PHASE 2 SAMPLING OF ARCHAEOLOGICAL SITES AT PARADISE BEACH, LYNCH POINT

Prepared for

CML Developers (Pty) Ltd

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CONTENTS

1. INTRODUCTION

The Archaeology Contracts Office of the University of Cape Town was commissioned by CML Developers Pty Ltd to undertake archaeological excavations at Paradise Beach just to the north of Lynch Point, Langebaan (Figure 1). A preliminary survey of sites in the area (Parkington and Poggenpoel 1987) revealed that there were a number of occurrences of archaeological material on Lynch Point which would potentially be impacted by development activities. As plans for the development of Paradise Beach were being implemented, the developers funded a program of archaeological excavation to mitigate the potential damage to this material. The following pages describe the archaeological sites, method of excavation and findings.

2. BACKGROUND HISTORY OF THE WESTERN CAPE

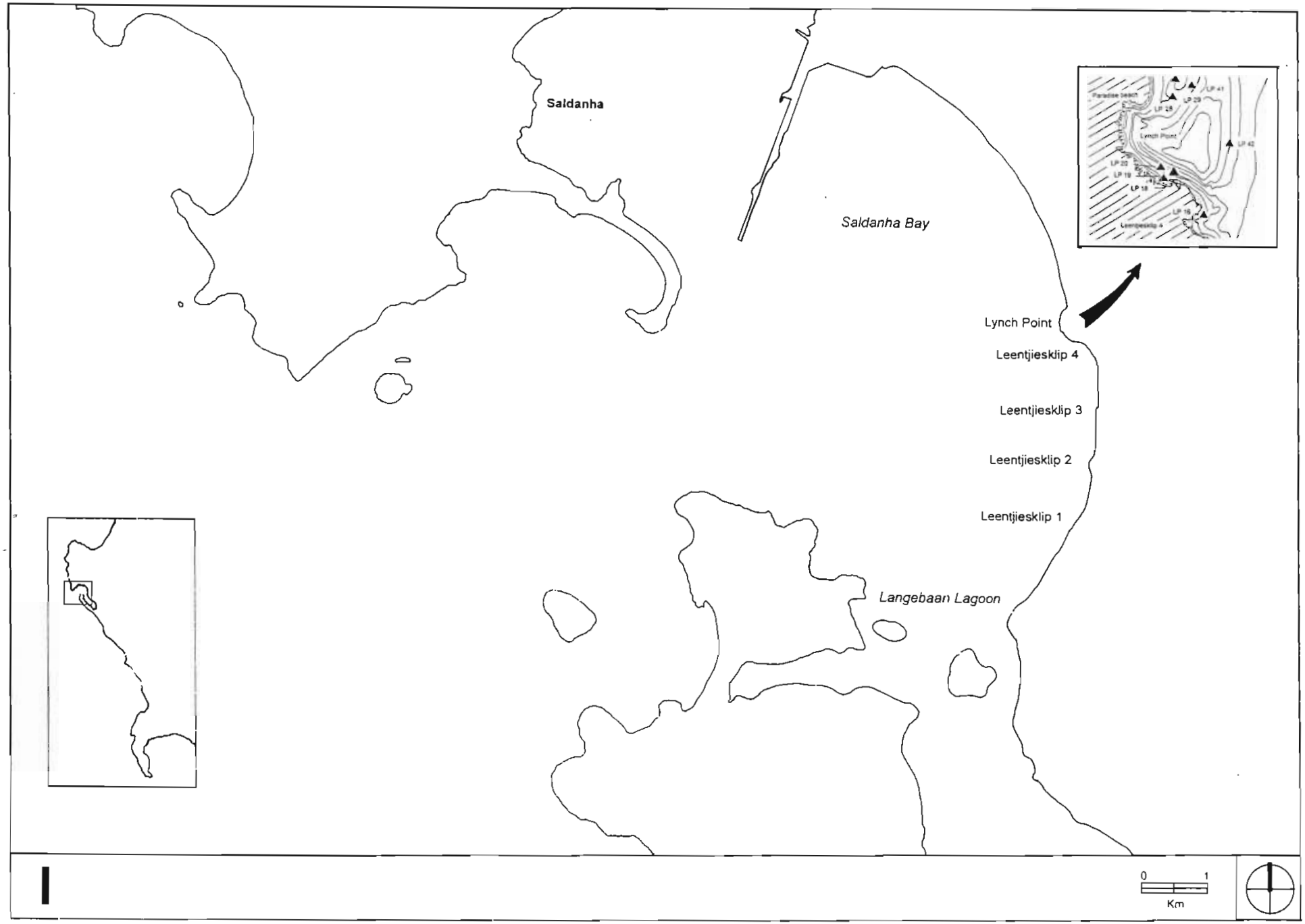
A simplified summary of the main characteristics of the various historical periods of the region is presented below. These summaries will help to place the findings of the archaeological investigation in context.

2.1 The Early Stone Age (ESA)

In 1911, an amateur archaeologist discovered some ancient stone artefacts on the banks of the Eerste River in Stellenbosch. Among these was an artefact type, which he recognised as the handaxe and suggested that they were of extreme age. Modern research has shown that these artefacts were made by people who lived between 200 000 and 1,000,000 years ago. Sites containing these characteristic Early Stone Age artefacts have been found throughout Africa, parts of Europe and the Far East (Sampson 1974) and locally, sites of this period have been found throughout South Africa. The makers of Early Stone Age artefacts are believed to be the hominid type known as *Homo erectus*. Although the population of these hominids was probably relatively small, the sheer depth of time over which they roamed the landscape has resulted in large numbers of sites found in widely differing ecological zones from the coast to the mountainous regions. The raw material favoured for the production of Early Stone Age tools was quartzite. It is no coincidence therefore that ESA sites are often found next to river beds where large quantities of water worn quartzite cobbles can be found.

2.2 The Middle Stone Age (MSA)

Large cave sites discovered in the Kalk Bay Mountains on the Cape Peninsula in the 1920s, contained deep deposits with large numbers of more refined stone artefacts in the lower parts of the sequences. These were recognisably different from ESA artefacts and had many similarities to artefacts found in the Palaeolithic sites of Europe. Similar kinds of artefacts have since been found on many open sites and on rare occasions, in the deposits of caves throughout South Africa. A larger selection of fine grained raw material was used for the manufacture of artefacts as new techniques of production, and secondary working into intricate tools, required more predictable flaking properties. Research has shown that these artefacts belong to a period known in South Africa as the Middle Stone Age and date to the period between 40,000 and 200,000 years. In some very rare instances where circumstances allow, fossil animal bone and marine shells have been found in association with the artefacts giving some indication of the diet. MSA people are thought to have been an early form of modern humans (*Homo sapiens*) who were capable of hunting large animals.


Saldanha
Saldanha Bay
Lynch Point
Leentjiesklip 4
Leentjiesklip 3
Leentjiesklip 2
Leentjiesklip 1
Langebaan Lagoon
0
1
Km

Current theory is that early *Homo sapiens* evolved in Africa and migrated to Europe and the Middle East some 40,000 years ago (Klein 1989). It is believed that these new migrants may have been responsible for the demise of the Neanderthal populations in Europe.

2.3 The Late Stone Age (LSA)

So far, all the archaeological sites that have been investigated by members of the Archaeology Contracts Office on the coast of the lagoon north of Langebaan fall into the period known as the Late Stone Age. Late Stone Age people lived in southern Africa from 40,000 years ago up to the arrival of European colonists at the Cape, and co-existed with them for some time. Late Stone Age people were the ancestors of the San (Bushmen) and Khoi Khoi (Hottentots) who were present throughout the south-western and Northern Cape during the colonial period. Throughout most of the Holocene (last 10 000 years) southern Africa was inhabited by small groups of San hunter-foragers who were highly mobile. They hunted with bows and arrows, snared small animals and, where groups lived close to the shore, gathered shellfish and other marine resources, a habit which resulted in the use of the term "Strandlopers"[1]. They used digging sticks, often weighted with bored stones, to find a variety of vegetable foods, particularly bulbs below the soil.

Not only did the San have a prodigious knowledge of the animals and plants around them, but they also had a complex belief system, aspects of which are represented in many of the rock painting and engraving sites of the northern and western Cape. It is now broadly accepted by archaeologists that shortly after 2000 years ago, a new economic system was introduced to southern Africa. Certain groups of people (the Khoi Khoi) who had adopted transhumant pastoralism (in this case with herds of fat-tailed sheep and later cattle) appeared in southern Africa (Smith 1987, Sealy and Yates 1994). While the San groups seem to have co-existed with the pastoralists, it has been suggested that hunter-foragers were marginalised moving into areas where the grazing opportunities were less attractive to pastoralists (Parkington et al 1986). The advent of pastoralism seems to have been accompanied by the technology of making clay pottery. The precise origin of early stock keeping and ceramic technology in southern Africa is still unclear but it is suggested that stock keeping was introduced from the north.

2.4 The colonial period

When the Dutch colonists arrived to set up a replenishment station at the Cape in 1652, they encountered several Khoi Khoi groups. Some of these lived on the Cape Peninsula while the larger groups grazed herds of sheep and cattle in the Tygerberg Hills and Cape Flats. First contact between Europeans and indigenous southern African pastoralist groups had occurred much earlier when Portuguese mariners sailing down the coast in the 15th and 16th centuries had bartered supplies of meat from the Khoi that they encountered at places such as Saldahna Bay (Smith 1985). With the increase of shipping rounding the Cape, it was inevitable that some would be wrecked. The survivors of such wrecks, often recounted meeting and trading with the indigenous groups (Smith 1985, Raven-Hart 1967) so that by the time that Van Riebeeck arrived, a history of contact had already been established. Although it is not entirely clear from the writings of the early settlers, it appears that some San groups still existed in the Cape. They still seemed to be pursuing a largely hunting and

[1] It has not been proven that there were indigenous groups who lived exclusively at the coast and entirely on marine foods, although hunter-foragers may have become more dependant on them when access to traditional food sources was limited by the influx of first Khoi pastoralists and later European settlers.

foraging lifestyle and were often encountered in the more mountainous regions where there was less possibility of conflict with either the Khoi or Dutch settlers (Parkington et al 1986).

At first the relationship between the Dutch and the Khoi Khoi was one of co-operation, with a great deal of bartering taking place primarily to get regular supplies of fresh meat. However, as the colony grew and free burghers were granted lands further away from Cape Town, grazing lands previously available to the Khoi Khoi were encroached upon. The conflict for land began a process of attrition which when accompanied by several deadly smallpox epidemics broke down the indigenous population and it's political structures. Those who survived were pressed into service as farm labour or settled around several large mission stations that had been established in the Cape. Namaqualand was one of the least desirable parts of South Africa for the colonists and meant that San and Khoi Khoi people were able to continue many aspects of their traditional ways of life in this area until they were displaced during the last century. The accounts of several early travelers who passed through Namaqualand, most notably that of Robert Jacob Gordon in 1779, clearly attest to the presence of indigenous hunter-forager and pastoralist groups in the area (Raper & Boucher, 1988). The Nama, originally one of the Khoi Khoi groups, still practice transhumant pastoralism in reservations in Namaqualand today.

2.5 Previous research in the Langebaan area

When Parkington and Poggenpoel (1987) conducted a general Phase 1 investigation of land destined to be developed by Club Mykonos they located 40 archaeological sites. Some of these were considered to be important, requiring excavation before development activities were to begin.

The first major excavations that took place along the eastern shore of the Langebaan Lagoon were conducted in 1988 when the Archaeology Contracts Office was commissioned to sample archaeological material that was to be impacted by the development of the Club Mykonos resort. Three sites were excavated (Parkington, Poggenpoel and Hart 1988) provided enough information and radio carbon dates to construct a preliminary local sequence of Late Stone Age. The oldest site excavated was LP 16 situated at what is known as Leentjiesklip 4. This small buried encampment demonstrated that occupation of area dated back to over 3500 years ago (shell date 4150 ± 60BP (Pta-5036)). Site LP 18 was rather more recent dating to mainly the pottery period of the Late Stone Age after 2000 years ago. The youngest layers of this particular site dated to within the last 200 years showing that agents of midden accumulation were active in this area until historic times.

In 1991 The Archaeology Contracts Office was once again commissioned to excavate archaeological material on Leentjiesklip 3 just south of the Club Mykonos development. Unfortunately the client went into financial difficulties before work on an interesting site (LP 12) could be completed. In general, the pattern of occupation of the Langebaan area involves people locating themselves at the coast where they ate large quantities of marine food including seals and fish. Furthermore there is good evidence to suggest that they may have been scheduling their coastal visits to collect low tide species of limpets and perlemoen which were found on most sites. Unlike many coastal sites that have been studied in the Western Cape, terrestrial foods were important with tortoises birds, and small antelope playing an important role in the diet.

3. STUDY AREA

Paradise beach lies behind a sheltered bay north of the rocky promontory, Lynch Point on the Eastern edge of Langebaan Lagoon facing directly towards the town of Saldanha Bay (Figure 1). Swells entering the bay, break on the granite shoreline of Lynch Point which supports colonies of shellfish on rocks in the intertidal zone. Lynch Point was therefore one of the few areas on Langebaan lagoon that had the potential to support a population of prehistoric people who were partially dependent on a predictable supply of marine foods. When Parkington and Poggenpoel visited the area in 1987, they found several scatters of shellfish very close to the shoreline and on the vegetated dunes above the beach. Since that time the area has experienced serious secondary impacts, mostly from the increase in day visitors and recreational vehicles. As a result of this some of the near-shore scatters seen in 1987 have been degraded. Sites located among the vegetated dunes had not been as negatively affected and provided useful archaeological samples.

4. METHOD

Excavations were conducted at 5 sites in the affected area. The locations of these are indicated on Figure 2. A pattern of random trial excavations was sunk to ensure that as many buried lenses as possible were located so that they could be sampled before development activities took place. Standard archaeological methods were used. Each site was gridded in 1m^2 blocks and excavated in 10 cm spits as most of the sites were not dense enough to show visible stratigraphy. Two deflated sites were gridded and subject to a surface scrape. Dry excavated deposit was passed through a 1.5mm screen, while a 3mm screen was used when the soil was damp. All finds were bulked and transported to the University of Cape Town where they were sorted. The results of this process are presented in Appendices A-E

5. RESULTS

5.1 Beach area

Although scatters of shell were present on the surface in 1987, much of this had become degraded as the immediate shoreline area has been subject to vehicle use. Test excavations failed to produce evidence of below-surface deposits.

5.2 Site LP 28 (Erosion gully)

Shell eroding from the sides of the gully, was noted by Parkington and Poggenpoel (1987). Eight trial excavations were strategically positioned on both side of the gulley to check for evidence of buried archaeological material. Only one of these showed evidence of *in situ* material. Much of the surface archaeology was found to have accumulated as a result of deflation of deposit brought to the surface by dune mole-rat activity. Nevertheless an excavation covering 7m^2 was positioned on the edge of the gully (Plate 1) to clean up the slumped deposit and sample the section. It was found that that moderate amounts of material were found in all 4 of the 10cm spits excavated, leading us to believe that moles had dispersed any lenses that may have once accumulated.

A further excavation of 6m^2 (Plate 2) was positioned 5m to the north of the gully to investigate an area where a trial hole had indicated the possibility of buried lens of material. Again, a system of 10cm spits was used as stratigraphy was not visible. At a depth of 1m a platform made from manuports (stones carried to the site) was located and plotted. At first this was thought to be a burial cairn but further excavation showed that the underlying sands were sterile.

5.2.1 Shellfish

Samples of shell were analysed from 3 squares from spits 5, 7, 9, 11. The most dominant species is *Choromytilus meridionalis* (black mussel) followed by *Burnupena sp*.(Whelks). *Patella granatina* are the most numerous of the limpets followed by *Patella granularis* and *Patella argenvillei.* The results show that the species of shellfish that were exploited are typical of broader patterns found on the west coast.

5.2.2 Animal Bone

Fragments of animal bone were located throughout the sequence. Animal bone from this site shows that people were exploiting a mixture of marine and terrestrial resources. Tortoise bones are the most common being a daily staple food. A variety of antelope were also hunted. These included steenbok, as well as medium and large antelope. Marine animals include the Cape fur seal (commonly eaten by prehistoric people) as well as fish. Birds represented include a Cape Francolin.

5.2.3 Artefacts

5.2.3.1 Pottery

Fragments of Cape Coastal Pottery were located throughout the sequence to a depth of 80 cm indicating that the bulk of the archaeological deposit is less than 2000 years old.

5.2.3.2 Stone Tools

Only stone artefacts were preserved. The complete collection has been analysed showing that the types of artefacts found were evenly distributed through all the excavated levels. In general the numbers of stone artefacts were low, while no formal tools were found. Chips, chunks, flakes and irregular cores made up the assemblage while the raw materials used were quartz and quartzite. The characteristics of this collection of stone artefacts indicate that the site is probably less than 2000 years old.

5.2.3.3 Ostrich Eggshell Beads

A single bead was found at a depth of 90 cm (external diameter 3.02mm).

5.3 Site LP 29 (Deflation bay)

A deflation bay (Plate 3) located by Parkington and Poggenpoel (1987) was observed to contain quartzite manuports, silcrete artefacts and shell. The entire site was gridded into 1m^2 blocks. A 6cm deep surface scrape was removed from 50m^2 of the site. Test excavations on the edges of the bay revealed no evidence of *in situ* deposit.

5.3.1 Shellfish

Shell was analysed from 5 squares on the surface of the site. Dominant species are *Choromytilus meridionals* and *Burnupena sp.* Very few limpets were found, of these *Patella argenvillei* dominates.

5.3.2 Animal Bone

All the material excavated from this site has been subject to wind erosion and surface exposure. Bone preservation was poor. Furthermore, we cannot be certain that the animal bone found was caused by the activities of people or by natural processes. Material found included the bones of snakes, lizards, small mammals, tortoise, birds and fish.

5.3.3 Artefacts

5.3.3.1 Stone tools

The bulk of the artefactual material included consisted of crude fragments of burned calcrete, calcrete chunks, quartz chunks and chips. Silcrete was present but minimal. Only two formal artefacts were found - a silcrete retouched piece and a quartz scraper. This contrasts with previous observations made by Parkington and Poggenpoel (1987) who saw far more artefacts on the site. This indicates that people have been illegally collecting stone tools since the area has been more accessible to the public.

5.3.3.2 Pottery

A single body sherd fragment was found indicating that material may post-date 2000 years ago.

5.4 LP 41

Eight trial holes were excavated in a level area (Plate 4) on the seaward side of the dune cordon above Paradise Beach. One of these trial holes showed that archaeological material was present at a depth of 25cm below surface. A $6m^2$ excavation was opened to sample what emerged to be a distinct shell lens (spits 2, 3) with artefacts and tortoise bone (Plate 5 and 6).

5.4.1 Shellfish

Spits 1-7 (square C4) and spits 1-6 (square D9) were analysed. *Choromytilus meridionalis* dominated the sequence throughout, followed by *Burnupena sp*. *Patella* species made up less than 10% of the total sample.

5.4.2 Animal Bone

Fragments of animal bone were located mainly in the shell lens but in smaller quantities throughout the sequence. Animal bone from this site shows that people were exploiting a mixture of marine and terrestrial resources. Tortoise bones are the most common and were probably regarded as a daily staple food. A variety of antelope were also hunted. These included steenbok, as well as medium and large antelope up to the size of an eland. Marine animals include the Cape fur seal (commonly eaten by prehistoric people) as well as fish and Jackass penguins. Various birds, small mammals such as dune mole rats, lizards and snakes were also present.

5.4.3 Artefacts

5.4.3.1 Stone tools

The sample of stone artefacts found is small and dominated by waste categories. The only formal tool was a single grinding surface. Quartz and quartzite were the favoured raw materials with silcrete making up a small proportion of the assemblage. The informal character of the artefacts indicates that the assemblage is likely to post-date 2000 years ago.

5.4.3.2 Pottery

A single sherd was located in test excavation 13.

5.5 LP 42 (Dirt road)

Although this site was not directly in the development area, it was being impacted by vehicles and needed immediate collection. Inspection of the site showed that it contained microlithic artefacts, ostrich eggshell beads and a pendant. Most of this material was exposed in an informal track, which had eroded its way some 30cm into the surrounding topography. It is quite likely that further material exists on either side of the road but it is unlikely to be impacted. A sampling grid of 2m broad strips was placed over the road to ensure broad lateral control of provenance. The portion of the site visible in the road was scraped, sieved and bulked (Plate 7).

5.5.1 Shellfish

Shellfish was extremely fragmented. Although a sample has been collected the assemblage was not analysed.

5.5.2 Animal Bone

Despite being older than other sites excavated at Lynch Point, LP 42 also contained a mixture of marine and terrestrial animals that people exploited in this area. These included tortoise, small mammals, steenbok, snakes, lizards and a large bovid or antelope.

5.5.3 Artefacts

5.5.3.1 Stone Tools

The composition of the artefactual assemblage shows that this site is older than others excavated so far at Paradise Beach. The presence of formal stone artefacts such as backed bladelets, small end scrapers and the dominance of silcrete in the collection indicates that this site is characteristic of the mid-late Holocene and is probably at least 3000 years old. The site clearly demonstrates a difference in the sorts of raw materials selected and the kinds of artefacts being made before the advent of the herding economy just after 2000 years ago. Artefacts of the later sites which include far less microliths, were more often made from quartzes, quartzites and other locally available but inferior raw materials.

No pottery was found on the site. This is to be expected as its age exceeds the advent of ceramics into southern Africa.

6. CONCLUSION

Prehistoric use of the eastern edge of Langebaan Lagoon is manifested in a number of LSA sites associated with the Lynch Point and Leentjiesklip rocky shorelines. These rocky areas exerted a strong attraction over prehistoric people who exploited the colonies of shellfish, which grow on the rocks of the intertidal zone. The 11 sites that have now been excavated along the eastern Lagoon shore show that occupation dated from the Late mid-Holocene through to the ceramic period. Mid-Holocene high sea levels (about 4000 years ago (Deacon & Lancaster 1988)) which were 2.5m higher than that of today, would have probably had a fairly dramatic effect on the shoreline of Langebaan lagoon with the effect that the present littoral dune system probably post-dates this event. This is demonstrated by the fact that fairly recent archaeological sites such as LP 12 (Hart in prep) and LP 43 have been inundated by considerable depths of dune sand showing that a dynamic process of dune formation has been progress within the last 3000 years.

In general, sites LP 28, 29 and 41 show characteristics in terms of their artefact assemblage that indicate that they mostly postdate 2000 years ago. The shellfish sample is dominated by black mussels. In contrast, ceramic period sites in the sheltered bay to the south of Lynch Point, are dominated by limpets. This shows that local shoreline conditions have played an important role in determining what people choose to collect from the sea.

A characteristic of these lagoon-side sites, is that prehistoric people were making use of a range of food sources ranging from shellfish, marine mammals, fish and birds, tortoises, antelopes and reptiles which were hunted and gathered on the inland coastal plain. Ceramic period sites excavated at Lynch Point show lower diversities of animals in terms of both quantity and species (Parkington, Poggenpoel and Hart 1988) compared with what we believe to be earlier sites excavated at Leentjiesklip 2 (Hart 1997). This may be because after 2000 years ago people were able to rely on products of domestic animals and were not quite as dependent on hunting.

Without submission of material for radiocarbon dates it is difficult to establish the precise age of LP 42. The fact that neither domestic animals nor pottery are present in the sample implies that the site is over 2000 years old and is probably as old as 3000 years. This is supported by the silcrete dominated microlithic stone assemblage found at this site which is characteristic of an earlier time period. The material excavated from the Cub Mykonos

development area now represents a valuable collection of rescued information that is available for further study and hopefully radio carbon dating in the future. Each excavated archaeological site represents a part of a region-wide system of human habitation and the environment in which people lived. However, our ability to gain a complete understanding of the history of South Africa is going to depend to a large extent on ensuring a continued policy of conservation and rescue of archaeological material, especially in the context of accelerating development.

7. RECOMMENDATIONS

The development area as indicated on the building control plan of 1997 has been cleared of archaeological material and no further work is considered necessary. The undeveloped portion of Lynch Point immediately south of the Paradise beach development area is archaeologically sensitive. Material in this area has already been impacted by the dirt track, which is eroding into the surface of the dune. It would be most desirable that this area is left to rehabilitate. Any further development on Lynch Point to the south of Paradise Beach will need to be subject to mitigation of archaeological material.

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9. PROFESSIONAL TEAM

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Field work	Chopi Jerardino (archaeologist in charge) Belinda Mutti Harriet Clift Peter Nilssen Johnathan Napier Mzwandile Sasa
Curation	Gail Euston-Brown (shellfish) Kato Joubert (shellfish) Mzwandile Sasa (shellfish) Mzumzima Mjikelizo (Shellfish) Chopi Jerardino (fauna) Tim Hart (artefacts, shellfish)
Report	Tim Hart

PLATE 1: Excavations along the edge of the erosion gully on site LP 28.

PLATE 2: The main excavation on site LP28.

PLATE 3: Deflation bay containing site LP29.

PLATE 4: Test excavations on site LP41.

PLATE 5: Test excavation on site LP 41 showing a lens of shell and other archaeological material at a depth of 25cm.

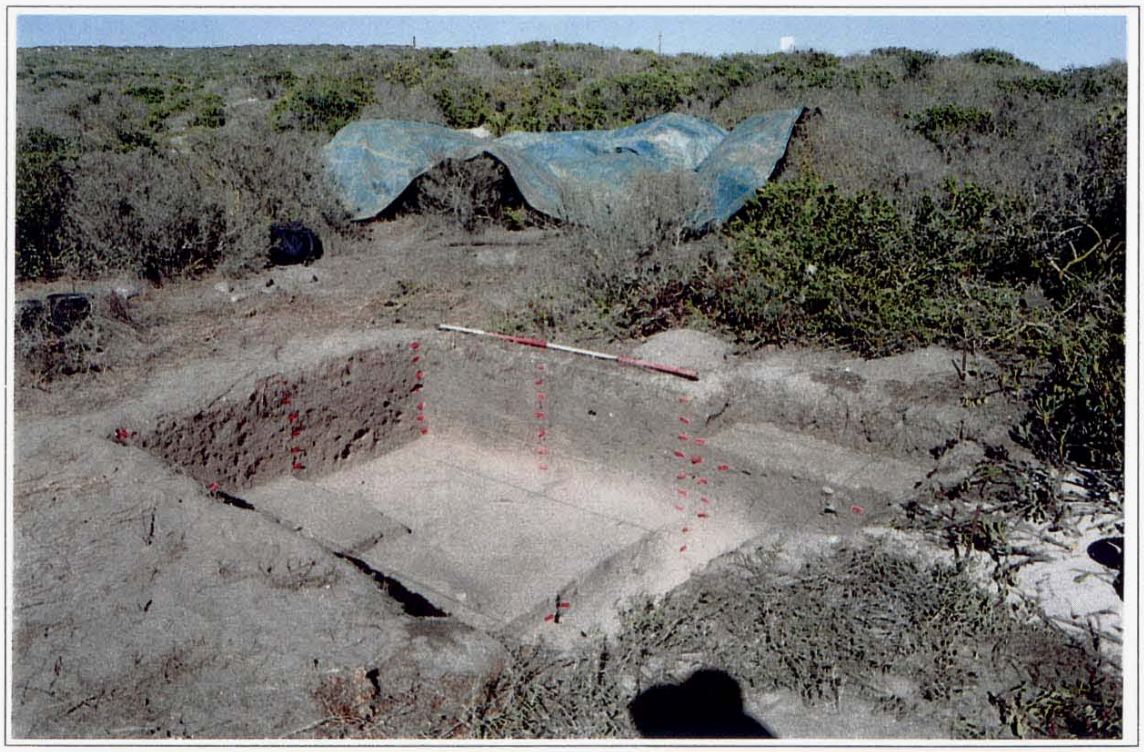

PLATE 6: The main excavation on site LP41.

PLATE 7: Site LP42 was being exposed and eroded on this informal dirt track.

APPENDIX A

Fauna

PARADISE BEACH
Animal species present

LP 28
Raphicerus spp (steenbok)
small-medium bovid
medium bovid
medium-large bovid
Arctocephalus pusillus (Cape fur seal)
Bathyergus suillus (Cape dune mole rat)
Felis sp. (cats)
Microfauna (rodents)
snake/lizard
bird (unident.)
Francolinus sp (a species of francolin)
fish (unident.)
small carnivore (viverrid?)
unidentified bone

LP 29
tortoise (mostly Chersina angulata)
small mammal
mammal (unident.)
Raphicerus spp (steenbok)
microfauna
snake/lizard
bird (unident.)
amphibian (?)
fish (unident.)
unidentified bone

LP 41
tortoise (mostly *Chersina angulata*)
Raphicerus spp (Steenbok)
medium bovid
large bovid
Arctocephalus pusillus (Cape fur seal)
Bathyergus suillus (Cape dune mole rat)
small mammal
unidentified mammal
microfauna
snake/lizard
bird (unident.)
Spheniscus demersus (African penguin)
fish (unident.)
unidentified bone

LP42

Tortoise (mostly Chersina angulata)
Raphicerus spp (steenbok)
large bovid
bovid (unident.)
Bathyergus suillus (Cape dune mole rat)
small mammal
snake/lizard
bird (unident.)
fish (unident.)
unidentified bone

LEENTJIESKLIP

tortoise (mostly Chersina angulata)
Raphicerus spp
medium bovid
bovid (unident.)
Arctocephalus pusillus (Cape fur seal)
small carnivore (viverrid?)
small mammal (unident.)
mammal (unident.)
microfauna
snake/lizard
Phoenicopteridae (flamingo, lesser and/or greater)
Morus capensis (Cape gannet)
Phalacrocorax carbo (Whitebreasted cormorant)
Phalacrocorax spp (species of cormorant)
Spheniscus demersus (african penguin)
bird (unident.)
Rhabdosargus globiceps (white stumpnose)
fish (unident.)
unidentified bone
Jasus lalandii (crayfish)

APPENDIX B

Ostrich eggshell

SITE: LP28

SQUARES: ALL

OSTRICH EGG SHELL

UNIT	BEAD EXT D.	MODIFIED n	DRILLED FRAG	FRAGMENT n
H20/SURF				2
J7/1-4				1
J7/5				3
J7/6				3
J7/7				2
J7/8				2
J7/9				1
J7/10				2
J7/11				2
J8/5				1
J8/6				2
K6/10				1
K6/5				3
K6/6				
K6/9	3.02			2
K7/1-4				
K7/6				1
K7/7				1
K7/8				2
K7/9				
K7/11			1	
K8/6				3
K8/7				1
K8/8				
TOTAL				

AVG BEAD DIAMETER 3.02

SITE: LP 29

SQUARES: ALL

OSTRICH EGG SHELL

UNIT	BEAD EXT D.	MODIFIED n	DRILLED FRAG	FRAGMENT n
F11/SURF				1
F22/SURF				1
G12/SURF				1
G13/SURF				1
G15/SURF				1
G23/SURF				2
H12/SURF				1
H20/SURF				1
H24/SURF				1
I12/SURF				1
I15/SURF				1
I19/SURF				1
TOTAL				10

SITE: LP 41
SQUARES: ALL

OSTRICH EGG SHELL

UNIT	BEAD EXT D.	MODIFIED n	DRILLED FRAG	FRAGMENT n
C2/PLMS				2
C2/top 25CM				1
C2/2				2
C3/1				3
C3/2				2
C3/3				1
C3/4				3
C3/5				1
C4/SURF				1
C4/1				2
C4/2				4
C4/3				3
C4/4				3
C4/5				1
E3/SURF				1
E3/1				3
E3/2			1	4
E3/3				4
E3/4				1
E3/5			1	7
TOTAL			2	49

SITE: LP 42
TRANSECTS: ALL

OSTRICH EGG SHELL

UNIT	BEAD EXT D.	MODIFIED n	DRILLED FRAG	FRAGMENT n
B				4
C				3
D				12
E				10
F				3
G				10
H				3
I				1
J				4
K				2
L				1
TOTAL				53

APPENDIX C

Ceramics

SITE: LP41
SQUARES: ALL

CERAMICS

UNIT	RIM	NECK	BODY	BASE
TEST 13 (20-40 cm)			1	
TOTAL			1	

SITE:LP 28
SQUARES: ALL

CERAMICS

UNIT	RIM	NECK	BODY	BASE
J7/7	1	1		
K6/6			1	
K7(1-4)			1	
K7/9			3	
K8/8		1		
TOTAL	0	1	5	

SITE: LP 29
SQUARES: ALL

CERAMICS

UNIT	RIM	NECK	BODY	BASE
H22/SURF			1	
TOTAL			1	

APPENDIX D

Stone artefacts

RAW MATERIAL PERCENTAGE FREQUENCIES

site	quartz	quartzite	calcrete	silcrete	granite	other
LP28	36.21	13.79	29.89	18.36	1.72	0
LP29	12.4	2.06	80.99	2.06	1.65	0.82
LP41	71.57	13.73	5.39	3.92	4.41	0.98
LP42	15.89	5.3	6.62	68.87	3.31	0

SITE LP 28

SQUARES: ALL

ARTEFACTS

UNIT:	k6 spit 7	j7 spit 9	k7 spit 9	h20 surface	j6 spit 14	j7 spit 10	j7 spit 11	j7 spit 11	j7 spit 12	j7 spit 5	j7 spit 6	j7 spit 8	j7 spit 9	j7 spit 5	j8 spit 6	j8 spit 6	j8 spit 8	j8 spit 9	k4 spit 1-4	k6 spit 10	k6 spit 11	k6 spit 13	k6 spit 14	k6 spit 16	k6 spit 5	k6 spit 5	k6 spit 6	k6 spit 8	k6 spit 9	k6 spit 9	k7 spit 10	k7 spit 12	k7 spit 5	k7 spit 5	k7 spit 5	k7 spit 6	k7 spit 7	k7 spit 9	k8 spit 5	k8 spit 7	k8 spit 8	k8 spit 9	k8 spit 9	l8 spit 9	total
chip	1		1		4	1	1		1		1		1			1	2			3		1	1	2			1		1	2		2	1		1			3		1			1	3	37
chunk	5	1		1		3	1		3		4			1	2		1		1	1			2		1		1			2	1	1			4	7	3	1	1	2	3		2	55
flake	1	1	2			2	5	1	1	2	2	3	1		2			3	1	1	2	2			4	2	2	1	1	3		2	3	1	1	2	3	7	2		2	1	2	74
bladelet					1		1			1									1									1							1	1	2	3						6
irr core											1											1																							2
bp core																																													0
bladelet core																					1																								1
s plat core																																				1									1
mrp																																													0
mbp																																													0
scraper																																													0
adze																																													0
bkd blade																																													0
bkd point																																													0
h/stone																																													0
grind stone																																													0
manuport																																													0
ochre																																													0
total	7	2	3	1	5	6	7	2	5	3	8	3	2	1	4	4	3	3	2	5	3	4	3	2	5	2	4	2	2	5	2	5	5	1	2	6	10	9	8	4	2	5	2	7	176

SITE LP 29
SQUARES: ALL

ARTEFACTS

UNIT:	e11	e13	e15	e17	f09	f10	f11	f12	f14	f16	f18	f20	f22	f22	g08	g09	g10	g11	g12	g15	g15	g17	g19	g21	h08	h09	h10	h12	h12	h14	h16	h22	h24	i08	i09	i10	i11	i12	i13	i15	i17	i19	j11	j12	j16	j18	q13	total
chip					1												1				1		1				1				1						1	3	2	1	1			2			16
chunk		4	1	1	1	4	9	5	4	5	3	1	1	4	1	2	4	1	8	3		4	4	1	5	6	2	12	4	7	1	1	2	1	3	6	6	2	2	1	3	3	1	1		1	5	143
flake	2			1	1	6			1							1		2	5	2						2	1	2		2			2	3		4	1		1	1	3	1			1	2	4	51
bladelet																																															0
irr core																																								1							1
bp core																																															0
s plat core																																															0
mrp									1																																							1
mbp																																															0
scraper												1																																				1
adze																																															0
bkd blade																																															0
bkd point																																															0
h/stone																																															0
manuport																																			1													1
ochre																																															0
total	2	4	1	2	3	10	9	5	6	5	3	2	1	4	1	3	5	3	13	5	1	4	5	1	5	8	4	14	4	9	2	1	2	4	1	7	8	9	5	5	7	4	1	1	3	3	9	214

SITE LP 41
SQUARES: ALL

ARTEFACTS

UNIT:	c2 plms	c2 spit 1	c2 spit 2	c2 top 25	c3 plms	c3 spit 1	c3 spit 2	c3 spit 3	c3 spit 4	c3 spit 6	c3 ssc	c4 spit 6	c4 spit 1	c4 spit 2	c4 spit 3	c4 spit 4	c4 spit 5	c4 spit 7	c4 surface	d2 tort.pud.	d3 spit 2	d3 spit 3	d3 spit 4	d3 spit 5	d3 spit 6	d4 spit 1	d4 spit 2	d4 spit 3	d4 spit 4	d4 spit 5	d4 spit 6	d4 surface	d4 tort. pud.	e3 spit 1	e3 spit 2	e3 spit 3	e3 spit 4	e3 spit 5	e3 spit 6	e3 surface	e4 spit 1	e4 spit 2	e4 spit 3	e4 spit 4	e4 spit 5	e4 spit 6	e4 surface	total
chip					1		1	4		2	1	2	1		1	1		2			1	4	7	5	3	2	2	3	1		3		3	1	3	2	4	1			7		1	2		70
chunk		2					1	1	1			3		3			2		1	1	1	2	1	2		1	1			1		2	1	4	3		2				1		1		4	2	38
flake	1	4	3	7		1		4	1	1			1	2	3	3	2	3		1	1	1	4	1	1	3	4	1	2	4		2		4		3	3	6	2	5		2	1	3	2		91
bladelet			1														1				1					1		1														1					6
irr core	1		1																																												2
bp core																																																0
s plat core																																																0
mrp																																																0
mbp																																																0
scraper																																																0
adze																																																0
bkd blade																																																0
bkd point																																																0
h/stone																																																0
grind stone																																										1						0
manuport																																																0
ochre										1																	1	1																				3
total	2	6	5	7	1	1	2	9	2	4	1	5	2	5	4	4	3	5	1	1	4	7	11	7	4	5	7	6	3	5	4	2	2	8	7	5	7	6	7	2	5	1	10	2	4	8	2	211

SITE LP 42

TRANSECTS

ARTEFACTS

UNIT:	Sect 2	Sect 3	Trans A	Trans B	Trans C	Trans D	Trans E	Trans F	Trans G	Trans H	Trans I	Trans J	Trans K	Trans P	total
chip				2	5		4	7	6		2	3	7	2	38
chunk			4	3	1	2	2		3	2	1	1	1		20
flake		2	2	3	2	3	5	8	8	6	4	7	4		54
bladelet			1	2	1		1	2			2		2		11
irr core								2	1			1			4
bp core															0
s plat core															0
bladelet core								2	1						
mrp															0
mbp															0
scraper			1			1		1					1		4
adze															0
bkd bladelet							1	1							2
bkd point															0
h/stone															0
manuport															0
ochre	1						2				1				4
total	1	2	8	10	9	6	15	23	19	8	10	12	15	2	140

APPENDIX E

Shell species

SQUARE K7

LP 28 K7	SPIT 5		SPIT 7		SPIT 9		SPIT 11	
Shell species	n	%	n	%	n	%	n	%
PATELLA SP								
granatina	36	9.3	15	6.5	13	5.8	7	2.5
compressa	0	0.0	0	0.0	0	0.0	0	0.0
granularis	11	2.8	7	3.0	4	1.8	5	1.8
argenvillei	5	1.3	13	5.7	15	6.7	14	4.9
barbara	2	0.5	2	0.9	1	0.4	5	1.8
tabularis	0	0.0	1	0.4	0	0.0	1	0.4
miniata	0	0.0	0	0.0	0	0.0	0	0.0
cochlear	1	0.3	2	0.9	6	2.7	6	2.1
longicosta	0	0.0	0	0.0	0	0.0	0	0.0
oculus	0	0.0	3	1.3	0	0.0	3	1.1
sub-total	0	0.0	0	0.0	0	0.0	0	0.0
TURBO SP	0	0.0	0	0.0	0	0.0	0	0.0
cidaris	0	0.0	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0
OXYSTELE SP	1	0.3	4	1.7	5	2.2	0	0.0
Whelks	150	38.7	104	45.2	85	37.9	51	17.9
Haliotis midae	0	0.0	0	0.0	0	0.0	0	0.0
C. meridionalis	193	49.7	98	42.6	112	50.0	204	71.6
D. serra	2	0.5	0	0.0	1	0.4	5	1.8
Barnacle	1	0.3	0	0.0	0	0.0	0	0.0
F. aperta	0	0.0	0	0.0	0	0.0	0	0.0
C. Porcellana	36	9.3	24	10.4	21	9.4	23	8.1
A.ater	0	0.0	0	0.0	0	0.0	1	0.4
Bullia	5	1.3	0	0.0	0	0.0	1	0.4
	388	100.0	230	100.0	224	100.0	285	100.0

SITE LP28

SQUARE J7

LP 28-J7	SPIT 5		SPIT 7		SPIT 9		SPIT 11	
Shell species	n	%	n	%	n	%	n	%
PATELLA SP								
granatina	10	3.8	32	13.2	12	3.0	2	1.2
compressa	0	0.0	0	0.0	0	0.0	0	0.0
granularis	7	2.6	15	6.2	15	3.7	5	3.0
argenvillei	4	1.5	16	6.6	6	1.5	6	3.6
barbara	2	0.8	0	0.0	0	0.0	0	0.0
tabularis	0	0.0	0	0.0	0	0.0	0	0.0
miniata	0	0.0	0	0.0	0	0.0	0	0.0
cochlear	9	3.4	5	2.1	2	0.5	2	1.2
longicosta	0	0.0	0	0.0	0	0.0	0	0.0
oculus	0	0.0	2	0.8	3	0.7	2	1.2
sub-total	0	0.0	0	0.0	0	0.0	0	0.0
TURBO SP	0	0.0	0	0.0	0	0.0	0	0.0
cidaris	0	0.0	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0
OXYSTELE SP	2	0.8	2	0.8	7	1.7	0	0.0
Whelks	91	34.2	108	44.4	103	25.6	44	26.3
Haliotis midae	0	0.0	0	0.0	0	0.0	0	0.0
C. meridionalis	113	42.5	98	40.3	209	52.0	104	62.3
D. serra	1	0.4	0	0.0	5	1.2	0	0.0
Barnacle	0	0.0	0	0.0	0	0.0	0	0.0
F. aperta	0	0.0	0	0.0	0	0.0	0	0.0
C. Porcellana	27	10.2	30	12.3	40	10.0	17	10.2
A.ater	0	0.0	0	0.0	0	0.0	0	0.0
Bullia	0	0.0	5	2.1	0	0.0	2	1.2
	266	100.0	243	100.0	402	100.0	167	100.0

SITE LP28

SQUARE J8

LP 28-J8	SPIT 5		SPIT 9	
Shell species	n	%	n	%
PATELLA SP				
granatina	8	2.8	11	3.4
compressa	0	0.0	0	0.0
granularis	4	1.4	5	1.5
argenvillei	4	1.4	17	5.2
barbara	0	0.0	6	1.8
tabularis	0	0.0	0	0.0
miniata	0	0.0	0	0.0
cochlear	2	0.7	2	0.6
longicosta	0	0.0	0	0.0
oculus	0	0.0	0	0.0
sub-total	0	0.0	0	0.0
TURBO SP	0	0.0	0	0.0
cidaris	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0
sub-total	0	0.0	0	0.0
OXYSTELE SP	7	2.5	4	1.2
Whelks	13	4.6	67	20.4
Haliotis midae	0	0.0	0	0.0
C. meridionalis	199	70.3	184	56.1
D. serra	8	2.8	4	1.2
Chiton	1	0.4	0	0.0
Barnacle	0	0.0	1	0.3
F. aperta	0	0.0	0	0.0
C. Porcellana	37	13.1	22	6.7
A.ater	0	0.0	4	1.2
Bullia	0	0.0	1	0.3
	283	100.0	328	100.0

SITE LP28

SQUARE K6

LP 28-K6	SPIT 5		SPIT 9		SPIT 11		SPIT 13		SPIT 14	
Shell species	n	%	n	%	n	%	n	%	n	%
PATELLA SP										
granatina	16	5.0	15	4.8	6	3.0	4	2.4	3	2.4
compressa	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
granularis	14	4.4	11	3.5	7	3.6	3	1.8	2	1.6
argenvillei	2	0.6	18	5.8	4	2.0	2	1.2	3	2.4
barbara	3	0.9	4	1.3	0	0.0	1	0.6	0	0.0
tabularis	0	0.0	0	0.0	2	1.0	0	0.0	0	0.0
miniata	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8
cochlear	1	0.3	5	1.6	0	0.0	3	1.8	1	0.8
longicosta	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
oculus	0	0.0	3	1.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TURBO SP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
cidaris	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
OXYSTELE SP	1	0.3	0	0.0	2	1.0	0	0.0	2	1.6
Whelks	92	29.0	109	35.2	43	21.8	33	19.9	19	15.3
Haliotis midae	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
C. meridionalis	160	50.5	112	36.1	120	60.9	120	72.3	82	66.1
D. serra	0	0.0	1	0.3	0	0.0	0	0.0	3	2.4
Chiton	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Barnacle	0	0.0	0	0.0	0	0.0	1	0.6	0	0.0
F. aperta	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
C. Porcellana	26	8.2	30	9.7	10	5.1	12	7.2	8	6.5
A.ater	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bullia	2	0.6	2	0.6	3	1.5	0	0.0	0	0.0
	317	100.0	310	100.0	197	100.0	166	100.0	124	100.0

SITE LP28

SQUARE K8

LP 28-K8	SPIT 5		SPIT 7		SPIT 9	
Shell species	n	%	n	%	n	%
PATELLA SP						
granatina	29	7.5	30	8.0	29	7.0
compressa		0.0		0.0		0.0
granularis	4	1.0	9	2.4	9	2.2
argenvillei	17	4.4	26	7.0	9	2.2
barbara	0	0.0	3	0.8	3	0.7
tabularis	0	0.0	0	0.0	0	0.0
miniata	0	0.0	0	0.0		0.0
cochlear	5	1.3	0	0.0	4	1.0
longicosta	0	0.0	0	0.0	0	0.0
oculus	1	0.3	3	0.8	1	0.2
sub-total	56	14.5	71	19.0	55	13.3
TURBO SP		0.0		0.0		0.0
cidaris	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0
OXYSTELE SP	5	1.3	0	0.0	5	1.2
Whelks	133	34.4	133	35.7	101	24.3
Haliotis midae	0	0.0	0	0.0	0	0.0
C. meridionalis	151	39.0	128	34.3	219	52.8
D. serra	0	0.0	0	0.0	0	0.0
F. aperta	0	0.0	0	0.0		0.0
C. Porcellana	35	9.0	38	10.2	32	7.7
A.ater	0	0.0	0	0.0	0	0.0
Bullia	7	1.8	3	0.8	3	0.7
	387	100.0	373	100.0	415	100.0

SITE LP29

LP 29	G15	SURF	H14	SURF	H20	SURF	I17	SURF	F14	SURF
Shell species	n	%	n	%	n	%	n	%	n	%
PATELLA SP										
granatina	2	1.1	2	1.1	0	0.0	3	2.8	5	3.9
compressa	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
granularis	0	0.0	3	1.6	0	0.0	4	3.7	0	0.0
argenvillei	11	5.9	6	3.2	4	3.4	5	4.6	11	8.6
barbara	0	0.0	0	0.0	0	0.0	4	3.7	0	0.0
tabularis	0	0.0	0	0.0	0	0.0	0	0.0	2	1.6
miniata	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
cochlear	1	0.5	1	0.5	4	3.4	1	0.9	2	1.6
longicosta	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
oculus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TURBO SP	0	0.0	0	0.0	0	0.0	1	0.9	0	0.0
cidaris	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
OXYSTELE SP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Whelks	85	45.5	41	21.7	20	16.9	21	19.3	48	37.5
Haliotis midae	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
C. meridionalis	87	46.5	128	67.7	77	65.3	80	73.4	66	51.6
D. serra	6	3.2	4	2.1	6	5.1	1	0.9	0	0.0
F. aperta	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
C. Porcellana	7	3.7	16	8.5	13	11.0	6	5.5	9	7.0
Barnacle	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chiton	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
A.ater	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bullia	0	0.0	0	0.0	2	1.7	1	0.9	5	3.9
	187	100.0	189	100.0	118	100.0	109	100.0	128	100.0

SITE LP41

SQUARE D3

LP 41-D3	SPIT 1		SPIT 2		SPIT 3		SPIT 4		SPIT 5		SPIT 6	
Shell species	n	%	n	%	n	%	n	%	n	%	n	%
PATELLA SP												
granatina	0	0.0	7	2.5	7	3.4	9	2.1	9	3.6	2	1.1
compressa	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
granularis	4	2.5	1	0.4	2	1.0	2	0.5	6	2.4	5	2.8
argenvillei	1	0.6	0	0.0	1	0.5	7	1.7	4	1.6	8	4.5
barbara	0	0.0	0	0.0	1	0.5	3	0.7	0	0.0	0	0.0
tabularis	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0
miniata	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
cochlear	0	0.0	0	0.0	1	0.5	1	0.2	1	0.4	4	2.2
longicosta	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
oculus	0	0.0	0	0.0	2	1.0	1	0.2	1	0.4	1	0.6
sub-total	5	3.1	8	2.8	14	6.7	24	5.7	21	8.4	20	11.2
TURBO SP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
cidaris	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
OXYSTELE SP	1	0.6	0	0.0	1	0.5	6	1.4	1	0.4	2	1.1
Whelks	41	25.5	38	13.4	44	21.2	63	15.0	53	21.3	24	13.5
Haliotis midae	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
C. meridionalis	104	64.6	220	77.7	135	64.9	302	72.1	157	63.1	113	63.5
D. serra	0	0.0	4	1.4	1	0.5	4	1.0	1	0.4	1	0 6
F. aperta	0	0.0	0	0.0		0.0	0	0.0	0	0.0	0	0.0
C. Porcellana	10	6.2	11	3.9	12	5.8	20	4.8	14	5.6	18	10.1
A.ater	0	0.0	0	0.0	0	0.0	0	0.0	2	0.8	0	0.0
Bullia	0	0.0	2	0.7	1	0.5	0	0.0	0	0.0	0	0.0
	161	100.0	283	100.0	208	100.0	419	100.0	249	100.0	178	100.0

SITE LP41

SQUARE C4

LP 41-C4	SPIT 1		SPIT 2		SPIT 3		SPIT 4		SPIT 5		SPIT 6		SPIT 7	
Shell species	n	%	n	%	n	%	n	%	n	%	n	%	n	%
PATELLA SP														
granatina	3	2.2	1	0.8	9	4.8	8	6.0	6	5.8	0	0.0	1	0.7
compressa	0	0.0	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
granularis	0	0.0	2	1.6	0	0.0	4	3.0	7	6.8	1	0.7	4	2.8
argenvillei	0	0.0	1	0.8	7	3.7	9	6.8	7	6.8	5	3.7	0	0.0
barbara	2	1.5	0	0.0	1	0.5	2	1.5	3	2.9	0	0.0	1	0.7
tabularis	0	0.0	0	0.0	0	0.0	0	0.0	1	1.0	0	0.0	2	1.4
miniata	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
cochlear	0	0.0	1	0.8	2	1.1	2	1.5	0	0.0	0	0.0	1	0.7
longicosta	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
oculus	0	0.0	0	0.0	1	0.5	1	0.8	6	5.8	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9	6.3
TURBO SP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
cidaris	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sarmaticus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
sub-total	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
OXYSTELE SP	0	0.0	2	1.6	1	0.5	0	0.0	0	0.0	0	0.0	2	1.4
Whelks	18	13.3	32	25.0	52	27.7	37	27.8	22	21.4	25	18.5	33	22.9
Haliotis midae	0	0.0	0	0.0	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0
C. meridionalis	107	79.3	92	71.9	122	64.9	84	63.2	76	73.8	103	76.3	86	59.7
D. serra	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
F. aperta	0	0.0	0	0.0		0.0	0	0.0	0	0.0	0	0.0	0	0.0
C. Porcellana	10	7.4	2	1.6	9	4.8	9	6.8	4	3.9	5	3.7	14	9.7
A.ater	0	0.0	0	0.0	1	0.5	1	0.8	0	0.0	2	1.5	0	0.0
Bullia	0	0.0	0	0.0	3	1.6	2	1.5	0	0.0	0	0.0	0	0.0
	135	100.0	128	100.0	188	100.0	133	100.0	103	100.0	135	100.0	144	100.0