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## **Report on the 2002 excavations at Vaalkrans Shelter, De Hoop Nature Reserve, southern Cape**

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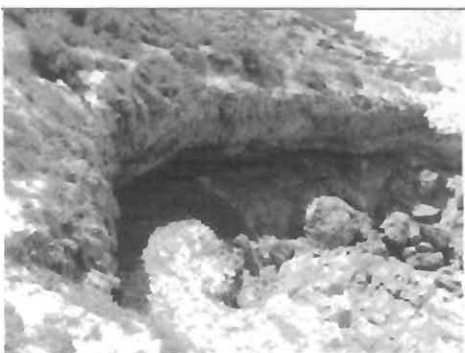
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### ***Site Description***

Vaalkrans (VK) shelter is located at 34°27'S, 20°34' E on the southwestern coast of the Western Cape in De Hoop Nature Reserve. The shelter faces southwest, is located some 20 meters from the Indian Ocean and approximately 11 meters above sea level. The rock overhang is about 2 meters high at the dripline and decreases to half a meter at the rear of the shelter. The shelter is 25 meters long and the depth ranges from 6.5 meters at its deepest to 87 centimeters at its most shallow point (See Figure 1). Just below the site is a cobble beach and the area is characterized by a rocky shoreline (See Figure 2).



*Figure 1. Vaalkrans shelter*



*Figure 2. Area below Vaalkrans*

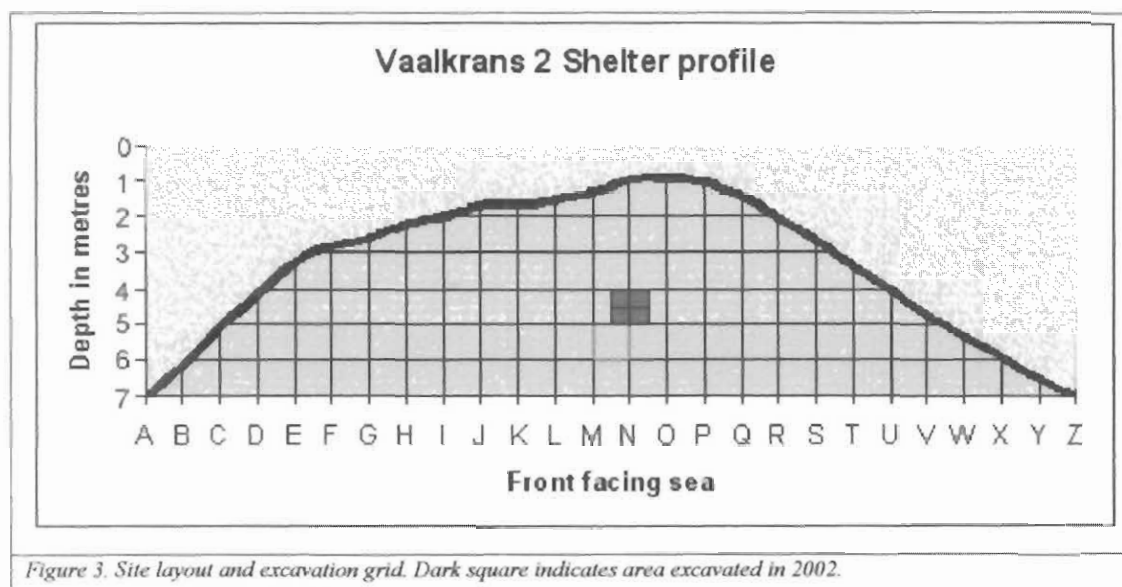


Figure 3. Site layout and excavation grid. Dark square indicates area excavated in 2002.

The most abundant faunal remains recovered during excavations in 2002 are shellfish, particularly *Patella longicosta*, *Patella argenvillei*, *Patella barbara*, *Patella tabularis*, *Patella cochlear*, *Patella oculus*, *Haliotis midae*, *Haliotis spadicea*, *Turbo sarmaticus*, *Turbo cidaris*, *Perna perna*, *Diloma sinensis*, *Diloma tigrina*, and *Dinoplax gigas*.

Other faunal remains are far less numerous than shellfish. Species of bovid ranging from size class two to class four were present, as well as remains of *A. pusillus*, *B. suillus*, *P. capensis*, *C. mesomelas*, *C. angulata*, *Serpentes sp* and microfauna.

Fragments of ostrich eggshell (OES) were recovered, some burnt, but none with any signs of modification for bead or water container manufacture.

Well-preserved geophytes have also been recovered and await identification by specialists at the University of Cape Town.

Lithics do not form a large part of the artefacts recovered and consists mainly of an informal assemblage.

Charcoal was present in all units and several hearth features were identified. Samples are to be sent to QUADRU for radiocarbon dating.

#### *Site preparation and excavation methodology*

Prior to excavation a grid of one metre squares was laid out at the site, starting at a base point (A7), and a baseline was set along the drip-line from the western end of the shelter. Shelter depth was measured from the baseline at each metre square to plot the outline of the back wall (See Figure 3). Grid squares were lettered along the frontal axis, running east to west and numbered along the saggital axis from north to south. Squares M5 and N5 were selected for excavation on the basis of the deposit appearing to be relatively *in*

*situ* in this area. Square M5 and N5 were then further subdivided into 0.5-m quadrats, with M5a being in the northwestern, and M5c in the southwestern corner. Squares M5b, c and N5a, b were excavated.

In order to protect the surface deposits in the area adjacent to the squares to be excavated, as well as to facilitate access for the excavators, a thick layer of sterile dune sand was laid over the deposit nearest to the excavated squares and wooden planks placed on top for seating. Filled sandbags were placed over the surrounding deposit to prevent disturbance. Red and white 'warning' tape was spanned along the edge of the deposit to demarcate safe walking areas and prevent accidental trampling of deposit.

During excavation, all objects larger than 1.5 cm were plotted by measuring the x, y and z coordinates. Vertical z measurements were taken with the use of a water level system and height determined relative to the datum point established prior to excavation. All plotted pieces were individually bagged, labeled and numbered according to square, unit and artefact category, as well as entered on the site record form and plotted on graph paper for that specific unit and square. Material smaller than 1.5 cm was wet sieved through a 3mm and 1.5mm screen with fresh water at the site, left to dry, bagged and taken back to the Potberg field station. Coarse fraction (>3mm) material was sorted at Potberg into the various artefactual categories and minimum numbers (MNI's) were determined where appropriate. Excavation commenced on 22 February 2002 on each Monday, Tuesday, Thursday and Friday and ended 8 March 2002. Wednesdays were spent sorting and analysing the finds at the Potberg center.

### *Sedimentology and stratigraphy*

Seven stratigraphic layers were excavated during the 2002 season. The surface level was designated as AA and was present in all four quadrats. It consists of medium brown to tan coloured compacted aeolian sand containing a considerable amount of shell and some bone. Quadrat M5b had an abundance of roofspall blocks, of which some in the western half of the quadrat were burnt and decomposing. All quadrats were fairly level and N5a sloped gently down to the north/north east

Unit AB does not extend to all quadrats and underlies AA in the southeast corner of M5b, the southern half of N5a, and the eastern half of N5c. The sediment is loose, soft, dark brown-grey sand with larger grains than those in AA and contains a considerable amount of charcoal and plant material. AB appears hearthy, but due to the loose nature of the soil it is unlikely to be *in situ*. Level ABA lies in the eastern half of N5a and the northeast corner of N5c. It consists of dark, very dense and 'sticky' humic material with flecks of burnt and limey shell throughout.

Unit AC is present in all four quadrats and consists of loose yellow/brown aeolian sand containing charcoal and very fragmented and rotten shells, as well as many roofspall blocks in M5b

Unit ACA occurs in the northwestern corner of M5d and the western half of M5b and is a pit containing massive amounts of charcoal, which has been dug through AC. Burnt roofspall blocks were found directly on top of the pit. It contained no material other than charcoal, and is most likely a recent intrusive event.

ACB was present in all quadrats, butting up against ACA in M5b and M5d. It consists of very compact brown humic sand containing charcoal, bone, organic material and a large amount of whole and fragmented shell. Excavation in quadrats N5a and M5b was discontinued after the removal of unit ACB.

Unit ACC was removed from N5c and M5b. In contrast with ACB, ACC is a sandy, fine-grained, medium-brown loose sediment containing a large amount of *T. sarmaticus*, many whole ones, and considerably less *P. perna* compared to unit ACB above. A patch of fish scales were found in the western portion of N5c. Excavation stopped at this point.

## Cultural artefacts

### Lithics

The lithic assemblage is small and informal, and made up almost entirely of quartz and quartzite flakes and chunks, with the exception of one quartzite hammerstone and one utilized silcrete flake (Table 1). A single small piece of ochre was found with no evidence of modification.

Unit	Hammerstone	Flake (utilised)	Flake (cortical)	Flake	Chunk	Core
AA	1 x quartzite					
AB		1 x quartzite				
ABA			2 x quartzite			
AC		1 x silcrete		2 x quartzite	1 x quartz	
ACB			1 x quartzite	1 x quartzite 1 x quartz	1 x quartzite 1 x quartz	1 x quartz
ACC			1 x quartz 1 x quartzite	1		

Table 1. Summary of lithic artifacts from VK.

### Bone artefacts

A single bone tool was found during the 2002 season from quadrat N5a unit ACB (Figure 4). It is a bone 'spatula' shaped from the left scapula of a juvenile size 3 bovid, measuring 16cm in length from the most medial end to the most lateral part of the glenoid fossa. The bone had been modified so that only a portion of the superior border remains, and the

acromium process had been removed. Its width ranges from 2.6 cm on the lateral end to 3.4 cm at the medial end.

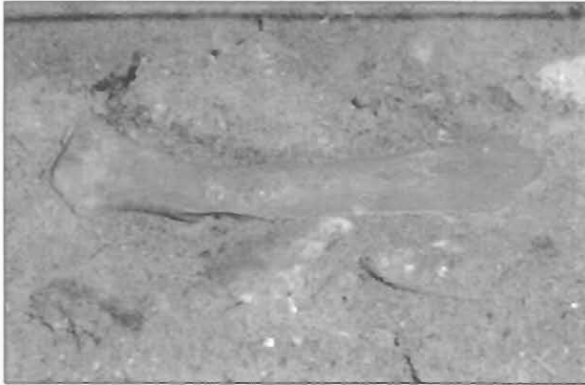


Figure 4. Bone 'spatula' from N5a unit ACB

## Fauna

### Mammals

Mammalian remains were present but not very abundant throughout the sequence, no doubt partly due to the small size of the excavation. Both marine and terrestrial mammals were exploited, with *Bathyergus suillus* the most abundant and present in all layers. A single marine mammal is represented by the right scapula of an older juvenile Cape Fur seal, *Arctocephalus pusillus*, found in M5b unit ACB. Both MNI's and NISP'a were calculated (Table 2 and 3).

Species	Unit AA	Unit AB	Unit ABA	Unit AC	Unit ACA	Unit ACB	Unit ACC
<i>A. pusillus</i>	0	0	0	0	0	1	0
<i>B. suillus</i>	4	1	0	4	0	7	0
<i>B. suillus</i> (dentition)	2	2	0	1	0	2	1
Bovid size 2	1	0	0	1	0	3	0
Bovid size 3	1	0	0	1	0	3	0
Bovid size 4	0	0	0	0	0	1	1
<i>C. mesomelas</i>	0	0	0	0	0	1	0
<i>P. capensis</i>	0	0	0	1	0	1	0
Microfauna	0	0	0	1	0	0	0
Small mammal	9	2	3	6	0	3	3
Insectivore(Bat?)	0	0	0	0	0	0	1

Table 2. Mammal NISP's per unit.

Species	MNI
Bovid size II	1
Bovid size III	2
Bovid class IV	1
<i>A. pusillus</i>	1
<i>B. suillus</i>	4
<i>B. suillus</i> dentition	2
<i>C. mesomelas</i>	1
<i>P. capensis</i>	1
Small mammal	N/A
Microfauna	1

Table 3. Mammal MNI's from all units

### Reptiles

Reptile remains consist of *Chersina angulata* as well as numerous snake ribs and vertebrae, probably *Bitus arietans*. *C. angulata* was present in all units apart from ACA and ACC.

### Fish

Fish remains are well preserved and were found in units AA, ACB and ACC, mostly scales and teeth, as well as a mandible from N5c unit ACB, provisionally identified as a musselcracker species. It is likely that fish will be well represented at the site but due to the limited area excavated in 2002 only a small number of fish bones were recovered. These have yet to be analysed.

### Shellfish

#### Analysis Methodology

All shells and shell fragments larger than 1.5cm were recorded *in situ* and bagged separately. All coarse fraction shell fragments were identified and sorted to species. MNIs were calculated for all species present (Table 4). Only specimens considered to be food items were included in the counts, thus excluding juveniles and small species that most likely entered the site unintentionally as 'passengers' on adult limpets or attached to larger mussels. MNIs for *Patella*, *Haliotis* and *Diloma* species were determined by counting the apices recovered. *Turbo* opercula and apices were counted separately and the larger number was taken as the MNI. For *D. gigas*, front, back and middle plates were counted separately, the middle plate count divided by six, and the largest number of either front, back or middle taken as the MNI. For *P. perna* all hinges were separated into right or left sides and the higher number was recorded as the MNI.

The shellfish data presented here is from the plotted shells as well as the material retained in the 3-mm sieve. The material from the 1.5-mm sieve has not yet been analysed and, as previous studies (Thackeray, 1988) have shown, are unlikely to change the MNI's substantially.

In all units *Perna perna* has the highest MNI count, and *Turbo sarmaticus* is the second most common shellfish species present (Table 4 and Figure 5). In unit ACC *T. sarmaticus*, *H. midae*, and to a lesser extent *P. argenvillei* MNI's increased significantly in relation to *P. perna* from that unit, suggesting that people were utilising marine resources more extensively and venturing further down the intertidal zones and into the infratidal zone at that time than during subsequent occupations. It should be kept in mind that ACC has only been excavated in two quads at present.

UNIT	AA		AB		ABA		AC		ACB		ACC	
SPECIES	MNI	%	MNI	%	MNI	%	MNI	%	MNI	%	MNI	%
<i>H. midae</i>	8	3	3	3	1	1	23	5	13	3	26	15
<i>H. rapadites</i>	14	5	3	3	6	6	35	8	18	5	8	5
<i>P. perna</i>	115	48	54	55	48	58	200	48	226	57	44	26
<i>D. gigas</i>	32	13	8	8	4	6	22	5	20	5	8	5
<i>P. argenvillei</i>	28	12	2	2	1	1	25	6	20	5	19	11
<i>P. cochlear</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>P. longicosta</i>	8	2	0	0	0	0	8	2	7	2	3	1
<i>P. oculus</i>	4	1	0	0	0	0	3	1	3	1	3	1
<i>P. barbara</i>	8	3	0	0	2	3	19	4	9	2	7	4
<i>P. fab/parb</i>	0	0	0	0	1	1	1	0	1	0	0	0
<i>P. fabularis</i>	1	0	0	0	0	0	0	0	0	0	0	0
<i>T. cidaris</i>	1	0	0	0	0	0	1	0	0	0	0	0
<i>T. sarmaticus</i>	59	24	20	20	9	12	62	14	50	13	42	24
<i>D. nigra</i>	0	0	0	0	1	1	5	1	5	1	2	1
<i>D. sinensis</i>	2	1	7	7	2	3	25	6	16	4	6	3
<i>D. sp.</i>	3	1	0	0	1	1	3	1	6	2		0

Table 4. MNI's of shellfish from quadrats M5b, M5d, N5a and N5c at VK shelter

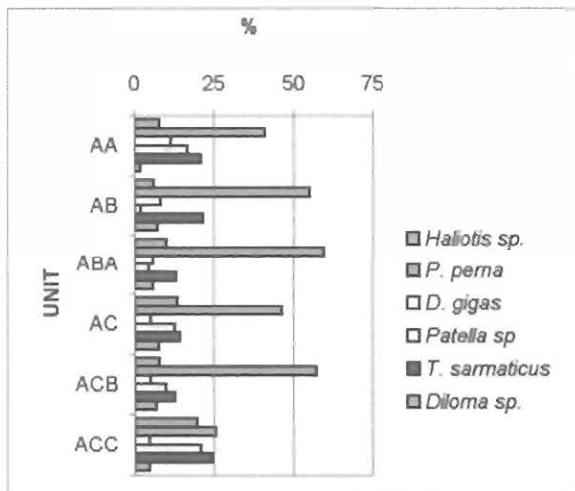


Figure 5. % Frequencies of the most common shellfish species at VK

### Discussion

Vaalkrans Shelter has the potential of providing a good overview of marine coastal exploitation by hunter gatherers in the De Hoop area during the Late Holocene. Bone and shell are well preserved as are *in situ* features such as hearths and processing areas. Plant materials are particularly well preserved, a feature unusual in a near coastal site. The recovered corn casings will provide interesting information on the recovery and utilization of carbohydrates at coastal sites in this area. The material recovered from Vaalkrans Shelter in 2002/2003 will be compared to that from the LSA levels at various sites in the Garcia State forest, including Blombos Cave (Henshilwood, 1995, 1996), Die Kelders (Schweitzer, 1979), Pearly Beach (Avery, 1974, 1975, 1976; Avery & Siegfried, 1980) and Byneskranskop (Schweitzer & Wilson, 1982) during 2003/2004. This comparison is aimed at looking at variations or similarities in coastal exploitation during the Late Holocene that might relate to ecological differences and/or group preferences. The potential of varied ecological zones along the southern Cape coastline for hunter gatherers during the Late Holocene to the east of Cape Agulhas and up to Mossel Bay is not well explored. Between Blombos Cave in the east and Danger Point in the west, a distance of c.330 km, no coastal sites with the exception of Pearly Beach/Gansbaai area (Avery, 1974; Schweitzer, 1975) have been well described or published during the past 50 years. There is considerable ecological variation along this stretch of the southwestern and southern Cape coastline due to a rapid change in sea surface temperatures where the Atlantic and Indian oceans meet. In particular fish and shellfish species to the east of Cape Agulhas are substantially different to those found to the west. The Vaalkrans excavations have the potential of providing excellent information relating to the ecology



of coastal hunter gatherers along the unexplored 220 km strip of coastline east of Cape Agulhas and west of the Garcia State Forest area (Henshilwood, 1995,1996).

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