Report on the 2002-2005 excavations at Vaalkrans Shelter, De Hoop Nature Reserve, southern Cape

Report prepared for Heritage Western Cape and Cape Nature by:

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(1) Introduction

Vaalkrans has been excavated by us in October 2002, February 2003, February and October 2004, February and October 2005. Water erosion is continuing to cause severe damage to the Vaalkrans deposit. During storms in mid 2005, high volumes of water cascaded over the Vaalkrans ridge and washed away deposits at the rear of the shelter. Fortunately, sand bags installed during our past excavations prevented further loss of in situ deposits. Conservation measures for the site are urgently required. We suggest a row of sandbags are installed at the western neck of the shelter to channel water away from the deposits. A conduit of c. 30 cm diameter and 4 m length will need to be installed to channel the water. With the permission of HWC, and subject to inspection by Dr Deacon, we will install this pipe in 2006.

(2) Vaalkrans: material and methods

(2.1) Site Description

Vaalkrans Shelter (34°27'S, 20°34'E) is located on the southern coast of the Western Cape in De Hoop Nature Reserve, South Africa. The shelter faces southwest some 20 meters from the Indian Ocean and approximately 11 meters above sea level. The rock overhang is about 2 meters high at the drip line, 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 (Figure 1). Just below the site is a quartzite cobble beach and the general area is characterized by a rocky shoreline with few sandy beaches in the vicinity (Figure 2).

Figure 1: Vaalkrans shelter

Figure 2: Area below Vaalkrans

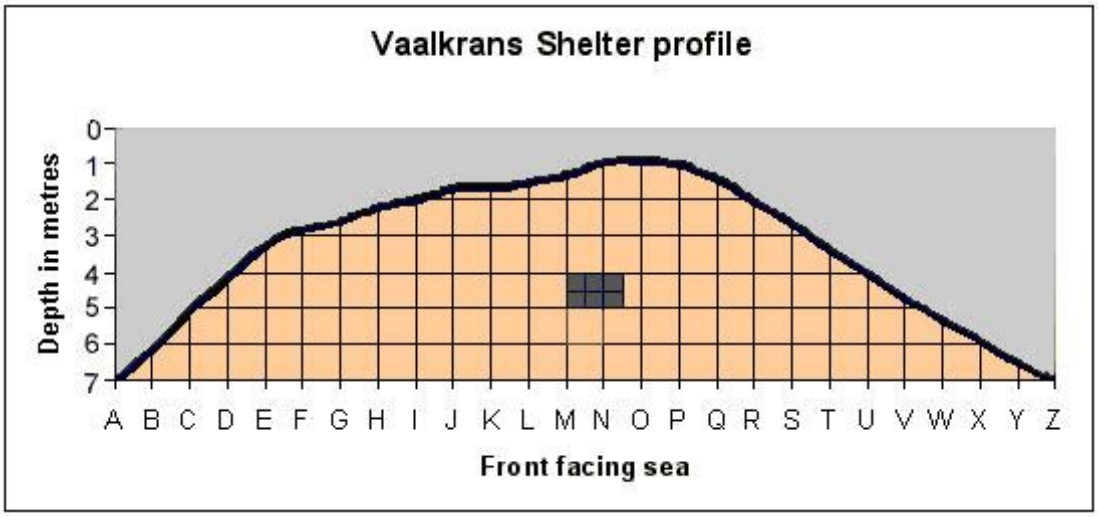


Figure 3: Site layout and excavation grid. Dark square indicates area excavated in 2002-2005

(2.2) Site preparation and excavation methodology

Prior to excavation a grid of one meter squares was laid out over 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 meter square to plot the outline of the back wall (Figure 3). The deposits at the rear of the shelter have been extensively washed and mixed by strong water action with only a narrow band of

deposit at the front of the shelter still *in situ* (Figure 4). Continuing stream water action further washes and bioturbates the deposits at the rear of the cave during the seasonal rainy period. This action is gradually eroding the *in situ* deposits in the front of the shelter thereby exposing bone, shell and hearths. Bone preservation in these eroded deposits is generally poor. Bone is well preserved in the *in situ* section and the depth of the overall deposit is less than 1 metre.

Figure 4: Erosion channel and *in situ* deposits of Vaalkrans

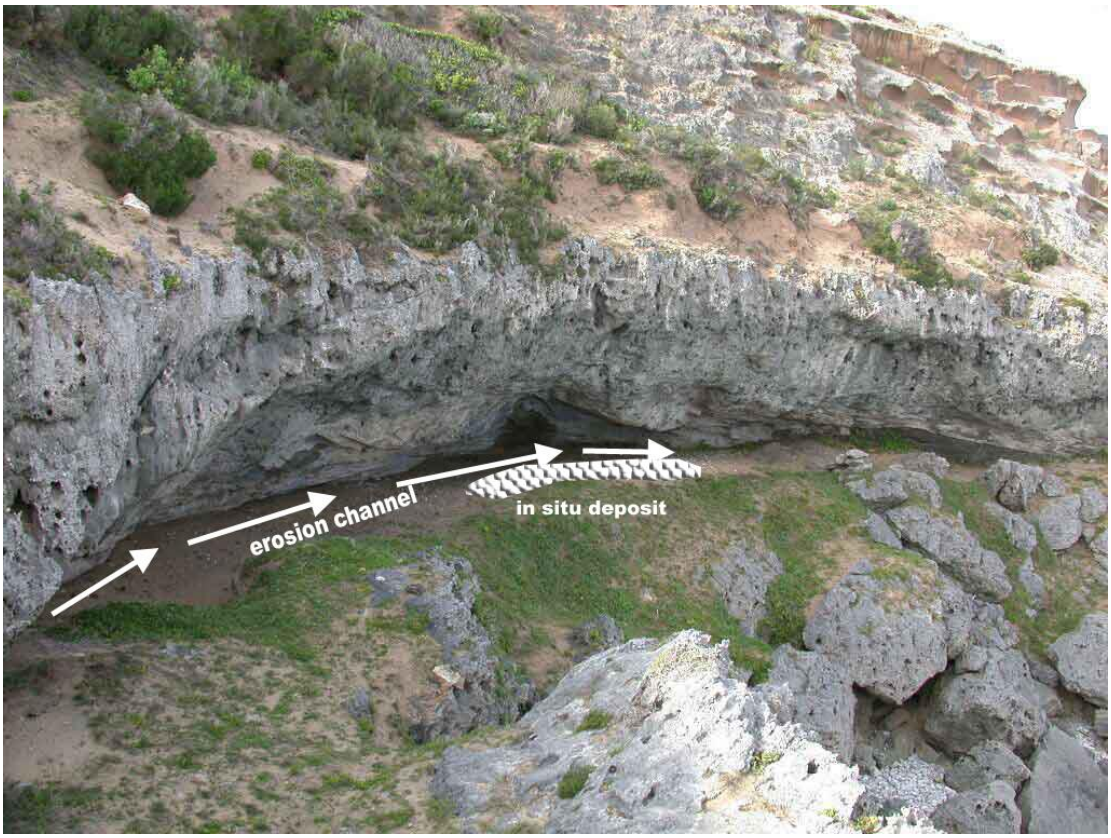
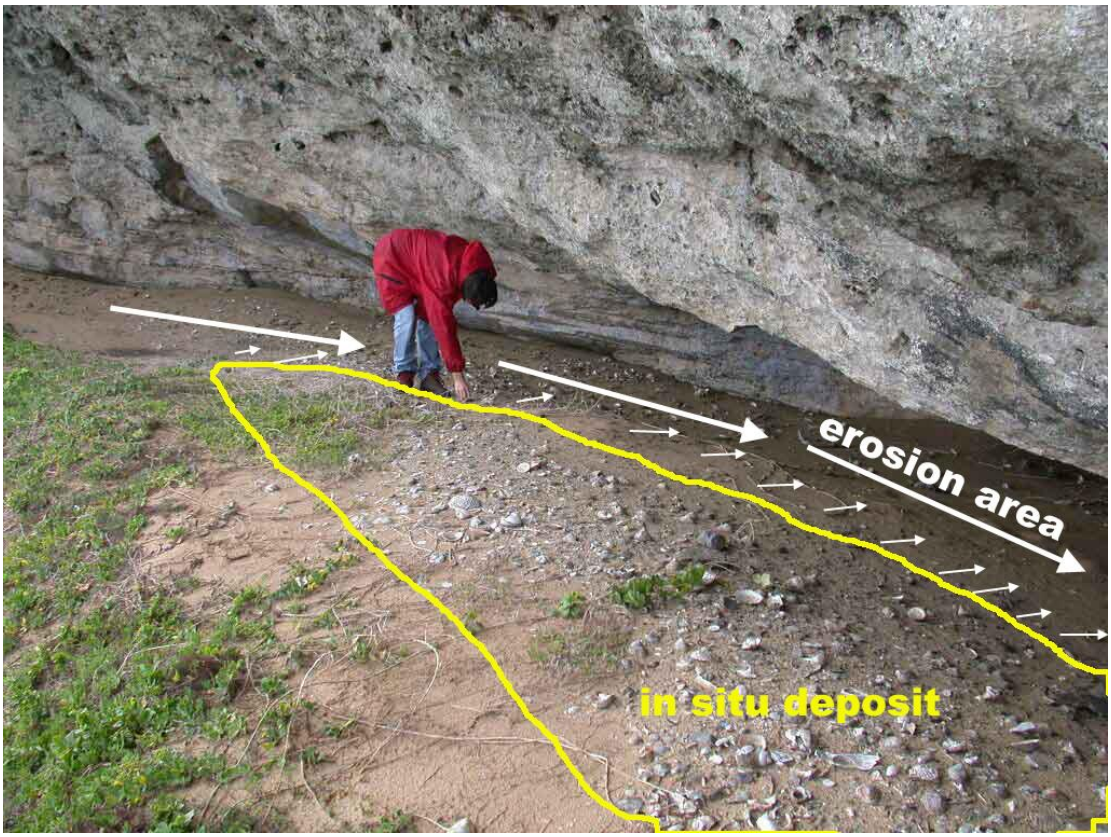


Figure 5: Erosion channel at Vaalkrans



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. Squares M5 and N5 were then further subdivided into 0.5m quadrats, with M5a being in the northwestern, and M5c in the southwestern corner. Squares M5a,b, c,d 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 of deposits. Red and white 'warning' tape was spanned along the edge of the deposit to demarcate safe walking areas and prevent accidental trampling of deposit. A temporary workstation with tables and sieves was set up about 15 meters from the excavation on sterile aeolian sand.

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. The deposit was excavated in units defined by soil colour and coarseness.

Material smaller than 1.5 cm was wet sieved through a 3 mm and 1.5 mm 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. The number of buckets sieved was also recorded. Digital photographs were taken of the surface of each unit, of the sections and of certain artefacts. After each excavation in October 2002, February 2003, as well as February, October 2004, and February, October 2005, all artefacts including lithics, shellfish, and bone, were analysed either at Potberg or at the Institute in Cape Town (see Tables). All the data recorded was entered into a central database. The digital photographic record of the excavations will be placed on a CD and curated at the South African Museum (part of Iziko) together with the finds.

All excavated material, as well as all field notes and records, are curated at the Institute and in due course will be lodged with the South African Museum. The 2002 material is already stored at Iziko. The excavated material from 2003, 2004 and 2005 has been analysed and is ready to be sent to the Museum. All material is packed in marked plastic bags and in museum-approved boxes.

(2.3) Faunal analysis methodology

All shells and shell fragments larger than 1.5 cm (with apices/ hinges that could be counted to MNI's) were recorded *in situ* and bagged separately. All coarse fraction shell fragments were identified and sorted to species. Minimum Number of Individuals (MNI) was calculated for all species present. 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. MNI's 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 *Perna 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.

The bone remains retrieved from the 2002 excavation were analysed by D. Stynder, and the 2003, 2004 and 2005 material by S. Badenhorst, but combined for this report. Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI) were calculated. These two methods of quantifying archaeofauna are most commonly used by faunal analysis worldwide, despite their many inherent shortcomings (e.g. Grayson 1984). Bovid size classes are those established by Brain (1974). During analysis, the bone material was investigated for taphonomy, age and gender (e.g. Cornwall 1974, Reitz & Wing 2001). Such methods are commonly used by faunal analysts in southern Africa. The animal bones were identified using the osteological collection housed at the South African Museum in Cape Town.

(3) Results from Excavations at Vaalkrans Shelter

(3.1) Sedimentology and stratigraphy (Figure 6)

Seven stratigraphic units were excavated during the 2002 season:

- The surface unit was designated as AA and was present in all four quadrats. It consists of medium brown to tan coloured compacted aeolian sand. Quadrant 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/northeast.
- Unit AB did 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 was loose, soft, dark brown-grey sand with larger grains than those in AA and contained a considerable amount of charcoal and plant material. AB

appeared hearthy, but due to the loose nature of the soil it is unlikely to be *in situ*.

- Unit ABA lies in the eastern half of N5a and the northeast corner of N5c. It consisted of dark, very dense and 'sticky' humic material with flecks of burnt and limey shell throughout.
- Unit AC was present in all four quadrats and consisted of loose yellow-brown aeolian sand containing charcoal and very fragmented and rotten shells, as well as many roofspall blocks in M5b.
- Unit ACA occurred in the northwestern corner of M5d and the western half of M5b and was 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 consisted 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 was a sandy, fine-grained, medium-brown loose sediment.

During the March 2003 season the following units were excavated:

- Unit ACA, a charcoal pit consisted of dark, compact sand, continued in M5b.
- Unit ACC continued in M5b, which consisted of compact yellow sand. This unit was also present in N5a, and is lighter in colour than ACC. Large quantities of charcoal were found in the eastern side of N5a.
- In M5b unit ACD consisted of dark sand, and occurred only in the northern section of the quadrant.
- In M5b unit AD was loose sandy soil, becoming more compact and darker lower down, with charcoal pieces found in the centre of the quadrant. In M5d unit AD was a medium brown soft soil, with roofspall wax found in the northeastern corner. In N5c unit AD consisted of loose sand, medium brown in colour, with charcoal fragments, but darker in the southeastern corner. From the northeastern section of the quadrant the unit seems to slope down towards

the southwest. The colour of the sand in N5a is medium brown with a light patch in the centre of the western side.

- Unit ADA was present in N5c only, being dark in colour.
- In M5d unit AE contained roofspalls in the northern section, and was compact with fish scales in the northern corner. In N5c the unit was also fairly compact and dark brown. It seemed to represent a hearth in both quadrants.

In February 2004 the following units were excavated:

- In N5a unit AE contained charcoal in the eastern half, with some burnt shell and the rest of the deposit being dark brown. In M5b the soil was also dark brown.
- In M5d unit AF was darker in colour towards the western quadrant, and a charcoal patch was found in the centre, with some burnt shells. The eastern section is lighter in colour. Fine grained sand surrounded the hearth. This unit represents a hearth that corresponds with N5c's unit ADA. Unit AF was not present in M5b or N5a.
- Unit AG of M5d contained almost no charcoal, except in the southeastern corner. The rest of the deposit was medium brown in colour. Evidence of disturbance was found in M5d, as a hole about 2cm in diameter was visible. The soil was not as compact as AF. In N5a the soil was light brown in colour. M5b was more compact in the north and western half of the quadrant.

During October 2004 the following units were excavated:

- In N5c unit AG sloped gradually from north to south, with a dense strip of charcoal, about 2cm wide, across the northwestern corner. The base of the unit was darker than the rest of the unit.
- In M5d unit AH consisted of loose aeolian sand mixed with charcoal, giving the soil a dark appearance. In the northwestern part an ash and charcoal patch was uncovered. In M5b the unit consisted of loose, yellow-brown aeolian sand in the western and southwestern corners. In N5a the deposit are dark and fine grained.
- In M5b unit AI consisted of loose yellow brown aeolian sand, but lower down it changed into medium brown compact sand. In N5a unit AI was light, fine grained sand and not compact.

Units excavated in February 2005:

- Unit AGA was present in the southern part of N5c, and consisted of a light-coloured soil.
- The soil of Unit AH in N5c was dark brown, and compact.
- Unit AI continued in N5a where it consisted of loose light sand, except in the northeastern corner of the quadrant, where it was darker in colour. In N5c AI also consisted of light-coloured, loose sand.
- Unit AIA in the southwestern corner of N5a and the southeastern corner of M5b, which was ashy, dark and compact. In M5d this unit was also compact and dark in appearance.
- In N5a unit AJ consisted of dark brown loose sand, although the eastern edge was lighter in colour. The sand in the northwestern corner is grey-brown, and loose, and much more compact in the northeastern corner where some small pebbles appeared. The soil was lighter in M5d, and consisted of fine grained sand, and seemed to slope southwards. A hearth was present in the northwestern corner of this quadrant. In M5b this unit was light in colour, and not compact, but is darker in colour in the southeast corner. A hearth was present in the southwestern corner.
- Unit AJA is an ashy patch, probably a hearth, and restricted to the northwestern corner of M5b.

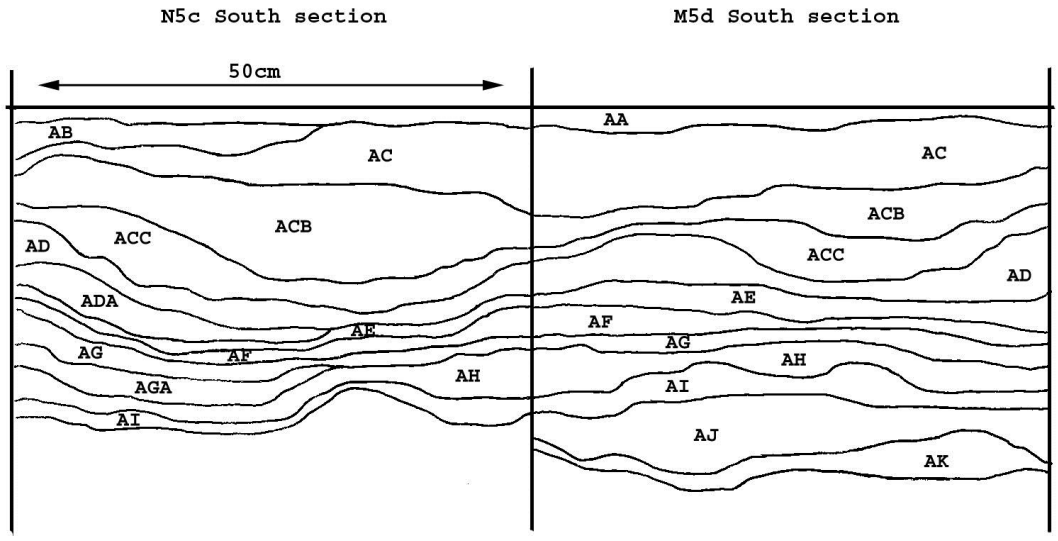
Units excavated in October 2005:

- The excavation area was expanded to include quadrats M5a and M5b. Unit AA was removed from both quadrats. AA consisted of quite firm, fine-grained Aeolian sand, sloping slightly to the northern end of M5a. AB was not present in either of these quadrates. AC was excavated from both quadrats, and consisted of loose grey-brown sand with flecks of charcoal. Excavation of M5c stopped at the base of AC. ACA and part of ACB was removed from M5a. ACA contained mostly big pieces of charcoal and is a continuation of the charcoal pit that was found in M5b ad M5d in 2002 and 2003. ACB occurred in the northern and western base of ACA and consisted of compact, dark grey sand with a large number of halites in the northwestern corner..
- Unit AI was excavated in quadrat N5c. It consisted of compact, lightly coloured sand with slightly darker sandy patches in between and specks of

charcoal throughout. The darker sand increased towards the bottom of the unit. The unit slopes up towards the northwestern corner and the base was quite uneven.

- Unit AJ was removed from N5c. The surface consisted of relatively light, loose sand, with the exception of the northwestern corner which consisted of compact, dark soil and comminuted shell. Excavation of this unit has not been completed.
- In quadrats M5b, M5d and N5a unit AK consists of a dark, greasy, slightly compact soil with halites and charcoal scattered all over the unit. Lots of shellfish occurs on the eastern side of the quadrant. In N5a AK slopes down from northwestern to southeastern. Some light patches of soil were evident on the western edge of the unit. Halites were present, and there was a part of a hearth in the southwestern corner. Excavation of AK in N5a was not completed during this season. The northwestern corner of N5a slopes down towards the eastern and southern sides.
- Unit AL was excavated from quadrats M5b and M5d but not entirely removed from either. The sediment has a brownish-grey colour, not very compact, and has colour variations, with both darker and lighter patches, particularly in and under the shellfish. The sediment along the southern side of M5b is a bit more compact than the rest. The southeastern corner of M5d contained a small area of dark and ashy soil which appears burnt. The unit is densely packed with shellfish, in particular *P. perna*.

Figure 6. Stratigraphy of the southern section of quadrats M5d and N5c.



(3.2) Cultural artefacts

(3.2.1) Lithics

The lithic assemblage is small and informal, and made up almost entirely of quartzite, followed by silcrete, quartz and calcrete. A total of 27 chunks are present, followed by 19 flakes, twelve manuports, nine cortical flakes, two cortical chunks, two hammerstones, two grinders and one core (Table 1). The grindstone from N5c unit AH had ochre residue on both sides of the stone. Two pieces of calcrete (ochre) were found without evidence of modification. In total, four lithics showed evidence of burning.

Table 1: Summary of lithic artefacts from Vaalkrans (2002-2005)

Unit	Hammer stone	Flake	Cortical Flake	Chunk	Cortical Chunk	Core	Cobble/ Manuport	Grinder
AA	1xqz							
AB		1xqz						
ABA			2xqz					
AC		2xqz,1xs		1xq, 1xqz				
ACB		1xqz,1xq	1xqz	1xqz,1xq		1xq		
ACC		2xqz	1xqz,1xq	1xqz,1xs				
AD		1xqz		3xqz			3xqz	
ADA	1xqz			1xc				
AE				1xqz				
AF				1xs				
AG		1xqz,1xs	1xqz	1xs				
AH		4xqz	2xqz	5xqz,1xs, 1xq				1xqz
AI		2xqz,1xs	1xqz	2xqz,1xc	2xqz		3xqz	1xqz
AJ				2xqz,1xq			6xqz	
AK								
AL		1xs		1xz				
Total	**n=2**	**n=19**	**n=9**	**n=27**	**n=2**	**n=1**	**n=12**	**n=2**

qz = quartzite, q = quartz, s = silcrete, c = calcrete

(3.2.2) Bone artefacts

A single bone tool was found during the 2002 season from quadrat N5a unit ACB (Figure 7). It is a bone 'spatula' shaped from the left scapula of a juvenile size III bovid, measuring 16 cm 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 acronium process had been removed. Its width ranges from 2.6 cm on the lateral end to 3.4 cm at the medial end. A piece of bone from M5b unit AD, less than a centimeter in length, is polished. It would seem to be the tip of a broken bone tool.

Figure 7: Bone ‘spatula’ from N5a unit ACB

(3.2.3) Fauna

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, and include insectivore, jackal, Cape fur seal, rock hyrax, bontebok, common duiker, steenbok, bovid size classes I, II, III and IV, Cape dune mole rat, vlei rat, rodent indeterminate, ostrich eggshell, bird indeterminate, angulate tortoise, tortoise indeterminate, snake, lizard, other small reptile, *Sparidae* sp. and other fish remains (Table 2 and 3). None of the ostrich eggshell fragments were modified, but some are burnt. The highest number of bone fragments (NISP) and Minimum Number of Individuals (MNI) are from Cape dune mole rat, followed by tortoise remains. Most of the animal bone came from unit AH, followed by AD (Table 2). An incisor fragment of a Cape dune mole rat is exceptionally large. All the snake remains are that of a large individual, probably the size of a puff adder. Preservation of faunal remains is excellent at the site. Fish scales were found throughout the excavation and a small amount of fish bone.

Some of the bone remains were burnt, the colour variation ranging from light brown, black to grey. Some tortoise shells (including angulate tortoise) were burnt black only on the outside of the shell. A skull fragment from M5d AH has two carnivore puncture marks. Cut and chop marks was present on some of the bone remains, most notably cut marks on the phalanx of a seal. Most of the remains are from adult individuals, except a bovid size class I neonate, as well as a bovid size class II neonate. The seal from unit ACB is that of a juvenile. A juvenile common duiker was also found, whilst some of the Cape dune mole rat post-crania has not fused yet. The mammalian and reptilian fauna from the October 2005 excavation have not yet been analysed.

Table 2: Vaalkrans total NISP's per unit

Species	**AA**	**AB**	**ABA**	**AC**	**ACA**	**ACB**	**ACC**	**ACD**	**AD**	**ADA**	**AE**	**AF**	**AG**	**AGA**	**AH**	**AI**	**AIA**	**AJ**	**Total**
Insectivora							1												**1**
Canis mesomelas (jackal)						1													**1**
Arctocephalus pusillus (Cape fur seal)						1			1										**2**
Procavia capensis (rock hyrax)				1		1	2									1			**5**
Damaliscus dorcas (bontebok)							1												**1**
Sylvicapra grimmia (common duiker)																		1	**1**
Raphicerus campestris (steenbok)												1							**1**
Bovid size class I															3				**3**
Bovid size class II	1			1		3							1		3	1		1	**11**
Bovid size class III	1			1		3			2										**7**
Bovid size class IV						1	1												**2**
Bathyergus suillus (Cape dune mole-rat)	6	3		5		9	4		35	1	5	1	1	1	19	14		13	**117**
Otomys irroratus (vlei rat)												3							**3**
Rodent indeterminate				1					1										**2**
Mammal indeterminate small	9	2	3	6		3	3												**26**
Struthio camelus (ostrich)							3			1	1	1	4			1		1	**12**
Aves indeterminate															1				**1**
*Chersina angulata (*angulate tortoise)	1	1	1	4		5	4		14	4	7	2	14		30	5	2	4	**98**
Tortoise indeterminate							9	3	4	3			1	1	17	14	2	4	**58**
Serpentis sp.	7	6	2	14	1	19	5				1				2				**57**
Sauria small (lizard)															1	1			**2**
Reptile indeterminate small							6	13	7						1	1			**28**
Sparidae sp.									1									3	**4**
Pisces indeterminate							2	1	12		2		1		1			1	**20**
Total NISP per Unit	**25**	**12**	**6**	**33**	**1**	**46**	**41**	**17**	**77**	**9**	**16**	**8**	**22**	**2**	**78**	**38**	**4**	**28**	**463**

Table 3: Vaalkrans NISP and MNI's from all units

Species	**NISP**	**MNI**	
Insectivora		1	1
Canis mesomelas (jackal)		1	1
Arctocephalus pusillus (Cape fur seal)		2	1
Procavia capensis (rock hyrax)		5	1
Damaliscus dorcas (bontebok)		1	1
Sylvicapra grimmia (common duiker)		1	1
Raphicerus campestris (steenbok)		1	1
Bovid size class I		3	*
Bovid size class II		11	*
Bovid size class III		7	2
Bovid size class IV		2	1
Bathyergus suillus (Cape dune mole-rat)		117	13
Otomys irroratus (vlei rat)		3	1
Rodent indeterminate		2	*
Mammal indeterminate small		26	*
Struthio camelus (ostrich)		12	1
Aves indeterminate		1	1
*Chersina angulata (*angulate tortoise)		98	4
Tortoise indeterminate		58	*
Serpentis sp.		57	1
Sauria small (lizard)		2	1
Reptile indeterminate small		28	1
Musselcracker		4	1
Pisces indeterminate		20	*
Total NISP		**463**	**34**

* MNI already included

(3.2.4) Shellfish

The most commonly occurring species in the assemblage are listed in Figure 8. Of these, *Perna perna* is the most abundant in the majority of layers, followed by the *Diloma* species (*D. sinensis* and *D. tigrina* have been gouped together in this figure as the recovered apices are generally too small and lack the distinguishing marks to facilitate accurate identification. Table 4b lists the separate numbers of each species where identification was possible). *Turbo sarmaticus* is also abundant throughout the sequence (Tables 4, 5 and Figure 8). On some of the giant limpets, *Patella argenvillei*, chip marks have been recorded on the periphery of the shell. Shellfish from all the intertidal zones; Upper Balanoid, Lower Balanoid, Cochlear and Infratidal, were exploited, and are the same species that are found in the area today. Most of these species are found in warmer waters. *S. granatina* however, is a cold water species, but only three specimens have been found thus far. Two mussel shells from N5a unit AB were modified. The edge of both specimens has a saw-like appearance, different from a natural breakage pattern.

Table 4a. MNI's of shellfish from quadrats M5b, M5d, N5a and N5c combined and % frequency of each species per layer (2002- 2005)

Layer	*S.argenvillei*		*S.cochlear*		*S.longicosta*		*C.oculus*		*S.tabularis*		*S.barbara*		*C.granatina*		*S.granularis*		*Patella sp.*		*S. miniata*		*S. tabularis/ barbara*	
	n	%	***n***	%	***n***	%	***n***	%	***n***	%	***n***	%	***n***	%	***n***	%	***n***	%	***n***	%	***n***	%
AA	40	12	2	1	9	3	4	1	1	0	9	3	0	0	0	0	8	2	0	0	0	0
AB	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABA	1	1	0	0	0	0	0	0	0	0	2	3	0	0	0	0	2	3	0	0	1	1
AC	26	6	0	0	8	2	4	1	0	0	15	4	2	0	0	0	0	0	0	0	1	0
ACA	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACB	17	5	0	0	6	2	3	1	0	0	9	2	0	0	0	0	7	2	0	0	1	0
ACC	14	8	4	2	6	3	2	1	0	0	6	3	1	1	0	0	0	0	0	0	0	0
ACD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AD	37	8	6	1	11	2	0	0	2	0	35	7	0	0	0	0	3	1	1	0	0	0
ADA	1	2	0	0	1	2	0	0	0	0	3	6	0	0	0	0	0	0	1	2	0	0
AE	15	6	2	1	12	5	0	0	3	1	5	2	0	0	1	0	0	0	0	0	0	0
AF	2	4	0	0	3	6	0	0	0	0	4	8	0	0	0	0	0	0	0	0	0	0
AG	6	2	0	0	12	4	1	0	2	1	12	4	0	0	1	0	3	1	0	0	0	0
AGA	0	0	0	0	1	3	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0
AH	6	1	1	0	29	6	2	0	5	1	4	1	0	0	2	0	3	1	0	0	0	0
AI	8	1	1	0	32	6	6	1	3	1	6	1	0	0	0	0	2	0	0	0	0	0
AIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AJ	7	1	0	0	13	2	8	1	4	1	16	3	0	0	1	0	0	0	0	0	0	0
AK	2	1	0	0	2	1	1	1	0	0	4	2	0	0	0	0	1	1	0	0	0	0
AL	1	1	0	0	3	2	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0

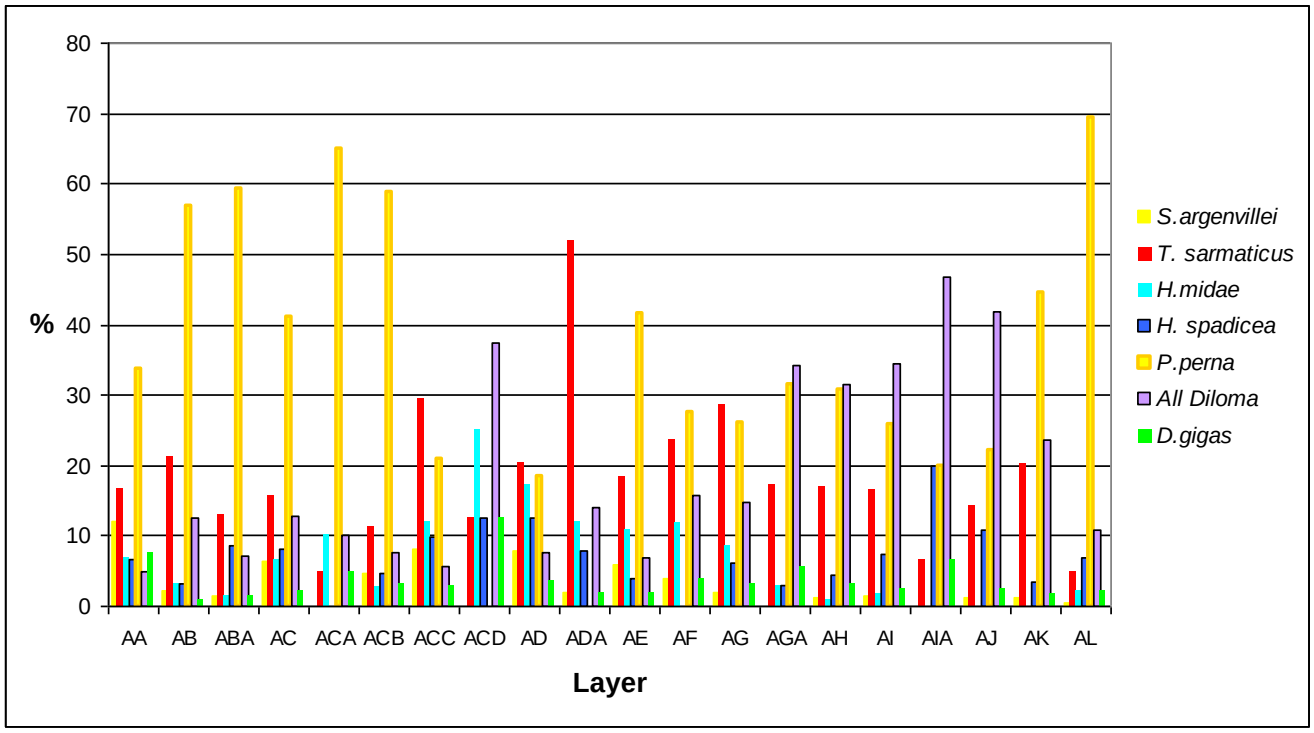
Table 4b. MNI's of Patella species from quadrats M5b, M5d, N5a and N5c combined and % frequency of each species per layer (2002- 2005)

Layer	*T. sarmaticus*		*T. cidaris*		*Turbo sp.*		*H. midae*		*H. spadicea*		*P.perna*		*D. sinensis*		*D. tigrina*		*Diloma sp.*		*D. gigas*		*B. cincta*		*Burnupena sp.*	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
AA	55	17	0	0	2	1	23	7	22	7	111	34	9	3	0	0	7	2	25	8		0	2	1
AB	20	21	0	0	0	0	3	3	3	3	54	57	7	7	0	0	5	5	1	1		0	0	0
ABA	9	13		0	0	0	1	1	6	9	41	59	2	3	1	1	2	3	1	1		0	0	0
AC	65	16	0	0	0	0	27	7	33	8	169	41	21	5	7	2	25	6	9	2		0	0	0
ACA	1	5	0	0	0	0	2	10	0	0	13	65	0	0	0	0	2	10	1	5		0		0
ACB	42	11	0	0	0	0	10	3	17	5	218	59	15	4	4	1	9	2	12	3		0		0
ACC	51	29		0	0	0	21	12	17	10	36	21	7	4	1	1	2	1	5	3		0	0	0
ACD	1	13		0	0	0	2	25	1	13		0	3	38		0		0	1	13		0		0
AD	97	20		0	0	0	82	17	60	13	88	18	17	4	1	0	18	4	18	4		0		0
ADA	26	52		0	0	0	6	12	4	8		0		0	1	2	6	12	1	2		0		0
AE	48	19		0	0	0	28	11	10	4	108	42	5	2	1	0	12	5	5	2		0	4	2
AF	12	24		0	0	0	6	12		0	14	27	1	2		0	7	14	2	4		0		0
AG	87	29		0	0	0	26	9	19	6	79	26	3	1		0	42	14	10	3		0	1	0
AGA	6	17		0	0	0	1	3	1	3	11	31	3	9		0	9	26	2	6		0		0
AH	82	17	1	0	0	0	5	1	21	4	149	31	45	9	6	1	101	21	16	3	6	1		0
AI	90	17	0	0	0	0	10	2	40	7	140	26	39	7	3	1	145	27	14	3	3	1		0
AIA	1	7		0	0	0		0	3	20	3	20	3	20		0	4	27	1	7		0		0
AJ	83	14	1	0	0	0		0	63	11	129	22	71	12	8	1	165	28	15	3		0		0
AK	35	20		0	1	1		0	6	3	77	45	2	1	6	3	33	19	3	2		0		0
AL	9	5		0	0	0	4	2	13	7	129	69	4	2	7	4	9	5	4	2	1	1		0

Table 5: Vaalkrans total MNI's per species for whole excavation.

Species (2002-2005)	**Total MNI**
Burnupena sp.	7
Burnupena cincta	10
Cymbula granatina	3
Cymbula miniata	2
Cymbula oculus	33
Diloma sinensis	257
Diloma tigrina	46
Diloma sp.	603
Dinoplax gigas	146
Haliotis midae	256
Haliotis spadicae	339
Patella sp.	29
Perna perna	1569
Scutellastra argenvillei	185
Scutellastra barbara	132
Scutellastra cochlear	16
Scutellastra granularis	5
Scutellastra longicosta	148
Scutellastra tabularis	20
Scutellastra tabularis/barbara	3
Turbo cidaris	2
Turbo sarmaticus	820
Turbo sp.	3
Total	**4634**

Figure 8: % Frequency of the most commonly occurring species of shellfish



(3.2.5) Geophytes

Well-preserved geophytes have been recovered from several layers. These are from the genus *Cyanella* sp, as well as two other unidentified species. They have yet to be identified by a botanist.

(3.2.6) Pottery

In the northeastern corner of N5c unit AG, a piece of black, thin-walled pottery was found with an ochre slip on the outside. This represents the only piece of pottery from the entire excavation so far. The single potsherd found at Vaalkrans indicates that is was a small-sized container, and places the levels excavated, so far, within the last 2000 years.

(3.2.7) Copper

A single piece of copper, greenish in colour, was retrieved from the southwestern corner of M5b unit AJ. It is heavily corroded.

(3.2.8) Dating

Charcoal was present in all units and several hearth features were identified. Two samples from the upper levels 2002 excavation were submitted to the CSIR in Pretoria for 14C dating. Square N5a, Level ACB and M5b, Level ACA

Anal.[1] No. Pta-	Sample [2] designation	$\delta^{13}C$ (‰PDB)	Radiocarbon [3] age, yrs BP	Calibrated [4] Date
9187	Vaalkrans VK2B (Level ACB)	-25.9	140 ± 35	AD 1686(1706,1717)1732; 1810(1883,1923)1941
9192	Vaalkrans VK2A (Level ACA)	-24.8	220 ± 45	AD 1660(1673)1686; 1732(1775,1799)1810

Excavations at Vaalkrans Shelter

Vaalkrans Shelter continues to provide an overview of marine coastal exploitation by hunter-gatherers in the De Hoop area during the Late and possibly Mid-Holocene. Further excavations at the site, expanded both horizontally and vertically, provide the potential for interpreting Khoisan life ways during the Holocene in the Overberg region.