

INTRODUCTION

The present archaeological survey of the Zulti North and TiSand mining lease areas began near the end of 1994. The survey program emerged from the recommendations by Whitelaw (1993) who motivated for a systematic archaeological survey to be undertaken ahead of dune mining activity. Both the initial and current survey form part of Richards Bay Mineral's Integrated Environmental Management Program for dune mining. This report serves to consolidate the results of the archaeological survey undertaken by the ICRM during the course of 1994 and 1995.

A systematic archaeological survey of the Richards Bay area has not been undertaken for some time, apart from Hall's (1981) survey, the results from this survey contribute to our understanding of the Iron Age in KwaZulu-Natal. A regional study of an area such as Richards Bay has important implications for our understanding of small communities interacting in a larger social framework. Previous surveys and excavations have been undertaken in north-eastern KwaZulu-Natal. The first of these occurred in 1904 by Anderson, who excavated a shell midden near St. Lucia. Several years later Chubb and King (1932) excavated several shell middens along the coast. These middens contained both EIA and LIA pottery. Hall (1981) surveyed the Kingsa/Tojan Lease area as well as the hinterland and recorded several EIA and LIA settlements. More recently Maggs *et al* (1989) surveyed the eastern shores of St Lucia and recorded approximately 140 Iron Age sites ranging from shell middens to settlements. Further south of Richards Bay several Iron Age and Stone Age sites have been recorded and/or excavated (Anderson 1996; Anderson and Whitelaw 1996; Davies 1971; Maggs 1980a, 1982). In the interior Iron Age sites have been excavated in the Tugela River Valley (Maggs 1980b) and near the Drakensberg (Davies 1974). All of these excavated sites have yielded much information regarding the different Iron Age settlement patterns in KwaZulu-Natal. However, few of these studies have been able to study a small, well-defined area as is the case at Richards Bay. The Richards Bay survey includes the sampling of most sites and has yielded information regarding the socioeconomic changes in a specific area through time. The results of this survey are thus particularly important to our understanding of KwaZulu-Natal history.

The terms of reference for this project are to undertake an archaeological survey of the Zulti North and TiSand Lease area in conjunction with the KwaZulu Monuments Council (KMC) oral

history project. The survey aims to record all archaeological sites, undertake appropriate mitigation and write a report concerning the survey. While CRM work is not research orientated, the mass of information obtained necessitates a comprehensive analysis.

THE ENVIRONMENT

The area consists of a flat coastal plain interspersed with dune cordons, often greater than 150m in height. These dune cordons were formed during the Late Pleistocene as the sea retreated (Hobday and Orme 1974). This marine transgression resulted in several lakes being formed, often being estuarine, and the rivers were deflected so as to run parallel with the coastline. The KwaZulu-Natal coastal plains have been described by Moll (1976) as Coastal Dune Forest. Present day vegetation tends towards grasses along the flatter plains, although in the past they were probably Coastal Dune Forest. These changes in vegetation are probably a result of Iron Age farmers' slash-and-burn methods for clearing plots of land.

The soil tends to have a low nutrient status, although exceptions do exist. This is probably a result of the soil consisting of weathered marine deposits formed during the Cretaceous Period (King 1972). This is in contrast to the hinterland which is mainly formed on the Karoo formations.

METHODOLOGY

The archaeological survey entails a foot survey of areas affected by the mining process, including the mining ponds and their servitudes. In the initial surveys we realised that the dense forest vegetation resulted in poor archaeological visibility, since many sites were approximately 20 - 30cm below the surface. These initial surveys were conducted along fire breaks, dune slumps and roads, where the topsoil had been removed, thus making the sites visible. It soon became apparent that more sites were to be found beneath the soil of the coastal forest. The new strategy was to coordinate the surveys after bush-clearance had taken place, but before dune mining began. This interim period in the mining process allowed several sites to be exposed, yet causes minimal damage to the site itself.

Each site is recorded according to the standard Natal Museum Archaeology Department site record form. The Natal Museum is the regional data base for all known archaeological sites in KwaZulu-Natal. Each site has a site record form and sites are plotted on a 1:50 000 map. Included on this form is information regarding a site's significance and whether it requires reassessment. All observed artefacts from each site are recorded.

Sites are plotted by means of a Geographical Positioning System (GPS), and also on a 1:50 000 map in the field. The GPS is used since many landmarks in the mining area change, making accurate recordings problematic. The GPS has an approximately 5 - 10m error of deviation.

Each scatter of artefacts is usually regarded as a site. This allows me to create a finer resolution of pottery styles and thus reduces problems with multicomponent sites. All sites have been grouped according to low, medium and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts, especially pottery. Sites of medium significance have diagnostic artefacts and these are sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips and decorated sherds are sampled, while bone, stone and shell are mostly noted. Sampling usually occurs on most sites (see table 1). Sites of high significance are excavated.

Significance is generally determined by several factors. However, in this survey, a wider definition of significance is adopted since the aim of the survey is to gather as much information as possible from every site. This strategy allows for an analysis of every site in some detail, without resorting to excavation.

Significance is usually determined by the following factors:

- Is the site the only one of its kind so far recorded in the province or area?
- Does the site have any rare or unusual features?
- Is there good preservation of artefacts and is the site relatively undisturbed?
- Has the site the potential to answer any questions currently asked in the related research and/or literature?

Archaeological sites in KwaZulu-Natal usually occur in areas that are characterised by:

- close proximity of a water source;
- close proximity to the sea;
- sandstone outcrops;
- Sweetveld and Bushveld vegetation;
- areas with fertile soil conducive to the cultivation of crops;
- the top of hills;
- iron ore bodies

DESCRIPTION OF TERMINOLOGY

Archaeological sites are divided into three general periods: Stone Age, Iron Age and Historical. These classifications are used for convenience and do not reflect a social evolutionary trajectory of human development; rather, they refer to the artefacts found on the site.

Stone Age

The Stone Age is divided into three phases: Early Stone Age (ESA), Middle Stone Age (MSA) and Late Stone Age (LSA). In this report I use a further category when it is not possible to determine the relative age of a site, namely Indeterminate Stone Age (SA).

The ESA in southern Africa began approximately two million years ago and ended about 120 000 years ago. These sites are characterised by stone tools such as hand axes, cleavers and choppers. In KwaZulu-Natal they are often in secondary contexts, in which case they are only significant from a geological point of view. Hominid skeletal remains are rare, and so far none have been discovered in KwaZulu-Natal. These sites are found in open areas, and are ubiquitous in KwaZulu-Natal.

The MSA dates from 120 000 to 30 000 years ago. The main archaeological evidence from this time period consists of stone tools, although organic remains such as bone are occasionally found. The age of this period, as with the ESA, is often to the detriment of the preservation of organic materials, hence the predominance of stone tools. MSA sites occur in both rock shelters and as open sites, and tend to be found on hills in many areas of KwaZulu-Natal.

The LSA dates from 30 000 years ago to the end of the last century. This period is characterised by an increase in organic artefacts, yet stone tools still dominate the archaeological record. LSA sites tend to be located in rock shelters, although they do occur in the open.

Iron Age

The Iron Age refers to the period of settlement in southern Africa by agriculturists. These people spoke a Bantu language, herded cattle, sheep and goats, and cultivated crops such as sorghum, millet, legumes and various squashes. The Iron Age is divided into two main phases: Early Iron Age (EIA) and Late Iron Age (LIA). The main differences between these two periods is in the pottery styles, settlement patterns and architectural styles. Both phases are restricted to summer rainfall areas in southern Africa.

The EIA dates from 1 700 to 1 000 years ago. Settlements occur below the 1 000m contour line and in areas with more than 300mm of rainfall per annum. They have been found in major river valleys such as the Tugela River Valley, close to rivers and around coastal lakes. Settlements may be approximately twelve hectares in size, although they are often smaller (Maggs 1980, 1984a, 1984b). The pottery styles tend to show diachronic change; that is, there are stylistic similarities between sub-periods.

The LIA dates from 1 000 to 180 years ago. These sites are different to those of the EIA in their pottery styles and settlement patterns. Settlements are located in savannah and grassland areas and often on the upper slopes of hills. The introduction of maize in the 1700s resulted in a change in the form of several artefacts such as grindstones. There is also an introduction of foreign, or exotic, artefacts such as ceramics and glass beads from the Middle and Far East and Europe, possibly indicating a more extensive trade network than existed during the EIA.

The Historical period dates from approximately AD 1829 to fifty years ago in KwaZulu-Natal. These sites, in general, include those associated with both black and white agriculturists.

SMALL FINDS

This section describes the archaeological remains according to their classifications, and certain finds are discussed. Six main groups are analysed: smoking pipes; utilised stone; iron ore, slag and metal; bone; marine shell; and pottery.

Smoking Pipes

Several smoking pipes have been recorded, which date to the LIA or Historical periods. One pipe is made from soapstone, and the rest from clay. The soapstone pipe is tubular in shape and decorated on the outside with small rectangular protuberances. Residue is still present in this pipe. The clay pipes are undecorated, and roughly bulbous in shape. Three whole pipes have been located at Mananga and fragments occur near MPD. The pipes at Mananga are thicker and shorter than those at MPD, and may indicate differences in pipe styles through time or across geographical space. The clay pipes tend to be weathered and subsequently traces of residue have weathered.

I suspect that the residue in the soapstone pipe may be *Cannabis sativa* (*iintsango*), which would correlate with the oral histories and the tradition of elderly men smoking *iintsango*. Gas chromatography-mass spectrometry (GCMS) analysis may indicate the origin of the residue. However, more pipes need to be recorded before samples are sent for analysis.

Utilised Stone

This is a broad category including lower and upper grindstones, whetstones, palettes, small pebbles, hammer stones and stone tools.

Only three stone tools have been recorded in the mining area of MPD. Two of these date to the MSA, while the other may date to the LSA. The MSA tools are utilised flakes made on a shale, while the LSA tool is a core made on clear quartz. The near absence of Stone Age material in the mining area is interesting, since several Stone Age sites are located towards Mtunzini, Empangeni, Lake Chuba and northwards towards St Lucia. This absence is probably a result of raised sea levels during the MSA. The soft sands would have caused artefacts to filter down,

making them invisible on the surface. If Stone Age sites exist, they may be found below the Iron Age cultural horizons.

Both upper and lower grindstones have been recorded. EIA grindstones differ from the LIA and Historical grindstones, in that they have a narrow oblong groove along the centre of the stone. The latter grindstones tend to be dished-shaped with a large oval depression in the centre. Similarly the EAI and LIA and Historical upper grindstones differ. The EIA grindstones have several facets, while the latter are rounded. The latter grindstones are unlikely to fit into the groove of EIA lower grindstones. The differences in these artefacts are a result of different crops being cultivated. EIA people cultivated sorghum and millet, while LIA people also cultivated maize. Only LIA and Historical grindstones have been recorded.

Whetstones are made mostly on the coarse white beach sandstone, although a few beach pebbles have been used. They occur at all sites, but the majority are found at the LIA and Historical sites. They were probably used for sharpening metal artefacts.

Palettes is a general term I use for stones that are approximately 20cm long and made on beach pebbles. They show signs of utilisation in the form of being rubbed smooth on one or more sides and tend to be flat in shape. Their use is unknown.

Small pebbles are found at all sites. They are approximately 5cm long and 0.5cm to 1cm wide. There appears to be a correlation between sites with both EIA and LIA decorated pottery and these pebbles; however, no statistical test have yet been undertaken. Their precise use is unknown, although several fit inside the larger decorations of sherds.

Hammer stones are beach pebbles that have been used to break other pieces of stone or used as pounders or mortars. They have characteristic impact marks along the edges of the pebble. While these artefacts have been recorded at LIA and Historical sites, they were probably used during the EIA.

Iron ore, slag and metal

Iron ore is found more often at EIA sites. The ore is bog-iron, or ferruginised ore. There is a notable decrease of iron ore at LIA sites and Historical sites.

Slag occurs at all EIA sites. MPD5 has the highest concentration of slag and iron ore, and was probably an area of smelting and /or forging activity. The EIA sites tend to have the largest single pieces of slag, while those of a more recent age tend to have smaller pieces.

Only two metal artefacts have been recorded during the survey. The first is the remains of an axe located 300m north of MPD5. The second metal artefact is a hoe found by one of RBMs' staff. Its location is unknown. Both metal artefacts are probably recent, that is within the last 100 years, in origin due to the corrosive nature of the sea air that would destroy older pieces.

Bone

The most common animal species present is the domestic bovid. These are mostly the remains of adult and juvenile cattle, followed by sheep or goats. Tortoise bones, especially the plastrons, are the next most commonly occurring bone. While tortoises do occur in the area today, they are few in number. Other animal remains include, in descending order of abundance, canid (domestic?), wild felid, hippopotamus, dolphin and marine bird.

While a larger range of animals was eaten, poor preservation has made it difficult to speciate fragmentary bones. The rate of deterioration of organic remains along the dune cordon is fast and those sites that have organic remains probably date to the LIA or Historical period - more so the latter. The occurrence of bone at EIA sites is probably due to post-depositional intrusions.

Human skeletons have been recorded in the sand dunes. One skeleton was excavated at MPA10 by myself, while Len van Schalkwyk has located the remains of three humans at Mananga and/or MPB. It is our policy only to excavate burials that are threatened by mining activity, if over 50% of the skeleton should still remain, and if a grave is visible. Excavations of human burials are undertaken in agreement with the relevant Tribal Authorities (TA's). All excavated human remains will be returned to their location of re-interment once the dune has been rehabilitated. The skeletons are housed at the KMC during this interim period. We have been given permission

by the Tribal Authorities to undertake scientific analysis of these skeletons on the proviso that they are not further damaged.

The burial at MPA10 was situated near the top of a large sand dune. Most of the cranium was exposed above the sand and was highly fragmented. There is no feature to indicate a burial, nor any artefacts in direct association with the burial. However, there are several Late Iron Age sherds in the vicinity.

The body was on its side and flexed in a crouched (foetal) position. The cranium-vertebrae axis was orientated along an east-west axis, with the head pointing north. The cranium faced west, as did the hands and knees. The face was orientated towards the sea, and to the top of the dune. The feet faced south-south-east.

Many of the bones were extremely wet and fragile. The cranium was poorly preserved and very fragmented. Darker areas of soil, sometimes consolidated, were observed around the bones, especially the torso and were probably discoloured by decomposed body tissues. There was a very dark patch of soil around the stomach area which was sampled for stomach contents. Of special note is the fact that the sacrum, pelvis and several lumbar vertebrae were missing. None were visible along the slope of the dune.

A general assessment of skeleton:

Age: Elderly person (very few Harris Lines around bones, and the bones were very thin); all molars had fully erupted, and the cranial sutures had fused.

Sex: Cannot sex the skeleton, since there is no pelvis and the cranium is too fragmented;

Pathologies: Right tibia may have been broken, but the break had healed prior to death..

Size: Small in stature.

Marine shell

Several marine shell species have been recorded. These are, in decreasing order of abundance: *Perna perna* (brown mussel), Ostreidae spp. (*Ostrea ?algoensis* - Sowerby) (oyster), *Patella concolor* (limpet), *Bullia natalensis* (Krauss) (whelk), *Donax lubricus* (white mussel), and *Fissurellidaea* spp. (key-hole limpet), *Patella miniata sanguinans* (limpet) and *Thais capensis*

(whelk). The key-hole limpet was probably introduced with the mussel. Marine shell in these dune sites do not preserve well, and is found on the more recent LIA and Historical sites. However, marine shell is common on EIA shell middens along the coast. This suggests that the forest is more destructive.

Pottery

Many vessels have been sampled and include pots, bowls and lids. Pottery decorations are varied and form the main basis for classifying different phases of the Iron Age and Historical periods. This allows for several sites to be grouped together, even if separate sites do not initially appear to have the same stylistic decoration. It is easier to identify specific phases in the EIA sites than for the LIA and Historical periods. We intend to use the information from oral histories to construct a relative dating method for some of the later pottery styles. The figures are labelled according to their pottery group number and to the number in the text.

Group 1 (fig. 1)

1. Flat lip; band of horizontal hatching on tapering rim.
2. Round lip; four bands of horizontal hatching and a band of triangles on rim.
3. Round lip; three bands of horizontal hatching on rim.
4. Round lip; oblique hatching on an everted rim.
5. Flat lip; horizontal incision below lip; discontinuous horizontal rows of five hatching, and two vertical hatching on rim.
6. Bevelled lip; horizontal hatching on everted rim.
7. Oblique hatching on rim with two wide and shallow impressions on neck and a horizontal row of circular impressions below.
8. Flat lip with oblique hatching on an everted rim.
9. Bevelled lip with single horizontal incision on rim.
10. Spaced oblique hatching on shoulder.
11. Four bands of horizontal hatches on rim with triangular hatch below.
12. Bowl with bevelled lip and oblique incisions on rim.
13. Internally bevelled lip; everted rim with continuous rows of horizontal hatching and spaced 'cross' motif'.

14. Tapered lip; two rows of oblique hatching separated by a space on an everted rim.
15. Round lip with horizontal incision along rim.
16. Flat lip with horizontal incision on an everted rim.
17. Round rim; band of oblique hatches on rim with discontinuous band of horizontal hatches below.

These sherds are found at the following sites: MPD13a, MPD4, MPD5, MPD6 and MPC13.

Group 2 (fig. 2)

1. Everted rim with band of triangles on neck.
2. Opposed hatching on neck.
3. Round lip; chevron hatching on rim with four bands of horizontal hatching at the base.
4. Flat lip; band of opposed hatching on everted rim; spaced pendant motifs on upper shoulder with horizontal hatching and a band of hatched triangles on lower shoulder
5. Flat lip; opposed hatching on everted rim.
6. "Flat lip; cross-hatching on rim.
7. ?Round lip; chevron hatching on rim; band of alternate triangles on neck.
8. Alternate triangles or blocks and parallel lines.
9. Alternating blocks with flat lip.
10. Five bands of horizontal hatches with triangles below.
11. Round lip; everted rim with chevron hatches; double row of horizontal hatches on neck.
12. Concave bowl with round lip.
13. ?Round lip; everted rim; fine cross-hatching on neck.
14. Ceramic sculpture.
15. Round lip; everted rim with small oblique incisions.

These sherds are found at MPD5 and MPA10.

Group 3 (fig. 3)

1. ?Everted rim; four bands of alternating oblique hatching on neck.

This style is found at MPB7.

Group 4 (fig. 4)

1. Alternating bands of oblique hatching.

This sherd was found at MPA10

Group 5 (fig. 5)

1. Flat lip; fingernail impressions on rim.
2. Round notched lip; everted rim.
3. Flat lip; tapering rim.
4. Tapering lip; horizontal incision on base of rim.
5. Flat rim; horizontal and vertical rows of fingernail impressions on neck.
6. Round notched lip; everted rim.
7. Flat lip.
8. Flat notched lip.
9. Round lip; everted rim.
10. Round lip; horizontal incision at base of everted rim.
11. Round lip.
12. Everted rim with circular-square impressions on lip and rim.
13. Fingernail impressions.
14. Round-flat lip and rim.

These sherds are found at MPA10

Group 6 (fig. 6)

1. Horizontal rows (7+) of circular impressions intercepted by two concave rows of circular impressions.

2. Tapering lip; everted rim.
3. Flat lip; everted rim.
4. Round lip; two rows of horizontal hatching on rim.
5. Round lip; everted rim.
6. Flat lip.
7. Tapering lip with circular impression on lip.
8. ?Round lip; horizontal rows (5+) of circular impressions.
9. Round lip.
10. Round lip; oblique incision across rim.
11. Internally bevelled lip; brown burnish.
12. Horizontal rows (14+) of circular impressions.
13. Internally and externally bevelled lip.
14. Three discontinuous horizontal rows of circular impressions.
15. Flat rectangular notched lip; everted rim.
16. Round lip; horizontal row of circular impressions on everted rim.
17. Flat lip with oval notches; everted rim.

These styles are at MPA11, MPA17, MPA22, and MPD13a.

Group 7 (fig. 7)

1. ?Round lip; horizontal row of oval impressions on neck.
2. Round lip with square notching in centre; everted rim.
3. Oblique and vertical bands of shell-impressed notching.
4. Internally bevelled lip with circular notches; everted rim.
5. Tapered lip - ?bowl
6. Flat lip.
7. Round lip with circular notches on lip; everted rim.
8. Horizontal row of elongated notches on ?rim or ?neck; two horizontal incisions on ?neck with vertical bands of shell-impressed notching between the incisions; thin oblique hatching occur between each row of horizontal hatching.
9. Internally bevelled lip; everted rim.

10. Round lip; two horizontal rows of shell-impressed notching between oblique rows of shell-impressed notches.
11. Round lip; everted rim.
12. Concave body and neck with pierced lug.
13. Internally bevelled, externally round lip with U-shaped notches; everted rim; vertical row of shell-impressed notching on neck.
14. Two single horizontal incisions with two vertical rows of shell-impressed notches between the incisions.
15. Flat lip; tapering rim.
16. Round lip; two oblique depressions along rim.
17. Flat lip; everted rim.
18. Concave vessel; horizontal row of rectangular impressions near rim; six rows of continuous U-shaped notches on body
19. Several (5+) horizontal rows of rectangular impressions.
20. *iSumpa*
21. Everted rim with internally bevelled lip.
22. Everted rim with round lip.
23. Round lip with circular impressions at base of neck.
24. Bevelled flat lip with horizontal depressions below rim.
25. Round lip with everted rim.

These sherds are found at MPD 13, MPD16, Mananga 2, Mananga 3, MPA1 and MPA13b.

Group 8 (fig. 8)

1. Flat lip; everted rim.
2. Flat lip.
3. Horizontal row of circular impressions and two oblique hatchings.
4. Horizontal row of four hatchings.
5. *iSumpa* on body.
6. Flat lip; everted rim; horizontal row of rectangular impressions on neck.
7. Bevelled lip; everted rim.

8. Tapering lip with circular notches.
9. Round lip; everted rim with rectangular impressions on lip.
10. Tapering lip; everted rim.
11. Flat lip; indented rim.
12. Round lip with thin rectangular impressions on rim-lip; everted rim; horizontal row of U-shaped impressions on neck.
13. Bevelled lip; glossy red burnish.
14. Round lip; (internally) convex rim.

These styles are found at MPAC1, MPC7, MPC11 and MPX1.

Group 9a (fig . 9)

1. Tapered lip - ?bowl
2. Bevelled lip; two horizontal incisions on everted rim.
3. Round lip; everted rim; perforation on neck.
4. Flat lip.
5. Round lip with rectangular notches; everted rim.
6. Bevelled lip; everted rim.
7. Flat lip with two rows of rectangular notches.
8. Internal bevelled lip; everted rim.
9. Internal bevelled lip.
10. Bevelled lip with square notching.
11. Round lip; concave rim, neck and body - ?bowl
12. Flat rim with rectangular notches extending onto an everted rim.
13. Row of 5+ horizontal hatchings.
14. Tapered lip - ?bowl
15. Tapered lip; everted rim.
16. Round lip; everted rim.
17. Flat lip; everted rim.
18. Round lip; elongated notches on everted rim.
19. Tapering lip.

These sherds are found at MPA10, MPA13, MPA21, MPB6, MPB9 and MPD21.

Group 9b (fig. 10)

1. Flat lip with circular notches that extend to the everted rim.
2. Flat lip.
3. Internally bevelled lip; everted rim.
4. Bevelled flat lip with elongated oval notches; everted rim.
5. Square lip.
6. Round lip.
7. Round lip with elongated oval notches; everted rim.
8. Round lip; everted rim.
9. Tapered lip.
10. Round lip with large elongated oval notches; everted rim; lip and rim are "wavy".
11. Flat lip; everted rim.
12. Bevelled lip; everted rim.
13. Flat lip with elongated notches.
14. Round lip with circular notches; everted rim.
15. Bevelled lip with slanted elongated notches.
16. Bevelled lip with elongated notches.
17. Bevelled lip.
18. Bevelled lip with rectangular notches; everted rim.
19. Square lip with red burnish on inside of rim.
20. Tapered lip with inverted rim.

These styles are found at MPD11, MPDX5, MPD13a, MPA10, E1, E2.

Group 9c (fig. 11)

1. Bevelled lip; everted rim; inverted neck.
2. Tapered lip with occasional incisions; everted rim.

3. Bevelled lip; everted rim with indentation at its base.
4. Bevelled lip; everted rim.
5. Round lip with thin incisions; tapered rim.
6. Flat lip; tapered rim.
7. Round lip with circular notch; everted rim.

These styles are found at MPC60, MPB7.

Group 9d (fig. 12)

1. Round lip; everted rim.
2. Chevron decorations on ?rim or ?neck
3. Round lip with circular notches; everted rim.
4. Round lip with square notches; square notches on slightly everted rim.
5. *Intsumpa* on neck or body.
6. Round rim with circular notches; everted rim.
7. Round lip; with rectangular notches; everted rim; convex ?neck

Group 9e - Miscellaneous sherds (fig. 13)

These are single sherds without decorations, and are thus not easily placed in the relative sequence.

1. MPD19: Bevelled lip; everted rim.
2. MPD18: Flat lip.
3. MPC12: Bevelled lip; everted rim; perforation at base of rim.
4. MPB5: Bevelled lip; everted rim.
Round lip.
5. MF1: Tapered lip.
Tapered lip; everted rim.
6. MPD1: Bevelled lip; everted rim.
7. E1: Round lip; everted rim.

8. MPD22: Tapered lip - bowl.
9. MPA16: Round lip.
10. MPA24: Internally bevelled lip.

DISCUSSION

In the previous section I categorised sites according to groups based on stylistic similarities. These groups form the basis for my proposed relative chronology, for the surveyed sites, in the absence of radiometric dates. This chronology uses other excavated sites in KwaZulu-Natal to provide a time frame for the Zulti North/TiSand mineral lease area. I discuss settlement patterns in the RBM mining lease area after establishing this chronology. Changing settlement patterns are used to discuss resource use patterns, such as food sources and iron working, through time and place.

Pottery

The use of pottery sequences to date archaeological sites with similar pottery styles is an established procedure in Iron Age studies. However, these sequences are related to other sites that have been radiocarbon dated. In this way relative dates for the sequence are obtained. I use this process since, so far, no archaeological sites in the survey area have produced material that can be radiocarbon dated. In addition to using the established sequences, the more recent sites are dated by means of oral histories (*amasiko*), historical ethnographies, from the late nineteenth century, such as James Stuart and Bryant, and associated artefacts. I discuss groups according to the EIA, LIA and Historical phases. The EIA has been systematically studied and dated in KwaZulu-Natal, while the LIA and Historical periods have received less attention. EIA material is thus placed in the relative chronology with greater certainty, while the LIA and Historical sites are placed with less certainty. Groups with uncertain relative dates are noted.

The survey methodology adopted for this project was to record each scatter of artefacts as a separate site, unless scatters were directly associated. This allows for a tighter control over pottery

styles, and decreases the amount of intersite contamination. If two sites were possibly related, this was noted in the site record forms.

Early Iron Age

Group 1

This group is related to the Matola phase and dates to the third century AD. Matola sites have been excavated in various parts of KwaZulu-Natal and display similarity in style across geographical space (Anderson and Whitelaw 1996; Hall 1980; Maggs 1980). Matola sites tend to be large and consist of several households in a single settlement. These settlements are probably associated with cattle byres in the centre of the settlement. The pottery is characterised by decorated everted rims, often with a single horizontal line below the rim. Various motifs occur occasionally on the shoulder or body of the pot. Bowls are not normally decorated; however, one at MPD5 was decorated (fig. 1.12). This bowl may, however, also relate to the Msuluzi phase of the site.

Only three sites are related to the Matola phase in the survey area: MPD4, MPD5 and MPD6. Two sites (MPD4 and MPD6) should be considered as one site, since subsequent to their recording, we were informed that they were originally located in the flat basin between two dunes. This area was cleared by bulldozers and the soil dumped at two different locations (Dannie Du Plessis, pers. comm). The second site is conflated with a Msuluzi site, since the dune had slumped. Both sites were located near the base of the dunes. Several Matola sherds were found at other sites; however, these were mostly isolated incidents of two to three sherds and therefore did not constitute a site. I discuss the relevance of this below.

Group 2

This group is associated with the Msuluzi phase and dates from AD 650 to AD 750 in the Tugela River Valley (Maggs 1980). Msuluzi sites are settlements, often greater than eight hectares in extent, and settlements are spaced over a large area. Cattle byres have been located in the centre of these settlements.

The pottery decoration is distinct from the Matola pottery, although continuities in several motifs exist. Decoration occurs on the rim, neck, shoulder and body of the vessel, and is thus more varied than the Matola decorations.

One Msuluzi site has been recorded, at MPD, and is associated with smelting activity. Another Msuluzi site was recently found near MPC and is probably a settlement. While the former is mixed with Matola pottery, Msuluzi pottery dominates the assemblage. A ceramic bead, several lids, and a broken ?sculpture were recorded. Several sherds indicated that pottery was broken and used as a temper for new pots. While this practice has been recorded elsewhere in KwaZulu-Natal, it is the only instance, so far, in the mining lease area. This site is located near the base of the sand dune.

Both Msuluzi sites have similar pottery sherds and may indicate activity variance on the same dune cordon. Since smelting is associated with rituals and it is often spatially separated from the living area. These two sites may thus represent such a spatial dichotomy on the landscape. The MPC site has not yet been fully recorded as it is approximately 3m - 5m under sand - only parts of the site are eroding from the dune face. The systematic sampling or excavation of this site should yield valuable information on the two sites.

Several Msuluzi sherds were found at other sites; however, these were mostly isolated incidents of two to three sherds and therefore did not constitute a site.

Group 3

The pottery in this group is associated with the Ntshekane period, which dates to the tenth century AD. Few sites of this time period have been recorded and excavated (see Maggs and Michael 1976). As with the Msuluzi sites, settlements are large with a central cattle byre. Pottery decorations are related to Msuluzi decorations, but Ntshekane decoration occurs mainly on the neck of the vessel. Decorations also occur on the rim and body, but to a lesser degree.

Only one Ntshekane sherd has been recorded. The sherd was located near the base of a dune at MPB and was associated with Group 11 pottery. While this single occurrence does not constitute a site, its occurrence in the area is important.

Group 4

Group 4 pottery is associated with the Ndongondwane phase and dates to the ninth century AD. Several archaeological sites with Ndongondwane pottery have been excavated in KwaZulu-Natal (Maggs 1984; Loubser 1993; Van Schalkwyk 1994; Whitelaw 1994). Some of these sites are several hectares in extent and include a central cattle byre. The pottery decoration tends to occur on the neck, and is usually less complex than the decorations from the preceding phases.

As with the above mentioned Ntshekane sherd, only one Ndongondwane sherd has been recorded in the mining lease area. This sherd was located near the top on the dune at MPA.

Late Iron Age

Group 7

The pottery from group 7 is characterised by shell-impressed decorations, *iiSumpa* ('warts'), notched lip impressions and rectangular impressions on the shoulder or body of the vessel. Shell impressed decoration is characteristic of Tsonga-speaking potters from southern Maputaland (Len van Schalkwyk, pers. comm.) and southern Mozambique (Morais and Da Silva 1975). Similar decorations have been recorded at the excavated site of Enkwazini near St Lucia (Hall 1979, 1982). The shell-impressed pottery at Enkwazini has been radiocarbon dated, and calibrated to between AD 1650 and AD 1800.

Both historical ethnographies (Hamilton 1985) and Mbonambi and Sokhulu oral histories indicate that Tsonga-speaking people originally occupied this area. These sources indicate that the Mbonambi and Sokhulu chiefdoms had established themselves between Richards Bay and St Lucia by the late 1700s, and that Tsonga-speaking people were subsumed into the greater Mthethwa polity. Tsonga-speaking people live amongst the Mbonambi today, but “trace their lineage to an independent Tsonga *inkosi*” (Van Schalkwyk 1995:5)

The importance and value of collating data from the oral history project and archaeological survey is exemplified in this group of pottery. Mananga 2 and Mananga 3 were identified as being

Tsonga-related which allows me to place MPA1, MPA13b, MPD1 and MPD16 into a more precise time and cultural sequence.

It is of interest that much of the Tsonga pottery has circular to square notching on the rims of the pots - more so than in groups 5 and 6. These notches are more common in subsequent phases and may indicate some continuity in pottery styles with Group 9, in other words, the terminal Iron Age and Historical period.

Historical Period

Group 5

One site with group 5 pottery has been recorded in the dunes at MPA. Associated with this pottery is group 11 pottery and a human burial. The site is probably a multicomponent site with the rest of the site still under the vegetation. The group 5 pottery is distinct from the Historical pottery, or group 11, in that it has fingernail impressions.

Ceramics with fingernail impressions occur at Mgoduyanuka, in the Bergville district (Maggs 1982a). Mgoduyanuka dates to the late eighteenth to early nineteenth centuries. The ceramics were divided into U-shaped pots, bag-shaped pots, globular pots, open-mouthed bowls and U-shaped bowls (Maggs 1982a). Bag-shaped pots tend to have poorly defined necks, while the small bag-shaped pots have most of the decoration. Decorations are predominantly in the form of fingernail impressions in vertical rows. Less common decorations include comb stamping, finger pinching and cross hatching. Applied bosses were not found. The rims have mostly round lips, while pointed/tapered and flattened lips occur less frequently. The sherds from Mgoduyanuka are similar in style and decoration structure to the pottery from group 5.

The site has partially slumped from the top of the dune. When bush clearance has occurred this area will need to be resurveyed in order to sample or excavate the rest of the site.

Group 6

The pottery from this group is characterised by circular impression on the shoulder, neck or body of the pot - no rims were found and thus the precise position of the decoration is difficult to

establish. Similar decorations have been recorded at Mpambanyoni (Robey 1980). I subsume group 6 with group 5 for the moment.

Group 8

Group 8 pottery differs slightly from groups 5 and 6 in that the decoration is restricted to a horizontal row of circular to rectangular impressions below the rim. While lip notching occurs on group 8 sherds, they do not have the horizontal incisions on the neck. One sherd from Mananga 4 has a similar decoration; however, it occurs on the rim, not the shoulder or body. The occurrence of marine shell at this site suggests that it may be placed in the Historical period, and not the LIA, since the latter tends to have little marine shell present due to poor preservation. I tentatively place this group in the Historical period with group 9 pottery. However, it remains in a separate category until further data is obtained.

Group 9

The pottery from this group is associated with the Mbonambi and Sokhulu chiefdoms, dating these sites to within the last 200 years for this area. Forced government removals dates the sites prior to 1950. While oral histories indicate that people still collected marine resources after 1950, and that these forays occurred through the afforested areas, these sites have too many sherds to be the result of single and brief occupations. Mananga 4 dates to approximately 100 years ago. This indicates that at least some of the group 9 pottery dates from the late 1700s to the early 1900s.

I have divided this group into several sub-groups, based on slight variations in the pottery decorations. Although most of these decorations include rim notching, other features suggest that changes may be temporal as well.

Group 9 pottery is characterised by impressions on the lip, while rim, shoulder and body decorations are scarce, with the exception of two sherds at Mananga 4. If decorated sherds are observed at these sites, they tend to be EIA sherds. These EIA sherds are too few in number to constitute an archaeological site. This is in accordance with Bryant's (1947) observations that Zulu pots were primarily undecorated from the mid nineteenth century onwards.

Group 9a pottery is characterised by elongated notches on the lip that extend from the inner to outer lip, but mostly on the outer lip. Group 9b pottery has elongated notches on the lip and is in association with clay pipes. This is similar to group 9d that has elongated notches on the lip. However, in group 9d the notching extends over the whole lip. Group 9c pottery has small oblique incisions on the lip. Group 9d pottery consists of notched lips. Group 9e sites are characterised by small scatters of sherds with undecorated rims and lips, suggesting a more recent age.

In general, group 9 pottery may reflect either temporal or spatial variation within a pottery style. I have not presented these subgroups in a chronological order, and these divisions will probably change as more sites are assessed. In summary six main groups can be seen in the pottery styles:

<u>GENERAL AGE</u>	<u>GROUPS</u>	<u>DATE</u>
EIA	Group 1	AD 300 - AD 400
EIA	Group 2	AD 650 - AD 750
EIA	Group 3	9 th century
EIA	Group 4	9 th to 10 th century
LIA	Group 7	AD 650- AD 1800
Historical	Groups 5,6,8,9a-e	post AD 1830

Groups 5 and 6 may be subsumed in the larger group 9 pottery category.

Changing Settlement Patterns Through Time

The relative chronology that I have proposed above can be used to assess the changing use of the landscape through time. I view these settlement patterns on a micro- and macro-level. By micro-level I refer to the mining lease area, or surveyed areas. By macro-level I refer to KwaZulu-Natal and Transkei. Conclusions reached in this section can only be based on areas that have been surveyed. Thus, while sites probably exist to the west of the mining ponds, we have no data from this area. Figure 14 is a schematic representation of the mining ponds and archaeological sites according to their pottery groups.

The orientation of each site has been noted during the survey, in terms of facing the sea or lake. In general there is a tendency for sites to face Lake Nhlabane, and this may be related to prevailing wind and rain patterns.

There is a distinct clustering of EIA sites in the surveyed area - the Ntshekane and Ndongondwane sherds do not constitute an archaeological site. These sites occur only north of the Nhlabane River and between MPD and MPC. Moreover, both the Matola and Msuluzi sites occur in close proximity of each other. Two sites are located at the base of the dunes or in the dune basin, and both are associated with iron working activity. The location of these two sites and the associated metallurgy is significant. The nearest iron ore sources are south of the Nhlabane estuary, or occur as bog-iron (ferruginised iron) either at Lake Nhlabane or in the sand dunes. The latter iron source is of poor quality and one would expect that alternative sources would have been used. EIA sites have not been located south of the estuary in this survey, suggesting that either bog-iron was indeed utilised, or that the location of the smelting sites have specific social meaning, since smelting is normally associated with ritual activity. Both explanations are probable occurrences. The MPD Msuluzi site has yielded iron ore and slag, however, the MPC site has, so far, only yielded bog iron. This may indeed indicate the spatial dichotomy suggested previously. The MPC site is of great significance, since it is often difficult to differentiate between a smelting and a forging site, by the remains of slag and iron ore alone - both activities produce slag and ore. The MPC and MPD sites may indicate subtle differences between these two metallurgical activities.

As with the EIA sites, the LIA sites are clustered around specific dunes. These sites differ from the EIA sites in that they are located near the top of a dune, as opposed to the base. This change in settlement patterns, from the EIA to LIA, is evident elsewhere in KwaZulu-Natal - although the new MPC Msuluzi site may now question this methodological assumption. If group 6 pottery is indeed a LIA site, then it is a very small site. I tend to place it in association with the group 5 pottery and thus it is more likely to be historical in age. The only certain LIA phase is that of group 7, Tsonga, pottery. There appears to be a linear settlement pattern for the Tsonga-related sites. These sites are located at Mananga, MPA, MPC and MPD. These settlements appear to have large dunes between them, and spaced at regular intervals, suggesting small boundaries

between individual settlements or family clusters. I am uncertain whether this is a result of a real phenomenon or a result of the survey methodology that is concentrated in the mining path.

Historical sites follow a similar pattern of site location on the dunes. They are mostly on relatively flat areas at the top of the dune, or near the edge of the dune face. Group 5, 6 and 8 pottery is localised around MPC, while group 9 pottery is more evenly distributed. There is a slight pattering of group 9 sites on a south-north axis. Group 9d is only located at Mananga 4. Group 9a is located south of the Nhlabane estuary at MPA and MPB. Group 9c is located at MPB, MPA and MPC, but not further north. Group 9b pottery is found in the vicinity of MPA, MPC and MPD. This group has the widest distribution of all group 9 sites. Further assessment is not yet possible for the group 9 pottery due to the lack of a well defined chronology.

The macro-level of site analyses coincides with data from other sites and can possibly explain the lack of early to middle LIA sites in the area. There is a period of no or little occupation for approximately 800 years ago in the Richards Bay area. This spans most of the LIA. A reason for this may be found in analysing climatic factors that influence the location of agriculturist settlements, since herds and crops are dependent on specific environmental features.

Prins (1993) has studied a similar phenomenon in the Transkei, and I argue his results are complimentary to the coastal plains of KwaZulu-Natal, irrespective of differences in vegetation. Prins (1993) suggests that from AD 900 to AD 1200 there is an increase in global warming, and southern Africa experienced drought conditions, especially along the coastal plains. From AD 1500 the climate became more conducive for farming, since it was cooler and wetter. Prins' data from Transkei roughly correlates with the 'small Ice Age' experienced in Europe at AD 1400. If the Transkei data can be justifiably extrapolated to the Richards Bay area, then it provides an explanation why the LIA sites are not located in this area. Moreover, the radiocarbon date of AD 1650 from Enkwazini for the shell impressed ware, suggests a reoccupation of the coastal plains during this time period. Unfortunately only one Tsonga site has been excavated and radiometrically dated in northern KwaZulu-Natal. It would be interesting to find and date a

Tsonga site in the Richards Bay area, in an attempt to determine the initial period of Tsonga occupation¹.

Marine resources

Marine shell and bone are found only at the Tsonga and Historical sites. This is due to the poor preservation of organic remains in the dune cordon. However, EIA shell middens do exist along the coastal strip, and several have been recorded north and south of Richards Bay.

The most commonly exploited marine shell is the brown mussel (*Perna perna*), followed by oyster (*Ostrea spp.*). Hall (1982) noted a similar pattern for sites near St Lucia. Brown mussel was probably collected because it is an important protein source and it has a high biomass. It can thus support a large group of people. The mussel is located on rocky outcrops or marine shelves during low tides.

While these marine resources provide a high energy intake, overexploitation is a problem. If the sources are depleted, it tends to take several years for the mussel populations to establish themselves. This phenomenon of overexploitation can be observed along the Transkei coastline where communities of mussel have either disappeared or are rapidly dwindling. It is possible to determine overexploitation patterns of these mussels in archaeological sites by measuring the internal band width of the mussel. However, due to the fragmentary nature of the brown mussel in the dunes, most of the shells cannot be measured. Moreover, the chronology of the sites is not yet refined to such a degree to assess marine exploitation through time. My only observation is that the mussels tend to be small to medium in size in comparison to living specimens, although large ones do occur to a lesser extent.

In addition to the nutritional information obtainable from the marine shell, it is possible to determine changes in the sea temperatures through time, and thus serve as a relative dating method for archaeological sites. This is done by comparing oxygen isotopes (O^{16} and O^{18}) in specific marine shell species that have annual ring growths on their shells. If the oxygen isotopes

¹Subsequent to the end of the fieldwork for this report, three more Tsonga-related sites have been located. Two of these sites are undisturbed. I have started excavations at one such site. The other site consists of four to five houses of which three are in primary context. These will be excavated during the course of the survey. All have datable material.

are utilised they may be able to corroborate Prins' observations discussed above. Marine shell may also be used for radiocarbon dating purposes.

Metallurgy

Iron ore and slag occur at several sites and this is indicative of smelting or forging activities, or both. Two significant aspects have emerged from this survey relating to metallurgy: changing smelting and forging practices through time and the use of different, or the same, ore sources in the EIA and Historical period.

Precolonial ironworking in southern Africa included at least two technologically and socially distinct processes, smelting and forging. Smelting is the process where iron ore is crushed, heated to a high temperature in a reducing atmosphere and the iron extracted. The iron did not become molten: precolonial smelting was a semi-solid reduction process and the iron was extracted as a spongy bloom. The archaeological residue from a smelting site will most likely include the remnants of furnaces comprising blocks of baked and possibly vitrified mud, blowpipes or tuyeres, vitrified sand, iron ore and slag. Smelting traditionally was a secluded activity, shrouded in procreation symbolism and considered potentially dangerous to the well-being of society. Forging, the process by which tools were produced from the raw iron, had less symbolism attached to it and in many parts of southern Africa was a relatively public activity. Smelting and forging sites are very often difficult to distinguish from one another.

There is evidence for both smelting and forging occurring at some of the sites. One of the more interesting finds of this project is the archaeological site near Pond D, which we sampled, but have not yet excavated systematically. This site has yielded the earliest evidence of metallurgical activity in the Richards Bay area. We have recorded a further fourteen sites with ironworking debris - all dating to different times. Two of these sites date to the EIA, one to the 'Tsonga period', and the rest to the Historical period. The EIA sites are probably smelting and/or forging sites and have a high concentration of slag and ore. Both the slag and ore occur as large and small

conglomerates, and several kilograms have been sampled. The Tsonga-related sites have both slag and ore, but in significantly fewer quantities and weight. Historical sites tend to have only slag, and iron ore occurs as small pieces. The EIA smelting site has more slag and iron than all of the other sites combined, suggesting intensified metallurgy activity. This suggests that smelting occurred more frequently in the EIA than in the more recent sites. The oral histories pertaining to Sondabane, a well known iron worker in the Historical period, should be able to contextualise the differences observed in the archaeological sites.

The clear evidence for ancient metallurgy north of Richards Bay raises several interesting questions:

- What is the source of the iron ore?
- What tree species' were used to make charcoal?
- Is there variation in the spatial distribution of ironworking residues between the early and late periods and, if so, what is the reason for this variation?
- Was ironworking between Richards Bay and St Lucia in any way stylistically distinct from elsewhere in the province?

Given time, systematic survey and excavation, all four questions may be answered. However, to determine the source or sources of iron ore, as well as the preferred tree species for charcoal production, specialist analyses are required. Identification of the ore source exploited by precolonial smelters is currently of particular interest. If we are to achieve any resolution of the problem that goes beyond speculation, we need analyses of the trace elements, or chemical 'signatures', of samples of iron ore, slag and iron artefacts recovered from archaeological sites. These should be compared with the chemical 'signatures' of the various possible ore bodies in the vicinity of the archaeological sites. There are several possible sources of ore.

A project has been proposed to establish whether different iron ore sources were used through time. While this project is by no means complete, tentative conclusions may be drawn from the initial results. The geological entities along the coast between Richards Bay and Cape St Lucia comprise the Port Durnford, Berea and Bluff formations, and yellow redistributed sand. Further inland are extensive outcrops of the Karoo sequence, including the Vryheid and Pietermaritzburg

Shale formations. These two Karoo sequence formations were a source of iron ore for precolonial metal workers elsewhere in the province and, despite the distance involved, it is conceivable that this is where smelters living north of modern Richards Bay obtained their ore. There are several examples in southern Africa of ironworkers using ore mined at a considerable distance from the smelting area. However, this scenario appears inconsistent with Mbonambi oral history which suggests that they produced tools and weapons for the powerful Mthethwa who, in fact, lived closer to the Vryheid and Pietermaritzburg Shale formations.

A second possibility is that ironworkers were exploiting patches of consolidated, ferruginised sand that may occur in the Berea Formation. This seems unlikely, however, because as an ore source the patches would be both too limited and high in silica. Furthermore, much of the Berea Formation in our area occurs north of Lake Nhlabane and possibly outside the boundaries of the Mbonambi chiefdom. The most likely source of iron ore, therefore, is the Port Durnford Formation, outcrops of which occur along the coast both north and south of Richards Bay. It consists of mudstone, shale, sandstone, lignite, clay and sand deposited under both aeolian and fluvial conditions. Lenses of haematite and other iron ores in the Port Durnford Formation are exposed in cliffs north and south of Richards Bay and among collapsed rocks on the beach, from where they are easily collected. Moreover, the distribution of the Port Durnford Formation matches that of the ironworkers of the Mbonambi chiefdom.

The samples analysed by the RBM geologists indicate that the ore may be similar to that analysed at KwaNgandaganda (Miller and Whitelaw 1995), as well as the bog iron. The iron ore from KwaGandaganda is located in shale deposits, snuffbox shale, and probably originates from the Port Durnford Formation. Bog-iron is located around Lake Nhlabane. My analyses for this report did not note whether bog-iron or snuffbox shale, was located at each site, although this will be noted in future surveys.

CONCLUSION

Several archaeological sites have been surveyed in the Zulti North/TiSand mining lease. We have evidence for EIA occupation along the dune cordon, as well as increased human occupation over the last 400 years. These changes are seen in diachronic pottery styles and settlement patterns. It

is envisioned that with a large data base we will be able to place these changes into a more precise chronological order.

Apart from the potential research that has been recorded during the course of the archaeological survey, several other issues have arisen:

- Education.
- An interpretative centre.
- Treatment of human remains.
- Potential research extending outside of the terms of reference.
- The viability of the CRM project in the future.

During the course of the survey it became clear that there was a high potential for archaeology and education in the Richards Bay area. History school syllabi are presently undergoing changes and there is a strong possibility that archaeology will be included in this syllabi. The RBM archaeology project has the potential to utilise present archaeological remains recorded during the survey. In addition, schools may visit sites while they are excavated, use non-diagnostic artefacts for displays and teaching, and do projects related to their syllabi on the archaeology of the area. We have had one meeting with school teachers in November 1995, and there was a positive response to the use of archaeology as a teaching medium. We intend to approach these teachers this year, take them on a field trip and discuss means of teaching history and archaeology with the CRM project. The management of the archaeological education project will need to be discussed with RBM in detail.

A further issue related to the continuous work undertaken in the RBM mining lease area, is that of an interpretative centre. The issue arose when we were discussing the future of the research material. While the archaeological remains belong to the state, and the KwaZulu Monuments Council and National Monuments Council determine where the material is housed, we thought it would be appropriate to share the research knowledge with the communities of the area. This would be in the form of an interpretative centre. The purpose of the centre(s) would be to use the results of the archaeological findings, *amasiko* project and local *amasiko* to portray the history of the Lake Nhlabane area and its inhabitants.

The use of an interpretative centre would require expertise in museum management, such as methods of curation, and general management of the centre. I do however, envisage the centre as being used for both education and tourism. This is, however, a long term project and no details have yet been discussed with the Tribal Authorities, RBM, the Natal Museum, Ondini Museum and the KwaZulu Monuments Council.

The policy of the treatment of human remains has been discussed with the relevant authorities. This process of negotiation is fundamental to any excavations where extant communities are involved. This is one of the few occasions such a policy has been undertaken from the beginning of a project. The co-operation from the TA has been positive, and valuable scientific information has been saved.

During the course of the survey it became clear that many of the issues being addressed by myself and colleagues, were rapidly extending beyond the scope of a standard CRM program. Furthermore, in order to provide the CRM survey with more information regarding site importance, time is needed for research. We regard this research as being necessary to the project. Furthermore the results of these projects will be published in accredited academic journals, and papers may be given at conferences.

This year's RBM budget for the archaeology program budget has allocated money for four main research projects, of which three have been decided upon:

- Diagnosis of human remains by Prof. Alan Morris, U.C.T .
- Analysis of organic remains by means of GCMS - includes smoking pipes and pot sherds.
- Analysis of iron ore and slag (discussed above).

The archaeological survey of the mining lease has been undertaken for a year. Approximately sixty archaeological sites have been recorded, of which most were sampled, and several excavations are planned for this year. The question that needs to be answered is whether archaeologists will gain further academic knowledge by continuing to monitor the impact of mining on archaeological sites. MPD is in an afforested area that is unlikely to yield archaeological sites in primary context. Furthermore, we have already documented many

archaeological sites dating to the Historical Period. However, there are still more sites within the mining path that warrant mitigation. Several areas are known to have archaeological sites which cannot be recorded until the bulldozers have cleared the area. These areas are located at MPA, MPC and MPB. MPD may yield more sites once it has passed through the afforested area.

Three sites (or areas) reinforce the above comments. At MPA I recently discovered the second Msuluzi site. This is the first Msuluzi site to be recorded on top of the sand dunes - something that we did not expect. The second site is a series of houses forming an homestead. This site may date to the Tsonga period of occupation in the area. If this is correct, then it would be the first time that several houses, from this time period, will be excavated in KwaZulu-Natal. These sites are part of a series of related sites along the dune cordon between MPD and MPC and may yield valuable data in the future. The third area is MPA where I have observed several sites along the bulldozer path. Some of these sites appear to be significant. The above three indicate that many more sites still exist within the mining lease area, and that some would need further mitigation.

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