PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT
WESTERN MACASSAR DUNES
CAPE TOWN

Prepared for

ENVIRONMENTAL EVALUATION UNIT

By

Agency for Cultural Resource Management
P.O. Box 159
Riebeek West
7306
Ph/Fax: 022 461 2755
Cellular: 082 321 0172
E-mail: acrm@wcaccess.co.za

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Executive summary

The Environmental Evaluation Unit of the University of Cape Town, on behalf of the City of Cape Town, requested that the Agency for Cultural Resource Management (ACRM) conduct a Phase 1 Archaeological Impact Assessment (AIA) for a proposed eco-trails and environmental education (or multi-purpose) centre to be located on the Western Macassar Dunes, in the Western Cape Province.

The City of Cape Town has undertaken to take over the long term management of the site in co-operation with local stakeholders in a co-management arrangement.

The extent of the proposed project site(about 337 ha) falls within the requirements for an archaeological impact assessment as required by Section 38 of the South African Heritage Resources Act (No. 25 of 1999).

The aim of the study is to locate and map archaeological heritage remains that may be negatively impacted by the planning, construction and implementation of the proposed project, to assess the significance of the potential impacts and to propose measures to mitigate against the impacts.

ACRM has also been requested to explore opportunities and benefits (or positive impacts) arising out of the proposed project.

Dr John Pether has been appointed to undertake a palaeontological impact assessment of the proposed project.

Records from the Department of Archaeology Iziko:South African Museum indicate that Early Stone Age tools were recorded by amateur archaeologists in the 1950's from an area referred to as the `Cape Flats', but the precise location of these sites are unknown. The museum's collections data base, however, indicates that some of this material is currently housed at the Museum.

In addition to these early records, archaeologists in the late 1960's recorded the presence of isolated scatters of stone artefacts and shell midden remains along the beach between Strandfontein and Macassar. However, due to recreational and infrastructure development in the area, these sites most likely no longer exist.

A 2003 study describes Middle Stone Age (MSA) tools on old buried surfaces (or palaeosurfaces) at the Olympic Sand Mine on the north eastern boundary of the study area, while another study describes MSA tools embedded in the weathered limestone cliffs at Swartklip and Wolfgat.

Several Bushmen (San) burials were also uncovered during bulk earthworks and excavations for the Strandfontein Pavilion.

However, apart than one small piece of ostrich eggshell, and two or three possible limestone flakes, no archaeological heritage remains were located during the baseline archaeological study of the Western Macassar Dunes.

The paucity of archaeological sites alongside the long sandy beach in the study area appears to confirm a pre-colonial hunter-gatherer settlement pattern that is well represented along the South African coastline.

The Phase 1 Archaeological Impact Assessment of the Western Macassar Dunes has identified no significant impacts to pre-colonial archaeological material that will need to be mitigated prior to proposed development activities.

Pre-colonial human burials may, however, be uncovered or exposed during excavations and bulk earthworks for services for the proposed multi-purpose centre.

Despite the absence of `tangible' archaeological heritage remains in the study area, the proposed project does present exciting opportunities for integrating aspects of archaeological and cultural heritage, into the environmental education component of the project.

By creating points of interest, or a themed approach, the project presents an opportunity for developing an historical awareness which can `add value' and provide educational benefits to the proposed project.

For example, the South African coastline has an exceptional record of humankind's relationship with the sea. Its abundance of marine resources (fish, shellfish, and birds, terrestrial and marine fauna) has attracted people for tens of thousands of years, even up to this day. Evidence of this can be traced from Middle Stone Age times, some 200 000 years ago, through San and Khoekhoe habitation, to colonial and contemporary times.

Such a linking theme could track the history of the changing cultural and political landscape of the `Cape Flats'.

Suitable candidates for interpretive guide training can also be identified, thus creating employment opportunities and benefits for disadvantaged communities living nearby.

1. INTRODUCTION

1.1 Background and brief

The Environmental Evaluation Unit of the University of Cape Town, on behalf of the City of Cape Town, requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment (AIA) for a proposed eco-trails and environmental education (or multi-purpose) centre to be located on the Western Macassar Dunes, in the Western Cape Province.

The City of Cape Town has undertaken to take over the long term management of the site in co-operation with local stakeholders in a co-management arrangement.

The extent of the proposed project (about 337ha) falls within the requirements for an archaeological impact assessment as required by Section 38 of the South African Heritage Resources Act (No. 25 of 1999).

The aim of the AIA is to locate, identify and map any archaeological remains that may be negatively impacted by the planning and construction of the proposed development, and to propose measures to mitigate against the impact.

ACRM has also been requested to explore opportunities and benefits (or positive impacts) arising out of the proposed project.

Dr John Pether has been appointed to undertake a palaeontological impact assessment of the proposed project.

2. TERMS OF REFERENCE

The terms of reference for the archaeological study were:

- to determine whether there are any archaeological or historical remains or sites on the property that will be affected by the upgrading or roads, installation of services and the construction of the multi-purpose centre. If so, what is the significance of these sites and what mitigation measures need to be undertaken;

- to determine whether there are any archaeological or historical remains or sites on the property which will not be affected by construction activities but may be affected by possible activities on the site. Such activities include hiking (along predetermined trails) and environmental education activities (also largely restricted to predetermined trails or areas). The possibility of including a 4 x 4 vehicle trail on a section of the site is also being explored, although the route is still unknown. This information is required with regard to:

  a) whether there are any particular areas of features which need to be avoided by the proposed above activities, due to their sensitivity or vulnerability to damage;

  b) whether there are particular areas, features or remains which can be used as part of the environmental education programme or which may be of interest to tourists or visitors (for instruction on archaeological, historical and cultural aspects of the site);

c) whether any archaeological or historical remains/artefacts have ever been removed from the site, and if still intact and traceable, could be returned to the site for display or education purposes

- to identify any particular actions or steps that must be included in Environmental Management Programs (EMPs) to be compiled for both the construction and operation phases.

3. THE STUDY SITE

A locality map is illustrated in Figure 1 of the Draft Scoping Report.

An aerial photograph of the study area is illustrated in Figure 2 of the Draft Scoping Report.

The study site (Portion of Cape Farm 544 Drift Sands) is located on the edge of the Khayelitsha urban node in the City of Cape Town. It is bounded by the Alpha Sand Mine to the north, the Olympic Sand Mine to the east, the coastline to the south and Baaden Powel Drive (R310) to the west. The Macassar dune system is reportedly the highest and most extensive dune system in the Western Cape.

The proposed site is currently undeveloped although it is used for a variety of purposes. There is a disturbed area which has been used as a military testing range. A large portion of the site, particularly in the frontal dune system, has been severely damaged and degraded due to illegal activities of quad bikes, scramblers and off-road vehicles. These activities have also caused extensive damage on some of the steeper parabolic dune slopes set back from the coastline. Numerous small footpaths and tracks also occur over the dunes. The site is used by local people to gather wood and medicinal plants as well as to hunt and graze cattle. The coast is also very popular for angling and recreational activities and large numbers of vehicles access the beach from Monwabisi. Dumping of domestic refuse and building rubble is also very widespread.

The study site can be broadly divided into two parts:

- A primary, frontal dune system and coastal strip extending from Monwabisi Beach in the west to the Macassar Beach Resort in the east (Figures 4-6). Narrow bands of calcrete and calcareous sands occur in the vicinity of an artificial wetland area south of the retention pond above Baden Powel Drive. Some rocky wave cut platforms are visible at low tide.

- High, well vegetated, parabolic dunes and steep dune slopes forming an impressive backdrop to the coastal zone (Figures 7 & 8).

The study area and surrounding area is characterised by a range of land-use and competing interests. These include:

- Sand mining
- Rapid urban development
- Recreational interests such as off road vehicles, fishing, etc, and
- Grazing of cattle, harvesting of flora and hunting

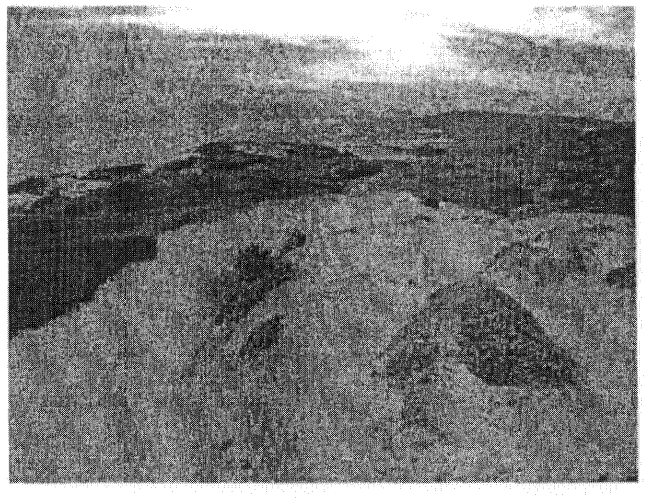

Figure 4. View of the frontal dune system facing west.

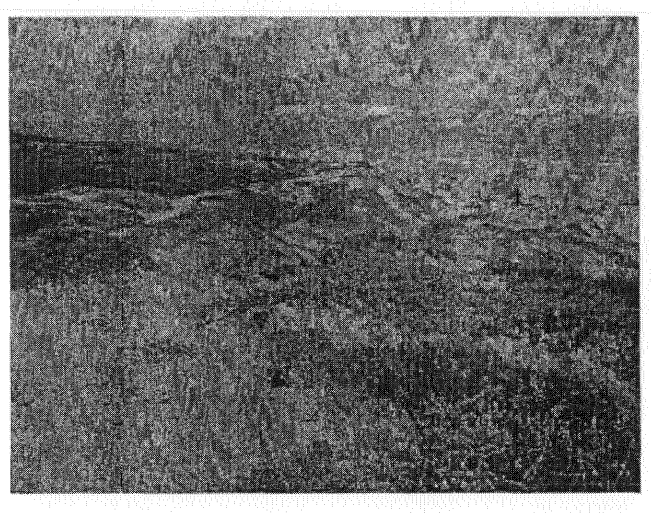

Figure 5. View of the frontal dune system facing east.

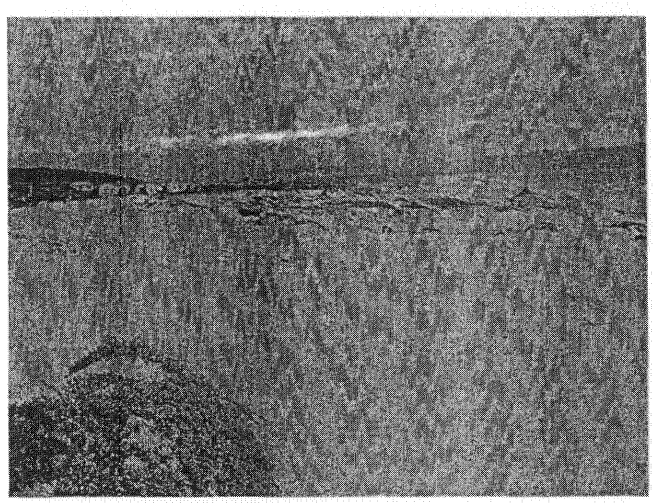

Figure 6.Macassar Beach Resort. Note the severely degraded dunes.

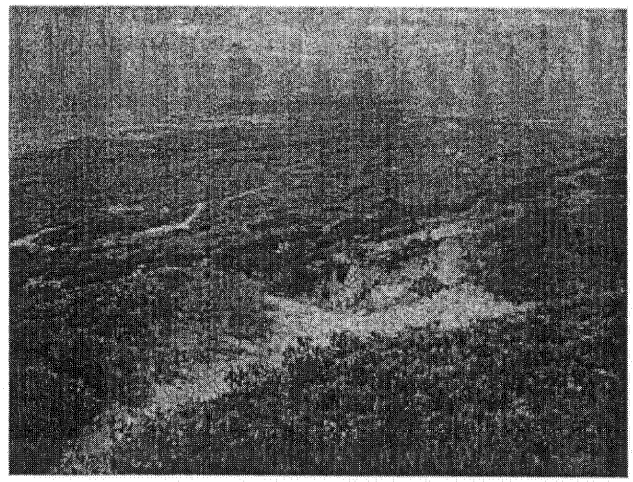

Figure 7. View of the site facing west. Khayelitsha is in the top right hand corner of the plate. Note the steep degraded dune slopes.

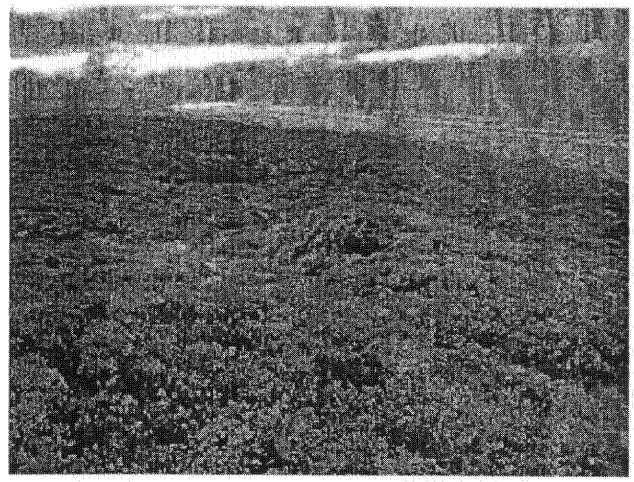

Figure 8. View of the site facing east.

4. APPROACH TO THE STUDY

4.1 Method of survey

The approach used in the archaeological study entailed a foot survey of the study site with a particular focus on the proposed project activities.

The specialist survey took place over two days, on the 18th and 19th January 2006.

A desktop study was also undertaken.

The archaeologist consulted with archaeologist Dr Graham Avery of Iziko: SA Museum, who has worked extensively in the False Bay area (see Avery 1980).

With permission, the archaeological and collections data base at Iziko: SA Museum was also examined[1].

5. CONSTRAINTS AND LIMITATIONS

A large portion of the study site, with particular reference to the inland portion and the high parabolic dunes, is heavily infested with alien vegetation and natural veld, resulting in low archaeological visibility.

6. LEGISLATIVE REQUIREMENTS

6.1 The National Heritage Resources Act (Act No. 25 of 1999)

`...any development or other activity which will change the character of a site exceeding 5 000m², or the rezoning or change of land use of a site exceeding 10 000 m², requires an archaeological impact assessment in terms of the National Heritage Resources Act (No. 25 of 1999).

6.1.1 Structures (Section 34 (1))

No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the South African Heritage Resources Agency (SAHRA), or Heritage Western Cape.

6.1.2 Archaeology (Section 35 (4))

No person may, without a permit issued by the SAHRA or Heritage Western Cape, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object.

6.1.3 Burial grounds and graves (Section 36 (3))

No person may, without a permit issued by SAHRA or Heritage Western Cape, destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

7. RESULTS OF THE DESK TOP STUDY

Records from the Department of Archaeology Iziko:South African Museum indicate that Early Stone Age[2] (ESA) tools were reported by amateur archaeologists in the 1950's from an area referred to as the `Cape Flats', but the precise location of these sites is unknown (Kaplan 1993).

The Museums collections data base also indicates that some of this material is currently housed at Iziko: South African Museum. These include a range of stone tools, bored stones, `spearheads' and fragments of pottery.

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[1] With thanks to Ms Sarah Wurtz, Department of Archaeology, Iziko: SA Museum
[2] A term referring to the period between 2 million and 200 000 years ago.

In the late 1960's archaeologists (for example Rudner 1968 and H. Deacon pers. comm. 1993), recorded the presence of isolated and ephemeral scatters of stone artefacts and shell middens (ancient rubbish dumps) on the beaches at Strandfontein, Swartklip and Macassar. However, due to recreational and infrastructure development such as road construction (Baaden Powel for example), and activities such as off road vehicles and illegal sand mining in the Strandfontein and Macassar area, these sites most likely no longer exist.

According to Mr Ken Young (pers. comm. 2002), a retired building contractor living in Riebeek West, several `Bushmen' burials were uncovered during excavations and bulk earthworks for the Strandfontein Pavilion, but these were illegally re-buried in soft sands in the surrounding area.

Dr Graham Avery (pers. comm. 2006), also reports that Middle Stone Age[3] (MSA) tools were found on old previously buried calcrete surfaces (or palaeosurfaces) at the Olympic Sand Mine in 2003, while earlier studies describe MSA tools embedded in the weathered limestone cliffs at Swartklip and Wolfgat on the False Bay coastline.

Fossil (or palaeontological) remains have been found on the Anglo Alpha limestone mine near Zandvliet (Halkett & Hart 1997), north east of the study area, while the significant fossil-bearing deposits on the False Bay coastline have also been widely reported (Pether 2005).

Several recently undertaken archaeological studies in the Khayelitsha area have yielded mixed results. Except for a very thin scatter of shellfish and a small piece of ostrich eggshell, no coherent archaeological heritage sites have been located in the surrounding area (Kaplan 2001, 2002, 2003, 2005a).

The results of the desk top study show that surface archaeological heritage remains have been recorded in the general study area, but that competing land uses are largely responsible for their destruction and damage.

8. FINDINGS

8.1 The frontal dunes

Despite an intensive foot survey, no coherent archaeological heritage sites were located in the frontal dune system between Monwabisi and Macassar Beach Resort. The system has been severely degraded by the use of off road vehicles and pedestrian traffic.

Only one small piece of weathered ostrich eggshell and several possible limestone flakes were found among a narrow band of weathered calcrete about 1.5 kms north of the Monwabisi pump station.

The paucity of archaeological sites along the sandy beach and behind the fore dunes in the study area, however, appears to confirm a pre-colonial settlement pattern that is fairly well represented along the South African coastline (Deacon & Deacon 2002; Kaplan 2005b, 1993).

[3] A term referring to the period between 200 000 and 20 000 years ago.

8.2 The parabolic dunes

No pre-colonial archaeological heritage remains were located among the parabolic dunes aligned along the northern boundary of the study site. The dunes in this area and the lower frontal slopes are heavily vegetated resulting in low archaeological visibility. Some of the steep dune slopes are also heavily degraded as a result of the use of off-road vehicles (refer to Figure 7).

The remains and ruins of several buildings related to a military shooting range occur on the lower slopes of the high dunes, but these `modern' buildings are not considered to be of any heritage value. A similar modern cement structure occurs on the beach midway between Monwabisi Beach and the Macassar Beach Resort.

8.3 Proposed environmental education centre and hiking trails

No archaeological heritage remains were located in the proposed sites for the environmental education centre (Figures 9 & 10), or in any of the proposed hiking trails (refer to Figure 3 in Draft Scoping Report). The proposed environmental education centre site, close to the entrance gate alongside Baaden Powel Drive, is severely degraded. Dumping is widespread, as is illegal sand mining.

Figure 9. View of area in vicinity of proposed environmental education centre.

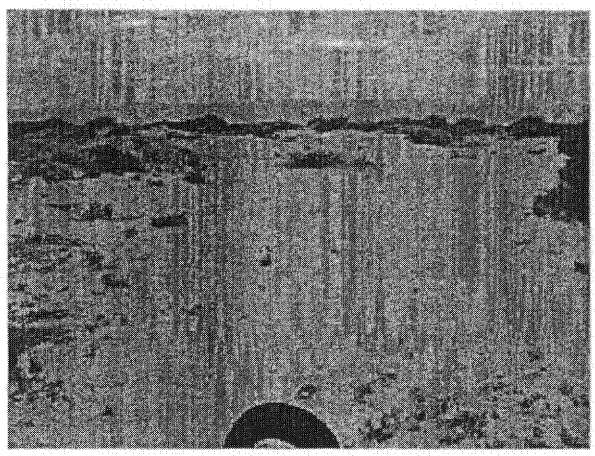

Figure 10. View of the proposed site for the environmental education centre.

9. IMPACT STATEMENT

The impact of the proposed Macassar Dunes Eco-Trail Project (i.e. construction of a multi-purpose centre and hiking trails) on archaeological heritage remains is likely to be very low.

The probability of locating any significant archaeological heritage remains during implementation of the project is also likely to be low.

Pre-colonial human burials may, however, be uncovered or exposed during excavations for bulk services centred round the proposed environmental education centre.

10. OPPORTUNITIES AND BENEFITS

Despite the absence of `tangible' archaeological heritage remains on the ground, the proposed Macassar Dune Eco-Trail Project presents exciting opportunities for integrating aspects of archaeological and cultural heritage into the environmental education component of the project.

By creating points of interest, or a themed approach, the project presents an opportunity for developing an historical awareness which can `add value' and provide valuable educational benefits to the proposed project.

For example, the South African coastline has an exceptional record of humankind's relationship with the sea. Its abundance of marine resources (fish, shellfish, and birds, terrestrial and marine fauna) has attracted people for tens of thousands of years, even up to this day. Evidence of this can be traced from Middle Stone Age times, some 200 000 years ago, through San and Khoekhoe habitation, to colonial and contemporary times.

Such a linking theme could track this history of the changing cultural and political landscape of the `Cape Flats' (see for example Bickford-Smith et al 1998; Boonzaier et al 2003; Smith 1993)

The SA Museum collections data base indicate that some archaeological material cultural objects such as stone tools, pottery sherds and fossil material (from the study area), is in storage at the museum. While permission to use this material for display purposes in an environmental education centre would have to be negotiated with the Museums Council, there is support from the Department of Archaeology at the Museum for such a proposal (Ms Sarah Wurtz pers. comm.).

Suitable candidates for interpretive guide training can also be identified, thus creating employment opportunities and benefits for disadvantaged communities living nearby.

11. EMP REQUIREMENTS

The Construction (and Operational) Environmental Management Plan (EMP) for the proposed Macassar Dunes Eco-Trails Project must detail reporting procedures to manage the discovery of any heritage remains during the Construction Phase of the proposed project. For example;

o Should an Environmental Control Officer (ECO) be appointed, he/she must be briefed by a professional archaeologist what to look out for during the Construction Phase of the project.

o Vegetation clearing operations, bulk earthworks and excavations for services must be monitored by the ECO.

o Should any shell midden material be exposed or uncovered during these activities, the archaeologist must be immediately informed. Depending on the importance of these remains, archaeological sampling may be required. The proponent (the City of Cape Town) is responsible for the cost of mitigating archaeological remains.

o Human burials or human burial remains uncovered or disturbed during bulk earthworks and excavations should not be removed or disturbed until inspected by a professional archaeologist.

o Should any human remains be exposed or uncovered during earthworks, these must immediately be reported to a professional archaeologist, and the South African Heritage Resources Agency (SAHRA)[4].

[4] Ms Mary Leslie at SAHRA can be contacted on 021-462 4502 or 082 733 2611

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