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**THE STATE OF ARCHAEOLOGICAL  
INFORMATION IN THE SALDANHA-  
VREDENBURG AREA AND ITS  
IMPLICATIONS FOR THE DECELERATION  
OF AN INDUSTRIAL DEVELOPMENT ZONE**

Prepared for

**WEST COAST INVESTMENT INITIATIVE**

By

Agency for Cultural Resource Management  
Specialists in Archaeological Studies & Heritage Management  
P.O. Box 159  
Riebeeck West  
7306  
Ph/Fax 022 4612755  
E-mail [gillker@iafrica.com](mailto:gillker@iafrica.com)  
Cellular 082 321 0172

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### Executive summary

The Saldanha Bay environs are remarkably endowed with archaeological and palaeontological (fossil) sites.

The peninsula is exceptionally rich in coastal shell middens and open sites. This is determined largely by its unique rocky shoreline formation, which was favoured by both hunter-gatherers and herders in the past as it offered greater opportunities for the exploitation of marine foods, while the local shales and granites provided vital nutrients for domestic stock.

The Alpha Saldanha Cement site, Varswater quarry, Saldanha Steel, and Elandsfontein sites respectively, have yielded Mid-Miocene (~ 11-12 million years), Mio-Pliocene (~ 5 million years) and Mid-Pleistocene (~ 4-500 000 years) fossils of great diversity and quantity. Several fossil hyena lairs have also provided glimpses of past Pleistocene (1.6 million - 200 000 years) faunas, including herbivores and carnivores, at Hoedjiespunt and Sea Harvest in Saldanha Bay, and Besans Klip in Vredenburg.

Early Stone Age (2 million - 200 000 years) and Middle Stone Age (200 000 - 20 000 years) butchery sites have been located at Elandsfontein and Geelbek in Langebaan. Middle Stone Age sites have been located on land already zoned for development in Saldanha Bay.

More recently, late Pleistocene (120 000 - 11 000 years) fossil footprints were uncovered at Kraalbaai on the western shores of the Langebaan Lagoon, among the oldest modern human footprints in the world. Sea Harvest is one of the oldest known sites to reveal human exploitation of coastal resources more than 100 000 years ago. Beside evidence of well preserved bone, ostrich eggshell, ochre and MSA stone implements, Hoedjiespunt also contains evidence of early modern humans about 125 000 years old.

The reasons for the abundance of fossil archaeological and palaeontological remains in the Saldanha environs is in part related to the highly calcareous character of the aeolianites (fossil dunes) and shallow marine sediments. Bones and implements are readily preserved by the rapid carbonate cementation of the strata in which they become entombed.

The archaeological and palaeontological sensitivity of the Saldanha Bay-Vredenburg area is thus considered to be extremely high.

Any revision of the current Structure Plan for the Saldanha Bay-Vredenburg environs must acknowledge the extremely important status of the cultural and palaeontological resources which occur in the area.

Terms of reference for an environmental impact assessment for a proposed Industrial Development Zone in the Saldanha-Vredenburg environs must therefore include an assessment of the archaeological, palaeoarchaeological and palaeontological resources in the area.

The archaeotourism potential of the Saldanha Bay-Vredenburg area has not been explored, yet the potential for drawing tourists to the area to appreciate the rich archaeological and cultural heritage of the region is considered to be extremely high. When well planned, archaeotourism has the potential to generate sustainable employment opportunities for local communities and business. Cultural or heritage tourism is also seen as the fastest growing sector in the global tourism industry. Archaeotourism in the Saldanha-Vredenburg area is seen in the context of the sustainable development of cultural resources, which is an integral part of environmental management.

## INTRODUCTION

### 1 Background and brief

The Agency for Cultural Resource Management (ACRM) has been requested by the West Coast Investment Initiative (WCII) to undertake a rapid information review of the current environmental resource base, and on the anticipated archaeological impacts of the proposed declaration of an Industrial Development Zone (IDZ) in the Saldanha Bay-Vredenburg area.

### 2 TERMS OF REFERENCE

The terms of reference for the archaeological study were:

1. to provide a summary of available archaeological information in the Saldanha-Vredenburg area;
2. to identify information requirements for an environmental impact assessment for the Saldanha-Vredenburg Structure Plan;
3. to identify information gaps; and
4. to provide terms of reference for an environmental assessment for the proposed Saldanha-Vredenburg IDZ.

ACRM has also been requested by the WCII to link the proposed IDZ study with the archaeotourism potential of the area.

### 3. AN OVERVIEW OF EXISTING ARCHAEOLOGICAL AND PALAEOLOGICAL INFORMATION IN THE SALDANHA-VREDENBURG AREA

The archaeological significance of the Saldanha-Vredenburg area has been well established, where more than 400 sites have been recorded and mapped (Kaplan 1993, 1995).

The region has been an important area of archaeological research since the early 1940s (Bateman 1945; Mabutt 1955). With its unique rocky shoreline formations, the area was favoured by pre-colonial people. Prior to 2000 years ago the southwestern Cape was inhabited by Later Stone Age<sup>1</sup> (LSA) 'Bushman' (San) hunter-gatherers, whose economy was based on the exploitation of wild animals, plant foods, and marine animals.

<sup>1</sup> A term referring to the last 20 000 years of pre-colonial history in southern Africa.

This scenario changed with the arrival of Khoi herding groups, who introduced domestic animals (sheep and cattle), and pottery into the Cape landscape. While hunter-gatherers still peopled the landscape, the region subsequently became a centre of the precolonial herding economy (Smith 1983, 1987), the local shales and granites providing vital nutrients for domestic stock that are not available elsewhere on the Cape Peninsula.

Research into the archaeology of the coastal zone has shown that there is a close correlation between the distribution of sites and the physical environment (Kaplan 1993). The rocky shoreline formations that exist in the Saldanha-Vredenburg area acted as foci that attracted Stone Age hunter-gatherers and herders, as they offered greater opportunities for the exploitation of marine foods, particularly shellfish.

Since the early 1990s, archaeological impact assessments have been undertaken in the Saldanha-Vredenburg area, developing primarily out of the need to fulfil Environmental Impact Assessment (EIA) requirements. Archaeological sites have been located during EIA studies for the Saldanha Steel Project (SSP) (Kaplan 1994, 1996), the Alpha Saldanha Cement Project (Kaplan 1997a), the Salamander Cove Project (Kaplan 1997b), the Dufenco Steel Project (Kaplan 1997c), and the proposed Public Access Road to the Port of Saldanha (Kaplan 1998). These projects are all located within a three kilometre radius of the town of Saldanha Bay, on land which has already been zoned for industry.

It is also well established that vertebrate fossils and archaeological occurrences in the Langebaan Limestone (calcareous) Formations, and associated deposits in the Saldanha Bay area, are extremely valuable sources of information on the sedimentary, chronological, palaeoenvironmental and palaeoecological context of the development of modern behaviour during the Middle Stone Age<sup>2</sup> (MSA), and perhaps even the Early Stone Age<sup>3</sup> (Avery 1997).

Referring to the proposed Alpha Saldanha Cement Project, Avery (1997:1) has argued that excavation of any kind in establishing infrastructure in the Langebaan Limestone and associated deposits, will "potentially impact negatively on Pleistocene archaeological remains".

Middle Pleistocene archaeological occurrences and the recovery of human remains from hyena lairs in the Langebaan Limestone deposits at Hoedjiespunt (Berger & Parkinson 1995) and Sea Harvest (Grine & Klein 1993) in Saldanha Bay, have also provided some of the earliest evidence we have in the world for human exploitation of coastal resources (Volman 1978). This information will contribute significantly to evidence concerning the development of early modern human behaviour.

Archaeological impact assessments, as well as archaeological research, have also taken place in the Saldanha-Vredenburg area, outside of the currently zoned industrial land, but in areas which fall within the current Saldanha-Vredenburg Structure Plan (see for example Avery 1982, Avery et al 1993; Buchanan et al 1978; Hart & Halkett 1992a,

<sup>2</sup> A term referring to the period between 20 000 and 200 000 years ago.

<sup>3</sup> A term referring to the period between 2 million and 200 000 years ago.

1992b; 1994a, 1994b, 1994c, 1995a, 1995b, 1996, 1998; Parkington & Robertshaw 1978; Robertshaw 1977, 1979a, 1979b; Rudner 1968; Sadr et al 1992; Smith & Sadr 1991; Parkington & Poggenpoel 1987; Thackeray & Cronin 1975). Many more sites have been located in the region as a result of these studies.

The Saldanha Bay environs are also remarkably endowed with palaeontological (fossil) and palaeoarchaeological sites. The Varswater quarry near Langebaanweg has yielded Mio-Pliocene (~ 5 million years) fossils of great diversity and quantity (Hendey 1982). Earthworks at SSP also exposed rare and previously unknown crocodylian and other fossil remains from the Miocene period, from deposits underlying calcareous formations during excavations for descaling pits (Roberts 1997a). The younger Mid-Pleistocene (~ 4-500 000 years) Elandsfontein site near Hopefield, a hominid butchery site where Early and Middle Stone Age artefacts are found, is also associated with a large and diverse fossil fauna. The partial skull of 'Saldanha Man', probably an archaic form of *Homo sapiens*, was also discovered at this locality (Singer & Wymer 1968).

More recently, Late Pleistocene (120 000 - 11 000 years) fossil footprints were uncovered at Kraalbai on the western shores of the Langebaan Lagoon (Roberts 1996). Late tertiary fossil remains and MSA butchery sites have also been found in the inland dunes at Geelbek on the eastern shores of the Langebaan Lagoon. Several fossil hyena lairs have also provided glimpses of past Pleistocene (1.6 million - 200 000 years) faunas, including herbivores and carnivores, at Hoedjiespunt and Sea Harvest in Saldanha Bay, and Besaans Klip south of Vredenburg (Roberts 1997a). An EIA investigation for the proposed Alpha Saldanha Cement Project at Prospect Hill, Saldanha Bay, also revealed the presence of an unusual Mid-Miocene (~ 11-12 million years) fauna, including shell of a giant extinct ostrich-like bird (Roberts 1997b).

The reasons for the abundance of fossil archaeological and palaeontological remains in the Saldanha environs is in part related to the highly calcareous character of the aeolianites (fossil dunes) and shallow marine sediments. Bones and implements are readily preserved by the rapid carbonate cementation of the strata in which they become entombed (Roberts 1997a).

The archaeological and palaeontological sensitivity of the Saldanha Bay-Vredenburg area is thus considered to be extremely high.

#### **4. INFORMATION REQUIREMENTS FOR AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE SALDANHA BAY-VREDENBURG AREA**

Any revision of the current Structure Plan for the Saldanha Bay-Vredenburg environs must acknowledge the extremely important status of the cultural and palaeontological resources which occur in the area.

Terms of reference for an environmental impact assessment for a proposed IDZ in the Saldanha-Vredenburg environs must therefore include an assessment of the archaeological, palaeoarchaeological and palaeontological resources in the area.

## **5. INFORMATION GAPS IN THE CURRENT SALDANHA-VREDENBURG STRUCTURE PLAN**

The current Vredenburg-Saldanha Structure Plan (1990), under archaeological and palaeontological sites (pp114), refers only to the SAMANCOR fossil site at Langebaanweg, Hoedjieskop, and Jacobsbaai. These sites are illustrated on plan 4.037.10. The structure plan does not emphasise enough the archaeological and palaeontological sensitivity or significance of the region within the currently zoned industrial land, nor the high density of sites which occur along the coastline. No references are cited in the structure plan report.

## **6. LEGISLATION**

Archaeological and palaeontological sites, including human burial remains are protected under the National Monuments Act (Act No. 28 of 1969 as amended). It is an offence to disturb, remove or destroy from its original site, or excavate any such site, without a permit from the National Monuments Council.

Human burials are also protected under the Human Tissues Act.

The Environment Conservation Act (Act No. 73 of 1989) makes provision for environmental impact assessments of activities identified and prohibited in terms of sections 21 and 22 respectively that may have an effect on the natural and 'man-made' environment. This includes archaeological sites.

The Minerals Act (Act No. 50 of 1991) and the Minerals Amendment Act (Act No. 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 Plan (EMP). The EMP must indicate how the natural and the 'man-made' environment will be protected and rehabilitated during and after mining.

As a principle, national environmental policy in the Draft National Environmental Management Bill (Government Gazette No. 1903, 1 July 1998) now recognises that "cultural heritage sites are respected and their disturbance is minimised and remedied where it cannot be altogether avoided".

## **7. PROPOSED TERMS OF REFERENCE FOR AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED IDZ**

The aim of any detailed archaeological and palaeontological impact assessment for the proposed Saldanha-Vredenburg IDZ is to locate, identify and map archaeological and palaeontological sites that may be impacted by the planning, construction and implementation of the proposed project, and to propose measures to mitigate against the impact.

Proposed terms of reference for a detailed archaeological and palaeontological study of the proposed IDZ would therefore include:

1. to provide a description of the archaeological and palaeontological history of the site and surrounding area;
2. to determine whether there are likely to be any archaeological and palaeontological sites of significance on the site;
3. to identify and map any sites of archaeological, cultural and palaeontological significance;
4. to assess the status and conservation significance of any impacts resulting from the proposed development; and
5. to identify mitigatory measures to protect and maintain any valuable archaeological and palaeontological sites that may exist.

## **8. ARCHAEOLOGY POTENTIAL IN THE SALDANHA-VREDENBURG AREA**

South Africa has a rich and diverse cultural heritage. The subcontinent's long history of human evolution and occupation dates back more than 2 million years, which is one of the longest surviving records in the world. The effective management of this heritage is vital to the development of a unifying national culture which reflects the aspirations, values and histories of all South Africans.

The archaeology potential of the Saldanha Bay-Vredenburg area has not been explored, yet the potential for drawing tourists to the area to appreciate the rich archaeological and cultural heritage of the region is extremely high. When well planned, archaeology has the potential to generate sustainable employment opportunities for local communities and business. Cultural or heritage tourism is also seen as the fastest growing sector in the global tourism industry. Archaeology in the Saldanha-Vredenburg area is seen in the context of the sustainable development of cultural resources, which is an integral part of environmental management.

The fossil park at the Varswater quarry near Langebaanweg is already open to limited numbers of visitors. Excavations by Hendy (1982) and more recently by Hart and Halkett (1998c), have provided evidence for the reconstruction of what life was like in the western Cape 5 million years ago. The park has the potential to contribute significantly to archaeology in the Saldanha-Vredenburg area, and at the same time stimulate the creation of direct and indirect employment opportunities as it develops in the future. Future proposed plans for the park include the development of a palaeoroute, linking the well-known fossil sites of Sterkfontein in Gauteng, and Florisbad in the Orange Free State, a possible theme park, craft centre, hiking, and mountain bike trails (Pippa Haarhof, pers. comm.).



The discovery of the 120 000 year old human footprints, and stone artefacts in fossil dunes at Kraalbaai on the southwestern shore of the Langebaan Lagoon, has established the Saldanha-Langebaan region as the cradle of modern humans. USA, and MSA butchery sites also occur in the inland dunes at Geelbek on the eastern shores of the Langebaan Lagoon.

Lesser known, but equally important fossil sites, occur at Hoedjiespunt and Sea Harvest in Saldanha Bay. These sites have both generated bone fragments from fossil-bearing limestone deposits of early modern humans dated to more than 125 000 years old. An even older (~ 400 000 years) partial skull of an archaic form of *Homo sapiens* was discovered at the hominid butchery and fossil site at Elandsfontein in Hopefield south-east of Saldanha.

It has also been shown that the Saldanha-Vredenburg peninsula is exceptionally rich in Later Stone Age coastal shell middens and open sites, determined largely by its unique rocky shoreline formation, which was favoured by both hunter-gatherers and herders in the past as it offered greater opportunities for the exploitation of marine foods.

A map showing some of the potential archaeotourism sites in the Saldanha-Vredenburg-Langebaan area is illustrated in Figure 1. Coastal shell middens and open sites occur in an almost continuous sequence along the coastline.

Three possible archaeotourism projects might therefore include:

### 1. Origins of Early Humans Tour

An Origins of Early Humans Tour would commence with a visit to the world famous 'Evel' footprint site at Kraalbaai in Churchhaven. The fossil prints are the oldest known modern human (*Homo sapien*) footprints in the world. The development of an archaeotourism site at Kraalbaai would, however, necessitate the footprints, or a reconstruction of the prints, being returned to their original site. The footprints are currently being exhibited at the South African Museum in Cape Town.

The tour would also visit USA sites, and MSA butchery sites in the inland dunes at Geelbek in the West Coast National Park. These inland dunes also contain fossil animal remains dating from the late tertiary period.

Logistics permitting, the proposed tour could also include the Mid-Pleistocene (~ 4-500 000 years) fossil site at Elandsfontein, located in an inland dune system between Hopefield and Langebaan, where the partial skull of 'Saldanha Man' was discovered in 1968. The site is an important hominid butchery site where Early and Middle Stone Age artefacts are found, associated with a large and diverse fossil fauna.

The Human Origins Tours would end at the fossil sites of Hoedjiespunt and Sea Harvest in the harbour at Saldanha Bay. Early human remains and MSA artefacts have been found at both sites. Sea Harvest is one of the oldest known sites to reveal human exploitation of coastal resources. Beside evidence of well preserved bone, ostrich eggshell, ochre and MSA stone implements, Hoedjiespunt also contains evidence of early modern humans about 125 000 years old.

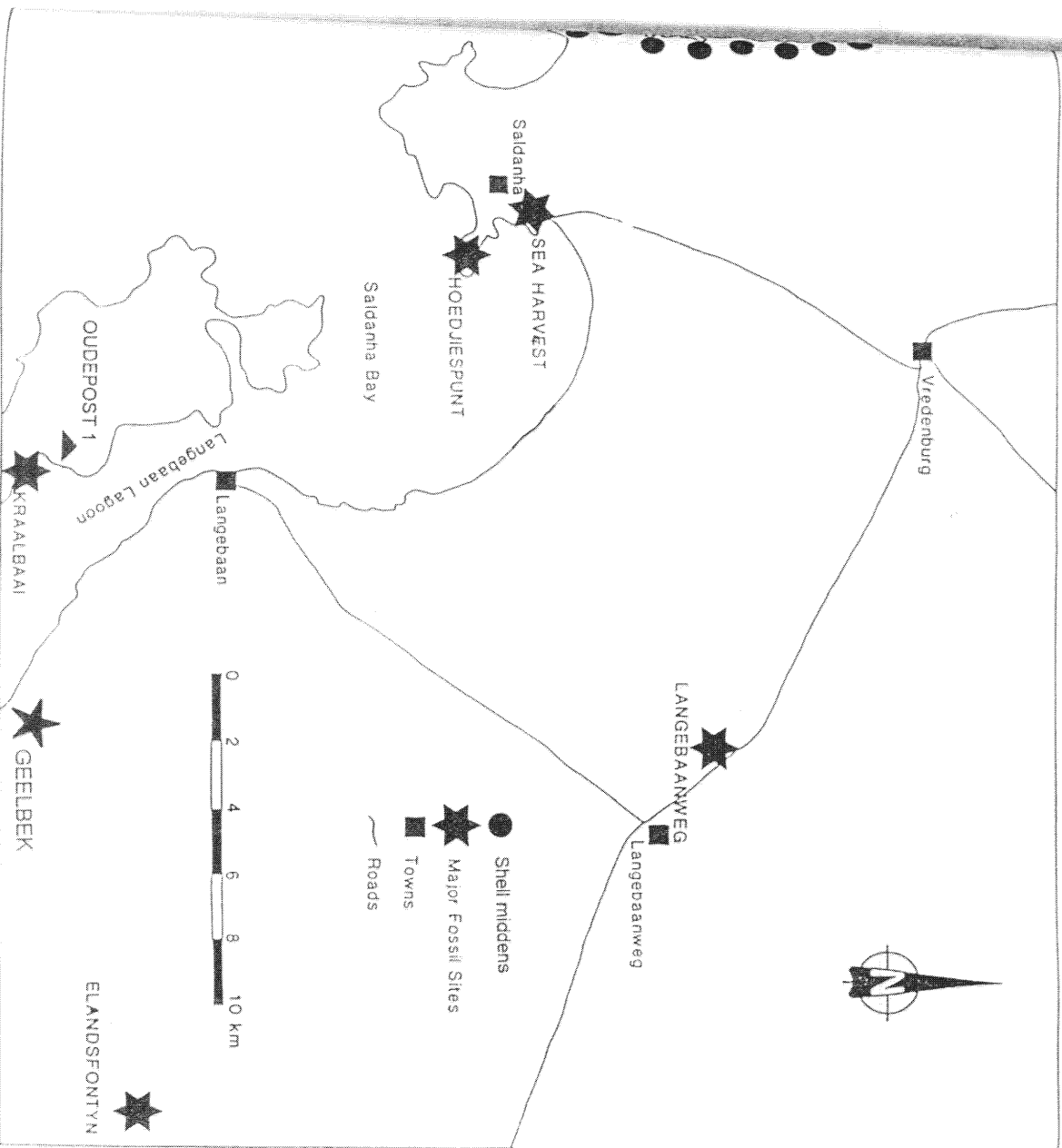


Figure 1. Map showing potential archaeotourism sites in the Saldanha Bay-Vredenburg area.

## 2. Archaeological Hiking Trail

Coastal shell middens and open sites which occur along the coast between Saldanha Bay and Vredenburg, could be included in an archaeological hiking trail, or form part of a guided tour of archaeological sites. Numerous well-preserved sites occur at Jacobsbaai, Maauritzbaai, Holbaai, Varwaterbaai, Bekbaai, Paternosterbaai, Stompneusbaai, Sandy Point, and St. Helena Bay, for example, a number which could be 'opened' to the public.

## 3. Historical Archaeological Tours

Archaeological excavations have taken place at Oudepost 1 (1669-1732), a Dutch East India Company (VOC) trading outpost on the southwestern shore of Langebaan Lagoon (Schrire et al 1993). The site was one of a string of outposts that farmed, fished, traded and defended the frontier of European penetration. Oudepost 1 was built by Company soldiers in 1669, with the initial purpose of warding off a French threat to claim Saldanha Bay. Once the threat had passed, the post continued to operate as a provisioning station for ships on the Europe-East Indies run, and also as a minor trade post in the heart of the Khoikhoi pastoralist-forager country. It was manned by a small garrison of 4-10 men until 1732, when it was relocated at a better water source a few kilometres away. Interpretation of the associated indigenous and colonial artefacts from excavations at Oudepost 1, have also confirmed the historical accounts of Dutch and Khoi interactions at the post (Schrire and Deacon 1989).

Oudepost could be included in a potential guided tour of archaeological and historical sites in the region.

Archaeotourism facilities would, for example, include the design and installation of exhibits and displays, interpretative centres, site museums, signage, and information boards, trails, boardwalks, and the production of literature such as booklets, pamphlets, brochures and postcards. The sale of packaged and labelled archaeological artefacts in craft shops could also be considered.

It is of the utmost importance that all interested and affected parties be consulted as to the viability and sustainability of the proposed archaeotourism projects. The above sites are all considered to be extremely sensitive, and have been given high conservation ratings. Some of the sites, such as Hoedjiespunt, Sea Harvest and Kraalbaai, are currently being researched by scientists. The development of the proposed archaeotourism projects are also subject to the implementation of an Archaeological and Heritage Management Plan (EHMP).

A list of interested and affected parties would include:

The South African Museum Departments of Human and Earth Sciences who are involved in long-term research projects at the Elandsfontein fossil site.

The Departments of Archaeology at the Universities of Cape Town and Witwatersrand are currently involved in a research programme at Hoedjiespunt and Sea Harvest.

The Department of Anthropology, Rutgers University (New Jersey), and Department of Archaeology, University of Cape Town, collaborated on the archaeological excavation programme at Oudepost I.

The Council for Geoscience, under the direction of Dr Dave Roberts, is currently involved in follow-up research at Kraalbaai.

The National Parks Board are the custodian of the Geelbek and Kraalbaai sites, which are located in the West Coast National Park.

The principle compliance agency, the National Monuments Council, would also need to be consulted in all matters pertaining to potential archaeotourism projects. The proposed archaeotourism projects are also subject to the approval of the National Monuments Council Plans Committee.

The Elandsfontein fossil site is owned by SAMANCOR who currently lease the site to the Departments of Earth and Human Sciences at the South African Museum in Cape Town.

The Oudepost Syndicate own the land on which the Oudepost I outpost is located.

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