

**ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED
CONSTRUCTION OF CHALETS AND ASSOCIATED
INFRASTRUCTURE ON EXISTING CAMP SITES IN THE
OORLOGSKLOOF NATURE RESERVE, NIEUWOUDTVILLE,
NORTHERN CAPE PROVINCE**

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act 25 of 1999)

Prepared for:
Thulani Gweje
IKAMVA Consulting
Tel: 047 531 4044/6
Cell: 073 491 7384
Email: thulani@kamva.co.za

OCTOBER 2012



Prepared by:

Lita Webley & Jayson Orton
ACO Associates
8 Jacobs Ladder
St James
7945

Phone (021) 706 4104

Lita.webley@aco-associates.com

EXECUTIVE SUMMARY

ACO Associates cc was appointed by IKAMVA Consulting to undertake a Heritage Impact Assessment in the Oorlogskloof Nature Reserve in the Northern Cape Province. The Reserve is located on the edge of the escarpment in the Bokkeveld Range of Mountains, between Nieuwoudtville and Van Rynsdorp. This area was historically known as the "Onder-Bokkeveld".

The Department of Environmental Affairs is funding the upgrade of camping facilities at the Oorlogskloof Nature Reserve. The Reserve already contains 10 tented campsites along the four to seven day circular hiking trails. It is proposed to replace the tented campsites with log cabins. In addition, it is proposed to sink three new boreholes, to construct 10 new wooden boardwalks across streams along the hiking trail and to build concrete drifts across rivers to facilitate vehicular access.

The BAR was submitted to SAHRA who requested (17/08/2012; CaseID: 273) that a Heritage Impact Assessment be undertaken comprising an Archaeological Impact Assessment which also assesses any other heritage resources such as the Built Environment, Living Heritage and the Cultural Landscape. The Palaeontological Impact Assessment will be undertaken independently.

The survey was undertaken by Lita Webley and Jayson Orton on 10 and 11 October 2012. They were accompanied by the Reserve Manager.

Heritage Indicators:

- There are numerous rock art sites in the Reserve, some in close proximity to campsites and hiking trails. Although these sites have been open to the public for 20 years, none have experienced any vandalism during this time;
- There are numerous historic stone and mud brick structures of early colonial settlement in the Onder-Bokkeveld. These include sheds, kraals, stone traps, threshing floors, etc;
- Some stone features may have their origins in earlier Khoisan settlement of the area but this is open to further investigation;
- There are a number of historic graveyards, many well maintained;
- The landscape is of great natural beauty and the abundance of rock art sites can be interpreted as an "archaeological landscape" of significance.

Impacts:

Only eight (8) rather than ten (10) tented camps will be replaced with cabins. The cabins will be positioned between 40m and 240m in distance from the original tented locations.

The construction of the wooden cabins in the Reserve is not expected to have direct impacts on the heritage of the area. No impacts are anticipated as a result of the construction of the wooden boardwalks and concrete drifts.

Only one indirect impact was identified. The proposed location of the Olienhoutbos cabin, in proximity to a rock art site, may have a significant impact on the "sense of place" of the site, and may result in vandalism.

No preference is expressed for the alternative locations for the Kareebos cabin.

Mitigation:

It is recommended that the proposed cabin at Olienhoutbos should be moved at least 40m away from the rock art site.

Due care should be taken during construction of the cabins and if human remains are uncovered, work should stop in that area and SAHRA should be notified.

It is recommended that the development can proceed.

TABLE OF CONTENTS

1. INTRODUCTION.....	4
2. DEVELOPMENT PROPOSALS	5
3. TERMS OF REFERENCE	6
4. LEGISLATION.....	6
5. DESCRIPTION OF THE affected ENVIRONMENT	7
6. BACKGROUND TO THE AREA	7
6.1 Palaeontology.....	7
6.2 Archaeological Background	8
6.3 Historical Background.....	8
6.4 Cultural Landscape.....	9
7. METHODOLOGY	10
8. FINDINGS.....	11
9. IMPACT IDENTIFICATION AND ASSESSMENT	15
10. CONCLUSIONS	17
11. REFERENCES.....	18

1. INTRODUCTION

ACO Associates cc was appointed by IKAMVA Consulting to undertake a Heritage Impact Assessment in the Oorlogskloof Nature Reserve in the Northern Cape Province. The Reserve is located on the edge of the escarpment in the Bokkeveld Range of Mountains, between Nieuwoudtville and Van Rynsdorp. This area was historically known as the “Onder-Bokkeveld”.

The Department of Environmental Affairs is funding the upgrade of camping facilities at the Oorlogskloof Nature Reserve. The Reserve already contains 10 tented campsites along the four to seven day circular hiking trails. It is proposed to replace the tented campsites with log cabins and associated infrastructure. In addition, it is proposed to sink three new boreholes, to construct 10 new wooden boardwalks across streams along the hiking trail and to build concrete drifts across rivers to facilitate vehicular access.

The BAR was submitted to SAHRA who requested (17/08/2012; CaselD: 273) that a Heritage Impact Assessment be undertaken comprising an Archaeological Impact Assessment which also assesses any other heritage resources such as the Built Environment, Living Heritage and the Cultural Landscape. The Palaeontological Impact Assessment will be assessed independently.

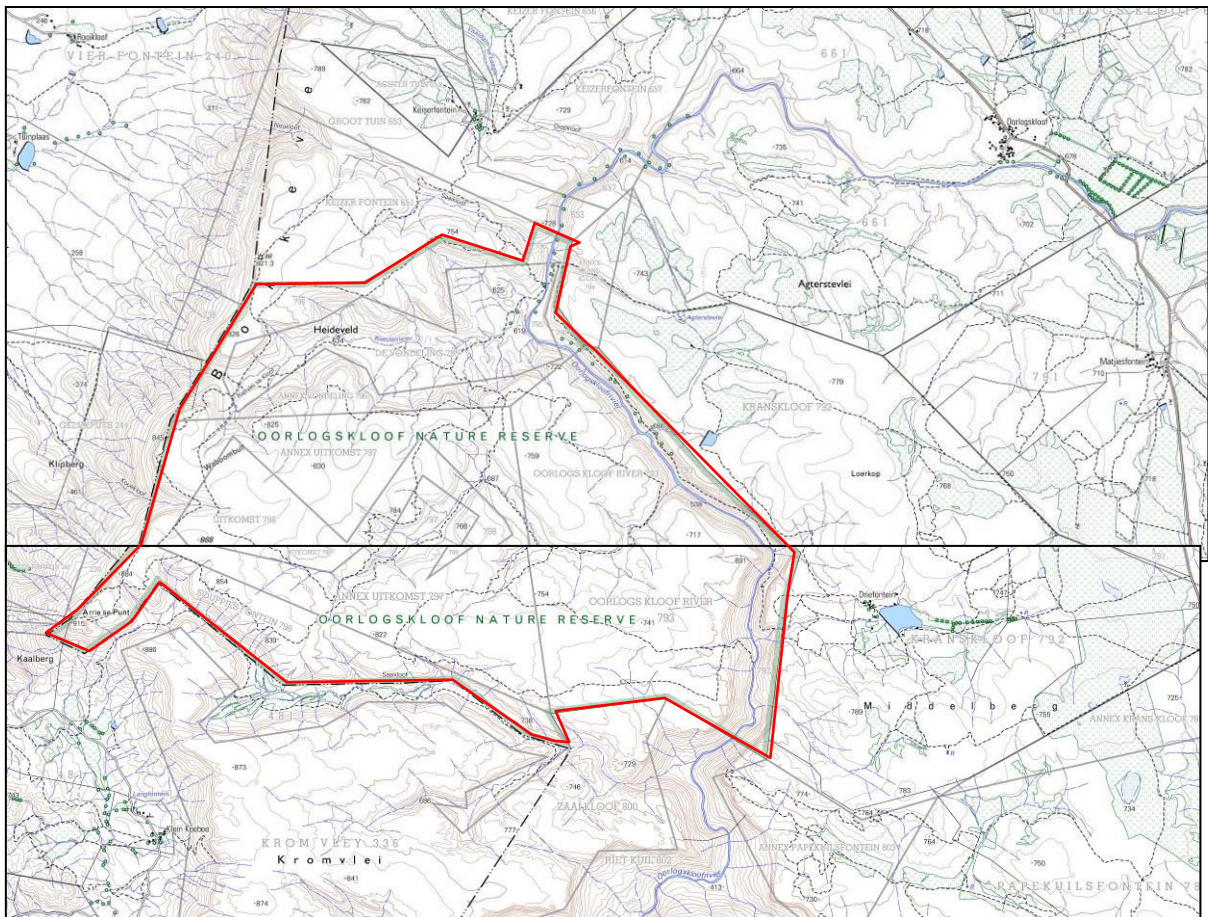


Figure 1: The Oorlogskloof Nature Reserve (1:50 000 map sheets 3119AC & 3119CA) is located 10km south-west of Nieuwoudtville and 60 km east of Van Rynsdorp, in the Northern Cape Province.

2. DEVELOPMENT PROPOSALS

The Reserve already contains 10 tented campsites along the four to seven day circular hiking trails (Figure 2). It is proposed to replace the tented campsites with log cabins.

However, while the BAR indicates that it is proposed to construct ten (10) log cabins, the Reserve Manager has indicated that only eight (8) tented camps will be replaced with log cabins.

The log cabins will house 15 people each with floor area of 80.5m². Each log cabin will have its own water reticulation from a natural source, sewer reticulation and septic tank, solar energy and ablution facilities. It is proposed to construct the log cabins at existing tented campsites at the following locations: Olienhoutbos, Pramkoppie, Driefontein, Brakfontein, Kareebos, Swartkliphuis, Doltuin and Kameel se gat. Although two further cabins are included in the BAR report for Suikerbosfontein and Bo-kloof, these will not be constructed according to the Reserve Manager.

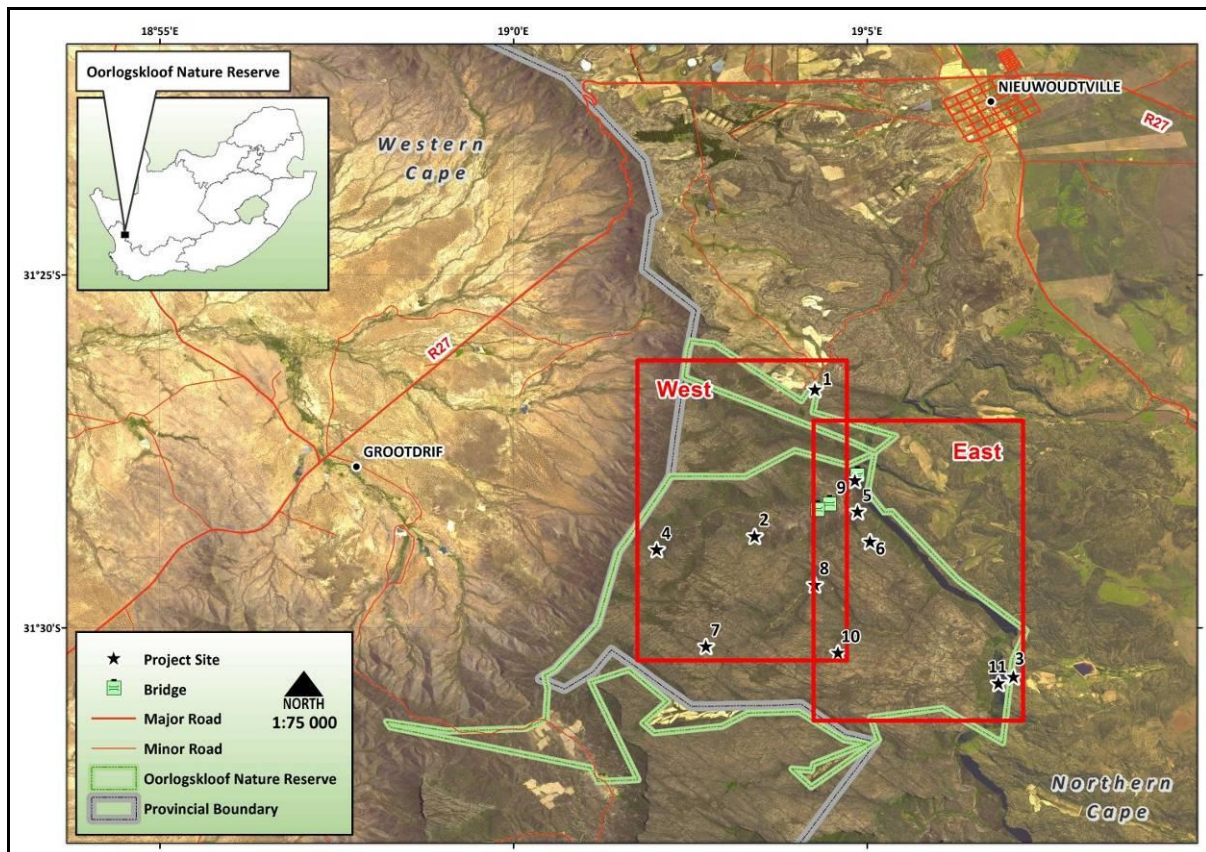


Figure 2: The location of the current tented campsites. The sites at 7 (Bo-kloof) and 10 (Suikerbosfontein) will not be replaced with wooden cabins.

The log cabins are going to be built at the existing campsites, in open spaces directly adjacent the tented sites, where the existing sites are close to water bodies or under trees that would be disturbed.

Since permanent water is not available at all the sites, particularly during the dry summer months, it will be necessary to drill three boreholes at Olienhoutbos, Pramkoppie and Groot Tuin. Each borehole will reach a maximum depth of 200m and have a bore diameter of 165 mm. Each cabin will be provided with water from a nearby spring, river or borehole.

Maintenance will be undertaken of the hiking trail and this will include the construction of stream crossings in the form of timber/boardwalk type of pedestrian bridges, low level crossings, culverts, drifts and gabions. There will be:

- Ten (10) timber foot/pedestrian boardwalk bridges across streams along the hiking trail at Driefontein, Kameel se gat, Eland se kliphuis, Suikerbosfontein (2 x), Doltuin, Saaikloof (2 x) and Saaikloof Day Trail (2 x).

Vehicular stream crossings/hydraulic structures will be constructed along the existing jeep track in the Reserve to facilitate access to the cabins. It is proposed to construct:

- Three (3) low level bridges;
- Six (6) single pipe concrete culverts;
- Two (2) double pipe concrete culverts;
- Two concrete drifts.

Alternatives:

The BAR documentation does not propose any alternative locations for the cabins because they will be replacing existing campsites which are in areas which have already been disturbed.

However, during our survey, the Reserve Manager suggested a number of alternative locations for the Kareebos site and a further alternative proposed for the Olienhoutbos site (Figures 4 & 5).

3. TERMS OF REFERENCE

This assessment includes:

- A review of the literature concerned with the heritage resources of the area;
- A survey of the proposed location of the cabins, boreholes, bridges and causeways to identify any heritage resources;
- The rating of significance of heritage resources;
- An assessment of whether the development will result in a loss of significant heritage resources;
- Recommendations for mitigation if necessary.

4. LEGISLATION

The National Heritage Resources Act, No 25 of 1999 (Section 38 (1)) makes provision for a compulsory notification of the intent to development when any development exceeding 5000 m² in extent, or any road or linear development exceeding 300m in length is proposed.

The NHRA provides protection for the following categories of heritage resources:

- Cultural landscapes (Section 3(3))
- Buildings and structures greater than 60 years of age(Section 34)
- Archaeological sites greater than 100 years of age(Section 35)
- Palaeontological sites and specimens
- Shipwrecks and aircraft wrecks
- Graves and grave yards (Section 36).

Only the Western Cape and Kwa-Zulu Natal have functioning Provincial Heritage Authorities, and consequently SAHRA administers heritage in the remaining provinces particularly where archaeology and palaeontology are the dominant concerns. Heritage Northern Cape (Ngwao Boswa Kapa Bokoni) deals largely with built environment issues at this stage. Amongst other things the latter administers:

- World Heritage Sites
- Provincial Heritage Sites
- Heritage Areas
- Register Sites
- 60 year old structures
- Public monuments & memorials

Archaeology, including rock art, graves of victims of conflict and other graves not in formal cemeteries are administered by the national heritage authority, SAHRA.

The Basic Assessment Report was submitted to SAHRA who issued a letter (Date 17/08/2012; CaseID: 273) requesting a Heritage Impact Assessment consisting of an Archaeological and Palaeontological Impact Assessment. They further instructed that: "Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewsapes must also be assessed".

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The Oorlogskloof Nature Reserve is 4 776 ha in size and is administered by the Northern Cape Nature Conservation Service. The Reserve was established in 1983, partly through a grant from the WWF South Africa.

The Reserve is situated between 500m and 900m above sea level and forms part of the Bokkeveld Mountains. The Oorlogskloof River, which originates near Calvinia, flows through the reserve in a deep gorge of about 500 m wide. The River has carved its way through a thin layer of Table Mountain Sandstone and quartzite to expose softer limestone and shale layers. South of the reserve, the Oorlogskloof River becomes the Koebee River, a tributary of the Doring River which eventually flows into the Olifants River. The reserve is at the transition between the Fynbos and Karoo Biomes.

6. BACKGROUND TO THE AREA

6.1 Palaeontology

The palaeontology of the area is addressed by the Palaeontological specialist and will be submitted as a separate report.



Plate 1: View from the proposed campsite of Driefontein, down to Kameel se gat, which is located in the Oorlogskloof gorge (see Figure 3).

6.2 Archaeological Background

Information on the pre-colonial archaeology of the area is limited.

Hollmann (1993) has undertaken a survey of rock paintings in the Koebee River Valley, a tributary of the Doorn River, located to the south of Oorlogskloof. Humphreys et al. (1991) have described some rock art to the east of the Koebee River, while areas south of the Doring River have been well documented by Yates et al. (1985). Hollmann (1993) discusses the “selective, conventionalised and repetitive” nature of the rock art which includes predominantly masculine images generally in red, the predominance of the eland and hartebeest, the high number of images of fat-tailed sheep, paint scratches or palettes and of handprints.

Amschwand (2009) talks of ephemeral stone walling in the Onder Bokkeveld “which may indicate the presence of pastoralists”. He includes a photograph of some stone walling from Oorlogskloof in this discussion. He notes that during the survey by the Vernacular Society of South Africa of farms in the Bokkeveld, pottery and rock art considered of Khoekhoen origin were also recorded. The Reserve pamphlet issued to tourists note that; “Many caves, San paintings, springs, stone houses, graves, stone traps and kraals, point to the early history”.

Very few CRM projects have been undertaken in the area (SAHRA 2009).

6.3 Historical Background

The Onder Bokkeveld is a plateau at the northern end of the Bokkeveld Mountains, between the Doorn and Hantam rivers. The northward expansion of the Cape Colony reached the Bokkeveld in the late 1730s.

The Khoisan presence in the Onder Bokkeveld was still considerable in the 1720s and 1730s and this discouraged early colonist settlement (Penn 2005). In 1739 a commando attacked Captain Jantje Klipheuwel's farm in the Bokkeveld. At least 13 Khoisan were killed. The place was subsequently named "Oorlogskloof" – a name it retains to this day (Penn 2005: 72). The commando continued to scour the Bokkeveld for any further kraals. A kraal was attacked on the other side of the Doorn River and 17 Khoisan were killed. These tactics eventually put an end to an independent Khoisan existence in the Bokkeveld. The trekboers now moved into the Onder Bokkeveld. By 1770s the Bokkeveld was completely settled by white colonists.

Settlement initially occurred on well situated farms on the plateau, such as Groenrivier, Matjiesfontein, Willemsrivier, Lokenburg and Ouplaas. Only in the 20th century was the modern township of Nieuwoudtville founded on part of Groenrivier.

Hendrik Krugel, who was associated with a certain Keyser (see below) had 13 loan farms granted in his name, one of which was Oorlogskloof, "once the dwelling of Jantje Klipheuwel" (Amschwand 2009:54). He is listed as vacating this farm described as "aan de oorlogs cloof en de Mattjes Fonteijn gelegen aan de Groenrivier" in 1742 in favour of Pieter Loubser. The latter was granted Oologskloof and the farm Vondeling in 1746. According to VASSA (2004) the farms Matjiesfontein and Oorlogskloof the farms passed to Hendrik Loubser in 1780. In 1783, these two farms as well as Lokenburg were transferred to Servus van Breda. By 1834 the farm Matjiesfontein was in the hands of Daniel Louw senior. Oorlogskloof was owned by a Louw prior to 1838, and then acquired by Nel. There were requests to have the farm surveyed from 1819, but this was only finally done in 1833. Oorlogskloof had a strong spring in the Oorlogskloof River which yielded abundant water.

Adjoining farms Papkuilsfontyn and Matjiesrivier were registered in 1742 and 1761 respectively. Amschwand describes a "hartebeest huis" on Papkuilsfonteyn and mentions that they are considered the habitation of the "bywoners" who were often people of colour. It is possible that the stone walled structure at Swartklipsfontein is the remains of such a "hartebeest huis".

The Keyzersfontein Farm which is located just outside the reserve, to the north, is named after a "Hottentot Captaine ... van die Bosjesmans Natie" called Keyser. "Keyser, who was residing in the Bokkeveld had in 1741 killed the "Chirigriquas Hottentot" Claas Hannibal and stolen their cattle. Keyser went unpunished, claims Amschwand (2009) because the VOC were unwilling to punish the San. Six years later (1747) a loan farm called Keyserfontein was granted to Loubser, and this may have been the dwelling place of Keyser.

The first surveys of the farms were carried out around 1833/4 and the purpose was to demarcate the actual boundaries of the farm for its registration as a perpetual quitrent holding. Perpetual quitrent was a more secure form of land tenure introduced by the British. Prior to this, farms were leased from the Dutch East India Company. These leased farms were called Loan Farms and were defined as half an hour's walk in each direction from a central location (often a spring). This often resulted in circular farm boundaries.

According to Amschwand (2009) the rainfall on the escarpment was apparently sufficient for the early colonists to grow some wheat for their own consumption. These farmers followed a season migration between their farms in the Onder Bokkeveld and the Agterveld, or southern Bushmanland after the summer rains.

6.4 Cultural Landscape

The Onder Bokkeveld receives higher rainfall than the surrounding Knersvlakte and Bushmanland and therefore attracted human settlement. Initially the San, and then the

Khoekhoen seem to have preferred this area. The numerous rock art panels indicate it was a landscape of archaeological significance. The higher rainfall also attracted European settlement from the early 18th century. The Bokkeveld has therefore experienced considerable competition over land in the past and can also be characterised as a landscape of conflict.

7. METHODOLOGY

Background information on the area was consulted.

The Reserve Manager advised us that:

- Mr David Morris, of the McGregor Museum in Kimberley, had visited the reserve in the past, but that no report was available of his visit;
- In approximately 2007, a Mr Adrian Flett and Ms Penny Letley, had visited the Reserve and they had recorded six (6) rock art sites, predominantly at Driefontein and Pramkoppie. He made a copy of their site descriptions available to us.

The Reserve Manager also provided us with a copy of his site records which he had accumulated over time (predominantly in 2006 and 2007). It included the GPS locations of:

- 13 graveyards/locations of graves (historic);
- 3 locations of grindstones (historic);
- 4 stone traps for lynx (historic);
- 5 stone threshing floors (historic);
- 11 rock art sites (pre-colonial);
- 2 antique items (historic);
- 50 Mud brick ruins/stone structures

Prior to conducting fieldwork, the GPS locations for the position of the proposed cabins were loaded onto hand held Garmin GPSmap 60CSx devices. According to the BAR, the cabins would replace existing campsites.

Fieldwork was undertaken on the 10 & 11 October 2012. We were accompanied to the location of the proposed cabin sites by the Reserve Manager, Mr Wessel Pretorius and a field ranger named Nathan. During the survey it became apparent that the tented sites were generally located in heavily wooded areas. The intentions are however, to place the cabins in more open areas, and for this reason the cabin locations vary in distance from 40m to 240m from the current camp sites. The location of the cabins as indicated by the Reserve Manager is given in Table 1.

7.1 Limitations

The GPS co-ordinates provided in the BAR report for the proposed log cabin locations represent the positions of the current campsites. However, the Reserve Manager indicated that there could be some flexibility with regard the proposed locations of the cabins. We therefore examined the general area which had been identified.

Most of the fieldwork was undertaken on foot, and the distances involved meant that we did not always have sufficient time to spend at each site.

Some sites were heavily vegetated and it was not possible to examine the soil surface.

8. FINDINGS

The list of heritage sites which were identified during the survey is provided at the end of this report as Appendix 1. A variety of heritage sites are described.

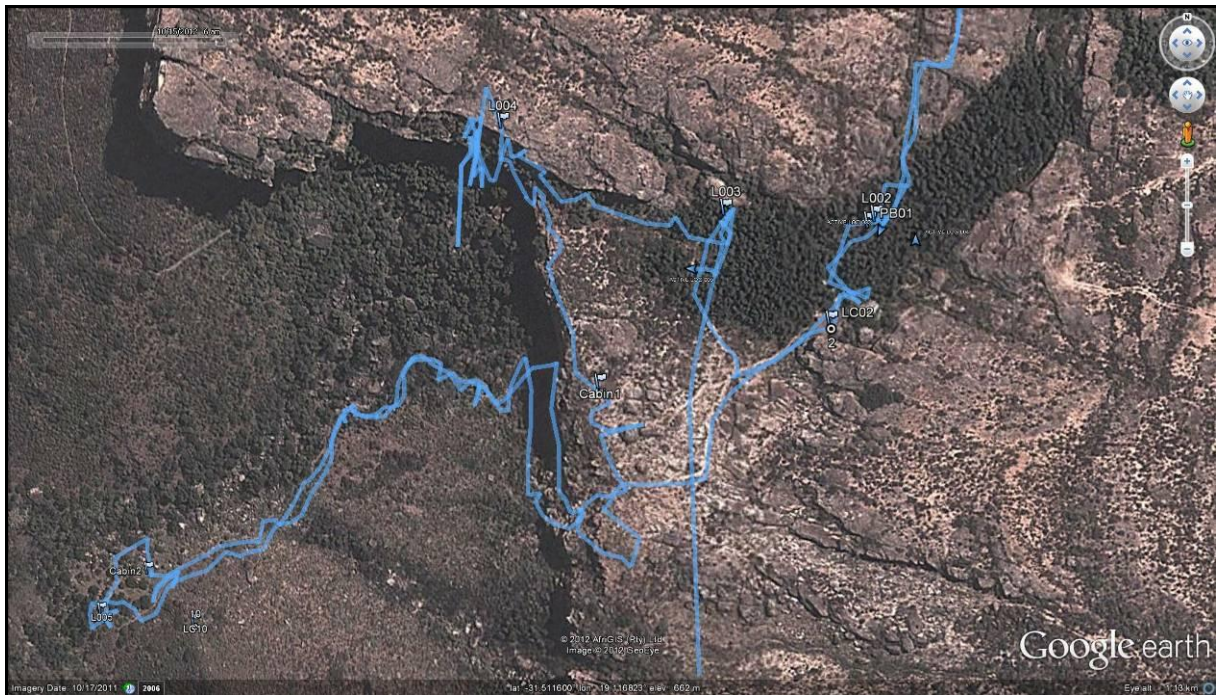


Figure 3: The proposed location of Cabin 1 (Driefontein) and Cabin 2 (Kameel se gat) and heritage sites referred to in the text. The blue lines indicate GPS tracks.

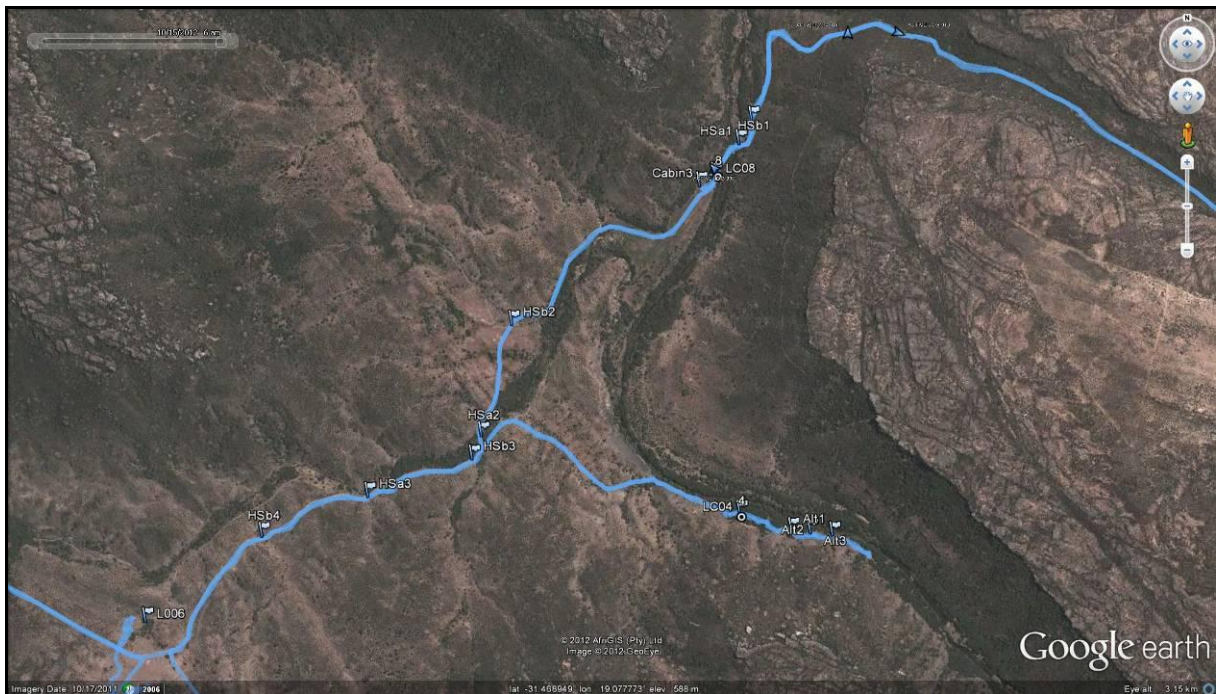


Figure 4: The proposed location of Cabin 3 (Brakfontein) and LC04 is the current location of Kareebos. The three alternative locations for the log cabin are given as Alt 1, Alt 2 and Alt 3. Hs indicates boardwalks and causeways across the river.



Plate 2: A geometric image from DR003; **Plate 3:** Handprint from DR003.



Plate 4: Finger smears from OL008; **Plate 5:** Human figures from DK017.

8.2 Stone Artefacts

Despite the number of rock art sites in the Reserve, very few scatters of stone tools were recorded. A few quartz flakes were observed between Shepherd's Rock and Nathan's site. A small terrace extends beyond the dripline of SK015 and contains one ccs side scraper, some silcrete and quartzite flakes, ochre and one thin-walled potsherd. No Early or Middle Stone Age artefacts were identified in the Reserve.

8.3 Stone and mud brick structures

At least two of the tented campsites, namely Kameel se gat and Swartkliphuis, are constructed inside historic stone-walled structures. Rectangular and circular structures of varying sizes were recorded. The majority is only 1m in height, and there are generally no indications of windows or interior spaces. It is possible that a rectangular stone structure at Swartkliphuis may represent the base of a "haartebeest huis". No associated historic material was recovered which could give some indication of the age of the settlements. The Reserve Manager indicated that some of these settlements date to the 1930s when small scale "rooibos tea" production was practiced in the Kloof. The GPS point for the 'rooivoetpad' (Appendix 1) records the top of the pass used by the settlers to transport the rooibos tea to Nieuwoudtville. A badly eroded mud brick structure was recorded at Doltuin.

An old rusted plough was recorded at Doltuin, and circular lower grindstones used for grinding wheat were recorded at least on three occasions in the Reserve. This supports the historic accounts that colonists planted wheat for own consumption.



Plate 6: Stone walled structures at Swartkliphuis; **Plate 7:** Possible lynx trap at Swartkliphuis.



Plate 8: Plough at Doltuin; **Plate 9:** Grindstone fragments at Swartkliphuis.

8.4 Graveyards and Graves

There are numerous graveyards in the Reserve and many of these have been recorded by the Reserve Manager. Only two were recorded during our survey and both are located on the hiking trail. These graves have been maintained by the Reserve Manager.



Plate 10: DK016 – a small graveyard at Dwarskloof on the hiking trail.

9. IMPACT IDENTIFICATION AND ASSESSMENT

All the sites for the proposed log cabins were visited during the survey and assessed. The results of the survey are summarized in Table 1 below.

Table 1: The location of the cabins discussed in the text.

Cabin Location	Co-ordinates	Description of location	Possible Heritage issues
Driewater cabin	S31 30 42.3 E19 07 00.3	The proposed location of the cabin will be 100m to the west of the current camp site, on the edge of the escarpment overlooking the kloof.	There is a single quartzite flake about 20m away.
Kameel se gat cabin	S31 30 46.0 E19 06 50.2	The proposed location of the cabin will be 50m north-west of the current camp site, at the bottom of the Oorlogskloof. There is dense vegetation cover	No heritage issues.
Brakwater cabin	S31 27 55.1 E19 04 48.2	The proposed location of the cabin will be about 40m south-west of the current camp site, in an open, grassy area.	Single broken quartzite hammerstone in an old field.
Olienhoutbos cabin	S31 28 44.3 E19 03 27.5	The proposed location of the cabin will be about 110m south-east of the current camp site. It is proposed to place the cabin in an area cleared of vegetation next to a large boulder.	The boulder contains rock art and there is a bedrock groove and two lower grindstone/grooved stones.
Olienhoutbos cabin alternative	S31 28 44.5 E19 03 26.3	It is proposed to move the cabin some 40m to the west of the large boulder to preserve the "sense of place".	Flat, vegetated area with no heritage issues.
Pramkoppie cabin	S31 28 49.6 E19 02 01.4	The proposed location of the cabin will be about 120m north of the current camp site. It will be placed next to the jeep access road, cleared bush.	No heritage issues.
Kareebos cabin Alt 1	S31 28 22.4 E19 04 56.7	The proposed location of the cabin will be further upstream from the current campsite along the river. 3 alternative sites were examined along the banks of the river. Alt 1 is 130m south-east of the current campsite	No heritage issues.
Kareebos Alt 2	S31 28 22.5 E19 04 58.5	Alt 2 is 180m south-east of the current campsite	No heritage issues
Kareebos Alt 3	S31 28 22.7 E19 05 00.5	Alt 3 is 240m south-east of the current campsite	No heritage issues
Swartkliphuis cabin	S31 28 45.1 E19 05 00.6	The proposed location of the cabin will be 70m north-west of the current campsite. It will be placed on a rock shelf.	The site is some distance from the stone structures. No heritage issues.
Doltuin cabin	S31 29 23.2 E19 04 15.1	The proposed location of the cabin has not been decided but it will be located near the current campsite on river	There is a grave nearby but exact location unknown.

		sands on the edge of the stream.	
--	--	----------------------------------	--

The impacts of the boardwalks and concrete drifts were considered but it did not seem likely that significant heritage material would be damaged or destroyed on stream banks.



Plate 11: This river will be crossed with a concrete drift while the wooden poles on the right will be replaced with a wooden boardwalk for hikers.

Table 2: Impacts to Rock Art sites

Nature of Impact: Indirect impact on rock art sites in vicinity of the proposed cabins due to increased visitor numbers		
	Pre- Mitigation	Post- Mitigation
Extent	Regional	Local
Magnitude	On-site	On-site
Duration	Permanent*	Permanent*
Intensity	Low	Negligible
Probability	Possibly	Possibly
Significance	High	Low
Mitigation: Although some rock art sites are located in close proximity to the proposed cabins, there has been no vandalism during the last 20 years. The impact is considered Low. The only site which may be impacted is at Olienhoutbos. It is recommended that the location of the cabin is moved some 40m to the west.		
Cumulative Impacts: None		
Operational Phase: n/a		
Decommissioning Phase: Rehabilitation of the landscape will not have any bearing on the archaeology of the site.		

* Once archaeological material is destroyed, it cannot be renewed or replaced.

Table 3: Impacts to Graveyards and Graves

Nature of Impact: Possible impact on below ground graves during the construction phase		
	Pre- Mitigation	Post- Mitigation
Extent	Local	Local

Magnitude	High	High
Duration	Permanent*	Permanent*
Intensity	Medium	Medium
Probability	Unlikely	Unlikely
Significance	High	High
Mitigation: In the <u>unlikely</u> event that unmarked graves are present and found during the construction phase, work at that location must be halted, the feature should be cordoned off and the heritage authority (SAHRA) notified. They are likely to suggest mitigation in the form of exhumation. No mitigation has been suggested.		
Cumulative Impacts: None		
Operational Phase: n/a		
Decommissioning Phase: Rehabilitation of the landscape will not have any bearing on the archaeology of the site.		

* Once archaeological material is destroyed, it cannot be renewed or replaced.

Table 4: Summary of impacts to Cultural Landscape

Nature of Impact: The proposed facility may have a visual impact on the cultural landscape		
	Pre- Mitigation	Post- Mitigation
Extent	Local	Local
Magnitude	Local	Local
Duration	Life span of cabins	Life span of cabins
Intensity	Low	Low
Probability	Unlikely	Unlikely
Significance	Low	Low
Mitigation: No mitigation is required.		
Cumulative Impacts: None		
Operational Phase: n/a		
Decommissioning Phase: n/a		

10. CONCLUSIONS

The survey was undertaken by Lita Webley and Jayson Orton on 10 and 11 October 2012. They were accompanied by the Reserve Manager.

Heritage Indicators:

- There are numerous rock art sites in the Reserve, some in close proximity to campsites and hiking trails. Although these sites have been open to the public for 20 years, none have experienced any vandalism during this time;
- There are numerous historic stone and mud brick structures of early colonial settlement in the Onder-Bokkeveld. These include sheds, kraals, stone traps, threshing floors, etc;
- Some stone features may have their origins in earlier Khoisan settlement of the area but this is open to further investigation;
- There are a number of historic graveyards, many well maintained;
- The landscape is of great natural beauty and the abundance of rock art sites can be interpreted as an “archaeological landscape” of significance.

Impacts:

Only eight (8) rather than ten (10) tented camps will be replaced with cabins. The cabins vary between 40m and 240m in distance from the original tented locations.

The construction of the wooden cabins in the Reserve is not expected to have direct impacts on the heritage of the area. No impacts are anticipated as a result of the construction of the wooden boardwalks and concrete causeways.

Only one indirect impact was identified. The proposed location of the Olienhoutbos cabin, in proximity to a rock art site, may have a significant impact on the “sense of place” of the site, and may result in vandalism.

Mitigation:

It is recommended that the proposed cabin at Olienhoutbos should be moved at least 40m away from the rock art site.

Due care should be taken during construction of the cabins and if human remains are uncovered, work should stop in that area and SAHRA should be notified.

It is recommended that the development can proceed.

11. REFERENCES

Amschwand, N. 2009. A short history of the Onder-Bokkeveld. Aquaknowledge: Cape Town.

Archer, M. & Amschwand, N. 2012. Historical Survey group report on the farm Klipperivier, also known as Willemsrivier, in the Onder Bokkeveld. Vernacular Architecture Society of South Africa.

Hollman, J. 1993. Preliminary report on the Koebee rock paintings, Western Cape Province, South Africa. South African Archaeological Bulletin 48: 16-25.

Humphreys, A.J.B., Bredekamp, H.C. & Kotze, F. 1991. A painting of a fully recurved bow from north of the Doring River, south-western Cape. South African Archaeological Bulletin 46:46-47.

Penn, N. 2005. The Forgotten Frontier: Colonists and Khoisan on the Cape’s northern frontier in the 18th century. Double Storey Books: Cape Town.

SAHRA 2009. Archaeology, Palaeontology & Meteorite Unit. Report Mapping Project. Version 1.0

Vernacular Society of South Africa. 2004. Report on the farm Matjiesfontein in the Bokkeveld.

Yates, R., Golson, J. & Hall, M. 1985. Trance performance: the rock art of Boontjieskloof and Sevilla. South African Archaeological Bulletin 40: 70-80.

Appendix 1: Location of Heritage Sites

Site Number	Co-ordinates	Description	Significance
DR002 (L002)	S31 30 39.9 E19 07 04.9	Driefontein. Small shelter with low roof. Damp soil. Two white nested images. The others located in hollows in the rock face, at least 4 hollows with paintings of animals in red (Flett & Letley 2007: No 1?)	High
DR003 (L003)	S31 30 39.8 E19 07 02.4	Driefontein. Large rock shelter with at least 8m of rock face. 3 geometric images; 25 handprints in red to the left, 20 handprints on the right, and at least 10 handprints under a rock ledge. All in red. The geometric images are red "sun" designs in at least 2 shades of red (Flett & Letley 2007: No 2?).	High
DR004 (L004)	S31 30 38.5 E19 06 58.7	Driefontein. Large site. Thin deposit with some flakes. At least 36 nested or decorated handprints in red, on the main panel. In various sizes. Four prints to the extreme left near a very faded geometric. Also some animals and humans (Flett & Letley 2007: No 3?). They describe the animals as horses.	High
KG005 (L005)	S31 30 46.8 E19 06 49.0	Kameel se gat: The present camp is located in a number of stone walled structures. They are rectangular and presumably occupied by people rather than animals although this is difficult to be sure about. Some are about 1.5m high. They have no windows, with exception of small aperture. Possibly reed roofs? There is a circular stone structure under a bush which may be a kraal. No historic artefactual debris. Further down in the valley is a historic graveyard.	Medium
Shepherd's Rock 1 (L006)	S31 28 29.3 E19 03 57.3	A large boulder perched on top of a smaller base in a valley a distance from any cabins. Paintings include geometrics, handprints and human figures. Some paintings have been rubbed by animals – this area used as a stockpost in the past. On edge of old field. Some recent glass as well as one piece of 20 th century ceramic with gilt decoration.	High
Nathan's site (L007)	S31 28 39.1 E19 03 52.7	On a large rectangular boulder lying in the valley, some paintings including a 2m long "snake" with horns on head, some animals in red.	High
OL008 (L008)	S31 28 44.3 E19 03 27.7	Olienhoutbos. A small shelter formed by overhanging boulder in the bottom of the valley. It contains a bedrock groove, as well as two portable grooved stones, one uncovered by a porcupine hole. The ashy deposit is badly churned. Three rows of red finger daubs, in a thick red pigment applied to a black surface. A number of thin red lines. A single red geometric.	High
PK009 (L009)	S31 28 38.1 E19 02 07.3	Pramkoppie. A large rock perched next to a small stream, in the valley. Virtually no deposit. The overhang contains a number of	High

		animals (red hartebeest?) and some humans as well as a very prominent nested image ("beehive"). Flett & Letley 2007: Site No 5.	
Klein Pramkoppie 1 (J001)	S31 28 33.79 E19 02 08.79	A large boulder on the walking trail. At least 6 faded handprints. Flett & Letley 2007: Site No 6.	High
Rooivoetpad	S31 28 37.9 E19 04 36.5	Position of the top of the trail used by early 20 th century rooibos tea farmers, to transport tea to Nieuwoudtville.	Low
SK010 (L010)	S31 28 46.7 E19 04 54.8	Swartkliphuis. Section of stone walling at the edge of the vlei.	Low
SK011 (L011)	S31 28 47.2 E19 04 54.8	Swartkliphuis. The fountain which was re-discovered by Pretorius after information from an informant who visited her grandmother here. Fountain re-packed with stone.	Low
SK012 (L012)	S31 28 46.45 E19 04 56.48	Swartkliphuis. Rectangular stone structure (3.5m x 9m) with walling 1m high. Single entrance. Possible hartebeest type house with reed roof.	Medium
SK013 (L013)	S31 28 45.7 E19 04 57.5	Swartkliphuis. Lynx/rooikat stone trap	Low
SK014 (L014)	S31 28 46.9 E19 05 02.3	Swartkliphuis. Three stone structures. One enclosing a small rock shelter. One a circular structure around 3 x 2m possible kookskerm. One a possible kraal. No associated historic remains	Low
SK015 (L015)	S31 28 48.5 E19 05 02.3	A large overhanging boulder, on the hiking trail. Some deposit outside the shelter. There is one ccs side scraper some silcrete and quartzite flakes, ochre and one thin-walled potsherd. One corner of the shelter contains some stone walling. Very low so difficult to determine if used as a kraal. Also some fragments of the historic grinding stone. Rock panel contains 39 handprints and some human figures.	High
DK016 (L016)	S31 28 55.7 E19 04 55.9	Dwarskloof: A little graveyard on the hiking trail, comprising some 8 graves packed with stone and with stone headstones. However, the site has been "re-packed".	High
DK017 (L017)	S31 28 59.4 E19 04 53.2	A rockshelter on the hiking trail with no deposit. Two broken historic grinding stones on the floor. 17 handprints on the left of the shelter, four human figures and one animal with head down, 7 handprints on the right. Handprints very faded.	High
DK018 (L018)	S31 29 10.5 E19 05 09.4	Broken historic grinding stone in a cave, containing no paintings. There may be deposit. These grinding stones found in the veld.	Low
DR019 (L019)	S31 29 50.2 E19 05 37.5	Draaikraal: Small stone kraal next to a koppie on edge of kloof, on hiking trail. 1 m high packed stone, 5 x 2m.	Low
DR020 (L020)	S31 30 04.6 E19 05 13.2	Draaikraal graveyard. At least 6 graves packed with stone and with stone headstones. Re-packed.	High
DT021 (L021)	S31 29 16.2 E19 04 23.1	Doltuin. Ruins of a rectangular mud brick house which is deteriorating. There is a plough in the middle of the house with the	Medium

		words: Ransome, Sims & Jeffries Ltd. Ipswich, England.	
DT022 (L022).	S31 29 15.9 E19 04 23.0	Next to ruin, is a small overhanging rock with some modern white finger daubs. Includes lettering. Some stone walling on the edge of the shelter.	Low