



UNIVERSITY OF  
**TORONTO**  
SCARBOROUGH

## **REPORT ON THE SECOND EXCAVATION SEASON AT SPITZKLOOF B**

Prepared for

**South African Heritage Resources Agency**  
Excavation Permit number 80/09/11/008/51b  
May 2014

Prepared by

**Genevieve Dewar**

**Assistant Professor**  
Department of Anthropology  
University of Toronto Scarborough  
Toronto, Ontario  
M1C 1A4  
Canada

Phone (416) 985-0366  
Fax (416) 287-7352  
Email [gdewar@utsc.utoronto.ca](mailto:gdewar@utsc.utoronto.ca)

## Table of Contents

1. Executive summary .....	2
2. Introduction .....	3
3. Background .....	3
3.1 Environment .....	3
3.2 Previous Archaeological Investigations .....	4
3.2.1 Northern Namaqualand .....	4
4. Current Excavations .....	6
4.1 Dating .....	6
4.2 Micromorphology .....	6
5. Artefacts .....	7
5.1 Bone .....	7
5.2 Charcoal and Botanicals .....	7
5.3 Lithics .....	7
5.4 Ostrich eggshell (OES).....	7
5.5 Ostrich eggshell beads .....	8
5.6 Pottery .....	8
5.7 Shell .....	8
5.8 Other Finds.....	8
5.9 Spatial Analysis .....	8
6. Discussion & Conclusion .....	9
7. Future Work .....	9
8. Team.....	10
9. References.....	10

### 1. Executive summary

The second field season at Spitzkloof B Rockshelter in the Richtersveld region of Namaqualand continues to produce artefactual material reflecting a late Holocene occupation: informal quartz lithics and a few Wilton segments, small ostrich eggshell beads and pottery. We have clear evidence for bead manufacturing on site with context 2008 producing the majority of both preforms and broken complete beads. The presence of marine shell (including a broken pendant) and crayfish mandibles indicates some contact with the Ocean 30 km distant. Using a Leica total station to piece plot every artefact over 2.5 cm in size meant that we were excavated very slowly: we excavated a further 15 cm within the 4 m<sup>2</sup> unit to a total depth of 42 cm. Based on the visual depth of the talus slope and the morphology of the shelter there is at least 1.3 m of material yet unexcavated. Spatial patterns identified in the excavated unit include a

hearth with a corresponding ring of fire rocks and a 30 cm drop zone of debris (feature 6). Numerous scientific studies are underway in order to identify past economic strategies and palaeoenvironmental signals including: geoarchaeology, botanical (phytoliths, pollen, and charcoal), lithics and faunal analyses. This is a multi-disciplinary research program including numerous international institutions.

## **2. Introduction**

This is the report for the second excavation season at Spitzkloof B Rockshelter (28° 51.79' S 17° 04.65'E) that occurred from July to August 2013. The site is located 30 km inland from the Atlantic Ocean and 30 km due south from the Orange River in the Richtersveld Municipality, Northern Cape, South Africa (Fig. 1). Spitzkloof B is the middle of three eroded bowls within a folded outcrop of quartzite in the Stinkfontein subgroup (Frimmel 2003) overlooking quartzitic gravel plains in Northern Namaqualand. Immediately in front of the shelter is a dry tributary of the Holgat River (Fig. 2).

The primary research questions of the project called 'Adaptations to Marginal Environments in Middle Stone Age' (AMEMSA) are: When, where and how did early *Homo sapiens* develop the adaptive plasticity required to colonize and continuously occupy environments where resources are unpredictable in space and time? Did they develop new social-economic strategies and technology *in situ* or were these creative solutions developed elsewhere. Ultimately this research project is aimed at contributing to the evidence for the migration of early humans 'Out of Africa' and eventually colonizing the old world and ultimately the deserts of Australia. The Spitzkloof shelters are a very important component of this research program as they represent the arid environment within the larger research project (Dewar & Stewart 2012, Dewar & Stewart *In press*, Stewart et al. 2012, Stewart et al. *in press*).

## **3. Background**

### **3.1 Environment**

The Spitzkloof Rockshelters are located in the winter rainfall zone that receives greater than 66% of its precipitation during the austral winter months (Dewar & Orton 2013). The region is a semi-arid desert and the southern extension of the Namib Desert on the west coast of South Africa. The area is desolate with the coastal strip consisting of Holocene white sand dunes and older red sands in the interior (Le Roux and Schelpe 1981, Acocks 1998). Drainage is westward toward the Atlantic Ocean but low rainfall ranging from 50 to 100 mm per annum mean that rivers rarely flow (Mucina et al. 2006). The biome is classified as Succulent Karroo and temperatures in the vicinity of the site exceed 30 °C during the summer

while winter minimums are below freezing. The region is a diversity hotspot for some succulent and reptilian species (Mucina et al. 2006) but prey species are low in diversity: species richness and evenness. All flora and fauna are arid adapted specialists and obtain the majority of their water intake through coastal fogs (*Malmokkies*) that range up to 90 km inland. The vegetation is Lekkersing Succulent Shrubland (Mucina et al. 2006), dominated by dwarf shrubbery while larger species such as *Acacia karoo* can be found along dry riverbeds in front of the shelter.

### **3.2 Previous Archaeological Investigations**

Relative to most regions in South Africa, very little archaeological research has been conducted in Namaqualand because a large proportion of the area was previously inaccessible diamond mining territory. However over the past 20 years the Archaeology Contracts Office and others have begun to systematically survey the region for various projects including Heritage, Environmental, and Archaeological Impact Assessment's. Over 1500 open sites have been catalogued with surface material identifying occupation of the area from the Early Stone Age through to the historic period (Dewar 2008, Halkett 2002, 2003, 2006a, 2006b; Halkett and Dewar 2007; Halkett & Hart 1997, 1998; Halkett & Orton 2004, 2005a, 2005b, 2007; Orton 2007a, 2009a; Orton & Halkett 2005, 2006; Webley 1992, 2002, 2009; Webley & Orton 2013). More rare is the presence of shelters with archaeological deposits that allow for the development of chronological sequences providing context for open sites. Currently there are two academic research projects addressing this, the Vaarsch River project in southern Namaqualand (Mackay et al. 2010, Steele et al. 2012) and this project at Spitzkloof in northern Namaqualand (Dewar & Stewart 2012, Dewar & Stewart *In Press*)

#### **3.2.1 Northern Namaqualand**

Spitzkloof A was excavated from April to May 2010 and again in 2011 (Dewar and Stewart 2012, *In Press*). After two field seasons units G3 and F3 are 1.9 m deep while F4 is 50 cm deep. The second field season was cut short when a large termite void was discovered one meter down the face of the south profile in unit G3. The void was 1 x 2 meters in size and extended through what would have been unit G4.

After discovering the dangerous nature of this void, the sections were shored up with sand bags and sediment samples were collected along the north wall of unit G3.

#### **Continuing results from Spitzkloof A:**

Recently obtained radiocarbon dates obtained from ostrich eggshell are presented in Table 1 and range from 14 to 52 <sup>14</sup>C kBP. The bottom most layers are beyond the scope of radiocarbon dating and OSL samples were sent to Dr Zenobia Jacobs at the University of Wollongong. Unfortunately

after attempting to use both the quartz and feldspar methods, Dr Jacobs informed us that the crystal traps are indeed full, preventing the dating of these samples. We are currently evaluating the possibility of using radiocarbon in conjunction with amino acid racemization of ostrich eggshell to date the lower aspects of the site. The analysis of the micromorphology samples was completed by Dr. Mike Morley (Oxford Brookes University) and we are just awaiting his final report. The sediment samples intended for phytolith analysis are currently with Dr Adrian Parker at Oxford Brookes University but he has yet to analyse them. Currently, Dr Judith Sealy at the University of Cape Town is supervising an honours project to measure the isotopes of the sediment column in order to identify the dominant vegetation type during the Pleistocene with results expected by the end of this academic year. The faunal remains have been analysed by the author and are being published this June (Dewar et al. *In Prep*). There is a clear focus on the immediately available species that are available in the region today but of interest is the increase in the presence of large grazing bovids/equids during the Last Glacial Maximum layers (LGM). This indicates that the region was likely more efficient in evapotranspiration during this time (Dewar & Stewart *In Press*, Dewar et al. *In Prep*).

### **Spitzkloof B**

In July 2012 we returned to Spitzkloof with an extended permit to work in shelter B. The site was surveyed and drawn using a Leica total station and tied into the datum established in 2010. The mouth of the shelter is twenty-five meters wide and six meters deep facing northeast. A four-meter square grid was surveyed onto the deposit with care to avoid the back wall and the edge of the drip line (Fig. 3).

The units were labelled J8, K8, J7 and K7. The sediment was excavated in 50 cm<sup>2</sup> quadrants using small trowels and brushes and processed through a 1.5 mm dry sieve. All bucket counts (10 L buckets) were recorded to estimate density of material. Organic rich deposits including all hearths and ash dumps were floated and the fine fraction was collected separately. The site was excavated stratigraphically using a modified single context method. Every context was excavated in 3 cm spits or by single context whichever was thinner. All data were recorded on single context recording sheets using a File Maker Pro 11 database on iPads. Each quadrant had a dedicated tablet and the data were uploaded to a laptop every night. Each one m<sup>2</sup> unit was given a different numbering system to avoid biasing the interpretation of the contexts during excavation: K8 is recorded as 1000's, J8 is 2000's, K7 is 3000's and J7 is 4000's. Drawings of every context were recorded using grid paper and pencil and the opening of a new context / feature was photographed with a digital camera. Depths were measured using both the total station and a line level with a measuring tape. All material 2.5 cm and over was piece plotted *in situ* using the total station and bagged separately. All sorted material was bagged by relevant artefact categories on site. We

used hatpins and white plastic botanical labels to mark the boundaries of the contexts in the profile walls (Dewar 2013). We excavated to a depth of 27 cm identifying 35 contexts (8 layers) two hearths, four ash dumps and a steenbok burial totalling 50.2 L (0.0502 m<sup>3</sup>) of sediment and material (Dewar 2013).

## **4. Current Excavations**

In July 2013 we returned to Spitzkloof B with an extended permit to work in shelter B. We continued in the excavation unit following the same methods as noted above reaching a total depth of 42 cm (Fig. 3) removing 49.3 L (0.0493 m<sup>3</sup>). We added a further four layers to the eight identified in the 2012 excavation (Table 2).

During this field season we switched to a new labelling system where every piece-plotted artefact/ecofact received a number in sequence of its discovery.

The four units (J7, J8, K7, K8) were excavated systematically with the aim of exposing 'living floors' in order to identify spatial patterning. The overall excavation process was very slow due to the piece plotting exercise. There was clearly some land snail disturbance in the southern and northern most quadrants (concreted sediment in 10 cm diameter columns with snails in the centre: Fig. 4). At 30 cm depth, we shut down the southern quadrants of J7 and K7 as well as the northern quadrants of J8 and K8 in order to continue excavating with precision. The snail concretions made precision difficult as they would pop out of the floor. We covered the closed quadrants with sand bags to protect the deposit.

In addition to the four major layers we discovered an additional seven features. Features 9, 11, 13 and 14 are small isolated concreted ash dumps while feature 10 is a small poorly preserved (due to concretion of the ash) *in situ* hearth. Feature 12 is a hearth presented in the drawings of the south wall profile (we only clipped the side of it) while 12A is an ash basin likely associated with feature 12 due to its close proximity (Figs. 5 & 6).

### **4.1 Dating**

We obtained two radiocarbon dates from the 2012 excavations that indicate we are excavating within the Holocene (Table 3), and the artefact signatures agree indicating we are within the microlithic Wilton cultural period. This is interesting, as we did not obtain any dates from the Holocene from Spitzkloof A. The most likely explanation is that shelter A was filled by 14 kBP (17 cal kBP) and could no longer hold any more sediment.

### **4.2 Micromorphology**

As the excavation remains quite shallow we have not yet taken sediment samples for the B shelter.

## **5. Artefacts**

### **5.1 Bone**

The organic preservation is excellent at Spitzkloof B allowing for the preservation of organic material including bone. The faunal remains have been analysed by Dr Benjamin Collins (University of Toronto) at the University of Cape Town and will be published soon (Collins et al. *In Prep*).

In total 331 elements ranged from 2.5 to 5 cm in length and were individually piece plotted. A further 72 bones were greater than 5 cm and received two spatial identifiers. The vast majority of the identifiable bone is from *Chersina angulate* (69%), followed by tortoise (15%) and size 3 bovids (6%: likely *Oryx gazella*). Other species present in order of prevalence are: size 4 ungulates (cf. zebra: Brain 1981), various birds, small snake, small fish, *Lupus capensis*, *Antidorcus marsupialis*, *Oreotragus oreotragus*, *Procavia capensis*, rodents, *Raphicerus campestris*, *Melivora capensis*, *Chacma ursinus*, and a carnivore. The majority of these species are present in the overlying layers indicating continuity or similarity of environment through time with the exception of the *Melivora capensis*.

### **5.2 Charcoal and Botanicals**

A total of 100 pieces of charcoal were greater than 2.5 cm in length and were piece-plotted. An additional 10 botanical remains were piece-plotted including unburnt twigs, pieces of wood, and bark. We may even have evidence for bedding in unit K7 context 4008. Dr Timm Hoffman currently has all the botanical material at the Department of Botany at the University of Cape Town. We are trying to find a student to work on the charcoal and botanicals for a PhD thesis, as the sample is fairly voluminous.

### **5.3 Lithics**

The majority of lithics from the site consist of milky-quartz flakes although some quartz crystal, heat treated CCS, tabular quartzite and silcrete was observed. Both bladelets and Wilton-type segments are present. A total of 248 lithics were over 2.5 cm in length, receiving a piece-plot number, although this means we have not plotted the bladelets unless they were counted as special finds. There was very little evidence of retouch but the analysis has not yet been completed. Dr Jayson Orton has the lithics and is in the process of identifying them. So far the lithic signature seems to represent a Later Stone Age (LSA) context.

### **5.4 Ostrich eggshell (OES)**

Ostrich eggshell is rich at the site with a total of 136 body shards large enough to piece plot. However there were no identified flask mouths, which we did find in the layers above. The interior of many pieces was etched;

indicating that people used an abrasive, probably sand to clean out the eggshell, either to remove the egg yolk for subsistence purposes or to clean the shell for use as a vessel. The external aspect of the shell reflects a range of colours: sunny yellow to light brown and white. This is not quite what we had seen in Spitzkloof A assemblage that produced a great range of colours from a sunny yellow to bright red and turquoise.

### **5.5 Ostrich eggshell artefacts**

Ostrich eggshell bead making activities occurred at the site including both yellow and black forms with one bead covered in ochre. All beads are small and are less than 5 mm. Following Orton's (2008b) stages, there are seventeen stage Va complete beads while 27 are broken (stage Vb) and 34 are in various preform stages. All are *in situ* and were piece plotted. There is a single ostrich eggshell bead with two apertures but it is broken so it is unclear if it is a pendant or a button of some sort. There are four pieces of single line incised ostrich eggshell similar to pieces identified along the Namaqualand coast during the LSA (Dewar 2008). Finally a piece of broken shell is covered in a metallic substance, likely specularite, as it is common in this region.

### **5.6 Pottery**

No pottery was discovered this year, although Dr Orton did find a rim sherd from the previous years excavation that expressed a double row of incised punctates (Fig. 7). This sherd is almost identical to the sherd found at SK400/AK2006-026 dating to 420 BP (Dewar 2008, Dewar et al. 2006).

### **5.7 Shell**

A total of six shells from three different marine Mollusc species were piece plotted: *Scutellastra argenvillei*, *Choromytilus meridionalis*, and an *unknown barnacle sp.* These few marine shells must have been transported from the Atlantic Ocean 30 km to the west. There were also many *Trigonephrus sp.* land dune snails that are common in the region today.

### **5.8 Other Finds**

In addition to the artefact classes mentioned above there were three crayfish mandibles (*Jasus lalandii*), a few pieces of ochre, a quartz crystal, a single human phalanx (finger bone), a bird feather and a notched but broken marine shell pendant.

### **5.9 Spatial Analysis**

After opening up the unit it became clear that feature 6 identified in the previous year actually plunged deeper than first believed (15 cm not 12 cm as reported in Dewar 2013). The deepest part of the feature was in the



centre of the southeast quadrant of J7 and is therefore not visible on the profile (Figs 5 & 6). This *in situ* hearth must have been dug into the deposit by the very people who made this fire feature. We discovered medium size rocks surrounding the edge of the feature and a clear concentration of partially articulated tortoises and snake vertebrae among these fire ring rocks. It was also clear that the artefact density dropped off in a 30 cm arc from the centre of feature 6. This likely represents a 'drop zone' and an intact floor (Fig. 8). The radiocarbon date from charcoal obtained from within feature 6 returned a calibrated date of 1,367 – 1,295 CAL BP (Table 3). Additionally it is likely that features 12 (hearth) and 12A (ash dump) represent the same time period/occupation of the site (Figs 5 & 6) but future radiocarbon dating will be required to confirm this. Further work using the piece-plotted data will allow for the identification of spatial relationships between the layers and the discarded artefacts.

## 6. Discussion & Conclusion

The artefact signatures (Wilton segments and small ostrich eggshell beads) and the radiocarbon dates indicate that we are currently working within the late Holocene period (cf. Orton 2006, Dewar 2008). The site was used to make ostrich eggshell beads based on the presence of a wide range of bead forms (preforms, complete and broken complete). The faunal species brought to the site are all locally available today and reflect a palaeoenvironmental signal that suggests the region was similar to the current semi-arid desert environment mentioned above. The prevalence of *Chersina angulate*, *Antidorcus marsupialis* and *Raphicerus campestris*, all open country living species (Skinner & Chimbimba 2005) indicates that past economic strategies were focussed on the plains as opposed to the surrounding foothills. However the presence of the marine shells and crayfish mandibles indicates some contact with the coast. While it is possible that a bird of prey brought the marine shell to the site it is unlikely given the low frequency of rodents in the deposit, their preferred diet. The lack of positively identified domestic animals is intriguing but could change with further excavations.

## 7. Future Work

Immediate future work will include continued excavation of the four units using piece plotting with two total stations to increase productivity. We predict an additional 1.3 m of deposit is present based on the morphology of the shelter. This excavation is planned for July/August 2014. We also need to continue systematic survey of the region in order to identify other sites and raw material sources. This will be done using standard survey methods and high-resolution GPS handheld units. Additionally we are looking into the prospect of obtaining a sediment core of the dry lakebed 8 km northwest of the site for palaeoenvironmental samples. We currently have two graduate students who are interested in palaeoenvironmental and geoarchaeological

questions (using strontium isotopes), which will contribute to the overall understanding of how this ancient landscape was used. The piece-plotted data will also potentially contribute to the fine-grained analysis of occupation pulses and hiatuses, to be used in conjunction with a rigorous dating program based on amino acid racemization and radiocarbon.

## 8. Team

Report:	Genevieve Dewar
Fieldwork (Fig. 9):	Genevieve Dewar Brian Stewart Ben Collins Wade Bible Steven Dorland Tascha Koning Nicole Kulaga Lily Waterman Tati Suda

## 9. References

Acocks, J.P.H. 1988. *Veld types of South Africa*. Memoirs of the Botanical Survey of South Africa No. 57 3rd ed. Cape Town.

Collins, B., Dewar, G., and Stewart, B. (In Prep). The preliminary analysis of the fauna from Spitzkloof B.

Dewar, G. 2008. *The archaeology of the coastal desert of Namaqualand, South Africa: a regional synthesis*. Oxford: British Archaeological Reports International Series 1761.

Dewar, G. 2013. Report on the first excavation season at Spitzkloof B. For South African Heritage Resources Agency. Unpublished report. Toronto: University of Toronto.

Dewar, G. & Stewart, B. (In Press). Paleoenvironments, sea level change and settlement in Namaqualand, South Africa during MIS 6-2. In: Stewart, B. and Jones, S. (Eds.) *Africa during stages 6-2: population dynamics and palaeoenvironments*. Vertebrate Paleobiology and Paleoanthropology. New York: Springer Press.

Dewar, G., Norman, L., Rhodes, S., Dorland, S., McFadden, L., and Goodwin, R. (In Prep). Southern Africa and the LGM: Desert life during the last glacial maximum.

Dewar, G. & Stewart, B. 2012. Preliminary results of excavations at Spitzkloof Rockshelter, Richtersveld, South Africa. *Quaternary International*. 270: 30-39.

Dewar, G. & Jerardino, A. 2007. Micromammals: when humans are the hunters. *Journal of Taphonomy* 5: 1–14.

Dewar, G., Halkett, D., Hart, T., Orton, J. & Sealy, J. 2006. Implications of a mass kill site of springbok (*Antidorcas marsupialis*) in South Africa: hunting practices, gender relations and sharing in the Later Stone Age. *Journal of Archaeological Science* 33: 1266–1275.

Dewar, G. and Orton, J. 2013. Subsistence, settlement, and material culture on the central Namaqualand coastline In: A. Jerardino, D. Braun, and A. Malan (Eds.) *The archaeology of the west coast of South Africa*. Cambridge Monographs in African Archaeology 84 British International Reports Series 2526: 109-123.

Halkett, D. 2002. Phase 1 archaeological survey: assessment of mining blocks in the BMC and KN areas, Namaqualand. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. 2003. A report on the archaeological mitigation program at De Beers Namaqualand Mines: March 2002 to June 2003. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. 2006a. Phase 1 archaeological assessment of mining targets in the BMC and KNC mining areas, Namaqualand, April/May 2006. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. 2006b. Phase 1 archaeological assessment of mining targets in the BMC mining area, Namaqualand, July/August 2006. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Dewar, G. 2007. Mitigation of archaeological sites within the Buffels marine and Koingnaas complexes, Namaqualand, July to October 2006. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Hart, T. 1997. An archaeological assessment of the coastal strip, and a proposed heritage management plan for: De Beers Namaqualand Mines. Vols 1 & 2. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Hart, T. 1998. Phase 1 archaeological survey: assessment of the proposed 1998 mining blocks on the Buffels Marine (BMC), Koingnaas (KN) and Buffels Inland (BIC) complexes. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Orton, J. 2004. Phase 1 archaeological survey: assessment of mining blocks and prospecting trenches in the BMC and KNC areas, Namaqualand. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Orton, J. 2005a. Phase 1 archaeological assessment of mining targets in the BMC and KNC mining areas, Namaqualand, April and September 2005. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Orton, J. 2005b. Phase 1 archaeological assessment of mining targets in the BMC and KNC mining areas, Namaqualand, November/December 2005. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Halkett, D. & Orton, J. 2007 Phase 1 archaeological assessment of mining block extensions in the KNC mining area, Namaqualand, May 2007. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Le Roux, A. and Schelpe, E.A.C.L.E. 1981. *Namaqualand and Clanwilliam: South African wild flower guide*. Cape Town: The Botanical Society of South Africa

Mackay, A., Orton, J., Schwartz, S. & Steele, T. 2010. Soutfontein (SFT)-001: preliminary report on an open-air site rich in bifacial points, southern Namaqualand, South Africa. *South African Archaeological Bulletin* 65: 84–95.

Mucina, L., Jürgens, N., Le Roux, A., Rutherford, M.C., Schmeidel, U. Esler, K.J., Powrie, L.W., Desmet, P.G. & Milton, S.J. 2006b. Succulent Karoo biome. In: Mucina, L. & Rutherford, M.C. (eds) *The vegetation of South*

*Africa, Lesotho and Swaziland*: 220–299. Strelitzia 19. Pretoria: South African National Biodiversity Institute.

Orton, J. 2007a. Mitigation of archaeological sites within the Buffels Marine, Buffels Inland and Koingnaas Complexes, Namaqualand, August to September 2007. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Orton, J. 2007b. The sampling of ephemeral shell scatters in Namaqualand, South Africa. *South African archaeological Bulletin* 62: 74–78.

Orton, J. 2008a. A late Pleistocene microlithic Later Stone Age assemblage from coastal Namaqualand, South Africa. *Before Farming* [Online Version] 2008/1: article 3.

Orton, J. 2008b. Later Stone Age ostrich eggshell bead manufacture in the Northern Cape, South Africa. *Journal of Archaeological Science* 35: 1765–1775.

Orton, J. 2009a. Archaeological mitigation on erven 13 and 14, Hondeklipbaai, Namakwa Magisterial District, Northern Cape. Unpublished report prepared for HKB Eiendomme BK. Archaeology Contracts Office, University of Cape Town.

Orton, J. & Halkett, D. 2005. A report on the archaeological mitigation program at De Beers Namaqualand Mines, August to September 2004. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Orton, J. & Halkett, D. 2006. Mitigation of archaeological sites within the Buffels Marine and Koingnaas Complexes, Namaqualand, September 2005 to May 2006. Unpublished report prepared for De Beers Consolidated Mines. University of Cape Town: Archaeology Contracts Office.

Orton, J., Hart, T. & Halkett, D. 2005. Shell middens in Namaqualand: two hunter-gatherer sites at Rooiwalbaai, Northern Cape Province, South Africa. *South African Archaeological Bulletin* 60: 24–32.

Orton, J., Mackay, A., Schwartz, S. & Steele, T. In press. Two Holocene rock shelter deposits from the Knersvlakte, southern Namaqualand, South Africa. *Southern African Humanities*.

Steele, T., Mackay, A., Orton, J., & Schwartz, S. (2012). Varsche Rivier 003, a new Middle Stone Age site in southern Namaqualand, South Africa. *South African Archaeological Bulletin*, 67, 108-119.

Stewart, B.A., Parker, A.G., Dewar G.I., and Morley, M. (*In Press*). Follow the Senqu: afromontane foragers in late Pleistocene Lesotho. In: Stewart, B. and Jones, S. (Eds.), *Africa during stages 6-2: population dynamics and palaeoenvironments Vertebrate Paleobiology and Paleoanthropology*. New York: Springer Press.

Stewart, B.A., Dewar G.I. Morley, M., Inglis, R., Wheeler, M., Jacobs, Z. and Roberts, R. 2012. Afromontane foragers of the late Pleistocene: site formation, chronology and occupational pulsing at Melikane Rockshelter, Lesotho. *Quaternary International* 270: 40-60.

Webley, L.E. 1992. The history and archaeology of pastoralism and hunter-gatherer settlement in the north-western Cape, South Africa. Unpublished PhD thesis: University of Cape Town.

Webley, L. 2002. The re-excavation of Spoegrivier Cave on the West Coast of South Africa. *Annals of the Eastern Cape Museums* 2: 19–49.

Webley, L. 2007. Archaeological evidence for pastoralist land-use and settlement in Namaqualand over the last 2000 years. *Journal of Arid Environments* 70: 629–640.

Webley, L. 2009. Archaeological impact assessment: Port Nolloth borrow pits, Richtersveld Municipality, Northern Cape. Unpublished report prepared for Richtersveld Municipality. University of Cape Town: Archaeology Contracts Office.

Webley, L. & Orton, J. 2013. Excavation of two shell middens at Port Nolloth on the Namaqualand coastline, Northern Cape. *South African Archaeological Bulletin* 69(197): 86-92.

Van der Merwe, N., & Vogel., J. 1983. Recent carbon isotope research and its implications for African archaeology. *African Archaeology Review* 1: 33-56.



Table 1. Radiocarbon ages of ostrich eggshell from Spitzkloof A, Namaqualand, South Africa. The  $^{14}\text{C}$  dates were run at the  $^{14}\text{C}$  Chrono Centre at Queens University Belfast. Dates are calibrated using the software Calib 7.0 and the calibration curve Shcal13.14c for the southern hemisphere (Hogg et al. 2013). Note that the geological layers Dave, Mark and Julie represent a single chronological layer.

Lab No.	Context	Date in $^{14}\text{C}$ BP	Calibrated dates in calBP
UBA-17609	Layer Nick	14,350 $\pm$ 10	17,274 - 17,093
UBA-17610	Layer Nick	14,400 $\pm$ 70	17,391 - 17,134
UBA-17611	Layer Nadja	15,200 $\pm$ 50	18,304 - 18,108
UBA-17612	Layer Jaïrd	16,250 $\pm$ 60	19,457 - 19,237
UBA-17613	Layer Dave	19,550 $\pm$ 60	23,415 - 23,132
UBA-17614	Layer Mark	19,750 $\pm$ 80	23,671 - 23,393
UBA-17615	Layer Julie	19,550 $\pm$ 60	23,415 - 23,132
UBA-17616	Layer Brian	>59,250	N/A
UBA-17617	Layer Brian	52,150 $\pm$ 800	N/A
UBA-17618	Layer Brian	51,150 $\pm$ 850	N/A

\* Experiments have shown that fossil ostrich eggshell is typically 180  $\pm$  120 years too old (Vogel et al. 2001) and so 180 yrs was subtracted before calibration.

Table 2. The description of the layers and contexts identified at Spitzkloof B including the Munsell Chart colours, matrix description, number of 10 L buckets and list of artefacts.

Layer	Contexts	Description	Munsell chart	Matrix	Artefacts
1	1,1001,2001	Surface scatter	7.5 YR 5/4 Brown	Sandy silt with roof spall < 4 cm a generally laying horizontally	Bone, Charcoal, Lithics, Oes, and Pottery
2	1000,2000, 3000,3001, 4000,4001, Feature1, Feature2, Feature3	Greyish brown sediment with few small pebbles < 1 cm	10 YR 6/4 Light yellowish brown	Silty sand with small pebbles	Bone, Charcoal, Lithics, and Oes
3	1002, 2002, 3002,4002, Feature5	Sediment is compact with 1 – 3 cm small roof spall	7.5 YR 5/4 Brown	Fine sandy silt with roof spall oriented more vertically	Bone, Charcoal, Lithics, and Oes
4	1003,2003, 3003,3003a, 3003b,3003c, 4002a,4003, 4003a, Feature4, Feature6	Lighter coloured loose sediment with small isolated patches of small roof spall	10 YR 5/4 Yellowish Brown	Fine sandy silt	Bone, Bottle glass, Charcoal, Lithics, and Oes
5	1004,2004, 2007,3004, 3005,3004a, 4004, 3007	Brown loose sediment with < 1 cm roof spall	10 YR 5/3 Brown	Sandy silt with small roof spall	Bone, Charcoal, Lithics, Oes, and Shell
6	1005,2005, 3005	Loose greyish sandy silt with <2 cm roof	7.5 YR 4/5 Brown	Sandy Silt	Bone, Charcoal, Lithics, and



		spall			Oes
7	1006,1007, 3006, Feature7	Loose brownish red sandy silt	7.5 YR 4/4 Brown	Silty Sand with small roof spall	Bone, Charcoal, Lithics, Oes and Land snail shell
8	1008,1009,2008,2009,3008,3009,4008, 1010B, Feature 9	Soft but compact goldish-brown sediment with a moderate 1< cm roof spall	10 YR 4/4 Dark yellowish brown	Sandy silt with 2-5 cm roof spall	Bone, Charcoal, Lithics, and Oes. *Tortoise rich and many OES bead preforms, bedding?
9	3010, 3010B, Feature 13, 4009, 4009A, 4009B	A mottled grey/yellow crunchy / compacted charcoal rich context with a few < 2cm roof spall inclusions	10YR 5/3 brown & 10 YR 4/2 dark greyish brown	Variable sandy silt with occasional small inclusions	Bone, charcoal, lithics, and Oes, possible broken bone awl. Low density
10	4010, Feature 12, 1011, 1012, 2010, 2011, 2012, 3011, Feature 14,3012	Mottled various dark colours, mahogany, fluffy ash with some tawny brown	7.5 YR 2.5/2 very dark brown to 10 YR 3/4 dark yellowish brown	Sandy silt with very small roof spall inclusions and some charcoal flecks	Bone, charcoal, lithics, and OES. Low density of artefacts, *marine shell pendant
11	4011, 3013, 1013, 2013	Loose reddish brown, easy to trowel, mottled with tawny in some pockets	7.5 YR 2.5/2 very dark brown	Reddish brown sandy silt with chunky roof spall inclusions	Bone, charcoal, lithics, and OES. Qtz bladelet
12	3014, 4012	Tawny, much more sandy with chunks of charcoal	5.5 YR 2.5/2 dark reddish brown	Tawny and black sandy silt with small roof spall inclusions	Bone, charcoal, lithics, and OES. Artefact rich. Decorated OES

Table 3. Radiocarbon ages of charcoal from Spitzkloof B, Namaqualand, South Africa. The AMS <sup>14</sup>C dates were run at Direct AMS Radiocarbon Dating Services. Dates are calibrated using the software Calib 7.0 and the calibration curve Shcal13.14c for the southern hemisphere (Hogg et al. 2013).

Lab No.	Context	Date in <sup>14</sup> C BP	Calibrated dates in calBP
D-AMS 005181	Feature 1	718 ± 23	661 - 572
D_AMS 005182	Feature 6	1,473 ± 27	1,367 – 1,295

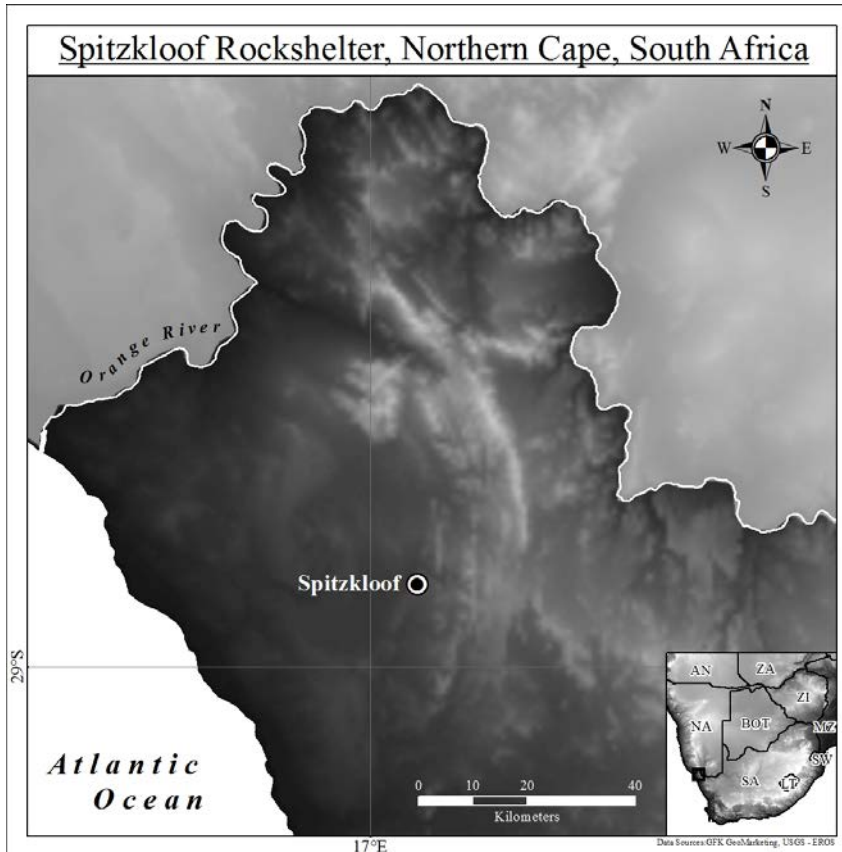


Figure 1. Topographic map showing the location of the Spitzkloof valley near the Orange River in the Richtersveld, Northern Cape, South Africa.



Figure 2. Photograph of Spitzkloof A on the right and B on the left, taken facing south from the outcrop across the dry tributary from the site. (Photo taken by Michael Korchok).



Figure 3. Plan view Top: pre-excavation at Spitzkloof B, facing southwest looking into the back of the shelter. Bottom: End of the 2013 excavation season facing south (Photo taken by Genevieve Dewar)

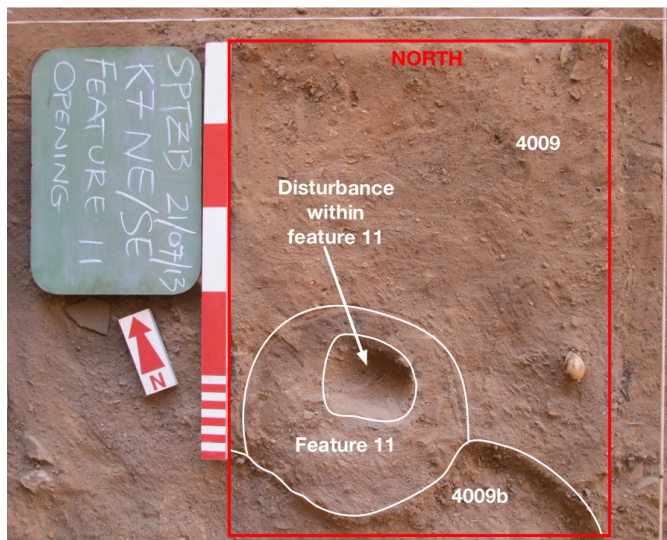
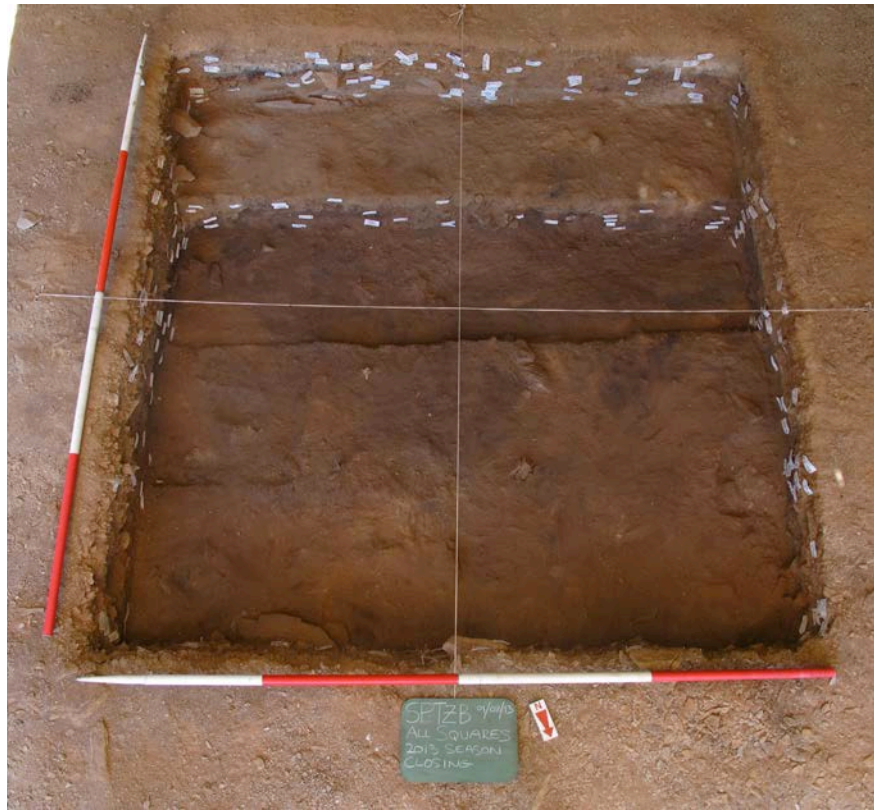


Figure 4. Photo of an example of the lands snails burrowing into the deposit. The disturbance has been excavated from the centre of feature 11 (ash dump) and the snail from within the disturbance is shown on the right

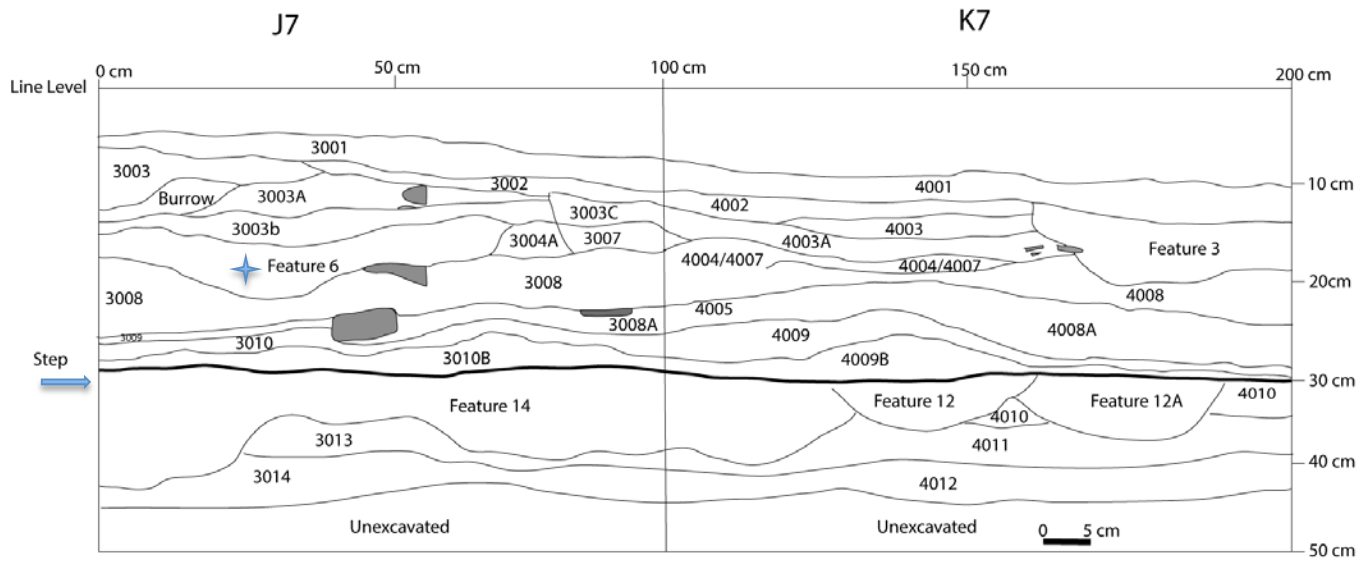


Figure 5. Drawing of the south wall profile of squares J7 and K7 of the excavation unit at Spitzkloof B. Feature 3 and 6 are *in situ* hearths. Feature 12, 12A and 14 are ash dumps. There is a step at the 30 cm mark and the drawings below reflect the south wall profile at the 50 cm mark.

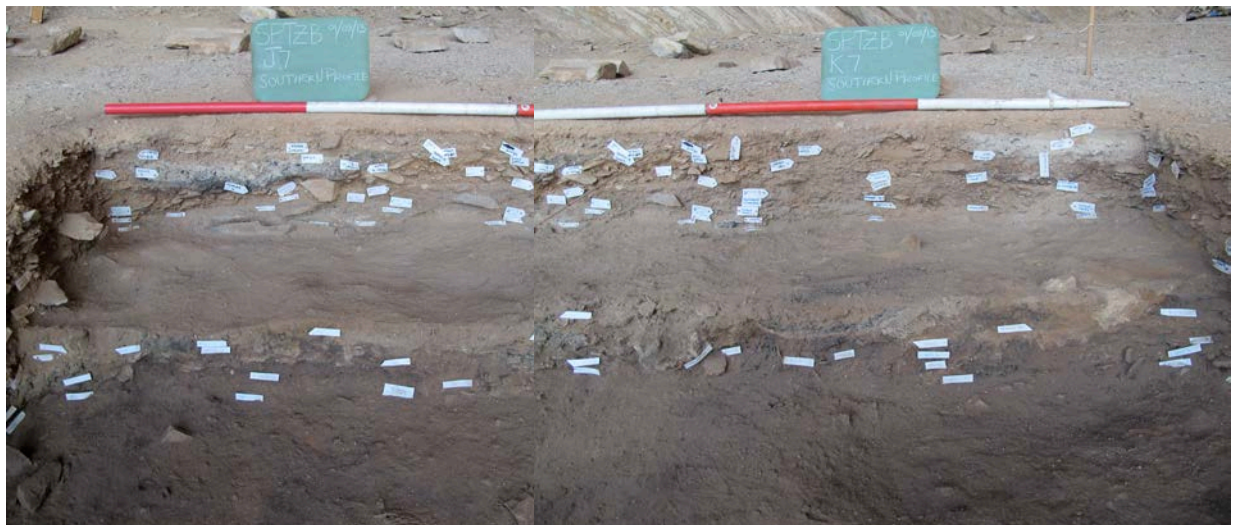


Figure 6. Photo of the south wall profile of J7 and K7 showing the profile of the step.



Figure 7. Photo of a pottery sherd from Spitzkloof with double row of incised punctates. (Photo taken by Jayson Orton)

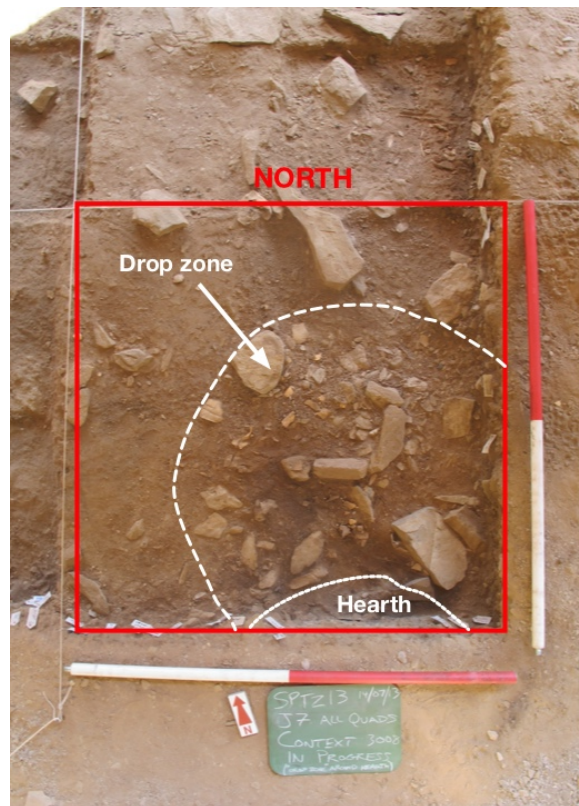


Figure 8. Photo of feature 6 (Hearth) and the high density 'drop zone' of artefacts and associated rocks



Figure 9. The field crew of Spitzkloof B 2013