ARCHAEOLOGICAL SURVEY OF THE RICHARDS BAY MINERALS ZULTI NORTH & TISAND MINING LEASES

For Richards Bay Minerals

By
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INTRODUCTION

The archaeological survey of the Zulti North and Tisand mining lease areas began near the end of 1994. The survey program emerged from recommendations by Whitelaw (1993) after a Richards Bay Minerals initiative for a systematic archaeological survey ahead of dune mining activity. Both the initial and current survey form part of Richards Bay Minerals 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 1996 and 1997. I have retained the ceramic groupings proposed in last year's report, which contextualises the ceramic groupings for this year's report. Twenty seven new archaeological sites were recorded during 1997-1998, making a grand total of ±110 new archaeological sites recorded so far in the mining lease. The historical aspect of archaeological surveys in this area was discussed in last year's report.

The terms of reference for this project are to :

- undertake an archaeological survey of the Zulti North and TiSand Lease
- area;
- to record archaeological sites and undertake appropriate mitigation,
- the results will be written in a report..

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 (see Hall 1981).

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 co-ordinate 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 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. Sites of high significance are excavated or extensively sampled. The sites that are extensively sampled have high research potential, yet poor preservation of features. I attempt to recover as many artefacts from these sites by means of systematic sampling, as opposed to sampling diagnostic artefacts only.

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.

Defining significance

Archaeological sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. **State of preservation of:**
   - 1.1. Organic remains:
     - 1.1.1. Faunal
     - 1.1.2. Botanical
   - 1.2. Rock art
   - 1.3. Walling
   - 1.4. Presence of a cultural deposit
   - 1.5. Features:
     - 1.5.1. Ash Features
     - 1.5.2. Graves
     - 1.5.3. Middens
     - 1.5.4. Cattle byres
     - 1.5.5. Bedding and ash complexes
2. **Spatial arrangements:**
   - 2.1. Internal housing arrangements
   - 2.2. Intra-site settlement patterns
   - 2.3. Inter-site settlement patterns
3. **Features of the site:**
   - 3.1. Are there any unusual, unique or rare artefacts or images at the site?
   - 3.2. Is it a type site?
   - 3.3. Does the site have a very good example of a specific time period, feature, or artefact?
4. **Research:**
   - 4.1. Providing information on current research projects
   - 4.2. Salvaging information for potential future research projects
5. **Inter- and intra-site variability**
   - 5.1. Can this particular site yield information regarding intra-site variability, ie spatial relationships between varies features and artefacts?
   - 5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities.
6. **Archaeological Experience:**
   - 6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.
7. **Educational:**
   - 7.1. Does the site have the potential to be used as an educational instrument?
   - 7.2. Does the site have the potential to become a tourist attraction?
   - 7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. These test-pit excavations may require further excavations if the site is of significance. Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

SMALL FINDS

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

Pottery

Many pottery fragments have been sampled and these 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. However, this is due to the emphasis on Early Iron Age research in KwaZulu-Natal in the past - much of the LIA remains unresearched. Pottery categories are according to the 1995 – 1997 survey pottery categories.

The ceramic classifications can be divided into nine groups.

Group 1 pottery decorations occur mostly on the rim and neck, although some vessels have body decorations. Group 1 sherds were found at MPE1 and MPD50.

Group 2 pottery decoration occurs on the rim, neck, shoulder and body of the vessel, and is thus more varied than the Group 1 decorations. Group 2 sherds were recorded at MPE1.

Group 3 pottery sherds are decorated mostly along the rim-neck junction. A few of these sherds were recorded at MPE1.

Group 4 pottery decoration occurs mainly on the neck of the vessel and to a lesser degree on the rim and body. Group 4 sherds were recorded at MPE1.

Group 5 pottery is characterised by fingernail impressions. Group 5 sherds were recorded at MPE4.

Group 6 pottery 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. Group 6 sherds were recorded at MPD53.

Group 7 pottery is characterised by shell-impressed decorations, *iiSumpa* ('warts'), notched lip impressions and rectangular impressions on the shoulder or body of the vessel, circular to square notching on the rims of the pots. Group 7 sherds were recorded at MPB52 and MPC56.

Group 8 pottery was not observed during the surveys.

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. Group 9a, 9b and 9d probably related in time. They are characterised by elongated notches on the lip that extend from the inner to outer lip, but mostly on the outer lip. In group 9d the notching extends over the whole lip. Group 9c pottery has small oblique incisions on the lip. Group 9e sites are characterised by small scatters of sherds with undecorated rims and lips, suggesting a more recent age. Group 9a,b,d sherds were recorded at MPB40 and MPD56. Group 9c sherd were recorded at MPC55. Group 9e sherds were recorded at MPB30, MPB31, MPB50, MPB51, MPC40, MPC41, MPC50, MPC51, MPC52a-b, MPC57a-b, MPD50, MPD52, MPD55, MPD56, MPD57, MPE2, MPE3, MPE6.

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.

Utilised Stone

Upper and lower grindstones occur at just below half of the sites. The upper grindstones tend to be beach pebbles that have been systematically utilised forming the standard wear patterns associated with these artefacts.

The lower grindstones tend to be made from white beach sandstone, are dished in shape, and vary in size. The average size of these grindstones is 60cm x 30cm x 10cm. The grindstones are associated with sites that are probably the remains of houses, as opposed to shell middens and iron working areas. MPE1 had upper grindstones associated with the grinding of millet and sorghum , while the Historical Period and perhaps Late Iron Age sites, had grindstones more suited for maize.

Whetstones were probably used for sharpening metal artefacts. They are made mostly on the coarse white beach sandstone, although a few beach pebbles have been used. They occur at all sites, but tend to be more frequent at the Historical sites.

The term palettes is used in a general sense for stones that are approximately 20cm in diameter 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 or it is a multi-purpose artefact. Palettes were found only on LIA and Historical sites.

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 only at LIA and Historical sites, they were probably used during the EIA.

Iron ore, slag and metal

The ore is ‘bog-iron’ (ferruginised ore), or high iron bearing rock. While ore was found at only eight sites, the 1995-1996 surveys indicate that there is a notable decrease in the amount of iron ore between the EIA sites through to the LIA sites and Historical sites. The Historical sites tend to have ferruginised ore only.

Slag occurred mainly at MPE1 and MPE4. Both sites appear to have been iron working sites. MPE1 is an Early Iron Age site, while MPE4 may be an early Zulu site (or later Late Iron Age).

Faunal Remains

While a large range of animals was eaten, poor preservation has made it difficult to identify fragmentary bones to the genus and/or species level. The rate of deterioration of organic remains along the dune cordon is rapid and those sites that have organic remains probably date to the LIA or Historical period - more so the latter. No EIA sites have yielded organic remains in the dunes. The LIA and Historical has a wide range of species and the bone is often well preserved.

Bos taurus (domestic cattle) occurs on all sites where bone is preserved. Fish mandibles, operculli and ribs, are found at Groups 6, 7 and 9. These are often in association with shell middens and/or humic layers of excavated sites. Small wild antelope, sheep or goats occur in some assemblages. Tortoise and bird bone occurs, but infrequently. Excavated shell middens have yielded a large proportion of fish bones. These have not been identified to the genus-species level, however, a mussel cracker teeth and shark tooth have been excavated.

Human remains

No human remains were excavated for this report.

Marine shell

Marine shell in the dune forest area does 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, bioactive, or that different shellfish exploitation patterns exist. Several marine shell species have been recorded and are the remains of shell middens (rubbish dumps), often in association with

identifiable domestic areas. The middens are circular in shape and approximately 2m in diameter. Middens occur at Groups 5, 6, 7 and 9. The middens are discussed below.

Perna perna (brown mussel) is the most abundant species in the middens. oyster *(Ostrea ?algoensis (Sowerby)* occurs at Groups 5, 6, 7, 8 and 9. Oyster is the second most abundant species. Limpet *(Patella concolor)* is infrequent and found at Groups 6 and 9. Key-hole limpet (*Fissurellidaea spp.*) is only found in Group 9.

Several of the shells have been used as adornments (see Table 1 for a list of shell species identified at RBM archaeological sites).

DESCRIPTION OF EXCAVATIONS & FEATURES

Several sites had recognisable features that were significant enough to be excavated. The sites are shell middens, a village settlement, and an iron smelting area. The description of the material remains for some sites is brief since the full analyses is as yet incomplete.

KZ97/5 (MPD43)

This site is a shell midden situated on the top of a small sand dune along the third dune cordon. There is a good view of the hinterland and most of the site is along the northern slope of the dune. Approximately two meters of sand covers the site, however, a road cutting had exposed the site. I estimated that the cutting did not remove more than 1 meter of the site.

Excavation methodology

The upper, more recent, sandy deposit was removed to 15 cm above the midden. I placed a grid of twelve 1 m x 1 m squares over the site, that extends beyond the main concentration of artefacts. The midden was sieved with a 1.5 mm sieve, while the material was sorted at the Natal Museum. Four squares had bulk samples removed for later analyses (some of the bulk sample material has been analysed for this report). The site was excavated stratigraphically.

I placed a 2 m x 2 m square ±10 m further uphill from the midden to determine if any living floors beyond the midden occurred. The excavation was 1.8 m deep and no features were located.

Stratigraphy

The shell Lenses are mostly well preserved, except for the upper ±2 cm of Lens 1 that has been disturbed by roots. Roots, rootlets and rodent burrows do occur in the midden, but dissipate as one proceeds further down. The cultural horizon is mostly horizontal, however, the northernmost squares angle sharply downwards. This may be more a result of the bulldozer track than a phenomenon of the site.

The site has three main cultural horizons. These horizons are dense shell middens separated by sandy layers. Lens 1 varies between 4 cm and 15 cm in depth, with an average of ± 10 cm, and 2.4 m x 1.60 m in diameter. Lens 1 is a layer of mostly compacted whole shell and some ashy soil.

The stratigraphic separation between the upper two Lenses varies between 0.5 cm and 5 cm, and consists of an ashy grey-brown sand between Lens 1 and 2. Lens 2 varies between 4 cm and 15 cm in depth, with an average of ± 10 cm, and 3.40 m x 2.20 m in diameter. Lens 2 is a layer of mostly compacted whole shell and some ashy soil.

The sand between Lenses 2 and 3 was removed as BSBL2 (Brown Sand below Lens 2). This deposit was nearly sterile, with a few artefacts that had filtered down form Lens 2. The sand was brown in colour and varied between 15 cm and 20 cm deep.

Lens 3 is ±15 cm below Lens 2. Lens 3 varies between 3 cm and 6 cm in depth, with an average depth of 5 cm. It is an ephemeral deposit of broken shells interspersed with yellow-brown sand. Beneath Lens 3 is a sterile yellow beach sand and a scatter of shell that has filtered down from above. Lens 3 is under-represented and probably damaged by the road cutting.

Artefacts

Ceramics

The ceramics from this site belong to Group 9a/b/d. The ceramics are mostly undecorated, but with lip notching. Most of the pottery occurs in Lens 2, followed by Lens 1. The similarities in diagnostic pottery between the shell Lenses suggest that Lenses 1 and 2 are of a similar age. No diagnostic pottery was located in Lens 3.

Stone

Most of the white beach sandstone fragments came from Lens 1. These fragments have been smoothed, and may be lower grindstone fragments. Both Lenses 1 and 2 have upper grindstone fragments made from quartzite beach pebbles.

Bone

The bone from KZ97/5 is mostly adiagnostic. Lens 1 has the highest density of bone, followed by Lens 2, BSBL2 and then Lens 3 (fig. 2). That is the bone density becomes higher through time. The faunal remains tend to be from bovids, and are probably domestic cattle and sheep/goat. A few bird bone fragments were also excavated.

Several fish bones, especially vertebrae, were excavated (fig. 3). The fish bone densities are similar to those of the other bones, however the lower two layers are almost equal in density. A few mussel cracker teeth and one shark tooth were excavated.

Worked Shell

A total of 19 shell beads (*Nassarius kraussianus*) were found mostly in Lenses 1 and 2. These small shells have been perforated along the apex and then smoothed. It appears as if they were strung together to form a necklace or bracelet.

Glycymerus spp. and *Tuvela spp.* were probably used as adornments as well. The males of the latter species have natural holes near the apex, and would have been easily strung. It is unlikely that these two species were eaten.

Marine Shell

Several species of marine shell were excavated (Table2; fig.4).The most common species is the brown mussel, followed by oysters, limpets and whelk. The coral, barnacles and key-hole limpets are probably not food, but were living on, or being lived on, the other shells when they were removed.

Apart from *P. perna*, *Patella spp.* (limpet) and *Ostridaea* (oyster) were eaten. There does not, however, appear to be a correlation between the amounts of limpet and oyster eaten, apart from that the consumption of limpets increase through time, while whelks decreased in time. The left and right hinges are nearly equal in number suggesting that food processing occurred on site.

Lens 2 has the highest density of marine shell, followed by Lenses 1 and then 3. This is also the case for brown mussel densities. I measured the lengths of whole brown mussel to determine if there was any change in the mean size of the shell through time. I hypothesised that if the same location was repeatedly exploited for brown mussel gathering, then there would be a decrease in the size of the mussels. This assumes that larger mussels would be gathered more extensively since it would yield a higher nutritional return for less time spent gathering.

The mean average for brown mussel size in Lenses 1, 2 and 3 are 3.68cm (n=128), 4.05cm (n=295) and 3.88cm (n=144), respectively. I did a Kolmogrov-Smirnoff statistical test to determine if there was a real difference between the brown mussel sizes through time. The test indicates that there is no significant difference (at the 0.95 level) between the mussel sizes. Fig. 5 illustrates the range of *P. perna* lengths per lens. Lengths are determined by measuring the maximum length between two points of the shell, beginning at the apex.

Botanical Remains

One carbonised seed was excavated in Lens 2. It has not yet been identified.

KZ98/11 (MPE4)

This site was located along the second dune system (from the interior). It had been bisected by a road to MPE and the construction of telephone poles would have effected parts of the site. Several artefacts still occurred in the vicinity of the site. Five 2m x 2m squares were excavated.

Stratigraphy

The site was a single occupation site without a visible stratigraphy in most of the squares. The soil varied from brown to light brown to a mottled humic brown colour at both excavations on either side of the road.

Artefacts

Stone

Several fragments of grinding stones were excavated, as well as hammer stones.

Bone:

Few bone fragments were excavated. Apart from the fish bone, the other faunal remains were from indeterminate bovids. These were too adiagnostic to identify to the genus level (fig.6).

Shell

Table 3 lists the shell species. As with other middens, *Perna perna* dominate the species assemblage, followed by oyster. Other species are probably result of being attached to the mussels when they were brought into the site.

The shellfish debris appears to have been used mostly for nutritional value and less so for decorative functions. The *Perna perna* appears to have been brought onto the site without prior procurement. That is there are approximately equal left and right halves of the mussel, suggesting that shellfish was processed at the site and not near the beach.

Slag, silica and iron ore

Slag was the most commonly occurring artefact category on the site, with the exception of pottery. I did not locate the main slag concentration in the excavations, and I believe it may have occurred where the road has bisected the hill. Most of the slag and silica were located on the southern side of the excavations. These fragments were mostly small nodules and unlike the large chunks associated with sites such as MPE1.

Ceramics

Most of the ceramics associated with the site are undecorated. Some of the sherds are diagnostic. The rims tend to be round or flat, and some are slightly everted. One rim had lip notching. A sherd with thumb-nail impressions was excavated in square 5.

Discussion

The pottery associated with this site can be places in the Group 5 pottery class. This means that the site probably dates to the early Zulu period.

The function of the site is difficult to establish since at least half of it is missing. Nonetheless, there does appear to be a spatial pattern. The southern and south-eastern side of the site appears to have been for iron

smithying. The southwestern and northern sides of the site appear to have been used for domestic purposes. The latter area tends to have more shellfish and faunal remains, while the former appears to be a metal working area.

No features, apart from the two shell middens, were excavated. A more refined spatial patterning is thus difficult to establish.

More of the site still remains, however, it has been damaged by the people who have been purposefully removing pottery from the sections of the road cutting.

KZ98/11 (MPE11)

This site is located at the current MPE site. The artefacts were first observed in a bulldozer cutting, some 0.5 m – 1.0 m below the surface. We later removed the upper 0.3 m with a bulldozer.

A total of thirty-two 2 m x 2 m squares and nine 1.5 m x 1.5 m squares were excavated (just below 5000m^3). The depths varied between 0.4 m to 1.1 m below the surface. Approximately ninety boxes of curated material have been retrieved from this site.

Stratigraphy

The site had no stratigraphic resolution apart from the brown-grey topsoil, and the yellow beach sand as the basal unit. The former was 1 m to 1.5 m in depth and contained the archaeological material. The yellow sand was archaeologically sterile: any material in this layer was intrusive.

I excavated in 10 cm spits . These spits roughly coincided with the changes in pottery decorations.

Artefacts

Ceramics

The ceramics located at this site can be divided into six groupings (youngest to oldest):

1. Zulu
2. Ntshekane
3. Ndondondwane
4. Msuluzi
5. Msuluzi-Matola
6. Matola

The Zulu pottery was undecorated and probably fits into the Group 9 category. The pottery is in a secondary context and originates from the dunes surrounding the site, e.g. MPE2.

The Ntshekane layer was the upper layer of the Early Iron Age ceramic sequence. Only a small percentage of the sherds belong to this phase. The decorations are characteristic of this phase and occur on the neck-shoulder aspect of the pot.

The Ndondondwane phase was under-represented at this site. Only four decorated sherds could be attributed to this phase, and these were mixed with the Ntshekane or Msuluzi horizons. The Ndondondwane ceramics are similar to those mentioned in the 1996 RBM report. The decorations are on the neck of the pot.

The Msuluzi phase is well represented at this site. The decorations are the standard Msuluzi decorations found on the rim-neck-shoulder of the pot. Similar Msuluzi sherds have been found elsewhere in the mining lease.

The Msuluzi-Matola phase of this site is rare. Some of the sherds have both characteristic features of both the Msuluzi and Matola phases (the photograph of a partially reconstructed vessel is on display at the Mananga Heritage Centre). This may represent the intermediate phase of the two phases.

The Matola phase of the site is the most well represented phase at the site. Apart from the standard Matola decorations, on the rim and sometimes the body of the vessel, several rare finds were excavated. In any Matola site the number of decorated bowls are minimal. However, at MPE1 most of the bowls were decorated. Some of the vessel decorations were also rare at this site.

Once the vessels have been completely analysed and possibly reconstructed, I will be able to obtain a more clear picture of the site.

Metal Working Debris

The metal working debris included iron ore, slag and tuyére fragments. These artefacts were concentrated in the first few excavated squares, or the easternmost part of the excavations, and in the Matola to Msuluzi occupations.

The slag varied from small fragments (±0.5g) to large chunks (±2kg). Iron ore fragments were mostly ferruginised iron ore (bog iron), and not very large. The tuyére fragments tend to have a large internal bore diameter, suggesting that iron smelting occurred at the site, *vis-à-vis* iron smithying.

Stone

Several utilised pieces of stone were excavated. These were fragments used for iron smelting, such as hammer stones and quartzite (the silica may have been used for the flux), and shale fragments (possible iron ore source). The western side of the excavation had fire cracked spalls, indicating that the metal working activity may have occurred in this area.

Several grindstones were excavated. These were the standard lower grindstones used for sorghum and millet, as well as a facetted upper grindstone (seen in the photograph at the Mananga Heritage Centre). Other grinding stones were probably used as sharpening stones.

Discussion

The site is probably a village settlement based between the second and third dune cordon. The village itself must have been over 5 hectares in size, or 100m x 100m. *In situ* pottery was found at the base of the dunes surrounding the centre of the site. This suggests that there was a very large settlement of Iron Age farmers in these dunes.

While no house floors and cattle byres were seen, the location of several whole pots, in pits, may give some information regarding settlement patterns.

DISCUSSION

The 1997-1998 survey did not recorded as many sites as in previous survey years. This has been partly due to my increased involvement with other projects, as well as a decrease in the number of sites in this specific area. This is also a result of the direction of the mining path, rather than a decrease in potential sites. The emphasis on site recording this year has been more on the analysis and excavation of materials than actual recordings. While the categorisation of pottery groups is relatively easy, they are still ‘floating’ groups, with no absolute dates. These groups form the basis for my proposed relative chronology, for the surveyed sites. I have submitted material for four to five radiocarbon dates.

Pottery

The use of pottery sequences to date archaeological sites with similar pottery styles is an established procedure in Iron Age studies. These sequences are related to other sites that have been 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 archives), 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 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 - I subdivided the associated scatters. This allows for a tighter control over pottery styles, and decreases the amount of intersite contamination.

Early Iron Age

Group 1

This group is associated with the Matola Phase and dates from AD 400 to AD 630 (fig. 7). Matola sites are village settlements, often greater than eight hectares in extent. Cattle byres have been located in the centre of these settlements. The new site, MPE1, is of great value since it has the transitional phase of pottery between the Msuluzi and Matola. This favours the argument that pottery decorations changed through natural evolution of styles. Thus, there is a connection between each ceramic phase, based on ethnolinguistic lines.

Group 2

This group is associated with the Msuluzi phase and dates from AD 630 to AD 750 in the Tugela River Valley (Maggs 1980) - calibrated radiocarbon dates place this period between AD 615 to AD 879. Msuluzi sites are probably village settlements, often greater than eight hectares in extent. 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. This can be seen in the related figures where some Matola-like sherds were recorded.

Group 3

The pottery in this group is associated with the Ndondondwane period, which dates from AD 700 to AD 950. This is only the second Ndondondwane site recorded in the mining lease.

Group 4

The pottery in this group is associated with the Ntshekane period, which dates from AD 950 to AD 1150. Few sites of this time period have been recorded and excavated (see Anderson 1997; Maggs and Michael 1976). As with the Ndondondwane sites, few have been recorded in the mining lease.

The Early Iron Age sites in the RBM mining lease are under-represented (in comparison to the Zulu sites) for several possible reasons:

1. There are fewer EIA sites than Nguni sites, since EIA sites are large villages while Zulu sites are more numerous households. Both may have the same population numbers, but the density in the EIA will be higher than that of the Zulu sites in a given area.
2. The EIA sites are concentrated along the valleys between the dunes, whereas the Tsonga and Zulu sites are located on top of the (more numerous) hills. The mining activity has concentrated on these hills *vis-à-vis* valleys for the last three years. Hence, the predominance of recorded archaeological sites
3. I have not systematically checked the larger valleys ahead of dune mining. If I do, it may allow me longer time to excavate one of these village sites in more detail. This may allow for demographic issues to be answered.

Late Iron Age

Group 7

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.

I have stated my position on the term Tsonga and its relation to the Mbonambi and Mthiyane people in previous reports to RBM. There has been some discontent amongst these people regarding the notion that Tsonga-speakers were living here prior to their ancestors. Apart from the archaeological record, the *amasiko* confirms these finds. The radiocarbon dates should substantiate these claims as well.

Historical Period

Group 5

In the previous reports I had subsumed Group 6 into Group 5. I still tentatively continue this grouping, but have differentiated these groups in the analyses. Two sites with Group 6 pottery have been recorded in the dunes at MPB and MPE. Radiocarbon material from this time period has been submitted for dating.

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 possibly similar in decorative style to the pottery from group 5. Similar decorations have been recorded at Mpambanyoni (Robey 1980).

Group 8

I tentatively place this group in the Historical period with group 9 pottery due to slight variations in decorative motifs. 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 250 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 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. If decorated sherds are observed at these sites, they tend to be EIA sherds. This is in accordance with Bryant's (1947) observations that Zulu pots were primarily undecorated from the mid nineteenth century onwards.

Material from sites dating to this period have been submitted for radiocarbon dating.

GENERAL AGE. GROUPS. DATE

EIA	Group 1	AD 300 - AD 400
EIA..	Group 2	AD 650 - AD 750
EIA...	Group 3	9th century
EIA	Group 4	9th to 10th century
LIA	Group 7	AD 1650? - AD 1800?
Historical 1	Groups 5,6,	unknown
Historical 2	Groups 8,9a-e	“?Early Zulu”

Food resources

Over the last three months I have been analysing and identifying the shellfish remains from the middens, in order to find out more about see food exploitation and subsistence.

Perna perna

The shell lengths from several *Perna perna* were measured to determine if there was a difference in sizes exploited throughout time. While I have not presented all of the data above, there is no suggestion, so far, that these mussels were overexploited. That is there is no real decrease in mean size through time or across space.

The mussels also appear to have been brought back and processed at the settlements, as opposed to being processed at the beach. If it was a case of the latter , then there would not be similar frequencies of left and right hinges, nor would there be a high incidence of those shells associated with mussels in rock pools, e.g. whelk, barnacle. Furthermore, there would be less waterworn stone and shell in these middens - these are attached to the byssus (small bristles) of a mussel. Shellfish processing did not occur in these middens either, since there is a lack of ash and charcoal in the deposit.

General exploitation

Brown mussels were the most exploited shellfish at all sites, followed by limpets and/or oysters. However, evidence suggests that the sandy beaches and even the estuarine areas were exploited for certain species (Table 1). The emphasis does however appear to be on marine resources. The identification of the fish bone would be of interest, since freshwater, estuarine or salt water fish may have been eaten.

Shellfish are exploited mostly along the intertidal zones, and are thus probably removed on a daily basis.

Other species had no nutritional value, but were probably picked up from the beach and used as adornments, e.g. *Glycymerus spp., Nassarius kraussiarius, Sunetta contempta, Venus verrucosa,* and *Conus Spp.*.

Faunal remains

The faunal remains from the excavated shell middens still require identification. However, it initially appears that both wild and domestic animals were eaten. Domestic animals included cattle and sheep/goats and possible chickens (although this may be marine bird as well). Wild animals were small bovids the size of *Raphicerus spp*.

The fish bones are unidentified, however a mussel cracker and shark tooth have been identified.

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:

- the opening of the Mananga Heritage Centre.
- material sent off for radiocarbon dates and research
- the viability of the CRM project in the future.

One of the highlights this year has been the opening of the Mananga Heritage Centre in October. The centre is to be used to portray not only the local communities history (*amasiko*) but also the history prior to their arrival (the archaeology).

The bulk of material returned to the museum from excavations and surveys need systematic sorting and curating. I employed someone to sort the shell samples from the shell middens and to identify the shells[1]. We have not completed the sorting and identification of all of the material – only that described above. We have however, managed to take reliable samples from excavated sited for radiocarbon dating. These dates will help in understanding the changing pottery styles through time and space, as well as shellfish exploitation patterns.

The archaeological survey of the mining lease has been undertaken for four years. To date ±110 sites have been recorded, of which most were sampled, and four have been excavated, with a further three sites identified as requiring excavation. While there initially appears to be a decrease in the number of new sites recorded, there is however an increase in the frequency of sites of high archaeological significance. The commencement of Mining Pond E (MPE) in the near future may yield more sites, especially along the higher dunes –I know of two that require some form of excavation.

The timing of the excavations at MPE4 were fortuitous. We began the excavations four days before a series of telephone poles were to be placed through parts of the site. Had we not been there, this site would have been damaged. My concern is that I need to be informed prior to the construction of these lines so that I can survey the servitudes as well as mitigate where necessary. A greater awareness amongst construction workers and contractors also needs to be created so that archaeological material is not removed from sites, something which happened at MPE4.

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 many 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, or until an opportunity arises for their excavations. These areas are located at MPB and MPC, some of MPD and MPE – I refer to current locations/areas of the mining path, and not future paths.

I suggest that the archaeological survey continues for the duration of 1998 -1999, whereupon the contract would need to be reassessed.

[1] Dr R. Kilburn, Natal Museum, assisted in the primary identifications.

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