-ordination by Council)
- Revision of research permit processing (mid-2006; internal task for Council Scientific Committee)
- Establishment of research database (end-2006; collaborative task between Council and National Museum, plus other institutions and individuals)
- Examine relevance of Twyfelfontein site management for regional archaeology (mid-2006)
- Identify potential training opportunities in research initiatives (mid-2006)

d. Management of landscape setting

Council will be responsible for management of the core area landscape, while that of the buffer zone will be subject to agreement and division of responsibility among key stakeholders, including the Council, Guides Association, Twyfelfontein-Uibasen Conservancy, Twyfelfontein Country Lodge, Aba-Huab Camp, and other occupants of the buffer zone. All management of landscape will be based on the agreed zoning of the core and buffer areas.

Council and key stakeholders should develop adequate plans and procedures for landscape management on each of the zones. A monitoring baseline exists for the archaeological and rock art sites in the core area, but this needs to be extended to the entire buffer zone. A monitoring baseline is also required for the following environmental indicators: vegetation, vertebrate fauna, invertebrate fauna, hydrology, and soil erosion. Special monitoring criteria should be established for potential threats, including: tourism traffic, road construction, off-road driving, waste disposal, and proliferation of informal settlements.

Key management measures (time frame and responsibility):

- Agreement on shared management of buffer zone, and formulation of agreement (end of 2005, co-ordination by Council)
- Development of detailed plans and procedures for management zones (end of 2005, co-ordination by Council)
- Establish monitoring baseline for relevant environmental indicators (end of 2006, Council to co-ordinate multi-disciplinary meeting)
- Achieve general agreement on potential threats and counter-measures (end of 2005, co-ordination by Council)

e. Management of tourism

All management of tourism at Twyfelfontein should be premised on sound conservation of the site. This requires that the site management team should have a thorough knowledge of the site, of tourism activities on the site, and of modern site management practice.

Tourism management at Twyfelfontein should be based on continuous monitoring of visitor numbers, flow patterns and expressed needs. The collection of visitor data at the Visitor Centre should fall within the overall site management framework rather than remain as the initiative of a community tourism survey, e.g NACOBTA. Greater detail of visitor data is

also needed, although this could be carried out by means of a sampling procedure rather than an increase of detail for every visitor record.

Increased detail can be gained from two levels of data collection: the general level of information is that which is recorded at the moment, viz: name, date, size of party, country of origin. A second level of detail would reflect level of interest, time spent on site, degree of satisfaction. Initial data collection should be fully computerized. The second level of detail could be gained by means of exit surveys or interviews carried out at rest points during the site tour.

Effective tourism management at Twyfelfontein must involve stakeholders, in the archaeological profession, the tourism industry, and in other fields that have bearing on the cultural and natural heritage assets of the area. As the leading stakeholder, the Council will endeavour to promote a common purpose among these parties, by holding regular meetings, by circulating decisions and by referring enquiries to the relevant partners.

Information will be provided by the Council at the Visitor Centre and, where appropriate, on the walking routes over the site. Council must take responsibility to provide clear, understandable and up-to-date information for the visitor as part of the service rendered in exchange for entrance fees. This information will be in the form of simple displays and explanatory

boards rather than printed leaflets or guides. Council will, however, commission a simple visitor's guide for sale at the Centre.

The Council must develop clear, concise and fair conditions of entry to the site. These should be summarized and printed on the reverse of receipts for admission fees. The Council must take due care to present the conditions of entry so that they are easily understandable for foreign visitors. The Council must also communicate the conditions of entry to all tourism operators, as an essential step to avoid or alleviate conflict between visitors and guides.

The Council should develop a set of standards and a procedure for licensing guides who operate at the site and in the buffer zone. Ideally, the standard of guiding offered by the Twyfelfontein Tour Guides Association should be commensurate with the envisaged World Heritage status of the site. This will require a suitable training programme so that guides can be recruited from the local community and trained to the level of competence needed. As a point of principle, the quality of guiding should take precedence over the need to generate local employment opportunities. Licensed guides must wear a photographic identification tag when on site. This will allow the Council to maintain effective control over the activities of guides, to monitor the training of individual guides and to withdraw permission to operate when guides do not perform ad-

equately. Council should not restrict licensing to members of the Guides Association, but endeavour to license suitable "commercial" or "national" guides, especially where foreign language skills are required.

The main tourism stakeholders, in turn, must endeavour to co-operate with the Council on day-to-day site management matters. Principally, this will entail establishing a system of pre-booking for clients (especially parties) wishing to visit the site. Pre-booking will greatly improve management of the visitor flow, and allow the Twyfelfontein Tour Guides to maintain an adequate presence at the site.

For their part, the Twyfelfontein Tour Guides will develop and adopt a binding code of conduct for members serving on the site. The code will be prominently displayed at the Visitor Centre, and visitors will be given the opportunity to express their satisfaction or otherwise with the facilities and service received.

Key management measures (time frame and responsibility):

- Develop staff training programme (end-2005; Council in collaboration with Polytech of Namibia)
- Develop and implement digital visitor register (end-2005; Council)
- Training of guides (continuous; to be co-ordinated by Council and Guides Association)
- Develop and implement visitor survey form (mid-2006; Council)
- Establishment of site and buffer zone forum for stakeholders (end-2005; to be co-ordinated by Council)
- Provision of information at Visitor Centre, and on core site walking routes (mid-2005; Council)
- Provision of information at buffer zone sites (end-2005; co-ordination and approval by Council, but other stakeholders involved)
- Finalize conditions of entry to site (mid-2005; Council)
- Establish pre-booking procedure for regular clients (end-2005; Council in collaboration with Guides Association and clients)

- Establish standards and licensing procedure for guides (mid-2006; Council, with NATH and NACOBTA)

- Develop binding code-of-conduct for Guides Association (end-2005; Guides Association in collaboration with Council and NACOBTA)

f. Management of guide training and accreditation

As the responsible authority, the Council needs to play a central part in the process of guide training and accreditation. This is particularly important at Twyfelfontein because the guides are the main interface between the visitor and the rock art, and therefore need to be properly trained in the presentation of the site. The members of the Twyfelfontein Tour Guides have received some elementary training and this has highlighted both the serious lack of capacity among the guides, and the very promising potential of the guides.

A simple curriculum outline set out in Kinahan (2003) is as follows:

Background:

The principles of guiding and archaeological tourism: information, cross-cultural experiences, sacred places, the idea of time, why Westerners travel

The first people:

How humankind arose in Africa; how long humans have lived in Namibia; how they lived; where they lived

How we know:

Methods of archaeology; different kinds of evidence; measuring time; why there are opposing views; how to decide

Rock art:

Understanding the subject-matter of paintings and engravings; why they are sometimes not what they seem; how they were made; who made them, and when

Site management:

How to conduct tours to rock art sites; what not to do; understanding the visitor; minimum standards of site management

All components of the curriculum should be presented in the form of lectures and practical demonstrations, with active participation of trainees in discussion groups. Printed materials should be prepared, with additional readings and examples from other countries. To adapt training to real circumstances, assessment would have to be verbal rather than written, and preferably on site, using both familiar rock art panels and panels not previously seen by the trainee.

Assessment must form part of the training exercise, firstly in order to provide some gauge of its effectiveness, and secondly

to provide a means of eventually disqualifying guides who cannot perform satisfactorily. It is imperative that Council decide on a practical minimum standard of guiding, based on both content and performance. Council should aim to raise the standard of guiding to a level that is commensurate with the value and importance of the site.

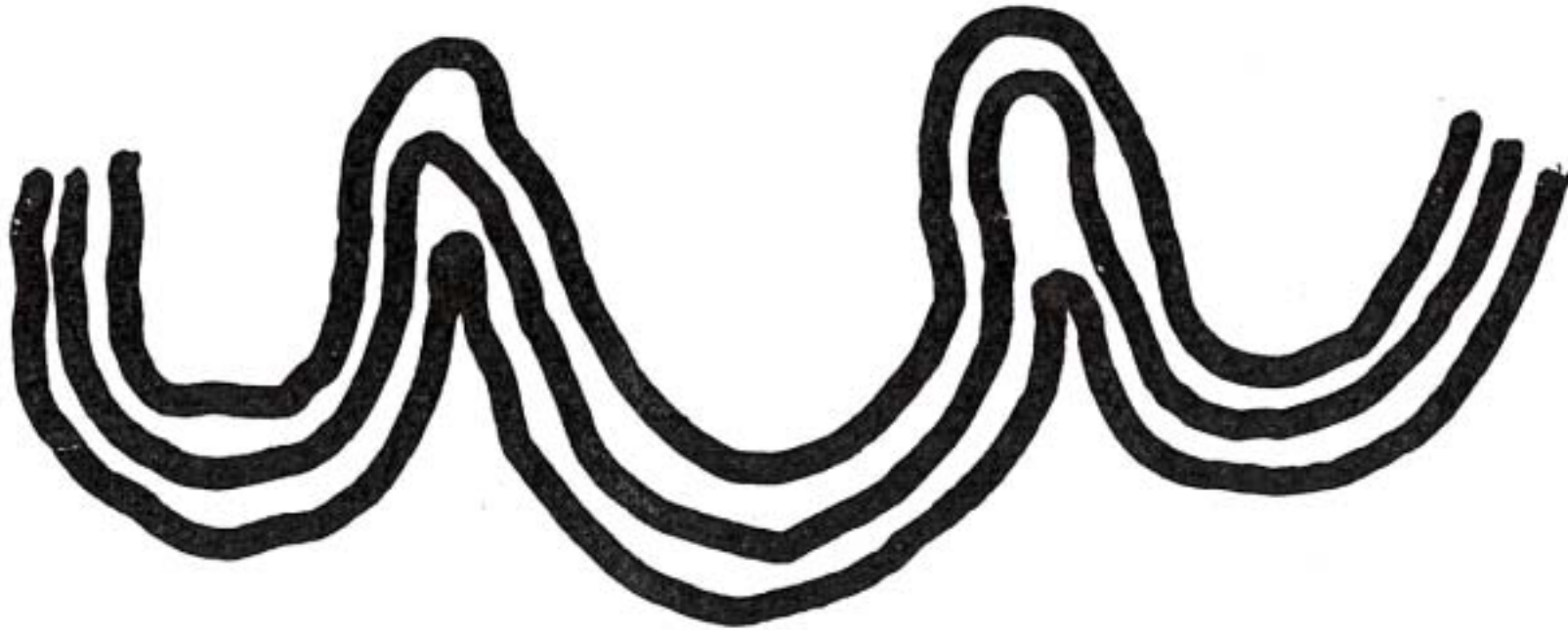
It is important that guides working at Twyfelfontein be provided with some means of accreditation according to a national standard. This will allow locally employed guides the possibility of working more widely in the country as rock art guides. A national standard will also allow the Council a means to license commercial guides to operate on the site, especially where special interest tour groups are concerned, and where foreign language skills are needed.

Key management measures (time frame and responsibility):

- Assess guiding capacity and guiding needs at Twyfelfontein (Council, mid- to late 2005)
- Develop framework and content for guide training programme (Council in consultation with NATH and NACOBTA, late 2005)
- Carry out regular training and assessment (Council, late 2005 and continuously)
- Decide on criteria for licensing of local and commercial guides (Council in consultation with tourism stakeholders)

CHAPTER 5

Recommendations for general development



a. General recommendations

Future developments at Twyfelfontein need to balance visitor pressure and site conservation within the framework of a well-founded management plan. For this reason, all development proposals need to be rigorously examined in the light of up-to-date information from regular site audits. Developments that are driven solely by the demands of tourism will not be in the interests of good site management.

It is recommended that all proposals for developments in the core and buffer zone should be subject to a tailor-made archaeological assessment. This assessment should be carried out by the Council if it has adequately trained staff to do so, and failing that, by an archaeologist from an appropriate national institution or independent consultancy. The assessment should be subject to independent review. All such assessments should follow a process of scoping, proposal review and on-site evaluation, with adequate provision for archaeological mitigation.

Two key recommendations for development are that all developments should be explicitly aimed at improved site conservation and that all interventions, especially in the form of tourism infrastructure should be fully reversible, as stipulated under the Burra Charter (1999).

Key management measures (time frame and responsibility):

- Establish and implement site audit procedure (mid-2006; Council (site manager and professional mentor)
- Establish and implement archaeological assessment procedure (mid-2006; Council in terms of National Heritage Act, 2004)

b. Core area tourism infrastructure

Future development of tourism infrastructure in the core area will be limited to the extension of the existing access routes to include a larger number of rock art panels and to increase the number of visitors than can be accommodated on the site at any one time. Two specific route extensions are envisaged: one on the Dancing Kudu route, providing for an extension by approximately 30% in length; and one on the Lion Man Route, providing for an extension by approximately 15% in length. Both of these developments will require pathway construction, as well as the provision of viewing platforms and toilets.

Key management measures (time frame and responsibility):

- Continuous monitoring of tourism infrastructure, i.e. paths, toilets, platforms, visitor centre facilities (continuous, Site Manager and Council)
- Continuous maintenance of tourism infrastructure, as above (continuous, as above)
- Planning of route extensions according to visitor needs, site conservation requirements, and site management capacity (Council, if professional capacity exists, otherwise by appointment of archaeological consultant.)
- Provision of up-to-date visitor information to maximize visitor experience, through new information displays at visitor centre, upgrading of guide training, and publication of visitor information brochures and guidebooks (Council, if professional capacity exists, otherwise by appointment of archaeological consultant.)

c. Buffer zone tourism infrastructure

Improved access to rock art sites in the buffer zone will reduce visitor pressure on the attraction and facilities of the core zone. Access paths and related infrastructure need to be provided at four sites in the buffer zone, viz Hasenbild, Siebenplatten, Klein Seremonienplatz and the Adam and Eve site. Toilet facilities and elevated viewing platforms are needed at the Siebenplatten

site. These developments are in the early planning stage and will form part of a joint project involving the various stakeholders with interests in the management of the buffer zone.

Infrastructure development is also required at the Burnt Mountain and Organ Pipes geological monuments. This should involve a clearly defined termination point with parking area, toilets and appropriate information panels. The two attractions at the monument have been considerably degraded by uncontrolled visitor traffic, both on foot and by vehicle. It is therefore envisaged that the sites themselves will be cordoned off and that suitable viewing facilities will be provided, probably in the form of raised platforms with handrails. Proper management of this site will require that the informal track leading through it to Doros Crater be re-routed.

Key management measures (time frame and responsibility):

- Preparation of site conservation and management plan for rock art sites in vicinity of Twyfelfontein Country Lodge (mid-2005, archaeological consultant to Twyfelfontein Country Lodge)
- Preparation of site conservation and management plans for Organ Pipes and Verbrandeberg geological monuments (mid-to late 2005, Council or consultant to Council.)
- Presentation of site conservation and management plans to Council for approval (mid-2005 for site conservation and management plan for rock art sites in vicinity of Twyfelfontein Country Lodge; late 2005 for site conservation and management plans for Organ Pipes and Verbrandeberg geological monuments.)
- Secure financial support for above (mid- to late 2005, affected parties, above.)

d. Articulation of regional rock art tourism network

Important as it is, Twyfelfontein is but one of several large concentrations of rock art in north-western Namibia. Several of these sites, including Brandberg (Tsisab Ravine), Spitzkoppe and Peet Alberts Kopje are proclaimed National Monuments which receive fairly large numbers of visitors. These sites are

subject to the same type of visitor pressure that exists at Twyfelfontein and all show varying degrees of neglect and degradation. In terms of the National Heritage Act (2004), the Council is obliged to develop and implement management plans for all monument sites. It would be both logical and advantageous if a general management plan were developed for all of these sites. Such a management plan should consider the sites as forming a natural group in archaeological terms, and as forming a tourism network, since all are connected by well-used tourist routes.

A regional rock art tourism network should aim to achieve a common standard of site conservation, management and presentation, with comparable facilities and standards of guiding. Many of the practical problems of site management have already been addressed and to some degree, solved, in the context of Twyfelfontein. The lessons of the emergency conservation work carried out at the site and the process of the nomination dossier compilation are broadly applicable to the other sites in the region and it would make economic sense to extend the process in this way.

A regional-scale rock art tourism network would serve as a useful initiative in terms of co-ordinated heritage conservation, promotion of tourism, development of local enterprise and employment creation.

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APPENDICES

TABLE 1: Twyfelfontein core area rock art inventory: positions and dimensions of panels

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
1	N1	S20 35 31.9	E14 22 23.5	602	320	94	2.5	4	1
2	N2	S20 35 32.0	E14 22 23.9	602	90	70	1.8	3.3	1
3	N3a	S20 35 31.1	E14 22 22.7	603	160	70	1	3.3	1
4	N6a	S20 35 30.7	E14 22 22.2	588	227	24	2	1.8	5
5	N6b	S20 35 30.7	E14 22 22.1	597	343	51	1.3	1.2	25
235	N5	S20 35 30.0	E14 22 22.2	no data	225	90	2.5	6.5	15
6	N7	S20 35 30.6	E14 22 22.4	600	35	62	1.5	1.1	10
7	N8	S20 35 29.9	E14 22 22.7	596	8	56	0.35	2.5	80
8	N9	S20 35 29.9	E14 22 22.7	599	125	38	0.9	2	10
9	N10a	S20 35 29.6	E14 22 22.7	599	285	14	2.5	2	90
10	N10b	S20 35 29.6	E14 22 22.8	599	235	69	0.45	3	20
11	N11	S20 35 29.6	E14 22 22.8	599	295	19	1.6	3.5	1
12	N12	S20 35 28.4	E14 22 23.3	600	305	19	3	4	10
13	N13	S20 35 29.3	E14 22 23.3	603	233	4	0	0	1
14	N4b	S20 35 31.0	E14 22 22.5	607	355	86	4	0.5	80
15	N4a	S20 35 31.0	E14 22 22.6	599	210	90	0.9	4	75

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
16	M12	S20 35 38.9	E14 22 23.8	no data	237	20	2.4	2.7	90
17	M13	S20 35 38.8	E14 22 23.9	no data	285	32	2	2.9	10
18	M11a	S20 35 39.5	E14 22 24.0	no data	205	49	1.7	2	20
19	M11b	S20 35 39.2	E14 22 23.8	no data	77	41	1.4	1.5	30
20	M16	S20 35 38.9	E14 22 24.5	no data	82	36	1.4	3.7	1
21	M15	S20 35 38.8	E14 22 24.1	no data	185	64	2	1.2	15
22	M1	S20 35 39.3	E14 22 23.1	no data	230	90	0.7	1.35	25
23	M2a	S20 35 39.3	E14 22 22.9	no data	230	59	1.4	4.3	20
24	M3a	S20 35 39.5	E14 22 23.3	no data	230	72	1.6	2	90
25	M3b	S20 35 39.5	E14 22 23.5	no data	205	90	2	2.2	40
26	M4	S20 35 39.6	E14 22 23.6	no data	35	68	1.4	3	50
27	M5	S20 35 39.9	E14 22 23.6	no data	35	70	0.9	1.9	25
28	M6	S20 35 39.9	E14 22 23.7	no data	35	70	0.9	2.1	40
29	M7	S20 35 39.8	E14 22 23.8	no data	35	70	1.2	1.3	15
30	M9	S20 35 39.8	E14 22 24.3	611	0	35	0.8	1.15	80
31	M18	S20 35 38.6	E14 22 25.0	614	240	55	0.7	1.1	10
32	M19a	S20 35 38.2	E14 22 25.1	605	257	70	0.7	0.9	15
33	M19b	S20 35 38.3	E14 22 25.3	611	225	36	1.3	1.6	15
34	M20	S20 35 38.5	E14 22 25.4	613	305	60	0.5	0.4	10
35	M21	S20 35 38.3	E14 22 25.6	613	62	48	1	1	25

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
36	M22	S20 35 38.2	E14 22 25.6	614	72	69	0.6	0.9	30
37	M23	S20 35 38.1	E14 22 25.1	609	232	56	1	1.6	75
38	M31	S20 35 37.1	E14 22 24.7	604	265	29	1.5	1.9	15
39	M32	S20 35 37.3	E14 22 24.8	600	325	31	0.8	0.4	75
40	M33	S20 35 37.5	E14 22 24.9	608	287	72	1	0.8	10
41	M34	S20 35 37.5	E14 22 24.9	604	250	90	0.6	0.8	10
42	M28	S20 35 37.3	E14 22 25.3	610	280	90	0.55	0.8	20
44	M25	S20 35 37.1	E14 22 26.1	613	270	56	0.5	0.5	20
45	M36	S20 35 36.9	E14 22 24.2	613	360	28	1.5	3	5
46	M37	S20 35 38.1	E14 22 25.0	607	355	31	1.2	2	5
47	F9	S20 35 38.8	E14 22 27.1	573	125	90+	2.5	6.1	5
48	F8	S20 35 39.6	E14 22 27.2	612	260	33	3	2.4	15
49	F7	S20 35 40.4	E14 22 26.9	615	347	20	2.3	3.8	5
50	F3	S20 35 41.4	E14 22 27.6	611	7	49	1.1	1.4	15
51	F5	S20 35 41.4	E14 22 27.2	613	235	21	4.2	6.6	10
52	F6	S20 35 41.1	E14 22 27.0	610	245	32	4.4	5.7	1
53	K7	S20 35 33.9	E14 22 30.1	622	267	54	1.1	1	40
54	K6	S20 35 36.4	E14 22 30.3	643	270	90	2.5	2.8	1
55	K8	S20 35 37.7	E14 22 30.1	640	257	90	2	6.7	5
56	K9	S20 35 37.5	E14 22 30.1	643	197	10	2.4	2	45

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
57	K5	S20 35 38.1	E14 22 31.5	642	205	29	2.7	3.5	70
58	K4	S20 35 38.2	E14 22 31.2	648	60	54	2.3	4	1
59	K3	S20 35 38.7	E14 22 30.9	643	355	36	0.7	0.3	20
60	K1	S20 35 38.7	E14 22 30.8	653	287	50	1.45	1.7	5
61	K2	S20 35 38.6	E14 22 30.7	649	285	70	3.5	6.5	1
62	F10	S20 35 39.5	E14 22 27.5	614	245	32	0.7	0.5	15
63	F11	S20 35 39.4	E14 22 27.4	614	250	26	0.9	0.6	60
64	F12	S20 35 39.4	E14 22 27.5	617	287	39	0.6	1.5	10
65	F13	S20 35 39.4	E14 22 27.5	622	130	18	0.9	0.4	45
66	F15	S20 35 39.5	E14 22 27.5	622	150	90	0.6	1.5	10
67	J4	S20 35 38.4	E14 22 31.8	623	170	90	2.3	3	1
68	J1	S20 35 41.5	E14 22 33.7	649	327	47	1	0.7	70
69	J2	S20 35 41.0	E14 22 33.3	655	220	90	1.3	6.7	45
70	J3	S20 35 41.4	E14 22 33.0	644	140	56	1.4	4	5
71	I14	S20 35 42.0	E14 22 30.8	651	273	90	1	4.5	15
72	I13	S20 35 41.9	E14 22 30.8	644	170	90+	1.4	2.5	1
73	I4a	S20 35 42.4	E14 22 31.3	651	15	45	1.4	2.7	50
74	I4b	S20 35 42.3	E14 22 31.1	648	360	0	2.5	3	25
75	I11	S20 35 42.0	E14 22 30.6	644	120	90	2.4	2	10
76	I9	S20 35 42.2	E14 22 30.5	641	143	26	2.5	1.4	10

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
77	I10	S20 35 42.1	E14 22 30.8	655	185	70	1	1.7	5
78	I1	S20 35 43.2	E14 22 31.3	616	160	4	0.4	1.6	5
79	I2	S20 35 43.5	E14 22 31.2	612	160	32	0.8	1.7	50
80	I3	S20 35 43.5	E14 22 31.2	612	335	90	1.2	1.5	35
81	I5	S20 35 45.2	E14 22 33.0	634	320	11	0.4	0.6	5
82	I7	S20 35 45.6	E14 22 34.1	633	210	36	1.1	2.1	25
83	H2	S20 35 46.3	E14 22 33.1	634	180	66	0.5	1.5	20
84	H3	S20 35 46.4	E14 22 33.1	634	0	43	0.4	1	80
85	H1	S20 35 46.4	E14 22 32.9	634	160	90+	1.8	2.2	20
86	H4	S20 35 46.5	E14 22 33.1	646	66	30	1.8	2.5	40
87	H5	S20 35 46.0	E14 22 33.0	640	300	39	8.3	6.2	5
88	H8	S20 35 46.1	E14 22 33.7	643	0	39	4	5.5	1
89	H6	S20 35 45.7	E14 22 33.7	644	327	66	3.2	4.7	5
90	H9	S20 35 47.2	E14 22 33.5	644	20	33	3	3.2	20
91	H10	S20 35 47.3	E14 22 33.5	640	20	33	3	4.2	40
92	H11	S20 35 47.3	E14 22 33.6	644	20	33	0.8	1	90
93	H12	S20 35 47.6	E14 22 33.6	645	53	15	0.9	2.7	1
94	H13	S20 35 47.7	E14 22 33.6	649	125	40	0.8	0.6	50
95	H14	S20 35 47.7	E14 22 33.5	652	83	30	2	1.4	10
96	H15	S20 35 47.9	E14 22 33.5	642	340	25	1.3	1.3	5

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
97	H16	S20 35 48.2	E14 22 33.3	644	117	90	1	0.8	30
98	H19	S20 35 47.7	E14 22 33.4	653	80	15	2.5	5.5	5
99	H20	S20 35 47.7	E14 22 33.3	651	65	12	2.8	2.4	25
100	H21	S20 35 47.2	E14 22 33.2	648	32	26	2	2	25
101	H22	S20 35 47.3	E14 22 33.1	646	352	30	2.1	2.2	15
102	H23	S20 35 47.3	E14 22 33.0	649	13	90	1.8	3.5	35
103	H24	S20 35 47.2	E14 22 32.6	649	150	45	1	1.4	1
104	H25	S20 35 47.4	E14 22 33.5	650	165	45	2.7	2.8	15
105	H26	S20 35 47.0	E14 22 32.7	643	10	90	1	3.5	1
106	H27	S20 35 47.0	E14 22 33.1	652	70	38	2.4	2.2	5
107	H28	S20 35 47.2	E14 22 33.0	633	35	13	1.9	2.5	1
108	H29	S20 35 47.2	E14 22 33.1	638	350	43	4.6	5.2	40
109	H30	S20 35 47.2	E14 22 33.0	642	350	43	2.5	0.7	1
110	H31	S20 35 47.8	E14 22 33.5	644	290	90	1	3.2	1
111	H32	S20 35 47.4	E14 22 35.3	653	263	61	3.3	4.5	20
112	H38	S20 35 47.2	E14 22 35.1	657	263	34	3.5	2.5	1
113	H34	S20 35 46.9	E14 22 34.7	645	295	40	1.1	1.4	5
114	H35	S20 35 46.9	E14 22 34.7	644	295	40	1.6	2.7	2
115	H33	S20 35 47.0	E14 22 34.4	638	5	27	2.3	2.6	10
116	H36	S20 35 46.5	E14 22 34.1	643	32	49	0.8	1	no data

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
117	H39	S20 35 46.9	E14 22 33.2	647	108	38	0.6	1.2	20
118	H41	S20 35 47.9	E14 22 33.0	642	12	6	9	1.7	1
119	H42	S20 35 47.9	E14 22 33.1	647	6	38	12	5	1
120	H44	S20 35 47.7	E14 22 33.0	651	0	0	1.1	0.4	1
121	H46	S20 35 47.5	E14 22 33.0	644	190	68	0.8	1	25
122	H47	S20 35 47.6	E14 22 32.9	641	145	66	1.6	1	1
123	H43	S20 35 47.8	E14 22 32.7	647	307	43	1.3	0.4	80
124	H45	S20 35 47.5	E14 22 32.9	647	210	76	2.5	2.4	5
125	H48	S20 35 47.6	E14 22 32.6	650	225	73	4.5	5.8	5
126	H49	S20 35 47.6	E14 22 32.7	642	45	90	7	2	10
127	H50	S20 35 47.6	E14 22 32.7	646	60	90	7	3	5
128	H52	S20 35 47.9	E14 22 32.2	634	247	27	7	3	1
129	H53	S20 35 47.9	E14 22 32.4	625	255	25	3	1	1
130	H54	S20 35 47.7	E14 22 32.3	643	192	21	2.1	1	40
131	H55	S20 35 47.9	E14 22 32.2	649	267	80	7	5	30
132	H61	S20 35 47.7	E14 22 31.9	643	260	32	6.8	4.3	20
133	H60	S20 35 47.5	E14 22 31.9	647	252	28	9.3	5.3	40
134	H56	S20 35 47.6	E14 22 32.1	646	265	33	4.4	7.7	10
135	H58	S20 35 47.6	E14 22 32.2	648	320	78	6	4.9	15
136	H57	S20 35 47.6	E14 22 32.3	642	343	64	0.7	1.1	80

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
137	H59	S20 35 47.2	E14 22 32.2	647	287	22	6	5	5
138	G1	S20 35 46.3	E14 22 32.2	646	317	27	2.5	3	35
139	G2	S20 35 46.5	E14 22 31.9	640	347	19	3.3	5.1	10
140	G3	S20 35 45.8	E14 22 32.0	639	320	26	6	8.5	1
141	C13	S20 35 51.7	E14 22 32.7	636	327	58	4.1	3.5	1
142	C14a	S20 35 51.7	E14 22 32.7	638	305	76	5	2.4	45
143	C14b	S20 35 51.4	E14 22 32.8	638	305	76	2.2	0.9	75
144	C14d	S20 35 52.0	E14 22 33.1	636	15	93	3.5	2.3	1
145	C14c	S20 35 51.6	E14 22 32.9	637	30	90	1.4	1.8	5
146	C15	S20 35 51.5	E14 22 32.6	637	80	90+	2.3	3.5	5
147	C16	S20 35 51.4	E14 22 32.8	636	307	76	2.3	3.5	10
148	C20	S20 35 51.3	E14 22 32.8	639	255	33	2.4	1.4	10
149	C17	S20 35 51.4	E14 22 32.3	635	85	74	1.8	4	90
150	C18	S20 35 51.3	E14 22 32.5	637	12	63	1.3	1.7	60
151	B14	S20 35 51.2	E14 22 31.2	644	310	19	2	1.3	80
152	B19	S20 35 51.4	E14 22 31.8	631	325	45	2.5	0.9	10
153	C9	S20 35 52.6	E14 22 32.5	645	27	39	2	3.5	5
154	C6	S20 35 52.5	E14 22 32.7	640	287	21	2.3	4.5	1
155	C7	S20 35 52.6	E14 22 32.5	644	49	55	2.9	1.8	5
156	C5	S20 35 53.0	E14 22 34.4	656	344	38	1	0.7	35

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
157	C10	S20 35 52.8	E14 22 32.3	653	15	33	2.7	2.2	5
158	E2a	S20 35 53.3	E14 22 25.6	654	360	90	4	2.1	15
159	E2b	S20 35 54.1	E14 22 25.5	625	106	90+	1.5	2	40
160	E2c	S20 35 54.1	E14 22 25.4	619	no data	no data	no data	no data	no data
161	E5	S20 35 54.3	E14 22 25.4	628	45	75	3	4	1
162	E3	S20 35 54.2	E14 22 25.5	622	293	89	7	14	10
163	E4	S20 35 53.9	E14 22 25.3	631	330	90+	3	4	1
164	B33	S20 35 50.0	E14 22 29.7	627	42	34	4	9.3	45
165	B22	S20 35 51.2	E14 22 30.8	640	340	84	1.6	2.3	45
166	B23	S20 35 51.3	E14 22 30.5	640	60	58	2	2.7	1
167	B25b	S20 35 51.0	E14 22 30.6	632	255	90	2.3	1.4	10
168	B25a	S20 35 51.0	E14 22 30.6	636	180	90	2.5	3	1
169	B39	S20 35 50.3	E14 22 30.5	635	25	18	5.7	3.6	45
170	B38	S20 35 50.7	E14 22 30.6	636	60	16	4.5	3	20
171	B36	S20 35 50.5	E14 22 30.3	642	280	49	0.5	0.4	25
172	B37	S20 35 50.7	E14 22 30.5	634	35	68	1.6	0.45	30
173	B32	S20 35 51.2	E14 22 30.3	634	55	31	0.7	1.1	10
174	B29	S20 35 51.3	E14 22 30.4	638	350	35	2.1	1.8	1
175	B21	S20 35 51.3	E14 22 30.9	637	350	59	1.6	0.5	15
176	B17a	S20 35 51.5	E14 22 31.1	640	270	64	5	2	15

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
177	B18	S20 35 51.4	E14 22 31.3	644	180	59	3.5	2	5
178	B17c	S20 35 51.5	E14 22 31.2	646	57	90+	3	1.5	5
179	B15	S20 35 51.6	E14 22 31.0	644	340	53	7	5	50
180	B16	S20 35 51.5	E14 22 31.1	643	295	69	1.8	2.7	10
181	B31	S20 35 51.7	E14 22 30.9	637	150	90+	2.7	5.5	5
182	B40	S20 35 49.7	E14 22 30.3	630	3	13	5.2	5.5	45
183	B9	S20 35 50.5	E14 22 31.6	620	37	83	3	5.5	10
184	B10	S20 35 50.5	E14 22 31.5	626	120	90+	3.2	5	1
185	B8	S20 35 50.3	E14 22 31.4	623	232	3	2.5	2.7	5
186	B7	S20 35 50.2	E14 22 31.3	627	40	63	4.2	2.6	1
187	B13	S20 35 50.8	E14 22 31.5	621	229	66	0.9	1.2	40
188	B11	S20 35 50.8	E14 22 32.3	623	319	90+	1.7	4	5
189	B12	S20 35 50.6	E14 22 32.4	624	225	74	4	5	75
190	B1	S20 35 49.4	E14 22 31.9	614	310	76	1.8	2.2	30
191	B2	S20 35 49.2	E14 22 31.9	621	193	43	4	3	1
192	B3	S20 35 49.6	E14 22 32.0	634	246	21	2.1	4	10
193	B4	S20 35 49.6	E14 22 32.1	619	291	21	6.6	4.5	1
194	B5a	S20 35 49.8	E14 22 31.9	632	291	21	9	6.5	5
195	B44	S20 35 49.7	E14 22 32.1	626	70	90+	5.7	5	1
196	B5b	S20 35 49.9	E14 22 32.0	627	no data	90+	9	6.5	1

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
197	B43	S20 35 50.0	E14 22 31.0	626	52	93	2.5	1.4	10
198	B42	S20 35 50.0	E14 22 30.9	626	312	31	7.4	2.9	15
199	B41	S20 35 50.0	E14 22 30.9	634	25	28	4	2.1	75
200	B27	S20 35 51.2	E14 22 30.3	645	216	72	1	1.5	5
201	B20	S20 35 51.4	E14 22 30.9	651	342	60	2.2	3	5
202	A19	S20 35 48.5	E14 22 28.9	616	162	42	0.8	2	5
203	A18	S20 35 48.6	E14 22 28.9	616	160	37	0.8	1.5	20
204	A17	S20 35 48.5	E14 22 28.8	609	160	39	0.8	1	60
205	A43	S20 35 47.7	E14 22 28.2	615	256	46.5	1.3	1.3	40
206	A40	S20 35 49.1	E14 22 28.2	611	302	10.5	1.9	3.7	30
207	A41	S20 35 49.4	E14 22 28.6	618	320	29	1.9	1.7	1
208	A37	S20 35 49.6	E14 22 28.1	609	105	40	1.6	4.5	65
209	A36	S20 35 49.6	E14 22 28.1	606	82	41	0.7	4.1	10
210	A35	S20 35 49.5	E14 22 28.1	610	257	49.5	1.1	1.2	5
211	A38	S20 35 49.4	E14 22 27.7	576	276	9	0.5	1.2	50
212	A39	S20 35 49.3	E14 22 27.5	618	280	10	3	4	25
213	A30	S20 35 50.1	E14 22 27.9	614	357	48	3.6	4	65
214	A29	S20 35 50.2	E14 22 28.1	609	340	63	1.6	2.2	1
215	A32	S20 35 49.6	E14 22 28.1	603	210	33	1.9	1	30
216	A33	S20 35 49.6	E14 22 28.0	607	210	33	3.3	2.2	5

Wpt	Panel	Latitude	Longitude	Elev.	Orient.	Inclin.	Width	Length	Cover %
217	A34	S20 35 49.5	E14 22 27.9	610	158	73	2	1.3	1
218	A31	S20 35 49.4	E14 22 28.3	605	220	34	1.3	0.8	1
219	A26	S20 35 49.5	E14 22 28.3	606	268	48	3	1.7	35
220	A24	S20 35 49.4	E14 22 28.2	613	212	41	1.5	3	1
221	A25	S20 35 49.5	E14 22 28.4	611	356	90	1	1.6	40
222	A27	S20 35 49.8	E14 22 28.3	610	331	43	2.3	2.7	1
223	A28	S20 35 49.9	E14 22 28.3	606	43	28	3.5	5	5
224	A20, 21	S20 35 48.3	E14 22 30.3	625	292	42	8	16	1
225	A1	S20 35 48.8	E14 22 31.5	632	255	79	4.5	1.4	80
226	A2	S20 35 48.9	E14 22 31.5	627	285	86.5	1.7	2.2	1
227	A3	S20 35 48.9	E14 22 31.3	633	332	31	2.5	4.5	20
228	A4	S20 35 48.7	E14 22 31.3	632	332	34	2.2	3.5	25
229	A5a	S20 35 49.0	E14 22 31.1	629	212	31	2.2	1.7	20
230	A5b	S20 35 48.7	E14 22 31.0	627	348	29	1.3	2.1	1
231	A6	S20 35 49.1	E14 22 31.1	633	10	32	3.7	4.2	30
232	A7	S20 35 49.0	E14 22 31.2	643	320	67	1.3	5.9	30
233	A8	S20 35 49.1	E14 22 31.3	633	110	29	1	0.6	40
234	A9	S20 35 49.4	E14 22 32.2	635	257	52	1.8	2.7	20

TABLE 2: Twyfelfontein core area rock art inventory: risk assessment and condition of panels

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
1	N1	3	0	good	no	off-route
2	N2	3	0	good	no	off-route
3	N3a	3	1	good	no	off-route
4	N6a	3	2	bad	no	off-route
5	N6b	3	2	good	no	off-route
235	N5	3	1	good	no	self-guide
6	N7	3	3	good	no	off-route
7	N8	5	4	good	fire place	off-route
8	N9	3	1	good	no	off-route
9	N10a	4	4	good	fire place	off-route
10	N10b	4	4	good	no	off-route
11	N11	5	3	good	no	off-route
12	N12	4	1	good	scratched	off-route
13	N13	5	5	good	scratched	off-route
14	N4b	3	3	good	no	off-route
15	N4a	4	2	good	no	off-route
16	M12	3	3	good	chopped	off-route
17	M13	3	2	spalling	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
18	M11a	4	3	spalling	chopped	self-guide
19	M11b	3	3	good	no	self-guide
20	M16	3	2	good	no	off-route
21	M15	3	3	good	no	self-guide
22	M1	3	2	spalling	chipped	off-route
23	M2a	4	3	spalling	scratched	off-route
24	M3a	4	3	spalling	chipped	self-guide
25	M3b	3	3	spalling	scratched	self-guide
26	M4	4	3	spalling	chipped	self-guide
27	M5	3	3	good	no	self-guide
28	M6	3	3	good	no	self-guide
29	M7	3	3	good	no	self-guide
30	M9	4	2	spalling	no	off-route
31	M18	3	2	good	no	off-route
32	M19a	3	2	good	no	off-route
33	M19b	3	2	good	no	off-route
34	M20	3	2	good	no	off-route
35	M21	3	2	spalling	no	off-route
36	M22	3	2	spalling	no	off-route
37	M23	4	2	good	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
38	M31	3	2	good	no	off-route
39	M32	3	2	good	no	off-route
40	M33	3	2	good	no	off-route
41	M34	3	2	good	no	off-route
42	M28	3	2	good	no	off-route
43	M29	3	3	good	no	self-guide
44	M25	3	3	3	no	self-guide
45	M36	2	2	spalling	no	off-route
46	M37	2	2	spalling	no	off-route
47	F9	2	0	good	no	off-route
48	F8	2	0	good	vandalzd	off-route
49	F7	2	0	fair	no	off-route
50	F3	2	0	spalling	no	off-route
51	F5	2	0	spalling	vandalzd	off-route
52	F6	2	0	spalling	no	off-route
53	K7	2	0	spalling	no	off-route
54	K6	3	1	good	vandalzd	off-route
55	K8	2	0	good	vandalzd	off-route
56	K9	2	0	good	scratched	off-route
57	K5	5	3	good	no	dancing kudu

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
58	K4	2	2	spalling	no	dancing kudu
59	K3	2	0	good	no	off-route
60	K1	3	0	good	scratched	off-route
61	K2	2	0	spalling	no	off-route
62	F10	2	0	good	no	off-route
63	F11	2	0	good	no	off-route
64	F12	2	0	good	no	off-route
65	F13	2	0	good	no	off-route
66	F15	2	0	good	no	off-route
67	J4	2	0	good	no	off-route
68	J1	4	4	spalling	no	dancing kudu
69	J2	3	2	good	no	dancing kudu
70	J3	3	1	spalling	no	dancing kudu
71	I14	2	0	good	no	off-route
72	I13	2	0	spalling	no	off-route
73	I4a	4	2	spalling	no	dancing kudu
74	I4b	4	2	spalling	no	dancing kudu
75	I11	2	0	good	no	off-route
76	I9	3	0	spalling	no	off-route
77	I10	2	0	spalling	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
78	I1	2	0	good	no	off-route
79	I2	3	0	spalling	vandalzd	off-route
80	I3	3	0	spalling	no	off-route
81	I5	3	0	cracked	no	off-route
82	I7	3	0	spalling	no	off-route
83	H2	2	0	good	no	off-route
84	H3	2	0	good	no	off-route
85	H1	2	0	spalling	no	off-route
86	H4	2	0	spalling	no	off-route
87	H5	3	0	good	scratched	off-route
88	H8	2	0	fair	no	off-route
89	H6	2	0	good	chipped	off-route
90	H9	4	0	good	no	off-route
91	H10	4	0	fair	no	off-route
92	H11	4	0	good	no	off-route
93	H12	2	0	good	no	off-route
94	H13	2	0	spalling	no	off-route
95	H14	2	0	fair	no	off-route
96	H15	2	0	fair	no	off-route
97	H16	2	0	fair	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
98	H19	2	0	spalling	no	off-route
99	H20	2	0	spalling	no	off-route
100	H21	4	0	spalling	no	off-route
101	H22	4	0	spalling	no	off-route
102	H23	3	0	good	no	off-route
103	H24	3	0	good	no	off-route
104	H25	4	0	spalling	no	off-route
105	H26	3	0	good	no	off-route
106	H27	3	0	spalling	no	off-route
107	H28	4	0	spalling	no	off-route
108	H29	3	0	spalling	no	off-route
109	H30	3	0	spalling	no	off-route
110	H31	5	0	good	no	off-route
111	H32	2	0	fair	no	off-route
112	H38	3	0	spalling	no	off-route
113	H34	2	0	spalling	no	off-route
114	H35	2	0	good	no	off-route
115	H33	3	0	fair	no	off-route
116	H36	2	0	spalling	no	off-route
117	H39	2	0	good	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
118	H41	2	0	spalling	no	off-route
119	H42	2	0	spalling	no	off-route
120	H44	3	0	fair	no	off-route
121	H46	3	0	good	no	off-route
122	H47	3	0	spalling	no	off-route
123	H43	3	0	good	no	off-route
124	H45	2	0	fair	no	off-route
125	H48	2	0	good	no	off-route
126	H49	2	0	fair	no	off-route
127	H50	2	0	good	no	off-route
128	H52	3	0	spalling	vandalzd	off-route
129	H53	3	0	fair	vandalzd	off-route
130	H54	5	0	worn	vandalzd	off-route
131	H55	5	0	good	vandalzd	off-route
132	H61	3	0	good	vandalzd	off-route
133	H60	3	0	fair	no	off-route
134	H56	3	0	good	no	off-route
135	H58	4	0	good	no	off-route
136	H57	5	0	worn	vandalzd	off-route
137	H59	2	0	good	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
138	G1	2	0	good	no	off-route
139	G2	2	0	fair	no	off-route
140	G3	2	0	spalling	no	off-route
141	C13	2	0	good	no	off-route
142	C14a	4	0	good	vandalzd	off-route
143	C14b	4	0	good	no	off-route
144	C14d	3	0	good	no	off-route
145	C14c	3	0	good	no	off-route
146	C15	2	0	good	vandalzd	off-route
147	C16	2	0	good	no	off-route
148	C20	3	0	good	no	off-route
149	C17	3	0	good	no	off-route
150	C18	3	0	spalling	no	off-route
151	B14	3	0	good	no	off-route
152	B19	4	0	good	no	off-route
153	C9	3	0	good	no	off-route
154	C6	3	0	good	no	off-route
155	C7	2	0	good	no	off-route
156	C5	2	0	good	no	off-route
157	C10	2	0	good	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
158	E2a	4	0	spalling	no	off-route
159	E2b	4	0	spalling	scratched	off-route
160	E2c	4	0	spalling	no	off-route
161	E5	3	0	good	no	off-route
162	E3	3	0	fair	no	off-route
163	E4	2	0	spalling	no	off-route
164	B33	4	2	worn	no	lion man
165	B22	3	0	fair	no	off-route
166	B23	3	0	good	no	off-route
167	B25b	3	0	good	no	off-route
168	B25a	3	0	good	no	off-route
169	B39	3	0	spalling	no	off-route
170	B38	3	0	spalling	vandalzd	off-route
171	B36	4	0	good	no	off-route
172	B37	3	0	good	no	off-route
173	B32	2	0	good	no	off-route
174	B29	3	0	good	no	off-route
175	B21	4	0	worn	worn	off-route
176	B17a	2	0	spalling	no	off-route
177	B18	3	0	good	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
178	B17c	3	0	good	no	off-route
179	B15	3	0	good	vandalzd	off-route
180	B16	3	0	spalling	no	off-route
181	B31	3	0	good	vandalzd	off-route
182	B40	5	0	worn	worn	off-route
183	B9	4	3	good	no	lion man
184	B10	3	3	good	no	lion man
185	B8	3	3	good	no	lion man
186	B7	1	0	good	no	off-route
187	B13	3	0	good	no	off-route
188	B11	3	0	fair	no	off-route
189	B12	4	0	fair	no	off-route
190	B1	4	0	worn	worn	off-route
191	B2	2	0	good	no	off-route
192	B3	4	0	fair	worn	off-route
193	B4	4	0	worn	worn	off-route
194	B5a	4	0	spalling	no	off-route
195	B44	2	0	good	scratched	off-route
196	B5b	2	0	good	no	off-route
197	B43	3	0	good	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
198	B42	3	0	fair	worn	lion man
199	B41	3	2	good	no	lion man
200	B27	2	0	good	no	off-route
201	B20	3	0	good	no	off-route
202	A19	3	0	good	no	off-route
203	A18	3	0	good	no	off-route
204	A17	3	0	spalling	no	off-route
205	A43	3	1	good	no	off-route
206	A40	3	0	good	no	off-route
207	A41	4	3	fair	no	lion man
208	A37	4	3	fair	no	lion man
209	A36	3	0	good	no	off-route
210	A35	3	0	good	no	off-route
211	A38	4	4	broken	broken	lion man
212	A39	4	3	good	no	lion man
213	A30	4	3	spalling	no	lion man
214	A29	4	0	spalling	no	off-route
215	A32	5	3	worn	worn	off-route
216	A33	4	3	good	no	lion man
217	A34	4	0	spalling	no	off-route

Wpt	Panel	Old risk	New risk	Surface	Damage	Access
218	A31	5	4	worn	vandalzd	lion man
219	A26	4	3	good	no	lion man
220	A24	2	0	fair	no	off-route
221	A25	4	0	fair	no	off-route
222	A27	2	0	fair	no	off-route
223	A28	3	0	fair	no	off-route
224	A20, 21	2	0	good	no	off-route
225	A1	4	2	spalling	no	lion man
226	A2	4	1	fair	no	lion man
227	A3	5	2	fair	worn	lion man
228	A4	3	0	good	vandalzd	lion man
229	A5a	4	3	good	vandalzd	lion man
230	A5b	4	3	worn	no	lion man
231	A6	4	3	worn	worn	lion man
232	A7	3	2	spalling	no	lion man
233	A8	3	0	good	no	off-route
234	A9	2	0	good	no	off-route



GOVERNMENT GAZETTE

OF THE

REPUBLIC OF NAMIBIA

N\$5.40

WINDHOEK - 29 December 2004

No.3361

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Government Notice

OFFICE OF THE PRIME MINISTER

No. 287

2004

PROMULGATION OF ACT OF PARLIAMENT

The following Act which has been passed by the Parliament and signed by the President in terms of the Namibian Constitution is hereby published in terms of Article 56 of that Constitution.

No. 27 of 2004: National Heritage Act, 2004.

ACT

To provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.

(Signed by the President on 19 December 2004)

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BE IT ENACTED by the Parliament of the Republic of Namibia, as follows: -

PART I - PRELIMINARY

Definitions

1. In this Act, unless the context otherwise indicates -

“alter” in relation to a place or object, means to modify or change the structure, appearance or physical properties of the place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means;

“appointed member” means a member of the Council appointed under section 4(1)(b);

“archaeological” in relation to a place or an object, means -

- (a) any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface on land or in the sea;
- (b) rock art, being any form of painting, engraving or other representation on a fixed rock surface or loose rock or stone which is 50 or more years old;

“archaeological site” means an area in which archaeological objects are situated;

“building” includes a structure, work or fixture and any part of a building, work or fixture;

“conservation” includes -

- (a) the retention of the heritage significance of a place or object; and
- (b) the protection, maintenance, preservation, restoration, reconstruction or sustainable use of a place or object;

“Council” means the National Heritage Council established by section 3;

“develop”, in relation to a place, means -

- (a) to construct or alter a place or a building on the place;
- (b) to demolish or remove a building or works on the place;
- (c) to carry out any works on, over or under the place;
- (d) to subdivide or consolidate land comprising the place or any buildings on the place; or
- (e) to place or relocate a building or works on the place,

and “development” has a corresponding meaning;

“Director” means the Director of the Council appointed under section 16(1);

“government building” means a building on State land;

"heritage" means places and objects of heritage significance;

"heritage significance" means aesthetic, archaeological, architectural, cultural, historical, scientific or social significance;

"land" includes any right to, privilege over, claim to, or any interest, whether corporeal or incorporeal, in the land or proceeds derived from that land;

"listed building" means a building included in the Register under section 53 as a listed building, and "listing" has a corresponding meaning;

"local authority" means a local authority council as defined in the Local Authorities Act, 1992 (Act No 23 of 1992);

"local authority area" has the meaning assigned in the Local Authorities Act, 1992;

"Minister" means the Minister responsible for Culture;

"object" means any movable article, and includes -

- (a) an archaeological object;
- (b) palaeontological and rare geological objects;
- (c) meteorites;
- (d) ethnographic art objects;
- (e) military objects;
- (f) objects of decorative or fine art;
- (g) objects of scientific or technological interest;
- (h) books, records, documents, photographic positives and negatives, film, or video material or sound recordings, excluding those that are public records to which the Archives Act, 1992 (Act No. 12 of 1992) applies;

"owner" includes -

- (a) in relation to land situated in a communal land area as defined in the Communal Land Reform Act, 2002 (Act No. 5 of 2002) -
 - (i) the person who holds a right in respect of that land under that Act; or
 - (ii) if no person holds such a right in respect of the land, the Communal Land Board having jurisdiction under that Act in that area;
- (b) in relation to other State land, means the Minister or public authority that manages or controls the land;
- (c) in relation to any land or other property, a person who in terms of any law -
 - (i) has a right, privilege, claim to; or
 - (ii) holds any security over or interests in,
the property or proceeds from the property; or

- (d) a person who in terms of any law holds or is entitled to hold any land or other property on behalf another person.

“palaeontological object” means any fossilised remains or fossil trace of animals or plants which lived in the past;

“palaeontological site” means an area in which palaeontological objects are situated;

“place” means an area of land, with or without improvements, and includes -

- (a) a building;
- (b) a garden;
- (c) a tree;
- (d) the remains of a ship or part of a ship;
- (e) an archaeological site;
- (f) a site;
- (g) land associated with anything specified in paragraphs (a) to (e);

“possess”, in relation to an item, includes -

- (a) having the custody or control of the item by any means; or
- (b) controlling access to the item, whether personally or with the assistance of another,

and “possession” has a corresponding meaning;

“presentation” in relation to heritage resources protected under this Act, includes -

- (a) exhibition or display;
- (b) provision of access and guidance;
- (c) provision, publication or display of information;

“protected object” means an object declared and registered as a heritage object under Division 3 of PART IV;

“protected place” means a place declared and registered as a heritage place under Division 3 of PART IV;

“provisional protection order” means a provisional protection order made under section 41;

“public authority” means any body corporate or unincorporated established by or under an Act of Parliament for performing functions defined in that Act, but does not include a local authority;

“Register” means the Namibian Heritage Register established under section 24;

“Registrar of Deeds” has the meaning assigned in the Registration of Deeds Act, 1937 (Act No. 47 of 1937);

“State land” includes land vested in, or controlled by, a public authority;

“this Act” includes any regulation made under this Act;

“works” includes -

- (a) any physical intervention, excavation or action that may result in a change to the nature, appearance or physical nature of a place;
- (b) any change to the natural or existing condition or topography of land;
- (c) any removal of trees, vegetation or topsoil;

State to be bound

2. This Act binds the State.

PART II- HERITAGE ADMINISTRATION

Division 1 - The National Heritage Council

National Heritage Council

3. There is established a body corporate to be called the National Heritage Council, capable of suing or being sued in its corporate name, acquiring holding and disposing of movable and immovable property and performing all such acts as bodies corporate may by law perform.

Constitution of the Council

4. (1) The Council consists of not less than seven and no more than fifteen members, being -

- (a) the Permanent Secretary responsible for Culture; and
- (b) such other persons as the Minister may appoint, of whom at least forty percent must be women.

(2) Before appointing members under subsection (1)(b) the Minister must invite nominations of persons for appointment -

- (a) from the public, through advertisement in at least two newspapers circulating generally in Namibia; and
- (b) from organisations involved in the field of heritage, by letters sent to the organisations.

(3) An invitation for nominations must state -

- (a) the manner in which nominations must be submitted; and
- (b) the cut-off date for the submission of nominations.

(4) If the Minister has received no or insufficient nominations by the cut-off date for nominations, the Minister may appoint the required number of persons whom the Minister considers suitable.

(5) When appointing members of the Council the Minister must take geographic representation into account.

(6) The names of appointed members, the date from which their appointments are of effect and the period for which they are appointed must be published by notice in the *Gazette*.

Functions of the Council

5. (1) The functions of the Council are -
- (a) to advise the Minister on the state of Namibia's heritage resources and on any steps necessary to protect and conserve them;
 - (b) to identify, conserve, protect and manage places and objects of heritage significance;
 - (c) to develop and revise from time to time the criteria for assessing the heritage significance of places and objects and determining whether those places or objects warrant inclusion in the Register;
 - (d) to initiate measures for or with respect to -
 - (i) the conservation of;
 - (ii) the provision of access to;
 - (iii) the presentation of;
 - (iv) the publication of information concerning;places or objects of heritage significance;
 - (e) to introduce measures and exercise control aimed at preventing the destruction, removal or injudicious treatment of, or deterioration or damage occurring in, places that have or may have heritage significance or special interest;
 - (f) to advise government ministries, offices and agencies, local authorities and public authorities on matters relating to the conservation and protection of places and objects of heritage significance;
 - (g) to advise the Minister or any other authority involved in administering any law relating to planning on proposed planning schemes or amendments to planning schemes which may affect the protection of places or objects of heritage significance;
 - (h) to promote public understanding of Namibia's heritage and develop and conduct community information and education programs;
 - (i) to liaise with other bodies responsible for or engaged in activities, relating to the protection, conservation, management and promotion of Namibia's heritage;
 - (j) to initiate and undertake or financially assist programs of research related to the identification, conservation or interpretation of Namibia's heritage; and
 - (k) to carry out any other functions conferred on the Council by or under this Act or any other law.
- (2) For the purpose of performing its functions, the Council may -

- (a) purchase or otherwise acquire or receive in trust or by donation any immovable or movable property or any interest in immovable or movable property which is, or is proposed to be declared, a heritage place or a heritage object under this Act, and entrust any heritage object so acquired to the custody of the National Museum, the National Art Gallery, the National Archives or any other museum or institution, as the Council may determine;
- (b) take such measures as the Council may determine for the preservation, conservation, restoration and security of any protected place or protected object, including the provision of incentives in such manner as it may think fit, and render financial assistance to any person or authority or body of persons who satisfies the Council that they have the necessary professional skills to carry out preservation and restoration work in relation to a protected place or protected object;
- (c) in relation to a protected place or protected object which is in private ownership, enter into an agreement with the owner with a view to the conservation of its environment or its preservation or presentation to members of the public;
- (d) by agreement with the owner of any land acquire or construct and maintain an access road over that land to any protected place and to construct upon the land fences, walls or gates along or across the road or to enclose that place;
- (e) insure in the name of the Council any property under its control and to insure the Council against any risk arising out of the exercise of its powers or the performance of its functions;
- (f) subject to the consent of the Minister, granted after consultation with the Minister of Finance -
 - (i) to lease, exchange, transfer to trustees to hold in trust or otherwise alienate or, hypothecate or burden with a servitude a protected place or other immovable property; or
 - (ii) to lend, exchange, transfer to trustees, to hold in trust or otherwise delegate control over a protected object or other movable object, owned by the Council or controlled on behalf of the State by the Council; or
- (g) appoint Honorary Heritage Officers to assist the Council in its functions on a voluntary basis.

Chairperson and Vice-Chairperson

6. (1) The Chairperson and Vice-Chairperson of the Council are elected by the members of the Council from among their number at the first meeting of the Council.

(2) The Council may at any time remove the Chairperson or the Vice-Chairperson from office and elect another member in that office.

Term of office

7. (1) An appointed member holds office for a period, not exceeding three years, specified in the instrument of his or her appointment.

(2) A retiring member of the Council is eligible for reappointment.

Vacation of office

8. (1) An appointed member ceases to hold office if he or she -
- (a) resigns his or her office by giving notice in writing signed by him or her to the Minister;
 - (b) has been absent from three consecutive meetings of the Council without leave of the Council; or
 - (c) is removed from office under subsection (2).

(2) The Minister may at any time, by notice in writing, remove an appointed member from office if the Minister is satisfied, after having given the member an opportunity to be heard, that the member -

- (a) is incapable of performing the duties of a member; or
- (b) is guilty of neglect of duty or misconduct.

Filling of casual vacancies

9. If the office of an appointed member becomes vacant, the Minister may appoint another person as member of the Council to fill the casual vacancy.

Alternate members

10. (1) The Minister may appoint an alternate member for each member of the Council.

(2) An alternate member may act in the place of the member for whom he or she is the alternate member if -

- (a) the member is absent or unable to perform the duties of his or her office;
- (b) the member and the alternate member agree that the alternate member is to act in the member's place; or
- (c) the member's position is vacant.

(3) An alternate member must not act for longer than 6 months in a member's vacant position.

(4) An alternate member has all the functions of the member when acting in the place of that member.

Meetings of the Council

11. (1) The first meeting of the Council must be held at a place and time determined by the Minister and any meeting of the Council thereafter must be held at a place and time determined by the Council.

(2) The Council must meet at least three times in every calendar year.

(3) The Chairperson of the Council -

- (a) must convene the next meeting of the Council if for any reason a meeting determined by the Council cannot take place; and

- (b) may at any time convene a special meeting of the Council.
- (4) The Chairperson or, in the absence of the Chairperson, the Vice-Chairperson, must preside at a meeting of the Council.
- (5) If neither the Chairperson or Vice-Chairperson are present at a meeting the members present must elect a member to preside at that meeting.
- (6) At a meeting of the Council -
 - (a) a majority of the members of the Council forms a quorum;
 - (b) all questions are decided by a majority of votes of the members present and voting; and
 - (c) the member presiding has a deliberative vote and, in the event of an equality of votes, also a casting vote.
- (7) The Council may invite any person who has expert knowledge of a matter before the Council for determination to attend the meeting and take part in discussions in relation to that matter, but that person has no vote.
- (8) An act or decision of the Council is not invalid only because of a defect or irregularity in or in connection with the appointment of a member of the Council.
- (9) The Council -
 - (a) may regulate its own proceedings; and
 - (b) must cause minutes of proceedings and decisions at each meeting of the Council to be kept.

Committees

- 12. (1) The Council may establish one or more committees -
 - (a) consisting solely of members of the Council, to carry out any functions of the Council delegated or assigned to it by the Council; or
 - (b) consisting of members only, or members and other persons as the Council may determine, to investigate and make recommendations to the Council on any matter referred to it by the Council.
- (2) The Council must designate a member of the Council to be the chairperson of a committee.
- (3) The Chairperson of the Council may attend a meeting of a committee of which he or she is not a member and may take part and vote in the proceedings thereof as if he or she were appointed as a member thereof.
- (4) The Council may at any time dissolve or reconstitute a committee.
- (5) The Council is not divested or relieved from a power or duty which has been delegated or assigned to a committee.
- (6) A decision of a committee in the exercise of a power delegated to it is subject to approval by the Council, and the Council may at any time vary or set aside the decision.

Remuneration

13. (1) A member of the Council or a committee, other than a staff member of the Public Service, is entitled to receive the fees and travelling and other allowances determined by the Minister, with the concurrence of the Minister of Finance.

(2) Fees and allowances determined under subsection (1) may differ according to the offices held or functions performed by different members.

Disclosure of interest

14. (1) A member of the Council or of a committee who has a direct or indirect financial or personal interest -

- (a) in a contract or proposed contract with the Council; or
- (b) in a matter being considered or proposed to be considered by the Council or a committee of which he or she is a member,

must, as soon as is practicable after the relevant facts have come to his or her knowledge, disclose the nature of his or her interest at a meeting of the Council or the committee, as the case may be.

(2) Subsection (1) does not apply to an interest which is held as a member of a public company common with other members of that company.

(3) A disclosure made in terms of subsection (1) must be recorded in the minutes of the meeting at which it is made.

- (4) A person who makes a disclosure in terms of subsection (1) must not -
- (a) take any further part in any consideration or discussion of the contract, proposed contract or other matter;
 - (b) take part in any vote on the contract, proposed contract or other matter; or
 - (c) be counted for the purposes of a quorum.

(5) A person who makes a full and accurate disclosure under subsection (1) and who complies with subsection (4)(a) and (b) is not in breach of any duty owed by him or her to the Council by reason of his or her interest in the contract, proposed contract or other matter about which the disclosure was made.

(6) A person who fails to comply with subsection (1) commits an offence and is liable to a fine not exceeding N\$4 000 or to imprisonment for a period not exceeding 1 year, or to both that fine and that imprisonment.

Immunity from liability

15. The Minister, the Council, a member of the Council or a member of a committee is not liable for anything done or omitted to be done in good faith -

- (a) in the carrying out a function or power under this Act or any other law; or
- (b) in reasonable belief that the act or omission was in the carrying out of a function or power under this Act or any other law.

Division 2 - Director and Staff**Director**

16. (1) The Council must appoint a suitable person to be the Director of the Council.
- 2) Subject to the directions of the Council, the Director is responsible for -
- (a) the formation and development of an efficient administration to manage the affairs of the Council and to implement its decisions;
- (b) the organisation, management and discipline of the staff of the Council;
- (c) carrying out any other functions assigned to the Director by the Council.

Staff

17. The Council may appoint such other employees as it considers necessary to assist in the performance of the Council's functions.

Conditions of service

18. The Council determines the remuneration and other conditions of service and benefits of the Director and other employees of the Council.

PART III**FINANCIAL PROVISIONS****Funds of the Council**

19. (1) The funds of the Council consist of -
- (a) money appropriated by Parliament for the purposes of the Council;
- (b) fees and other money paid to the Council under this Act;
- (c) interest derived from investments; and
- (d) money received from any other source.
- (2) The Council must annually submit to the Minister, at a time determined by the Minister, a statement of the Council's estimated income and expenditure for its next financial year for approval by the Minister, with the concurrence of the Minister of Finance.
- (3) The Council may during the course of a financial year submit to the Minister supplementary estimates of expenditure for that financial year for approval by the Minister, with the concurrence of the Minister of Finance.
- (4) The Council may not incur any expenditure except in accordance with an estimate of expenditure approved under subsection (2) or (3).
- (5) The Director is the accounting officer of the Council and is responsible for accounting for -
- (a) all money received and payments made by the Council; and
- (b) all assets and the discharging of all liabilities of the Council.

Bank accounts

20. (1) The Council must open and maintain accounts with a banking institution, as defined in section 1 of the Banking Institutions Act, 1998 (Act No. 2 of 1998), as may be necessary for the performance of the functions of the Council.

(2) The Council must ensure that -

- (a) all money received by or on behalf of the Council is deposited into its bank account as soon as is practicable after the receipt thereof;
- (b) any payment by the Council is made from its bank account; and
- (c) no money is withdrawn, paid or transferred from its bank account without the Council's authority.

(3) Cheques or orders drawn on the Council's bank account must be signed on its behalf by two persons authorised for that purpose by resolution of the Council.

Investment of money

21. Any money of the Council that is not immediately required for expenditure by the Council may be invested at a banking institution referred to in section 20(1) or another registered financial institution approved by the Minister.

Financial year, accounts and audit

22. (1) The financial year of the Council ends on 31 March of each year.

(2) The Council must -

- (a) cause proper books and records of account to be kept in accordance with generally accepted accounting practice and procedure to represent fairly the state of affairs and business of the Council and to explain its transactions and financial position; and
- (b) not later than three months after the end of each financial year, cause annual financial statements to be prepared showing, with appropriate particulars, the money received and expenditure incurred by the Council during the financial year and its assets and liabilities as at the end of that financial year.

(3) The books and records of account and the annual financial statements of the Council must be audited by the Auditor-General.

Reports and financial statements

23. (1) The Council must -

- (a) furnish to the Minister such information as the Minister may from time to time in writing require in connection with the activities and financial position of the Council; and
- (b) each year, within six months of the end of its financial year, submit to the Minister -
 - (i) a report on its activities in respect of that financial year; and
 - (ii) copies of the Council's audited financial statements and the auditor's report for that financial year;

(2) The Minister must lay a copy of the report and the financial statements referred to in subsection (1)(b) upon the Table in the National Assembly within 30 days of the receipt thereof if the National Assembly is then in ordinary session, or, if the National Assembly is not then in ordinary session, within thirty days after the commencement of its first ensuing ordinary session.

PART IV

SYSTEM OF HERITAGE PROTECTION

Division 1 - The Namibian Heritage Register

Namibian Heritage Register

24. (1) The Council must establish and maintain a register, to be called the Namibian Heritage Register, in respect of heritage places and heritage objects protected under this Act.

(2) The Register, or any part thereof, may be maintained in a form which the Council considers expedient, including in electronic form.

Categories of registration

25. (1) A place or object must be recorded in the Register in either of the following categories -

- (a) heritage places; or
- (b) heritage objects,

and in accordance with such further classifications as the Council may determine.

(2) Classifications under subsection (1) may include parts for -

- (a) national monuments, being heritage places -
 - (i) declared as national monuments under section 35; and
 - (ii) which were national monuments immediately before the commencement of this Act by virtue of a declaration made under the National Monuments Act, 1969; (Act No. 28 of 1969).
- (b) protected places;
- (c) listed buildings;
- (d) protected objects -
 - (i) listed generically;
 - (ii) listed in the inventories of the National Museum, National Art Gallery, the National Archives or any other museum or institution; or
 - (iii) in possession of an individual or a body corporate or association of persons under section 56.

(3) The Council may maintain in the Register parts for the recording of places and objects in respect of which limited identifying details are given, if the Council determines -

- (a) that they may be at risk of damage or removal if fully identified in the Register; and
- (b) that their protection cannot reasonably be secured otherwise.

Information to be included in Register

26. (1) Except in the case of places or objects referred to in section 25(3), the Council must record in the Register sufficient details to identify the places and objects included therein, including details relating to their location, ownership, and heritage significance.

(2) The Council is not required to include in the Register the name or exact location of a historic shipwreck or a historic shipwreck object referred to in section 57 of which the name or exact location is not known.

Copies and inspection of Register

27. (1) Copies of the Register, duly amended, must be kept -

- (a) at the office of the Council; and
- (b) any other place which the Council may determine and make known by notice in the *Gazette*.

(2) A copy of the Register, or any part thereof, must be made available for inspection by members of the public during normal office hours.

(3) The parts of the Register referred to in section 25(3), as well as any information not disclosed in relation to the items contained therein, are not open for inspection by any person, except with the express consent of the Council, and subject to the conditions determined by the Council.

(4) Inspection of the Register, or any part thereof is subject to payment of an inspection fee as may be determined by the Council, with the approval of the Minister.

Division 2 - Procedure for Declaration and Registration

Council to make recommendation to Minister for declaration

28. (1) The Council may submit to the Minister a recommendation that -

- (a) a place be declared a heritage place; or
- (b) an object be declared a heritage object.

(2) A recommendation under subsection (1) may be made by the Council, either -

- (a) of its own motion; or
- (b) upon a nomination made by any person or body.

(3) A recommendation to the Minister under subsection (1) must -

- (a) be in writing;
- (b) include a statement of the heritage significance of the place or object; and

- (c) specify the category and classification in the Register in respect of which the place or object is recommended to be declared a heritage place or heritage object.

Nomination for declaration

29. (1) A nomination by a person or body that a place or object be declared a heritage place or a heritage object must -

- (a) be made in writing to the Council in a manner approved by the Council; and
(b) specify the reasons as to why the place or object warrants to be so declared.

(2) The Council must not accept a nomination of a place or object under subsection (1) if, in the preceding 12 months -

- (a) the Council had refused to recommend to the Minister that the place or object be declared a heritage place or heritage object;
(b) the Minister had refused to declare the place or object as a heritage place or heritage object; or
(c) a previous declaration of that place or object as a heritage place or a heritage object has been revoked under this Act,

but the Council may accept the nomination if the Council receives significant information relating to that place or object which was not available to the Council and the Minister in reaching the decision referred to in paragraph (a), (b) or (c).

(3) If a nomination under subsection (1) is made in relation to a place which is an archaeological site the Council may accept a nomination of any archaeological objects associated with that place or any artefact or unique specimen which includes an archaeological object associated with that place for declaration as an archaeological object.

- (4) A nomination can be made -
(a) in respect of an archaeological object whether or not the object is located on or under the place or whether or not the exact location of the object is known;
(b) in respect of all objects associated with the place, whether or not the number or nature or the exact location of the objects is known; and
(c) without the extraction of the object from the place.

(5) The Council may ask a person or body nominating a place for further information to assist the consideration of the nomination.

(6) If the Council determines not to accept a nomination made in relation to a place or object it must in writing notify the nominator of its decision and furnish the reason for the decision.

Notice of proposed recommendation

30. (1) If the Council determines to recommend to the Minister that a place or object be declared a heritage place or a heritage object, the Council must give notice in accordance with subsection (2) to -

- (a) the owner of the place or object;
 - (b) the nominator, if any, of the place or object; and
 - (c) the relevant local authority in whose area of jurisdiction the place is situated,
- (2) A notice under subsection (1) must -
- (a) be in writing;
 - (b) set out the terms of the recommendation;
 - (c) include sufficient information to identify the place, or object, whether by reference to maps, diagrams or otherwise;
 - (d) include a brief statement of the heritage significance of the place or object;
 - (e) advise the owner that the Council will submit its recommendation to the Minister after a period of 60 days from the date the notice of the proposed recommendation is published under subsection (4);
-
- (f) advise the owner that the owner may, within that period of 60 days -
 - (i) make a submission on the proposed recommendation to the Council; and
 - (ii) request a hearing in relation to that submission; and
 - (g) set out a summary of the rights and obligations under this Act of the owners of protected places or protected objects of that kind.

(3) Despite subsection (2)(c), the Council may determine that, in relation to an archaeological site, some details of identification should not be included in the notice if the Council believes that there is a real danger that the site may be damaged or an archaeological object may be removed or damaged by a person if those details were known.

(4) The Council must cause a notice of a proposed recommendation that a place or an object be declared as a heritage place or a heritage object to be published in a newspaper circulating generally in the area in which the place or object is located at least 60 days before the date on which the Council proposes to submit its recommendation to the Minister.

Obligations of owner

31. (1) The owner of a place or object to whom notice has been given under section 30(2) must within 10 days after receipt of that notice advise the Council of -

- (a) any works or activities that are being carried out in relation to the place or object at the time the notice is given; and
- (b) any works or activities that are proposed to be carried out in relation to the place or object.

(2) After a notice has been given under section 30(2), and before the Minister takes a decision on the place or object, the owner must not, without the prior written approval of the Council, carry out or permit to be carried out any works or activities in relation to that place or object that could adversely affect the place or object.

(3) If, before the Minister's decision on a place or object to which a notice under section 30(2) relates, the owner proposes to dispose of the whole or any part of that place or object, the owner must -

- (a) advise the Council of the proposed disposal at least 10 days before entering into a contract for that disposal; and
- (b) before entering into a contract for that disposal, give a copy of the notice under section 30(2) to the person who, under the proposed contract, is to acquire the place or object or part of the place or object.

(4) An owner of a place who fails to comply with any provision of this section commits an offence and is liable to a fine not exceeding N\$ 10 000 or to imprisonment for a period not exceeding 1 year, or to both such fine and such imprisonment.

Submissions

32. (1) Any person may make a written submission to the Council in relation to a proposed recommendation of the Council that a place or object be declared a heritage place or heritage object.

(2) A submission under subsection (1) must be made within 60 days after the date that the notice of the proposed recommendation is published under section 30(4).

(3) A submission must relate only to the issue whether or not a place is of heritage significance.

(4) A person making a submission under this section may in that submission request an opportunity to be heard by the Council in relation to the submission.

Procedure if no submissions are received

33. If no submissions have been received in respect of the proposed declaration the Council may, after expiry of the submission period referred to in section 32(2), submit its recommendation to the Minister.

Procedure if submissions are received

34. (1) The Council must examine each submission in relation to a proposed declaration which has been made in the required time, and may -

- (a) ask the person making the submission for more information in relation to the submission;
- (b) conduct a hearing into the proposed declaration.

(2) The Council must conduct a hearing into a proposed declaration if a person with a real and substantial interest in the place requests a hearing by the Council in a submission under section 32.

(3) After considering any submissions and conducting any hearing into a proposed declaration, the Council may determine -

- (a) that the place or object is not of heritage significance and does not warrant inclusion in the Register;
- (b) that the place or object is of heritage significance and should be included in the Register;

- (c) that part of the place is of heritage significance and should be included in the Register;
- (d) that the place, or part of the place, or the object may be of heritage significance and that a provisional protection order should be made in respect of the place or that part of the place or the object.

(4) When making a recommendation that a place be declared a heritage place, the Council may recommend that the place be declared a national monument if the place is of major significance and importance in relation the national heritage.

(5) If, when making a recommendation that a place be declared a heritage place, the Council considers that -

- (a) the heritage significance of that place would be substantially less if the land or any part of the land which is or has been used in conjunction with the place were developed; or
- (b) land surrounding that place is important to the protection or conservation of the place or contributes to the understanding of the place,

the Council may make a recommendation that that land be included for declaration as being part of the place, whether or not the land is in the same ownership as the place.

(6) A recommendation in respect of land referred to in subsection (5) must be made with the consent of the owner.

(7) Upon making a determination under this section the Council must provide a report to the Minister on the proposed declaration, including a report on any submissions considered or hearing conducted and the Council's determination concerning the declaration which the Council recommends should be made by the Minister in relation to the place or object.

Division 3 - Declaration of Heritage Places and Heritage Objects and Registration

Decision of Minister

35. After considering the report of the Council, the Minister -
- (a) may make any determination recommended by the Council or that the Council could have made under section 34; and
 - (b) must notify the Council in writing of the determination made under paragraph (a).

Notice of declaration and registration

36. (1) If the Minister determines that a place or part of a place or an object be declared a heritage place or heritage object, the Council, upon receiving the Minister's notification, must -

- (a) include the place or part of the place or the object in the Register;
- (b) give notice to the owner of the declaration and inclusion in the Register of the place or object;
- (c) publish notice in the *Gazette* of the inclusion of that place or part of the place or the object in the Register as a heritage place or heritage object.

(2) A notice to an owner under subsection (1)(b), may include a determination by the Council as to works and activities that can be carried out in relation to the protected place or the protected object without the need for a permit under PART V.

(3) The notice under subsection (1)(c) must -

- (a) specify the category or categories of the Register and the part of the register under which the place or object is included; and
- (b) include sufficient information to provide reasonable identification of the place or object.

(4) Despite subsection (3)(b), the Council may, in relation to a place or object recorded in a part of the register referred to in section 25(3), include only limited identifying details as contemplated in that section.

Notice to Registrar of Deeds

37. (1) The Council must lodge with the Registrar of Deeds, in the prescribed manner, notice of any matter concerning any inclusion in, removal from or amendment to the Register which affects land.

(2) The Registrar of Deeds must make such endorsements or recordings in the appropriate documents and registers of the Deeds Registry, and any affected title deed or other document submitted to the Registrar, as are necessary to reflect the subject matter of the notice in respect of the land concerned.

(3) The Registrar of Deeds may require any evidence of the identity of any land affected by a notice lodged under subsection (1).

Certificates

38. (1) A person may apply to the Council for a certificate stating in respect of any place or object described in the application -

- (a) whether or not the place or object is included in the Register under this Act and the category in which it is registered;
- (b) whether or not the place or object is subject to a provisional protection order, and if so the date of the order;
- (c) whether or not the place or object is being considered by the Council under this Act for inclusion in the Register;
- (d) whether or not a nomination has been made under this Act for inclusion of the place or object in the Register;
- (e) whether a building is a listed building.

(2) An application in terms of subsection (1) must -

- (a) be in a form approved by the Council;
- (b) state particulars of the place or object in respect of which the certificate is required; and
- (c) be accompanied by the appropriate fee as determined by the Council, with the approval of the Minister.

Notice of sale of protected place or object

39. The owner of a protected place or protected object who proposes to enter into a contract of sale of the whole or any part of that place or object must notify the Council in writing of the prescribed information about that contract at least 30 days before the contemplated date of conclusion of the contract.

Amendment or removal of item on Register

40. (1) The Council may amend an item in, or remove an item from, the Register.

(2) Divisions 2 and 3 of this Part apply to an amendment or removal under subsection (1) in the same way as those Divisions apply to the declaration and registration of a place or object.

Division 4 - Provisional Protection Orders**Power to make provisional protection order**

41. (1) The Minister, on recommendation of the Council, may make a provisional protection order in relation to a place or object if, in the opinion of the Minister, it is necessary or desirable to do so for the purposes of this Act.

(2) A provisional protection order must be in the prescribed form.

(3) The Council must cause the provisional protection order to be served on the owner, occupier or person apparently in charge of the place or object.

(4) In the case of -

(a) a place which is a government building or State land; or

(b) an object which is in or on a government building or State land,

the Council must give the order required to be served under subsection (3) to a Minister or a public authority or any other person responsible for the care, management or control of that building or land.

Effect of provisional protection order

42. (1) A provisional protection order takes effect on the service of the order under section 41.

(2) For the period that a provisional protection order continues in force in relation to a place or object in terms of section 45, such place or object is deemed for all purposes of this Act to be a protected place or protected object.

Display of provisional protection order

43. (1) A person who has been served with a provisional protection order under section 41 in relation to a place must cause a notice of the existence of that order to be continuously displayed in a conspicuous position on the place for the period that the order is in force.

(2) A notice referred to in subsection (1) must be in a form approved by the Council.

Authorisation of certain works to be carried out

44. Despite anything to the contrary in PART V, while a provisional protection order is in force in respect of a place or object, the Council may authorise any reasonable works or activities on the place or object which may assist -

- (a) in determining the heritage significance of the place or object; and
- (b) in the consideration of the place or object for declaration under section 35 and inclusion in the Register.

Period of provisional protection order

45. (1) A provisional protection order relating to a place or object continues in force -

- (a) for a period of 6 months or any further period specified by the Minister under subsection (3); or
- (b) until the place or object is declared a heritage place or a heritage object in accordance with section 35 and included in the Register,

whichever first occurs.

(2) The Minister, on recommendation of the Council, may at any time revoke a provisional protection order.

(3) The Minister may at any time extend the period of which a provisional protection order continues in force.

(4) A notice of an extension under subsection (3) must be served in the same manner as the provisional protection order is served.

PART V - PERMITS**Certain activities prohibited**

46. (1) A person must not -

- (a) remove or demolish;
- (b) damage or despoil;
- (c) develop or alter; or
- (d) excavate,

all or any part of a protected place.

(2) A person must not -

- (a) remove or demolish;
- (b) damage or despoil;
- (c) alter or excavate; or
- (d) export from Namibia,

a protected object.

- (3) A person must not relocate or disturb the position of a fixed protected object.
- (4) Subsections (1), (2) and (3) do not apply to works or activities -
 - (a) carried out in accordance with a permit issued under this PART; or
 - (b) for which the Council has determined that a permit is not required pursuant to section 36(2) or section 47.

(5) A person who contravenes a provision of subsection (1), (2) or (3) commits an offence and is liable to a fine not exceeding N\$100 000 or to imprisonment for a period not exceeding 5 years, or to both such fine and such imprisonment.

Exemption from permit

47. (1) The Council may from time to time determine classes of works or activities which may be undertaken in respect of any protected place or protected object or class of protected places or protected objects without a permit under this PART. *or see Part VII - Music - un2*

(2) The Council must give written notice without delay to the owner of a protected place or protected object of a determination made under subsection (1) which affects that place or object.

(3) An owner may apply to the Council for a determination that a permit is not required in respect of particular works or activities in relation to a protected place or protected object.

(4) If the Council makes a determination under subsection (1) or (3), those works and activities may be carried out in relation to that protected place or protected object without a permit under this PART.

(5) The Council may at any time amend or revoke a determination made under subsection (1) or (3).

(6) The Council must give written notice without delay to the owner of protected place or protected object of an amendment or revocation under subsection (5) which affects that place or object.

Application for permit

48. (1) A person may apply to the Council for a permit to carry out works or activities in relation to a protected place or protected object.

- (2) An application must -
 - (a) be accompanied by the prescribed fee; and
 - (b) if the applicant is not the owner of the protected place or protected object, include the consent of the owner that the works or activities may be carried out in relation to that place or object.
- (3) An applicant may at any time -
 - (a) withdraw an application; or
 - (b) with the consent of the Council make amendments to an application.
- (4) In this section "owner" in relation to -

- (a) a place which is a government building or State land; or
- (b) an object which is in or on a government building or State land,

means a Minister, a public authority or any other person responsible for the care, management or control of that building or land.

Publication of application

49. (1) On receiving an application under section 48, the Council -

- (a) must cause notice of the application to be published in a newspaper circulating generally in the area in which the protected place or protected object is situated, if the Council considers that the proposed works or activities may detrimentally affect that place or object;
- (b) must make a copy of the application available at the office of the Council during normal office hours for inspection by members of the public for the period of 14 days after the notice is published under paragraph (a); and
- (c) may require the owner of the protected place or protected object to cause a copy of the application to be continuously displayed in a conspicuous position on that place or the place where the object is located for a specified period not exceeding 14 days.

(2) The Council may -

- (a) require the owner of a protected place or protected object to give the notice referred to in subsection (1)(a) at the owner's expense; or
- (b) if that notice is given by the Council, recover the costs of publication from the owner.

Submissions

50. (1) If notice of an application is given under section 49(1) any person may lodge a written submission with the Council in relation to the application.

(2) A submission must be lodged within 14 days after the notice is given under section 49(1).

Matters to be considered in determining application for permit

51. (1) In considering an application for a permit, the Council must have regard to -

- (a) the extent to which an approval of the application would affect the heritage significance of the protected place or object;
- (b) the extent to which a refusal of the application would affect the reasonable or economic use of the protected place or object, or cause undue financial hardship to the owner in relation to that place or object;
- (c) any submissions made under section 50;
- (d) if the applicant is a public authority, the extent to which a refusal of the application would unreasonably detrimentally affect the ability of the public authority to carry out a statutory function specified in the application; and
- (e) any matters relating to the protection and conservation of the place or object

that the Council considers relevant.

(2) The Council may ask the applicant or any person who has made a submission for additional information in relation to the application or submission that the Council thinks necessary to assist the determination of the application.

(3) Before determining an application, the Council may require the applicant to obtain from a person with appropriate professional qualifications or experience, at the applicant's expense, a statement as to the impact the proposed works and activities may have on the place or object to which the application relates and the risk of damage to the place or object.

(4) The Council must determine an application for a permit within 90 days after its receipt, but the Council, with the consent of the applicant or, if the applicant refuses consent, with the approval of the Minister, may extend that period by a further period not exceeding 30 days.

(5) If the Council obtains an extension in accordance with subsection (4), the Council must notify the applicant within 7 days of that extension and the period of the extension.

Issue of permit

52. (1) After considering an application and any submissions relating to the application, the Council may determine -

- (a) to issue the permit for the proposed works and activities;
- (b) to issue the permit for some of the proposed works and activities specified in the application and approved by the Council; or
- (c) to refuse to issue the permit.

(2) A permit may be issued on any conditions the Council thinks fit, including a condition requiring -

- (a) the applicant to carry out, at the applicant's expense, any protective works which the Council may specify;
- (b) that the works or activities be carried out under the supervision of a person with appropriate professional qualifications or experience as specified in the permit, at the applicant's expense;
- (c) in the case of a permit authorising excavation of a site, that Namibian citizens, as may be specified in the permit, be engaged in the activities for the purpose of receiving professional training.

(3) The Council must, within 7 days of making a determination under subsection (1) -

- (a) issue the permit to the applicant;
- (b) issue the permit for some of the works or activities approved by the Council under paragraph (b) of that subsection and give the applicant a written notice of refusal to issue a permit in respect of the works and activities not approved; or
- (c) give the applicant written notice of the refusal to issue the permit.

- (4) A notice of refusal under subsection (3)(b) or (c) must set out -
 - (a) the reasons for the refusal; and
 - (b) a statement of the applicant's right of appeal under section 61.

PART VI - SPECIAL PROVISIONS FOR PROTECTION AND MANAGEMENT OF CERTAIN HERITAGE RESOURCES

Listed Buildings

53. (1) The Council may identify, and include in the Register as listed buildings, any buildings which are worthy of protection and conservation.

(2) The Council must record in respect of each listed building sufficient details to identify the building, including details of its location, ownership and heritage significance.

(3) The Council must give notice of the listing of a building -

- (a) in the case of a building situated within a local authority area, to the relevant local authority;
- (b) in the case of a building situated outside a local authority area, to the owner of that building.

(4) A local authority must give notice to every owner of a listed building situated within its local authority area of the fact of the listing of that building under this section.

(5) A notice given to the owner of a listed building by the Council under subsection (3)(b) and by a local authority under subsection (4) must include a statement advising the owner of the obligations and liabilities of owners of listed buildings under subsections (6), (7), (12), (13) and (14).

(6) An owner of a listed building to whom notice has been given under subsection (3) or (4) must not carry out or cause or permit to be carried out any work for the alteration or development of that building without prior written consent obtained in accordance with this section.

(7) An application for consent under subsection (6) must be made at least 30 days before work for the alteration or development of the listed building is proposed to begin and must be submitted -

- (a) in the case of a building situated within a local authority area, to the relevant local authority; and
- (b) in the case of a building situated outside a local authority area, to the Council.

(8) A local authority, other than a local authority with delegated authority under subsection (9), must without delay and not later than 7 days after receiving an application under subsection (7)(a), submit the application to the Council and provide the Council with the prescribed information in relation to the application.

(9) The Council may -

- (a) delegate to any local authority the power to consider and determine an application submitted to that authority under subsection (7)(a); and

- (b) may impose conditions in relation to the exercise of that power by the local authority.
- (10) The Council and a local authority with delegated power under subsection (9) -
 - (a) may ask an applicant for further information to assist the determination of the application; and
 - (b) must determine the application within 30 days of the receipt of the application.
- (11) A local authority must forthwith give notice to the Council of any consent given by the local authority under subsection (10) and details of the consent given.
- (12) If an owner or occupier of a listed building alters or develops that building in contravention of subsection (6) -
 - (a) the relevant local authority, in the case of a listed building situated within the area of a local authority; or
 - (b) the Council, in the case of a listed building situated outside a local authority area,

may require the owner or occupier to stop any work for the alteration or development of that building and to restore it to its previous condition or design.

(13) If an owner or occupier fails to comply with the requirement of a local authority or the Council under subsection (12), the local authority or the Council may without further notice -

- (a) take possession of the building;
- (b) cause the necessary restoration work to be carried out; and
- (c) recover from that owner or occupier the cost of the restoration work.

(14) An owner who contravenes subsection (6) commits an offence and is liable to a fine not exceeding N\$10 000 or to imprisonment for a period not exceeding 2 years, or to both such fine and such imprisonment.

Conservation areas

54. (1) The Council may, by notice in the *Gazette*, declare any area defined in the notice to be a conservation area on the ground of its historic, aesthetic or scientific interest.

(2) Before the Council declares an area situated within a local authority area to be a conservation area, the Council must consult with the relevant local authority.

(3) If the Council and the local authority fail to agree on the declaration of the conservation area, the local authority may in writing request the Minister to review the decision of the Council in relation to the declaration of the conservation area.

(4) In determining a review under subsection (3), the Minister may confirm or cancel the decision of the Council and may by notice in the *Gazette* revoke a notice issued by the Council under subsection (1).

(5) A person must not undertake the work referred to in subsection (6) unless that person has complied with all the requirements of this section and permission has been given to that person by the Council in terms of subsection (10).

(6) A person who intends to undertake within a conservation area -

- (a) a development which exceeds 10 000 square metres in extent or the estimated costs of which exceed N\$2 million;
- (b) the construction of a road, wall, powerline, pipeline, canal or any other similar form of linear development or barrier exceeding 300 metres in length; or
- (c) the construction of a bridge or similar structure exceeding 50 metres in length,

must, at least 90 days before the work is planned to begin, give notice to the Council of the proposed work and of the location where the work is proposed to be carried out.

(7) The Council, with the consent of the Minister responsible for environment, must as soon as is practicable, but in any event not later than 30 days after receipt of the notification, inform the person who gave the notice whether the Council requires him or her to obtain, at his or her expense, an environment impact assessment from a person with appropriate professional qualifications or experience, with a view to determining -

- (a) the existence of heritage resources in the vicinity of the relevant area where work is to be carried out;
- (b) the impact of the proposed work on those resources; and
- (c) the extent to which the proposed area and height of the proposed development may be obtrusive in relation to the area and height of any protected place or listed building in the vicinity.

(8) The report on the environment impact assessment must be submitted to the Council and the Minister responsible for the environment.

(9) The Council may require the person proposing to undertake the work to meet with the Council for the purpose of discussing the report and ways to minimize any adverse effect of the work on heritage resources as may be indicated in the report.

(10) The Council may, after considering the report and any other information submitted to it in terms of this section, permit, subject to any conditions which it may impose, the person who has given notice to it in terms of subsection (6), to undertake the proposed work.

(11) The Council may, in a notice under subsection (1) or a subsequent notice, prohibit that any building situated within the conservation area which is 50 or more years old be demolished without the written consent of the Council.

Archaeological and palaeontological sites, meteorites and other heritage resources

55. (1) The Council may cause to be erected at suitable places within or on the boundaries of or near a registered archaeological or palaeontological or meteorite site notices indicating that the site is a protected place.

(2) The fact that a notice is not erected under subsection (1) does not affect the liability of any person for a contravention of this Act relating to archaeological or palaeontological sites or archaeological or palaeontological objects or meteorites.

(3) All archaeological and palaeontological objects and meteorites are the property of the State, except such an archaeological or palaeontological object the private possession and ownership of which -

(a) was acquired not in contravention of section 12 of the National Monuments Act, 1969 (Act No. 28 of 1969) or a law repealed by that Act; or

(b) is acquired by virtue of a consent issued under this section.

(4) A person who discovers any archaeological or palaeontological object or meteorite must as soon as practicable report the discovery to the Council.]

(5) If the Council has reason to believe that any activity or development is being carried out in or on any area of land which is believed to be an archaeological or palaeontological or meteorite site without a permit under section 52 and that the activity or development may destroy, damage or alter that site, the Council may -

(a) serve on the owner or occupier of the site or on the person undertaking the activity or development an order to cease that activity or development immediately for the period specified in the order;

(b) carry out or cause to be carried out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists on the land and whether the activity or development may adversely affect that site;

(c) if the Council considers that the activity or development may adversely affect the archaeological or palaeontological site, assist the person on whom the order has been served under paragraph (a) to apply for a permit in accordance with section 48; and

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(d) recover the costs of the investigation from the person on whom the order has been served under paragraph (a) if the investigation shows that an archaeological or palaeontological site exists on the land and that a permit under section 52 is required for carrying out that activity or development.

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(6) The Council, after consultation with the owner of any land on which an archaeological or palaeontological site or a meteorite is located, may serve a notice on that owner to prohibit any activities indicated in the notice within a specified distance from that site or meteorite.

(7) Unless authorised by a permit under section 52, a person must not, without a consent issued under subsection (8) -

(a) use an archaeological or palaeontological object or meteorite for the purpose of study, conservation or presentation;

(b) uncover or expose, or move from its original position, any archaeological or palaeontological object or meteorite;]

(c) carry out an investigation or survey of any land for the purpose of finding any archaeological or palaeontological object or meteorite;]

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(d) alter or develop any land on or in which an archaeological or palaeontological site or a meteorite is believed to be located;

(e) carry out an act likely to endanger an archaeological or palaeontological object or meteorite;

- (f) within the area of a registered archaeological site be in possession of any excavation equipment or equipment designed or used for the detection of metals or archaeological or palaeontological objects or meteorites; or
- (g) whether as principal or agent -
 - (i) buy or sell;
 - (ii) export or attempt to export from Namibia;
 - (iii) have in his or her possession for the purpose of sale or export, any archaeological or palaeontological object or any meteorite;
- (8) An application for a consent referred to in subsection (7) must -
 - (a) be made to the Council; and
 - (b) be accompanied by the prescribed fee.
- (9) The Council may issue a consent subject to any conditions that the Council thinks fit, including a condition -
 - (a) that the activity authorised by the consent be supervised by a person with appropriate professional qualifications or experience as specified in the consent;
 - (b) that any archaeological or palaeontological object or meteorite found in the course of the activity authorised by the consent must be recorded, conserved and dealt with in a way specified in the consent; and
 - (c) that Namibian citizens, as may be specified in the consent, be engaged in the activity authorised by the consent for the purpose of receiving professional training.
- (10) A person who contravenes or fails to comply with an order under subsection (5)(a), a notice under subsection (6), any provision of subsection (7) or any condition imposed under subsection (9), commits an offence and is liable to a fine not exceeding N\$100 000 or to imprisonment for a period not exceeding 5 years or to both such fine and such imprisonment.

Duty of persons possessing an archaeological or palaeontological object or meteorite

56. (1) A person who is in possession of an item which is an archaeological or a palaeontological object or meteorite on the date of commencement of this Act must, within the period as the Minister may determine by notice in the *Gazette*, notify the Council of his or her possession of that item and provide the information prescribed in the notice in relation to the item.

(2) An item in respect of which a person without reasonable cause does not give the notification under subsection (1), is deemed to have come into that person's possession after the commencement of this Act.

(3) If a person gives notification under subsection (1) in respect of an item of which that person or any other person acquired possession otherwise than as contemplated in section 55(3), that item, unless the Council directs otherwise, remains in the person's possession -

- (a) in the case of an individual, until the person's death; or
- (b) in the case of a body corporate or trust or an association of persons, until the date determined by the Minister by notice in the *Gazette*,

provided the person or a representative of the body corporate, trust or association, at the request of the Council, signs a written undertaking as determined by the Council to take the measures as the Council may require for the protection and safe-keeping of the item and not to part with the possession thereof, except to the Council or any person or institution specified by the Council.

(4) Arrangements for the transfer of an item in the circumstances contemplated in subsection (3), must be made, in the case of a deceased person, between his or her executors and the Council, and in any other case between the representative of the body corporate, trust or association.

(5) A person referred to in subsection (3) who fails to comply with a written demand of the Council to rectify any breach of a condition of an undertaking referred to in that subsection within the period specified by the Council must, on the written direction of the Council, deliver the item to the Council or any person or institution specified by the Council.

Historic shipwrecks and shipwreck objects

57. (1) The remains of all ships that have been situated on the coast or in the territorial waters or the contiguous zone of Namibia for 35 years or more are historic shipwrecks for the purposes of this section.

(2) All articles that have been situated on the coast or in the territorial waters or the contiguous zone of Namibia for 35 years or more and that were associated with ships are historic shipwreck objects for the purposes of this section.

- (3) The Minister may, by notice in the *Gazette*, declare that -
 - (a) subsection (1) does not apply to the remains, or part of the remains, of a particular ship or class of ships; or
 - (b) subsection (2) does not apply to any specified article or class of articles.
- (4) If the Council proposes to recommend to the Minister -
 - (a) under section 28, that -
 - (i) a place where the remains of a ship are located be declared a protected place; or
 - (ii) an article associated with a ship be declared a protected object; or
 - (b) under section 41 that a provisional protection order be made in relation to a place where an article or articles appearing to be the remains of a ship are located.

the Council must obtain and submit to the Minister, together with the Council's report and recommendation, any comments or advice which the Minister responsible for fisheries and marine resources may wish to make or give in relation to the proposed declaration.

Site management

- 58. (1) The Council must progressively introduce and maintain -

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- (a) for each protected place which is a national monument; and
- (b) for any other protected place as the Council may determine,

a site management plan in accordance with the best cultural, environmental, ecological, scientific and education principles that can reasonably be applied, taking into account the location, size and nature of the site and the extent of the resources of the Council.

(2) The management of a site in accordance with subsection (1), or any activity connected with the management of a site, may be undertaken -

- (a) solely by the Council;
- (b) by the Council in conjunction with staff members of the Ministry of Environment and Tourism designated by the Minister responsible for that Ministry; or
- (c) by any person, traditional authority as defined in the Traditional Authorities Act, 2000 (Act No. 25 of 2000), institution or undertaking in accordance with the terms and conditions of a contract entered into between the Council and the person, traditional authority as defined in the Traditional Authorities Act, 2000 (Act No. 25 of 2000), institution or undertaking, with the approval of the Minister.

(3) A site management plan may relate to -

- (a) the enclosure of the site, or such parts thereof as need to be kept secure;
- (b) the provision of authorised points of entry, access routes and parking facilities;
- (c) the imposition and collection of admission charges;
- (d) the employment of trained guides and other attendants for providing information, assistance and other services to visitors;
- (e) the provision of information and education about the site which will lead to an understanding and appreciation of the heritage significance and values associated with the site;
- (f) the provision of facilities for the convenience or enjoyment of visitors, including the sale of refreshments and items of interest;
- (g) the construction and maintenance of camping or other facilities for the accommodation of visitors; and
- (h) any other matter which the Council considers necessary or expedient for the conservation and management of the site.

(4) The Council must cause to be displayed at each authorised point of entry to a managed site -

- (a) the emblem of the Council; and
- (b) the conditions on which access to the site is permitted.

PART VII - MISCELLANEOUS**Service of notices, orders and other documents**

59. (1) Any notice, order or other document required to be served on or given to a person under this Act, may be served or given -

- (a) by delivering it to that person;
- (b) by leaving it at the person's usual or last known place of residence;
- (c) by forwarding it by post in a prepaid registered letter addressed to the person at his or her usual or last known postal address or place of residence;
- (d) by forwarding it electronically to that person at his or her last known place of residence or business; or
- (e) in the case of a place, by displaying it at that place.

(2) If a provisional protection order is served -

- (a) on a person other than the owner of the place or object to which the order relates; or
- (b) in the manner referred to in subsection (1)(c),

the Council must as soon as possible after the service of the order -

- (c) cause a copy of the order to be served on the owner in accordance with subsection (1)(a), (b), (c) or (d); or
- (d) if the address of the owner is unknown, cause a copy of the order to be published in a newspaper circulating generally in Namibia.

Appointment and powers of heritage inspectors

60. (1) The Council may appoint persons to be heritage inspectors for the purposes of this Act.

(2) A staff member of the Public Service or a public authority may be appointed as heritage inspector only with the consent of the Minister or other person in charge of the relevant Ministry or of the public authority.

(3) Each member of the Namibian Police Force and each customs and excise officer is a heritage inspector.

(4) The Council must issue to each heritage inspector, other than a person referred to in subsection (3), an identity card containing a photograph and the signature of the heritage inspector.

(5) A heritage inspector, other than a person referred to in subsection (3), who seeks to exercise any power under this Act in relation to any person must produce his or her identity card for inspection by that person.

(6) A heritage inspector may at all reasonable times enter upon any land or premises for the purpose of inspecting any heritage resource protected in terms of this Act, or any other property in respect of which the Council may exercise its functions and powers under this Act, and may take photographs, make measurements and sketches and use any other means of recording information necessary for the purposes of this Act.

(7) A heritage inspector may at any time inspect work being done under a permit or consent issued in terms of this Act and may for that purpose at all reasonable times enter any place protected in terms of this Act.

(8) If a heritage inspector has reasonable grounds to suspect that an offence in terms of this Act has been, is being, or is about to be committed, the heritage inspector may, with such assistance as he or she thinks necessary -

- (a) enter and search any place or premises, other than a private dwelling, or any vehicle, vessel or craft, and for that purpose stop and detain any vehicle, vessel or craft, in or on which the heritage inspector believes, on reasonable grounds, there is evidence related to that offence;
- (b) confiscate and detain any heritage resource or evidence concerned with the commission of the offence; and
- (c) take any action reasonably necessary to prevent the commission of an offence in terms of this Act.

(9) A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit or consent issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the Council.

(10) A heritage inspector may require any person who he or she has reason to believe has committed an offence in terms of this Act to supply his or her name and address and reasonable evidence of his or her identity, and may arrest a person who refuses to comply with that requirement.

Appeals

61. (1) A person who is aggrieved by -

- (a) a refusal of the Council to accept a nomination under section 29;
- (b) a refusal of the Council to grant a permit or any consent under this Act;
- (c) a condition imposed by the Council in relation to any permit or consent under this Act;
- (d) a decision of the Council in relation to an appeal under subsection (2); or
- (e) or any order issued or prohibition imposed or any other decision which affects any real and substantial interest of the person in a protected place or protected object or a place or object which may be of heritage significance,

may appeal against the decision of the Council to the Minister in the prescribed manner.

(2) A person who is aggrieved by a decision of a local authority with delegated authority under section 53 in relation to an application for consent in respect of a listed building, may appeal against that decision to the Council in the prescribed manner, who may confirm or refuse the appeal.

(3) In determining an appeal under subsection (1), the Minister may -

- (a) confirm the Council's decision;
- (b) refer the matter back to the Council for reconsideration in accordance with any directions the Minister may give; or

- (c) make any decision which the Council could have made in relation to the matter under this Act.

Regulations

62. (1) The Minister, on the recommendation of the Council, may make regulations relating to -

- (a) the issuing of any permit or consent under this Act;
- (b) the control of excavations or other works or activities carried out in relation to a protected place or protected object;
- (c) any application made to the Council or a local authority with delegated power under this Act, including the particulars or information to be furnished and any documents, drawings, plans and photographs to accompany such application; and
- (d) generally relating to any matter required or permitted to be prescribed under this Act or which the Minister considers necessary or expedient to prescribe for the purpose of achieving the objects of this Act.

(2) The Minister may make regulations relevant to international conventions or agreements to enforce measures concerning trade in items of national heritage belonging to states other than Namibia.

- (3) Regulations made under this section may -
 - (a) differentiate between different classes of persons or different places or objects;
 - (b) make provision for the granting of exemptions from any provision thereof;
 - (c) create an offence for any contravention thereof or any failure to comply with a provision thereof; and
 - (d) prescribe penalties in respect of any such offence not exceeding a fine of N\$4 000 or imprisonment for a period of 1 year.

Offences and penalties

63. (1) A person commits an offence who -
- (a) fails to comply with a request or requirement lawfully made under this Act;
 - (b) for the purpose of obtaining, whether for himself or herself or for any other person, any permit, consent or other authority in terms of this Act, makes any statement or representation knowing it to be false or not knowing or believing it to be true;
 - (c) fails to comply with or performs any act contrary to the terms, conditions, restrictions or directions subject to which any permit, consent or authority has been issued to him or her under this Act;
 - (d) obstructs the holder of a permit or consent under this Act in exercising a right authorised by the permit or consent;

- (c) hinders or obstructs a heritage inspector in the exercise of any power or the performance of any duty under this Act;
- (f) damages, takes or removes, or causes to be damaged, taken or removed from a place protected in terms of this Act any badge, sign, notice or thing displayed or erected by the Council or a local authority;
- (g) receives any badge, emblem or any other property or thing unlawfully taken or removed from a place protected under this Act.

(2) A person convicted of an offence under subsection (1) is liable to a fine not exceeding N\$8 000 or imprisonment for a period not exceeding 2 years or to both such fine and such imprisonment.

(3) If a person is convicted of an offence under this Act which has resulted in damage to or alteration of a protected heritage resource, the court may -

- (a) order that person to remedy the result of the act of which he or she was convicted, in a manner and within the period specified by the court, and upon the person failing to comply with the order, order the person to pay to the Council a sum equivalent to the cost of making good; or
- (b) if it is of the opinion that such person is not in a position to make good damage done to the heritage resource by virtue of the offender not being the owner or occupier of a heritage resource or for any other reason, or that it is unrealistic or undesirable to require that the results of the act be made good by the offender, order the offender to pay to the Council a sum equivalent to the cost of making good.

Exemption from taxes and protection of copyright

64. (1) Notwithstanding anything to the contrary in any other law contained, no duty, tax or fees, other than a duty, tax or fee levied under the law relating to customs and excise, is payable by the Council to the State in respect of anything done or any transaction under this Act or in respect of any document required in connection with anything so done or with any such transaction.

(2) Notwithstanding sections 5 and 27(5) of the Copyright and Neighbouring Rights Act, 1994, (Act No. 6 of 1994) copyright in any work, as defined in section 1 of that Act, published by the Council vests in the Council, who may exercise all the rights of a copyright owner under that Act.

Educational role of Council

65. (1) The Council in the performance of its education function must publish a statement approved by the Minister of the Council's policy for the protection of Namibia's heritage.

(2) In performing that function, to the extent of personnel and financial resources available to the Council, the Council may -

- (a) liaise and consult with local authorities and community leaders in relation to the protection, conservation and maintenance of protected places and protected objects and their environment;
- (b) educate and encourage owners of land and members of the public to report and protect discoveries of places and objects of cultural, artistic, natural, palaeontological, archaeological, historical or scientific interest;

- (c) publish or promote the publication of guidebooks and similar publications, having an educational purpose in respect of all or any parts of Namibia and its heritage;
- (d) issue broadsheets and leaflets for use by visitors to protected places and protected objects;
- (e) carry out and encourage research into national, regional and local history of Namibia and its heritage, and publish the useful results of the research;
- (f) contribute to and encourage the training of staff and the professional development of persons working in the field of heritage;
- (g) encourage public awareness and participation in heritage matters.

Remedial works

66. (1) In the event of any breach of a provision of this Act or an obligation under this Act on the part of a person charged with the custody of a protected place or protected object whereby damage is caused to that place or object, the Council may -

- (a) by notice in writing require that person to remedy the damage within a specified period and at the person's own expense; and
- (b) upon failure of the person to comply with the notice, itself enter upon the property and to remedy or cause to be remedied the damage and recover the cost for the remedial work from that person, except if the person proves that he or she was not responsible for the damage either directly or indirectly through default or neglect.

(2) If a person has defaced, destroyed, removed, altered or damaged a memorial tablet at a protected place or the Council's emblem or any sign or notice erected by the Council, the Council may cause the damage to be repaired or the tablet, emblem sign or notice to be replaced and recover the cost thereof from that person.

By-laws of Council and local authorities

67. (1) The Council, with the approval of the Minister, may, by notice in the *Gazette*, make by-laws in relation to -

- (a) the admission of members of the public to protected places to which access is allowed under the control of the Council and the fees payable for admission;
- (b) the conditions of use by any person of any protected place or protected object which is under the control of the Council;
- (c) the safeguarding and protection of, and access of members of the public to, any protected place or object in the possession of a private person;

(2) A local authority may, with the approval of the Minister, granted on the recommendation of the Council, make by-laws in relation to -

- (a) the admission of the public to a protected place to which the public is allowed access under the control of the local authority and the fees payable for admission;
- (b) the conditions of use by any person of a protected place or object which is under the control of the local authority.

(3) A by-law made under this section may prescribe fines not exceeding N\$2 000 or imprisonment for a period not exceeding 6 months for any contravention thereof or failure to comply therewith.

Transitional provisions

68. (1) All assets, rights liabilities and obligations of the National Monuments Council constituted under the National Monuments Act, 1969 (Act No. 28 of 1969) vest in the Council on the commencement of this Act.

(2) Any immovable property referred to in subsection (1) vests in the Council without formal transfer and without payment of transfer duty, stamp duty or any other fee or charge, but subject to any existing right, charge, obligation registered in or over the property.

(3) The Registrar of Deeds must make the necessary endorsements in the registers and records of the Deeds Registry and on any title deed or other document submitted to the Registrar to give effect to the provisions of subsection (2).

(4) A person who immediately before the date of commencement of this Act was a member of the National Monuments Council referred to in section 2 of the National Monuments Act, 1969 (Act No. 28 of 1969) continues to serve as member of the Council for a period of 1 year from the date of commencement of this Act and is deemed to have been appointed under this Act.

(5) Every person who, immediately before the date of commencement of this Act, was employed by the National Monuments Council referred to in subsection (1), becomes on that date an employee of the Council -

- (a) at the same remuneration and conditions of service as applied to him or her immediately before that date; and
- (b) without any interruption in the employment of that person.

Repeal of laws and savings

69. (1) Subject to subsection (2) -

- (a) the National Monuments Act, 1969 (Act No. 28 of 1969);
- (b) the National Monuments Amendment Act, 1970 (Act No. 22 of 1970);
- (c) the National Monuments Amendment Act, 1971 (Act No. 30 of 1971);
- (d) the National Monuments Act Amendment Act, 1979 (Act No. 7 of 1979); and
- (e) the National Monuments Amendment Act, 1979 (Act No. 35 of 1979);

are repealed.

(2) Any regulation or by-law made and anything done under a provision of a law repealed by subsection (1), and which may be made or done under a provision of this Act, is deemed to have been made or done under the corresponding provision of this Act.

Short title and commencement

70. This Act is called the National Heritage Act, 2004 and comes into operation on a date determined by the Minister by notice in the *Gazette*.

(3) A by-law made under this section may prescribe fines not exceeding N\$2 000 or imprisonment for a period not exceeding 6 months for any contravention thereof or failure to comply therewith.

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Short title and commencement

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Introduction

I chose to do my fieldwork in Namibia since Kalle Lindholm, a PHD-student at the Department of Archaeology and Ancient History at Uppsala University, spoke so highly of the country and its fascinating history and prehistory. Having studied archaeology as well as anthropology, I was looking for a way to do ethnographic field research without losing touch with the archaeological material. Consulting Kalle Lindholm on this matter proved to be fruitful. Through him I came in contact with the Namibian archaeologist John Kinahan, who suggested the rock art site *Twyfelfontein* as a suitable place for doing the fieldwork I had in mind. Here it would be possible to work with a group of people that made a living out of working on an archaeological site. John Kinahan also gave me initial assistance in the field, by introducing me to the guides working at Twyfelfontein.

Since I am a student at the Department of Cultural Anthropology and Ethnology at Uppsala University, the fieldwork was made within the framework of my Master Thesis in Cultural Anthropology, which will be completed this year. The aim of the research was to analyse in what ways monumental archaeological sites can be important to members of local communities, using the guide community at Twyfelfontein as a case study. The work was financed through a SIDA Minor Field Study scholarship.

The following text is entirely based on the fieldwork carried out at Twyfelfontein between September and December 2004, and can be seen as a summary of my experiences there. Altogether, I spent eight weeks with the *Damara* site guides doing research on their views on different aspects of the rock art site. I participated in their daily work at the site as well as in other activities after working hours. Most of the information was received through daily conversations with guides and other people in the area, but I also made around twenty formal interviews with guides. Eight weeks might be considered a short period of time. The fact that I could communicate with all the guides using English, and not had to depend on an interpreter, meant that I nevertheless was able to gather what I consider to be sufficient information for my purposes. I do not mention any of my informants by name, and I have chosen not to reveal age or sex of specific individuals that have provided me with information since this would make them easy to identify for some. Not that I, at this moment, consider anything they have said to be very controversial, but written statements can easily be misunderstood or misused, and this could cause inconvenience to those I worked with.

The area and tourism

Today, the Twyfelfontein area is a conservancy, called the Uibasen Twyfelfontein conservancy, which was established towards the end of the 1990s on initiative of local farmers. Their farms had been established due to the South African *Odendaal Commission* of 1964, which resulted in a large area being designated a Damara Home Land, *Damaraland* (041004, 041201 Twyfelfontein, Field Note Book 1). From the 1990s and onwards there has been a population increase in the Twyfelfontein area. Quite a few people have moved here from rather distant places, but many have also come from nearby farms, contributing to a somewhat more dense population in the surroundings of the Twyfelfontein rock art site. The reason for this increase in residents is mainly that more and more tourists are visiting the area, usually to see the Twyfelfontein rock art. The increasing amount of visitors in recent years has resulted in the establishment of several tourist accommodation facilities that have led to many new job opportunities, which have attracted people to move here. The site receives about 35,000 visitors per year, and today most of the households in the area are involved in the tourism, in one way or another. The biggest tourist facilities in the conservancy are the *Twyfelfontein Country Lodge*, the *Mowani Mountain Camp* and the *Aba-Huab Camp* (041208 Twyfelfontein, Field Note Book 1).

The guides

When I conducted my field research about 20 people, men and women, were working as guides at the Twyfelfontein rock art site. All of them belonged to the ethnic group Damara, and ages ranged between 17 and 35. The guides were divided into two groups, taking turns in working a seven day shift followed by a seven day leave. Many of the guides originally come from Khorixas, a small town about 100 km east of Twyfelfontein, others are from local farms and some from more distant farms. Those who come from farms in the area usually have some connection to Khorixas, since they went to school there and, subsequently, in part have grown up there. A few of the guides have worked at the site on and off since the mid 1990s, but the majority of them have joined the group later on (041011, 041012, 041130 Twyfelfontein, Interviews). Most of the guides live in *Laow Inn*, a settlement located some eight or nine kilometres from the rock art site, although many of them also stay on farms or in Khorixas for some periods of time. *Laow Inn* was originally a farm cattle post, later became a more permanent settlement and due to the new job opportunities in tourism it has grown to a

settlement with 40 to 60 residents. The number of residents varies, and some only stay there on part time basis (041208 Twyfelfontein, Field Note Book 1).

In the beginning of 2004 all the Twyfelfontein site guides were made employees of the *National Monuments Council*, and they now receive a monthly salary. Up to this point in time, when the National Monuments Council was able to include the guiding activities in their overall management of the site, all guiding had been organised locally. The guides had themselves formed a guide association and through *Nacobta (Namibian Community-Based Tourism Association group)* received some basic guide training (041208 Twyfelfontein, Field Note Book 1). The main part of the income generated from the site now goes directly to the National Monuments Council. Work opportunities are scarce in this part of the country and although the guide job is by no means well-paid, the salary, together with tip money from visitors, means that the guides get a chance to provide for themselves and their families (041003 Twyfelfontein, Field Note Book 1).

The importance of the site

When asked in what ways the rock art site is important, guides often mention the economic value of the site first. In such an environment as this, with the high unemployment numbers in mind, economy is of course the far most obvious aspect to be considered. The tourism in the area is seen as crucial for raising the incomes and living standard of members of the local communities. It is vital to maintain the high number of visitors to sites such as Twyfelfontein since this contributes to the economic development of the whole region (041011, 041012 Twyfelfontein, Interviews). The wealth generated through different tourist activities in the Twyfelfontein area is by no means evenly distributed. Nevertheless, working as a guide at the rock art site, or being employed at a camp or a lodge, makes a big difference to people and their families (041208 Twyfelfontein, Field Note Book 1).

On an individual level, getting the guide job has changed many things, or as one person put it: “I was struggling, now I don’t struggle anymore” (041012 Twyfelfontein, Interview). Another guide expressed a similar opinion: “I had a useless life before I got this job” (041130 Twyfelfontein, Interview). A few are even convinced that, without this job, they would have ended up in the streets of some town, pushed into becoming criminals. Their work at Twyfelfontein now makes it possible for them to make a descent and honest living (041208 Twyfelfontein, Field Note Book 1). Working at the site has indeed changed the lives of many of the guides. The incomes give them the means to support themselves and their families, they

can buy food, clothes, medicines, and, not least, pay their children's school fees. Working with tourists, the guides have also been able to improve their language skills, learning more English and other languages as well, especially German. The opportunity to learn languages, and to communicate with people from all over the world on a daily basis, is by many considered to be one of the most rewarding aspects of this kind of work. Their new language skills, and the sense of doing something really meaningful when teaching visitors about the site, have made the guides more confident in themselves. Of course their improved economic situation has also contributed to this self-esteem (041011, 041012, 041017, 041130 Twyfelfontein, Interviews).

Many of the guides are proud of working at such an extraordinary site as Twyfelfontein, and they see it as part of their cultural heritage. One guide was of the opinion that the site must be preserved so that future generations will be able to experience it, and also in order to allow for more research to be carried out: "so that prehistory must not die and go out" (041012 Twyfelfontein, Interview). The origin of the rock art at Twyfelfontein is usually ascribed to the San people, both in the tourist-oriented travel literature and by academic scholars on the rock art of Southern Africa. This view is also presented by many of the guides working at the site, but it is not completely shared by all of them. One of the guides said that the site is ascribed to the San because this is the only ethnic group that in historical times have practised such religious traditions that scholars think could result in engravings and paintings of this kind (041210 Twyfelfontein, Interview). Some guides argue that since the Damara and the San have a similar cultural background, it is as likely that the hunter-gatherer rock art site of Twyfelfontein is of Damara origin. The two groups use similar languages and the Damara have, like the San, lived as hunter-gatherers in the past. Others still are of the opinion that Damara and San share the same ancestors, and that the site therefore is part of both groups' heritage. The guides draw on different sources, for example history books and texts on rock art and archaeology. One person said that the whole question of origin could only be solved through archaeological investigations. If one could find prehistoric burials in the area it would be possible to identify these remains with certain ethnic groups, for example by comparing rests of garments and ornaments with those used by different ethnic groups during historical times (041130, 041208 Twyfelfontein, Field Note Book 1; 041024, 041210 Twyfelfontein, Interviews).

The opinions concerning the ethnic origin of the site are very interesting, but I do not wish to speculate over whether the site is of San or Damara origin. Within the discipline of archaeology there is a long tradition of ascribing prehistoric remains to specific ethnic groups.

However, I find it impossible to connect an archaeological site from the Late Stone Age with a modern ethnic group. From an archaeological point of view (or at least my archaeological point of view) this is not meaningful either. I think it is very problematic to talk about ethnic groups in prehistory, and especially to talk about ethnic groups of today in prehistoric terms. I do not see ethnicity as something primordial. Once a strong ethnic identity have been forged, be it an African tribal identity or a nationalist European identity like the Swedish one, this identity will be viewed as something given, as the natural order of the world. This identity will therefore be projected on our past as well. Ethnic identity becomes very fundamental, and therefore almost impossible to disregard. From this constructivist standpoint, I am of the opinion that modern ethnic categories are not valid as labels for prehistoric people. This is an academic view on ethnicity and prehistory, and it does not correspond to how people in general actually view their past. Normally, ethnic identity is seen as something natural and timeless.

The guides' views on the origin of the site of Twyfelfontein show that they consider it to be very important from a cultural point of view. Working at the site has definitely made some of the guides more interested in, and conscious about, their own culture. One guide told me that just being at Twyfelfontein brought the origin closer. This is important, not least since many of the guides feel that they have left much of their culture behind, living a more modern way of life. Working at Twyfelfontein can therefore also be a way of 'coming back to your ancestors,' whose engravings and paintings are something to be proud of (041208 Twyfelfontein, Field Note Book 1; 041130 Twyfelfontein, Interview).

Conclusions

The Twyfelfontein site is obviously of great economic importance to most people living in the area. The guides' opinions on the cultural aspects of the site are less obvious to most visitors, but they deserve attention since they are certainly no less important than other theories on the origin of the site. Some of the guides ascribe the site to ancient Damara ancestors while others believe that it is of San origin. Some guides consider it to be the heritage of both San and Damara. What these views have in common is that they connect the site to contemporary ethnic groups. It is hard, and probably not meaningful, to think about the site in non-ethnic terms. After all, the ancient people that once dwelt there must have had proper identities. Not giving them an ethnic identity would perhaps make them too elusive, and alienated from the people working at the site today.

Report for the proposal of Twyfelfontein as a World Heritage Site

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Scorpions were chosen to serve as a crude monitoring tool for future evaluation of the ecological quality of the Twyfelfontein site. Twelve species of scorpions have been collected from the site (see species list below, divided per habitat type). Although not found during a recent survey, it is highly likely that at least one species of *Hadogenes* (rock scorpions) could be added to this list, bringing the number of scorpions at the site to at least 13 species. This is a very high number of scorpion species to be found at a specific location (in Namibia the number is usually in the order of 6-9 species). Scorpions are not distributed randomly within a habitat, but the spatial distribution of the different species are normally associated with very specific microhabitats, particularly edaphic factors, but factors like temperature, precipitation, stone or litter cover and environmental physiognomy also play a role. The high scorpion diversity at Twyfelfontein can thus mainly be attributed to the many habitat types found at the site, i.e. red sand in grassy valley interspersed with some trees and shrubs, a small gravel plain, rocky mountain slopes and ravines and the top of the mountain itself.

From a management perspective it is clear that protecting the finer grain habitat of the Twyfelfontein site would contribute to preserving the scorpion diversity at the site. In more practical terms it would mean that, when choice of type and placement of infrastructure is being made, this should not lead to the destruction of one or more of these habitat types.

Scorpion species list per habitat type

Red sand:

Parabuthus brevimanus
Parabuthus gracilis
Parabuthus granulatus
Parabuthus kraepelini
Uroplectes gracilior
Opisthophthalmus jenseni
Opisthophthalmus wahlbergi

Gravel plains

Parabuthus brevimanus
Parabuthus granulatus

Rocky slopes and ravines

Hottentotta conspersa
Uroplectes planimanus
Opisthophthalmus ugabensis

On mountain

Parabuthus villosus

In trees

Uroplectes otjimbingwensis

VISITORS' INTERPRETATIVE CENTRE FOR A PREHISTORIC ROCK ART SITE AT TWYFELFONTEIN, NAMIBIA

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ABSTRACT:

This presentation focuses on the new Visitors' Interpretative Rock Art Centre at Twyfelfontein in the arid and remote northwest of Namibia. The National Monuments Council of Namibia (NMC) initiated the project in response to the pressures of increasing numbers of visitors to this fragile site. It was funded by the European Union (EU) through the Namibian Tourism Development Programme (NTDP) in the Ministry of Environment and Tourism (MET).

The paper describes the development of a collaborative response to the prehistoric rock art environment of Twyfelfontein with a multiple-stakeholder client body. The design and construction of the centre had to contribute positively to the pending World Heritage Site application as well as include varied functions at a very low cost. The design makes use of both natural and recycled materials (such as old drums cut up for roofing tiles). The construction contains no cement and is completely reversible, in line with the principles of the Burra Charter for conservation.

The centre has to prepare visitors for their engagement with the rock engravings, which are interpreted as representations of the experiences and meanings of the trance ritual. The design and construction thus form an organic whole in conducting the visitor through a series of spaces in psychological preparation for the guided walking routes to the actual rock engravings.

The building is currently under construction with completion intended end May 2005 and final opening planned for June 2005.

1. LOCATION

The new Rock Art Interpretation Centre is located at Twyfelfontein in the northwest of Namibia – a particularly arid and remote area of the country. Namibia lies on the southwest coast of Africa - a similar climate to Chile in South America.



Fig. 1: Namibia's location in Africa & Twyfelfontein's location in Namibia

Twyfelfontein's name, an Afrikaans term meaning "Doubtful Fountain", indicates the importance of water in this barren environment. The site is one of the richest in the world in prehistoric rock engravings, attributed to San, or Bushmen peoples, of about twenty thousand years ago.

2. BACKGROUND

The National Monuments Council of Namibia (NMC) initiated the project in response to the damage that rapidly increasing numbers of visitors were causing to this fragile site, which required greater management and control as well as better provision for the visitors' needs. The rock engravings are on exposed slabs of soft sandstone that erodes when people walk on it. About 5000 people visit the site per month, with up to 200 at any one time. The numbers are expected to increase.

The NMC appointed the architects through a competitive bidding process and the project was funded by the European Union (EU) through the Namibian Tourism Development Programme (NTDP) in the Ministry of Environment and Tourism (MET). We thus had to report to a committee consisting of the NTDP representative, the NMC Board and the consulting archaeologist and EU tender procedures had to be followed for all contracts.

3. CONTEXT – ROCK ART, CLIMATE & COMMUNITY

The rock engravings are assumed to have been carved by the ancestors of the San, the 'Bushmen' of Southern Africa. The archaeological theory subscribed to in this case is that the trance dance, a preparatory cleansing ritual performed before hunting and a vehicle for rain-making, provided the *raison d'être* for the engravings.



Fig. 2: View over the building site to the west

The design had to respond to an extreme climate and an arid site with no services. Twyfelfontein has a median & average rainfall of 50 to 100 mm per annum (2 to 3 inches), with a 70 to 90% coefficient of variation. Temperatures are high throughout the year (averages of 34 to 36 °C max in summer and 8 to 10°C in winter), with relatively low humidity. The main environmental constraint is the extreme radiation and resultant heat and glare.

The local community of Damara-Nama herders are not thought to be related to the original San who created the engravings. Remnants of San groups live in the northwest of Namibia, approximately 800 kilometres away. The rock art is thus considered national patrimony, and not the exclusive possession of a single group or tribe. The

'community' referred to, thus indicates the full Namibian spectrum, from local residents through the owners (NMC), to the archaeologist and the funding authorities.

Initially daunting, interacting with this multiple-stakeholder client body, including the EU representatives, the NMC, the resident archaeologist, Dr John Kinahan, and local community tour guides, resulted in a far more interesting and creative process than conventional appointments. Balancing the concerns of each group allowed us to keep a sense of perspective and not get carried away by a one-sided approach. Dr Kinahan's long-term association with the site and intimate knowledge of the rock art provided valuable background without which we would have been lost. Extensive meetings were held with all parties, both on site and in Windhoek, and from each encounter more was shared and learnt by all.

We also had to get involved with long-term management issues not usually addressed by architects, such as potential income generating projects for the community and the NMC, managing difficult relationships with brash and demanding tour operators, and submissions to the World Heritage Committee.

4. SITE PROTECTION

A collaborative relationship was therefore formed early on between architects, clients, archaeologist, funders, programme coordinator and supervising craftsman, particularly in the discussions around the site protection work, a contract separate from the architects' appointment.



Fig. 3: Gabion steps.

Site protection work on the rock art walking routes had already commenced when we were appointed. Their original design had included long lengths of concrete paths and steps, but we managed to persuade the client and contractor to convert to caged gabion pebble paths so as to remove the need for cement and create a more appropriate intervention. This process, which could have so easily deteriorated into conflict, created trust and a common purpose between all the parties involved, which resulted in good group cohesion and a great amount of enthusiasm.

5. WORLD HERITAGE SITE APPLICATION

The extremely sensitive prehistoric rock art environment of Twyfelfontein is currently being assessed for World Heritage Status. The design and construction of the centre had to contribute positively to the World Heritage application and we had the responsibility of providing a functional facility that would enhance the heritage status of a twenty thousand year old cultural site. Among other measures, we positioned the building away from the rock art routes on the archaeologist's advice, out of visual range, so that the visitor can imagine being in the prehistoric landscape, uncluttered by modern additions. This included removal of the existing visitors' kiosk and shade structures in the valley below the routes, and using the rubble generated in the construction of the new centre.

6. CONCEPTS AND METAPHOR

The centre's most important role is to prepare the visitor for an otherworldly experience in their engagement with the esoteric nature of the rock engravings, which are not considered to be realistic representations, but abstract renditions of the experiences and meanings of trance. The spatial design and construction thus form a unified organic whole in conducting the visitor through a series of spaces in psychological preparation for the guided walking routes to the actual rock engravings. The process of trance has been extensively documented in different cultures and a brief explanation is necessary to understand the concept and how it is translated in the building:

7. TRANCE

The three stages of trance is a journey into the supernatural, where a period of physical endurance (dancing for hours around the fire, monotonous chanting, smoke inhalation, the use of hallucinogenic substances, hunger & thirst) prepares the healer or 'shaman' for trance. In the first stage, resembling a malarial attack, retinal images called 'phosphenes' or 'entoptics' appear to the shaman in the shape of scrolls, spirals, circles and parallel lines that form abstract patterns. The shaman starts sweating and shivering.

The second stage is called the 'little death', as it resembles the physical symptoms displayed by a wounded animal just before dying. The shivers continue, nosebleeds occur, the back arches; the shaman feels weightless and levitates. According to belief, the spine acts as channel for departing energy to be conducted to the heavens, raising the hairs on the neck. At this stage, the brain makes associations with the phosphenes as representing objects known from daily

experience. Parallel lines could become rain, or the stripes on a zebra, or a group of ostriches moving mirage-like over the horizon.

In the third stage, that of full trance, the shaman leaves his/her body to merge with the visualised animal, enchanting it for hunting or 'to make rain' as a rain-animal such as the eland. According to belief, the transformed shaman can also move through solid matter and exist in more than one space at once.



Fig. 4: The “dancing kudu” with background phosphenes

The architectural challenge was to reflect these beliefs in a spatial way to make it easier for the visitor to internalise the theories behind the rock engravings. Our initial response was to find clues from the landscape – from curved overhangs forming shallow caves and square slabs leaning against each other to create narrow vertical slits as shelter. We then speculated as to what the original San would have done for shelter – rocks & caves or brushwood shelters, clad with grass bundles.



Fig.5: The building model from above. North is to the left.

We looked at curved forms to merge into the landscape, finding a parallel in the local cloven hoof-shaped ‘mopane’

tree's leaf. In addition, we wanted to relate the building to animal skeletons and insect carapaces, but in a reminiscent rather than realistic way.

This response was then overlaid with the image of an animal in the 'little death' stage of trance – its back arched, blood running from the nose becoming the path which routes the visitor through the interior as though through intestines to prepare them for the psychological experience of the site.

8. SPACES

From the parking area the visitor approaches the centre along a cleared gravel path edged with loose stones. At first not visible, the centre's round shapes emerges from the landscape like a looming rock. Through a narrow slit like a throat, the visitor enters into a foyer occupied by the craft & souvenir shop. Just behind, the reception counter (with the management office and store to one side behind) regulates the movement through the building. Groups of no more than eight people with their guide embark on the routes setting off at 10-minute intervals. Those waiting their turn may linger in the dining area served by a small kiosk.



Fig.6: Plan of the new centre. North is to the left.

The start of the walking routes is preceded by an area for information display leading to two 'experience chambers' related to the first and second stages of trance. The first of these is a circular room, illuminated only by sunlight falling through cut-outs in the metal ceiling evocative of entoptics or phosphenes. The second space is covered with a spider-web of timber lathes, creating disorientating shadows over the display panels of different phosphenes overlaid with animal images that are also cut out from metal panels. This evokes the mental overlay of known images on phosphenes during trance.

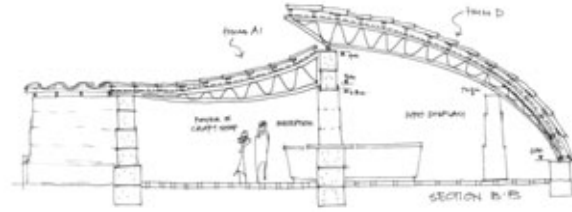


Fig.7: Section through the information display area on the right-hand side, with the craft shop on the left.

9. MATERIALS & TECHNOLOGY

In addition to the conceptual metaphor underpinning the design, we felt that a strong environmentally sustainable approach was essential to communicate the sensitivity of the site and instil respect for the environment in the users. The current interpretation of the rock art and cultural values associated with it may also change in future, when another generation might find our interpretation too limited, so we decided to design a 'reversible' building. The construction contains no cement and the building is completely removable and re-usable.

In the design, we followed the Burra Charter principles (The Australia ICOMOS Charter for Places of Cultural Significance), which advise conservation to retain the cultural significance of a place. In that vein, the client brief required that the existing shabby kiosk, shade structures, pit latrines and awnings were to be removed from the open valley floor below the rock art routes, leaving only the adobe remnants of the first white settler's farmhouse.

9.1 Walls and screens

The solid masonry walls are constructed from gabions (wire cages made on site from standard galvanised diamond mesh). These are filled with recycled rubble from the old kiosk foundations, and local loose stones gathered from different areas around the site so as not to leave scars on the landscape. Often used in civil engineering projects, this system is relatively new to buildings in Namibia, and can be done utilising unskilled labour, teaching them on site.

The curved walls screening the toilet entrances, experience chamber and route exits, are made from tubular steel frames anchored into gabions. The screen infill material consists of recycled oil drum lids spot welded either to butt against each other, or to overlap like fish scales where more privacy is needed, such as between the toilet cubicles.

9.2 Roofs

The roof structure consists of tubular steel sections welded together in curved roof trusses. Roof cladding consists of

'tiles' made by quartering recycled 200 litre oil drums and installing them in a Roman tile fashion with a row of concave 'tiles' fixed to the purlins and closed with a row of convex 'tiles'.



Fig. 8: Roofing tiles from recycled oil drums.

The metal is sandblasted before installation to remove paint remnants and to start the rusting process, which will have a kind of 'anodising' effect in this dry climate and help blend the building in with the surrounding red oxide rocks.

9.3 Ceilings & insulation

We originally intended to install reed ceilings recovered from riverbeds and mesh reinforced foil insulation, but the budget did not allow. We are however looking at alternate funding to accomplish this, as the foil insulation is required both as radiation barrier and as drip sheet to compensate for the possible gaps between the tiles. It must be stressed that this is not a fully weatherproof building. It offers shelter against the sun, heat and some wind, but will be vulnerable to dust and infrequent wind-driven rain.

9.4 Floors

The largest 'imported' component of the building is the terracotta clay brick flooring, packed on levelled and compacted sand. The bricks are made in Mariental, 800 kilometres south from the site, and taken by train to the suppliers' depot in Windhoek, the capital, from where it is transported to the site by truck.

9.5 Doors & windows

Most of the doors are site-made gates using drum-lids for the infill welded to a tubular steel frame. The office and stores are provided with conventional solid timber doors for security and weatherproofing. The toilet cubicles are provided with canvas curtains that are looped back when not in use.

10. SERVICES

10.1 Water

The existing fountain that Twyfelfontein was named after, is a mere trickle, and in danger of being completely depleted by the existing visitors' centre. Dr Kinahan had decided that the fountain should be left undisturbed as a historical feature and to provide water for the surrounding wildlife as well as the visitors during their walk on the guided route. A special hand-pump and trough was provided for the purpose.

The water needs for the new centre is restricted to hand washing for the public and showers plus drinking water for the staff. Water is delivered from the nearby commercial lodge by truck once a week, and we devised a storage and high-tank system using the existing storage tank linked to additional small tanks perched on a gabion wall. Water is pumped from the large ground level tank to the small high tanks by hand. This process makes the staff acutely aware of the value and scarcity of the water. A borehole and solar pump installation would have cost approximately N\$ 90,000 (15,000 USD).

The visitor's hand washbasin will be a halved leadwood tree-trunk salvaged from the nearby riverbed and roughly scooped out to form a long basin for three taps.

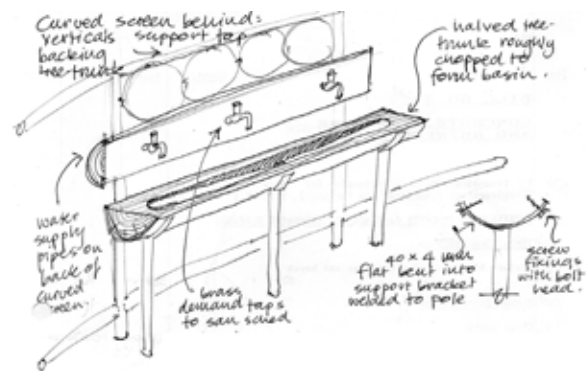


Fig.9: Hand washbasin from leadwood tree trunk

10.2 Sewerage

Dry toilets are provided for the visitors and staff, and the staff resting area has two showers (as they have to do several trips a day up to the rock art sites, the guides tend to get sweaty!). The toilet system is a proprietary brand called 'Enviroloo' developed by a South-African company and used extensively in the subcontinent. We used 9 Enviroloo's from the NTDP stock obtained for all their projects, such as upgrading of campsites in Namibia. Some problems had been experienced with this system before, which we are

trying to eliminate by adaptations to the design, better user education, maintenance training for the staff and more frequent inspections.

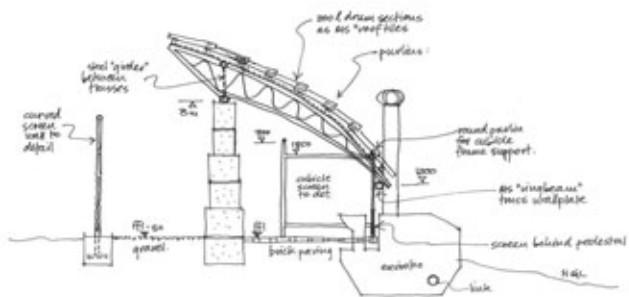


Fig. 10: Section through toilet cubicle & dry toilets.

The showers are cold (no need for hot water!) and drain to a 'homemade' French drain consisting of perforated drums buried in the soil with a gravel layer underneath. The grey water thus drains into a sandy sub-soil far enough from the local dry river course not to pollute underground water. The client will be advised as to environmentally friendly and biodegradable soap with which to provide the staff.

10.3 Energy: solar & gas

The building has an almost zero energy requirement, as it will not be used at night, nor will it be heated or cooled. The kiosk will provide hot water for beverages from a gas hob and serve pre-prepared and packaged foods. The kiosk fridge and freezer for beverages operate on bottled LPG gas, as solar fridges are prohibitively expensive and difficult to service in remote areas. Gas technology is well known and inexpensive to obtain, though the running costs quickly exceeds that of a solar installation.

Though no funds are available for further energy needs, we are investigating a 'homemade' system for the office to run a laptop computer, printer, fax and V-sat telephone with a modem. A similar system has been used by the client representative while working at a remote research station. For this, two or more old 55 W or similar photovoltaic panels are needed. They can be connected together on homemade frame mounts and positioned facing North, on the ground so that they can be wheeled in at night (solar panels are very desirable items in the bush!). 6 sets of 2 volt or similar second-hand solar batteries are then connected in series to make 12 V. A regulator is not really required (too expensive) but a fuse should be added to protect the equipment. Coming directly off the batteries, we can then have two sets of cables – one to charge lights for unforeseen evening use (about 6 times 12 V standard 15 W caravan lights) and the other linked to an inverter off a battery from a computer store, to run a laptop off a car charger (the inverter is plugged into a car cigarette lighter

socket, which is connected to the battery). In the example system, the inverter's outlet had been wired to power outlets in each room (220 V) for a printer, small music system and kitchen appliances. The water and pH in batteries had to be carefully monitored, but otherwise the system worked well.

10.4 Waste removal

Visitors at Twyfelfontein are requested to take their litter along with them to the nearest town for disposal, but despite this the centre still generates a large amount of waste. This is removed by truck at the same time as water delivery and is disposed of in the landfill at the nearby lodge. We have designed a system of different lockable drums to discourage the local baboon troupe from raiding the bins. We also aim to convert the centre staff and lodge staff to a recycling system where bio-degradables are composted at a site in the nearest town and recyclables like glass, plastic and metal are taken to depots in Windhoek.

11. PROGRAM

The building is currently under construction; with completion intended for the end of May 2005. The architects are also involved with the design and manufacture of the information display in the centre, which will be opened in early June 2005.



Fig. 11: Progress on 15 April 2005

12. BUDGET

One of the challenges was to build a projected N\$ 3 million building (according to advisors from South Africa) for less than a third that amount. We achieved a 500 m² building at a cost of about N\$ 1,200/m², compared to the current conventional building cost of about N\$ 4,000/m². The budget total is approximately N\$ 780,000 (130,000 USD) of which 17,000 USD is for the parking and roads, and 17,000 USD is for furniture, fittings and information display, leaving about 96,000 USD for the building.

EVENTS AT TWYFELFONTEIN from 1948 to 1970 with archival refs.

17.11.1951 Scherz agrees to recommend Twyfelfontein to the Administrator to be proclaimed a monument.

Minutes of Historical Monuments Commission meeting A.23 Lemmer Collection vol.1.

6.02.1951 D. Levin requests loan for ewes for Twyfelfontein no. 39, southern Kaokoveld

Letter, LAN 1588 ref.4974 vol. 1 1951-59 (NB all refs to LAN1588 have this full ref)

28.02.1952 D. Levin Entitled to an advance as “*Weidinglisensiehouer*” under Ordinance 14/1951

Circular Letter, LAN 1588

n.d. D. van Rensburg, *Landbanksaksateur*, evaluates improvements on farm Twf. To be £884 (see notes for details)

Evaluation, LAN 1588

28.05.1952 The Abbe Breuil viewed Twyf. as the most important group [of engravings] in South West Africa.

Letter to Secretary SWA, HMK 15/1/3

15.08.1952 Twyfelfontein is proclaimed a monument according to Article 7 of Ordinance no. 13 of 1948.

Official Gazette of SWA, Government Notice no. 234 [copy in HMK 15/1/3]

27.11.1952 Dept. of Lands approves loan of £500 to Levin

Letter, with loan conditions, LAN 1588

31.03.1953

Twyfelfontein is listed as a proclaimed monument.

Fourth Annual Report of the Historical Monuments Commission. A.23 Lemmer Collection vol. 1

18.08.1953 Land Board evaluates D.Levin’s improvements of £722; CA Ellis’s improvements of £268; determines value of ground to be 6d/ha; notes presence of natives; recommends land to be advertised

Farm Inspection Report LAN 1588

9.09.1953 Land Board notes Twyf. has engravings to be surveyed and that public right of access can be mentioned in the lease “*huurkontrak en Grondbrief*”.

Minutes, Land Board Meeting LAN 1588

6-15.03.1954 Levin’s stipulations: if the land is to be a monument he still wishes to have the rights to use the spring, his house, and to build a better house near the old one. Discusses the boundaries of the monument area.

Bericht über eine Fahrt im Auftrag der Monumentkommission nach Ameib, zum Brandberg und nach Twyfelfontein in der Zeit vom 6-15 März 1954, HMK 15/1/3/ Twyfelfontein.

19.03.1954 Land Board decides Twf. is to be leased to Levin for a trial period of 12 months from 1.4.1954

Minutes, LAN 1588

21.01.1954 D. Levin is South African, born 19.12.1910 Springbok, married, 5 children: Michael 13, Dirk 11. Susanna 12, Cristina 7, Davina 1. Total capital: 700 sheep @ £3 each £2 100, 12 rams @ £25 each £300 and 200 goats @ £1.50 each is £2 650. Total debts are £700. Holding applied for is Twyfelfontein no. 534.

Application form for a holding under the Land settlement Consolidation and Amendment Proclamation, 1927 LAN 1588

22.04.1954 D. Levin leases Twyfelfontein (=12 000 ha) @£1 p.a.for a trial period of 12 months from 1.04.1954 subject to the conditions of General Notice no 108 of 23.12.1953 (SWA) Proclamation of Amendment 1948. Mention is made of the “rotstekeninge” to be surveyed for a historical monument.

Proefhuurkontrak, LAN 1588

22.05.1954 Letter of thanks to owner of Twy for his co-operation, to appoint him honorary curator and to furnish him with a visitor's book.

Letter, HMK 15/1/3/ Twyfelfontein

16.6.1954 D. Levin requests additional land as the grazing and rain is too little; has been on Twy. for 6 years

Letter, LAN 1588

18.06.1954 Levine asks to be allowed to pay back his loan from 1 Jan 1055 because he has had drought all the time and not much income.

Letter, LAN 1588

24.06.1954 Land Board approves his request (note to the effect that he has a sickly wife and his costs are high)

Minutes, Land Board Meeting, LAN 1588

18.12.1954 Surveyor-General has had Twf. Prehistoric Reserve no. 722 surveyed (57.4269 ha)

Letter, Office of the Surveyor General file A/534, LAN 1588

11.02.1955 Levin to Lands describing the mountainous stony ridges where nothing grows except “gif”. Reports that he has been at Twy. since 1948 and only in 1950-51 did it rain sufficiently. He has to trek and needs more ground.

Letter, LAN 1588

7.03.1955 Income assessment: stock, improvements, carrying capacity, total income for 1953-54. Has 600 sheep and 200 goats worth £2000, lorry worth £350, general implements worth £35 and has sold karakul skins, stock and wool worth £856.

Opgawe van vee en greedskap, LAN 1588

15.06.1955 Dept.Lands informs Levin that the Administrator has allocated Twf. to him according to the terms of *Landnedersetting Proklamasie* nr 310/1927 for a purchase price of £588

Letter, LAN1588

1.07.1955 SWA Dept. Lands (ref. 4974) Lease no. 106/56 with option to buy under Proclamation no. 310 of 1927, with Surveyor-general's map dated 28.11.1955 attached (SG ref A844/55). Lease is stamped CANCELLED 26.02.1965.

Huurkontrak nr 106/56, LAN 1807

NB: this "Huurkontrak is supposed to be in the Deeds Office as well under ref. K106/1956L but could not be located)

15.03.1957 Inspector of Lands: because rain is patchy, it is not possible to reside permanently on Twy.

Letter, LAN 1588

4.04.1957 Levin asks for more land; summarizes rainfall on Twy. 1951 = good rain; 1954 = enough rain for him to stay at Twy for a year; 1955-56 had to trek; 1957 = enough rain for him to stay for 2 months but he won't last out the year.

Letter, LAN 1588

23.08.1957 Levin requests fencing loan

Letter, LAN 1588

31.12.1957 Lands informs L. his lease payments are in arrears

Letter, LAN 1588

6.09.1958 Levin requests more land

Letter, LAN 1588

25.10.1958 Inspector, Dept. Lands points out that L. can't make a living on Twy. without more land.

Memo, LAN 1588

27.10.1958 Levin requests help, has 5 children, 2 at high school.

Letter, LAN 1588

5.12.1958 Office of the Director of Agriculture: carrying capacity of Twy is 5-6 sheep/ha.

Letter, LAN 1588

n.d. Twy. and surrounding farms. Scale 1: 100 000

Sketch map, LAN 1588

17.09.1959 Administrator Viljoen gives reason why he is against approving additional land for Levin

Application for additional ground, LAN 1588

8.10.1959 Chief Inspector of Lands, Outjo will inspect Twy.
Minutes, LAN 1807 G.A. 534 1959-1972 (NB ALL refs to LAN 1807 are like this)

26.10.1960 Chief Inspector and Inspector of Lands, Outjo recommend a passage from Levin's house through the nek in the mountains to additional ground on no. 533 (or Crown Land) without which he will not be able to make a living; give map and suggestions,
Letter and map (sketch of this in notebook), **LAN 1807**

1.07.1961 Lands grants Levin additional ground from **no.741, Outjo** of 3 799 ha with lease payments starting on 1.07.1961. Accepted by Surveyor General 19.11.1960.
Algemene Vermeerdering Afdeling Lande LAN 1807

24.11.1964 Levin applies successfully for R1800 to build a *grondendam*; has 975 sheep, 400 goats
LAN 1807

9.10.1962 Trustee Branch, Standard Bank. Elsie Susanna Johanna Maria Levin died on 20.09.1962. Trustees ask for details of lease agreement, &c.
Letter, LAN 1807

30.06.1952 Uiterste Wil en Testament van ESJM Levin (gebore De Beer)
Will, LAN 1807

19.04.1963 Standard Bank advising Lands that Levin must apply for the *Goewermentsgrondbrief* for Twy.
Letter, LAN 1807

12.06.1963 Lands directs Levin to pay all his debts
Letter, LAN 1807

28.08.1963 Levin's assets (840 sheep worth R6720, 300 goats R1200 motor car R1300 and general R80 (Total =R9200) and income for tax year 1962-63 (income = R1300) (see notes)
Statement, LAN 1807

13.11.1964 Director of State Settlement and Farmer's Assistance, Office of Dept.. Lands informs Landbank, Water Affairs, &c that Twy. falls in the proposed Bantu Homeland
Letters, LAN 1807

06.05.1964 Levin to Lands re his payment because he has already taken out an option and wants to settle on farm Havana, Otjiwarongo District.
Letter, LAN 1807

15.01.1965 Valuation of improvements to farm (**NB** see notes for details of everything on farm)
Valuation, LAN 1807

19.01.1965 Administrator reports the Evaluation Committee recommends the farm is purchased for R48 000 and is hired out for R70 per month. Levin accepts the offer.
Letter, LAN 1807

22.01.1965 Dept. State Settlement informs Revenue, State Magistrate, Health &c that payment from State Funds will be made to Levin for Twy.
Letters, LAN 1807

26.02.1965 Lands Huurkontrak (lease agreement) no. 106/56 is cancelled.
Lease agreement (2 copies) with Surveyor-General's maps by Mendes de Gouvêa (May-Aug 1953) attached, LAN 1807

2.03.1965 SWA Administration pays the purchase price of Twy (minus Lenin's debts) into Volkskas for him (R40 535.25) according to Budget Vote 19.A.1
Payment advice, LAN 1807

25.08.1965 Lands grants hire of Twy to Blaauw (no. 520)
Minutes, LAN 1807

16.05.1966 Agric. Officer, Outjo reports on Twy. Pos 1 windpump is rusted, no animals, grazing very good.
Memo, LAN 1807

20.06.1966 Lands grants hire of Twy to JMA Dippenaar
Minutes, LAN 1807

28.07.1967 Lands reports Twy. *lê leeg*, grazing is moderately good.
Inspection report, LAN 1807

11.12.1968 Lands hires Twy to FW Jooste (temporary lease)
Minutes, LAN 1807

17.04.1970 Lands gives H. Robberts temporary lease on Twy
Minutes, LAN 1807

12.08.1970 Lands grants grazing at Twy to the brother, PI Robberts
Minutes, LAN 1807

3.03.1971 Director, State Settlement informing H and PI Robberts that their lease agreements will end on 31.05.1971 because the Department of Bantu Administration & Development needs the farm which they must vacate before 31.05.1971.
Letter, LAN 1807

10.09.1971 NMC (SWA) to Secr. NMC (CT) The Head Commissioner of Bantu Affairs (Hoofbantoesakekommissaris) approved in principle that Bantu Administration would appoint caretakers for Twy (& Spitzkoppe, Brandberg and Verbrandeberg), assume full responsibility for their salaries, housing &c. and provide facilities for tourists, including fencing, footpaths, &c. The Council can rest assured that they have done all that is necessary and Bantu Affairs will take over.
RNG 16/S/T-F/1

24.01.1972 Dept of *Landboukrediet en Grondbesit (tak SWA)* informing the Secretary of Bantu Administration and Development re the implementation of the Odendaal Commission recommendations that Twy is available
Letter, LAN 1807

02.07.1976 G.S. Hofmeyr, Secr. NMC (CT) to G.S. Mienie (SWA Regional Committee). No-one ever checked whether Bantu Admin appointed a caretaker at Twy. – it was never done, through lack of funds.
Letter, RNG 16/S/T-F/1

27.10. 1977 Mienie, Secr. Of SWA Regional Committee to Director of Bantu Education re vandalism at Twy. by schoolchildren.
Letter, RNG 16/S/T-F/1

16.07.1978 Dr H. Metton expressed his outrage at the condition of Twy (also Spitzkoppe and Brandberg)

07.08.1978 Regional Manager, Corporation for Economic Development, (Streeksbestuurder) to Secretary Agric and Forestry, Damara Representative Authority, Khorixas, with Metton's letter attached. Expresses agreement with Metton saying they must act on this and asking for suggestions for the protection of the art.
DALB 4. 6/19/5/1 Historiese Besienswaardighede 1978-81

14-17.08.1978 C.G. Coetzee of the NMC Regional Committee visits Twy., views engravings, finds them in good condition with no sign of vandalism. Recommends that some method be found of leading visitors to some of the engravings, as some visitors cannot find them. Also recommends that a map be compiled, printed and sold as the old NMC publications are sold out and are not worth reprinting.
NMC 14/4/2/5

22.11.1978 Borehole no. 23433 to 70 m through weathered granite completed but dry.
Borehole completion report DALB 2 vol. 1 1978 file no. 5/3/2

4.12.1978 Borehole no. 23438 to 150 m through sand and clay, and mica schist completed but dry "2 km N of windpump".
Borehole completion report DALB 2 vol. 1 1978 file no. 5/3/2

1983 Note re Twyfelfontein: one "nie blanke" has been appointed caretaker by the Department of Nature Conservation.
A664 2/59 box 7 Correspondence: Damaraland

27.05.1985 Bruwer (NMC) to Kmdt Rigaardt re vandalism at Twy.
Letter, RNG 16/S/T-F/1

24.09.1985 Meeting with NMC, Nature Conservation and Recreation Resorts, and Trade and Tourism. Note is taken that Natswa is in the process of declaring Spitzkoppe, Brandberg, Verbrandeberg, Twyfelfontein and Versteende Woud Nature Conservation areas. As soon as these are proclaimed, Nature Conservators will be appointed at all these areas.

NMC 14/4/2/5

18.09.1987 Report from W.D. Kaibel, Chairman of Society for Scientific development, Swakopmund to J. Bruwer, NMC with photographs and recommendations for Twy.

NMC 14/4/2/5

29.10.1987 Letter, J.A.L. Laubscher, Secr. Namibia to Bruwer, NMC, expressing full support for matters raised in Kaibel report.

NMC 14/4/2/5

Dec 1986 – Nov 1987 No. of visitors to Twy. totals 9 439.

NMC 14/4/2/5

16.03.1988 Memo, J.B. Kinahan, State Museum, to V. Gelijnsse, NMC re Critical Rock Art Sites requiring research and protection.

NMC 14/4/2/5

18-24 May 1988 Itinerary of Reconnaissance trip to Damaraland Prof. Eloff (Pretoria), Coetzee, Harper, Gelijnsse).

NMC 14/4/2/5

12.10.1988 Gelijnsse to Director, Dept. Nature Conservation re State Museum/NMC management program at Twy. Mentions R. Loutit's valuable contribution to the protection of the site by appointing caretakers at his own initiative and the Regional committee's decision to provide for one caretaker's salary; also mentions the information centre to be erected at the parking area.

NMC 14/4/2/5 (letter photocopied)

29.10.1988 Letters, Gelijnsse to Safari Bus companies informing them of the joint NMC/State Museum survey and site management program for Twy. and requesting them to keep to the marked pathway, respect the signboards, keep off engraved rocks and always be accompanied by a local guide.

NMC 14/4/2/5 (letter photocopied)

20.09.1989 Vera Freyer, Secr. Regional Committee to E. 'Aro Xoagub re Twf. restcamp. Gives the NMC's support to Xoagub's "private initiative to protect the environment and the rock art" and asks him to report developments.

Letter, RNG 16/S/T-F/1

08.06.1995 Danie Grobler (MET) to E. Xoagub re Aba Huab (twy.) Tourism concession. Xoagub's application has been approved pending finalization of contract details Affirmative action will apply to E.X. as he is the first black citizen to "succeed tourism rights".

Letter, RNG 16/S/T-F/1

18.11.1996 Xoagub, Aba-Huab Camp and Safaris, to NMC).

Letter, RNG 16/S/T-F/1 (letter photocopied)

21.11.1996 Hoveka, Director NMC to E. Xoagub. NMC supports Xoagub's activities at Twy. but asks for a report on his activities by the end Nov. 1997. (No report found)

TWYFELFONTEIN

1. Arrival

1.1 The Levins arrived at the fountain of Twyfelfontein in April 1946. The Levins were:

- David, born at Springbok in the Northern Cape on 19 December 1910, his wife
- Ella (de Beer) born at Kakamas on 25 December 1919, their son
- Michiel, born at Bethanie 23 July 1940, and
- Susan, born at Bethanie 18 January 1942.

1.2 At the time of their arrival Ella was pregnant with Christina, who was later born at Omaruru on 6 August 1946.

1.3 The Levins arrived with about 230 sheep and goats, and a couple of chickens. They unpacked at a spot about 300 metres west of the fountain at a Mopanie tree which provided a bit of shade. Their tents were erected at this spot - where the ruins are at present. Some of their belongings were loaded on a wagon pulled by four donkeys. Their names were: Vaaltyn, Bloudon, Ligman, en Witbooi. David's pride was a horse cart and two horses, Kolbie and Prins. Ella and the children travelled on the horse cart. The herdsman for the live stock was Bernhard, a Damara man that joined them at Dobbelsberg near Karibib.

1.4 The 'Twyfelfontein' grazing area at that time was bordered by the table mountain range surrounding the fountain up to (but excluding) the first valley to the west of the present Lodge. The eastern border was the blue hills - where the fence bordering with Blaauwpoort is at present. The Northern border started at the intersection of the Aba-huab with the blue hills in the East and all along the river bed to where it hits the rocky dune hills in the West. The western border ran from there to the eastern mountain shoot of the valley, west of the present lodge.

1.5 Near the fountain, west from where the Levins established themselves, lived a Damara (Elifas?). He, his wife, three kids and an elderly women, and about two dozen animals. After the arrival of the Levins the Damara left. All Damaras had to resettle in reserves. Theirs was at Sesfontein. However, some of them settled at Fransfontein and some to the west from the present Palmwag to about Warm Quelle.

2. Water

2.1 The first year (and longer) was a battle for water – merely to survive. Although the fountain supplied water consistently it took careful organisation to share out the water so that all animals and humans could survive. The flow, though, was slow. Where the stone dam is today, my farther created a clay hollow area to store the water in. A furrow was used as a canal to take the water to the hollow clay area. The animals were parcelled in groups and a group could only drink when there was enough water for them to drink.

2.2 My father thought that the main water vain, feeding the fountain was blocked by the rock standing over the fountain. He dug below the rock, following the route indicated by the filtering water. Some people advised him to use dynamite and “blow the fountain open”. Farther was scared to do this, because it could also have meant the end of the fountain.

2.3 He also sank some wells in an effort to find water in the surrounding the well. This digging was endless. Day after day. Month after month. Without initial success. Only by about 1951 the present well rendered water. It did effect the supply at the fountain. It was wonderful to see how

my farther used gravity to get the water to the house without a wind pump or an engine. Can you imagine what our relief was after carrying buckets of water several times a day from the fountain to the house!

2.4 Soon after our arrival a new problem cropped up. The grass and shrubs in the valley was completely eaten away by the animals. However, our northern neighbour, Constance Ellis (who owned a water drilling machine), came to our rescue. Three times a week our sheep and goat flock could drink at his farm which was on the northern bank of the Aba-Huab, beyond the north western corner of the Twyfelfontein grazing area. By the late winter of 1946, and occasionally after that, my farther moved his flock to the reed fountain (later known as the farm “de Riet” in the Huab river, west of Twyfelfontein. “De Riet” was then still un-inhabited at the time.

2.5 At the Twyfelfontein fountain, some of the water arriving at the clay hollow drained into the soil. It was then that my farther built the cement and stone dam. First a single layer and then more layers.

2.6 Eventually, in the fall of 1948, Constance Ellis drilled the bore hole at the point. Although the water was brackish, it was drinkable for the animals.

3. The name

3.1 Occasionally neighbours visited. When they arrived my mother would tell them my farther is at the fountain. The men would then go their. Andries Blaauw of Blaauwpoort, happened to visit us more often than the other neighbours in those early days. Every time after he greeted my farther - who was more than likely on his knees somewhere, - digging. He would then continue and ask: “How is it David”. My farther would then answer, invariably. “Good. . . . but I doubt if the fountain will make October” (When the first rains could be expected). Every time the same answer. Andries Blaauw, as was common practice in those days, then started to refer to my farther in ordinary conversation as “David Twyfelfontain”. That’s it. By the time my farther had to register a name for the farm, he had no choice.

4. Making a living

4.1 Omaruru, then 190± Kms away was our nearest town. Roads to Outjo were very bad and rocky. It was, in any case, impossible to travel such distances by horse cart. To obtain flour for baking, maize meal for porridge, sugar, salt, coffee, medicines, and clothing was an immense problem. It was in these difficult times that Elifas, the Damara who lived at Twyfelfontein, showed my farther how to dig up ant nests and harvest their grass seed stocks (which they naturally accumulated as winter food), and how to cook the seeds into a porridge. Although the porridge tasted soily, we some times simply had to eat it.

4.2 Occasionally a hawker visited, but they did not sell groceries. Neighbours travelling to town, every three or four months, usually needed their loading capacity for their own needs. At Soris-Soris the Vissers had a small shop. Sometimes replenishment of the most essential items was possible when a mobile neighbour or some other nearby farmer could save some space on their vehicles.

4.3 There was some game roving the farm and the adjacent area – into and of the Namib. They were free to move. There were no fences. Most of the time there were springbuck, Oryx, zebra, ostrich, kudu (next to the river), and peacocks (“gom poue”) on the farm. But, there were also predators such as lions, leopards (spotted as late as 1963), lynx, jackal, hyena, and big animals

such as elephant (in the Aba-Huab), rhinoceros, and giraffe. There was relatively little shooting of game, and almost never for other reasons than for the pot.

- One reason was because ammunition was very scarce and very expensive. My father had a 7 mm Mouser. Every bullet he used had to render meat for cooking, biltong (in the winter), and salt meat. My mother never had a fridge or a freezer.
- Another reason was that my father did not really believe in just shooting animals. Other plans had to work. Lions and hyenas were at occasions scared away from the sheep and goats by noise and lighting huge fires. My father never shot a lion, elephant, rhinoceros, giraffe or leopard in all the years on Twyfelfontein.

4.4. We arrived at Twyfelfontein, shortly after World War II. Every thing was scarce and often rationed. Petrol, oil, steel pipe, corrugated tin sheets, paraffin, tyres and even rice were rationed. Samp (crushed maize) was occasionally available. Mealie meal was not a problem because maize were grown in Namibia (Grootfontein and Otavi). Good quality flour was available but only from the mills at Kakamas. The mills railed us a bag of flour to Omaruru once a month – however because transport to the farm was irregular, it was stored at the station. Cost for storage was an immense problem.

4.5 Life on the farm was tough, particularly for the women.

- My mother had to go without any conveniences – little shelter against the elements and for most of the time only meagre outfits of clothing. For washing, she made her own soap from animal (hard) fat. She baked bread in a clay oven and cooked food on an open fire until 1948. She had very seldom any vegetables to cook, because there was no water to grow them. She had a continuous battle for sugar, salt, flour, and maize meal if for nothing else, but a shortage of money to buy them.
- Although goats were kept for milk, it rarely happened that enough milk was available to prepare butter, not even to mention cheese. Chickens produced a few eggs, some days. They survived from the veldt and the carcasses of the karakul lambs that were slaughtered, and were cooked for them.
- Meat was the staple food. When available, it was game. Otherwise, it was goat. Occasionally a karakul sheep was slaughtered for (soft) fat. Fat was also used as a spread on bread, because there was almost never any butter. Medicines were patent medicines, if available. Omaruru had a chemist and medical doctors. Luckily, for many years, the district surgeon (a GP working for the government) was available for those who could not afford private doctors.

4.6 Money was scarce – very scarce. The main source of income was karakul furs. Therefore, looking after, and caring for the sheep, was a priority. Ewes can give birth twice a year. All ram lambs were usually harvested. The harvesting of ewe lambs depended on how badly farmers needed income, or how badly they needed a bigger flock, to secure a bigger income in future. At Twyfelfontein nature often dictated the harvest.

(a) Karakul fur was auctioned at Hudson Bay in Canada twice a year, by the co-operatives who collected the furs, or bought them from the farmers. The option depended on the urgency of farmers for a cash income. Banks allowed farmers very little credit in those days. Retailers usually sold them essentials “on the book” (on credit).

(b) Goats were intermittently sold, on the farm, to speculators for cash - once or twice a year. These goats were slaughtered at abattoirs in Windhoek (later Okahandja) or Swakopmund. However some of them were directly sold to town people.

(c) Animal bones and skins were often exchanged for flour, sugar and maize meal and other household necessities at retailers. By the 1950s when farmers co-operatives were established, they also bought these items.

(d) Karakul sheep was sheared twice a year. Wool was often also bought by speculants who usually paid very low prices. After Khorixas was established (1954) farmers marketed most of their wool through the farmers co-operatives, FCU and later BSB. Prices were nevertheless never really worth-the-while.

5. Better times

5.1 After my father bought a car (a 1939 Chevrolet) and water was struck at the 'point' things improved for the Levins. Because the water situation improved my father could allow his flocks to grow. Off course there was a trade off. Allowing karakul lambs to grow up, in order to increase the flock, reduced the number of furs available for sale. Cash income was continually under severe pressure.

6. In 1952 the farms in the area were surveyed. Twyfelfontein's size was established at 12000± hectares. This was almost double the size my father was restricted to before. And the additional land included the water installation north of the Aba-Huab, where Constance Ellis used to live. The surveying also had the result that the Western neighbour, who where only surveyed 4000 hectares, gave up farming and my father secured the inclusion of most of that farm known as "Willie De Wit se hoek". (I never learned the registered name). My father's total farm area was then approximately 16000 hectares (if I remember correctly. If you can check these figures). However, as the years have gone by and the family increased to seven, a bigger flock, a thousand ±, was needed. Rains were sparse and the Levins were on "trek" at least once in three years

6. Welwitschia

In 1954 Welwhitchia (Khorixas) was established. Retailers, banks, garage, post office, farmers cooperatives were established . A school was built; we switched from Omaruru to Welwitschia. Infrastructure such as roads and a bus service from Outjo to Welwitschia, followed. The telephone line ended at Piet Carstens - two farms east of Twyfelfontein. He wouldn't allow an 'evil' thing like that in his house. It was installed in the engine room, where users had to compete with the Listre engine when they spoke!

7. The end

My mother passed away in 1962 while they were on "trek" at Leeurante on the southern boarder of the Etosha Pans, north of Buurmanskool. Soon afterwards, the farm was bought by the government to establish a homeland for Damara people. My father remained on the farm until 1964. He then sold his sheep and other animals and left for good. He re-settled in the early 1970 at Piketberg in the Western Cape where he passed away in 1983.

*.All five children are still all alive. Three live in Namibia.

Mike Levin

19 March 2005

A REPORT ON THE FLORA OF THE TWYFELFONTEIN HERITAGE SITE

INTRODUCTION

Kunene is one of the more arid regions in Namibia. Rainfall is low and variable, and occurs between October and March. Average annual rainfall lies between 50 – 400 mm (Kolberg, 1993). Evaporation rates are high and there are no permanently flowing rivers, except in the extreme north. Just as the rainfall varies the vegetation of the region also varies from riverine woodland, woodland savannah and grassland to desert with succulents and lichens.

Twyfelfontein is situated at 21°35'39"S and 14°22'17"E (2014 CB), and falls into the Mopane Savanna vegetation zone (Giess, 1971).

Twyfelfontein has been earmarked to be included in the World Heritage Site list, which lists areas of most important cultural heritage. The rock engravings do not include any plants features, but the region is internationally known as being an extremely rich in endemics and diverse flora, and is therefore a centre of endemism for Africa (Craven, 2000). Eight percent (8.62 %) from the total endemics of Namibia occurs in Kunene area. This was confirmed by the International Conservation Union (IUCN) (Golding, 2002).

Many damara names of the plants are related to the cultural uses and believes by people. A significant (22 %) proportion of the plants occurring in the area are used for medicinal purposes. Plants also supply shade and material for household implements. The gathering of veld food and other plant products for medicinal purposes is not, however extensively practised in this area, and the actual effects on the vegetation is thought to be minimal at present.

The information included in this report was extracted from the Specimen (SPMNDB) and Flora databases of the National Botanical Research Institute (NBRI) that contain amongst others, ethnomedicinal information, common and scientific names. The extracted information is presented in a condensed table 3.

METHODOLOGY

The Flora and Specimen databases were accessed and basic information on the Twyfelfontein area was retrieved. A provisional checklist was compiled.

A plant collecting field trip was undertaken to Twyfelfontein area. The following Quarter degree squares (2014 CB, 2014 DA, 2014 CA and 2014 AD) were chosen for collecting. Intensive collecting was done mainly in the quarter degree square 2014 CB, where Twyfelfontein is situated

A literature review on existing research in that area was conducted.

A checklist of plants occurring in the area was updated after the collecting trip. Families and species were arranged alphabetically.

DISCUSSION AND ANALYSIS

From the total flora of Namibia, fifty percent (50%) occurs in this area, whereby Fabaceae, Asteraceae and Poaceae are the dominant families.

From table 1. below, it was established that dicotyledons dominate this flora numerically (80 %), while monocotyledons largely make up the remaining twenty (20 %). The complete checklist of the area is presented in Appendix 1.

Table 1: Composition of the flora of the Twyfelfontein area.

Taxonomic group	Families	Genera	Species
	Number of Indigenous taxa	Indigenous taxa	Indigenous taxa
Gymnosperms	1	1	1
Monocotyledons	10	41	61
Dicotyledons	54	154	1 561
Total	65	196	1 723
Total taxa (species and genera)	1984		

High number of endemics occurs in this area (see Appendix 2). The families rich in endemics include Fabaceae, Bursceraceae, Asteraceae, Poaceae, Solanaceae, Capparaceae, Malvaceae and Acanthaceae, the last with most representatives i.e. *Barleria solitaria*, *Blepharis gigantea*, *Justicia platysepala*, *Petalidium canescens*, *Petalidium giessii* and *Petalidium pilosi-bracteolatum*. Many of these plants are confined to particular areas such as high peaks or sandy/gravel plains. e.g. *Acacia montis-usti* and *Acacia robynsiana*

A process has been initiated to assess Namibian plant species against the IUCN Red List (RL) criteria. The listed taxa in Appendix 3 have been assessed and categorised as Lower Risk least concern (LR-lc).

Namibia is a signatory of CITES, the international treaty which regulates and monitors International trade of vulnerable plants from being exploited commercially. The genera which appear on this list are *Moringa*, *Cyphostemma* and the only gymnosperm *Welwitschia mirabilis*. See Appendix 5.

Table 2: A summarised table of the status of Twyfelfontein's flora according to various criteria

Taxonomic group	Taxa (genera and species)				
	C2	E	F	RD	P
Gymnosperms					1
Monocotyledons	1	5	1		
Dicotyledons	5	45	8	6	4
Total	6	51	6	6	4

C2 - CITES Appendix II, 1999

E - Endemic

F - Forestry legislation Act 37 of 1952 (section 5(1))

RD - Red Data 1994 and 2001 IUCN Red List Criteria

P - Nature Conservation Ordinance No. 4 of 1975

Unfortunately, although a field trip was undertaken, rains had been poor and the area was relatively dry. Nevertheless more protected and moist habitats were sampled. The specimens were identified and lodged at the National Herbarium of Namibia (WIND). Two geophytes *Eriospermum corymbosum* and *Eriospermum flexum* were collected as first records for the National Herbarium.

Local communities interviewed, mainly consist of young and inexperienced people, who could not provide much information on the uses of plants. In table 3 the uses were extracted from the existing information on the two databases.

Table 3: Plant uses as food and medicines by local communities

<i>SPECIES</i>	<i>DAMARA LOCAL NAME</i>	<i>PLANT USE</i>
<i>Acacia erubescens</i> Welw. ex Oliv.	Dûs	The gum (resin) produced by the tree is edible.
<i>Adenolobus garipensis</i> (E.Mey.) Torre & Hillc.	/Gantob	Medicine for heart attacks and heart problems
<i>Boscia foetida</i> Schinz subsp. <i>foetida</i>	Xaubes	Leaves are roasted and used as coffee. A decoction is used for earache. Berries are edible.
<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	Autsamas	Seed roasted and used on burn wounds, tea made from roots used for diarrhoea
<i>Coccinia rehmannii</i> Cogn.	/Hâb	Fruit edible, tuber is consumed boiled or roasted.
<i>Colophospermum mopane</i> (J.Kirk ex Benth.) J. Kirk ex J. Leonard	Tsaurahais	Leaves chewed for stomach pain or applied to wounds.
<i>Commiphora virgata</i> Engl.	/ânab	The bark is used as ingredient in perfumes "Sâi".

<i>Cucumis africanus</i> L.f.	Tôas	Used for laxative and dropsy, venereal disease
<i>Cryptolepis decidua</i> Planch. ex Hook. f. & Benth.	/Girihaib	Root decoction for stomach ailments.
<i>Cyanella amboensis</i> Schinz		Tuber eaten with relish
<i>Grewia bicolor</i> Juss.	≠âus	Bark robe made out of this for pregnant women - tied around the waist to keep fetus strong. Berries are eaten
<i>Grewia tenax</i> (Forssk.) Fiori	//Nais	Berries edible
<i>Monsonia umbellata</i> Harv.	Harapa	Seeds are collected to make porridge. Leaves used in tea, to give a pleasant taste.
<i>Myrothamnus flabellifolius</i> Welw.	!Khotorotorosen	Pulverised leaves used on burn wounds, Tea make used for chest and kidney pain.
<i>Parkinsonia africana</i> Sond.	!Khâs, /Khâb	Leaves, terminal shoots and bark are boiled to produce a cough remedy.
<i>Pechuel-Loeschea leubnitziae</i> (Kuntz) O. Hoffm.	Autsi !hanneb	Leaves are used to relieve insect bites and itches, and are burnt to keep mosquitoes out of the house.
<i>Ruellia diversifolia</i> S. Moore	/Gom/gom	Leaves can be applied on wounds, flower nectar sucked and eaten as a snack
<i>Salvadora persica</i> L.	Khoris	Root tea used for gastro-intestinal problem sand diarrhoea.
<i>Sesbania sphaerosperma</i> Welw.	Nanatub	Seeds roasted in the ground and then brewed and drunk as coffee.
<i>Spirostachys africana</i> Sond.	Au haib	Leaves are used to relieve chest pain, also ingredient in Damara perfume "Sâi".
<i>Terminalia prunioides</i> M.A. Lawson	≠Kheab	Root decoction used as a cough remedy.
<i>Thamnosma africana</i> Engl.	≠Khanab	Decoction of leaves used to relieve stomach and chest pain. It is also used to treat cough, colds and flu.

CONCLUSION

Due to low rainfall in the area, most annuals are affected and dries out very fast. These could not be collected and assessed.

ACKNOWLEDEMENT

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**APPENDIX 1: CHECKLIST OF
PLANT SPECIES RECORDED IN
THE TWYFELFONTEIN AREA**

ACANTHACEAE

Barleria macrostegia Nees
Barleria merxmuelleri P.G. Mey.
Barleria solitaria P.G. Mey
Blepharis gigantea Oberm.
Blepharis grossa (Nees) T. Anderson
Blepharis obmitrata C.B. Clarke
Justicia platysepala (S. Moore) P. G. Mey
Justicia heterocarpa T. Anderson subsp
dinteri (S. Moore) Hedrèn
Monechma cleomoides (S. Moore) C.B.
Clarke
Monechma genistifolium (Engl.) C.B.
Clarke subsp *australe* (P.G. Mey.)
Munday
Monechma genistifolium (Engl.) C.B.
Clarke subsp. *genistifolium*
Petalidium canescens (Engl. C.B. Clarke
Petalidium engleranum (Schinz) C.B.
Clarke
Petalidium giessii P.G. Mey.
Petalidium hallimoides (Nees) S. Moore
Petalidium lanatum (Engl.) C.B. Clarke
Petalidium pilosi-bracteolatum Merxm. &
Hainz
Petalidium rossmannianum P.G. Mey.
Petalidium variabile (Engl.) C.B. Clarke
Peristrophe hereroensis (Schinz) K.
Balkwill
Peristrophe namibiensis K. Balkwill
subsp. *brandbergensis* K. Balkwill
Ruelliopsis damarensis S. Moore
Ruelliopsis setosa (Nees) C.B. Clarke
Ruellia diversifolia S. Moore

AIZOCEAE

Aizoanthemum dinteri (Schinz) Friedrich
Sesuvium sesuvioides (Fenzl.) Verdc.
Trianthema parvifolia E. Mey. ex Sond.
Trianthema triquetra Rottler ex Willd.
Galenia africana L. var. *africana*

AMARANTHACEAE

Aerva leucura Moq.
Calicorema capitata (Moq.) Hook.f.

Hermbstaedtia argenteiformis Schinz
Hermbstaedtia linearis Schinz
Hermbstaedtia scabra Schinz
Hermbstaedtia spathulifolia (Engl.) Baker
Leucosphaera bainesii (Hook.f.) Gilg
Nelsia quadrangula (Engl.) Schinz
Pupalia lappacea (L.) A. Juss. var.
lappacea
Marcelliopsis denudata (Hook.f.) Schinz

ANACARDIACEAE

Ozoroa crassinervia (Engl.) R. & A. Fern.

Rhus marlothii Engl.

ANTHERICACEAE

Chlorophytum papillosum Rendle

APIACEAE

Phlyctidocarpa flava Cannon & Theobald

APOCYNACEAE

Cryptolepis decidua Planch. Ex Hook. F. & Benth.

Cryptolepis oblongifolia (Meisn.) Schltr.

Orthanthera albida Schinz

Pentarrhinum insipidum E. Mey.

Pergularia daemia (Forssk.) Chiov. var *leiocarpa* (K. Schum.) H.E. Huber

ASPARAGACEAE

Asparagus pearsonii Kies

ASPHODELACEAE

Aloe asperifolia A. Berger

ASTERACEAE

Doellia cara (DC.) Anderb.

Emelia marlothiana (O.Hoffm.) C. Jeffrey

Engleria africana O.Hoffm.

Eriocephalus pinnatus O.Hoffm.

Felicia anthemidodes (Hiern) Mendonça

Felicia smaragdina (S.Moore) Merxm.

Felicia clavipilosa Grau subsp. *clavipilosa*

Geigeria acaulis Benth. & Hook. f. ex Oliv. & Hiern

Geigeria alata (DC.) Benth & Hook.f. ex Oliv. & Hiern

Geigeria ornativa O.Hoffm.

Helichrysum roseo-niveum Marloth & O.Hoffm.

Hirpicium ganzanioides (Harv.) Roessler

Launnaea intybacea (Jacq.) P. Beauv.

Litogyne gariepina (DC.) Anderb.

Melanthera marlothiana O.Hoffm.

Nidorella resedifolia DC.

Pegolettia oxyodonta DC.

Pegolettia senegalensis Cass.

Pentratrichia petrosa Klatt

Ondetia linearis Benth.

Othonna lasiocarpa (DC.) Sch.Bip.

Senecio alliarifolius O.Hoffm.

Senecio eenii (S.Moore) Merxm.

Senecio flavus (Decne.) Sch.Bip.

Tripteris microcarpa Harv. subsp. *microcarpa*
Tripteris microcarpa Harv. subsp. *septentrionalis* (T.Norl.) T. Norl.
Vernonia cinerascens Sch.Bip.
Vernonia obionifolia O.Hoffm. subsp. *dentata* Merxm.

BIGNONIACEAE

Catophractes alexandri D.Don

BORAGINACEAE

Cordia sinensis Lam.
Heliotropium ovalifolium Forssk.
Heliotropium rariflorum Stocks
Heliotropium steudneri Vatke
Heliotropium tubulosum E. Mey. ex DC.
Trichodesma africanum (L.) Lehm.

BURSERACEAE

Commiphora anacardifolia Dinter & Engl.
Commiphora glandulosa Schinz
Commiphora glaucescens Engl.
Commiphora kraeuseliana Heine
Commiphora multijuga (Hiern) K. Schum.
Commiphora pyrananthoides Engl.
Commiphora saxicola Engl.
Commiphora tenuipetiolata Engl.
Commiphora virgata Engl.
Commiphora wildii Merxm.

CAPPARACEAE

Boscia albitrunca (Burch.) Gilg & Benedict
Boscia foetida Schinz subsp. *foetida*
Cadaba schroepelii Suess.
Cleome angustifolia Forssk. subsp. *diandra* (Burch.) Kers
Cleome angustifolia Forssk. subsp. *petersiana* (Klotzsch ex Sond.) Kers
Cleome foliosa Hook.f. var. *foliosa*
Cleome foliosa Hook.f. var. *lutea* (Sond.) Codd & Kers
Cleome gynandra L.
Cleome suffruticosa Schinz
Maerua juncea Pax subsp. *juncea*
Maerua schinzii Pax

CELASTRACEAE

Gymnosporia senegalensis (Lam.) Loes.

CHENOPODIACEAE

Chenopodium pumilio R.Br.

COMBRETACEAE

Combretum imberbe Wawra

Combretum wattii Exell
Terminalia prunioides M.A. Lawson

COLCHICACEAE

Ornithoglossum vulgare B. Nord.

CONVOLVULACEAE

Convolvulus sagittatus Thunb.
Merremia guerichii A. Meeuse
Ipomoea magnusiana Schinz

CUCURBITACEAE

Citrullus ecirrhosus Cogn.
Citrullus lanatus (Thunb.) Matsum. & Nakai
Citrullus rehmii De Winter
Coccinia rehmii Cogn.
Corallocarpus welwitschii (Naudin) Hook.f. ex Welw.
Cucumella cinerea (Cogn.) C. Jeffrey
Cucumis africanus L.f.
Cucumis kalahariensis A. Meeuse
Cucumis meeusei C. Jeffrey
Cucumis sagittatus Peyr.
Dactyliandra welwitschii Hook.f.
Momordica balsamina L.
Momordica humilis (Cogn.) C. Jeffrey
Trochomeria debilis (Sond.) Hook.f.

CYPERACEAE

Cyperus laevigatus L.
Cyperus longus L. var. *tenuiflorus* (Rottb.) Boeck.
Cyperus marginatus Thunb.
Fuirena pubescens (Poir.) Kunth
Mondandrus squarrosus (L.) Vorster ined.
Schoenoplectus subulatus (Vahl) Lye
Scirpoides dioecus (Kunth) J. Browning

EBENACEAE

Euclea pseudebenus E. Mey. ex A.DC.

ELATINACEAE

Bergia polyantha Sond.

ERIOSPERMACEAE

Eriospermum corymbosum Baker
Eriospermum flexum P.L. Perry

EUPHORBIACEAE

Acalypha fruticosa Forssk
Croton gratissimus Burch. var. *gratissimus*
Euphorbia damarana L.C. Leach

Euphorbia gariepina Boiss. subsp. *balsamea* (Welw. Ex. Hiern) L.C. Leach
Euphorbia glanduligera Pax
Euphorbia giessii L.C. Leach
Euphorbia guerichiana Pax
Euphorbia inaequilatera Sond.
Euphorbia phylloclada Boiss.
Euphorbia virosa Willd.
Phyllanthus maderaspatensis L.

FABACEAE

Acacia erioloba E. Mey
Acacia erubescens Welw. ex Oliv.
Acacia mellifera (Vahl) Benth. subsp. *detinens* (Burch.) Brenan
Acacia montis-usti Merxm. & A. Schreib.
Acacia reficiens Schinz
Acacia robynsiana Merxm. & A. Schreib.
Adenolobus garipensis (E.Mey) Torre & Hillc.
Adenolobus pechuelii (Kuntze) Torre & Hillc. subsp. *mossamedensis* (Torre & Hillc.)
Brummitt & J.H. Ross
Caesalpinia pearsonii L. Bolus
Caesalpinia rubra (Engl.) Brenan
Colophospermum mopane (J. Kirk ex Benth.) J. Kirk ex J. Leonard
Crotalaria argyraea Welw. ex Baker
Crotalaria damarensis Engl.
Crotalaria kurtii Schinz
Crotalaria leubnitziana Schinz
Crotalaria platysepala Harv.
Crotalaria podocarpa DC.
Dichrostachys cinerea (L.) Wight & Arn. subsp. *africana* Brenan & Brummitt var. *africana*
Faidherbia albida (Delile) A. Chev.
Indigastrum argyroides (E. Mey.) Schrire
Indigastrum guerranum (Torre) Schrire
Indigofera adenocarpa E. Mey.
Indigofera alternans DC. var. *alternans*
Indigofera auricoma E. Mey.
Indigofera charlieriana Schinz
Indigofera daeioides Benth. Ex Harv.
Indigofera heterotricha DC.
Indigofera holubii N.E.Br.
Lotononis bracteosa B.-E van Wyk
Lotononis platycarpa (Viv.) Pic. Serm.
Mundulea sericea (Willd.) A. Chev.
Neorautanenia amboensis Schinz
Parkinsonia africana Sond.
Ptychlobium biflorum (E. Mey.) Brummitt subsp. *angolensis* (Baker) Brummitt
Rhynchosia candida (Welw. ex Hiern) Torre
Sesbania pachycarpa DC. subsp. *dinterana* J.B. Gillett
Sesbania pachycarpa DC. subsp. *pachycarpa*
Tephrosia dregeana E. Mey var. *dregeana*
Tephrosia monophylla Schinz

Tephrosia rhodesica Baker. f.

GERANIACEAE

Monsonia senegalensis Guill. & Perr.

Monsonia umbellata Harv.

Sarcocaulon salmoniflorum Moffett

GISEKIACEAE

Gisekia africana (Lour.) Kuntze var. *africana*

HYACINTHACEAE

Dipcadi crispum Baker

Ledebouria luteola Jossop

Ledebouria revoluta (L.f.) Jessop

Ledebouria undulata (Jacq.) Jessop

Ornithogalum sp.

HYDROPHYLLACEAE

Codon schenckii Schinz

LAMIACEAE

Acrotome fleckii (Gürke) Launert

Hemizygia floccosa Launert

Leucas pechuelii (Kuntze) Gürke

Ocimum americanum L. var. *americanum*

Salvia garipensis E. Mey. ex Benth.

LOASACEAE

Kissenia capensis Endl.

LORANTHACEAE

Phragmanthera guerichii (Engl.) Balle

MALVACEAE

Abutilon fruticosum Guill. & Perr.

Gossypium anomalum Wawra ex Wawra & Peyr. subsp. *anomalum*

Hibiscus castroi Baker f. & Exell

Hibiscus micranthus L.f.

Hibiscus rhabdotospermus Gürke

Pavonia burchellii (DC.) R.A. Dyer

Pavonia rehmannii Szyszyl.

Pavonia senegalenis (Cav.) Leistner

Sida ovata Forssk.

MESEMBRYANTHEMACEAE

Psilocaulon salicornioides (Pax) Schwantes

Lithops ruschiorum (Dinter & Schwantes) N.E.Br. var. *lineata* (Nel) D.T.Cole

MOLLUGINACEAE

Corbichonia decumbens (Forssk.) Exell
Limeum argute-carinatum Wawra & Peyr.
Limeum myosotis H. Walter var. *myosotis*
Mollugo cerviana (L.) Ser. ex DC.

MONTINIACEAE

Montinia caryophyllacea Thunb.

MORINGACEAE

Moringa ovalifolia Dinter & A. Berger

MYROTHAMNACEAE

Myrothamnus flabellifolius Welw.

NYCTAGINACEAE

Boerhavia coccinea Mill.
Boerhavia cordobensis Kuntze
Boerhavia deserticola Codd
Boerhavia hereroensis Heimerl
Commicarpus fallacissimus (Heimerl) Heimerl ex Oberm.
Commicarpus squarrosus (Heimerl) Standl.
Phaeoptilum spinosum Radlk.

PEDALIACEAE

Sesamothamnus guerichii (Engl.) E.A. Bruce
Sesamum capense Burm. f.
Sesamum marlothii Engl.
Sesamum rigidum Peyr. subsp. *merenskyanum* Ihlenf. & Seidenst.
Sesamum triphyllum Welw. ex Asch.
Rogeria adenophylla J. Gay ex Delile subsp. *aurantianca* (Schinz) Ihlenf.

PLUMBAGINACEAE

Dyerophytum africanum (Lam.) Kuntze

POACEAE

Acrachne racemosa (Roem. & Schult.) Ohwi
Acrachne pubescens Nees
Anthephora schinzii Hack.
Aristida adscensionis L.
Aristida effusa Henrard
Brachiaria grossa Stapf
Cenchrus ciliaris L.
Centropodia mossamedensis (Rendle) T.A. Cope
Chloris virgata Sw.
Cymbopogon pospischilii (K. Schum.) C.E. Hubb
Dactyloctenium aegyptium (L.) Willd.
Danthoniopsis dinteri (Pilg.) C.E. Hubb.
Enneapogon cenchroides (Roem. & Schult.) C.E. Hubb.
Enneapogon desvauxii P. Beauv.
Enneapogon scoparius Stapf

Enteripogon rupestris (J.A. Schmidt) A. Chev.
Eragrostis annulata Rendle ex Scott-Elliot
Eragrostis cylindriflora Hochst.
Eragrostis echinochloidea Stapf
Eragrostis gladulosipedata De Winter
Eragrostis nindensis Ficalho & Hiern
Eragrostis porosa (L.) P. Beauv.
Eragrostis rotifer Rendle
Eragrostis superba Peyr.
Eragrostis walteri Pilg.
Fingerhuthia africana Lehm.
Imperata cylindrica (L.) Raeusch.
Melinis repens (Willd.) Zizka subsp. *grandiflora* (Hochst.) Zizka
Monelytrum luederitzianum Hack.
Oropetium capense Stapf
Panicum arbusculum Mez
Panicum simulans Smook
Phragmites australis (Cav.) Steud.
Schmidtia kalahariensis Stent
Schmidtia pappophoroides Steud.
Setaria appendiculata (Hack) Stapf
Setaria geminata (Forssk.) Veldkamp
Setaria verticillata (L.) P. Beauv.
Sporobolus engleri Pilg.
Stipagrostis hirtigluma (Trin. & Rupr.) De Winter subsp. *hirtigluma*
Stipagrostis hirtigluma (Trin. & Rupr.) De Winter subsp. *patula* (Hack.) De Winter
Stipagrostis hirtigluma (Trin. & Rupr.) De Winter subsp. *pearsoni* (Henr.) De Winter
Stipagrostis hochstetteriana (Beck ex Hack.) De Winter var. *hochstetteriana*
Tragus racemosus (L.) All.
Triraphis ramosissima Hack.
Tricholaena monachne (Trin.) Stapf ex C.E. Hubb.
Urochloa brachyura (Hack.) Stapf

POLYGALACEAE

Polygala guerichiana Engl.
Polygala leptophylla Burch.

PORTULACACEAE

Portulaca oleracea L.

RHAMNACEAE

Helinus integrifolius (Lam.) Kuntze

RUBIACEAE

Amphiasma merenskyanum Bremek.
Kohautia caespitosa Schinzl. subsp. *brachyloba* (Sond.) D. Mantell
Kohautia cynanchica DC.

RUTACEAE

Thamnosma africana Engl.

SALVADORACEAE

Salvadora persica L.

SANTALACEAE

Thesium lineatum L.f.

SAPINDACEAE

Cardiospermum pechuelii Kuntze

SCROPHULARIACEAE

Anticharis ebracteata Schinz

Anticharis imbricata Schinz

Anticharis inflata Marloth & Engl.

Aptosimum angustifolium Weber & Schinz

Aptosimum lineare Marloth & Engl.

Jamesbrittenia canescens (Benth.) Hilliard var. *laevior* (Dinter) Hilliard

Limosella grandiflora Benth.

SOLANACEAE

Lycium cinereum Thunb.

Lycium eenii S. Moore

Nicotiana africana Merxm.

Solanum dinteri Bitter

Solanum lichtensteinii Willd.

Solanum rigescentoides Hutch.

STERCULIACEAE

Hermannia amabilis Marloth ex K. Schum.

Hermannia engleri Schinz

Hermannia modesta (Ehrenb.) Mast.

Hermannia solaniflora K. Schum.

Hermannia tigrensis Hochst. ex A. Rich.

Melhania damarana Harv.

Sterculia africana (Lour.) Fiori

Sterculia quinqueloba (Garcke) K. Schum.

TECOPHILAEACEAE

Cyanella amboensis Schinz

TILIACEAE

Grewia bicolor Juss.

Grewia flavescens Juss.

Grewia tenax (Forssk.) Fiori

Grewia villosa Willd.

URTICACEAE

Forsskaolea candida L.f.

Forsskaolea hereroensis Schinz

Forsskaolea viridis Ehrenb. ex Webb

VAHLIACEAE

Vahlia capensis (L.f.) Thunb. subsp. *vulgaris* Bridson

VERBENACEAE

Chascanum garipense E. Mey.

Lantana dinteri Moldenke

VISCACEAE

Viscum schaeferi Engl. & K. Krause

VITACEAE

Cyphostemma uter (Exell & Mendonça) Desc.

WELWITSCHIACEAE

Welwitschia mirabilis Hook.f.

ZYGOPHYLLACEAE

Tribulus terrestris L.

Tribulus zeyheri Sond. subsp. *zeyheri*

Zygophyllum cylindrifolium Schinz

Zygophyllum simplex L.

Zygophyllum spongiosum Van Zyl

APPENDIX 2: ENDEMIC PLANTS OF THE TWYFELFONTEIN AREA

ACANTHACEAE

Barleria solitaria P.G. Mey.
Blepharis gigantea Oberm.
Justicia platysepala (S. Moore) P.G. Mey.
Petalidium canescens (Engl.) C.B. Clarke
Petalidium giessii P.G. Mey.
Petalidium pilosi-bracteolatum Merxm. & Hainz

AIZOACEAE

Aizoanthemum dinteri Dinter ex Friedrich

APIACEAE

Phlyctidocarpa flava Cannon & Theobald

ASTERACEAE

Eriocephalus pinnatus O. Hoffm.
Felicia smaragdina (S. Moore) Merxm.
Ondetia linearis Benth.
Senecio alliarifolius O. Hoffm.
Vernonia obionifolia O. Hoffm.

BURSERACEAE

Commiphora anarcardifolia Dinter & Engl.
Commiphora pyracanthoides Engl.
Commiphora saxicola Engl.
Commiphora virgata Engl.

CAPPARACEAE

Cleome suffruticosa Schinz

CONVOLVULACEAE

Merremia guerichii A. Meeuse

CUCURBITACEAE

Citrullus rehmii De Winter

EUPHORBIACEAE

Euphorbia damarana L.C. Leach
Euphorbia giessii L.C. Leach

FABACEAE

Acacia robynsiana Merxm. & A. Schreib.
Acacia montis-usti Merxm. & A. Schreib.
Caesalpinia pearsonii L. Bolus
Crotalaria kurtii Schinz
Lotononis platycarpa (Viv.) Pic.Serm.
Sesbania pachycarpa DC subsp. *pachycarpa*

Tephrosia monophylla Schinz

LAMIACEAE

Hemizygia floccosa Launert

Acrotome fleckii (Gürke) Launert

MALVACEAE

Pavonia rehmannii Szyszyl.

MESEMBRYANTHEMACEAE

Lithops ruschiorum (Dinter & Schwantes) N.E.Br. var. *lineata* (Nel) D. T. Cole

NYCTAGINACEAE

Boerhavia deserticola Codd

PEDALIACEAE

Sesamum marlothii Engl.

POACEAE

Eragrotis walteri Pilg.

Panicum simulans Smook

Stipagrostis hochstetteriana (L.C. Beck ex Hack.) De Winter var. *hochstetteriana*

POLYGALACEAE

Polygala guerichiana Engl.

RUBIACEAE

Amphiasma merenskyanum Bremek.

SCROPHULARIACEAE

Anticharis ebracteata Schinz

Anticharis imbricata Schinz

Anticharis inflata Marloth & Engl.

SOLANACEAE

Solanum dinteri Bitter

Solanum rigescentoides Hutch.

STERCULIACEAE

Hermannia amabilis Marloth ex K. Schum.

Hermannia engleri Schinz

Hermannia solaniflora K. Schum.

TECOPHILAEACEAE

Cyanella amboensis Schinz

ZYGOPHYLLACEAE

Zygophyllum cylindrifolium Schinz

APPENDIX 3: TAXA THAT HAVE BEEN ASSESSED AGAINST THE 1994 IUCN, RED LIST CRITERIA (GOLDING, 2002) AND THEIR STATUS

ACANTHACEAE

Barleria solitaria P.G. Mey.

Status: LR-lc

APIACEAE

Phlyctidocarpa flava Cannon & Theobald

Status: LR-lc

ASTERACEAE

Eriocephalus pinnatus O. Hoffm.

Status: LR-lc

FABACEAE

Acacia robynsiana Merxm. & A. Schreib.

Status: LR-lc

Acacia montis-usti Merxm. & A. Schreib.

Status: LR-lc

Caesalpinia pearsonii L. Bolus

Status: LR-lc

MESEMBRYANTHEMACEAE

Lithops ruschiorum (Dinter & Schwantes) N.E.Br. var. *lineata* (Nel) D.T.Cole

Status: LR-lc

SOLANACEAE

Nicotiana africana Merxm

Status: LR-lc

VITACEAE

Cyphostemma uter (Exell & Mendonç) Desc.

Status: LR-nt

APPENDIX 4: TAXA PROTECTED BY NATURE CONSERVATION ORDINANCE, 1975

ASPHODELACEAE

Aloe asperifolia A. Berger

MESEMBRYANTHEMACEAE

Lithops ruschiorum (Dinter & Schwantes) N.E.Br. var. *lineata* (Nel) D.T. Cole

MORINGACEAE

Moringa ovalifolia Dinter & A. Berger

VITACEAE

Cyphostemma uter (Exell & Mendoca) Desc.

WELWITSCHIACEAE

Welwitschia mirabilis Hook.f.

APPENDIX 5: TAXA ON CITES APPENDIX II

EUPHORBIACEAE

Euphorbia damarana L. C. Leach

Euphorbia gariiepina Boiss subsp. *balsamea* (Welw. ex Hiern) L.C. Leach

Euphorbia giessii L.C. Leach

Euphorbia guerichiana Pax

Euphorbia virosa Willd.

WELWITSCHIACEAE

Welwitschia mirabilis Hook.f.

3.a. DESCRIPTION OF PROPERTY

GEOLOGY

By Gabi Schneider

Twyfelfontein lies in a valley running northwards and carrying a small tributary of the Huab River, the Aba Huab River. Sandstones of the Etjo Formation and shales of the Gai-As Formation, both of the Karoo Sequence that is underlain by dark Kuiseb Formation schists of the Damara Sequence bound the valley.

The Neoproterozoic Damara Orogen was formed between 1000 and 460 million years ago during a complete plate tectonic cycle in successive phases of intra-continental rifting, spreading, the formation of passive continental margins, mid-ocean ridge development and subsequent subduction and continental collision involving the Congo and Kalahari Cratons, and culminating in the formation of Alpine-type mountain belts. The coastal and intracontinental arms of the Damara Orogen underlie much of northwestern and central Namibia.

Following the assembly of Gondwanaland towards the end of the Damara Orogeny, stable continental conditions prevailed throughout the Palaeozoic and the Early to Middle Mesozoic. By the end of the Carboniferous, 200 Ma of erosion had left only remnants of the Damara mountain belt. Most parts of present-day Namibia had become vast pen plains, separated only by those remnants. The pen plains were to become the sedimentary basins in which the rocks of the Permo-Carboniferous to Jurassic Karoo Sequence were to be deposited. The Aranos, Huab, Waterberg and Owambo Basins occur in the southeastern and northerly parts of Namibia. Within Gondwanaland, southern Africa initially occupied a position close to the South Pole, and a huge ice sheet covered the region. Basal glycolytic rocks of the Permo-Carboniferous Dwyka Formation include moraines and fluvio-glacial as well as glacio-marine deposits. The Dwyka glaciation ended approximately 280 Ma ago, when plate tectonic movements brought southern Africa to a more moderate climatic realm.

At the end of the Dwyka glaciation, the melting ice sheet provided ample water to create an environment with huge lakes and rivers. Consequently, lacustrine grey- to green-weathering shales, mudstones, limestones, sandstones and coal-bearing shales, which in turn are overlain by fluvial sandstones, overlie the Dwyka Formation. In the Huab basin, purple shales and sandstones of the Gai-As Formation represent mid-Permian rocks.

The rivers that flowed into this lake, some 260 to 250 million years ago, deposited in a huge lake and the Gai-As Formation. The Huab Basin developed as an intracontinental rift valley, similar to the East African Rift Valley of today, and is therefore the result of extensional tectonics that would eventually lead to the break-up of Gondwanaland more than 110 million years later. Lake Gai-As, which occupied this rift valley had an extent of

more than 1.5 million km², and was elongate in a northwest-southeast direction. It therefore was an enormous inland water body.

Fine-grained mudstones of the Gai-As Formation were deposited at the bottom of the lake. As the lake slowly filled up with sediments, more coarse-grained gravels, derived from creeks and rivers transporting sediments into the lake were deposited together with sandstones and mudstones. Sedimentary structures reveal that there was appreciable wave action along the shores of the lake, and that braided rivers dewatered into the lake forming deltas. Lake Gai-As straddled latitude of approximately 40° south, and the climate was therefore warm to temperate, sub-humid and seasonal. The predominant wind direction would have been from the south. The palaeogeographic position suggests that during the winter months strong storms occurred occasionally, and this is also obvious in the rock record through the presence of so-called tempestites. These are storm deposits, showing evidence of violent disturbance of pre-existing sedimentary structures, followed by re-deposition in shallow waters.

From time to time, the salinity as well as alkalinity of the lake water increased, which promoted the formation of algal mats along the margins of the lake. These are today preserved in the form of stromatolitic limestones. Other fossil remains of the inhabitants of the lake, as well as of those on land, which were washed into the lake, were deposited together with the sediments. Invertebrate fossils are represented in the Gai-As Formation by the freshwater bivalve *Leinzia similis*, which also occurs in the Rio do Rasto Formation in Brazil, which was deposited at the same time. *Leinzia similis* was a filter feeder and lived in shallow water on the water-sediment interface. It had a small, triangular shell with an average size of 2 cm and a maximum size of 4 cm. The shells display a coarse, concentric ornamentation. *Leinzia* preferred finer-grained sediments in distal offshore settings below the storm-wave base.

The Gai-As Formation also contains remains of the palaeoniscoid fish *Namaichthys* and *Atherstonia*. *Atherstonia* had fairly primitive skull morphology and a robust trunk, and reached a length of up to 35 cm. The typical interlocking enamel-like scales of the early actinopterygians were quite large and externally marked with coarse oblique striae. Particularly along the dorsal margin, these scales were very large and deeply overlapping. The strong fins had bifurcating rays. *Atherstonia* had a predatory habit, as evidenced by its numerous relatively large, needle-like teeth, which were arranged in two vertically inclined series, comprising a row of large conical inner teeth and numerous small outer teeth present in the upper and lower jaw margins. These teeth must have been a powerful tool to crush *Atherstonia*'s prey, consisting most probably of invertebrates and other, smaller fish (Bender, in press).

To date, very few tetrapod remains have been described from the Gai-As Formation. However, one recent find is that of the oldest member of the amphibian group known as the Stereospondyli (Warren et al., 2001). These fully aquatic predators evolved from earlier temnospondyl amphibians, and during the Triassic became the most widespread and largest ever amphibians ever to have lived. The largest of these attained a length of some 6 meters. The Gai-As specimen, however, had a body length of 2.5 meters. These

animals had relatively short legs in relation to their long bodies, and had a flattened head with nostrils and bulging eyes facing upwards, enabling them to breathe and see while being semi-submerged in the water. Because of their aquatic habitat, stereospondyl amphibians had adaptations for an aquatic lifestyle, such as lateral line sensory organs as are present in fish.

In places, extensive bioturbation in the form of burrows such as *Planolites*, *Skolites*, *Beaconites*, *Palaeophyus* and *Rosselia* indicate that a variety of invertebrates other than the mollusk described above were also present, however, they have not been preserved in the fossil record.

On land, the shores of the lake would have been vegetated by the typical Permian *Glossopteris* flora, including Glossopteridales, Cordaitales, ferns, cycads and conifers. Petrified wood pieces are quite common in the Gai-As Formation, however, no leaf material has so far been recovered. The wood has been assigned to the genus *Podocarpoxyton* and *Araucarioxyton*, representing, most probably, conifers. It is, however, not possible to reconstruct these plants, since only the wood, and no leaves have been preserved.

Further severe changes of the environmental conditions about 200 Ma ago led to the establishment of an extremely arid climate. A huge desert formed and aeolian deposition prevailed. The Triassic to Jurassic Etjo Sandstone Formation is a remnant of this desert and comprises fossil sand dunes. It overlies the middle Permian rocks in the Huab Basin.

The Etjo Formation consists of basal interbedded pebbly gravels and sandstones, a middle unit of sandstones, and large-scale cross bedded sandstones on top. While the two lowermost units were deposited by rivers, the top unit represents wind-blown dunes similar to those existing in the Namib Desert today. The Etjo Formation therefore gives evidence of an increasing desertification during this period in the earth's history. This change in the environment did put enormous pressure on the fauna and flora living 200 million years ago.

Meanwhile, evolution laid the foundation for the development of a well-known group of reptiles, the dinosaurs. Dinosaurs actually descended from small, bipedal thecodonts, and they appeared in the Late Triassic at about the same time as the first mammals. Again an extinction event might have played a role, this time related to climatic changes. In the Late Triassic and Early Jurassic, the whole of the southern part of Pangea was drifting northwards into warmer latitudes. Open, savannah-type habitats, subject to dry periods, increased during that time. Dinosaurs soon became quite large and quite often bipedal animals, which could make use of the higher, savannah-type vegetation, and also move about more safely in open habitats. It is therefore possible that these climatic changes, which influenced the environment rather negatively for the therapsids, gave the edge to the early dinosaurs. Dinosaurs may already have been adapted to drier conditions, so when a dry climate became more common in the Early Jurassic, dinosaurs also became more common and diverse. Therapsids, so abundant in the Omingonde Formation, decreased as the possible number of ecological niches for them did so too (King, 1990).

In the Etjo Formation, the lower gravel and sandstone unit has yielded little evidence of life so far. There is only a moderately diverse range of trace fossils of burrowing organisms, which occurred in still or flowing water. In the middle unit, however, a prosauropod dinosaur, *Massospondylus*, has been discovered. *Massospondylus* is one of the oldest known dinosaurs, and grew to a length of about 6 meters. This quadrupedal dinosaur had a long neck and blade-shaped slicing teeth, which indicates that it was feeding on vegetation well above ground level. The forelegs were considerably shorter than the hind legs, which suggests that, although it normally walked on four legs, it may have moved at times on the two hind legs while feeding or defending himself. *Massospondylus* swallowed small stones to assist the digestion of rough plant matter in the stomach, similar to many modern birds and crocodiles today. Other than *Massospondylus*, the only fossils found in the middle unit are the trace fossils *Planolites* and *Palaeophycus*.

The upper unit of aeolian sandstones is well-known for dinosaur footprints and trackways. There are a number of localities in the Etjo Sandstone that contain dinosaur footprints. The sands which formed the upper Etjo sandstones accumulated under arid conditions as wind blown dunes. Numerous reptiles lived in the interdune areas, but as the climate became drier, these animals were forced to concentrate near waterholes, small lakes and rivers fed by occasional rainfalls and thunderstorms. Inevitably, their feet left imprints in the wet sediment around the water. Later, these imprints were covered by other layers of wind blown sand, and were preserved as trace fossils when the sand solidified into rock due to the pressure that built up as they became buried ever deeper.

Taking the arid conditions into consideration, it is not surprising that the vegetation was not lush during the deposition of the Etjo Formation. In fact, no fossil record exists. It can, however, be expected, that it consisted mostly of conifers, cycads and cycadeoids, which grew close to the limited bodies of open water.

Due to the continuous change to more arid climate conditions, it can be assumed that the animals became extinct not long after they left their footprints. Even worse, by about 180 million years ago, large eruptions of volcanic lava began to change the face of southern Africa. The desert landscape with its few and seasonal ponds became partly covered by volcanic ash and lava horizons, which reached the earth's surface through cracks in the earth's crust and isolated volcanic centres. This volcanism heralded the end of Gondwanaland, which started to break apart during this period in earth's history. As a consequence, the southern Atlantic Ocean started to open, and Africa and South America began to drift apart, a movement which is still progressing today. Volcanic rocks of the Etendeka Formation have an age of about 132 Ma. Extensive dolerite sills and dyke swarms are related to the volcanic rocks.

At Twyfelfontein, the geological juxtaposition of porous aeolian and fluvial sandstones of the Etjo Formation on impermeable deposits of the Gai-As Formation resulted in the formation of a freshwater spring. The name "Twyfelfontein", meaning "doubtful spring", originated because it only carries water episodically, the porous aeolian sandstone being

limited in volume and only holding a limited amount of water after good rainy seasons. Undoubtedly, people have for a long time been attracted to the area by this small spring which brings a great variety of game to the area, which hunters can observe unseen from a terrace some 50 m above the spring itself.

The rocks of the Etjo Formation, a thick-bedded aeolian sandstone, weather into large blocks, often with clean flat faces. These large blocks provided great shelter and the large flat faces, the old dune slip faces, the “canvas” for rock art.

The field notes interviews

Tomas Taniseb, aged 68, Blaukran farm , Khorixas 07 April 2004

When we were growing up the sources of live were springs, Wild fruits and wild life. The Namibdama people were hunters, the use hunting tools like ellows and bows, traps etc. There were some tradition ceremonies and worships like rainmaking and hunting that I noted as young boy. I don't really know what is done during these ceremonies as I did not participate. Only the elders, especially men, were participating in this rituals which held in the mountain. The mountains or the rocks played a significant role in the lives of our people. They believe that it has the power to bring rainfall. There are traditional songs about the mountain and it power to bring rainfall.

We have see the rock paintings but we don't know who done it. I don't think we attached any importance on the rock art then but only realized it can generate income after the white people started visit them and are paying a lot of money. However, only few individuals are benefiting from the income derive thereof.

Absalom Gaeb, age 89 Bloupoort, Khorixas, 09 April 2004

(Although Mr. Gaeb has some difficult in hearing and sight he remembered how they were to roam the area of Twyfelfontein to Uis). We were growing up there were hardly any shortage in terms of food and resources. The springs were source of life; it provides the much needed water especially during dry periods.

Our spring used to provide us with adequate water and people were grateful for the springs thus were ceremonies there to give thanks ask for more (like more rainfall, luck, and success hunting). However some people install pumps on the spring and the ceremonies ceased and spring no longer provide enough water.

The rock signs were sacred and important place. I don't know who drew the sign on the rock but I used hear that rock signs were left by our 'elders' (those who passed on) and the creator of the earth. The rock signs give luck, people used to gather around ask blessing, rainfall, and success in hunting and when they want to get job at the mine at Uis.

People also used give thanks after they have luck. Only elders were allowed to come nearer the Rock signs, it was a taboo for children to play near the rock sign. We respect the rock sign just like we respect graves in the community. No body ever destroyed rock signs, if you did you get bad luck.

After people started asking blessing at the church instead of the rock sign, it lost it original use.

Herman Goraseb, age 68, Morewag farm, Khorixas, 10 April 2004

I was growing, we were aware of rock arts but we never allowed going near it or spoiling it. It was treat like a sacred thing, it was a no go areas, just like graves. Everybody fear to violate the taboo surrounding the rock arts, it was just unquestionable obedience. It was believed that this art was done by our ancestors, we never heard about bushmen lived here.

I don't know when it happen, but with missionary work, the fear or respect for this started to fade away.

I can't believe that what we used to fear so much is now a place of employment. Things changed with education and new development. It is not going to last long because it commercialized, some individuals might be tempted to sell it. I heard some people vandalized rock art. It never used to happen because we used to fear the consequences but it seems that people now knew that nothing will happen to them if they steal or vandalized rock art. It will be difficult to enforce any law because normal obey law if they believe it or they fear to be caught.

An Overview of Tourism in the North West regions of Namibia

Background

The tourism industry is quickly developing into a major revenue earner for Namibia, and is currently in third position behind mining and agriculture. According to the latest report by the World Travel and Tourism Council for Namibia, travel and tourism generated 16.1% of Namibian export earnings in 2002, and this is expected to grow to 17.5% in 2012. Employment in travel and tourism is currently estimated at 48,568 jobs, or 12.3% of total employment in Namibia, which is 1 in every 8 jobs.

'Eco-tourists' represent the majority of holiday visitors to Namibia. Most of these tourists visit Etosha National Park and the Namib Desert, while many also venture further a field into some of Namibia's remote rural areas, among the most scenic parts of the country. It should be noted that there is actually more wildlife living outside of protected areas in Namibia. The north west is becoming well known by tourists for its large, free roaming populations of wild animals.

To date, well-established tour operators have largely monopolized tourism in the rural areas. As a result, until quite recently, few benefits have trickled through to rural residents themselves, despite incurring the cost of frolics by 4x4 users and tour operators that enjoy their areas for personal recreation and profit. This particular issue, and the need to 'level the playing field' for local people to participate meaningfully in tourism, have been motivating factors for the establishment of a community-based tourism (CBT) interest group in Namibia.

Tourism in the North West

Tourism destinations in north western Namibia, such as Etosha and the Skeleton Coast are some of the most popular attractions in Namibia. The desert areas of Erongo and Kunene regions (often described as Damaraland and Kaokoland) lie between major coastal destinations such as Swakopmund, Henties Bay and the Skeleton Coast and Namibia's major wildlife destination, Etosha. These areas became popular destinations for adventure tourists in the early 1990's and have since grown to be more popular with general tourists to the region. The North West is sold by almost all the tour operators in Namibia due to its open space, wilderness appeal, contrasting scenery, mysterious wildlife, diverse cultures and unique archaeological attractions.

The White Lady near the Brandberg and the Twyfelfontein rock engravings are recognised icons of the north west and are visited by most tour groups and independent travellers visiting the region. The collection of accurate information about visitors to these attractions has only recently commenced, however interviews with local guides and tour operators have revealed that an *estimated 30,000 to 40,000 tourists* visit each of these attractions every year.

The majority (over 80%) of visitors to these attractions originate from overseas, while the average length of stay of visitors to the immediate Twyfelfontein – Brandberg – Khorixas area is 1 night (refer to Table 1).

<i>Region</i>	<i>Number of Rooms</i>	<i>Avg occ</i>	<i>Length of stay</i>	<i>Visits</i>
Omaruru	130	50%	1.1	38 823
Twyfelfontein – Brandberg - Khorixas	286	45%	1.1	32 253
Total rooms	416			

Table 1: Rooms and visits in the focal area (source: Marlien Lourens, 2002)

There are several designated camping sites in the north west, but camping is not restricted to these areas. It is estimated that in the region of 25,000 visitors are camping when travelling through the Twyfelfontein – Brandberg - Khorixas and Sesfontein – Otjovazandu - Kamanjab areas. The Aba-Huab campsite at Twyfelfontein receives around 10,000 visitors per annum that use their camping facilities. The table below provides a list of the accommodation establishments in the Twyfelfontein – Brandberg - Khorixas area, which is the zone that is of most interest for the purpose of this report.

	Rack Rates (N\$)				Camping Sites	Camping Rates
	Single	Double	Units	Beds		
<i>Twyfelfontein/Brandberg/Khorixas area:</i>						
<i>Damaraland Camp</i>	\$2,675	-	9	20	No	-
<i>Mowani Mountain Camp</i>	\$1,440	\$999	13	26	No	-
<i>Twyfelfontein Country Lodge</i>	\$715	\$560	57	114	No	-
<i>Brandberg White Lady Lodge</i>	\$450	\$375	8	16	Yes	\$45
<i>Khorixas Lodge & rest camp</i>	\$295	\$207	25	60	Yes	\$20
<i>/Glowati Lodge</i>	\$200	\$140	12	36	No	-
<i>White Lady B/B & Camping</i>	\$150	\$105	6	14	Yes	\$35
<i>Aba Huab Camp</i>					Yes	\$35
<i>Brandberg rest camp</i>					Yes	\$35

Note: All rates are in Namibian Dollars

Table 2: Accommodation in focal area (source: NACOBTA Booking Office, 2003)

Evolution of CBT

The movement towards CBT development in Namibia has been grounded within the holistic framework of community-based natural resource management (CBNRM), which is cognisant of the fact that sustainable development is only truly achieved when social, ecological and economic objectives are balanced. The origins of Namibia's CBNRM programme stem from community game guard initiatives that commenced in 1982 within the former "Kaokoveld" area of the north west. These initiatives were launched to help combat rampant commercial slaughter of wildlife in the area, which also coincided with the natural die-off of game due to drought.

The CBNRM programme in Namibia is thus building upon over two decades of implementation experience, and is now integrated as part of government's decentralization strategy that aims to devolve management and conditional utilization rights over various natural resources to village level. Under the CBNRM programme, rural communities can establish conservancies, which are representative, legal entities registered by the Ministry of Environment and Tourism (MET). To date government has registered 29 conservancies and more than 30 others are in various stages of development (refer to attached Map 1). Once all of these conservancies are registered approximately 10 million hectares of land will be encompassed within these rural conservation areas.

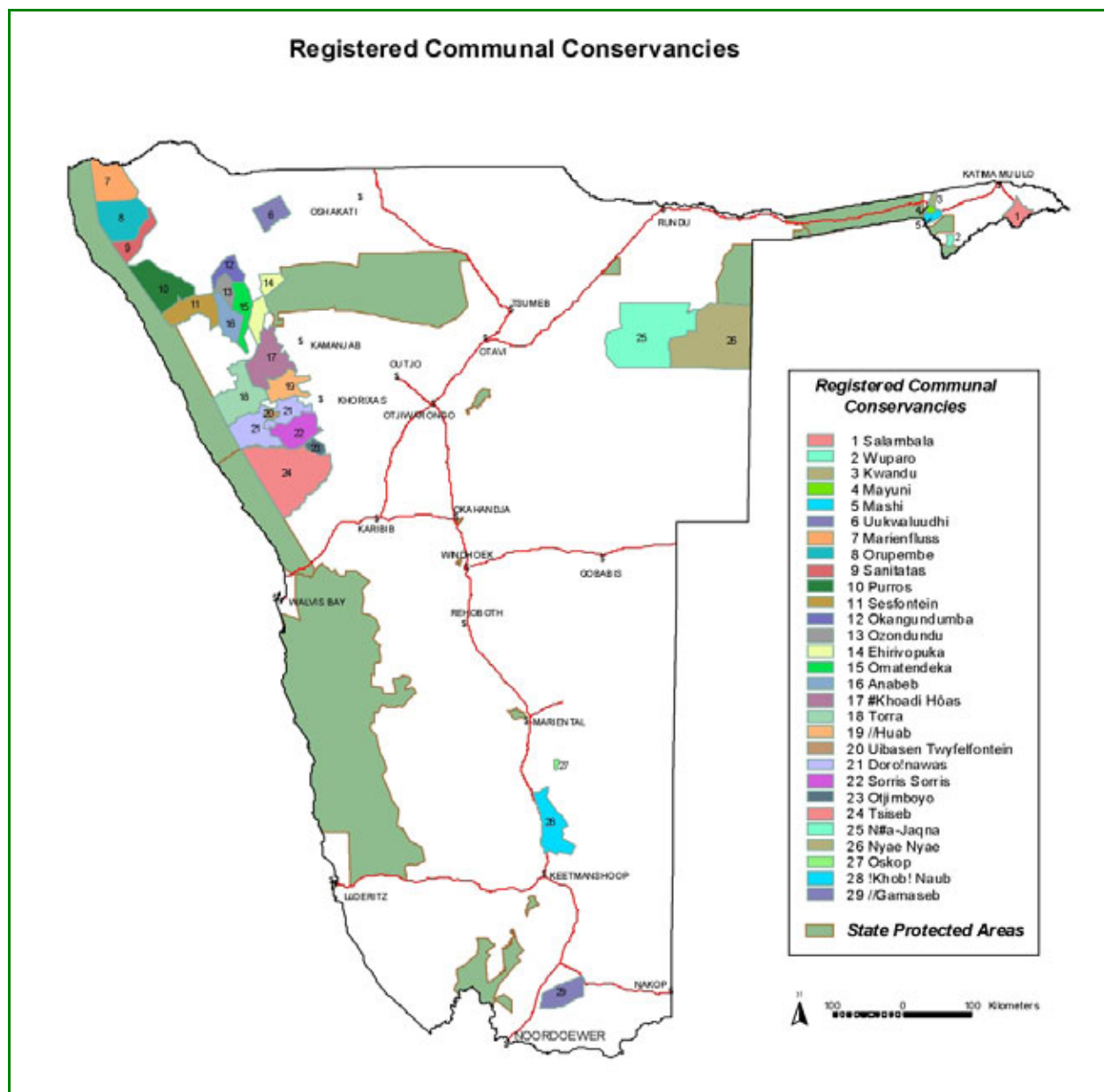
Conservancies by law are only empowered to manage wildlife and benefit from its use (both consumptive and non-consumptive). Government and supporting organizations interpret "non-consumptive use" as meaning tourism and other recreational use. Although the conservancy legislation does not allow the exclusions of tourist movement on communal land, it is envisaged that over time Government will bestow such rights upon them.

Since the adoption of CBNRM as a management approach on communal land, a strong ethic of wildlife conservation has become prevalent among the members of registered and emerging conservancies in Namibia. In many areas this has been a major contributor towards the recovery and proliferation of wildlife populations. It is generally accepted that this conservation ethic, once lost to Apartheid disenfranchisement, has been re-kindled through both the conservancy legislation and an expectation that efforts to conserve wildlife will ultimately reap meaningful benefits, both tangible and intangible. With regard to tangible benefits the expectation of revenue from tourism is especially high.

Benefits of CBT

The benefits of CBT to conservancies in Namibia can be categorised as both economic and socio-political. In terms of the economic contribution of CBT, considerable benefits have been recently been earned through the employment of conservancy members and cash income to conservancy management committees. These committees then use the mandate given to them by their members to decide how this income is used. Most common uses for funds generated by conservancies from CBT have been the payment of conservancy management costs and provision of cash payouts to members.

One of the major social benefits of CBT is empowerment created locally through the devolution of real rights to plan and develop a successful wildlife and tourism sector within a community. The sense of pride and ownership stimulated in such cases is a major factor in the success of the CBNRM programme in Namibia. Additionally, there has been substantial tourism awareness and capacity developed among rural people within conservancies. This has occurred through first hand experience in planning tourism developments, employment in various enterprises, and in some cases, management of individual enterprises too.



Map 1: Registered conservancies in Namibia as at 1 October 2003 (source: NNF, 2003)

Challenges facing CBT

The successes of CBT in Namibia should not be considered without understanding the challenges being experienced. The major challenges being faced in CBT are briefly summarized below:

1. Low awareness and capacity

The awareness of tourism and business is generally very low among conservancy members. As a result, many conservancy members have unrealistic expectations of the benefits that can accrue from tourism. Additionally, the speed of tourism development and its planning sometimes undermines and discourages the full participation

of rural people. On the other hand, many private sector operators remain skeptical of the quality of CBT products and do not fully understand the ecological, social/political and economic objectives of the CBNRM programme.

2. Wrong product in the wrong place

Many CBT products in Namibia have been developed without thorough market research. Several CBT developments have occurred with an overemphasis on the social and political objectives without input from marketing and design specialists, and without putting proper business plans and management systems in place.

3. Interest in CBT by the private sector is still emerging

Interest in CBT among visitors is still emerging and much marketing is required to elevate the profile of this tourism sector.

4. Insecure rights of tenure

Land in rural areas remains State owned but is administered locally through customary law and common property regimes (where private ownership is not allowed). This provides a major financial hurdle for new entrants to the tourism industry, as developments on communal land cannot be held as collateral for loans from commercial banks.

5. Reliability and standards of CBT products

Early CBT products have generally been of poor standard in terms of customer service, cleanliness and design. The bad reputation resulting from this has rubbed off on products of a higher standard. Additionally, the lack of telecommunications in rural areas means that booking systems have been difficult to implement. Tourism operators can therefore not totally rely on these products being available when needed.

6. Marketing

The marketing of tourism products is a specialized field that requires substantial investment. Most CBT products are poorly marketed or not marketed at all.

7. Individual vs collective, control vs management

In rural areas where livelihood pursuits depend upon the sharing of natural resources, how can individual entrepreneurial spirit be encouraged while ensuring that the broader community benefits from a collective conservation effort? The current thinking is that conservancies should provide local level *control* of wildlife management and tourism development, but should outsource the commercial tourism function to the private sector, in exchange for negotiated financial, environmental and social obligations. The private sector can be defined as either a local or outside businessperson, depending on the availability of appropriate skills and experience.

TWYFELFONTEIN – Reptiles, Mammals & Birds

Introduction

A rapid field survey was conducted from 12-16 October 2003 at Twyfelfontein mainly to determine the reptile diversity of the area, but also including mammals and birds. This survey is supplemented by a literature review of reptiles, mammals & birds that ought to occur at the site, but not necessarily observed whilst conducting the field survey. Personal communications with various guides at the site regarding the fauna of the area is also included.

The northwest escarpment area, which includes the Twyfelfontein area, is rich in reptile, mammal and bird species diversity. At least 61 reptile, 65 mammal and 143 bird species occur in the area of which a high proportion are endemics. Protection of the Twyfelfontein area would thus advantage endemic species in the northwest escarpment region and thus ensure protection of these species otherwise not formally included in protected areas in Namibia.

Reptiles:

The following table indicates the reptile diversity expected to occur at Twyfelfontein, actually encountered whilst conducting fieldwork in the area and those said to occur there as a result of personal communications with guides.

Species: Scientific name	Species: Common name	Expected	Observed	Pers. Comm.	Status
<i>Teptotyphlops occidentalis</i>	Western Thread Snake	√			E
<i>Teptotyphlops labialis</i>	Damara Thread Snake	√			E
<i>Python anchietae</i>	Anchieta's Dwarf Python	√		√	E
<i>Python natalensis</i>	Southern African Python	√			
<i>Xenocalamus bicolor</i>	Bicoloured Quill-snouted Snake	√			
<i>Lamprophis fuliginosus</i>	Brown House Snake	√			
<i>Lycophidion namibianum</i>	Namibian Wolf Snake	√			E
<i>Mehelya vernayi</i>	Angola File Snake	√		√	
<i>Pseudaspis cana</i>	Mole Snake	√			
<i>Pythonodipsas carinata</i>	Western Keeled Snake	√			E
<i>Prosymna</i>	South-western	√			

<i>frontalis</i>	Shovel-snout				
<i>Dipsina multimaculata</i>	Dwarf Beaked Snake	√			E
<i>Psammophis trigrammus</i>	Western Sand Snake	√		√	E
<i>Psammophis notostictus</i>	Karoo Sand Snake	√		√	
<i>Psammophis leightoni namibensis</i>	Namib Sand Snake	√		√	
<i>Psammophis brevirostris leopardinus</i>	Leopard Grass Snake	√		√	
<i>Dasypeltis scabra</i>	Common Egg Eater	√			
<i>Telescopus</i> sp.	Damara Tiger Snake	√			E
<i>Telescopus semiannulatus polystictus</i>	Western Tiger Snake	√		√	
<i>Aspidelaps lubricus infuscatus</i>	Coral Snake	√		√	
<i>Elapsoidea sunderwallii</i>	Sundevall's Garter Snake	√			
<i>Naja annulifera anchietae</i>	Snouted Cobra	√			
<i>Naya nigricollis nigricincta</i>	Black-necked Spitting Cobra	√	√	√	E
<i>Bitis arietans</i>	Puff Adder	√		√	
<i>Bitis caudalis</i>	Horned Adder	√	√	√	
<i>Monopeltis anchietae</i>	Anchieta's Spade-snouted Worm Lizard	√			
<i>Sepsina alberti</i>	Albert's Burrowing Skink	√		√	E
<i>Mabuya acutilabris</i>	Wedge-snouted Skink	√	√		
<i>Mabuya hoeschi</i>	Hoesch's Skink	√	√		E
<i>Mabuya occidentalis</i>	Western Three-striped Skink	√			
<i>Mabuya spilogaster</i>	Kalahari Tree Skink	√	√	√	E
<i>Mabuya striata wahlbergi</i>	Striped Skink	√			

<i>Mabuya sulcata</i>	Western Rock Skink	√		√	
<i>Mabuya variegata variegata</i>	Variegated Skink	√			
<i>Heliobolus lugubris</i>	Bushveld Lizard	√			
<i>Nucras intertexta</i>	Spotted Sandveld Lizard	√			E
<i>Pedioplanis breviceps</i>	Short-headed Sand Lizard	√			E
<i>Pedioplanis namaquensis</i>	Namaqua Sand Lizard	√	√		
<i>Pedioplanis undata</i>	Western Sand Lizard	√			E
<i>Pedioplanis gaerdesi</i>	Kaokoveld Sand Lizard	√	√		E
<i>Cordylus subdorsatus</i>	Dwarf Plated Lizard	√			
<i>Gerrhosaurus validus</i>	Giant Plated Lizard	√	√		
<i>Varanus albigularis</i>	Rock Monitor	√	√	√	
<i>Agama aculeata</i>	Ground Agama	√	√		
<i>Agama anchietae</i>	Anchieta's Agama	√	√		
<i>Agama planiceps</i>	Namibian Rock Agama	√	√	√	
<i>Chamaeleo namaquensis</i>	Namaqua Chameleon	√	√	√	
<i>Chondrodactylus angulifer</i>	Giant Ground Gecko	√	√		
<i>Lygodactylus bradfieldi</i>	Bradfield's Dwarf Gecko	√	√		E
<i>Lygodactylus lawrencei</i>	Lawrence's Dwarf Gecko	√			E
<i>Pachydactylus bicolor</i>	Velvety Thick-toed Gecko	√			E
<i>Pachydactylus fasciatus</i>	Banded Thick-toed Gecko	√			E
<i>Pachydactylus turneri</i>	Turner's Thick-toed Gecko	√			E
<i>Pachydactylus oreophilus</i>	Kaokoveld Thick-toed Gecko	√			
<i>Pachydactylus</i>	Brandberg	√			E

<i>gaiasensis</i>	Thick-toed Gecko				
<i>Pachydactylus punctatus</i>	Speckled Thick-toed Gecko	√			
<i>Pachydactylus scutatus</i>	Large-scaled Thick-toed Gecko	√	√		
<i>Ptenopus garrulus maculatus</i>	Common Barking Gecko	√	√		
<i>Rhoptropus barnardi</i>	Barnard's Namib Day Gecko	√	√		E
<i>Rhoptropus boultoni</i>	Boulton's Namib Day Gecko	√	√		E

Pers. comm. – Gerson Thaniseb (Guide at Twyfelfontein)

Source for literature review: Branch (1998), Griffin (2003)

At least 61 species of reptiles are expected to occur at Twyfelfontein with 24 species being endemic. Due to the fact that reptiles are a understudied group of animals, especially in Namibia, it is expected that more species may be located in the Twyfelfontein area than presented above.

The occurrence of endemic lizards and snakes is high in the northwest escarpment area, which includes the Twyfelfontein area. At least 22% or 55 species of Namibian lizards are classified as endemic. The occurrence of reptiles of “conservation concern” (includes about 67% of Namibian reptiles) is high in the northwest escarpment (i.e. Twyfelfontein) area (Griffin 1998a). Griffin (1998a) furthermore states that the escarpment area from the Erongo Mountains to the Kunene River has been neglected in the Namibian conservation network and requires additional protection.

Varanus albigularis (Rock Monitor) is the only reptile that is depicted by the San people in their engravings at Twyfelfontein although the significance thereof is not known.

Mammals:

The following table indicates the mammal diversity expected to occur at Twyfelfontein, mammals actually encountered whilst conducting fieldwork in the area and those said to occur there as a result of personal communications with guides.

Species: Scientific name	Species: Common name	Expected	Observed	Pers. Comm.
<i>Crocidura cyanea</i>	Reddish-grey musk shrew	√		
<i>Aterix frontalis</i>	South African hedgehog	√		√
<i>Macroscelides proboscideus</i>	Round-eared elephant-shrew	√		
<i>Elephantulus rupestris</i>	Smith's rock elephant-shrew	√		
<i>Elephantulus intufi</i>	Bushveld elephant-shrew	√		√
<i>Mormopterus petrophilus</i>	Flat-headed free-tailed bat	√		
<i>Tadarida aegyptiaca</i>	Egyptian free-tailed bat	√		
<i>Miniopterus schreibersii</i>	Schreiber's long-fingered bat	√		
<i>Myotis seabrai</i>	Angola hairy bat	√		
<i>Pipistrellus capensis</i>	Cape serotine bat	√		
<i>Pipistrellus zuluensis</i>	Aloe serotine bat	√		
<i>Scotophilus dinganii</i>	Yellow house bat	√		
<i>Nycteris thebaica</i>	Common slit-faced bat	√		
<i>Rhinolophus fumigatus</i>	Rüppell's horseshoe bat	√		
<i>Rhinolophus clivosus</i>	Geoffroy's horseshoe bat	√		
<i>Rhinolophus denti</i>	Dent's horseshoe bat	√		
<i>Hipposideros commersoni</i>	Commerson's leaf-nosed bat	√		
<i>Hipposideros caffer</i>	Sundevall's leaf-nosed bat	√		
<i>Galago moholi</i>	South African lesser bushbaby	√		

<i>Papio ursinus</i>	Chacma baboon	√	√	E
<i>Manis temminckii</i>	Pangolin	√		E
<i>Lepus capensis</i>	Cape hare	√		
<i>Lepus saxatilis</i>	Scrub Hare	√	√	E
<i>Pronolagus randensis</i>	Jameson's red rock rabbit	√	√	
<i>Hystrix africaeaustralis</i>	Cape porcupine	√	√	E
<i>Pedetes capensis</i>	Springhaas	√	√	E
<i>Xerus inauris</i>	Cape ground squirrel	√	√	E
<i>Xerus princeps</i>	Mountain ground squirrel	√		
<i>Petromus typicus</i>	Dassie rat	√	√	
<i>Rhabdomys pumilio</i>	Striped mouse	√		
<i>Mastomys natalensis</i>	Natal multimammate mouse	√		
<i>Mastomys coucha</i>	Mutimammate mouse	√		
<i>Aethomys namaquensis</i>	Namaqua rock mouse	√		
<i>Desmodillus auricularis</i>	Short-tailed gerbil	√		
<i>Gerbillurus paeba</i>	Hairy-footed gerbil	√		
<i>Gerbillurus tytonis</i>	Dune hairy-footed gerbil	√		
<i>Tatera leucogaster</i>	Bushveld gerbil	√		
<i>Petromyscus collinus</i>	Pygmy rock mouse	√	√	
<i>Proteles cristatus</i>	Aardwolf	√	√	E
<i>Hyaena brunnea</i>	Brown hyaena	√	√	E
<i>Crocuta crocuta</i>	Spotted hyaena	√		E
<i>Acinonyx jubatus</i>	Cheetah	√		E
<i>Panthera pardus</i>	Leopard	√	√	E
<i>Felis caracal</i>	Caracal	√		

<i>Felis lybica</i>	African wild cat	√		
<i>Otocyon megalotis</i>	Bat-eared fox	√		E
<i>Vulpes chama</i>	Cape fox	√	√	
<i>Canis mesomelas</i>	Black-backed jackal	√	√	
<i>Mellivora capensis</i>	Honey badger	√		E
<i>Ictonyx striatus</i>	Striped polecat	√		E
<i>Genetta genetta</i>	Small-spotted genet	√		
<i>Suricata suricatta</i>	Suricate	√	√	
<i>Cynictis penicillata</i>	Yellow mongoose	√		
<i>Galerella sanguinea</i>	Slender mongoose	√	√	
<i>Loxodonta africana</i>	African elephant	√	√	E
<i>Procavia capensis</i>	Rock dassie	√	√	E
<i>Diceros bicornis</i>	Black rhinoceros	√	√	E
<i>Equus zebra hartmannae</i>	Hartman's mountain zebra	√	√	E
<i>Giraffa camelopardalis</i>	Giraffe	√	√	E
<i>Sylvicapra grimmia</i>	Common duiker	√		
<i>Antidorcas marsupialis</i>	Springbok	√	√	
<i>Orotragus oreotragus</i>	Klipspringer	√		
<i>Madoqua kirkii</i>	Damara dik-dik	√		E
<i>Raphicerus campestris</i>	Steenbok	√	√	
<i>Oryx gazella</i>	Gemsbok	√	√	
<i>Tragelaphus strepsiceros</i>	Kudu	√	√	

Pers. comm. – Gerson Thaniseb (Guide at Twyfelfontein)

Source for literature review: De Graaff (1981), Skinner & Smithers (1990) & Taylor (2000)

Namibia is well endowed with mammal diversity with at least 250 species occurring in the country. These include the well known big and hairy as well as a legion of smaller and lesser-known species. At least 65 species of mammals are expected to occur at Twyfelfontein. Mammal species probably underrepresented are bats and rodents, as these groups have not been well documented from the Twyfelfontein area.

Mammal species richness is high in the northwest escarpment area, which includes Twyfelfontein. Fourteen mammal species are classified as being endemic to Namibia with 11 of these being rodents and small carnivores (Griffin 1998b). Most endemic species occur in the Namib and escarpment with 60% of these being rock dwelling (Griffin 1998b). According to Griffin (1998b) the endemic mammal fauna is best characterized by the endemic rodent family *Petromuridae* (Dassie rat) and the rodent genera *Gerbillurus* and *Petromyscus*, all of which occur in the Twyfelfontein area.

At least 10 mammal species (and their tracks), that occurs in the Twyfelfontein area today, is depicted by the San people in their engravings at Twyfelfontein. It is suggested that these engravings had religious significance to the San people and do not thus necessarily depict animals that occurred in the area in the past. This is supported by the fact that Eland (*Taurotragus oryx*) and Cape fur seal (*Arctocephalus pusillus*) are depicted at the site, and either doesn't occur there anymore (eland) or not at all (Cape fur seal). It is suggested that the San people visited the coast where they encountered seals whilst eland had religious significance and thus depicted wherever the San people occurred.

Birds:

At least 143 species of birds occur and/or could occur around the Twyfelfontein area (Maclean 1985). This excludes aquatic and migratory birds and/or birds only attracted to the area after localized rain showers. This would imply that many more birds could occur in the area depending on "favourable" environmental conditions.

High avian diversity is found in ecotone areas, which includes the ecotone along the escarpment between the savanna and the Namib biomes (i.e. Twyfelfontein area) (Brown *et al* 1998). The northwestern escarpment area is high in endemic birds with approximately 7-10 endemic species occurring in the north-south belt of dry savanna and escarpment running from Angola to the Erongo Mountains (i.e. including the Twyfelfontein area) (Brown *et al* 1998). Fourteen species of birds are endemic or near endemic to Namibia with the majority of Namibian endemics occurring in the savannas (30%) and in the desert (30%) (Brown *et al* 1998).

Birds depicted in the San engravings at Twyfelfontein, include the Ostrich and Kori Bustard, although the significance thereof is unknown.

Wildlife with Tourism potential:

The following species increase the general tourism potential of the Twyfelfontein area due to either being rare, endemic, unique or relatively easy and frequently observed in the area:

Elephant (*Loxodonta africana*):

The well-known “Desert Elephants” are seen throughout the northwestern region and also frequently sighted in the Twyfelfontein area. Although similar to elephants elsewhere they inhabit a marginal environment with unique behavioural adaptations such as being generally less destructive to their environment and utilizing water less frequently. Elephant tracks and faeces are virtually a daily occurrence on the roads around Twyfelfontein with sightings being common.

Black Rhino (*Diceros bicornis*):

This is one of Africa’s most endangered species with sightings, even in wildlife reserves, being scarce. Due to being mercilessly hunted for their horn their numbers have dwindled throughout their range. However, the northwestern region is home to a relatively large Black Rhino population with sightings being common.

Lion (*Panthera leo*):

Lion are infrequent visitors to the Twyfelfontein area, but without doubt a positive attraction for tourists. They used to be more numerous throughout the area, but due to conflict with livestock farmers in the area they have been persecuted mercilessly. Sightings are occasionally possible though.

Anchieta’s Dwarf Python (*Python anchietae*):

The endemic Dwarf Python is never very numerous throughout its range in northwestern Namibia making it hard to observe. Individuals do however frequent the fountain at Twyfelfontein making sightings of this unique species occasionally possible.

Rüppell’s Korhaan (*Eupodotis raepellii*):

Although not unique to the Twyfelfontein area Rüppell’s Korhaan are fairly common in this area with guaranteed sightings for potential birders. They favour open barren gravel plains and their distinctive “kraaa...kraaa” call, especially early in the morning, makes them relatively easy to locate.

The above-mentioned species undoubtedly add to the value of the Twyfelfontein area as a general tourist destination. The fact that wildlife are free roaming and are not fenced in such as in Etosha National Park and other wildlife reserves makes viewing them a more rewarding experience. The conservancies in the area indicate how humans and wildlife can coexist and that problems experienced with wildlife are surmountable and that benefits from wildlife are realistic.

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Scorpions as monitoring tools of ecological quality at the Twyfelfontein site

It is proposed that scorpions are chosen as indicators by which to evaluate continued ecological integrity of the Twyfelfontein site:

- Scorpions constitute a very important group of animals at the Twyfelfontein rockart site, with twelve species collected during a survey conducted at the site (see species list below, divided per habitat type). Although not found during this survey, it is highly likely that at least one species of *Hadogenes* (rock scorpions) could be added to this list. This brings the number of scorpions at the site to at least 13 species, which is a very high number of scorpion species to be found at a specific location (in Namibia the number is usually in the order of 6-9 species).
- Scorpions in general have very specific requirements in terms of microhabitat, particularly edaphic factors, but also factors like temperature, precipitation, stone or litter cover and environmental physiognomy. Most scorpions are thus very sensitive to changes in these, making them well suited to detect such changes.
- Studies conducted to date show that scorpions have very low rates of increase, suggesting that scorpion populations are not resilient to disturbance or to large decreases in size, which is one of the key requirements of taxa to be used as indicators of ecological quality.
- Scorpions fluoresce brightly under UV light, which make them an easy to use monitoring tool, necessitating very little skills to conduct the actual collecting of data.

In order to use scorpions as a monitoring tool at the Twyfelfontein site, the following have to be established foremost:

1. **Species to be used:** It is suggested that one or more *Opisthophthalmus* species be monitored. Species belonging to the *Opisthophthalmus* genus are all burrowing scorpions, and therefore most sensitive to the soil substrate. As for collecting of field data, the *Opisthophthalmus* species are very easy to distinguish as a genus and the species are relatively easy to distinguish from each other in the field.
2. **Soil habitat types to focus on:** The large diversity of scorpions found at the Twyfelfontein site can largely be attributed to the high diversity of habitat types at the site. It is suggested that monitoring should focus on two of these habitat types: i.) The red sandy substrate: apart from having the highest diversity of scorpions at the site, it is also potentially the most sensitive in terms of scorpion distribution. Two *Opisthophthalmus* species occur on this substrate type. ii.) Rocky slopes in the area where the greatest concentration of rock art is found: given the numbers of visitors moving daily through this area, the direct impact on this area will be the greatest, necessitating inclusion in any monitoring plan.
3. **Baseline data by which to compare data collected during monitoring:** Unfortunately, very few population studies have been done on scorpions. Consequently, there is very little baseline data available on scorpions in general. Furthermore, activity patterns are largely influenced not only by the phases of the moon, but also by environmental conditions such as temperature and wind conditions. Although there is some overlap in preferred conditions, different species of scorpions also show smaller scale difference in activity patterns, e.g. nocturnal temporal distribution of activity. Therefore, before scorpions at any given site could be used for monitoring, some more concrete baseline data has to be collected by which monitoring results can be

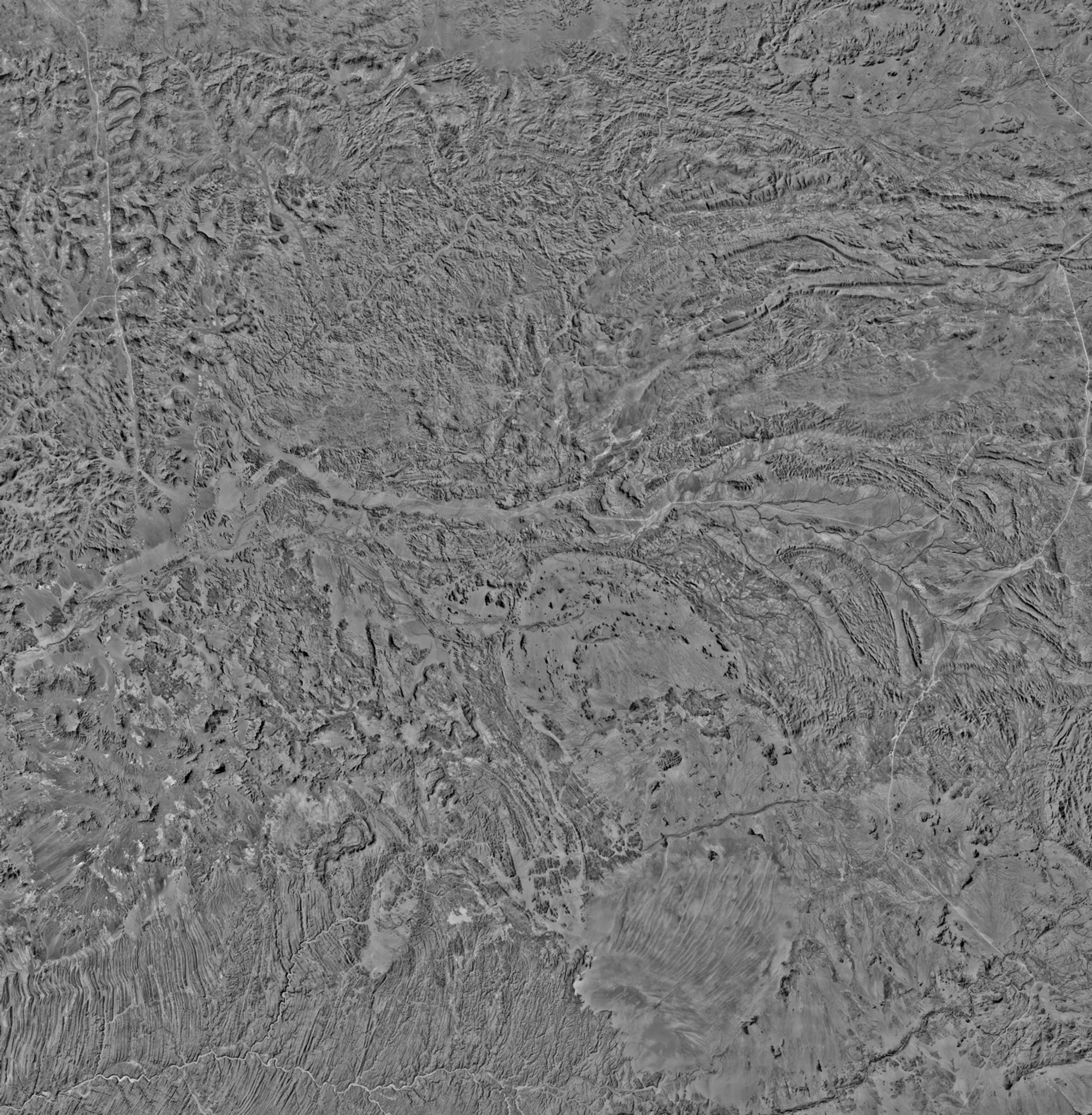
compared. Such a study would typically be a research project(s) concentrating on the life history, activity patterns and population aspects of the potential species to be used as monitoring tools.

4. Duration and intensity of sampling: Once baseline data is collected, monitoring would be a continuous effort, with typical sampling consisting of six nights per year hand collecting with the aid of UV lights. However, the exact sampling protocol and intensity will only be determined after intensive collecting of some baseline data.

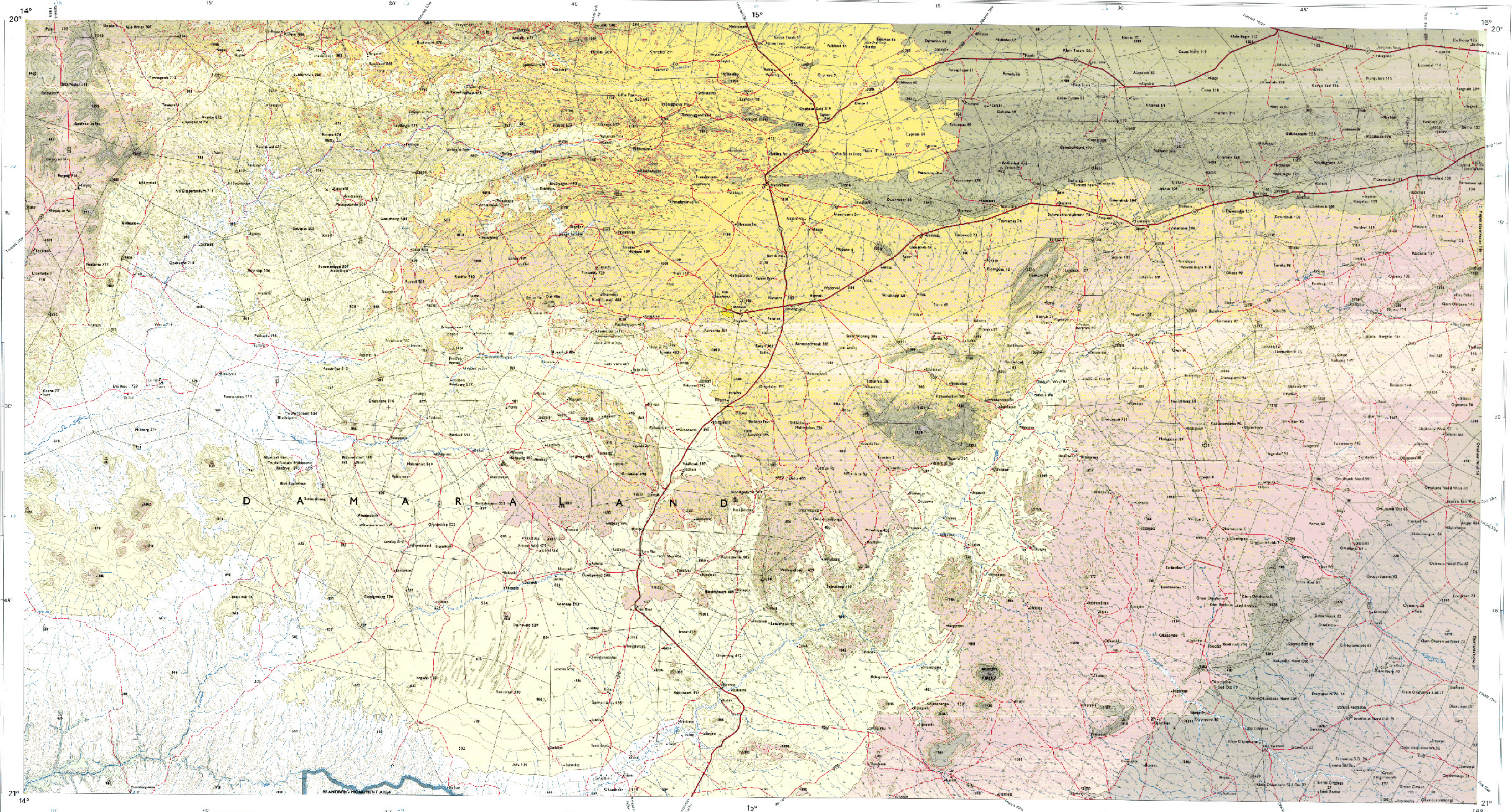
Although it is possible that developments like constructions, covering large areas with paving, putting up bright lights, etc. might have an influence on the diversity of scorpions at the site, this cannot be said for certain. The feeling is however that it is doubtful that developments that is carefully planned to have a minimal disturbance on the environment would have any drastic effect on scorpion density or diversity at the Twyfelfontein site. This means for example keeping the basic integrity of the four main substrate and habitat types in the direct vicinity of the site, choice of type and placement of paving according to environmental principles, installation of lights with minimal environmental impacts, and careful selection of sites for providing infrastructure like artificial shade and toilets.

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Scale: 1:250 000



VLINKELAARS	REFERENCE
Provincial boundaries	Provincial boundaries
Water courses	Water courses
Other roads	Other roads
Lightning	Lightning
Other symbols	Other symbols

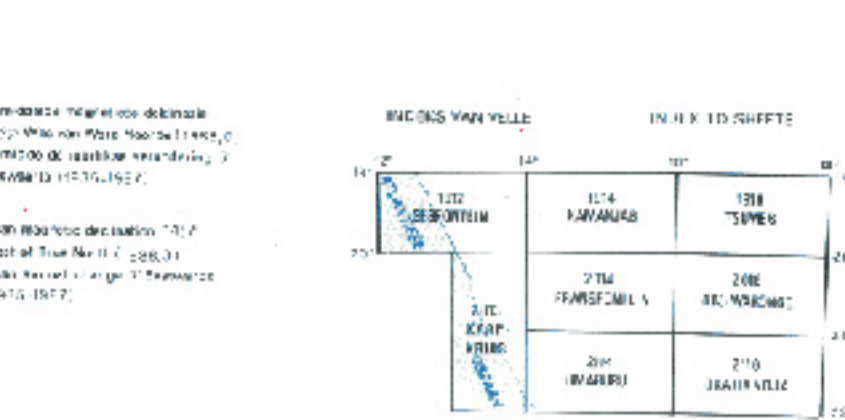
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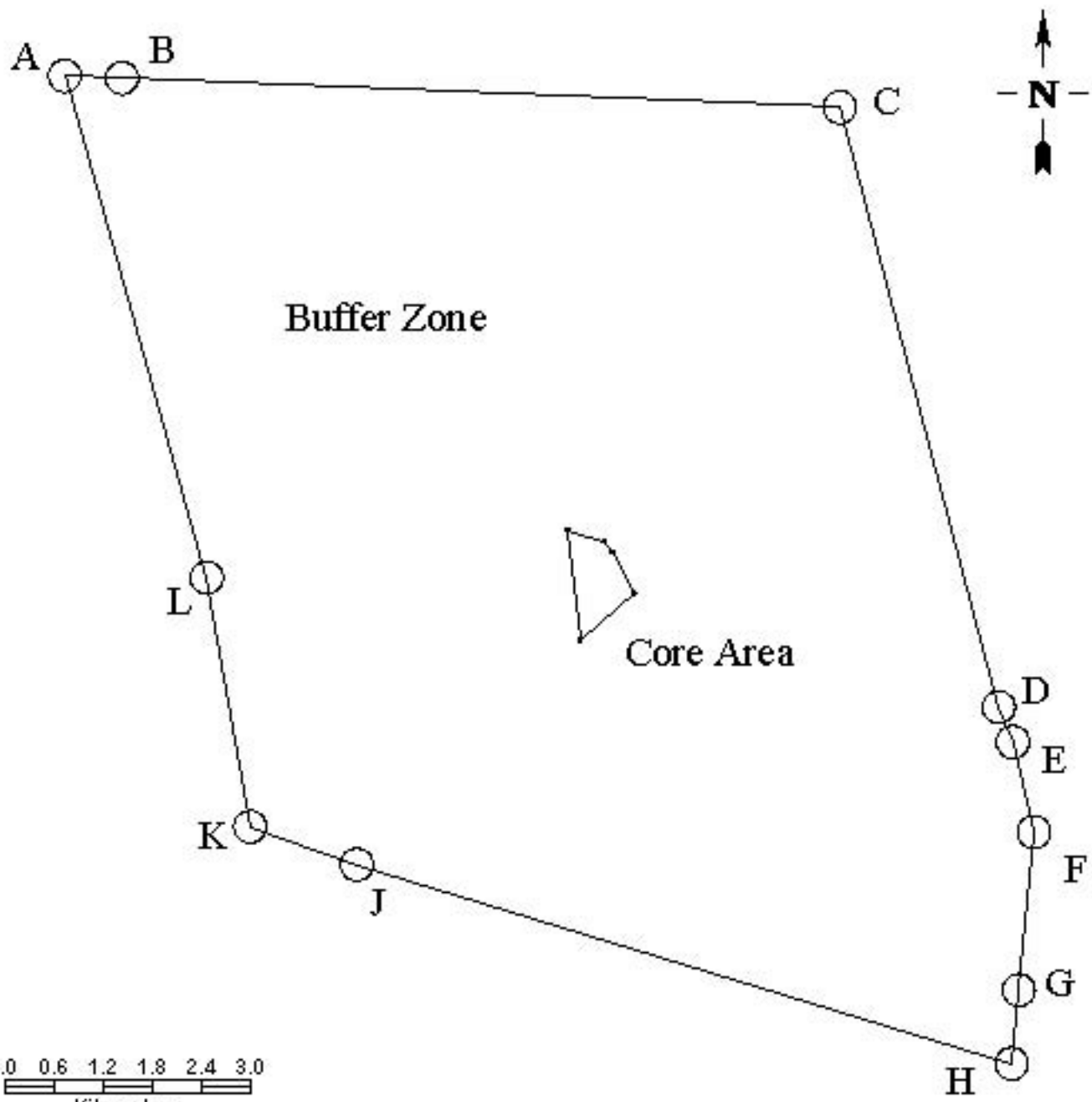
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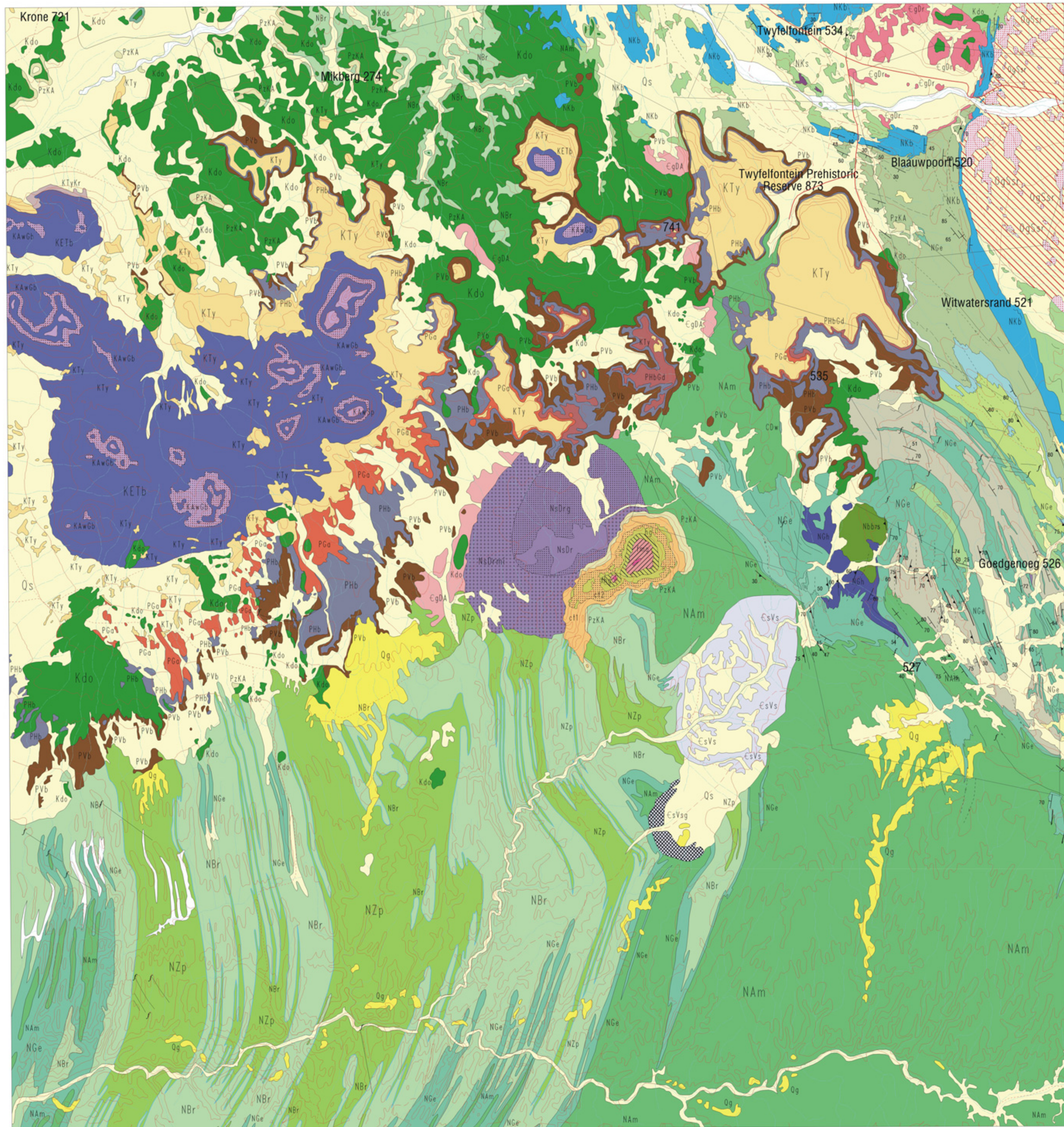
Vertical scale: 1:250 000

Horizontal scale: 1:250 000

VERKLAARINGS	REFERENCE
Provincial boundaries	Provincial boundaries
Water courses	Water courses
Other roads	Other roads
Lightning	Lightning
Other symbols	Other symbols







GEOLOGICAL SURVEY OF NAMIBIA
 Director: G.T.C. Schneider
 Ministry of Mines and Energy
 OPEN FILE MAP
 SHEET 2014C DOROS (PROVISIONAL)
 2001
 1:100 000

Geological mapping by F.D.J. Hodgson (1972), E. Horsthemke (1988), J. Kuhnert (1993/94) and S. Ledwoschek (1998)



Mean magnetic declination 17°E
 Mean annual change 1°E
 Eastwards (1987-70)

LEGEND 2014C DOROS

(META)SEDIMENTARY AND VOLCANIC ROCKS/DEPOSITS

- Qa Alluvium
- Qc Calcrete
- Qg Raised gravel
- Qs Undifferentiated surficial deposits

- KAwSp Springbok quartz latite
- Etendeke basalt
- Goboboseb quartz latite
- KETb Etendeke basalt

- KTy Medium-grained, yellowish-white aeolian sandstone
- Thin conglomerate, grit, coarse grained pebbly sandstone

- PGa Silstone (purple) and quartzite, gritstone (coarse-grained, maroon), white Qtz-pebble gritstone and conglomerate
- PHbGd Quartz-dominated dark sandstone containing root marks and layers of flat pebble conglomerate
- PHb Shale and mudstone (grey to green), minor sandstone, stromatolitic carbonate layers
- PVb Shale and mudstone (grey to white), thinly bedded flagstone, minor ironstone
- CDw Conglomerate, sandstone, claystone; locally marl and limestone

- UGAB AREA**
- NAm Meta-greywacke and meta-pelite (phyllite), minor carbonate and quartzwacke
 - NGe Marble and pelite (phyllite), turbiditic-hemipelagic
 - NBr Meta-greywacke and pelite (phyllite) with dropstones
 - NBw Marble and pelite (phyllite), turbiditic-hemipelagic
 - NZp Meta-greywacke and pelite (phyllite)

- INTRUSIVE ROCKS**
- DOROS COMPLEX**
- Chrysolite, tilaite
 - Hyalosiderite melagabbro
 - Foliated melagabbro
 - Foliated hyalosiderite gabbro
 - Hyalosiderite gabbro
 - Chrysolite, tilaite
 - Dolerite

- Twyfelfontein Formation
- Krone Member
- Gai-As Formation
- Gudaus Member
- Huab Formation
- Verbranded Berg Formation
- Dwyka Formation

- DAMARA SEQUENCE / SOUTHERN KAKOZO ZONE**
- GOANTAGAB EAST AND ABU HABA AREAS**
- "2nd schist" and Twyfelfontein schist
 - Goedgenoeg, Driekrone and Abu Huab marbles
 - Uitkomst schist and correlative units / Quartzite
 - Diamictite, minor schist, conglomerate and marble

- Damara Intrusives**
- Apilite
 - Sorris-Sorris Granite (red)
 - Driekrone Granite
 - Voetspoor Syenite and Granite
 - Doros Syenite
 - Doros Granite
 - Doros Granite mixed with metasediments
 - Undifferentiated Damara Granite
 - Post-tectonic Salem-type granite (Omangambo Granite)
 - Gabbro

- ETENDEKA GROUP**
- KAROO SEQUENCE**

- GOANTAGAB WEST AREA**
- Schist
- Marble
- Schist with inter-bedded quartzite
- Pebbly schist and diamictite
- Marble
- Schist with inter-bedded quartzite

ZERRISSENE GROUP

STRUCTURAL SYMBOLS

- Fault
- Synclinal axis
- Anticlinal axis
- Trend of F1 axis
- Trend of F2 axis
- Form line
- Sedimentary layering, inclined
- Sedimentary layering, overturned
- Sedimentary layering, vertical
- Metamorphic foliation, inclined
- Metamorphic foliation, vertical
- Lineation

MINERAL OCCURRENCES

- Active mine
- Dormant mine
- Prospect
- Mineral showing

Thin lithological units shown as arcs





B37



TWEELFONTEIN
ROCK ART INVENTORY

F 8



QRS Job 03 February 2009



Twyfelfontein (Namibia)

No 1255

Official name as proposed by the State Party: Twyfelfontein or /Ui-//aes

Location: Kunene

Brief description:

Twyfelfontein has one of the largest concentrations of rock petroglyphs in Africa. Over two thousand individual figures have been documented to date. These well preserved petroglyphs are depicted on flat sandstone boulders. The diversity of images includes rhinoceros, elephant, ostrich, human and animal footprints with giraffe predominating. The property also includes six painted rock shelters with motifs of human figures in red ochre. The material culture excavated from two parts of the property, including stone artefacts, ostrich eggshell beads, and schist pendants, has been related to the Late Stone Age, suggesting that some of the rock art represents the final flourishing of then dominant hunter-gathers in the face of the rapid expansion of nomadic pastoralism.

Category of property:

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

1. BASIC DATA

Included in the Tentative List: 3 October 2002

International Assistance from the World Heritage Fund for preparing the Nomination: No

Date received by the World Heritage Centre: 30 January 2006

Background: This is a new nomination.

Consultations: ICOMOS has consulted its International Scientific Committee on Rock Art.

Literature consulted (selection):

Lewis Williams, J D & Dowson T, *Images of Power*, 1989.

Woodhouse B., *The Bushman Art of Southern Africa*, 1979.

Technical Evaluation Mission: 21-25 September 2006

Additional information requested and received from the State Party: None

Date of ICOMOS approval of this report: 21 January 2007

2. THE PROPERTY

Description

The rock art is found on a dramatic weathered and fragmented sandstone hills some 90 kilometres west of Khorixas, in the centre of Damaraland, which stretches between the Erongo and the Etosha Pan in the north-west of Namibia. The sedimentary and volcanic rocks are disjointed and break up along fault lines into flat boulders of Etjo sandstone on which the rock art is found. Along one of the fault lines is an aquifer that feeds the spring after which the site is named. This flows into the Aba Huab River, which drains to the Atlantic Ocean. Twyfelfontein lies within a transitional zone between semi desert and savannah and receives less than 150mm annual rainfall.

The rock art is found in loose clusters on boulders on the lower slopes of the scarp. The paintings and engravings have been recorded on 235 separate surfaces on which have been found 2,075 identifiable images.

The nominated property encompasses the rock art and associated archaeological remains on a west facing slope below high sandstone cliffs. The extensive buffer zone encloses both sides of the valley and a significant part of the surrounding hills. Both the core area and the buffer zone fall within the Twyfelfontein Uibasen Conservancy.

The nominated property consists of:

- *Petroglyphs*
- *Painted rock art*
- *Archaeological sites*

These are considered separately.

Petroglyphs

The images were produced by two separate techniques: pecking with a harder stone or a hammer and punch, and secondly grinding or polishing. The pecked images vary from a simple design of lines and infill to much more complex subjects. Most of the sites show a variety of techniques and levels of refinement suggesting cumulative compositions over time. Unlike many painted rock art sites, the images do not overlap one another.

The two main techniques are considered separately in terms of sites where they are dominant.

- Pecked images:

The Etjo sandstone beds are extremely hard rocks and as a consequence some of the pecked engravings are comparatively shallow and are quite fresh looking. Others are cut much deeper and have weathered edges and a restored surface patina.

The most developed or refined examples of peck engraving are animal depictions where a type of shading was used - lighter etching within a deep, precisely etched outline and often with the rock cortex left intact in the middle of the animal image or slightly reduced by polishing. A large number of giraffe were executed with this technique. Their heads are emphasised as are the chest and rump in a

manner that may be termed the 'Twyfelfontein manner' or style. The pecked technique was also used as a type of false relief engraving. This involved the removal of the rock cortex in the centre of the image with a rounding of the body towards the outline.

These refined pecking techniques only account for a small proportion of the overall images. Simpler geometric images seem to have been produced throughout the history of the property.

- Polished images:

The most refined, but rare, examples of images where the main technique was polishing include naturalistic engravings such as the Dancing Kudu created by polishing the area within a simply defined shape.

Rubbing has also created numerous examples of 'cupule' depressions. 'Cupules' are small, semi-hemispherical hollows that seem to have been produced by rotating a smooth pebble against the inner surface of a depression. The meaning of cupules is, as yet, unclear, but they seem to represent a way to mark certain categories of space and place.

Rubbing was also used near images to smooth the surface without any decorative design. One rock is highly polished over a four metre square area. These areas could indicate the location of rituals associated with the engraved images.

One clear feature of the images is their apparent deliberate siting in relation to the terrain. Engravings of human footprints and animals tracks are found on inaccessible surfaces or near the sharp broken edges of rock faces. A higher number of engravings and paintings are also found near the spring or 'fontein' with a gradual dispersal further away and this is typical of similar sites in Namibia.

An analysis of the animal images reveals that giraffe account for 40%, rhinoceros 19%, zebra 12%, oryx 8%, ostrich 6% and cattle 5%. Flying birds hardly appear and human figures account for only 0.5% of all subjects.

The images of animals have been interpreted as representing not their occurrence in the wild but rather their significance in rituals. It is also suggested that the animals depicted might in fact be illustrating the ritual transformation of humans into animals. For instance, the ostriches are shown walking in line with wings extended in an 'arms back' posture as in a ritual dance and some giraffes are juxtaposed with human footprints. The most celebrated example is the 'Lion Man' a lion with five toes on each claw.

The imagery suggests the rock art was linked to the belief system of hunter-gathers who dominated the area until the arrival of pastoralists around 1000 AD. They could well have used the area around the spring as a ritual centre associated with rainmaking, initiation and other ceremonies. The rock art tradition persisted until after the arrival of the pastoralists as some engravings depict cattle that were introduced by the Damara people.

In addition to the rock art in the core area, there are approximately 500 more individual images at 8 sites in the buffer zone. Some particularly significant engraved sites

occur in the Buffer Zone. They are not included in the nominated area as their integrity has been severely damaged by the construction of the Twyfelfontein Country Lodge (see below).

Painted rock art

There are six shelters with painted images. In distinct contrast to the petroglyphs sites, human figures are dominant in the painted shelters. The paintings are carried out in red ochre. Human figures are depicted in a variety of stances including on 'all-fours', a pose representing a classical stance in ritual dances.

Archaeological sites

Three shelters associated with the rock art have been excavated since 1968. Affenfelsen site, noted for its painted figures revealed 19,000 stone artefacts – stone tools and ostrich egg beads - and a date of 3,450 BP +/- 40 years. Zwei Schneider another painted shelter produced similar artefacts and a date of 5,850 BP +/- 70 and Hasenbild a date of 370 BP +/- 50 suggesting very recent use of the area.

There have been no excavations near the engraved sites. Some of these have a striking feature of semi-circular stone windbreaks, often associated with scatters of quartz flake debris.

History and development

In the 1940s the Twyfelfontein land was granted on licence to a settler. At that time a few Damara people lived close to the spring in 32 huts. The land was transferred to communal use for Damara farmers in 1964 on the recommendation of the Odendaal Commission. But no farmers came forward to make use of it and it lay abandoned for 20 years. Following Namibian independence in 1990, the land became State Land under the Ministry of Lands, Resettlement and Rehabilitation.

Before the 1940s, there is little evidence for the use of the area by the Damara; it is likely that as nomadic pastoralists, they used the area on a seasonal basis congregating near the spring after rains. However nomadic pastoralism had been almost completely destroyed in the preceding 100 years by the *Rinderpest* epidemic of 1897 and by ensuing government policies which encouraged people to leave the land.

Interviews with local residents in 2004 failed to collect oral evidence for living cultural association with the rock art, although the rock art sites were seen as powerful places and the rock art the work of 'ancestors'. The imagery of the art suggests it is part of the belief system of hunter-gathers, the San, who lived in the area until partly displaced by Damara herders about 1,000 years ago and finally displaced by European colonists within the last 150 years. No San now live in the area, although the beliefs of present-day San who live some 800km away in the north-eastern part of Namibia, give insight into the meaning of the rock paintings and engravings at Twyfelfontein.

3. OUTSTANDING UNIVERSAL VALUE, INTEGRITY AND AUTHENTICITY

Integrity and Authenticity

Integrity

The integrity of the property is generally intact.

By most standards, Twyfelfontein is in a remote location in a country that has fewer than 2 million inhabitants, yet it currently attracts some 40,000 visitors a year. Busloads of tourists, mainly from Europe, stop there as tour operators have found it convenient to include it in their itineraries on a route from the Namibian desert and the coastal town of Swakopmund to the well-known game park at Etosha Pan. The large number of visitors has the potential to affect the integrity of the property.

However, the number of rock art panels open to the public is limited and they are in guided routes. This helps to retain the integrity of the property.

The Twyfelfontein Country Lodge was permitted by the Conservancy in 1999/2000 within the Seremonienplatz rock engraving site in the buffer zone. This has severely compromised the integrity of the rock engravings in this area.

Authenticity

All the rock engravings and rock paintings within the core area are without doubt the authentic work of San hunter-gatherers who lived in the region long before the influx of Damara herders and European colonists. In the buffer zone, there is one recent rock engraving by the late E.R. Scherz who made it deliberately in the 1960s to test the rate of patination in comparison with the San engravings. He recorded the event photographically and it is quite clear even today that it is a recent addition.

The setting of the Twyfelfontein rock art is also authentic as other than one small engraved panel which was removed to the National Museum in Windhoek in the early part of the 20th century, no panels have been moved or re-arranged.

ICOMOS is satisfied with the integrity and authenticity of the nominated property.

Comparative analysis

Twyfelfontein is one of a set of sites identified in 1998 by the Southern African Rock Art Project to represent the full range of rock art in the sub-continent on the World Heritage List. Others in the set that have already been inscribed are the uKhahlamba/Drakensberg Park mixed site in South Africa, the Matobo Hills in Zimbabwe, Tsodilo in Botswana, the Chongoni Rock-Art Area in Malawi and Kondoa Rock-Art Sites in Tanzania. The Mapungubwe Cultural Landscape in South Africa also includes rock art, but was nominated mainly for other values. All these sites have rock paintings (with a few engravings at Mapungubwe and Tsodilo) that relate to the spiritual beliefs of San hunter-gatherers, Khoekhoe herders and indigenous farming communities.

ICOMOS considers that Twyfelfontein is unique in its large number of rock engravings and their high quality and

diversity. None of the other Southern African sites, either on tentative lists or already inscribed, can match this number. The /Xam Heartland in the Northern Cape in South Africa, on the tentative list because of its association with 19th century /Xam San people and their oral history, has a wide range of rock engravings, but they are of variable quality and are not concentrated in one relatively small area as at Twyfelfontein. Sites of similar diversity and quality are known in South Africa (for example Rooipoort near Kimberley and Kinderdam near Vryburg), but they have not been proposed for World Heritage listing.

North of the Equator, there are outstanding rock engraving sites in the Sahara at Tadrart Acacus in Libya and Tassili n'Ajjer in Algeria that might surpass those at Twyfelfontein for their size and individual impact, but the quality and variety at Twyfelfontein remains significant and distinctive.

Beyond the African continent, there is a generic similarity with rock engravings at sites such as Rock-Art of Alta in Norway, Rock Carvings in Tanum in Sweden, Prehistoric Rock-Art Sites in the Côa Valley in Portugal, Petroglyphs within the Archaeological Landscape of Tamgaly in Kazakhstan, and Uluru-Kata Tjuta National Park and Kakadu National Park in Australia. However in each of these cases the underlying significance of the property is related to the local communities that created the art, and their way of life, as well as to their superficial manifestations.

ICOMOS considers that Twyfelfontein can be seen as an outstanding example in a relatively confined area of a remarkable concentration of high quality engravings as well as good quality rock paintings that reflect hunter-gatherer communities before the arrival of pastoralists.

ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List.

Justification of the Outstanding Universal Value

The State Party considers that the property has outstanding universal value for the following reasons:

- Twyfelfontein has the largest single concentration of rock art sites in southern Africa.
- With 2,000 engravings the site is larger than any other rock arts sites in Namibia.
- The engravings are exceptionally well preserved and show a wide repertoire of subjects.
- The property represents the final florescence of ritual art under the combined impact of environmental stress and the rapid expansion of nomadic pastoralism.
- The engravings show deliberate positioning in the landscape and exemplify the integration of culture and nature.

Criteria under which inscription is proposed

The property is nominated on the basis of criteria iii and v.

Criterion iii: The State party justifies this criterion on the grounds of the number of engravings, their good state of conservation, and their wide ranging subject matter relating to the hunter-gatherer tradition.

ICOMOS considers that the rock art engravings and paintings in Twyfelfontein form a coherent, extensive and high quality record of ritual practices relating to hunter-gather communities in this part of southern Africa over at least two millennia and can justify the use of this criterion.

ICOMOS considers that this criterion has been justified.

Criterion v: The State Party justifies the use of this criterion on the basis that the rock art is an excellent example of links between ritual and economic practices. The State Party also asserts that the collection of art is an eloquent statement of human strategy in increasingly inimical conditions due to the apparent sacred association of the land adjacent to the aquifer reflecting its role in nurturing communities over many millennia.

ICOMOS considers that this criterion has been justified.

4. FACTORS AFFECTING THE PROPERTY

Impact of climate change

This is not addressed in the dossier. The already hot dry climate does not adversely affect the rock engravings. Violent and unpredictable weather might have an adverse effect on the geology but this is unlikely. The rock paintings are much more vulnerable to changes in climate and particularly wind.

Risk preparedness

This is not addressed.

Development

Without adequate protection of the Buffer Zone, the setting of the property remains vulnerable to development pressures related to tourism.

Environment

The quality of the rocks on which the painted images are found is poor and the paintings show extensive spalling due to the wind.

Tourism

The large number of visitors to the property and the fact that they currently arrive in large groups provide the potential for damage to the rock art. However some 75% of the rock art – some 50% of the overall property is currently out of bounds to visitors for conservation reasons. In those areas that are open, active visitor control is now being practiced through the provision of viewing platforms and paths laid out to facilitate one way circulation systems, and keeping vulnerable areas free from traffic.

Since the dossier was prepared, several further changes increase the chances of retaining the integrity of the core

area despite the addition of new facilities. The Namibian roads authority has de-proclaimed the last 500m of the road leading to the visitors centre so that an intrusive road sign could be removed. A satellite dish that will enable the staff to receive bookings and communicate with the outside world has been installed and will be camouflaged with suitable paint so that it is not visible from the tourist routes. A well-designed interpretation center with solar panels for electricity, eco-toilets, a refreshment counter, information boards and a craft outlet, has been constructed of natural stone gabions and re-cycled materials. This blends in well with the surrounding landscape.

Their challenge is not to attract more visitors as the carrying capacity of the property could be exceeded, but rather to develop capacity to manage the current visitor numbers and a modest increase. This can be done as suggested in the management plan by opening new routes and carefully monitoring the impact on existing routes but it will need advice from a professional rock art conservator.

In addition, the tourist guides need to be managed so that their duties are rotated. They could become involved in conservation and documentation projects to increase their understanding of the art, and/or in the collection and analysis of visitor behaviour patterns and perceptions. In spite of the positive work carried out locally, as noted in the dossier and management plan, formal linkages with the national tourism authority are weak and ICOMOS considers that it would be highly beneficial to improve these.

The policy of the Ministry of Environment and Tourism in the past has been to promote wildlife rather than cultural heritage sites. It is understood that a concerted effort to jointly promote tourism at cultural heritage sites with the Ministry of Youth, National Services, Sport and Culture would be greatly enhanced with the inscription of a major cultural attraction such as Twyfelfontein as a World Heritage property.

An official guide book for the site is planned.

One major factor affecting the property is the construction of the Twyfelfontein Country Lodge in the Buffer Zone which incorporates one of the key rock art sites, the Seremonienplatz. Guests pass through a natural gap amongst high rocks with numerous rock engravings which seriously disrupts the sense of place of the rock art. The nomination dossier states that the construction of this lodge was against the National Heritage Act and demonstrates the weakness of local authorities in the face of booming entrepreneurial tourism.

Currently there is no plan to re-direct traffic and create a different entrance to the Lodge. However the dossier and management plan indicate that this scale of impact will not be allowed in future without a full environmental impact assessment. The Lodge generates income for the Conservancy and is a major player in the Joint Management Forum. Over a 30-year period, ending in about 2030, ownership of shares in the Lodge will be gradually transferred to the Conservancy. It is the most important single employer of local people with a staff of 80 and for this reason alone is important in the economy of the region.

ICOMOS recommends that serious consideration should be given to changing the entrance to the Lodge in order to better conserve and manage this rock art site.

ICOMOS considers that the main risks to the property are from the lack of effective enforcement of legal protection of the buffer zone and recommends that special attention is given to ensuring that this is addressed.

5. PROTECTION, CONSERVATION AND MANAGEMENT

Boundaries of the nominated property and buffer zone

The boundaries of the nominated property encompass the majority of the key rock art that still possesses integrity. The buffer zone is large enough to enable the protection of the setting, but needs adequate protection – see below.

ICOMOS considers that the boundaries of the core and buffer zone are adequate.

Ownership

The entire core area belongs to the State of Namibia.

Protection

Legal Protection

The core area was designated a national monument in 1948 and is now protected by the National Heritage Act 2004. This offers adequate legal protection which will be further enhanced once the process of declaration of the Conservation Area in terms of s.54 of the National Heritage Act is completed for the core and buffer zone.

By-laws for the Conservation Area have been drafted and approved by the National Heritage Council and were discussed at a meeting of the Joint Management Forum on 18 October 2006. Once agreement has been reached, the document will be forwarded to the Ministry of Justice and it is expected that final approval will be forthcoming early in 2007.

Agreement has been reached with the Ministry of Mining, which typically grants exclusive prospecting licenses for blocks of 1,000 ha. Three applications were received for the Twyfelfontein area recently and were referred to the National Heritage Council for clearance. The buffer and core were excised from the licensed blocks and may therefore not be prospected. There is no mining currently in the area and the nearest operation is a tin mine some 150km to the south that has been worked out and is no longer in commission.

Two security guards have been appointed at the property, one for the parking area and one for the information center. If any contraventions of the National Heritage Act occur, they will be reported to the Site Manager for action.

In size, the buffer zone adequately protects the core area. However there are currently no protective measures in place for the buffer zone to control development, protect archaeological sites, and regulate environmental activities.

Its boundaries coincide with the former Twyfelfontein Reserve which completely surrounds the core area and is almost 20 times larger. The buffer and core areas together comprise the soon-to-be established Conservation Area. This will lie within the boundaries of the even larger Twyfelfontein-Uibasen Conservancy Area.

Conservancies were established after Namibian independence in 1990 to allow registered indigenous communities and individuals to use the land and to lease portions to others for a fee that is distributed amongst the registered communities. It is therefore essential that the by-laws that establish the Conservation Area under the National Heritage Act make provision for the National Heritage Council to assist the Conservancy if the authenticity and integrity of the values of the potential World Heritage sites are threatened. This could be achieved through the establishment of a Joint Management Committee that has representatives from the Conservancy, the National Heritage Council, the Tour Guide Association and the lodge and camp owners.

ICOMOS considers that the protective measures for the nominated property are adequate but recommends that special attention is given to ensuring that protection of the buffer zone is put in place and enforced. ICOMOS further recommends that the Conservancy is represented on a Joint Management Committee in order to afford adequate protection to the Buffer Zone. (See Management below.)

Conservation

History of Conservation

In the last few years there has been a concerted effort to give the property formal management and to control visitor impact and put in place preventative conservation measures. Paths have been repaired or re-routed and viewing platforms have been constructed at vulnerable sites to keep visitors out of direct contact with the sites. There are now also properly trained guides on site and the management plan identifies preventative conservation measures.

Present state of conservation

The current state of conservation of the property is adequate.

Active Conservation measures

Some of the conservation measures proposed in the nomination dossier and management plan are in place and are being monitored.

Conservation measures related to the maintenance of paths, visitor facilities, security and waste removal have been outsourced by the National Heritage Council. Viewing platforms have been erected at several engraved panels to prevent visitors from walking on the engravings. The raised platforms do intrude to some extent, but have been designed to blend with the rocky slopes and are certainly necessary to protect the art.

Repairs undertaken in the low season (January) in 2006 have highlighted the effectiveness of some conservation interventions and problems with others. Elevated viewing

platforms work very well, as do the shaded seating areas along the guided routes. As guided groups are limited to 8 people at a time, parties are sometimes required to wait their turn and shade and seating are very welcome. Some pathways have not needed repair, but those subjected to erosion on unstable slopes have needed damage control and will be watched to identify the major causes. Minor problems have been experienced with the welded metal frames for steps on one of the paths.

Conservation tasks related specifically to the documentation and monitoring of rock engravings and paintings have not yet been given the same level of attention as those dealing with day-to-day visitors and maintenance, but are a medium-term priority at this stage. They will need to be budgeted for both by the National Heritage Council and the Ministry. (see management below)

ICOMOS considers that the overall state of conservation of the property has improved over the past few years, particularly in terms of the way visitor are managed. ICOMOS considers that a higher priority needs to be given to regular documentation and monitoring as a means of ensuring the state of conservation of the property continues to improve.

Management

The property is managed directly by the National Heritage Council.

A Management Plan for the property was drawn up and implementation begun in 2005. As the management plan and implementation structure is relatively new, there is a strong sense of enthusiasm. The hierarchy of decision-making starts with the Ministry of Youth, National Services, Sport and Culture that sets budgets according to its annual strategic plan. An annual grant allocated to the National Heritage Council provides for staff salaries at the head office and at satellite sites such as Twyfelfontein. The Board of the National Heritage Council makes policy decisions and these are executed by the Director and his staff. The Twyfelfontein site manager, who is responsible for two other sites besides Twyfelfontein, reports to the head office of the National Heritage Council in Windhoek. Matters specific to Twyfelfontein and the surrounding area are discussed by a Joint Management Forum. The tour guides report to the Conservancy. Contracted maintenance staff report to the site manager.

All the current tour guides are Damaran, as are most of the members of the Conservancy community. No spokespersons from the San community in Namibia have been included amongst the stakeholders in the nomination process, although the Working Group for Indigenous Minorities in Southern Africa (WIMSA) has been informed of the nomination. The San will thus not benefit directly from development of Twyfelfontein. ICOMOS suggests that ways should be considered to allow San participation in the site (even though they now live far from the area).

Resources, including staffing levels, expertise and training

The National Heritage Council appoints and pays the salary of the site manager. The NHC receives a gross

income of about NS\$1 million, or US\$160,000 a year from visitors to Twyfelfontein. The two cashiers are paid out of this income from visitors, as are the contracted service providers for maintenance and security. Tour guides, who must be members of the Twyfelfontein Tourist Guide Association, are employed on contract by the Conservancy and receive 35% of the visitor fees. This sum is distributed amongst about 25 guides, depending on their working hours.

At present none of the local members of the Joint Management Forum or the Conservancy have experience in heritage site management. ICOMOS recommends that in the short and medium term, professional heritage managers and archaeologists are involved in planning and decision-making.

Part of the reason for the slow start in conservation is the general lack of suitably qualified people in Namibia. It is understood that a target is to establish a degree course for heritage site managers in the departments of history and geography at the University of Namibia. In the short term, ICOMOS considers that it would be desirable to consider on-site training with contracted specialists to teach recording techniques and monitoring methods to tour guides who could contribute to documentation and monitoring during off-peak months.

It would clearly also be desirable to appoint a rock art conservation manager at the site who could be responsible for conservation, documentation and monitoring at other rock art sites in the general region.

ICOMOS commends the State Party on the Management Plan. ICOMOS considers that further consideration should be given to setting up a joint Committee with the Reserve; to involving professional heritage managers and archaeologists in decision making; to appointing a rock art specialist who could have a monitoring role at this and other similar sites in the Region; and to finding ways to allow San participation in the property.

6. MONITORING

All the rock art sites have been documented and an inventory has been produced with the basic documentation linked to a GIS system.

ICOMOS understands that ongoing documentation and monitoring of rock engravings and paintings are only a medium-term priority at this stage. ICOMOS considers that higher attention should be given to these processes.

ICOMOS considers that although the basic documentation for the property is adequate, the monitoring measures for the property should be enhanced to ensure that the outstanding universal value of the property and its authenticity and integrity are sustained over time.

7. CONCLUSIONS

Recommendations with respect to inscription

ICOMOS recommends that Twyfelfontein or /Ui-//aes, Namibia, be inscribed on the World Heritage List on the basis of *criteria iii and v*.

Criterion iii: The rock art engravings and paintings in Twyfelfontein form a coherent, extensive and high quality record of ritual practices relating to hunter-gather communities in this part of southern Africa over at least two millennia.

Criterion v: The rock art reflects links between ritual and economic practices in the apparent sacred association of the land adjacent to an aquifer as a reflection of its role in nurturing hunter-gather communities over many millennia.

Recommended Statement of Outstanding Universal Value

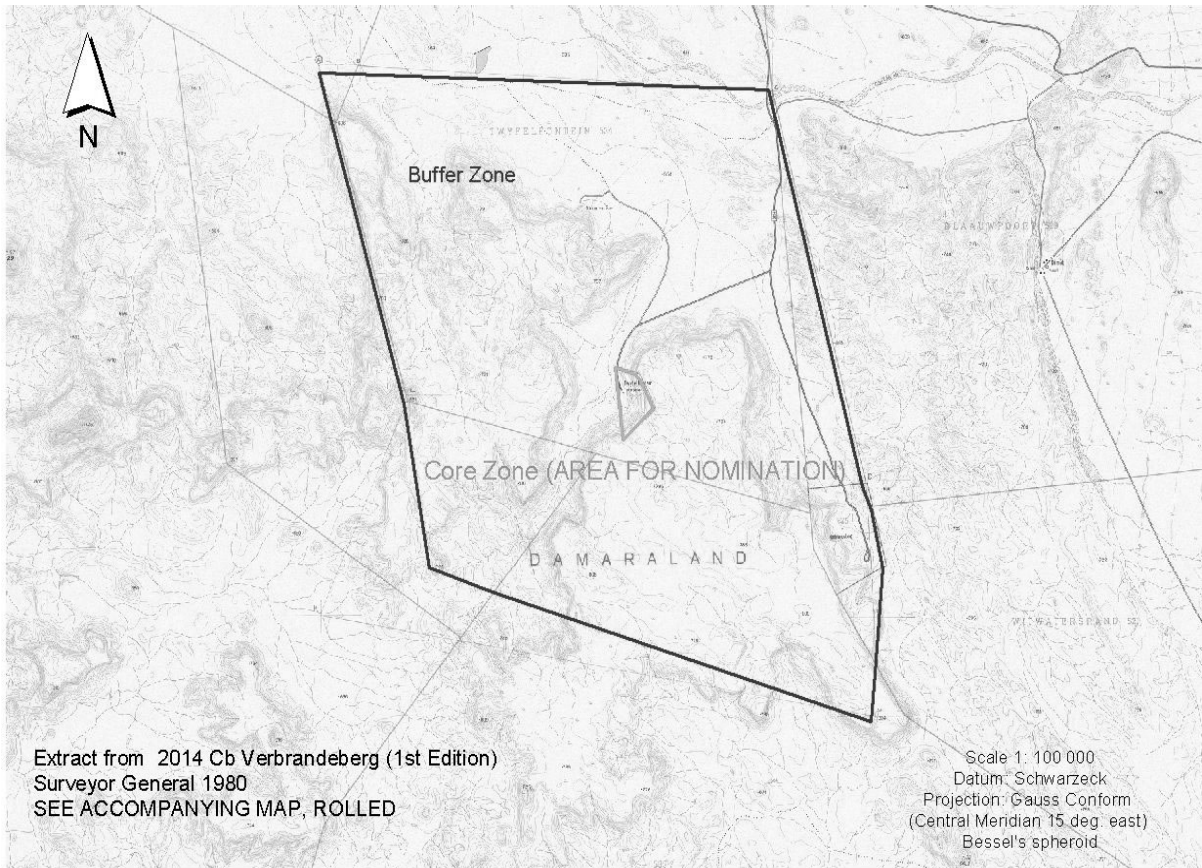
The Twyfelfontein rock art engravings and paintings demonstrate Outstanding Universal Value.

The rock art:

- forms a coherent, extensive and high quality record of ritual practices relating to hunter-gather communities in this part of southern Africa over at least two millennia; and,
- eloquently reflects the links between ritual and economic practices of hunter-gatherers in terms of the value of reliable water sources in nurturing communities on a seasonal basis.

ICOMOS recommends that the State Party give consideration to the following issues:

- Providing adequate protection for the buffer zone.
- Setting up of a Joint Management Committee for the Conservation area and the Conservancy that has representatives from the Conservancy, the National Heritage Council, the Tour Guide Association and the lodge and camp owners.
- Giving higher priority to monitoring and documentation as a means of sustaining the OUV of the property.
- Considering the possibility of appointing a rock art specialist to the site who could have a monitoring role at other similar sites in the Region.
- Exploring ways to allow San participation in the site.
- Giving serious consideration to ways of changing the entrance to the Twyfelfontein Lodge in order better conserve and manage the nearby rock art.



Map showing the boundaries of the nominated property



Shaded antelope



Lion, giraffe and other animals



Dancing kudu



Zwei Schneider

Twyfelfontein (Namibie)

No 1255

Nom officiel du bien tel que
proposé par l'État partie : Twyfelfontein ou /Ui-//aes

Lieu : Cunene

Brève description :

Twyfelfontein possède l'une des plus importantes concentrations de pétroglyphes sur roche en Afrique. Plus de deux mille figures individuelles sont répertoriées à ce jour. Ces pétroglyphes bien préservés sont gravés sur des roches de grès plates. Les images sont d'une grande variété et représentent des rhinocéros, des éléphants, des autruches, des empreintes de pas d'hommes et d'animaux, et surtout des girafes. Le bien comprend aussi six abris sous roche décorés de représentations humaines peintes à l'ocre rouge. Les vestiges matériels mis au jour dans deux parties du site, qui regroupent des objets en pierre, des perles en coquille d'œuf d'autruche et des pendentifs en schiste, ont été attribués à la fin de l'âge de la Pierre, ce qui suggère qu'une partie de cet art rupestre correspond à l'ultime apogée de la période des chasseurs-cueilleurs qui dominaient jusqu'alors, face à la rapide expansion du pastoralisme nomade.

Catégorie de bien :

En termes de catégories de biens culturels, telles qu'elles sont définies à l'article premier de la Convention du Patrimoine mondial de 1972, il s'agit d'un *site*.

1. IDENTIFICATION

Inclus dans la liste indicative : 3 octobre 2002

Assistance internationale au titre du Fonds du patrimoine mondial pour la préparation de la proposition d'inscription : Non

Date de réception par le
Centre du patrimoine mondial : 30 janvier 2006

Antécédents : Il s'agit d'une nouvelle proposition d'inscription.

Consultations : L'ICOMOS a consulté son Comité scientifique international sur l'art rupestre.

Littérature consultée (sélection):

Lewis Williams, J D & Dowson T, *Images of Power* 1989

Woodhouse B., *The Bushman Art of Southern Africa* 1979

Mission d'évaluation technique : 21-25 septembre 2006

Information complémentaire demandée et reçue de l'État partie : Aucune

Date d'approbation de l'évaluation
par l'ICOMOS : 21 janvier 2007

2. LE BIEN

Description

Ces œuvres d'art rupestre se trouvent dans des collines de grès spectaculairement érodé et fragmenté, à 90 kilomètres à l'ouest environ de Khorixas, au cœur du Damaraland, qui s'étend entre l'Erongo et le pan (lac salé asséché) d'Etosha, au nord-ouest de la Namibie. Les roches sédimentaires et volcaniques sont disséminées et brisées le long des lignes de faille, et constituent les roches plates de grès de Etjo sur lesquelles se trouve l'art rupestre. Le long d'une des lignes de faille, un aquifère alimente la source qui a donné son nom au site et qui se jette dans la rivière Aba Huab, laquelle rejoint l'océan Atlantique. Twyfelfontein se trouve dans une zone de transition entre une région semi-désertique et la savane et reçoit moins de 150 mm de précipitations annuelles.

L'art rupestre est réparti en groupes épars, sur des roches situées au bas des pentes de l'escarpement. On a répertorié des peintures et des gravures sur 235 surfaces distinctes, sur lesquelles on a identifié 2 075 images.

Le bien proposé pour inscription comprend l'art rupestre et les vestiges archéologiques associés qui se trouvent sur un flanc rocheux faisant face à l'ouest et surplombé de hautes falaises de grès. La vaste zone tampon comprend les deux côtés de la vallée et une partie significative des collines avoisinantes. La zone principale et la zone tampon sont toutes deux situées dans la zone de conservation de Twyfelfontein Uibasen.

Le bien proposé pour inscription se compose de :

- *Pétroglyphes*
- *Peintures rupestres*
- *Sites archéologiques*

Ces éléments sont considérés séparément.

Pétroglyphes

Ces images ont été produites suivant deux techniques distinctes : en frappant la roche avec une autre pierre plus dure ou un marteau et un burin, ou bien en l'égrissant ou en la polissant. Les images taillées vont du simple dessin de lignes et de pleins à des sujets beaucoup plus complexes. La plupart des sites témoignent d'une variété de techniques et de degrés de raffinement qui suggèrent des compositions qui se sont accumulées dans le temps. Contrairement à bon nombre de sites de peintures rupestres, il n'y a pas ici de superpositions d'images.

Les deux techniques principales sont considérées séparément, selon les sites où elles prédominent.

- Images gravées :

Le grès de Etjo est une roche extrêmement dure ; par conséquent, certaines gravures sont relativement peu profondes et ont l'air assez récentes. D'autres sont taillées plus en profondeur et présentent des bords érodés et une patine de surface.

Les exemples les plus élaborés ou les plus raffinés de gravures sont des représentations d'animaux utilisant un type d'ombrage : une gravure plus légère avec un contour profond et précis. Souvent, le cortex rocheux est laissé intact au milieu de la représentation de l'animal ou est légèrement réduit par polissage. Quantité de girafes ont été exécutées suivant cette technique. Leur tête est accentuée, de même que le poitrail et la croupe, d'une manière qu'on pourrait nommer « style de Twyfelfontein ». La technique de burinage a aussi été utilisée pour un type de gravure en faux-relief. Pour cela, la roche est évidée au centre de l'image et le contour du corps est laissé avec un arrondi.

Ces techniques raffinées de burinage ne représentent cependant qu'une petite proportion de l'ensemble des images. Des images géométriques plus simples semblent avoir été produites pendant toute la durée d'occupation du bien.

- Images polies :

Les exemples les plus raffinés d'images où le polissage est la technique principale sont rares. Ils comprennent des gravures naturalistes, comme le « Koudou dansant » créé par le polissage d'une zone délimitée par une forme aux contours simples.

Le frottement a aussi donné naissance à de nombreux exemples de dépressions en forme de cupule, des petits creux hémisphériques qui semblent avoir été produits en faisant tourner un galet doux contre la surface intérieure d'une dépression. La signification des cupules reste énigmatique, mais elles semblent indiquer certaines catégories d'espaces et de lieux.

Le frottement était aussi utilisé à côté d'images, pour adoucir les surfaces sans motifs décoratifs. Une roche a ainsi été polie très finement sur une surface de quatre mètres carrés. Ces zones pourraient indiquer l'emplacement de rituels associés aux images gravées.

L'une des caractéristiques évidentes des images est le choix apparemment délibéré de leur emplacement par rapport au terrain. Des gravures d'empreintes de pas humaines et animales figurent sur des pierres inaccessibles ou près des bords brisés des surfaces rocheuses. On trouve aussi un grand nombre de gravures et de peintures près de la source, ou « *fontein* ». Au fur et à mesure que l'on s'en éloigne, elles sont plus disséminées, ce qui est un trait typique des sites de ce genre en Namibie.

L'analyse des images animales montre que les girafes en représentent 40 %, les rhinocéros 19 %, les zèbres 12 %, les oryx 8 %, les autruches 6 % et le bétail 5 %. Les oiseaux volants sont rares et les figures humaines ne constituent que 0,5 % de l'ensemble des sujets.

Selon l'interprétation qui en a été faite, les images d'animaux reflètent leur place dans les rituels, et non leur abondance dans la nature. On a aussi suggéré que les animaux représentés pourraient en fait illustrer la

transformation rituelle d'humains en animaux. Les autruches apparaissent par exemple en file indienne, les ailes déployées vers l'arrière avec une position de « bras dans le dos » qui imite une danse rituelle, et certaines girafes sont associées à des empreintes de pas humaines. L'exemple le plus célèbre est celui de l' « Homme Lion », un lion pourvu de cinq orteils à chaque griffe.

L'iconographie suggère que l'art rupestre était en rapport avec le système de croyance des chasseurs-cueilleurs qui dominèrent la région jusqu'à l'arrivée des peuples pastoraux aux environs de 1000 apr. J.-C. Il est possible qu'ils aient utilisé la zone autour de la source comme un centre rituel associé aux cérémonies invoquant la pluie, aux initiations et à d'autres rites. La tradition de l'art rupestre a persisté au-delà de l'arrivée des pasteurs, puisque certaines gravures représentent du bétail, qui a été introduit par les Damara.

Outre l'art rupestre dans la zone principale, on recense environ 500 autres images individuelles réparties sur huit sites dans la zone tampon. Celle-ci abrite quelques sites de gravure particulièrement importants. Ces derniers ne sont pas inclus dans la zone proposée pour inscription, car leur intégrité a été sévèrement affectée par la construction du *Twyfelfontein Country Lodge* (voir ci-après).

Peintures rupestres

Six abris sous roche conservent des images peintes. Contrairement aux sites de pétroglyphes, les figures humaines y sont majoritaires. Les peintures sont réalisées à l'ocre rouge. Les figures humaines sont représentées dans des positions variées, et notamment à quatre pattes, une posture classique dans les danses rituelles.

Sites archéologiques

Trois abris sous roche associés à de l'art rupestre ont fait l'objet de fouilles depuis 1968. Le site de Affenfelsen, célèbre pour ses figures peintes, a livré 19 000 objets en pierre - des outils - et des perles en coquille d'œuf d'autruche ; et une date de 3 450 BP, +/- 40 ans. Zwei Schneider, autre abri sous roche peint, présentait des objets similaires et une datation établie à 5 850 BP, +/-70 ans. Hasenbild est quant à lui daté de 370 BP, +/- 50 ans, ce qui suggère une utilisation très récente de la zone.

Aucune fouille n'a été menée près des sites de gravures. Certains d'entre eux présentent un trait frappant : des brisements semi-circulaires en pierre, souvent associés à des débris de quartz éparpillés.

Histoire et développement

Dans les années 1940, les terres de Twyfelfontein furent concédées sous licence à un colon. À l'époque, quelques Damara vivaient dans 32 huttes à proximité de la source. Les terres furent transférées pour un usage collectif aux agriculteurs Damara en 1964, sur recommandation de la Commission Odendaal, mais aucun fermier ne se manifesta pour les exploiter et elles restèrent à l'abandon pendant vingt ans. Après l'indépendance de la Namibie en 1990, les terres devinrent terres de l'État, sous l'égide du ministère des Terres, du Repeuplement et de la Réhabilitation.

Avant les années 1940, il n'y a que peu de preuves de l'utilisation de la zone par les Damara, et il est probable que ces bergers nomades ne la fréquentaient que de façon saisonnière, se rassemblant près de la source après les pluies. Toutefois, le pastoralisme nomade avait presque complètement disparu au cours des 100 années précédentes, suite à l'épidémie de *Rinderpest* de 1897 et aux politiques gouvernementales qui s'ensuivirent et qui encourageaient les gens à quitter ces terres.

Les interviews effectuées auprès des résidents locaux en 2004 n'ont pas permis de collecter de traces orales d'associations culturelles vivantes en rapport avec l'art rupestre, même si les sites d'art pariétal étaient considérés comme des lieux de puissance, et l'art rupestre comme l'œuvre des « ancêtres ». L'iconographie suggère qu'il faisait partie du système de croyance des chasseurs-cueilleurs, les San, qui vécurent dans la région jusqu'à leur déplacement partiel par les bergers Damara il y a environ 1 000 ans, puis par les colons européens ces 150 dernières années. Aucun San ne vit aujourd'hui dans cette région, bien que les croyances des San contemporains, qui vivent à 800 km dans la région nord-est de la Namibie, donnent une idée du sens des peintures et gravures rupestres de Twyfelfontein.

3. VALEUR UNIVERSELLE EXCEPTIONNELLE, INTÉGRITÉ ET AUTHENTICITÉ

Intégrité et authenticité

Intégrité

L'intégrité du bien est généralement intacte.

Selon la plupart des standards, Twyfelfontein se trouve dans un site isolé, dans un pays abritant moins de 2 millions d'habitants. Cela dit, le site attire actuellement quelque 40 000 visiteurs chaque année. Des autocars entiers de touristes, essentiellement venus d'Europe, y font étape car les tour-opérateurs ont trouvé commode de l'inclure dans leur itinéraire partant du désert de Namibie, et de la ville côtière de Swakopmund vers la célèbre réserve animalière du pan d'Etosha. Ce grand nombre de visiteurs risque d'affecter l'intégrité du bien.

Toutefois, le nombre de surfaces ornées d'art rupestre et ouvertes au public est limité et elles sont comprises dans des parcours de visites guidées, ce qui favorise le maintien de l'intégrité du bien.

La zone de conservation a autorisé en 1999/2000 la construction du *Twyfelfontein Country Lodge* sur le site de roches gravées de Seremonienplatz, dans la zone tampon. Ceci a gravement compromis l'intégrité des gravures rupestres à cet endroit.

Authenticité

Toutes les gravures et peintures rupestres de la zone principale sont sans aucun doute l'œuvre authentique des chasseurs-cueilleurs San qui vécurent dans la région longtemps avant l'arrivée des bergers Damara et des colons européens. Dans la zone tampon, feu E.R. Scherz réalisa dans les années 1960 une gravure rupestre pour en comparer le degré de patine avec celle des gravures San. Il

en a conservé un témoignage photographique, et il est assez évident, aujourd'hui encore, qu'il s'agit d'un ajout récent.

L'environnement de l'art rupestre de Twyfelfontein est aussi authentique, puisque à l'exception d'un petit panneau gravé qui a été déposé au musée national de Windhoek au début du XXe siècle, aucun panneau n'a été déplacé ou réorganisé.

L'ICOMOS considère que le bien proposé pour inscription répond de façon appropriée aux conditions d'intégrité et d'authenticité.

Analyse comparative

Twyfelfontein fait partie d'un ensemble de sites identifiés en 1988 par le Projet d'art rupestre d'Afrique australe pour illustrer la diversité de l'art rupestre du sous-continent sur la Liste du patrimoine mondial. D'autres sites de cet ensemble ont déjà été inscrits, comme uKhahlamba/Parc du Drakensberg en Afrique du Sud, les monts Matobo au Zimbabwe, Tsodilo au Botswana, l'art rupestre de Chongoni au Malawi et les sites d'art rupestre de Kondoa en Tanzanie. Le paysage culturel de Mapungubwe en Afrique du Sud comprend aussi de l'art rupestre, mais il a été proposé essentiellement en fonction d'autres critères. Tous ces sites possèdent des peintures rupestres (avec quelques gravures à Mapungubwe et Tsodilo) qui sont en rapport avec les croyances spirituelles des chasseurs-cueilleurs San, des bergers Khoekhoe et des communautés agricoles indigènes.

L'ICOMOS considère que Twyfelfontein est unique par son grand nombre de gravures rupestres, leur haute qualité et leur diversité. Aucun des autres sites d'Afrique australe, qu'il s'agisse des sites des listes indicatives ou d'un de ceux qui sont déjà inscrits, ne peut rivaliser en nombre. Le territoire /Xam du nord de la province du Cap, en Afrique du Sud, inscrite sur la liste indicative en raison de son association avec le peuple San /Xam du XIXe siècle et sa tradition orale, possède un large éventail de gravures rupestres, mais elles sont de qualité variable et ne sont pas concentrées dans une zone relativement petite comme c'est le cas à Twyfelfontein. On connaît en Afrique du Sud des sites d'une diversité et d'une qualité similaire (par exemple Rooipoort près de Kimberley ou Kinderdam, près de Vryburg), mais ils n'ont pas été proposés pour inscription sur la Liste du patrimoine mondial.

Au nord de l'équateur, il existe des sites de gravures rupestres exceptionnels, dans le Sahara, le Tadrart Acacus en Libye et le Tassili n'Ajjer en Algérie, qui pourraient surpasser ceux de Twyfelfontein par leur taille et leur impact, mais la qualité et la variété de Twyfelfontein demeurent significatives et distinctes.

Au-delà du continent africain, on constate une similitude de genre avec des gravures rupestres de sites tels que l'art rupestre de Alta en Norvège, les gravures rupestres de Tanum en Suède, les sites d'art rupestre préhistorique de la vallée de Côa au Portugal, les pétroglyphes du paysage archéologique de Tamgaly au Kazakhstan, ainsi que les parcs nationaux Uluṛu-Kata Tjuṛa et Kakadu en Australie. Cependant, dans tous ces cas, la signification profonde du bien est liée aux communautés locales qui ont créé l'art, à

leur mode de vie, ainsi qu'à leurs manifestations superficielles.

L'ICOMOS considère que Twyfelfontein peut être qualifié d'exemple exceptionnel de remarquable concentration, dans une zone relativement restreinte, de gravures d'excellente qualité et de peintures rupestres de bonne qualité, témoignages des communautés de chasseurs-cueilleurs avant l'arrivée des populations pastorales.

L'ICOMOS considère que l'analyse comparative justifie que l'inscription de ce bien sur la Liste du patrimoine mondial soit envisagée.

Justification de la valeur universelle exceptionnelle

L'État partie considère que le bien témoigne d'une valeur universelle exceptionnelle pour les raisons suivantes :

- Twyfelfontein possède la plus grande concentration de sites d'art rupestre de toute l'Afrique australe.
- Avec ses 2 000 gravures, le site est plus important que n'importe quel autre site d'art rupestre en Namibie.
- Les gravures sont exceptionnellement bien préservées et illustrent un vaste répertoire de sujets.
- Le bien représente l'ultime essor de l'art rituel, soumis à l'impact combiné du stress environnemental et de l'expansion rapide du pastoralisme nomade.
- Les gravures démontrent un positionnement délibéré dans le paysage et témoignent de l'intégration de la culture et de la nature.

Critères selon lesquels l'inscription est proposée

Le bien est proposé pour inscription sur la base des critères iii et v.

Critère iii : L'État partie justifie ce critère en se basant sur la quantité de gravures, leur bon état de conservation et la diversité des sujets en rapport avec la tradition des chasseurs-cueilleurs.

L'ICOMOS considère que les gravures et les peintures rupestres de Twyfelfontein forment un ensemble cohérent, d'envergure et de qualité, témoignant des pratiques rituelles des communautés de chasseurs-cueilleurs dans cette région d'Afrique australe pendant au moins deux millénaires, et qu'elles peuvent justifier l'utilisation de ce critère.

L'ICOMOS considère que ce critère a été justifié.

Critère v : L'État partie justifie l'utilisation de ce critère au motif que l'art rupestre est un excellent exemple de liens entre les pratiques rituelles et économiques. L'État partie affirme aussi que l'ensemble artistique est un témoignage éloquent de stratégie humaine mise en place dans des conditions de plus en plus hostiles, en raison de l'apparente

association sacrée de la zone à l'aquifère, qui illustre son rôle nourricier pour les communautés pendant plusieurs millénaires.

L'ICOMOS considère que ce critère a été justifié.

4. FACTEURS AFFECTANT LE BIEN

Impact du changement climatique

Ce point n'est pas traité dans la proposition d'inscription. Le climat déjà chaud et sec ne porte pas préjudice aux gravures rupestres. Des intempéries violentes et imprévisibles pourraient avoir un impact négatif sur la géologie, mais c'est improbable. Les peintures rupestres sont bien plus vulnérables aux changements du climat, et tout particulièrement au vent.

Préparation aux risques

Ce point n'est pas traité.

Développement

Sans protection adéquate de la zone tampon, l'environnement du bien demeure vulnérable aux pressions de développement liées au tourisme.

Environnement

La qualité des roches sur lesquelles les images sont peintes est assez médiocre, et les peintures présentent une érosion importante due au vent.

Tourisme

Le grand nombre de visiteurs du bien et le fait qu'ils arrivent fréquemment en groupes nombreux sont un risque potentiel de dommages causés à l'art rupestre. Cependant, 75 % environ de l'art rupestre - 50 % du bien global, approximativement - est actuellement interdit aux visiteurs pour des raisons de conservation. Dans les zones ouvertes au public, un contrôle actif des visiteurs est actuellement pratiqué, grâce à des plates-formes d'observation et à des chemins établis pour faciliter une circulation à sens unique, ce qui maintient les zones vulnérables à l'abri du passage.

Depuis la préparation du dossier, d'autres changements ont été apportés, augmentant encore les possibilités de maintien de l'intégrité de la zone principale en dépit de l'ajout de nouvelles infrastructures. Les autorités chargées des routes de Namibie ont déclassé les derniers 500 m de la route menant au centre de visiteurs, afin de retirer un panneau routier intrusif. Une antenne satellite qui permettra au personnel de recevoir les réservations et de communiquer avec l'extérieur a été installée et sera camouflée au moyen d'une peinture adéquate, afin de la rendre invisible depuis les routes touristiques. Un centre d'interprétation bien conçu, avec des panneaux solaires pour l'alimentation électrique, des toilettes écologiques, un comptoir de rafraîchissement, des panneaux d'information et un magasin d'artisanat, a été construit en gabions de pierres naturelles et en matériaux recyclés. Il se fonde harmonieusement dans le paysage environnant.

Leur défi ne consiste pas à attirer plus de visiteurs, la capacité d'accueil du bien risquant d'être dépassée, mais plutôt à développer la capacité de gérer le nombre actuel de visiteurs et une hausse modeste. Cela peut être réalisé, comme le suggère le plan de gestion, par l'ouverture de nouvelles routes et par le suivi attentif de l'impact sur les routes existantes, mais nécessitera les conseils d'un conservateur d'art rupestre professionnel.

En outre, les guides touristiques doivent être formés, afin que leurs tâches varient. Ils pourraient être impliqués dans des projets de conservation et de documentation pour améliorer leur compréhension de l'art et/ou dans le recueil et l'analyse des schémas de comportement des visiteurs et de leur perception.

En dépit du travail positif réalisé à l'échelle locale, comme le notent le dossier et le plan de gestion, les liens formels avec les autorités touristiques nationales sont distendus et l'ICOMOS considère qu'il serait extrêmement bénéfique de les améliorer.

Par le passé, le ministère de l'Environnement et du Tourisme avait pour politique de promouvoir la faune et la flore plutôt que les sites du patrimoine culturel. Il est clair qu'un effort concerté de promotion conjointe du tourisme sur les sites du patrimoine culturel en collaboration avec le ministère de la Jeunesse, des Services nationaux, des Sports et de la Culture bénéficierait grandement de l'inscription d'un pôle d'intérêt culturel majeur comme Twyfelfontein sur la Liste du patrimoine mondial.

La publication d'un guide officiel du site est prévue.

Il existe un facteur négatif majeur qui affecte le bien : la construction du *Twyfelfontein Country Lodge* dans la zone tampon, qui comprend l'un des principaux sites d'art rupestre, Seremonienplatz. Les clients de l'établissement passent par une faille naturelle entre des roches de haute taille présentant de nombreuses gravures rupestres, ce qui perturbe sérieusement le sens du lieu d'art rupestre. La proposition d'inscription précise que la construction de ce pavillon était contraire au *National Heritage Act* et démontre la faiblesse des autorités locales face à l'essor économique du tourisme.

Il n'existe actuellement aucun plan officiel pour rediriger la circulation et créer une autre entrée pour le Lodge. Toutefois, la proposition d'inscription et le plan de gestion indiquent qu'un impact de cette ampleur ne sera plus autorisé à l'avenir sans une évaluation complète de l'impact environnemental. Le Lodge génère des revenus pour la zone de conservation et a une place majeure dans le Forum de gestion conjointe. D'ici une trentaine d'années, c'est-à-dire vers 2030, la propriété des parts du Lodge sera graduellement transférée à la zone de conservation. C'est le principal employeur de la population locale, avec un personnel de 80 personnes, et pour cette seule raison, il est important dans l'économie de la région.

L'ICOMOS recommande d'envisager sérieusement le changement de la voie d'accès au Lodge, afin de mieux conserver et gérer ce site d'art rupestre.

L'ICOMOS considère que les principaux risques pour le bien viennent du défaut d'application effective de la protection légale pour la zone tampon et recommande

d'accorder une attention toute particulière à la résolution de ce problème.

5. PROTECTION, CONSERVATION ET GESTION

Délimitations du bien proposé pour inscription et de la zone tampon

Les délimitations de la zone proposée pour inscription comprennent la majorité des principaux éléments d'art rupestre qui ont conservé leur intégrité. La zone tampon est suffisamment vaste pour permettre la protection de son environnement, mais elle a besoin d'une protection adaptée (cf. ci-après).

L'ICOMOS considère que les délimitations de la zone principale et de la zone tampon sont appropriées.

Droit de propriété

La zone principale tout entière appartient à l'État de Namibie.

Protection

Protection légale

La zone principale de l'art rupestre a été classée monument national en 1948 et elle est désormais protégée par le *National Heritage Act 2004*. Ceci offre une protection légale adéquate, qui sera prochainement encore renforcée une fois que le processus de déclaration de la zone principale et de la zone tampon comme zone de conservation en vertu de la section 54 du *National Heritage Act* sera achevé.

Les statuts de la zone de conservation ont été rédigés et approuvés par le Conseil du patrimoine national et ont fait l'objet d'un débat lors de la réunion du Forum de gestion conjointe du 18 octobre 2006. Après l'accord final, le document sera transmis au ministère de la Justice, et l'acceptation définitive est prévue pour le début de l'année 2007.

Un accord a été atteint avec le ministère des Mines, qui octroie en général des licences de prospection exclusives pour des parcelles de 1 000 hectares. Trois demandes ont été reçues récemment pour la zone de Twyfelfontein et ont été renvoyées pour autorisation au Conseil du patrimoine national. La zone tampon et la zone principale ont été retranchées des parcelles concessibles et ne peuvent donc pas faire l'objet de prospection. Il n'y a actuellement aucune activité minière dans la zone et l'exploitation la plus proche est une mine d'étain à environ 150 km au sud, qui est épuisée et désaffectée.

Deux gardes de sécurité ont été affectés au bien, l'un pour le parking et l'autre pour le centre d'information. En cas de violation du *National Heritage Act*, les faits seront signalés au responsable du site et passibles de sanctions.

En termes de taille, la zone tampon protège correctement la zone principale. Toutefois, il n'existe actuellement aucune mesure de protection dans la zone tampon pour contrôler le développement, protéger les sites archéologiques et réguler les activités environnementales. Ses frontières coïncident

avec l'ancienne réserve de Twyfelfontein, qui encercle complètement la zone principale et qui est presque vingt fois plus grande. La zone tampon et la zone principale composent à elles deux la zone de conservation qui verra prochainement le jour. Celle-ci sera située à l'intérieur de la zone de conservation de Twyfelfontein-Uibasen, encore plus vaste.

Les zones de conservation ont été établies après l'indépendance de la Namibie en 1990 pour permettre aux communautés et aux individus indigènes répertoriés d'utiliser les terres et d'en louer des parcelles à des tiers, en contrepartie d'un loyer redistribué ensuite entre les communautés répertoriées. Il est donc essentiel que les statuts établissant la zone de conservation en vertu de la *National Heritage Act* prévoient que le Conseil du patrimoine national apporte son assistance à la zone de conservation si l'authenticité et l'intégrité des valeurs des sites potentiels du patrimoine mondial sont menacées. Ceci pourrait être fait grâce à la mise sur pied d'un comité de gestion conjointe où siègeraient des représentants de la zone de conservation, du Conseil du patrimoine national, de l'Association des guides touristiques et des propriétaires du Lodge et des campements.

L'ICOMOS considère que les mesures de protection du bien proposé pour inscription sont appropriées mais recommande de porter une attention particulière à la mise en place et à l'application d'une protection pour la zone tampon. L'ICOMOS recommande également que la zone de conservation soit représentée au sein d'un Comité de gestion conjointe afin d'offrir une protection suffisante à la zone tampon (voir Gestion ci-après).

Conservation

Historique de la conservation

Ces dernières années, des efforts concertés ont été faits pour donner au bien une gestion formelle et pour contrôler l'impact des visiteurs, avec la mise en place de mesures de conservation préventive. Les chemins ont été réparés ou déviés et des plates-formes d'observation ont été construites sur les sites vulnérables pour écarter les visiteurs d'un contact direct avec les lieux. Les guides sur le site sont maintenant correctement formés et le plan de gestion identifie des mesures de conservation préventives.

État actuel de conservation

L'état actuel de conservation du bien est correct.

Mesures de conservation active

Certaines des mesures de conservation proposées dans le dossier de proposition d'inscription et le plan de gestion sont en place et font l'objet d'un suivi.

Le Conseil du patrimoine national a sous-traité les mesures de conservation relatives à la maintenance des chemins, aux infrastructures pour les visiteurs, à la sécurité et à l'évacuation des déchets. Des plates-formes d'observation ont été construites à proximité de plusieurs panneaux gravés pour empêcher les visiteurs de marcher sur les gravures. Les plates-formes surélevées sont dans une certaine mesure intrusives, mais elles ont été conçues pour

se fondre dans les parois rocheuses et sont de toute façon nécessaires pour protéger les œuvres.

Les réparations entreprises en basse saison (janvier) en 2006 ont souligné l'efficacité de certaines interventions de conservation, mais ont aussi révélé des problèmes pour d'autres. Les plates-formes d'observation en hauteur fonctionnent très bien, tout comme les espaces ombragés prévus pour s'asseoir le long du parcours guidé. Comme les visites guidées sont limitées à des groupes de huit personnes à la fois, les participants doivent parfois attendre leur tour et apprécient vraiment l'ombre et les sièges. Certains chemins n'ont pas nécessité de réparation, mais ceux qui sont soumis à l'érosion sur des pentes instables ont dû subir un contrôle des dommages et seront surveillés en vue d'en identifier les causes majeures. Les encadrements métalliques soudés des marches de l'un des chemins ont connu des problèmes mineurs.

Les tâches de conservation spécifiquement liées à la documentation et à la surveillance des gravures et peintures rupestres n'ont pas encore bénéficié de la même attention que celles qui concernent les visiteurs et l'entretien journalier, mais elles constituent à ce stade une priorité à moyen terme. Elles devront être budgétées, pour ces deux aspects, par le Conseil du patrimoine national et le ministère (voir Gestion ci-après).

L'ICOMOS considère que l'état général de conservation du bien s'est amélioré ces dernières années, particulièrement en termes de gestion des visiteurs. L'ICOMOS considère qu'il convient d'accorder la priorité absolue à la documentation et au suivi régulier du bien, afin de s'assurer que son état de conservation continue de s'améliorer.

Gestion

Le bien est directement géré par le Conseil du patrimoine national (*National Heritage Council* - NHC).

Un plan de gestion du bien a été élaboré et sa mise en œuvre a commencé en 2005. Le plan de gestion et la structure d'application étant relativement nouveaux, l'enthousiasme est grand. La hiérarchie décisionnelle commence par le ministère de la Jeunesse, des Services nationaux, des Sports et de la Culture, qui définit les budgets selon son plan stratégique annuel. Une subvention annuelle allouée au Conseil du patrimoine national permet de payer les salaires du personnel du siège et des sites satellites tels que Twyfelfontein. Le Conseil du patrimoine national prend les décisions politiques, la mise en œuvre en étant confiée au Directeur et à son personnel. Le responsable du site de Twyfelfontein, chargé également de deux autres sites, rend compte au siège du Conseil national du patrimoine à Windhoek. Les questions propres à Twyfelfontein et à la zone environnante sont discutées dans le cadre d'un Forum de gestion conjointe. Les guides touristiques dépendent de la zone de conservation, tandis que le personnel engagé pour l'entretien est sous l'autorité du responsable du site.

Tous les guides touristiques actuels sont des Damara, comme la plupart des membres de la communauté de la zone de conservation. Aucun porte-parole de la communauté San de Namibie ne figure parmi les protagonistes de la procédure de proposition d'inscription,

bien que le Groupe de travail pour les minorités indigènes d'Afrique australe (WIMSA) ait été informé de la proposition d'inscription. Les San ne bénéficieront donc pas directement du développement de Twyfelfontein. L'ICOMOS suggère qu'il conviendrait d'envisager des moyens permettant une participation San au site (même s'ils vivent actuellement loin de cette région).

Ressources, y compris nombre d'employés, expertise et formation :

Le Conseil du patrimoine national nomme le responsable du site et paie son salaire. Le Conseil du patrimoine national perçoit un revenu brut de 1 million de dollars namibiens (160 000 dollars américains) par an environ, grâce aux visiteurs du site de Twyfelfontein. Les deux guichetiers sont payés sur ces recettes provenant des visiteurs, tout comme les prestataires de service de maintenance et de sécurité. Les guides touristiques, qui doivent être membres de l'Association des guides touristiques de Twyfelfontein, sont employés sous contrat par la zone de conservation et perçoivent 35 % des droits d'entrée des visiteurs. Ces sommes sont réparties entre 25 guides environ, en fonction de leurs heures de travail.

À l'heure actuelle, aucun des membres locaux du Forum de gestion conjointe ou de la zone de conservation n'a d'expérience dans la gestion de sites patrimoniaux. L'ICOMOS recommande que sur le court et moyen terme, des professionnels de la gestion du patrimoine et des archéologues soient impliqués dans la planification et la prise de décision.

Une des raisons qui expliquent la lente mise en place de la conservation est la pénurie générale de personnel suffisamment qualifié en Namibie. Il est entendu que l'un des objectifs est d'établir un cursus diplômant pour les responsables de sites patrimoniaux dans les départements d'histoire et de géographie de l'université de Namibie. Sur le court terme, l'ICOMOS considère qu'il serait souhaitable d'envisager la formation sur le site avec des prestataires spécialisés qui enseigneraient des techniques d'enregistrement et des méthodes de suivi aux guides touristiques, qui pourraient ainsi contribuer à la documentation et au suivi pendant les mois creux.

Il serait évidemment aussi souhaitable de nommer un responsable de la conservation de l'art rupestre sur le site, lequel pourrait être chargé de la conservation, de la documentation et du suivi sur d'autres sites d'art rupestre dans la région.

L'ICOMOS félicite l'État partie pour le plan de gestion.

L'ICOMOS considère qu'il faudrait envisager de mettre sur pied un Comité conjoint avec la Réserve ; d'impliquer des professionnels de la gestion du patrimoine et des archéologues dans la prise de décision ; de nommer un spécialiste de l'art rupestre qui pourrait avoir un rôle de surveillance sur ce site et sur d'autres sites similaires de la région ; et de trouver des moyens de permettre la participation San dans le bien.

6. SUIVI

Tous les sites d'art rupestre ont été répertoriés et un inventaire a été établi, avec la documentation de base reliée à un système GIS.

L'ICOMOS comprend que la documentation et le suivi des gravures et des peintures rupestres en cours ne sont qu'une priorité à moyen terme à ce stade. L'ICOMOS considère cependant qu'il faudrait prêter plus d'attention à ces processus.

L'ICOMOS considère que, bien que la documentation de base du bien soit appropriée, les mesures de suivi du bien devraient être améliorées pour assurer la pérennité de la valeur universelle exceptionnelle du bien et le maintien de son authenticité et de son intégrité.

7. CONCLUSIONS

Recommandations concernant l'inscription

L'ICOMOS recommande que Twyfelfontein ou /Ui-//aes, Namibie, soit inscrit sur la Liste du patrimoine mondial sur la base des *critères iii et v*.

Critère iii : Les gravures et peintures rupestres de Twyfelfontein forment un vaste ensemble cohérent et de haute qualité qui témoigne des pratiques rituelles relatives aux communautés de chasseurs-cueilleurs dans cette région de l'Afrique australe pendant au moins deux millénaires.

Critère v : L'art rupestre reflète les liens entre les pratiques rituelles et économiques dans l'apparente association sacrée de la terre adjacente à l'aquifère comme reflet de son rôle dans les communautés qu'elle a nourries pendant plusieurs millénaires.

Déclaration de valeur universelle exceptionnelle recommandée :

Les gravures et peintures rupestres de Twyfelfontein ont une valeur universelle exceptionnelle.

L'art rupestre :

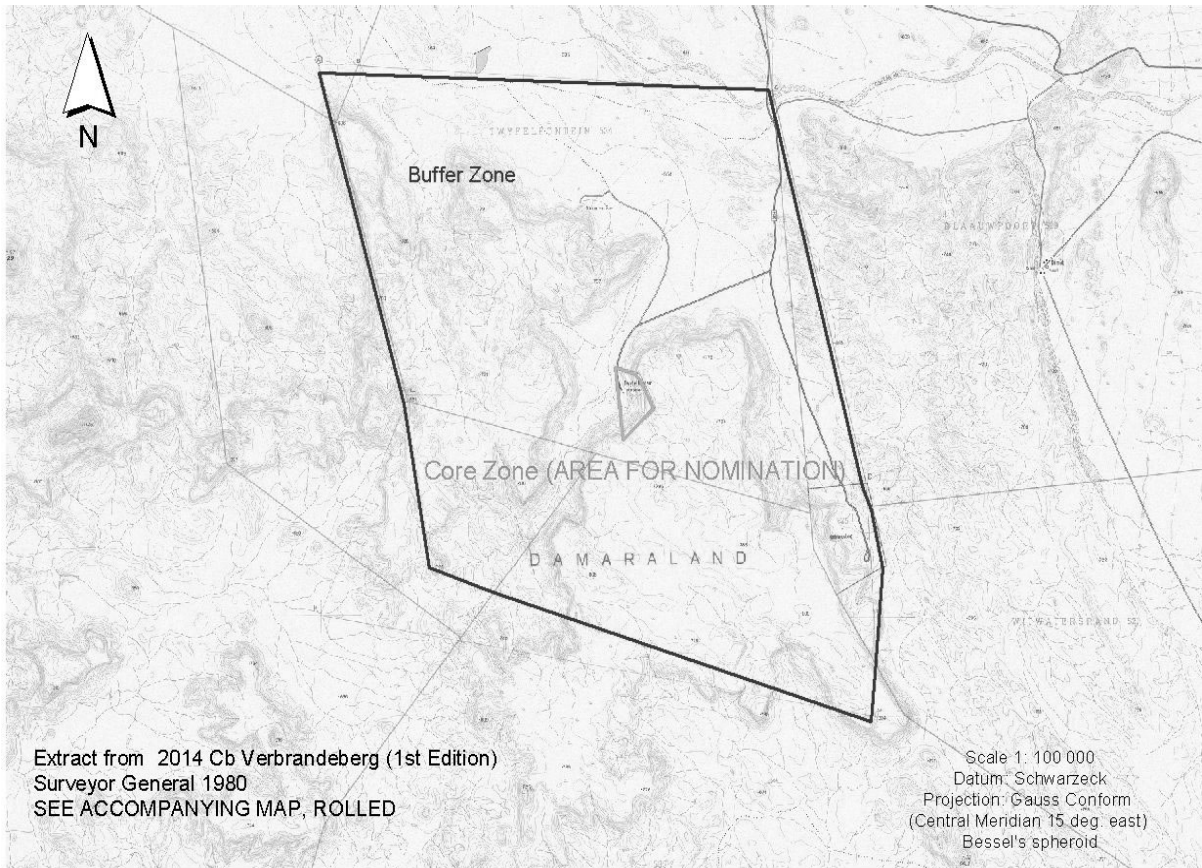
- forme un vaste ensemble cohérent et de haute qualité qui témoigne des pratiques rituelles relatives aux communautés de chasseurs-cueilleurs dans cette région de l'Afrique australe pendant au moins deux millénaires ; et
- est un reflet éloquent des liens entre les pratiques rituelles et économiques des chasseurs-cueilleurs, pour lesquels des sources d'eau capables de pourvoir à leurs besoins à certaines saisons étaient précieuses.

L'ICOMOS recommande à l'État partie de considérer les points suivants :

- Fournir une protection appropriée à la zone tampon.
- Établir un Comité de gestion conjointe pour la zone de conservation, avec des représentants de la zone de conservation, du Conseil du

patrimoine national, de l'Association des guides touristiques et des propriétaires du Lodge et des campements.

- Donner la haute priorité au suivi et à la documentation en tant que moyens de préserver la valeur universelle exceptionnelle du bien.
- Envisager de nommer sur le site un spécialiste de l'art rupestre qui pourrait avoir un rôle de suivi sur place et dans d'autres sites similaires de la région.
- Explorer des voies pour permettre la participation San au bien.
- Envisager sérieusement de changer l'entrée du *Twyfelfontein Country Lodge* afin de mieux conserver et gérer le site d'art rupestre situé à proximité.



Plan indiquant les délimitations du bien proposé pour inscription



Antilope gravée avec ombrage



Lion, girafe et autres animaux



Koudou dansant



Zwei Schneider