REPORT OF A PHASE 1 ARCHAEOLOGICAL SURVEY OF ERF 115, ROOIELS, WESTERN CAPE

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EXECUTIVE SUMMARY

Erf 115 contains three areas of archaeological interest. Two of the areas are of little importance but the third warrants further study before damage or destruction. A limited sampling exercise is the recommendation for mitigation of the impact of the development.

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1 INTRODUCTION

1.1 Background and brief

In the late 1970s, students of the University of Cape Town searched the shoreline from Rooiels to Betty's Bay for archaeological sites and simultaneously excavated Rooiels Cave (Smith 1981). The excavation was an effort to salvage information from what deposit remained in the cave after two massive, but crude digs, conducted much earlier in the century. Unfortunately, there was little material remaining in place and the new excavation was limited in extent. This excavation did however provide information on the exploitation of marine resources by hunter-gatherers from some 6000 to 300 years ago. The students in the course of their survey discovered many coastal shell middens and these probably date to the last six thousand-years. A number of these sites are now destroyed or damaged by residential development. Beyond the work of the students, there is little formal archaeological knowledge of the Rooiels area and the accounts are at best anecdotal. Ongoing development pressure may mean that most traces of pre-colonial lives will disappear forever.

Tommy Brümmer, Town and Regional Planner commissioned Henshilwood, Yates and Winter cc to undertake a specialist archaeological study of ERF 115, Rooiels. After rezoning, the property will be developed with a single residence. The terms of reference for the study are the identification and assessment of archaeological resources; the identification and evaluation of the risks posed to the archaeological resources by development; and the recommendation of measures of mitigation of these risks.

1.2 Study Area

The study area is confined to the boundary of ERF 115 (Figure 1 & 2).

1.2.1 Geomorphological setting

The study area consists of unconsolidated aeolian littoral sand of the Witzand formation. The sand forms an undulating dune mound that is well vegetated except on two dune plumes formed by blowouts of the beach face of the dune mound. The adjacent intertidal, known as "The Point", is rocky and subject to heavy seasonal wave action.

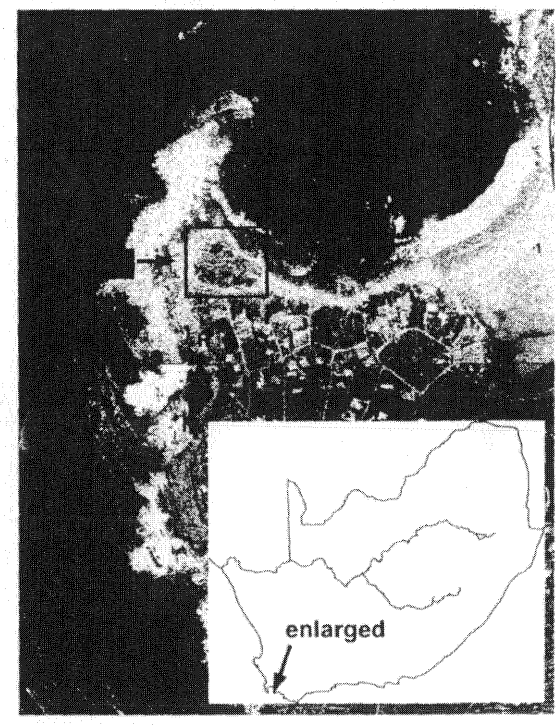

Figure 1. Location of study area.

The local bedrock of the Table Mountain Group has an uneven surface varying from below sea level to a maximum height of six metres onshore. In geological terms the dune mound overlying bedrock is a recent feature, having formed after a high stand of the sea dated around the South African coast to between 4000 to 3000 years ago (Yates et al 1986; Miller et al 1993; Marker & Miller 1993). We can predict from bedrock morphology that the 2 to 3 metre marine high stand penetrated some way inland of the current shoreline. The geomorphology of the study area constrains the age of any near surface archaeological materials to younger than 4000 years old.

2 SURVEY APPROACH

The area was surveyed on foot. The extent of the distribution of archaeological surface remains was mapped on a 1:500 scale contour map of the area provided by the client. A Global Positioning System (GPS) receiver located all significant finds. All noted materials were photographed. Small test soundings evaluated the depth and density of deposits to a maximum depth of one metre. No material was collected.

The approach assumed that a) any sites are likely to contain shell and thus be relatively visible and b) materials of significance would be relatively densely scattered and therefore easily detectable. These assumptions are justified by general archaeological knowledge of this and other areas. Ground visibility was moderate to poor but areas devoid of vegetation as well as eroded faces of the dune provide an adequate window. The method adopted thus is appropriate for the type of terrain that constitutes the study area.

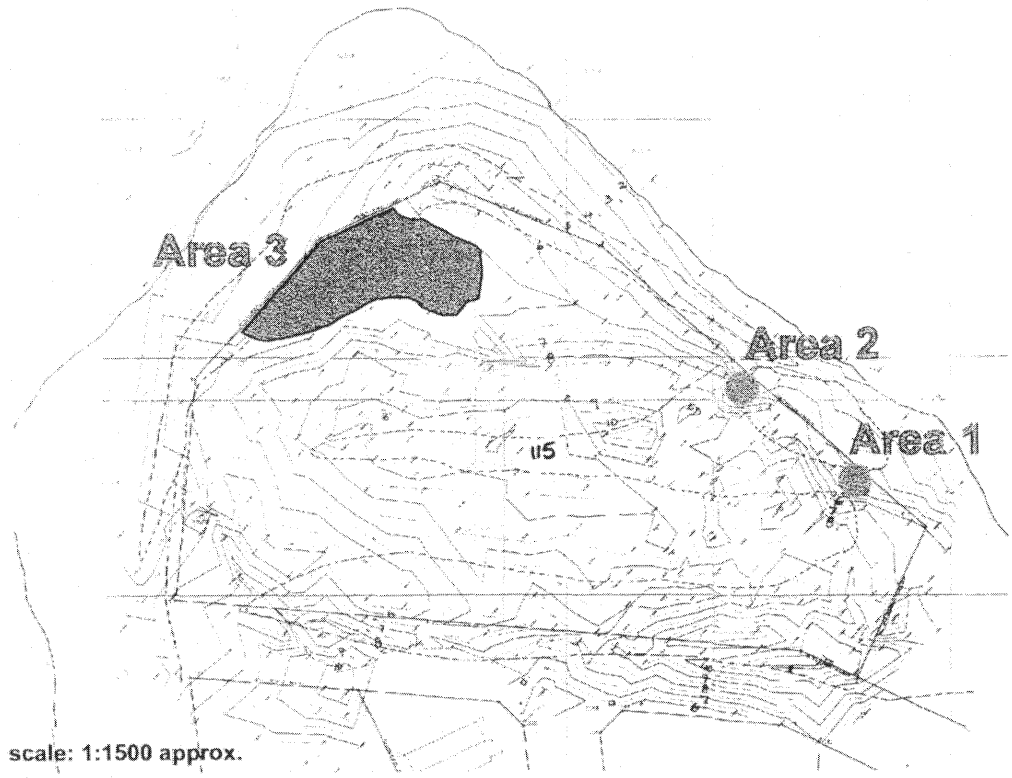

Figure 2. Location of archaeological areas.

3 DESCRIPTION OF THE AFFECTED ARCHAEOLOGICAL ENVIRONMENT

3.1 Summary of significance of study area.

Three archaeological areas are present (Figures 2 & 3). Evidence of human activity is thinly dispersed in Areas 1 and 2 but it cannot be separated from underlying relict shelly beach deposits. Areas 1 and 2 thus have limited archaeological significance. Area 3 is a widespread but thin shell midden stratified just below the surface. The site is poor in cultural items and bone but has importance as a repository of shellfish species exploited in the past for food.

Dune littoral areas have in the past yielded pre-colonial human skeletal material. There is no means to predict occurrences of this sort, but burials are an important consideration in the development of ERF 115.

Figure 3. View of Erf 115 with archaeological areas.

3.2 Area 1

Figure 4. The shell scatter and stone packed hearth in Area 1.

3.2.1 Description

Relict beach deposits form the exposed surface of a blow out of the shore face of the coastal dune. On the surface of the deflated sand lie numerous fragmented shells and water worn shell fragments and pebbles. A few quartzite flakes and one flaked quartzite cobble are scattered in amongst the shells. Close to the active face of the blow out is a dense patch of less fragmented shell and nearby a packed stone feature of about 0.5 metre diameter (Figure 4). Both shell patch and stone feature cover an area of approximately 3 by 3 metres. The sediment between the packed stones is well carbonised but no ash remains. The stone feature is clearly a hearth. The associated shell patch slopes upwards and enters the slumping dune face but does not penetrate very far. This patch of shell appears to contain more perlemoen (*Haliotis midae*) and less water worn shell and pebbles than the beach deposit. No artefacts occur near the stone feature besides one fragment of a glass tumbler. Shellfish species in the patch are *Haliotis midae* (perlemoen), *Turbo sp.* (alikreukel), *Oxystele sp.*, *Burnupena sp.* (whelk) and *Patella sp.* (limpet). No bone was seen. Shell and sand continues below the surface shell to at least 0.4 metres, but this appears to be beach deposit. Area 1 is located at 34° 17' 55.6" S and 18° 48' 56.3" E (GPS, PDOP=2.4).

Area 1 is very difficult to assess. The exposure is entirely due to wind erosion and probably occurred fairly recently. The position of the materials at the base of a substantial dune suggests they are quite old. There is a definite deposit of beach material, possibly some shell midden, certainly a few stone artefacts and one stone lined hearth.

The beach deposit must relate to a two to three metre relative high stand of the sea between 6000 to 4000 years ago documented around the southern African coast (Yates et al 1986; Miller et al 1993; Marker & Miller 1993). The few stone artefacts in the wider area demonstrate the presence of pre-colonial people close to the beach deposit. However, it is not possible to identify the shells near the hearth as a human refuse midden with certainty. The species represented in the shell patch associated with the stone hearth are typical of those exploited by hunter-gatherers in the past for food but are also those present in the beach material. Stone packed hearths do occur in some

shell middens along the western Cape coast (Avery 1974, 1976) but the example described here conceivably could be very recent and associated with the glass fragment. In any event, those features, possibly human derived and pre-colonial in age, are limited both in extent and content.

3.2.2 Statement of significance

Area 1 has little significance as a historical resource as it is not possible to separate human derived materials from natural.

3.3 Area 2

3.3.1 Description

Area 2 is a small, steeply sided blow-out located northwest of Area 1. The remains, scattered over 4 by 2 metres on the surface of the blow-out, consist entirely of shell and are lightly fragmented. Very little water worn shell or pebble is present. The shell layer clearly penetrates the side of the blow-out and is deeply buried beneath the surface of the dune. No stone artefacts or remains of animals were seen. The shellfish species comprise *Haliotis midae*, *Turbo sp.* and *Patella sp.* The location of Area 2 is 34° 17' 54.0" S and 18° 48' 54.8" E (GPS, PDOP=4.1).

Assessing Area 2 presents problems that are very similar to those for Area 1. The deposit conceivably is a scatter of shellfish discarded by people in the past but this is by no means certain.

3.3.2 Statement of significance

Area 2 has no cultural historical significance.

3.4 Area 3

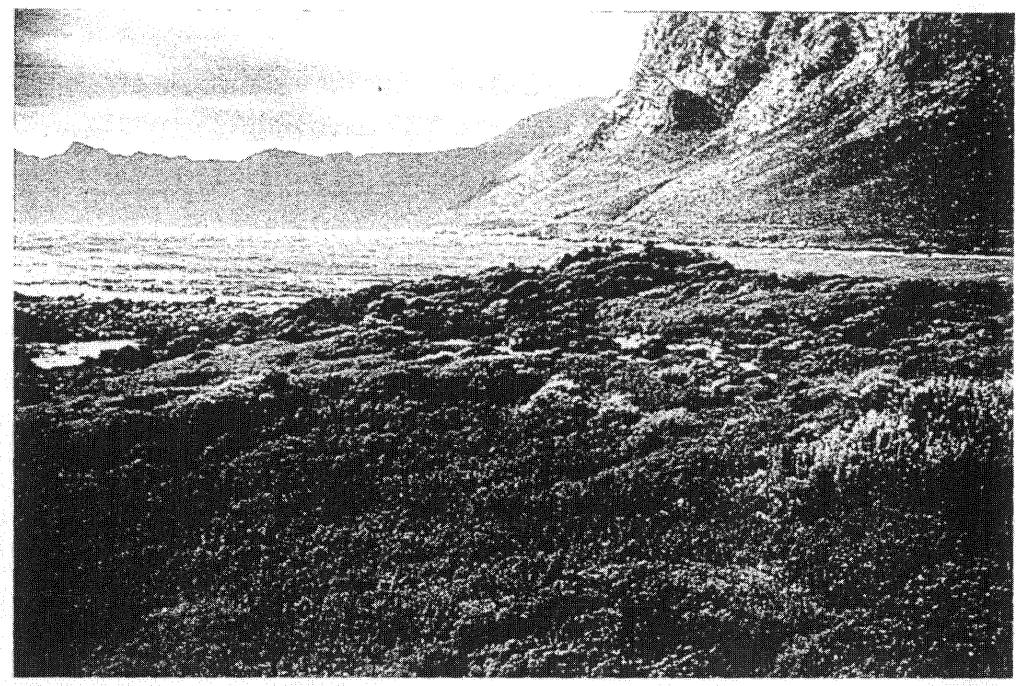

Figure 5. View of Area 3.

3.4.1 Description

Area 3 lies immediately south and southwest of a rock mass protruding through the surface of the coastal dune to form a local high point (Figure 5). The site is known in records at the South African Museum as 3418BD10. There is little erosion of the sediments in Area 3 and the surface is well covered by vegetation. Traces of the archaeological material occur on the surface (Figure 6) but the midden is buried mostly within the root zone. The upper and major horizon occurs between 0.15 and 0.3 metre deep with a thickness of 0.05 to 0.1 metre. Near the western margin of the midden approximately 0.4 metre of dune sand follows the shell horizon before reaching a second 0.1 metre thick shelly layer. No further shell is present to a depth of one metre. On the southwestern margin of the midden the upper shell layer appears to enter a linear dune mound. The site has minimum dimensions of 40 m E to W and 25 m N to S.

Area 3 is remarkably devoid of cultural material. The sum total seen was one quartzite hammer-stone and a flaked quartzite cobble. Bone is likewise scarce. The principal shellfish species are *Haliotis midae, Turbo sp., Patella sp.* and *Oxystele sp.*. The Patellidae consist of *P. argenvillei, P. granatina, P. oculus, P. cochlear, P. longicosta* and *P. barbara*. Water worn shell and pebble is scarce in amongst the fragmented shells of the upper layer but is more common in the lower horizon.

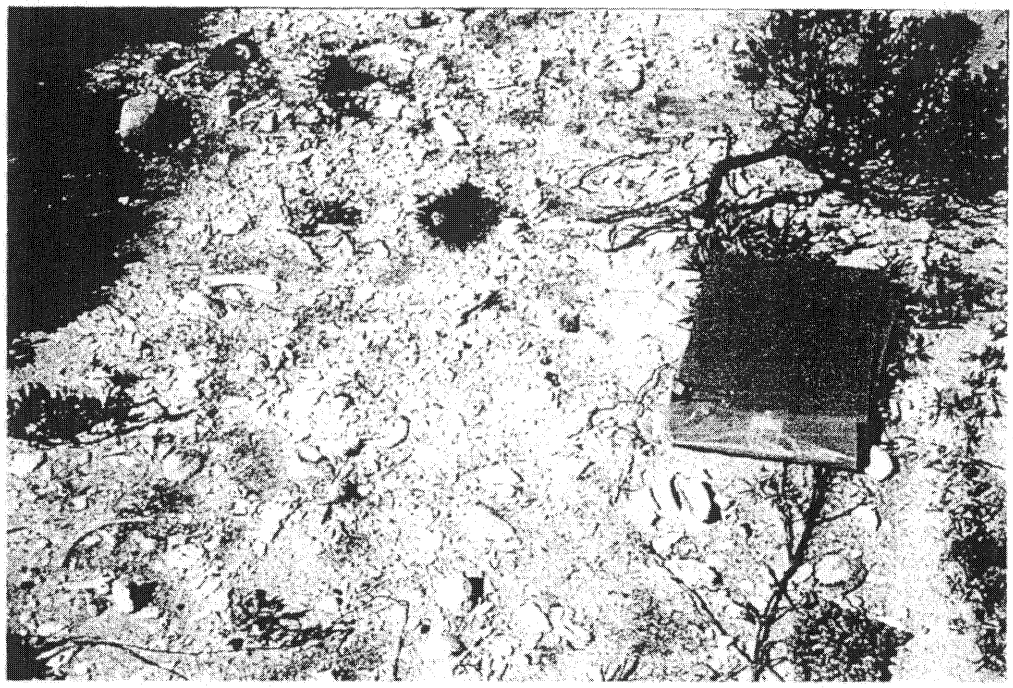

Figure 6. Surface shell of the Area 3 midden.

The upper shell layer represents refuse discarded by hunter-gatherers after cooking and extraction of the flesh from the shells. The paucity of artefactual material and the absence of bone implies that the site served principally as a processing station and not as a base camp. The age of the site is difficult to determine without radiocarbon dating. Ceramic technology entered southern Africa 2000 years ago and the absence of pottery sherds on the site might mean the site is older. The absence could equally be a function of the use of the area for shellfish processing alone.

3.4.2 Statement of significance

Area 3 is the most significant of the three identified localities. It is an intact shell midden in an understudied portion of the landscape. The impoverished cultural and non-marine faunal assemblages diminish the potential importance of such a locality but the shellfish species do represent an information resource on chronology, past dietary habits as well as palaeo-environments.

4 IDENTIFICATION OF SOURCES OF RISK

4.1 Construction phase

4.1.1 General

Any penetration of the sand surface may uncover pre-colonial human skeletal remains.

4.1.2 Area 1

Reclamation, sand levelling and fencing if undertaken.

4.1.3 Area 2

Reclamation, sand levelling and fencing if undertaken.

4.1.4 Area 3

Sand levelling, foundation digging, road construction and landscaping.

4.2 Habitation phase

4.2.1 Area 1

Unspecified and general interference.

4.2.2 Area 2

Unspecified and general interference.

4.2.3 Area 3

General interference, landscaping / gardening and further development of the property and residence.

5 IMPACT DESCRIPTION AND ASSESSMENT

5.1 General

Disturbance of human burials results in a loss of information regarding ritual observances and grave goods as well as minor but potentially interesting skeletal elements.

5.2 Area 1

Table 1.1: Impacts on archaeology without mitigation

Impact: *Loss of shell midden material of low archaeological importance*

Stage in project life-cycle	Extent of impact	Duration of impact	Intensity of impact	Probability of occurrence	Significance of impact	Status of impact	Confidence of predictions
Construction	Local	Permanent	**Low / medium**	Probable	**Low**	Negative	Low / medium
Habitation	Local	Permanent	**Low / medium**	Probable	**Low**	Negative	Low / medium

Attempts to reclaim the blow-out that forms Area 1 may well disturb archaeological materials by moving large quantities of sand. The erection of a boundary fence would offer similar risks. The significance of this impact is low.

5.3 Area 2

Table 1.2: Impacts on archaeology without mitigation

Impact: *Loss of shell midden material of low archaeological importance*

Stage in project life-cycle	Extent of impact	Duration of impact	Intensity of impact	Probability of occurrence	Significance of impact	Status of impact	Confidence of predictions
Construction	Local	Permanent	**Low / medium**	Probable	**Low**	Negative	Low / medium
Habitation	Local	Permanent	**Low / medium**	Probable	**Low**	Negative	Low / medium

Attempts to reclaim the blow out that forms Area 2 may well disturb archaeological materials by moving large quantities of sand. The erection of a boundary fence would offer similar risks. The significance of this impact is low.

5.4 Area 3

Table 1.3: Impacts on archaeology <u>without</u> mitigation

Impact: *Loss of a shell midden of <u>moderate</u> archaeological importance*

Stage in project life-cycle	Extent of impact	Duration of impact	Intensity of impact	Probability of occurrence	Significance of impact	Status of impact	Confidence of predictions
Construction	Local	Permanent	**High**	Highly probable	**Moderate**	Negative	High
Habitation	Local	Permanent	**High**	Highly probable	**Moderate**	Negative	High

Preparation of a building site will inevitably disturb and destroy the shell midden as will the construction of foundations and access roadways. Landscaping of the property either at the time of development or at a later point in time has substantial potential to damage the site. The impact of such actions is moderately significant.

6 RECOMMENDED ACTIONS OF MITIGATION

6.1 General

Obtaining the services of a professional archaeologist is a necessary provision in case of the uncovering human skeletal remains.

6.2 Area 1

No mitigation is necessary for Area 1.

6.3 Area 2

No mitigation is necessary for Area 2.

6.4 Area 3

Materials other than shell are simply too scarce to warrant a systematic and extensive excavation of the Area 3 midden. Nonetheless, adequate sampling of the shellfish content of the shell midden is essential before development takes place.

It is recommended that archaeologists retrieve statistically valid samples of shellfish from the sections of three (3) soundings dug by spade to the midden bottom. The placement of the soundings should adequately reflect the spread of the midden. A report on the species composition of the samples will complete the mitigation procedure.

Table 2.1: Impacts on archaeology with mitigation

Impact: *Loss of a shell midden of moderate archaeological importance but with adequately documented content*

Stage in project life-cycle	Extent of impact	Duration of impact	Intensity of impact	Probability of occurrence	Significance of impact	Status of impact	Confidence of predictions
Construction	Local	Permanent	**High**	Highly probable	**Low**	Negative	High
Habitation	Local	Permanent	**High**	Highly probable	**Low**	Negative	High

7 DISCUSSION

The National Monuments Act (Act No. 28 of 1969, as amended) specifically protects pre-colonial human skeletal remains. The discovery of such remains requires a permit from the National Monuments Council in order to document and remove them. Properly excavated human burials provide considerable information on diet, population health and ritual practices in the past. Sampling and analysis of the midden in Area 3 will provide information on the species available for food collection in the past as well as material that can be radiocarbon dated. This knowledge contributes both to our understanding of hunter-gatherer life and the environmental conditions at the time of collection. Information of this sort is presently extremely sparse for the Rooiels area.

- Sampling of midden (Area 3)
- Archaeological permit (Section 35) – section 3
- Radio Carbon dates
- Archaeological permit to destroy Arch site (Area 142)
- Low significance of the sites.

8 REFERENCES

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1 INTRODUCTION

1.1 Background and brief

In the late 1970s, students of the University of Cape Town searched the shoreline from Rooiels to Betty's Bay for archaeological sites and simultaneously excavated Rooiels Cave (Smith 1981). The excavation was an effort to salvage information from what deposit remained in the cave after two massive, but crude digs, conducted much earlier in the century. Unfortunately, there was little material remaining in place and the new excavation was limited in extent. This excavation did however provide information on the exploitation of marine resources by hunter-gatherers from some 6000 to 300 years ago. The students in the course of their survey discovered many coastal shell middens and these probably date to the last six thousand-years. A number of these sites are now destroyed or damaged by residential development. Beyond the work of the students, there is little formal archaeological knowledge of the Rooiels area and the accounts are at best anecdotal. Ongoing development pressure may mean that most traces of pre-colonial lives will disappear forever.

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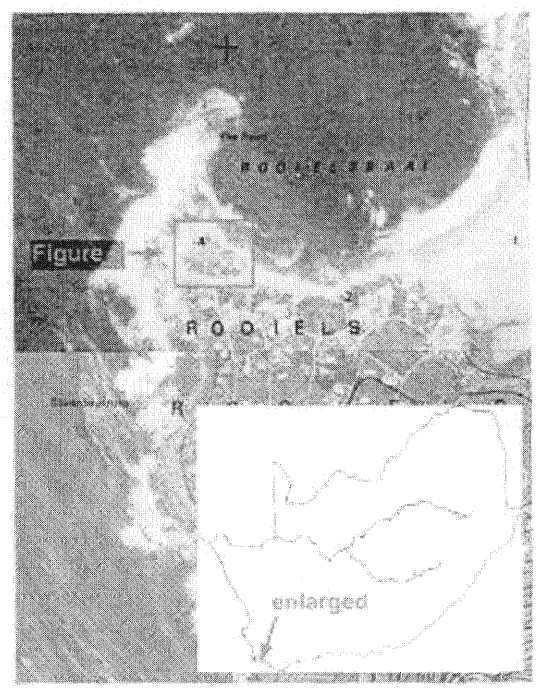

Figure 1. Location of study area.

2 SURVEY APPROACH

The area was surveyed on foot. The extent of the distribution of archaeological surface remains was mapped on a 1:500 scale contour map of the area provided by the client. A Global Positioning System (GPS) receiver located all significant finds. All noted materials were photographed. Small test soundings evaluated the depth and density of deposits to a maximum depth of one metre. No material was collected.

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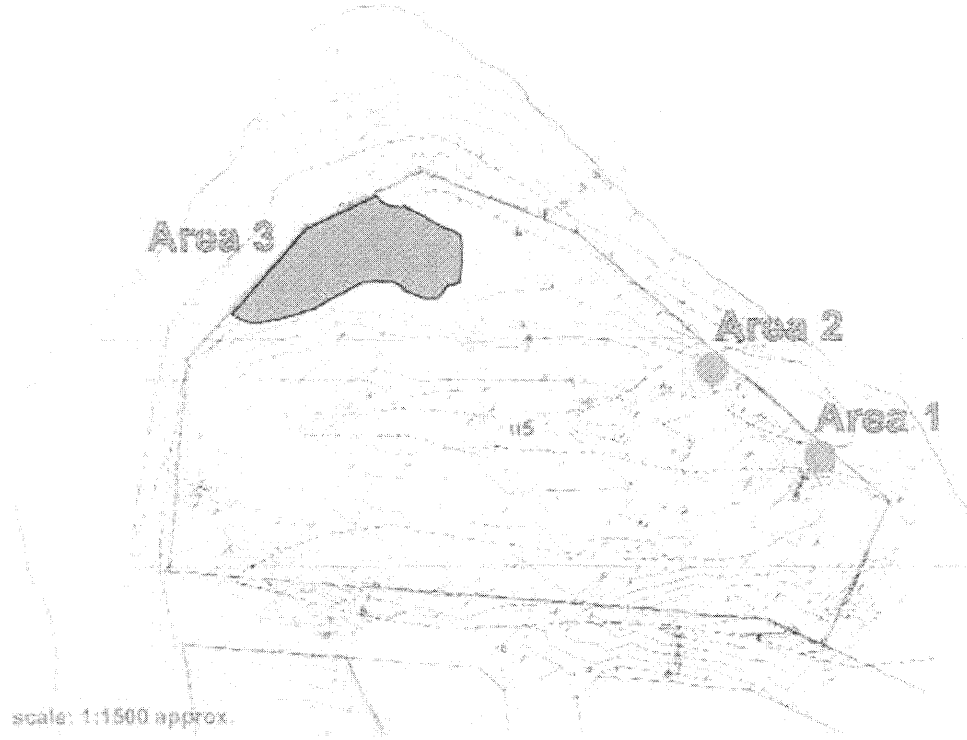

Figure 2. Location of archaeological areas.

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3.1 Summary of significance of study area.

Three archaeological areas are present (Figures 2 & 3). Evidence of human activity is thinly dispersed in Areas 1 and 2 but it cannot be separated from underlying relict shelly beach deposits. Areas 1 and 2 thus have limited archaeological significance. Area 3 is a widespread but thin shell midden stratified just below the surface. The site is poor in cultural items and bone but has importance as a repository of shellfish species exploited in the past for food.

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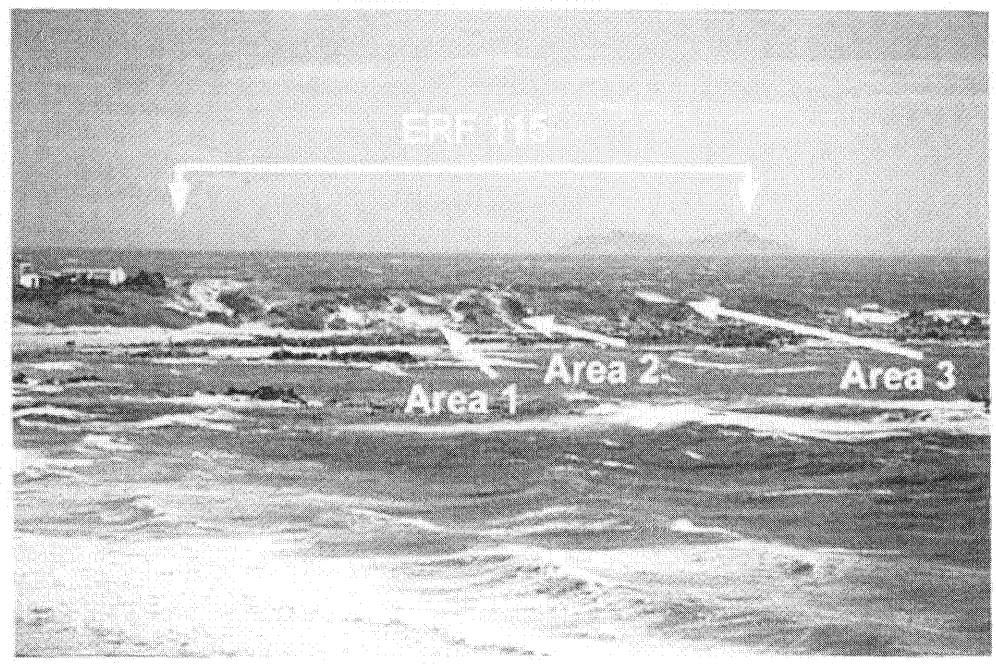

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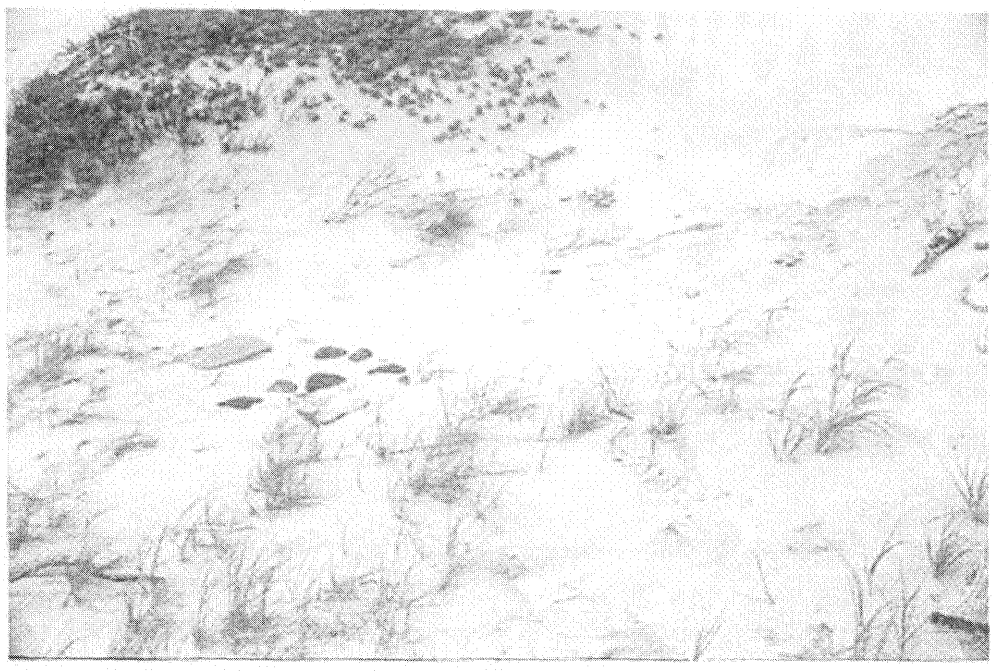

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Area 1 is very difficult to assess. The exposure is entirely due to wind erosion and probably occurred fairly recently. The position of the materials at the base of a substantial dune suggests they are quite old. There is a definite deposit of beach material, possibly some shell midden, certainly a few stone artefacts and one stone lined hearth.

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3.4 Area 3

Figure 5. View of Area 3.

3.4.1 Description

Area 3 lies immediately south and southwest of a rock mass protruding through the surface of the coastal dune to form a local high point (Figure 5). The site is known in records at the South African Museum as 3418BD10. There is little erosion of the sediments in Area 3 and the surface is well covered by vegetation. Traces of the archaeological material occur on the surface (Figure 6) but the midden is buried mostly within the root zone. The upper and major horizon occurs between 0.15 and 0.3 metre deep with a thickness of 0.05 to 0.1 metre. Near the western margin of the midden approximately 0.4 metre of dune sand follows the shell horizon before reaching a second 0.1 metre thick shelly layer. No further shell is present to a depth of one metre. On the southwestern margin of the midden the upper shell layer appears to enter a linear dune mound. The site has minimum dimensions of 40 m E to W and 25 m N to S.

Area 3 is remarkably devoid of cultural material. The sum total seen was one quartzite hammer-stone and a flaked quartzite cobble. Bone is likewise scarce. The principal shellfish species are *Haliotis midae*, *Turbo sp.*, *Patella sp.* and *Oxystele sp.*. The Patellidae consist of *P. argenvillei*, *P. granatina*, *P. oculus*, *P. cochlear*, *P. longicosta* and *P. barbara*. Water worn shell and pebble is scarce in amongst the fragmented shells of the upper layer but is more common in the lower horizon.

Figure 6. Surface shell of the Area 3 midden.

The upper shell layer represents refuse discarded by hunter-gatherers after cooking and extraction of the flesh from the shells. The paucity of artefactual material and the absence of bone implies that the site served principally as a processing station and not as a base camp. The age of the site is difficult to determine without radiocarbon dating. Ceramic technology entered southern Africa 2000 years ago and the absence of pottery sherds on the site might mean the site is older. The absence could equally be a function of the use of the area for shellfish processing alone.

3.4.2 Statement of significance

Area 3 is the most significant of the three identified localities. It is an intact shell midden in an understudied portion of the landscape. The impoverished cultural and non-marine faunal assemblages diminish the potential importance of such a locality but the shellfish species do represent an information resource on chronology, past dietary habits as well as palaeo-environments.

4 IDENTIFICATION OF SOURCES OF RISK

4.1 Construction phase

4.1.1 General

Any penetration of the sand surface may uncover pre-colonial human skeletal remains.

4.1.2 Area 1

Reclamation, sand levelling and fencing if undertaken.

4.1.3 Area 2

Reclamation, sand levelling and fencing if undertaken.

4.1.4 Area 3

Sand levelling, foundation digging, road construction and landscaping.