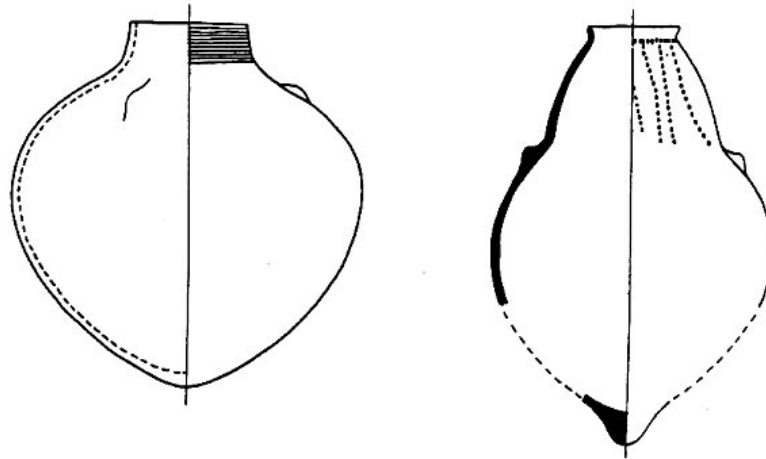


# **AN ARCHAEOLOGICAL ASSESSMENT OF THE COASTAL STRIP, AND A PROPOSED HERITAGE MANAGEMENT PLAN FOR: DE BEERS NAMAQUALAND MINES**



**Volume 1**



**PREPARED FOR**

De Beers Consolidated Mines Ltd.  
Namaqualand Mines

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## **1. INTRODUCTION**

Early in 1991, Professor John Parkington of the Department of Archaeology at the University of Cape Town visited Kleinsee and was shown a number of archaeological sites along the coast in the mining areas. Following discussions with Mr. Richard Molyneux, the chief geologist at the time, the Archaeology Contracts Office was commissioned to make an inventory of the archaeology of De Beers owned coastal properties in Namaqualand and this took place over some three months in the latter half of 1991. It was hoped that ultimately important archaeological sites could be identified and saved from destruction by mining.

The report is broken into two volumes. The first volume details the project and summarises the results of the survey, placing them in an historical context. A number of recommendations are made with regard to heritage resource management in terms of both current and proposed legislation. The second volume consists of the field observations and includes extracts from aerial photographs with site locations plotted, and descriptions of site content.

## **2. SCOPE OF THE DE BEERS COASTAL ARCHAEOLOGY PROJECT**

### **2.1 Archaeological goals**

The archaeology of the Namaqualand coast has remained for many years, relatively unexplored apart from odd forays to study specific aspects (Rudner 1968). In addition to making a partial inventory of sites, this has been a pioneering exercise aimed at determining the range, age, quantity and context of archaeological material.

It became clear within the first few days of fieldwork, when we were able to gauge the volume of sites, that a complete inventory would be out of the question. As a result the project was modified and instead of attempting a complete assessment, we adopted the approach of looking at transects across different kinds of landscapes. It was hoped that, although not comprehensive, we would at least get a broad picture of the types of sites and the favoured localities that past inhabitants had selected. We concentrated the study on a coastal strip of approximately 1km in width, in which most sites usually occur. Although we have concentrated on the coastal strip, in some cases search transects were extended inland to examine features such as small outcrops and pans, to establish if these were ever foci of occupation.

Based on experience of site location on other parts of the coast, we know that people favoured certain parts of the landscape over others. The location of open sites where there is no obviously apparent geographical attraction remains in many cases enigmatic although social/cultural factors, which are archaeologically invisible, may have played a role. Generally speaking, the majority of open middens are associated with rocky coastal stretches and sheltered bays where shellfish may be gathered.

By studying the recorded archaeological sites and their locations we hoped that we could gain an understanding of how pre-colonial people were using the landscape. The ultimate goal is to gain enough understanding of the patterns to extrapolate our findings to areas which have not yet been studied, thereby assisting with long term management of the archaeological heritage.

## **2.2 Previous studies**

During the 1960's several researchers reported sites from the diamond areas and pottery was collected (Rudner 1968). Since that time few researchers have worked in the area, probably as a result of a combination of factors such as increasing costs of fieldwork and difficulty of access. Since the completion of this survey small portions of the Namaqualand coast have been studied in more detail. Excavations have also been undertaken at a cave at the Spoeg River mouth where a sequence of occupation has been found (Webley 1992). In addition, six archaeological sites on De Beers owned land at Brand se Baai, have been subjected to controlled archaeological excavation as part of a programme to mitigate the effects of diamond mining (Halkett and Hart 1993). More sites were excavated to the north of Brand se Baai as part of the mitigation of Anglo Americans' Namakwa Sands project (Halkett and Hart 1994). Dates obtained from these excavations, have already provided the beginning of a chronological framework for the occupation of Namaqualand. Three areas, namely Brazil, Tweepad and Schulpfontein were partially surveyed during an IEM study for ESCOM (Parkington and Hart 1991). The locations of sites found in these areas will be included as part of the data presented in volume 2 of this report. A recent study of the distribution of known archaeological sites along the entire South African coastline (Kaplan 1993) has included observations made in this report.

## **2.3 Heritage management**

An important aspect of this study was to explore ways of setting up heritage management mechanisms for mining, as well as envisaged future land use. We have proposed a heritage management policy which takes account of both the existing and proposed new legislation, that controls the conservation of archaeological material.

IT MUST BE POINTED OUT THAT THE PROJECT WAS DIRECTED TOWARDS THE COASTAL AREAS AND HAS NOT EXAMINED INLAND AREAS WHERE OTHER SITES ARE SURE TO EXIST. WE DO HOWEVER BELIEVE THAT THE MANAGEMENT MECHANISMS WHICH ARE DISCUSSED WITH REFERENCE TO THE COASTAL ARCHAEOLOGY CAN BE EXTENDED TO COVER INLAND SITES AS WELL.

## **3. BACKGROUND HISTORY OF THE NORTHERN AND WESTERN CAPE**

A simplified summary of the main characteristics of the various historical periods of the region is presented below. These summaries will help to place the findings of the archaeological investigation in context.

### **3.1 The Early Stone Age (ESA)**

In 1911, an amateur archaeologist discovered some ancient stone artefacts on the banks of the Eerste River in Stellenbosch. Among these was an artefact type which he recognised as the handaxe and suggested that they were of extreme age. Modern research has shown that these artefacts were made by people who lived between 200 000 and 1 000 000 years ago. Sites containing these characteristic Early Stone Age artefacts have been found throughout Africa, parts of Europe and the Far East (Sampson 1974) and locally, sites of this period have been found throughout South Africa. The makers of Early Stone Age artefacts are believed to be the hominid type known as *Homo erectus*. Although the population of these hominids was probably relatively small, the sheer depth of time over which they roamed the landscape has resulted in large numbers of sites found in widely differing ecological zones from the coast to the mountainous regions. The raw material favoured for the production of

Early Stone Age tools was quartzite. It is no coincidence therefore that ESA sites are often found next to river beds where large quantities of water worn quartzite cobbles can be found.

### 3.2 The Middle Stone Age (MSA)

Large cave sites discovered in the Kalk Bay mountains on the Cape Peninsula in the 1920s, contained deep deposits with large numbers of more refined stone artefacts in the lower parts of the sequences. These were recognisably different from ESA artefacts and had many similarities to artefacts found in the Palaeolithic sites of Europe. Similar kinds of artefacts have since been found on many open sites and on rare occasions, in the deposits of caves throughout South Africa. A larger selection of fine grained raw material was used for the manufacture of artefacts as new techniques of production, and secondary working into intricate tools, required more predictable flaking properties. Research has shown that these artefacts belong to a period known in South Africa as the Middle Stone Age and date to the period between 40 000 and 200 000 years. In some very rare instances where circumstances permit, fossil animal bone and marine shells have been found in association with the artefacts giving some indication of the diet. MSA people are thought to have been an early form of modern humans (*Homo sapiens*) who were capable of hunting large animals. Current theory is that early *Homo sapiens* evolved in Africa and migrated to Europe and the Middle East some 40 000 years ago (Klein 1989). It is believed that these new migrants may have been responsible for the demise of the Neanderthal populations in Europe.

### 3.3 The Late Stone Age (LSA)

This period has been subjected to detailed study by archaeologists. Late Stone Age people lived in southern Africa from 40 000 years ago up to the arrival of European colonists at the Cape, and co-existing with them for some time. Late Stone Age people were the ancestors of the San (Bushmen) and Khoi Khoi (Hottentots) who were present throughout the south-western and northern Cape during the colonial period. Throughout most of the Holocene (last 10 000 years) southern Africa was inhabited by small groups of San hunter-foragers who were highly mobile. They hunted with bows and arrows, snared small animals and, where groups lived close to the shore, gathered shellfish and other marine resources, a habit which resulted in the use of the term "Strandlopers"<sup>1</sup>. They used digging sticks, often weighted with bored stones, to find a variety of vegetable foods, particularly bulbs below the soil.

Not only did the San have a prodigious knowledge of the animals and plants around them, but they also had a complex belief system, aspects of which are represented in many of the rock painting and engraving sites of the northern and western Cape. It is now broadly accepted by archaeologists that shortly after 2000 years ago, a new economic system was introduced to southern Africa. Certain groups of people (the Khoi Khoi) who had adopted transhumant pastoralism (in this case with herds of fat-tailed sheep and later cattle) appeared in southern Africa (Smith 1987, Sealy and Yates 1994). While the San groups seem to have co-existed with the pastoralists, it has been suggested that hunter-foragers were marginalised moving into areas where the grazing opportunities were less attractive to pastoralists (Parkington et al 1986). The advent of pastoralism seems to have been accompanied by the technology of making clay pottery. The precise origin of early stock keeping and ceramic technology in southern Africa is still unclear but it is suggested that stock keeping was introduced from the north.

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<sup>1</sup> It has not been proven that there were indigenous groups who lived exclusively at the coast and entirely on marine foods, although hunter-foragers may have become more dependant on them when access to traditional food sources was limited by the influx of first Khoi pastoralists and later European settlers.

### **3.4 The Colonial Period**

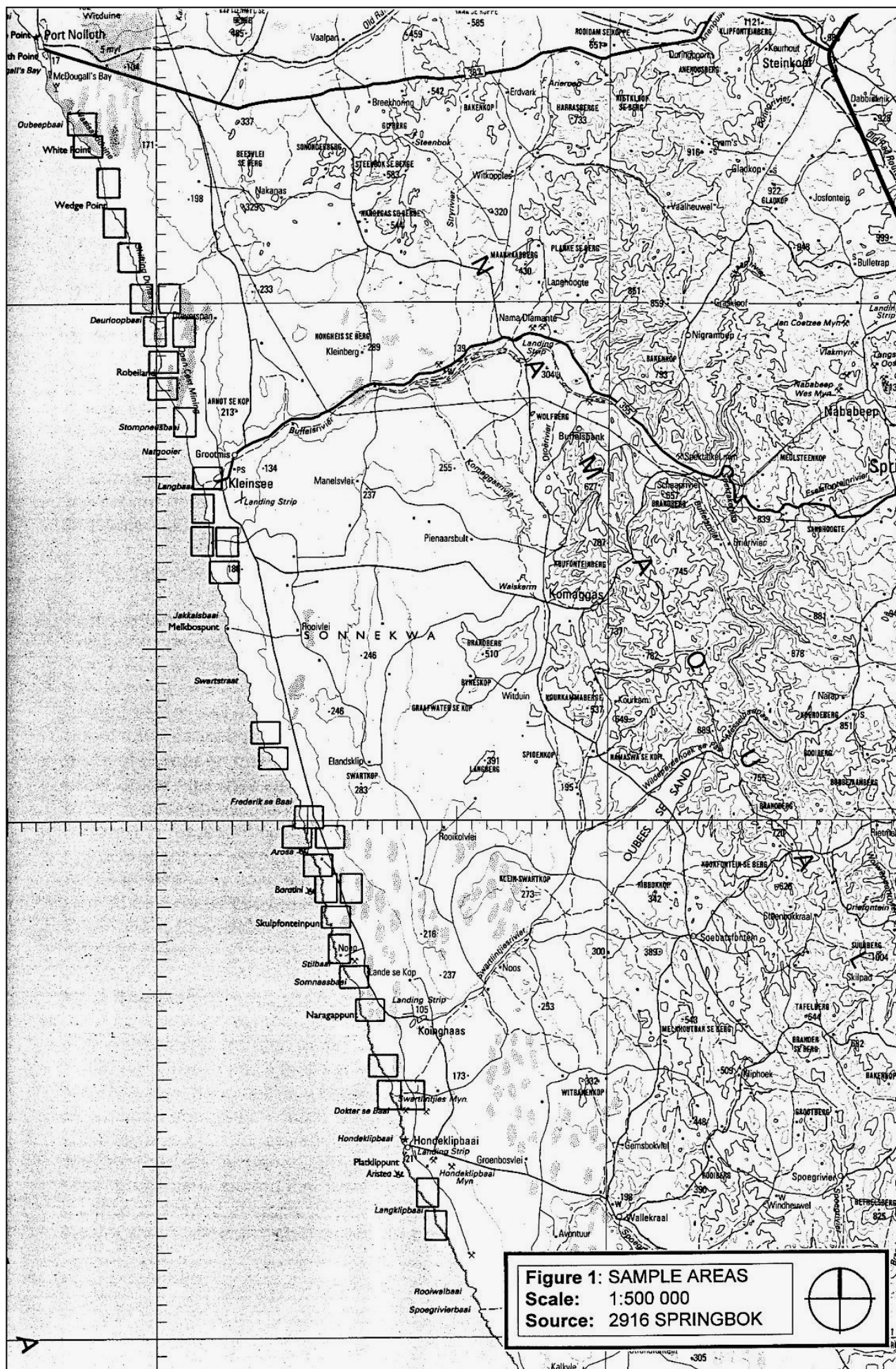
When the Dutch colonists arrived to set up a replenishment station at the Cape in 1652, they encountered several Khoi Khoi groups. Some of these lived on the Cape Peninsula while the larger groups grazed herds of sheep and cattle in the Tygerberg Hills and Cape Flats. First contact between Europeans and indigenous southern African pastoralist groups had occurred much earlier when Portuguese mariners sailing down the coast in the 15th and 16th centuries had bartered supplies of meat from the Khoi that they encountered at places such as Saldanha Bay (Smith 1985). With the increase of shipping rounding the Cape, it was inevitable that some would be wrecked. Encampments were set up by the survivors of such wrecks, and they often recount meeting and trading with the indigenous groups (Smith 1985, Raven-Hart 1967) so that by the time that Van Riebeeck arrived, a history of contact had already been established. Although it is not entirely clear from the writings of the early settlers, it appears that some San groups still existed in the Cape. They still seemed to be pursuing a largely hunting and foraging lifestyle and were often encountered in the more mountainous regions where there was less possibility of conflict with either the Khoi or Dutch settlers (Parkington et al 1986).

At first the relationship between the Dutch and the Khoi Khoi was one of co-operation, with a great deal of bartering taking place primarily to get regular supplies of fresh meat. However, as the colony grew and free burghers were granted lands further away from Cape Town, grazing lands previously available to the Khoi Khoi were encroached upon. The conflict for land began a process of attrition which when accompanied by several deadly smallpox epidemics broke down the indigenous population and its political structures. Those who survived were pressed into service as farm labour or settled around several large mission stations that had been established in the Cape. Namaqualand was one of the least desirable parts of South Africa for the colonists and meant that San and Khoi Khoi people were able to continue many aspects of their traditional ways of life in this area until they were displaced during the last century. The accounts of several early travelers who passed through Namaqualand, most notably that of Robert Jacob Gordon in 1779, clearly attest to the presence of indigenous hunter-forager and pastoralist groups in the area (Raper & Boucher, 1988). The Nama, originally one of the Khoi Khoi groups, still practice transhumant pastoralism in reservations in Namaqualand today.

### **4. DESCRIPTION OF THE STUDY AREA**

The survey began at the northern boundary of the De Beers mining area at Oubeep and progressed south as far as the farm Lang Klip. A map of the Namaqualand coast showing the area that has been surveyed is presented in Figure 1. Lying within this area are the security areas at Kleinsee and Koiingnaas, both of which have high levels of access and exit control.

Shoreline conditions vary considerably but generally can be characterised as rocky, interspersed with stretches of sandy beach. Inland topography consists for the large part, of undulating reworked dune sand. Active dune fields are a common feature of this arid coastline and lie in a north-south orientation. While these are usually unvegetated, several older, stabilised and vegetated fields can be identified on the aerial photographs. These may have formed during periods of marine transgression and regression. The dunes on



Swartduinen are a good example. Deflation bays are common features occurring in both older yellow sands and the more recent white sands. Several large saline pans are present inland. Two major watercourses are present in the searched area, namely the Buffels and Swartlintjies Rivers. These are both non-perennial and saline at present. Occasional rock outcrops are present.

Prior to acquisition by De Beers, the land was used for farming livestock. Original farm boundaries are still retained although De Beers owns most of the land. These boundaries have presented a convenient system for dividing up the survey. Open-cast diamond mining, prospecting and related infrastructure is a major feature of the landscape which has resulted in variable impacts. Some areas are heavily impacted while others are relatively untouched. Areas with high concentrations of diamonds have been extensively modified by the mining process and archaeological sites have certainly been destroyed, particularly where the activity is close to the shore or along the major watercourses.

## **5. LOCATION AND ASSESSMENT OF SITES**

The initial intention of the project was to make a comprehensive inventory of archaeological material in the study area. After the first week of survey work at Oubeep and Tweepad, it became apparent that the both the density of sites and complexity of the sequence, made this an impossible task. We decided that the best approach was to sub-sample the area using a system of transects extending from the coast inland. We attempted to cover as great a diversity of environments as possible within the study area. This work took place over a period of 3 months in the latter part of 1991.

Standard archaeological methods of survey and recording were used. The field crew, who were all experienced in locating archaeological material, walked zig-zag patterns along each transect. Any site that was located was recorded on a field copy of a 1:10 000 aerial photograph (GPS was not available to us at the time) along with the walk paths of the field crew. Details of the surface attributes of the sites were recorded on standardised site record forms. Certain kinds of artefactual material such as decorated ostrich egg shell, ceramic fragments or pendants were sketched and photographed in the field. Samples of shellfish were collected from selected sites in the event that the opportunity arose to radio-carbon date the material. As a routine, no artefactual material was collected unless it was under direct threat.

Attributes of site record forms were transferred onto a computer spreadsheet for analysis of the attributes of the various sites. Site plots were transferred onto overlays of 1:10 000 aerial photos. Subsequently, site provenances have been included on a GIS database by a post-graduate student for dissertation purposes.

## **6. ARCHAEOLOGICAL SURVEY: OBSERVATIONS AND CONCLUSIONS**

723 archaeological sites have been recorded during this survey. In some cases, multiple clusters of sites in dune fields where the edge definition is blurred have been described as individual sites. An additional 149 sites were recorded during the assessment of potential power station sites for Escom on a previous occasion. Presented below are a number of preliminary observations that have been made during the course of the survey. Detailed breakdowns of site content and site locations are presented in Volume 2.



## 6.1 Observations

While artefacts dating to the Middle Stone Age (>45 000 years) have been found in a few instances, artefactual material is recognised as dating predominantly to the Late Stone Age, or more specifically the last 5000 years or so. A further refinement of the age of many of the sites can be made on the basis of the presence of indigenous ceramics. It is well documented that ceramic technology was introduced to the Cape about 1800 years ago. A few sites contained fragments of refined earthenwares and glass of European manufacture and date to the last 200 years.

Later Stone Age sites along the coast are largely identified by scatters of marine shell. In some cases these dumps are associated with domestic artefactual debris and are believed to represent occupation sites of long duration. Other sites, lacking a formal stone artefact component may represent visits of short duration.

Areas immediately adjacent to the coastline are often covered by extensive shell dumps formed as a result of overlapping of debris from hundreds of individual visits. Fortunately, this seems to be a near shoreline phenomenon and sites become more discrete inland.

### 6.1.1 Shellfish

Three species of shellfish were heavily exploited namely, the limpets *Patella granatina*, *Patella argenvillei* and *Patella granularis*. Other species noted are the black mussel *Choromytilus meridionalis*, whelks *Burnupena* sp. and the limpet *Patella barbara*. Information from the recorded sites indicates a tendency for higher quantities of *Choromytilus meridionalis* and *Patella argenvillei* to be found on sites suspected to predate the ceramic period. The presence of the razor clam, *Solen capensis* on MSA sites, particularly around the present Swartlintjies river, suggest that estuarine conditions existed at some stage in the past and would be consistent with a higher sea level. Other species which occur in low numbers are *Patella compressa* and *Argobuccinum pustulosum pustulosum*. Some species have been collected for decorative purposes e.g. *Conus mosambicus*, a species of cowrie appears to have been perforated and used as decorative beads.

### 6.1.2 Bone

Bone is virtually absent from sites to the north of Schulpfontein whereas to the south of this point occurrences are more numerous (Plate 1). Not only are faunal remains (including pre-colonial sheep) more common, but so are bone artefacts such as arrow points and link shafts. The variable presence of bone requires further investigation.

Whale bones (particularly ribs) are found on a number of sites and were used as support struts in small huts and shelters (Plate 2). Whale vertebrae are also found on occasions and the use of these as seats has been ethnographically documented. A painting of a group of "Strandlopers" made during Robert Jacob Gordons' expedition of 1779, shows not only whale bone in the form of vertebral discs and ribs adjacent to a fire place, but also shows discarded shellfish remains, and attests to the use of small shelters and ostrich eggshell water containers (Plate 3), (in Raper & Boucher 1988: 271). Two entries in Gordons' journal specifically describe the use of whale ribs: *We found seven huts standing together which the wild Bushmen had made of whale bones all protected to the Nw. At these huts were large amounts of shells....*(ibid:258) and later: *There was a large hut made differently from those of the Hottentots with two high doors - or rather openings - open to the east, of wood from cast*



**PLATE 1:** Discrete surface shell scatters on Leentjiesklip 8. This site contains a large amount of bone as well as a grindstone. Quantities of bone such as this are not common and give additional information about diets.



**PLATE 2:** Whale ribs found at Samsons Bak 5. The arrangement suggests their use in the construction of a small hut. The use of whale ribs for this purpose has been documented in the historical literature.

up trees, and Noordcaper or whale bones covered with grass and vegetation, and very hot. (ibid: 269). The whale bones which he saw are most likely those of the Southern Right whale, *Balaena australis*.

### **6.1.3 Lobsters**

The contribution of this species to the diet can be assessed on the basis of the number of mandibles found on the sites. Although lobster remains have been seen on most sites, observations so far indicate that sites suspected to be older than 1800 years show markedly higher mandible counts.

### **6.1.4 Ostrich Eggs**

For the early inhabitants of the area these were versatile objects with a number of uses. They could be used as food and if the shells were carefully perforated could be used as water containers that could be filled and carried (Plate 3), or stored in caches below ground for future use. A cache of 3 intact containers was found buried in the sand on one site (Plate 4). Details of the shells are shown in Plate 5. Two of the containers had been decorated by the incision of abstract designs onto the outer surface close to the opening. Although decorated examples of whole containers have been found in other parts of the country, they are not common. The fact that these shells come from a known context makes them an important find.

Decorated ostrich eggshell fragments have been found on a number of sites (Plate 6) indicating that decorated containers were once abundant. We have noted that certain parts of the coast thus far surveyed, contain more sites with decorated ostrich eggshell than others. Active dune fields close to the shoreline frequently contain sites with this material present. The regional patterning of such occurrences as well as the geographical distribution of decorative patterns may hint at the arrangement of population and usage of the land by different groups of people.

Ostrich eggshell has also been used in the manufacture of pendants and beads. Diameters of beads vary from site to site. Exterior diameters of beads thus far measured range from 4 to 16 mm. Current research at U.C.T. suggests that there may be chronological as well as cultural aspects related to size differences (Yates, in prep).

### **6.1.5 Stone Artefacts**

The range of tools includes flakes, cores, hammerstones, upper and lower grindstones (Plate 7), small convex scrapers, backed scrapers, segments, drills and a variety of miscellaneous retouched pieces. Examples of characteristic forms can be seen in Figure 2. Fewer sites contain the formal tool element e.g. scrapers (121 sites), drills and segments (29 sites). Drills and segments normally occur on sites that are older than those without. Scrapers seem to have had a longer history of use and occur on both early and later sites. Formal tools are more common on sites not on the immediate shoreline and are frequently found in deflation bays (see also Manhire 1987). Near shore sites more commonly contain informal stone assemblages of flakes made from quartzite and quartz.





Plate 52 Strandlopers and their beach shelters;  
in the immediate foreground are whalebones and shells, while in the background is a flock of flamingo.

**PLATE 3:** A painting of a group of "Strandlopers" made during Robert Jacob Gordons' expedition of 1779, shows not only whale bone in the form of vertebral discs and ribs adjacent to a fire place, but also shows discarded shellfish remains, and attests to the use of small shelters and ostrich eggshell water containers (in Raper & Boucher 1988: 271).

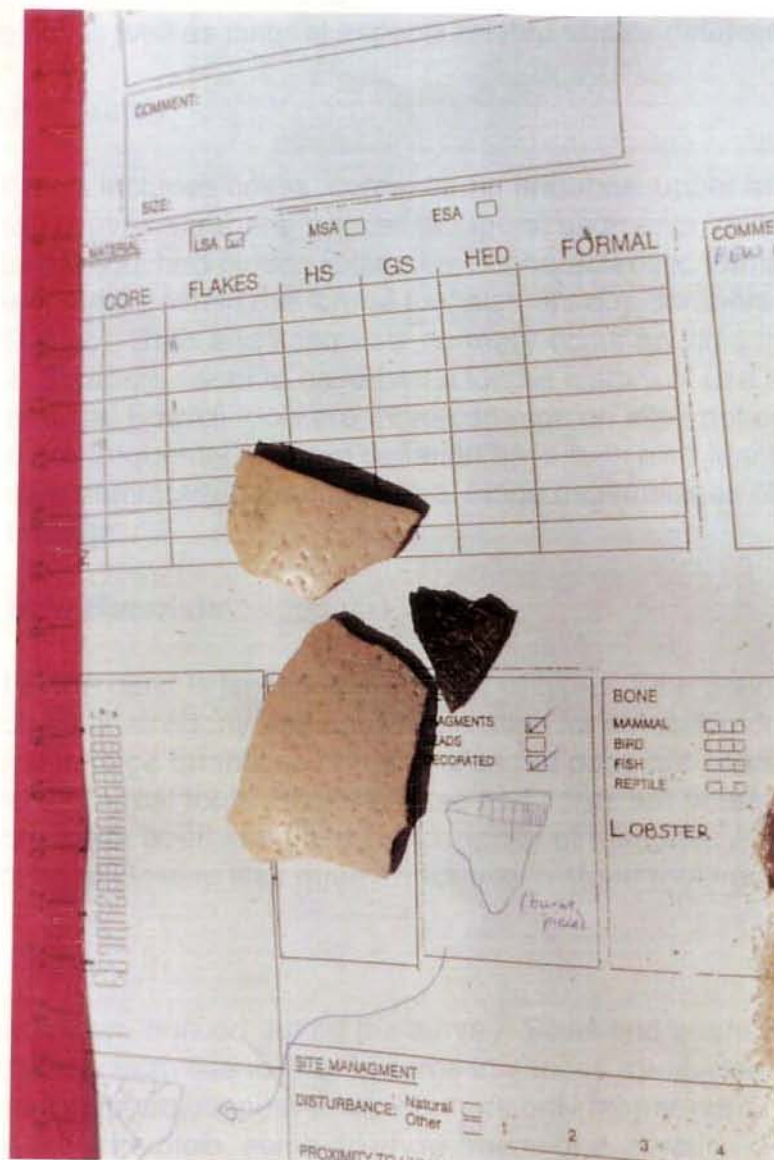


**PLATE 4:** A cache of ostrich eggshell water containers on Swartduinen 6. Two of these were decorated.



**PLATE 5:** Detail of decorated ostrich eggshell water containers from Swartduinen 6. Note that the placement of the perforation is the same as recorded in the painting in Plate 6.





**PLATE 6:** Fragments of ostrich eggshell from Elandsklip 1 showing traces of decoration. These are probably the remains of broken water containers.



**a** thumbnail scraper **b,c** adze **d,e,f** segment **g,h** backed scraper **i,j,k** cores

**Figure 2**

### **6.1.6 Stone Raw Materials**

The range of stone used is limited to a number of types. Fine grained siliceous materials such as chalcedony and chert were used for scrapers, drills and segments. Quartz is found in large quantities on most sites but does not seem to have been regularly used for formal tools. Silcrete flakes and cores are present. Sources of silcrete and chalcedony have been identified in the vicinity of Kleinsee. A small outcrop of fine grained quartzite at Goraap was quarried for use in stone tool manufacture (Plate 8).

### **6.1.7 Pottery**

Many potsherds were noticed during the survey. Sizes and quantities of the sherds varied considerably from site to site. In some instances it was clear that the remains represented reconstructable pots while in others only fragments of pots were present. While most sherds are plain, some do show traces of decoration (Plates 9 & 10). We have observed three kinds of decoration namely i) Impressed - usually linear arrangements of small depressions, ii) Lined - rows of horizontal lines around the neck, and iii) "Thumbnail" impression - series of crescent shaped depressions in various positions on the pot. Most vessels had perforated lugs and the presence of base nipples has been noted suggesting that some of the pots had pointed bases. The presence of fragments bearing traces of more conventional basal studs (feet) shows that some pots had round bases. While the established chronology for this material suggests that sites containing it post-date 2000 years, in some cases it is found on sites with an earlier signature. This has probably resulted from the multiple use of those sites at different times. Pottery may provide regional and chronological information, particularly through the analysis vessel shapes and decorative motifs (Smith et al 1991). Collections of pottery from different parts of the South African coast have showed that there is variation in both vessel shape and decoration (Rudner 1968).

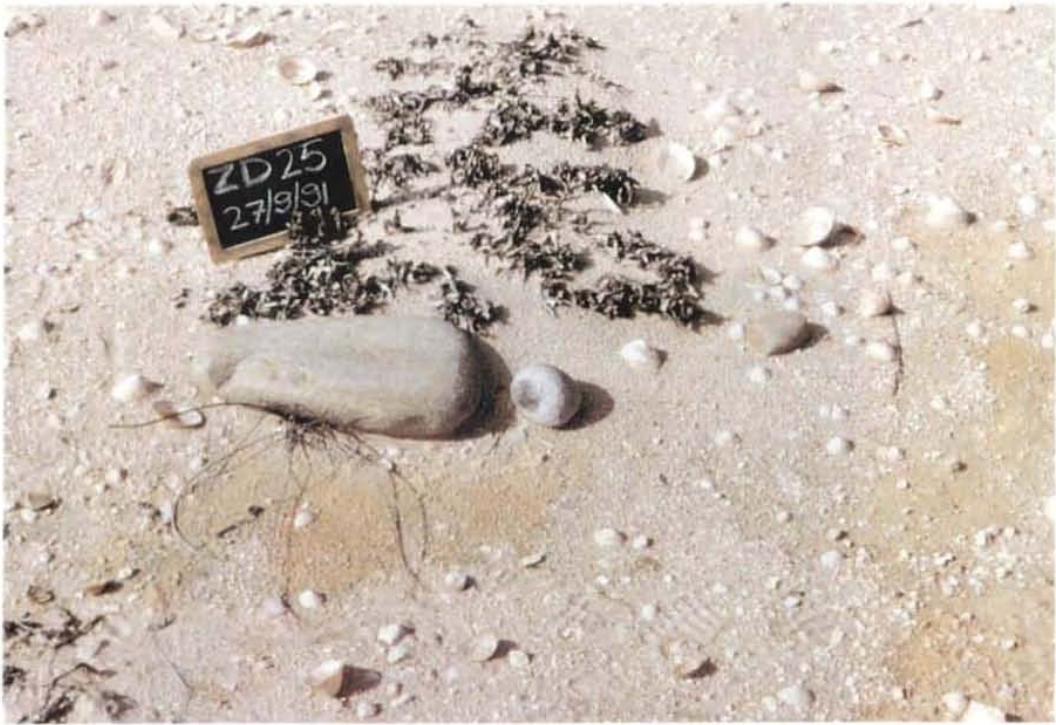
### **6.1.8 Pre-colonial Human Remains**

Burials during the Late Stone Age were usually not formalised in the sense of having been buried in demarcated graveyards. As a result the locations are not predictable beyond that they will occur in soft soil. In some instances graves are marked by stone cairns, which may include grindstones, but often there is no sign of any marker. Deflation often results in the bones being exposed on the surface. Human remains have been observed at Koingnaas where a burial was seen in the side of a prospecting trench. Cairns have been observed at other sites and are presumed to cover burials. Human remains have previously been excavated at Koingnaas by the South African Museum and are housed in the Kleinsee museum. It has been suggested that Khoi burial patterns differ from those of San in that the former are sometimes in niche graves while the latter are in simple pits (Morris 1995). In both cases bodies are usually found in the foetal position. A burial excavated at Groen River had preserved microfaunal bone in the stomach contents (Jerardino et al 1992).

### **6.1.9 Historical Material**

Some bottles clearly date to the 18th century while much of the earthenware and other glass dates to the 19th century (Plate 11). Some of this material occurs close to old farm buildings and is clearly related to early use of the area by for farming during the colonial period. Some material is found in isolated areas sometimes associated with shell middens and may relate to transient stock camps or shipwreck survivors. Graves of the period have not been observed but can be expected around farmsteads and other early settlements.





**PLATE 7:** Upper and lower grindstones on Zwartduinen 25. These are likely to be *in situ* or in other words in their original positions as when the site was in use. Items such as these are rarely found on sites outside of the security areas nowadays as they are often removed by the public.



**PLATE 8:** A rock outcrop on Goraap 1 which has been utilised as a source of raw material for stone artefact manufacture. A core can be seen at the center of the photograph.



**PLATE 9:** The decorated neck of a pot found on Dreyers Pan 48. The coarse nature of the clay is characteristic of these indigenous ceramics. The lined decoration has been seen on other sites in the De Beers area but is also found elsewhere on the Cape coast.





**PLATE 10:** Detail of pot sherds found on Zwartduinen 27. This type of decoration seems to have been made with a fingernail and is not as common as lines or impressed dots. A perforated lug can be seen at lower left and was a common feature of indigenous ceramics. Since pots often had conical bases these lugs may have been used to suspend pots over fires or to make them easier to transport.



**PLATE 11:** Historical ceramics, glass and bone from the site of Somnaas 40. The material is characteristic of the 19th century.

## 6.2 Assessment of Observations

As sample size increased, trends within the artefacts and the sites themselves became more noticeable. Three observations which we feel are significant are presented below.

- i) Formal tools are more likely to be found on sites where there is no pottery;
- ii) Decorated ostrich eggshell is not usually found on sites containing decorated pottery;
- iii) Sites that show high concentrations of formal tools are also likely to contain large amounts of the shell species *Patella argenvillei* and *Choromytilus meridionalis*, and lobster mandibles.

These observations show strong evidence of chronological variation. Sites with decorated ostrich eggshell and formal tools are virtually certain to be older than sites containing both decorated and undecorated pottery. Our observations also show that certain classes of artefacts are more common in some locations than others and suggest that there have been shifts in habitation patterns through time. It is possible at this stage to suggest a hypothetical chronology of occupation on the Namaqualand coast. Numerous MSA artefacts attest to the use of the coast during the late Pleistocene. Since the MSA sites that we have observed often contain shellfish, it would seem likely that some occupation occurred during interglacials when the shoreline closely resembled that of today. Some early material relating to the glacial stages was probably lost following inundation of the ancient coastal plain.

Between the end of the MSA (approximately 40 000 years BP) and about 5000 years ago, few sites are found anywhere along the west coast. The few that are known are usually found in caves although the reason for this is not fully understood. Between about 5000 years ago and the ceramic period, the region was occupied by hunter/gatherers who were exploiting large amounts of marine foods which included quantities of mussels and lobsters, rather higher than what we have seen on ceramic period sites. This may reflect environmental changes associated with Holocene sea level fluctuations, depletion of marine resources in later times, or even a change in cultural values associated with the ceramic period. It is known that the advent of a stock keeping economy in southern Africa was associated with changes in material culture. It is hypothesised that in Namaqualand this is reflected by the disappearance of types of formal artefacts from open sites and shifts in marine food collecting habits. Further development of the research base will reveal more patterns as well as corroborate those which are beginning to be discerned.

## 6.3 Conclusions

### 6.3.1 Late Stone Age

The majority of visible archaeological sites date largely to the Later Stone Age (LSA). For reasons that are not entirely clear, but possibly related to climatic factors, LSA sites dating to the Holocene seem to fall within the last 5000 years. Of these, a large number date after the last 2000 years, when it is known that there was a major change in the prevailing social situation in the Cape. This is believed to have coincided with the arrival of pastoralist groups (Khoi Khoi) from the north, who in addition to introducing ceramic technology, also introduced domesticated stock, initially sheep and some time later cattle. While the route of this migration remains unresolved, it is believed that one possible route for the introduction to southern Africa was from Botswana along the Orange River and down the west coast

(Elphick 1977). Spoeg River cave has produced some of the oldest dates so far for domestic sheep in southern Africa (Webley 1992, Sealy and Yates 1994)

#### **6.3.1.1 Site Distribution**

Late Stone age sites along the coast are represented by scatters of marine shell (Plates 12 & 13). Areas immediately adjacent to the coast, especially where there are rocky shorelines, are often covered by extensive shell middens resulting from hundreds of visits by groups of pre-colonial people. These sites which overlie and overlap each other are very difficult to resolve archaeologically. Fortunately this is a near shore phenomenon and further inland, sites have more defined boundaries. Unlike those sites along the immediate shoreline which contain few artefacts, occupation sites are generally believed to show a much wider range of artefactual material, with spatial arrangements indicating specific activity areas (Plate 14). Items that may be expected on such sites include stone artefacts, ostrich eggshell - particularly beads and water containers, grindstones, discrete shell piles, hearths, bone and whale bone structures. There seems to be no specific location which only attracts occupation sites (Plate 15) but we have noticed that deflation bays along the coast or further inland are frequently selected (Plate 16).

Within a kilometer of the shore, pre-colonial camp sites are found in a variety of environments and locations, some of which appear to have been favoured over others. Dune tops, dune lees, deflation bays and areas around sheltered bays appear to have strongly attracted pre-colonial people. We have noted clusters of middens and artefact scatters associated with coastal dune seas. These areas seem to have been popular 3000-5000 years ago. There are, however a significant number of sites that are not located at obvious natural foci and can be found on featureless coastal flatlands (Plate 14). This variability makes accurate prediction of location very difficult. What is clear is that people in this marginal landscape were attracted to the coast where food resources were the most reliable.

#### **6.3.1.2 Chronology**

At this beginning of this study very little was known about the length of time that Late Stone Age people occupied Namaqualand. We now know that the chronology of occupation is long and complex. Fragments of pottery are common on sites indicating that much of the pre-colonial occupation post-dates the arrival of the Khoi Khoi. We have also found a number of instances where fragments of pottery have been found on sites with older types of stone artefacts indicating that some sites were re-used over a long period of time.

In the same way as ceramics are indications of sites dating to after 2000 years ago, so certain types of stone artefacts are an indication of even earlier occupation. In South Africa, within the Holocene, the prevalence of refined microlithic artefacts such as segments, backed scrapers and backed bladelets indicate occupation approximately 3000-5000 years ago. In Namaqualand, a number of sites contain these types of formal artefacts indicating occupation since the mid-Holocene. In addition, formal artefacts are often accompanied by decorated ostrich eggshell and this material is also believed to have a mid-late Holocene signature. Layers in sites at Brand se Baai and Lamberts Bay containing formal artefacts, have been radio-carbon dated to between 4000-5000 years ago (Hart & Halkett 1994, Parkington et al, in prep)





**PLATE 12:** A stratified shell midden at Oubeep 108. Stratified lenses suggests re-use of specific locations and dating of the lenses allows reconstruction of the chronology of visits.



**PLATE 13:** A small patella shell midden on Zwartduinen 27. The mounded form has resulted from erosion of the sand being inhibited by the capping of shell. These middens are more often than not unstratified and may represent short visits.



**PLATE 14:** A surface shell scatter at Oubeep showing discrete patches of different shell species in this case limpets and mussels (dark patches). Patterning of debris on sites such as this can reveal spatial layout of campsites potentially allowing to reconstruct group size.





**PLATE 15:** Several shell scatters at Samsons Bak 3. Prediction of the location of sites such as this is problematic as there does not appear to be any geographical focus. Each of the shell patches probably represents a dwelling area of a large group of people.



**PLATE 16:** A large surface shell scatter in a dune field at Elandsklip 4. The edges are discrete but a number of different occupation areas are probably represented. Several large pieces of quartzite have been carried to the site from the shore and may have functioned as anvils or grindstones. Many decorated ostrich eggshell fragments were found at this site and many like it.



### **6.3.1.3 Impacts of Mining on LSA Sites**

Most LSA sites exist on or close to the surface and are therefore susceptible to a variety of impacts. Earthmoving operations related to mining have destroyed many sites for example around Kleinsee and Koingnaas. Ironically, sites not affected by mining are better preserved in the mining areas through long term limitation of access to the general public and other development activities, than they are on the rest of the South African coast. This limitation of secondary impacts has resulted in preservation of a wide range of artefacts and features that would have been destroyed elsewhere. The challenge for the future will be to ensure that these sites are well studied before these areas are opened for other uses.

### **6.3.2 Early and Middle Stone Age**

Indications are that there are a far smaller number of visible sites that have Middle Stone Age (MSA) and fewer still with Early Stone Age characteristics. There are likely to be more of these buried below the surface but invisible to archaeological survey. The MSA, which is of late Pleistocene age is identifiable by the artefactual content. It has particular stone tool forms associated with the characteristic technology of that period (Plates 17 & 18). ESA artefacts have a limited number formal tool types. The most recognisable of these is the handaxe (Plate 19). MSA material does exist in some active dune seas where artefacts are periodically exposed as the sand shifts. A few sites were located at prospecting trenches where the material is present in sections and on spoil heaps. It is known that some ESA and MSA material will have been inundated by rising sea level as sites dating to the glacial phases would have been located on ancient coastal plains.

Most MSA and ESA sites are of limited archaeological value because little more than stone artefacts survive. Organic material is seldom preserved on open sites of this age except in exceptional circumstances where fossilisation takes place. A number of such localities have been found in the western Cape, for example Elandsfontein, Duinefontein and Saldanha. MSA sites with preserved organic material are prized internationally in terms of the information they contain about early modern human behaviour.

Although bone may be preserved on open sites where alkaline conditions prevail, caves and shelters are the best places for preservation. Where bone is found, extinct faunas are often present. Under these circumstances there is the possibility that included amongst them will be the remains of human beings. While other parts of southern Africa have produced remains of Australopithecine's under specific preservational circumstances, very few remains of humans have been found which date to the late Pleistocene. The few remains which have been found in southern Africa are of major importance as they represent the earliest known existence of early modern humans, whom some researchers believe, evolved in Africa about 200 000 years ago (Klein 1989). We know that along the west coast we have artefactual material which attests to human activity from this time period but sites which produce hominid remains are virtually non-existent.

#### **6.3.2.1 Chronology**

It is very difficult to date MSA sites in general because they require very specialised direct dating techniques together with a range of supplementary palaeoenvironmental information. As MSA sites are over 40 000 years old, they are beyond the range of radio carbon dating. Because the MSA period is so extensive, the optimum situation is to find material in stratified



**PLATE 17:** A characteristic of the MSA is longish blades with a central flake scar, although other forms also occur. The examples shown here are from a range of sites in southern Africa. Scale in cm.



**PLATE 18:** Certain periods of the MSA are marked by highly specialised forms of tools. The Stilbaai industry for example has a large number of bifacially flaked (on both sides) points. Tools of this type have at this point in time only been recognised at sites on the peninsula and Cape south coast. A number of examples are shown in the photograph. A second industry known as the Howiesons Poort, has forms such as segments which are similar to some LSA forms but generally larger. Scale in cm.



**PLATE 19:** The characteristic tool of the ESA is the handaxe. Scale in cm.

contexts so that it is possible to identify the chronology of distinctive assemblages from different phases.

### **6.3.2.2 Impacts of Mining on MSA Sites**

Recent work in Alexkor diamond mining area has demonstrated the possibility that MSA sites with extremely good preservation exist in caves along the old inland sea cliffs of the interglacial period. These lie deeply buried and have thus been well preserved. The presence of diamondiferous gravels in these locations has resulted in these areas being targeted for mining. At least one site that we have observed dating to approximately 80 000 years ago has been virtually destroyed by mining. The small amount of remaining deposit which has been archaeologically excavated contained *in situ* hearths, shellfish remains, ostrich eggshell, stone artefacts and bone. This is probably one of only a handful of sites of this age documented anywhere in the world and in all likelihood would have produced human bone in good condition.

Close by in another cave was an ancient brown hyena lair which had been sealed for tens of thousands of years until exposed by mining. While no traces of archaeological material were noticed at this locality, the possibility existed that the hyenas in their scavenging could have brought in human material (remains of early humans have been found in this kind of context before). For this reason, these types of sites are of intense archaeological interest in addition to the wealth of information on past climate that can be derived from them. It is likely that more of these sites exist and they must be recognised before they are impacted. Mine geologists who are familiar with the area are often in the best position to predict the locations of buried cliffs where caves and gullies may exist.

### **6.3.3 Colonial Period**

Sites dating to the historical period have been identified. Some of these are related to the use of the area by early farmers. Several old structures exist associated with dumps containing ceramics and glass. Ceramics and glass have also been found in dunes at various places along the coast. These do not seem to have any particular focus and may be the remains of transient stock camps or related to shipwrecks. Some of this material occurs on the same sites as LSA material but it is not clear if there is any connection between the two. As yet the historical archaeology of Namaqualand is unstudied.

## **6.4 Predictions**

Sites have been found in all transects that were investigated. We have still to examine the precise implications of the locations but nevertheless some broad observations can be made regarding site location. There is one primary factor governing the distribution of archaeological sites. Patches of rocky shoreline, especially sheltered bays and rocky promontories exerted a powerful attraction for pre-colonial people. Virtually all choices of site location made by pre-colonial groups were secondary to the overriding influence of the shoreline.

We have located archaeological material in every kind of environment we searched. We hoped that we would pick up clear patterns that would provide short cuts in predicting locations of heritage resources. Although we have identified some patterns, it is clear that there are no areas on the coast that we can confidently declare to be archaeologically

insignificant. We have isolated areas that appear to have been favoured for certain kinds of pre-colonial occupation. These are commented on below.

#### **6.4.1 Rocky shorelines**

Rocky shorelines are perhaps the most important feature which attracted pre-colonial people to the coast. These rocky areas support large colonies of shellfish and other marine fauna in the intertidal zone. This was an easily accessible and predictable source of protein. Rock pools were also a source of fish and lobsters which could be utilised after being trapped by low tides. While these were the magnets which attracted people to the coast, the places from which they chose to exploit this food source was varied.

Adjacent to rocky shorelines are virtually continuous ribbons of overlapping archaeological sites. These sites mainly contain only the remains of shellfish with minimal amounts of casually flaked stone. The shoreline sites may have been areas where shellfish were processed (shells removed) prior to being taken back to a home base or occupation site further inland. The presence of lower balanoid shell species on many sites indicates that people may have come on a regular basis at low tide to collect shellfish. On some parts of the coast these shell middens can extend for hundreds of meters as a result of multiple use, very often blurring the boundaries of individual visits and reducing our ability to interpret the archaeological material.

#### **6.4.2 Dune tops and dune ridges**

We noticed that there is a high frequency of sites located on dune tops and sides of prominent dune ridges. This is particularly the case where a prominent dune ridge abuts a flatland. Prominent dunes within several kilometers of the shore attracted pre-colonial occupation, especially where deflation bays exist.

#### **6.4.3 Dunefields and deflation bays**

All dunefields within walking distance of the coast attracted pre-colonial people. The deflation hollows are often fairly stable features and may be exposed for thousands of years, particularly those in the older inland dune seas.

Active dune seas are considered to be particularly archaeologically sensitive. Such places close to the coast were selected by pre-colonial people for occupation. Because of the mobile nature of the dunes, large scatters of material are present where one deflation has run into another. Discrete patches are also present where amalgamation has not occurred. One particular artefact type that has been observed in the dunefields is decorated ostrich eggshell. These fragments are often in association with other artefacts and shellfish remains. While such material is also found in other settings, the dunefield association is particularly noticeable. This phenomenon has now also been observed on the southern Cape coast. The fragments of decorated ostrich eggshell were once part of water containers, most of which have broken.

#### **6.4.4 Rivers**

Generally, rivers and estuaries are environments that were able to offer pre-colonial people a variety of resources, not only water itself, but the fauna that were attracted to such areas. Fish also tend to spawn in these areas under the right conditions. The area around the



Buffels River at Kleinzee has been heavily impacted by mining and township development although there are some small sites in rock shelters along its banks. The amount of LSA archaeological material associated with the Swartlontjies River is dense but no denser than in dunefield systems on the coast. However, we did notice a lens of buried MSA material which had estuarine shell species present indicating inundation during periods of higher sea level. Spoeg River mouth was not surveyed for the purposes of this project. One of the regions' most important archaeological sites exists in a granite cave on this estuary.

Riverine areas should be considered archaeologically sensitive.

#### **6.4.5 Pans**

In terms of the pans that we examined, there are no significant concentrations of LSA archaeological sites. We have noticed scatters of MSA material on the edges of pans indicating that in the distant past they may have had qualities (seasonal water) which attracted humans and animals.

#### **6.4.6 Granite boulders**

We noticed that south of Koingnaas, granite boulder foci are much more common on the coast. Several stratified middens were located in the lee of large boulders or natural sheltered areas associated with them. Any granite boulder complex is likely to be associated with archaeological material.

#### **6.4.7 Rock outcrops**

There are very few rock outcrops in the areas that we searched. Outcrops at Goraap did not attract significant occupation. There is a silcrete raft near Kleinzee has been quarried for raw material. The large amounts of occupation debris on the open landscape suggests that with the absence of rock outcrops containing shelters and caves, the pre-colonial inhabitants were utilising other forms of shelter from the elements and were not restricted in their choice of site.

#### **6.4.8 Flatlands/coastal plain**

Although there were generally fewer sites in open flatlands, they are present which means that these areas cannot be dismissed as being archaeologically unimportant. Pre-colonial people did not always rely on natural features for shelter, although these were used wherever possible. There is good historical and ethnographic evidence that bush *skerms* and huts were constructed by the San. The Khoi Khoi transported their *Matjieshuise* with them giving them the freedom to camp wherever they liked. Sites in windswept open areas are good indirect evidence that people were building huts or windbreaks.

### **6.5 Heritage Management**

The survey has established that there is a wealth of archaeological material on De Beers properties, a heritage that can be considered significant at both local and international levels. Some of this has been seriously impacted by mining activities. On the other hand, due to the high security nature of the mining operation, large tracts of land have been conserved and the preservation of archaeological material in these areas is excellent. The expectation is that in future years mining and related operations will not be the only activities that will impact

on the heritage. Township and resort development, industry, as well as establishment of nature reserves will follow when the mining ceases. This means that management of heritage resources will have to operate within a wider range of circumstances. The long term aim of any management goals should be to:

- i) Conserve the archaeology of those areas that have been protected or excluded from the public.
- ii) Ensure that good heritage impact assessments are made in any areas that may be developed in the future.
- iii) Mitigate the archaeology of those areas to be impacted by mining during the remaining life of the mine.

The present National Monuments Act has not been fully implemented in the past with respect to mining due to problems of interpretation and lack of prescribed procedures. Mechanisms for the mitigation of impacts on archaeological sites have been developed and are currently in use. Draft heritage legislation is more comprehensive defining procedures and clearly defining the nature of heritage resources. As the new legislation is still in draft form, it is premature to suggest what the final legislation will cover. If however the Act is passed, it will allow for the negotiation of "heritage covenants" and management agreements which are potential options that De Beers may be able to explore in the future.

## **7. LEGISLATION**

Certain Archaeological sites in South Africa have been afforded legal protection since 1911 when the Bushmen Relics Protection Act became the first body of legislation that specifically protected artefacts and sites of 'South African Bushmen or other aboriginals'. The first South African conservation authority - the Commission for the Preservation of Natural and Historical Monuments of the Union - was established in terms of the Natural and Historical Monuments Act of 1923. This body was more commonly known as the Historical Monuments Commission. In 1934, previous Acts were replaced by the Natural and Historical Monuments, Relics and Antiquities Act (see also Deacon and Pistorius 1996). This was superseded in 1969 with the creation of the National Monuments Council by an Act of Parliament. Various amendments have since been made to the Act, with the most recent amendment being in 1986. The legislation which currently applies to heritage material in its various forms is known as the National Monuments Act No. 28 of 1969 (as amended). The National Monuments Council was invested under this legislation with powers to protect a variety of heritage resources as well as to declare national monuments and conservation areas. At present, archaeological, palaeontological, historical sites (including shipwrecks) and structures, and certain antiquities are protected. Destruction, damage, alteration, excavation or removal from the original site of a feature considered to be a heritage resource without permission from the Council is considered an offense (see also Pistorius 1996).

The Environment Conservation Act (Act 73 of 1989) and the Environment Conservation Amendment Act of 1992<sup>2</sup> forms the latest body of legislation that potentially supplements the National Monuments Act through the Integrated Environmental Management procedure. Although many archaeological sites have been identified and mitigated through this procedure, the existing National Monuments Act of 1969 (as amended) remains the primary

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<sup>2</sup> The Government Gazette, 26/6/92. No 14075. Substitution of section 22 of Act 73 of 1989.

piece of legislation in heritage management. The Minerals Act (Act 50 of 1991) and the Minerals Amendment Act (Act 103 of 1993) require plans for the conservation of the environment at or in the vicinity of any mine or works to be detailed in an environmental management programme (EMP). The EMP must indicate how the natural and 'man-made' environment will be protected and rehabilitated during and after the mining.

The present National Monuments Act as it exists today has been widely criticized for a number of reasons. In the drafting of the Act no formal mechanisms were specified in dealing with the material intended for protection. Only recently have some formal mechanisms been put in place with the establishment of plans committees which vet a wider range of development applications (including rezoning) than in the past. Even so most applications that are considered are to do with changes to the built environment as required by the 50 year clause.

While the conservation of colonial period structures has been reasonably well addressed by the NMC, resources devoted to the conservation of pre-colonial sites are small by comparison. Perhaps one of the biggest faults of the present legislation is that it is inadequately policed (there are at present only 14 compliance officers in South Africa), and the penalties and fines provided for by the Act in instances of contravention are inadequate and do not constitute a deterrent. Although the National Monuments Council has prosecuted offenders who have contravened the Act in terms of the built environment, prosecutions for the destruction of pre-colonial archaeological sites are few.

The existing Act therefore no longer reflects South Africa's priorities for cultural heritage conservation. In addition, the 1996 White Paper on the Arts, Culture and Heritage<sup>3</sup> outlined a new policy and vision for heritage in South Africa and new legislation is needed to implement it. The new Constitution gives concurrent powers to National and Provincial government for 'cultural matters', so a new legislative framework is needed to spell out the responsibilities of heritage authorities at national and provincial level. To fulfill these goals, a completely new set of legislation has been written and is due to be tabled before parliament before the end of this year. It is far more comprehensive than the existing body of legislation and introduces some fundamental changes to the *status quo*. It provides for the establishment of the South African Heritage Agency (SAHA) which will replace the existing National Monuments Council Head Office. The 6 current regional offices of the NMC will be transferred to the respective provinces where they will form the cores of provincial heritage authorities. SAHA will be responsible to the National Heritage Resources Commission which will consist of between 7-15 members to be appointed by the minister and the commission will in turn be represented on a body to be known as the National Heritage Commission (NHC). This will co-ordinate policy, planning, redress and transformation in the heritage sector as a whole, including living heritage, archives, museums, geographical names and heritage resources.

Until such time as new legislation is in place, the provisions of the National Monuments Act of 1969 (as amended) will continue to apply. Although it is likely that the draft Heritage Resources Bill will be adopted into law, it may still undergo substantial changes after debate in parliament. We will nevertheless discuss parts of the new legislation as it is likely, that notwithstanding any changes, the basic approach as laid out in the draft will be followed through.

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<sup>3</sup> Department of Arts, Culture, Science and Technology. 1996. Draft White Paper on Arts, Culture and Heritage, June 1996. Pretoria: Government Printer.



## 7.1 Current Legislation

In this section we have reproduced portions of the Act which apply specifically to archaeological and historical material. Other non-archaeological issues are also covered and may be seen in a copy of the National Monuments Act which is reproduced in Appendix A.

The main clauses are as follows:

**Section 12(2A)** *No person shall destroy, damage, excavate, alter, remove from its original site or export from the republic-*

- a) any meteorite or fossil; or*
- b) any drawing or painting on stone or a petroglyph known or commonly believed to have been executed by Bushmen; or*
- c) any drawing or painting on stone known or commonly believed to have been executed by any other people who inhabited or visited the Republic before the settlement of Europeans at the Cape; or*
- d) any implement, ornament or structure known or commonly believed to have been used or erected by people in paragraphs (b) and (c); or*
- e) the anthropological or archaeological contents of graves, caves and rockshelters, middens, shell mounds or other sites used by such people; or*
- f) any historical site, archaeological or palaeontological finds, material or object;*

*except under the authority of and in accordance with a permit issued under this section.*

An historical site is defined in the Act as any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 50 years.

**Section 12(2B)** *No person shall destroy, damage, excavate, alter, remove from its original site or export from the republic-*

- d) any wreck or portion of a wreck, or any object derived from a wreck, known or generally accepted to have been in South African territorial waters longer than 50 years;*
- e) any burial ground or grave referred to in section 3A (2) [war graves]*

*except under the authority of and in accordance with a permit issued under this section.*

**Section 12 (3)(a)** *The provisions of subsection (2A) shall not apply to the removal of anything other than deposits in any cave or midden, in the normal course of mining, engineering or any agricultural activities: Provided that anything referred to in section (2A) is found in the normal course of the said activities, the finder thereof or the owner of the land where it is found or the person who performs such activities, shall report the fact immediately to an institution referred to in the Cultural Institutions Act, 1969 (Act No. 29 of 1969).*

Additional discussion of this clause can be found in the report prepared by Huffman and Sievers (summarised in section 7.1.2 of this report).

**Section 12(4)** *On application by any person in the manner prescribed by regulation under this Act, the council may at its discretion, but subject to the directions of the minister, issue such a person free of charge a permit to destroy, damage, excavate, alter, remove from its*

*original site or export from the Republic any monument or any object referred to in subsection (2) or (2A), specified in the permit.*

### **7.1.1 National Monuments Act and Archaeology: Application of the Current Legislation**

Although the National Monuments Act is, in some ways a strong body of legislation as far as archaeological material is concerned, it was hampered from the outset by the fact that no formal mechanisms or procedures were defined by which archaeological material could be identified or assessed for significance prior to being negatively impacted by development activities. The new environmental legislation on the other hand showed how this could be formalised through the Integrated Environmental Management (IEM) procedure.

While archaeologists and other interest groups had always lobbied for there to be some established mechanisms for the assessment of pre-colonial material, the focus was biased toward the protection of colonial sites. While regional plans committees concerned themselves with the built environment, other sites were virtually ignored. Development took place on a limited scale during the 1970's and the early part of the 1980's, but since that time has proliferated and become a real threat to the archaeological record. Perception of the threat from development saw an increase in lobbying from interest groups and has resulted in the more equitable application of the legislation. Some amendments to the Act were made in 1986 which reflected the change in attitude but still fell short in terms of procedures. In addition, staff with archaeological training have been appointed to the National Monuments Council. A set of procedures has evolved during the last 10 years. A number of provinces have taken steps to create the mechanisms by which the National Monuments Act can be enforced. This has involved the co-operation of local authorities, the NMC and various heritage professionals including archaeologists, who serve on the regional plans committees and regularly comment on rezonings sent in by local authorities. A booklet was prepared by the NMC in 1992 which was intended to inform developers of the legislation (Deacon 1992) (see Appendix A).

Where there is a perceived threat to sites as defined in the Act, assessment is possible through a Phase 1 study (impact assessment). Groups capable of carrying out such work now exist at most universities and museums, and some private organisations have also been established. Payment for these investigations is the responsibility of the developer or landowner. If it is found during the Phase 1 that there are important sites then a Phase 2 programme of mitigation is usually recommended also at the cost of the developer or landowner. A report describing the finds is sent to the client and the NMC. Permission for rezoning or to proceed with the development may be refused if these studies have not been undertaken. Numerous archaeological sites have been successfully mitigated in this way.

### **7.1.2 National Monuments Act and Mining: Discussion and Legal Opinion**

Although some mining houses have commissioned heritage resources studies, interaction between them and the National Monuments Council has been largely non-existent. The non-application of the National Monuments Act has largely been due to the fact that the built environment has not been significantly impacted by this activity. In addition, the interpretation of the wording of the Act in respect of mining is considered ambiguous as to whether mining operations are exempt from the provisions of the Act or not.

The ambiguity of the Act in relation to mining came under scrutiny in 1994 when a Phase 1 archaeological and palaeontological assessment of a proposed lime mine on the west coast

near Velddrif (commissioned for an EMP) revealed that significant archaeological and fossil material would be destroyed. The report identified the potential impacts and referred the client to the relevant sections of the National Monuments Act. A programme of mitigation to alleviate the potential impacts was suggested. As a result, both the mining company and the Department of Mineral and Energy Affairs (who were of the opinion that this was not a legal requirement), and the Department of Environment Affairs and Tourism and the NMC (who were against the mining if mitigation was not undertaken) sought legal opinion on the matter. Legal opinion was that the mine had a duty in terms of the Act to mitigate shell middens on the site. The mining company disputed the fact that the middens were actually the result of human activity in an attempt to avoid having to carry out mitigation.

It was however, pointed out in the impact report that items such as ostrich eggshell beads and stone artefacts were found in association with the shell meaning that the sites were indisputably the result of human activity. The mining company accepted the findings and opted to leave exclusion zones around the middens where mining would not take place.

This case prompted the Department of Environment Affairs and Tourism to commission a study on the status of cultural resource management on South African mines in general. This study was undertaken by Professor Tom Huffman and Ms. Christine Sievers from the Department of Archaeology at the University of the Witwatersrand.

The study was a nationwide exercise which examined the views of mining houses, heritage professionals and the various branches of the National Monuments Council. Their study revealed: *"It is commonly believed by the mining industry, the NMC, as well as by most archaeologists that the National Monuments Act does not apply to mining operations"* (Huffman and Sievers 1996). Huffman and Sievers as well as environmental lawyers commissioned to assist them, are of the opinion that mines do have responsibilities in terms of the National Monuments Act.

Huffman and Sievers concluded that the implication of the Act is that mining operations may not destroy middens and the contents of caves without a permit from the National Monuments Council. Other kinds of heritage resources may be removed (not destroyed) during the course of mining but their discovery must be immediately reported to a cultural institution. As this law has been in existence since 1969, the implications of the findings are that many archaeological sites have been illegally destroyed and will continue to be so until effective management procedures are in place and operational.

In the light of what we know about the archaeology of the De Beers owned portions of coastal land, the National Monuments Act (as interpreted in the Huffman and Sievers report) is going to be very difficult to apply in its present form without the involvement of the NMC, the mine and heritage professionals. We have now established that there are probably many thousands of archaeological sites on De Beers owned property, almost all of which are technically protected by the National Monuments Act. If permits were to be issued for the destruction of each one of these, the implications of this for the mining operation are immense and virtually beyond the resources of most archaeologists and cultural organisations as they presently exist. It is for this reason that an effective and realistic management plan is essential to evaluate those sites which are truly worthy of conservation.

## 7.2 Future Legislation

Portions of the draft Heritage Resources Bill to be presented to parliament before the end of May 1997 are reproduced below. A copy of the full draft bill is included as Appendix B and is preceded by a summary pamphlet issued by the NMC. As this legislation has not been finalised, aspects may be subject to change<sup>4</sup>.

The main clauses are as follows:

Under **Section 2 - Definitions**, the term archaeological is defined as:

*(a) material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;*

*(b) rock art, being in any form of painting, engraving or any other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years, including any area within 10m of such representation; and*

*(c) wrecks, being any vessel or aircraft, or any part thereof which is wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Marine Zones Act, 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which the SAHA considers to be worthy of conservation;*

*(d) features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.*

Relating to what is protected:

**Section 30 (1)** *No person may alter or demolish any structure or part of a structure which is older than 60 years except under the authority of a permit issued by the provincial heritage authority.*

**Section 31(4)** *No person may, except under the authority of a permit issued by a responsible heritage authority-*

*a) destroy, damage, excavate, alter, deface or disturb any archaeological or palaeontological site or meteorite;*

*b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or meteorite;*

*c) Trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological material or palaeontological material or object, or any meteorite; or*

*d) Bring onto use at an archaeological or palaeontological site any excavation equipment or any equipment which assists in the detection or recovery of metals or archaeological or palaeontological material or objects, or use such equipment for the recovery of meteorites.*

**Section 32(3)** *No person shall, except under the authority of a permit issued by a provincial heritage authority-*

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<sup>4</sup> Two pamphlets namely "New Legislation for National Heritage" and "Non-governmental Organisations (NGO's) and the Draft Heritage Bill", summarising the new legislation and its implementation are available from the NMC. Copies have been included in Appendix ?.

- (a) destroy, damage, alter, exhume, remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground which is situated outside of a formal cemetery administered by a local authority and which is older than 60 years; or*
- (c) bring onto or use at a burial ground or grave referred to in clause (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.*

**Section 34** of the bill defines activities that will require heritage assessments while assessment criteria are set out in **Section 5**. These can be seen in the copy of the draft bill in Appendix B.

## **8. HERITAGE MANAGEMENT**

The history of humankind is preserved in many ways. There is often a misconception that history is based on written texts alone. While written texts in their various forms do indeed provide invaluable information, history is preserved in many other forms as well. Buildings, art, antiques and many other artefacts are also aspects of history which in themselves tell a tale.

It is common knowledge that written texts document only a small fraction of the trajectory of human history and the balance must be inferred from the remains of activity which have been left behind. This is particularly true in Africa where the human species evolved some 4 million years ago, but written records have only existed in some areas for last few hundred years. The bulk of this history must therefore be gained from examining the remains of human activity in all its forms which preserved on archaeological sites. The perception that old buildings and archaeological sites are irrelevant is therefore clearly misguided.

Historical buildings, archaeological sites and other artefacts are non-renewable and once destroyed can never be replaced. This realisation has resulted in the formulation of statutory controls for the preservation of such resources in many countries in the world today. The International Council on Monuments and sites (ICOMOS), of which South Africa is now a member along with 84 other countries, seeks to apply the highest principles of conservation to the Monuments and Sites of the world (Deacon ed. 1996).

### **8.1 Sources of Impact**

We generally identify two major sources of impact on heritage material. These are defined as primary sources which are often large scale organised activities which modify the landscape, and secondary impacts which are of an *ad hoc* and usually more limited nature.

#### **8.1.1 Primary Sources of Impact on Archaeological Material**

The activities identified below are generally responsible for the most damage to heritage resources.

- 1) Development of land as a result of a structure plan
- 2) Development of land as a result of a rezoning application
- 3) Development of land as a result of a subdivision
- 4) Establishment of housing developments not subject to conditions of 1,2,3 above.
- 5) Establishment of townships
- 6) Establishment of resorts
- 7) Any development on undeveloped land
- 8) Mining and quarrying activities
- 10) Construction of airports
- 11) Construction of dams
- 12) Construction of ports, harbours and marinas
- 13) Laying of pipelines
- 14) Construction of major sporting facilities
- 15) Flood control schemes, canals, aqueducts, river diversions
- 16) Any major landscaping, excavation or land remodeling projects
- 17) Construction of roads
- 18) Construction of railway lines
- 19) Illegal demolition of structures over 50 years old
- 20) Agricultural activity

### **8.1.2 Secondary Sources of Impact on Archaeological Material**

These impacts can be as serious as those caused by large developments but are usually of more limited nature and occur on an *ad hoc* basis. They are generally associated with increase in human activity resulting from proximity of residential areas and recreational facilities. Primary impacts which lead to the increase in human use of an area will usually be accompanied by secondary impacts. Impact assessments must also consider these additional factors resulting from development activity. *The ad hoc* nature of the impact makes it difficult to control beyond educating the public as to the sensitivity of archaeological resources. We have identified some of the secondary impacts on archaeological sites below:

- 1) Illegal collection of artefactual material
- 2) Indiscriminate use of off-road vehicles
- 3) *Ad-hoc* creation of dirt tracks or tracks for off-road vehicles
- 4) Establishment of informal parking areas
- 5) Establishment of Informal camp sites and picnic areas
- 6) Dumping
- 7) Unplanned footpaths
- 8) Erosion resulting from any of the above or any other source.

## **8.2 Current Heritage Management Mechanisms**

While mechanisms for impact assessment are prescribed by the Environmental legislation (IEM procedures), there are no legislated procedures in the present National Monuments Act beyond having to apply for a permit to excavate, remove or destroy heritage resources. The system that is presently in operation and described below, is one that has evolved over time.

### **8.2.1 Reactive Management**

Many heritage assessments or rescue excavations take place reactively because the archaeological potential of development is seldom taken into account at the initial planning

stage. In many cases management can be characterised as knee-jerk responses, with mitigation procedures carried out as a result of the intervention of an authority or lobbying by interest groups and members of the public, or if a find of significance is exposed during the course of construction.

Whilst the reactive approach will always be a component of heritage resource management, it should not be seen as an acceptable mechanism for dealing with heritage issues. We realise that in some instances there will be no indication that important finds will be uncovered and the reactive approach therefore becomes unavoidable. This way of carrying out mitigation has many disadvantages for both the archaeologist and developer alike. One of the major disadvantages is in terms of delays to the development which can be extremely costly. In addition money will not have been budgeted for the purpose of mitigation and may mean that the archaeologist is forced to complete the task unsatisfactorily. Secondly, should any conservation worthy features be found, it may not be possible to preserve these for posterity.

### **8.2.2 Pro-active Management**

Because of the failings of reactive heritage management, both archaeologists and the National Monuments Council have attempted to implement a more pro-active system of assessment. The mechanisms described below are a synthesis of the experiences of a number of HRM organisations operating in South Africa. The process is by no means perfect but a good deal of successful mitigation has been accomplished using these procedures. The process consists of two phases of assessment, which we believe greatly lessens the need for the reactive approach to be adopted. These procedures are described below:

#### **8.2.2.1 Phase 1**

The heritage resource professional (archaeologist, architect, historian, palaeontologist) needs to be approached as early as possible in the planning phase of a development project. The project is initially assessed as to whether it is likely to impact heritage resources. This stage of assessment is usually based on the knowledge of particular locations and recently has taken place during the submission of plans to the National Monuments Council Regional Planning Committee, but may also occur through more informal enquiries. If it is considered that impacts will occur, a Phase 1 investigation will be recommended. This is a more detailed study which will usually involve fieldwork and/or interrogation of archival material and other documentary sources, depending on the age of the remains. These investigations are paid for by the prospective developer. If no impacts are identified during the Phase 1 study, recommendation would be that no further mitigatory work need take place. A copy of the recommendations is sent to the client and NMC for implementation.

Recommendations may include a number of actions. Firstly, if no impacts are identified, permission will be granted to proceed with development. If impacts are identified, the developer has the option to avoid the resource, or to mitigate the impact by removing it, or a sample of it. In some cases a resource may be of such a nature that it cannot be removed. Some replanning may be necessary under these circumstances. The latter process will usually be negotiated between the developer and the NMC.

### **8.2.2.2 Phase 2**

Recommendations are usually implemented during what is known as a Phase 2 programme and require further involvement of a heritage professional at the clients' cost. Permits usually need to be issued for material to be moved, sampled or documented. Provided that the mitigation is carried out satisfactorily, the developer will be given permission to proceed, and will be allowed to remove the balance of material by issue of a permit from the NMC. The results of a Phase 2 study may result in the erection of information boards and/or displays.

## **9. RECOMMENDATIONS**

### **9.1 Conservation of Sites on Undeveloped Land**

One of the most striking features of the De Beers owned properties is the excellent surface preservation of many archaeological sites. This preservation is as a result of these areas having been restricted to the public for many years. In other parts of South Africa sites which are as well preserved are scarce because they have been negatively affected by the actions of people. Even on parts of the coast where property development has not taken place, many sites have been damaged by illegal collection of artefactual material such as pottery and stone artefacts. Furthermore, recreational use of off-road vehicles has caused irreparable damage to sensitive dune areas and the sites that they contain. To minimise the destructive effects of human action in the future it is suggested that the following measures be applied:

- i) Archaeological sites are an irreplaceable aspect of the environment and should be protected as vigilantly as any endangered animal or plant species. It should become part of the company environmental policy that people be actively discouraged from collecting artefactual material or conducting excavations without a permit from the National Monuments Council.
- ii) Off-road vehicles should be restricted to existing roads and tracks which will minimise damage to archaeological material. This is particularly so in areas within 1km of the shoreline which contain large concentrations of sites.

### **9.2 Future Land Use Change**

When mining is no longer viable, use of De Beers owned properties will change in the future. New uses may involve changes to the infra-structure and development activities of various sorts. A National park is proposed between the Groen and Spoeg River mouths. All these factors will draw more people into the area and necessitate the construction of more roads and services.

- i) Development activities must be subjected to a Phase 1 heritage impact assessment and mitigation of possible destruction of archaeological material. This will satisfy the requirements of the existing National Monuments Act as well as the proposed new legislation.
- ii) Under the current legislation, buildings that are over 50 years old may not be demolished without a permit from the National Monuments Council. A study should be undertaken in order to assess and compile a list of residential and industrial buildings that may fall within this time period.



iii) The proposed future legislation will also protect industrial structures over 60 years old. These are not protected at the moment and may be demolished without a permit. Should demolition of such a structure be necessary, consideration must first be paid to the role that the structure has played in local history, the uniqueness of machinery contained within. If structures that are historically significant cannot be conserved, they must be methodically recorded (photographic and measurement) before demolition takes place. Any documentation relating to such structures should be archived.

iv) The proposed National Park should undertake to become a guardian of the archaeological material which will fall within its boundaries. With careful planning suitable archaeological sites could be incorporated as educational attractions within the park. Development of the road system and infrastructure should be done in conjunction with a heritage impact assessment.

### 9.3 Mining

Although there is some ambiguity concerning the current state of the legislation with respect to mining, experience has shown us that archaeological material has been destroyed by mining operations where these are close to the shore such as at Kleinsee and Koingnaas. While some sites are extremely important and merit careful study, this survey has shown us that the majority of surface archaeological sites have limited information potential on an individual basis but on a broader scale, each site and its location is part of a pre-colonial system of human habitation on the landscape and is therefore worthy of some measure of recording.

i) Provided that a range of archaeological sites are preserved in areas which are not going to be mined, this will to some extent mitigate the damage that mining does to sites elsewhere. However, there will always be the possibility that unique archaeological sites exist in proposed mining areas and these should nevertheless be identified. In order to execute effective conservation and mitigation procedures, mining should be treated like any other development activity. New mining areas should be subjected to a phase 1 heritage impact assessment well in advance of the start of any earthmoving. During the course of the Phase 1 assessment all archaeological sites will have to be identified and their surface characteristics recorded and certain kinds of archaeological material collected. Sites which are important will have to be sampled/excavated as a phase 2 programme.

Rehabilitation of mined areas, although positive for the environment, can pose a threat to otherwise undisturbed sites through earthmoving and related activity, particularly where the edges of deep excavations are collapsed and beveled. Areas of rehabilitation should also be subjected to Phase 1 investigations.

ii) There are some types of archaeological sites that are not going to be detected during the course of a phase 1 heritage assessment, although the possibility of their presence may be anticipated. Of particular concern are deeply buried ancient archaeological sites dating to the Middle or Early Stone Age. Experience has shown that these can be located in areas associated with previous Pleistocene marine transgressions. Especially sensitive are buried caves and gullies that would have acted as *foci* for ancient camp sites. Well preserved ESA and MSA sites are extremely rare in international terms which mean that the loss of such material is very serious. If such finds are located, earthmoving will need to be diverted and an archaeologist be immediately appointed to sample the material. Short of the mining operation employing a full-time archaeologist to monitor earthmoving in all active mining

areas, it is suggested that suitable personnel (such as an environmental officer or geologists) be designated the task of checking deep excavations for any archaeological deposits. It may be necessary for such a person to undertake some practical archaeological training so that he/she has enough knowledge to recognise such deposits and the materials associated with them. In addition, consideration should be given to the preparation of a handbook which would describe typical sites and their content. These could be made available to the mine geologists, foremen machine operators and other field personnel who may come across sites in the course of their duties.

iii) If the draft heritage legislation is passed, mining operations are going to have to undertake assessment and conservation of a wide range of heritage sites ranging from industrial structures, buildings, fossils and archaeological material. This means that mine environmental officers will have to become familiar with their working domains in these terms. Furthermore, mines will need to forge closer relationships with heritage consulting organisations as well as the compliance officers of the relevant branches of the state heritage bodies. If the draft legislation is passed in its present form, provision is made for heritage covenants which will enable the negotiation of an agreement with respect to the conservation of heritage resources where large numbers of sites occur on property under single ownership.

iv) Mines will have to allocate an annual budget to heritage resources management. This size of this would depend on the amount of new mining areas opened up during any one financial year. The budget would have to be enough to bring in a heritage management team to conduct the phase 1 assessments as well as cover the costs of any mitigation if this is required.

#### 9.4 Time and cost implications of Phase 1 and Phase 2 investigations.

Our Phase 1 estimate is based on the assumption that annually approximately 150 hectares of soil will be stripped for mining. Our Phase 2 estimate assumes that 6 sites would need mitigation as a result of this process. Costs subject to change.

##### Phase 1 (annual)

Archaeologists	(x2)	7days (including travel)	fieldwork
Assistants	(x2)	7days (including travel)	fieldwork
Archaeologists	(x1)	5days	reporting
TOTAL			<b><u>R15 634.00*</u></b>

##### Phase 2 (annual)

Archaeologists	(x2)	15days (including travel)	fieldwork
Archaeologists	(x1)	5days	laboratory work
Assistants	(x2)	15days (including travel)	fieldwork
Assistants	(x2)	15days	laboratory work
Skilled Labour	(x2)	15days	fieldwork
Skilled Labour	(x2)	15days	laboratory work
Archaeologists	(x2)	10days	reporting
TOTAL			<b><u>R47 089.00*</u></b>

\*Accommodation and subsistence (supplied by mine)/ Mine vehicles in security areas

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1. THE NATIONAL MONUMENTS ACT NO. 28 OF 1969
2. PAMPHLET: ARCHAEOLOGY FOR PLANNERS, DEVELOPERS  
AND LOCAL AUTHORITIES

1. PAMPHLET: NEW LEGISLATION FOR NATIONAL HERITAGE
2. AN EXPLANATORY OUTLINE OF THE DRAFT HERITAGE  
RESOURCES BILL
3. DRAFT HERITAGE RESOURCES BILL, 12 NOVEMBER 1996



1. EXTRACT FROM ICOMOS DOCUMENT: CONSERVATION POLICY FOR HERITAGE SITES IN SOUTH AFRICA
2. EXTRACT FROM ICOMOS DOCUMENT: CASE STUDIES OF CONSERVATION PRACTICE AT ARCHAEOLOGICAL AND PALAEONTOLOGICAL SITES