ARCHAEOLOGICAL SITE INSPECTION

LAOHU VALLEY RESERVE, NORTHERN CAPE & FREE STATE, SOUTH AFRICA

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EXECUTIVE SUMMARY

TERMS OF REFERENCE –

ArchaeoMaps was appointed by the Laohu Valley Reserve to conduct an ASI of known and inferred sites on the 378km² property situated across portions of the Northern Cape and Free State, with the aim of making recommendations regarding the archaeological heritage on the reserve for conservation and management purposes.

THE ARCHAEOLOGICAL SITE INSPECTION –

PROJECT AREA: Laohu Valley Reserve (378km²), Northern Cape and Free State [1:50,000 map ref – 3025AA, 3025AC and 3025CA].

COVERAGE & GAP ANALYSIS: Site inspection including known and inferred sites as well as recording of additionally identified sites.

FIELD METHODOLOGY: Two day site inspection; GPS co-ordinates – Garmin Oregon 550; Photographic documentation – Pentax K20D. Archaeological and cultural heritage site significance assessment and mitigation recommendations – SAHRA 2007 system.

SUMMARY:

Map Code	Site	Co-ordinates	Recommendations
Laohu Valley Reserve, Northern Cape and Free State			
LVR-1	Stone Age (MSA)	S30°17'14.0"; E25°06'20.2"	***In-situ* Conservation**
LVR-2	Stone Age (MSA)	S30°16'54.6"; E25°05'30.1"	***In-situ* Conservation**
LVR-3	Stone Age (MSA)	S30°16'31.3"; E25°05'24.0"	***In-situ* Conservation**
LVR-4	LSA Rock Art Shelter (Khoe)	S30°16'28.1"; E25°03'23.4"	***In-situ* Conservation**
LVR-5	Stone Age (MSA & LSA)	S30°16'18.0"; E25°03'37.2"	***In-situ* Conservation**
LVR-6	Stone Age (MSA & LSA)	S30°17'00.7"; E25°03'55.7"	***In-situ* Conservation**
LVR-7	Later Iron Age (Homestead)	S30°21'06.3"; E25°02'26.6"	**Impacted on by Vanderkloof Dam development**
LVR-8	Stone Age (MSA)	S30°31'22.8"; E25°09'35.7"	***In-situ* Conservation**
LVR-9	Stone Age (ESA, MSA & LSA)	S30°31'01.3"; E25°10'02.2"	***In-situ* Conservation**
LVR-10	Stone Age (MSA & LSA)	S30°30'24.9"; E25°10'35.6"	***In-situ* Conservation**
LVR-11	Stone Age (LSA)	S30°28'55.1"; E25°10'30.2"	***In-situ* Conservation**
LVR-12	Stone Age (MSA)	S30°28'35.9"; E25°09'54.8"	***In-situ* Conservation**
LVR-13	Stone Age (MSA & LSA)	S30°28'25.7"; E25°09'37.9"	***In-situ* Conservation**
LVR-14	Stone Age (LSA)	S30°28'12.8"; E25°09'22.1"	***In-situ* Conservation**
LVR-15	Stone Age (MSA)	S30°28'15.6"; E25°09'21.2"	***In-situ* Conservation**

RECOMMENDATIONS –

Fifteen archaeological sites were recorded during the ASI. All sites will be conserved *in-situ* aside from Site LVR-7, already impacted on by the Vanderkloof Dam development. Low level impact (farm vehicle access tracks) is present at most of the Stone Age sites recorded. However, general extensive site sizes together with the inferred rich archaeological heritage on the property does not warrant recommendations for rerouting of access roads at this stage. Further recommendations regarding future recording, conservation and research measures beyond immediate *in-situ* conservation are made in Sections 2.1) and 3) of this report.

ARCHAEOLOGICAL SITE INSPECTION

LAOHU VALLEY RESERVE, NORTHERN CAPE AND FREE STATE, SOUTH AFRICA

CONTENTS

LIST OF TABLES –

LIST OF MAPS –

LIST OF PLATES –

1) LAOHU VALLEY RESERVE – INTRODUCTION

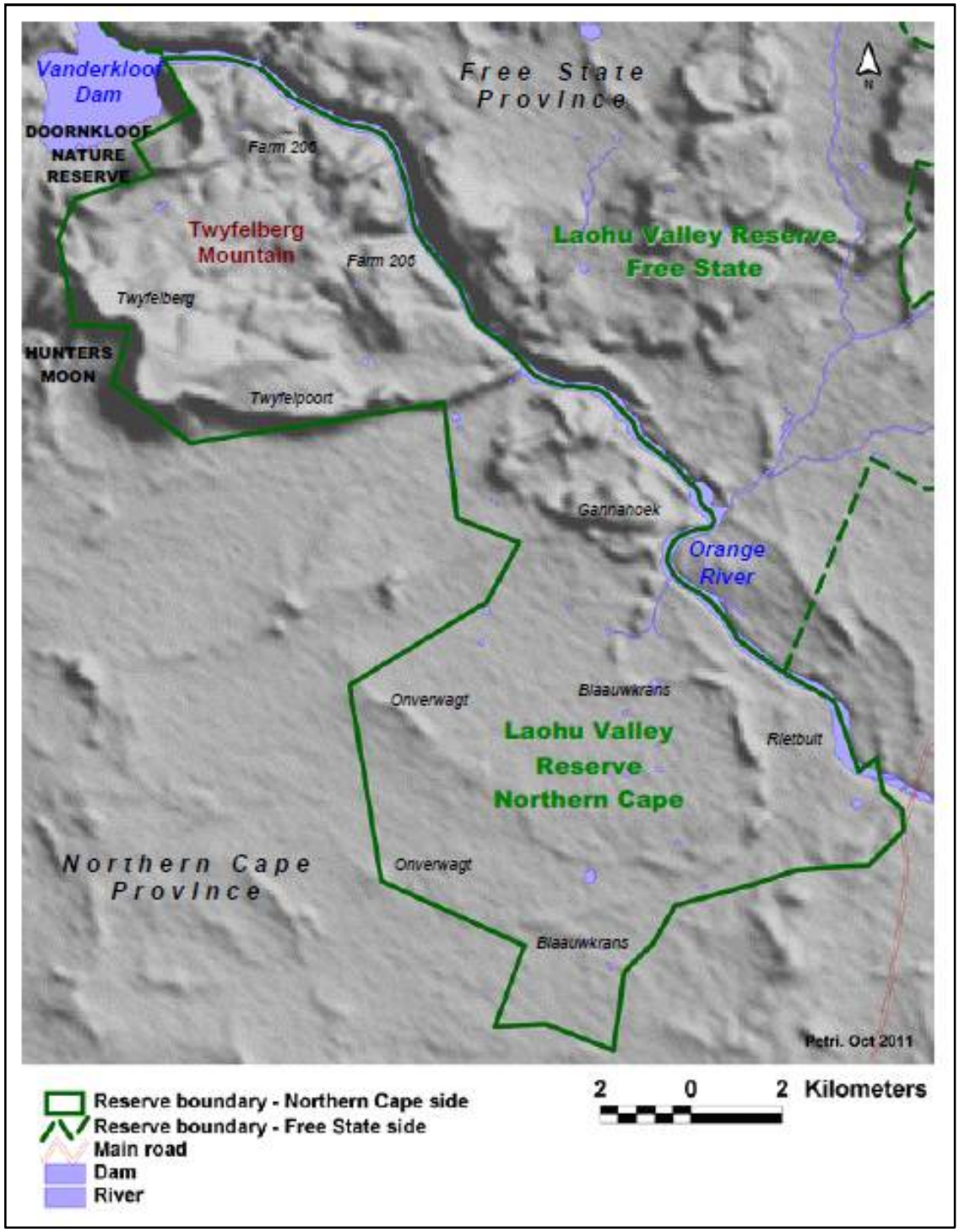
The Laohu Valley Reserve comprises an approximate 378km² area and is one of the largest protected areas in South Africa. The reserve spans the Orange (Gariep) River in the upper reaches of the Vanderkloof Dam and includes Northern Cape (+/- 146km²) and Free State (+/- 232km²) sections (Viljoen 2010, 2011).

The Northern Cape portion includes the properties Missing 206, Twyfelberg 234, (portions of) Twyfelspoort 235, Missing 17, Onverwaght 18, Ronde Vlei 238, Diyatalawa 236, Blaauwkrans 45, Rietbult 205 and Rietbult 237. The Free State portion includes the properties Karree Poort 28, Karree Poort 536, Annex Karreepoort 309, Hartebeestfontein 516, Puntdraai 546, Schurve Kop 26, Kookfontein 107, Kookfontein 86, Bekkers Road 252, Tuindam 542, Middle-Erf 541, Klein Paardefontein 90, Vrede 341, Schuilbroek 249, Voorspoed 378, Groot Waaihoek 115, Kleinfontein 294, (portions of) Groene-Kloof 16, Rooipoortjie Oost 390, Ongegund 280, Beckers Hoop 406, Helpmekaar 395, Draai Kloof 25, Kleindraaikloof 80, Schoonheid B226, Weltevreden 228, Triangle 194, Groenvlei 65 and Poortjie 517.

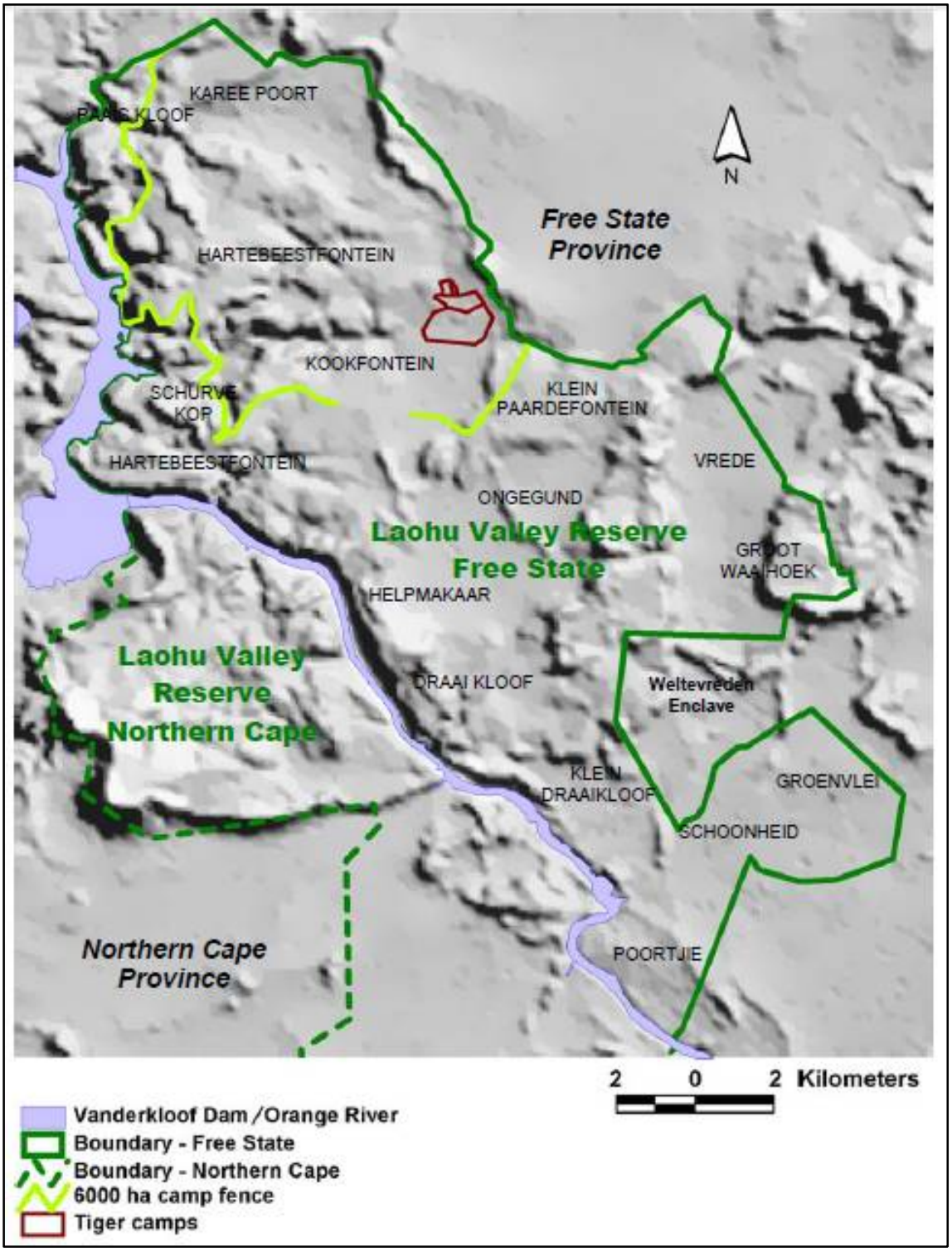
The Laohu Valley Reserve was established during 2000 for the re-wilding of captive-born south China tigers (*Panthera tigris amayensis*) as well as for biodiversity conservation. For at least a century prior to the establishment of the reserve the farms had been used primarily for sheep stock farming (Viljoen 2010, 2011).

ArchaeoMaps was appointed by the Laohu Valley Reserve to visit known and inferred archaeological sites and make recommendations regarding the archaeological heritage on the reserve for conservation and management purposes.

Map 1: General locality of the Laohu Valley Reserve, Northern Cape and Free State



Map 2: Laohu Valley Reserve – Northern Cape section (1:50,000 map ref – 3025AC and 3025CA) (Viljoen 2011)



Map 3: Laohu Valley Reserve – Free State section (1:50,000 map ref – 3025AA and 3025AC) (Viljoen 2010)

2) THE ARCHAEOLOGICAL SITE INSPECTION

❖ Summarized Findings of the Site Inspection

The Archaeological Site Inspection (ASI) of the Laohu Valley Reserve was aimed at visiting known archaeological sites and to make recommendations regarding the archaeological heritage on the reserve for conservation and management purposes. A total of 15 sites were recorded, 14 of which represent Stone Age sites, including the Site LVR-4 LSA Khoe Rock Art Shelter and Site LVR-7, a Later Iron Age homestead. Site LVR-4, a previously recorded Rock Art site was known and reported on to the reserve by former owner Piet Venter. In addition Venter was of the opinion that 2 more localities on the property may well represent archaeological sites, verified as such and here reported on as Sites LVR-5 and LVR-6. Heinrich Funck and Petri Viljoen reported on the 2005/2006 identified Site LVR-7. The site, now submerged by the Vanderkloof Dam water levels, could not be visited. However, brief consultation with archaeologist Cobus Dreyer indicated that the preliminary assumption of the site being a '*corbelled*' hut type site is not the case, but Dreyer could not classify the site indicating that the structure does not seem to fit any of the basic Later Iron Age Type settlement pattern categories and that further investigation of the site may well be of significant importance. Anticipated to be of archaeological significance by Viljoen, Orange River bed terracing was briefly inspected and recorded as Sites LVR-13, LVR-14 and LVR-15.

No new development will impact on any of the recorded sites. Current development impact is limited to a number of farm roads (vehicle access tracks) that traverse most of the large open-air Stone Age sites recorded and reported on in this report.

Archaeological sites reported on by no means represent an all-inclusive record of archaeological resources on the reserve; but rather the numerous sites encountered along the few roads traveled, highlighting vast site sizes and variation in archaeological type site.

- Time allowed only for a brief assessment along limited access roads in the northern and southern parts of the reserve, but site distribution can reasonably be inferred to continue at relative densities across the 378km² property, focussed along river and stream beds, including paleo-water courses, but also significant other landscape markers such low and high raised hills and outcrops and importantly, though not assessed, Twyfelberg.
- Open-air Stone Age site sizes are estimates only. Sites proved to be noticeably large and conventional methods to determine site size will be extremely laborious and most possible without verifiable results. In addition changes in classification implying long occupation or use, or repeated use, or disturbance is prevalent; much further inspection would be necessary to determine actual boundaries of sites, areas, terrain, overlay, associated disturbance and occurrences.
- The Stone Age archaeological record of the Laohu Valley Reserve proved remarkably significant despite the fact that the sites are open-air sites, implying a general deflated ex-situ context. The various phases of the Stone Age are represented, including ESA, MSA and LSA, with a focus on the MSA and including most probably a Volman (1984) MSA1, MSA2a, MSA2b and MSA3 sequence, a sequence rarely present in known MSA records, let alone directly associated with the ESA and both macro- and microlithic LSA deposits.
- The Iron Age is represented by recorded Site LVR-7. Additional structures on the property may well be of Iron Age origin, albeit of Colonial Period times. Venter reported on a few farm workers' dwellings known to be present on the property and more may well be encountered.

- The Colonial Period is represented on the property, but no site recorded and included in this report. Known Colonial Period sites are mainly still partly in use comprising of structures older than 60 years, although a few structures (mostly stone built stock enclosures / kraals) were observed elsewhere on the property.

❖ Methodology

The Laohu Valley Reserve Archaeological Site Inspection was done over a 2 day period (2013-03-14 to 03-15) in the company of Heinrich Funck and Petri Viljoen. The assessment was done by foot and off-road vehicle and limited to a Phase 1 surface survey. GPS co-ordinates were taken with a Garmin Oregon 550 (Datum: WGS84). Photographic documentation was done with a Pentax K20D camera. A combination of Garmap and Google Earth software was used in the display of spatial information.

Archaeological and cultural heritage site significance assessment and associated mitigation recommendations were done according to the system prescribed by SAHRA (2007).

SAHRA ARCHAEOLOGICAL AND CULTURAL HERITAGE SITE SIGNIFICANCE ASSESSMENT			
Site Significance	Field Rating	Grade	Recommended Mitigation
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	Site conservation or extensive mitigation prior to development / destruction
High / Medium Significance	Generally Protected A	-	Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B	-	Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C	-	On-site sampling, monitoring or no archaeological mitigation required prior to or during development / destruction

Table 1: SAHRA archaeological and cultural heritage site significance assessment

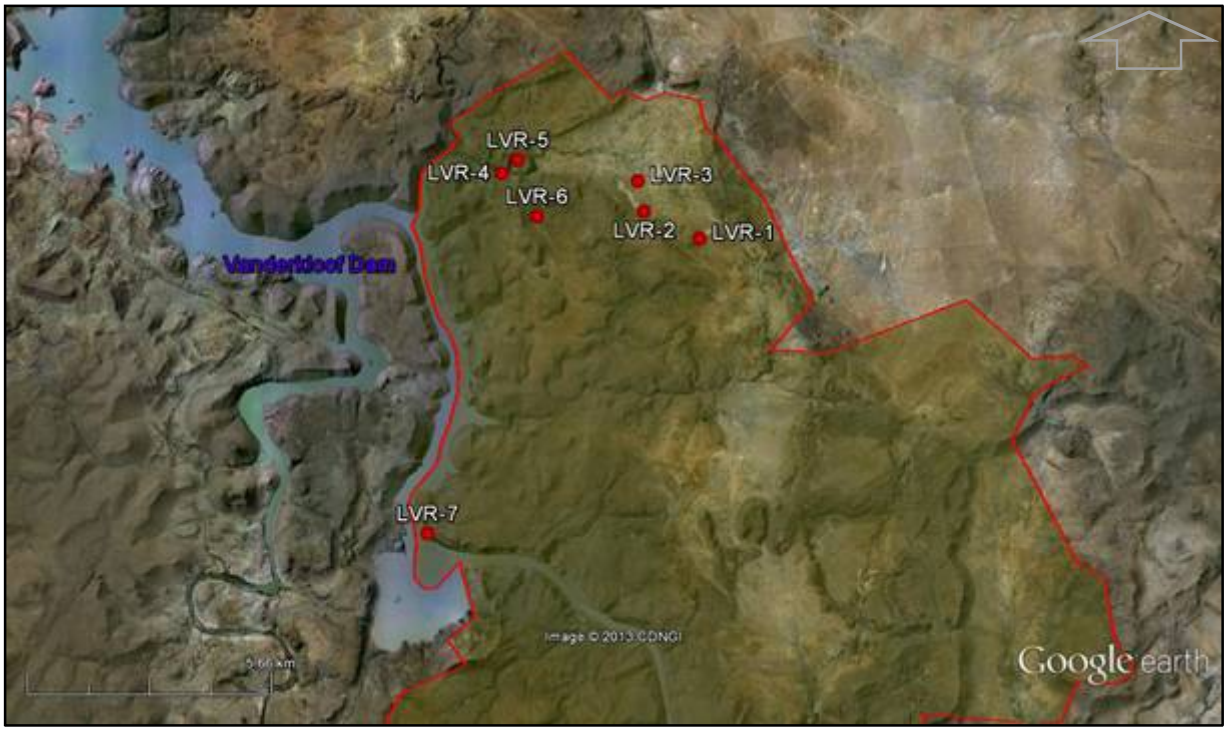
❖ Assessor Accreditation

The assessment was done by Karen van Ryneveld (ArchaeoMaps):

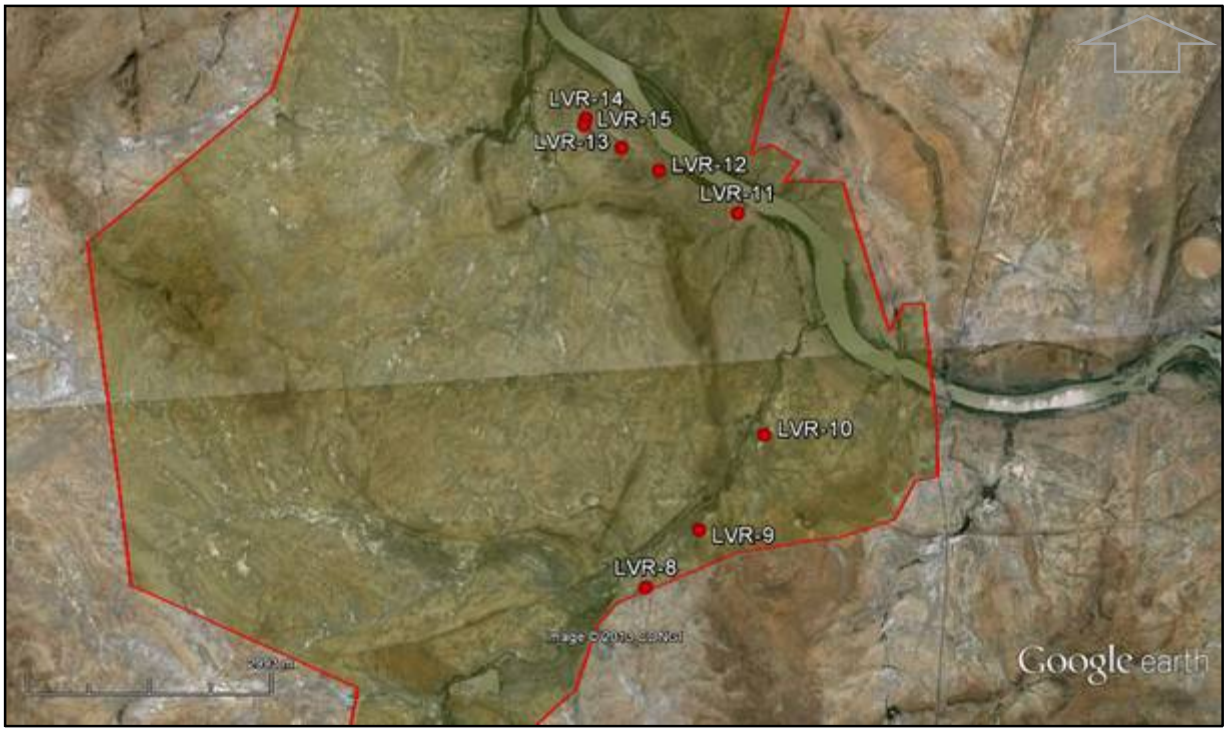
- Qualification: MSc Archaeology (2003) WITS University.
- Accreditation:
  1. 2004 – Association of Southern African Professional Archaeologists (ASAPA) – Professional Member.
  2. 2005 – ASAPA CRM Section: Accreditation – Field Director (Stone Age, Iron Age, Colonial Period).
  3. 2010 – ASAPA CRM Section: Accreditation – Principle Investigator (Stone Age).

Karen van Ryneveld is a SAHRA, EC PHRA and AMAFA listed CRM archaeologist.

2.1) FIELD ASSESSMENT RESULTS



Map 4: Results of the Site Inspection – Northern part of the Laohu Valley Reserve, Free State

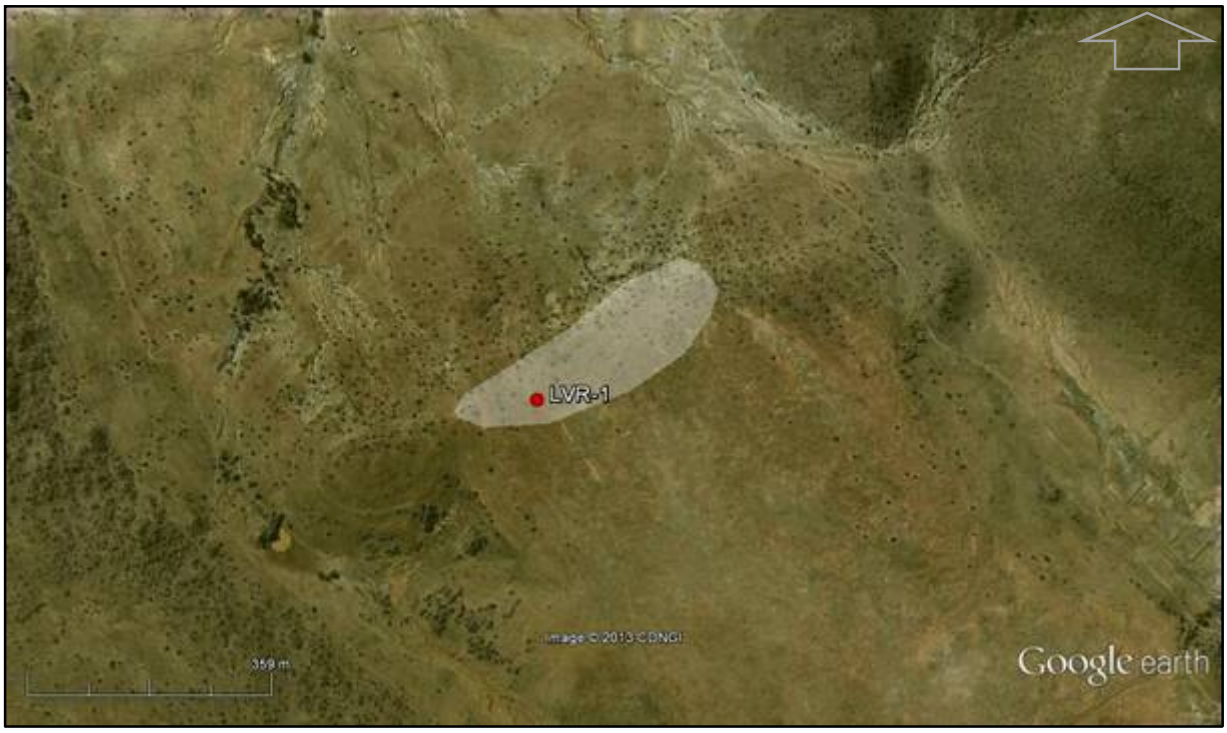


Map 5: Results of the Site Inspection – Southern part of the Laohu Valley Reserve, Northern Cape

2.1.1) SITE LVR-1 – STONE AGE (MSA) – S30°17'14.0"; E25°06'20.2"

Site LVR-1 is situated at general site co-ordinate S30°17'14.0"; E25°06'20.2" on the property Hartebeestfontein 516. The site, characterized by justly significant stone tool deposits on a low rising hill encompasses an approximate 400x120m terrain, located between 2 hills, 1 to the north-east of Site LVR-1 and the other to the south-west thereof. Artefact densities varied markedly across the site extent, with recorded artefact ratios (artefacts: m²) in the region of 1-5+:1. Artefacts are typologically reminiscent of a Volman (1984) MSA2b, with the collection characterized by cores, flakes and scrapers, with a few blade-like tools present. Many artefacts had a rolled appearance found together with lithics with notably crisp flake scars giving the impression of a disturbed surface assemblage – and it may well be the case that artefacts with a rolled surface appearance are the result of hill-wash or a related water associated post-depositional process, signifying the possibility of both hills effectively being sites in themselves, but with verification thereof outside the brief site inspection scope. Depth of deposit is unknown and no organic material is associated with the Site LVR-1 lithic assemblage. Baked shale or hornfels constitutes the primary raw material used for artefact production.

Site LVR-1 is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*. The site will not be impacted on by development. The site will be conserved *in-situ*, thus in its current context.



Map 6: General locality of Site LVR-1

Plate 1: General view of Site LVR-1

Plate 3: Selected artefacts from Site LVR-1 [2]

Plate 2: Selected artefacts from Site LVR-1 [1]

Plate 4: Selected artefacts from Site LVR-1 [3]

2.1.2) SITE LVR-2 – STONE AGE (MSA) – S30°16'54.6"; E25°05'30.1"

Site LVR-2 is situated at general site co-ordinate S30°16'54.6"; E25°05'30.1" on the property Karree Poort 536, on a low rising ridge running roughly parallel to a tributary of the Kareepoortspruit. An estimated site extent measures approximately 1kmx100m. Stone Age lithics were found in varying densities across the site extent, but with ratios (artefacts: m²) of 2-10:1, recorded providing for a site with a medium to high artefact density in common terminology. Artefacts were produced from local baked shale or hornfels, with the raw material ridge also being the very provenance of the site. The assemblage comprises typologically of a dominance on flake types, with cores, primarily being a-diagnostic or amorphous core types, a few scrapers and amorphous flakes with scraper edges, with the most prominent 'specialized' tool type being flakes that approach flake-blades and blades in morphology. A general Volman (1984) MSA2b typology is assigned to the assemblage. The MSA ridge site may well need further inspection with reference to its immediate surroundings; the ridge running north-west to south-east, west of Site LVR-2 may well prove to yield artefacts typologically and temporally significantly different from those discovered at Site LVR-2 that may imply a terraced Stone Age stratification in the area, well worthy of further scientific inspection despite the deflated secondary context of the LVR-2 deposits. Sub-surface depth of deposit may well be inferred at Site LVR-2, but no exposed sections were present to verify this. No organic material are directly associated with the Site LVR-2 lithic deposits.

Site LVR-2 is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*. The site is not threatened by any development impact and will be conserved *in-situ.*

Map 7: General locality of Site LVR-2

Plate 5: View of a portion of the LVR-2 ridge

Plate 7: Selected artefacts from Site VLR-2

Plate 6: A collection of amorphous cores from LVR-2

Plate 8: Surface artefacts and raw material at Site LVR-2

2.1.3) SITE LVR-3 – STONE AGE (MSA) – S30°16'31.3"; E25°05'24.0"

Site LVR-3, located at general site co-ordinate S30°16'31.3"; E25°05'24.0" on the property Karree Poort 536, is characterized by the flat terrain of the Kareepoortspruit river valley, now in close proximity to a manmade dam in the stream section, most probably associated with a natural water collection point. Low densities of artefacts were found on the river valley floor, with the indicated approximate 150x200m site size reflecting a rough area recorded during the field visit, but the actual Stone Age occurrence can reasonably be expected to extent significantly beyond the indicated site parameters. Exposed sub-surface sections proved to be anthropogenically sterile. Artefacts were found in clusters scattered across the surface of the area – giving the impression that the majority of the artefacts may well be the result of hill-wash from higher lying areas over many millennia, but not negating the fact that the Kareepoortspruit was a major draw card to the area during Stone Age times and that river valleys were extensively exploited. Artefact localities are thus interpreted as in an extensive secondary context. Clusters of artefacts varied from single finds to 2-15 artefacts found together; an artefact ratio (artefacts: m^2) of 0-5:1 were recorded. Artefact types included primarily flakes and scarpers of a Volman (1984) MSA2b – MSA3 typology, but inferred large scale post-depositional disturbance needs to be taken into account in both the typology and context of the site.

Site LVR-3 is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*. The site is not threatened by development and will be conserved *in-situ.*

Map 8: General locality of Site VLR-3

Plate 9: General view of Site LVR-3

Plate 11: Clustered artefacts at Site LVR-3

Plate 10: Anthropogenic sterile sections at Site LVR-3

Plate 12: A selection of artefacts from Site LVR-3

2.1.4) SITE LVR-4 – LSA ROCK ART SHELTER (KHOE) – S30°16'28.1"; E25°03'23.4"

Site LVR-4 is situated at S30°16'28.1"; E25°03'23.4" on the property Karree Poort 536, approximately 1.5km east of where the Paaiskloofspruit and Kareepoortpruit join the Vanderkloof Dam and just south of the Kareepoortspruit with a view over the Kareepoortspruit River and a permanent pool in the often dry riverbed. The shelter is situated within a notable outcrop in the landscape, being the only shelter / cave site known on the reserve. The rather large east facing cave site measures an approximate 7x5+m interior. No artefacts were found on the cave floor, but a vast array of paintings is present on the cave walls. Paintings are done with red pigment, with a few traces of black and perhaps white, but these being weathered to a degree that they are hardly discernible. A single panel of 4 human figurines is presented on the north wall. The remainder of the cave walls displays primarily fingerprints, often in groups and curved linear alignments, repetitive lines, a few handprints, dots with meandering lines and geometrics. In places paintings have been weathered to such a degree that the original motive is no longer apparent. Towards the southern side of the main chamber a small chamber, no more than approximately 50cm high, hosts a wealth of small handprints while just west thereof a talus slope may well be covering a further chamber. Paintings are done in the typical 'fingerpaint' style associated with the Khoe (or Khoi-khoi / Khoekhoen commonly referred to as 'Hottentot'). The Khoe, a people culturally distinguished from the San or 'Bushman' by their practice of animal husbandry, is believed to have migrated to South Africa from the north around 2,000 years ago, providing at least for a maximum age of the site.

The site was first reported to the National Museum, Bloemfontein, by former owner of the property Piet Venter and recorded by Sven Ouzman on 1999-06-10. The site has been recorded in the South African Rock Art database (SARADA) as Site RSA-KRT1 (Pers. Comm: Jens Kriek, Rock Art Department, National Museum, Bloemfontein).

Site LVR-4 is ascribed a SAHRA *Medium Significance* and a *Generally Protected B Field Rating*. The site is under no development threat; conservation of the site remains a high priority by the Laohu Valley Reserve. Visitation to the site is limited, estimated by Funck as approximately 20 visits over the past 4-5 years, in all cases by, or accompanied by staff of the reserve. There is at present no intention to open or promote tourism at the site.

Further conservation measures that can be considered by the Laohu Valley Reserve include:

1. A site specific management / conservation plan, to tailor site specific conservation and be used in conjunction with the Moodley & Kriek (2010) Rock Art Pack;
2. Digitized representation of the site, to allow virtual visitation of the site without direct impact on, or damage to the art.

In addition to the above archaeological test pits (to be done under a SAHRA excavation permit) will serve to verify the absence / presence of sub-surface archaeological deposits after which further recommendations regarding the archaeology of the site, if present, can be made.

Map 9: General locality of Site LVR-4

Plate 13: View from the permanent pool onto Site LVR-4 in the background

Plate 15: General interior of the LVR-4 cave

Plate 14: General view from the LVR-4 site

Plate 16: A group of fingerprint impressions

Plate 17: Repetitive lines and rough geometrics

Plate 19: A geometric, dots, dotted lines and fingerprints

Plate 18: A panel containing scattered geometrics

Plate 20: A panel of 4 human figurines with fingerprint lines at the bottom

2.1.5) SITE LVR-5 – STONE AGE (MSA & LSA) – S30°16'18.0"; E25°03'37.2"

Site LVR-5 is situated at general site co-ordinate S30°16'18.0"; E25°03'37.2" on the property Karree Poort 536. The site is located on the crest of a hill overlooking the Kareepoortspruit with a site extent measuring a conservative estimate of 400x100m in size. High densities of artefacts were recorded at the site, with artefact ratios (artefacts: m²) of 15:1 recorded. Typologically artefacts may represent various stages of the MSA, dominated by Volman (1984) MSA2a and MSA2b types, but a number of smaller artefacts may be representative of a MSA3 or even a macrolithic LSA. Primary identified types include flakes, scrapers and cores, but a few specialized flakes were identified, mainly comprising of flake-blade and blades. At various places across the cress of the hill quarrying for raw material was obvious, having resulted also in notably large flakes, but these are not inferred to be industry associated, despite the fact that some of them displayed working edges. Local '*amandelklip*' or baked shale constitutes the exclusive raw material used, and the site is preliminary described as a quarry and knapping locality. Depth of deposit may well be inferred, but no open sections were visible to verify this. However, despite inferred depth of deposit surface indicators point towards a deflated assemblage – typology and technology may well be the most prominent archaeological contribution of the site and may also be the primary stratigraphic indicator at the site. No associated organic material was identified during the surface survey.

Site LVR-5 is ascribed a SAHRA *Low-Medium Significance* and a *Generally Protected B Field Rating*. The site will not be impacted on by any envisioned development. The site will be conserved *in-situ*, thus in its current context.

Site LVR-5 was visited in the company of former landowner Piet Venter, who brought the possibility of the stone deposits as an archaeological significant site to the attention of the Laohu Valley Reserve.

Map 10: General locality of Site LVR-5

Plate 21: General view of Stone Age surface deposits at Site LVR-5

Plate 23: A large cortical quarried piece with secondary working edge

Plate 22: Surface artefact densities at Site LVR-5 [1]

Plate 24: Surface artefact densities at Site LVR-5 [2]

2.1.6) SITE LVR-6 – STONE AGE (MSA & LSA) – S30°17'00.7"; E25°03'55.7"

Site LVR-6, situated at general site co-ordinate S30°16'18.0"; E25°03'55.7", is located on the property Karree Poort 536. The site is characterized by 2 drainage lines forming part of a tributary of the Karrepoortspruit enveloping the low rising '*amandelklip*' hill, with a conservatively estimated site size of approximately 200x50m. The surface of the hill is literally strewn with Stone Age artefacts, with the local baked shale or hornfels also being the raw material from which artefacts were seemingly exclusively knapped. Typologically artefacts vary greatly: With a notable number of large flake-blade and blade types perhaps representative of a Volman (1984) MSA1, the majority of the tools are typologically representative of MSA2a and MSA2b types, comprising primarily of flakes and scrapers but including formal tools; flake-blades and blades together with lower numbers of convergent flakes. High densities of cores are present but on-site evidence of large scale quarrying might obscure industry related core types. A number of smaller artefacts and flakes may be representative of the MSA3, but may also represent a macrolithic LSA. Artefacts were found in a lagged context, but fairly significant sub-surface depth may well be inferred at intervals across the hill. Artefact densities varied radically across the extent of the site but high ratios (artefacts: m²) of up to 25-40:1 were recorded, providing for one of the highest artefact density sites recorded at Laohu Valley Reserve and distinguished amongst general interior open-air type sites. No organic material directly associated with the Stone Age archaeological assemblage was identified.

High artefact densities and the typological range, ranging from a possible MSA1, including MSA2a, MSA2b and MSA3, to a macrolitic LSA distinguishes Site LVR-6. The site is assigned a SAHRA *Medium Significance* and a *Generally Protected B Field Rating*. The site will be conserved *in-situ*.

Site LVR-6 was visited in the company of former landowner Piet Venter, who brought the possibility of the assemblage as an archaeological significant site to the attention of the Laohu Valley Reserve.

Map 11: General locality of Site LVR-6

Plate 25: General view of the low rising Site LVR-6 hill

Plate 27: Selected artefacts from Site LVR-6

Plate 26: Selected typical MSA2a and 2b artefacts

Plate 28: Distinguished high surface artefact densities at Site LVR-6

2.1.7) SITE LVR-7 – LATER IRON AGE (HOMESTEAD) – S30°21'06.3"; E25°02'26.6"

Site LVR-7 is situated at general co-ordinate S30°21'06.3"; E25°02'26.6" on the property Hartebeestfontein 516. The site co-ordinate was taken in 2005/2006 by environmentalist Petri Viljoen together with photographic evidence at a time when the water levels of the Vanderkloof Dam were at a recorded low, having exposed the now submerged site. The site originally inferred to be a '*corbelled*' hut type Later Iron Age site, was reported to comprise of approximately 4-5 stone built structures clustered together in the general area (Pers. Comm: Petri Viljoen and Heinrich Funck). Archaeologist Cobus Dreyer (Pers. Comm) is of the opinion that the site definitely does not represent a '*corbelled*' hut type site: Firstly it is too big in comparison with known '*corbelled*' type structures and secondly there is not enough stone inside the structure remains to represent a former roof. Dreyer argues that '*corbelled*' type structures are as a norm associated with Type V settlement patterns (Maggs 1976, 1994) with the known distribution of Type V settlements not extending so far south or west in the Free State. Dreyer is also of the opinion that Magg's hypothesis of Type N settlements having changed into Type V may well be a far too simplified interpretation with regards to the origin of '*corbelled*' Type V sites. Dreyer stated that it may well be worthwhile to revisit Type R settlement patterns in an attempt to further interpret and classify Site LVR-7.

The Vanderkloof Dam is the 2nd largest dam in South Africa, with the highest dam wall and covering a surface area of 133,402km². The dam was commissioned in 1977 (http://en.wikipedia.org/wiki/vanderkloof_Dam), well before current environmental legislation – no heritage or archaeological study was thus done to assess the possible impact of the development on cultural resources.

It is recommended that the Laohu Valley Reserve contacts an archaeologist for a site inspection as soon as levels of the dam drop to where the site is visible. Further than that the recommendation that the site be assessed by diving remains the only option for a more in depth site description and possible interpretation, as has informally been suggested by both the Laohu Valley Reserve and Cobus Dreyer.

The identification of the site and possible interpretation thereof highlights an important, though secondary to the purpose of this assessment concern, namely the current emphasis on CRM archaeology with a tremendous focus on site conservation without necessarily further inspection associated with the general weight placed by research departments, most often provincial museum archaeology departments, on CRM rather than research, resulting in a definite loss of specialized research knowledge in the country; leaving at present literally Maggs and Dreyer as the only archaeologists with research experience in the Iron Age archaeology of the Free State.

Site LVR-7 is preliminary ascribed a *Medium-High Significance* and a *Generally Protected B Field Rating*. The site has effectively already been impacted on, but any attempt or measure to further describe and classify the site may have a potentially significant scientific value.

Map 12: General locality of Site LVR-7

Plate 29: General view of the Site LVR-7 structure (courtesy Petri Viljoen)

Plate 30: General view of the Site LVR-7 area during the 2005/2006 recording (courtesy Petri Viljoen)

2.1.8) SITE LVR-8 – STONE AGE (MSA) – S30°31'22.8"; E25°09'35.7"

Site LVR-8 is located at general site co-ordinate S30°31'22.8"; E25°09'35.7" on the property Rietbult 237, approximately 300m from the Vanderwaltspruitfontein. Stone Age lithic artefacts were found in an approximate 60x40m area, but actual site extent may go well beyond the recorded boundary. Artefact ratios (artefacts: m²) were high with 5-7:1 recorded but unequally scattered across the site, the result of post-depositional processes, most probably water disturbance. Typologically the assemblage is most reminiscent of a Volman (1984) MSA3, with a notable number of blades and convergent flakes present, complimenting the general scraper, flake and core assemblage. Artefacts were produced from local baked shale or hornfels. Depth of deposit remains unknown. No associated organic material was found at Site LVR-8.

Despite the fact that depth of deposit remains unknown the LVR-8 collection displayed outstanding typology with reference to the number of blade and convergent flake types. The site is ascribed a SAHRA *Low-Medium Significance* and a *Generally Protected B Field Rating*. The site will be conserved *in-situ*.

Map 13: General locality of Site LVR-8

Plate 31: View from Site LVR-8 onto the Vanderwaltsfonteinspruit

Plate 32: Selected artefacts from Site LVR-8 [1]

Plate 33: Selected artefacts from Site LVR-8 [2]

Plate 34: A lithic artefact with scraper and notched working edges

2.1.9) SITE LVR-9 – STONE AGE (ESA, MSA & LSA) – S30°31'01.3"; E25°10'02.2"

Site LVR-9, situated at general co-ordinate S30°31'01.3"; E25°10'02.2" on the property Rietbult 205, is located approximately 200m from the Vanderwaltsfonteinspruit and 3km from the Orange River, with the general terrain directly associated with natural terracing along the banks of the Vanderwaltsfonteinspruit. The recorded approximate 70x30m site extent provides for a minimum site size. Lower lying areas of the Stone Age site was characterized by primarily MSA type lithics, including Volman (1984) MSA2b and MSA3 types. Smaller artefacts may well be representative of a macrolithic LSA cultural overlay. The collection is dominated by flakes and scrapers with a few samples representing flake-blades, blades and the infrequent convergent flake. Along the higher parts of the recorded site area 2 ESA handaxes were discovered. Further assessment may well yield more ESA type artefacts and at present it is inferred that terracing along the banks of the Vanderwaltfonteinspruit may well represent a rough ESA–MSA–LSA stratigraphy associated with landscape formation and use. Artefacts were again produced from local baked shale. A rough artefact ratio (artefacts: m²) of 5:1 describes general artefact density, but a density description associated with the various Stone Age phases may be very useful in furthering the description and understanding of Site LVR-9. Depth of deposit is unknown and no associated organic material was discovered at the site.

Site LVR-9 is ascribed a SAHRA *Low-Medium Significance* and a *Generally Protected B Field Rating*.

The site is not threatened by development impact and will be conserved *in-situ*, or in its current context.

Map 14: General locality of Site LVR-9

Plate 35: General view of Site LVR-9 [1]

Plate 37: Selection of Stone Age lithics from Site LVR-9

Plate 36: General view of Site LVR-9 [2]

Plate 38: Close-up of the 2 ESA handaxes

2.1.10) SITE LVR-10 – STONE AGE (MSA & LSA) – S30°30'24.9"; E25°10'35.6"

Site LVR-10, situated on the property Rietbult 205, at general co-ordinate S30°30'24.9"; E25°10'35.6" is located within the Vanderwaltsfonteinspruit valley, approximately 200m from the Vanderwaltsfonteinspruit and 1.5km from its confluence with the Orange River. Minimum site size is estimated at 300x60m. The open-air site, characterized by terracing of the river valley, comprises of a MSA site, typologically representative of a Volman (1984) MSA2a, MSA2b and MSA3, with smaller artefacts perhaps being of a macrolithic LSA typology. Primary artefact types include cores, flakes and scrapers with a notable emphasis on blade-like specialized flakes, including both flake-blades and blades. Recorded artefact densities reached an artefact ratio (artefacts: m²) high of 7-10:1. Further assessment would be necessary to determine artefact quantity and typology associated with specific terrace levels. Artefacts were routinely produced from local '*amandelklip*' or hornfels, emphasizing the direct relationship between local geology and the use of raw material for artefact production. Depth of deposit is unknown and no associated organic material was found on the surface of the site.

Site LVR-10 is ascribed a SAHRA *Low-Medium Significance* and a *Generally Protected B Field Rating*.

The site is not threatened by development impact and will be conserved *in-situ*, or in its current context.

Map 15: General locality of Site LVR-10

Plate 39: General view of Site LVR-10 [1]

Plate 41: Selected artefacts from Site LVR-10 [1]

Plate 40: General view of Site LVR-10 [2]

Plate 42: Selected artefacts from Site LVR-10 [2]

2.1.11) SITE LVR-11 – STONE AGE (LSA) – S30°28'55.1"; E25°10'30.2"

Site LVR-11 is located at general site co-ordinate S30°28'55.1"; E25°10'30.2" on the property Rietbult 205 at the confluence of a small stream (name unknown) and the Orange River. Here, following the ridges of the stream valley a number of infrequent, sometimes singular and sometimes small clusters of artefacts were encountered. Though a few artefacts may represent MSA types, by far the majority were representative of the LSA, including both macrolithic LSA artefacts, as a norm produced from baked shale and microlithic LSA tools, where siliceous material were selected as raw material for artefact production. Artefact quantities were too low to ascribe a general artefact ratio (artefacts: m²) to the area, with the highest cluster of artefacts counting approximately 8-10 in number. However, artefact density along the stream bed were disappointedly low and it was reported (Pers. Comm: Heinrich Funck and Petri Viljoen) that construction of the Vanderkloof Dam impacted radically on water levels of the Orange River in the area, with water levels today being much higher than in the past. Expected deposits along stream beds and at stream / river confluence may in fact have been destroyed by higher water levels of the Orange, explaining the unexpected low artefact occurrence in the area.

The Site LVR-11 occurrence is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*. The occurrence will be conserved *in-situ*.

Map 16: General locality of Site LVR-11

Plate 43: General view of the Site LVR-11 area [1]

Plate 45: Use of siliceous material for artefacts at the Site LVR-11 area

Plate 44: A collection of arefacts from the Site LVR-11 area [1]

Plate 46: General view of the Site LVR-11 area [2]

2.1.12) SITE LVR-12 – STONE AGE (MSA) – S30°28'35.9"; E25°09'54.8"

Site LVR-12 is located on the property Blaauwkrans 45 at general site co-ordinate S30°28'35.9"; E25°09'54.8", just east of a significant outcrops and approximately 230m from the Orange River. The site measures a minimum size of approximately 80x30m in extent. Here MSA artefacts of a probable Volman (1984) MSA2a, MSA2b and MSA3 were found in fairly dense quantities, with an approximate artefact ratio (artefacts: m²) of ≥5:1. The assemblage is typologically characterized by flakes and scrapers without any significant specialized flakes, though some approach blade-like flakes in character. Evidently in a disturbed, ex-situ context some of the artefacts may be the result of hill-wash from the nearby hill, signifying the possibility of the hill itself being an archaeological site, but time constraints did not allow further investigation. Depth of deposit is unknown and no associated organic material was found at the Site LVR-12 terrain.

Site LVR-12 is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*.

The site is not threatened by development impact and will be conserved *in-situ*, or in its current context.

Map 17: General locality of Site LVR-12

Plate 47: General view of Site LVR-12

Plate 49: A selection of artefacts from Site LVR-12

Plate 48: Surface stone densities at Site LVR-12

Plate 50: Close-up of a scraper

2.1.13) SITE LVR-13 – STONE AGE (MSA & LSA) – S30°28'25.7"; E25°09'37.9"

Site LVR-13 is situated on the property Blaauwkrans 45, on a low rise at general co-ordinate S30°28'25.7"; E25°09'37.9", north-east of a significant outcrops and with extensive drainage evidence towards the south-west of the site. Minimum site size measures approximately 45x20m. Surface finds comprised of a rich array of Stone Age artefacts, including typical Volman (1984), MSA2a, MSA2b and MSA3 types as well as both macrolithic and microlithic LSA samples. Cobble cores, flakes and scrapers dominated the MSA component of the assemblage with a noticeable emphasis on blade-like artefacts including flake-blades and blades. The majority of the MSA artefacts were produced from local '*amandelklip*' or hornfels, but other raw material types were evidently exploited. Macrolithic artefacts were primarily produced from hornfels while siliceous raw material seems to have been pre-selected for the manufacture of microlithic artefacts. The mixed assemblage is testimony to significant use of the site throughout many millennia. Average artefact ratios (artefacts: m^2) approximating 5-7:1 were recorded at the site. Depth of deposit is unknown and no organic material was discovered at the site.

Site LVR-13 is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*.

The site is not threatened by development impact and will be conserved *in-situ.*

Map 18: General locality of Site LVR-13

Plate 51: General view of Site LVR-13 [1]

Plate 53: A cluster of artefacts from Site LVR-13

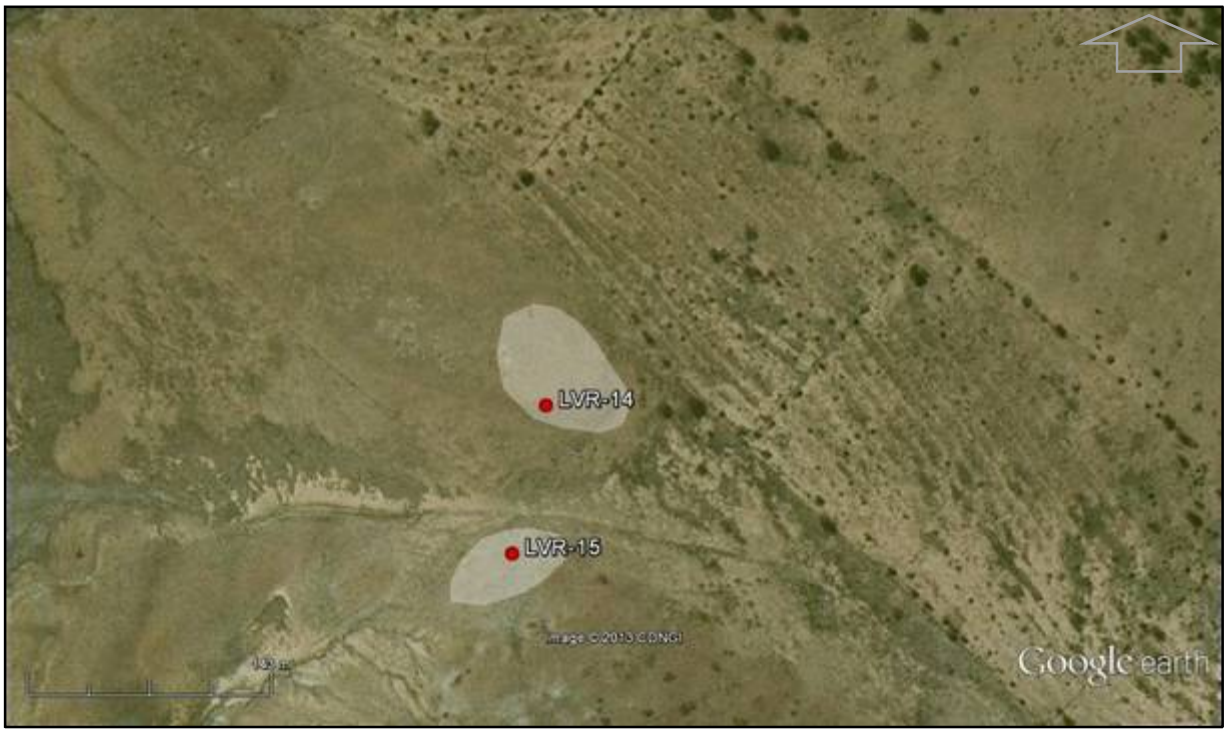
Plate 52: General view of Site LVR-13 [2]

Plate 54: Selected artefacts from Site LVR-13

2.1.14) SITE LVR-14 – STONE AGE (LSA) – S30°28'12.8"; E25°09'22.1"

Site LVR-14 is located at general site co-ordinate S30°28'12.8"; E25°09'22.1" on the property Blaauwkrans 45, approximately 500m from the Orange River and 1km south south-east of the confluence of a fairly significant stream (name unknown) and the Orange, with the rich drainage system of the stream characterizing the general terrain. Site LVR-14 measures a minimum size of approximately 100x60m in extent. The site, typified by its locality on a low rise, yielded an array of pebbles and artefacts on the surface. It seems as though river pebbles formed the primary source of raw material with the resultant variety of raw material used for artefact production. Though baked shale were used, knapped into a number of larger artefacts that may represent disturbance or alternatively the routine larger component of LSA assemblages, what makes the site unique is the tremendous abundance of microlithic artefacts, including small cores, flakes and scrapers. Microlithic LSA artefacts were produced from the number of siliceous (and other) material available without any evident preference for one above the other. Macrolithic artefacts were present on site, but to a lesser extent than their microlithic counterparts. Artefact densities were fairly high with recorded ratios (artefacts: m²) of 5-10:1. A single fossilized piece of bone was found on site. Depth of deposit remains unknown.

Site LVR-14 is ascribed a SAHRA *Medium Significance* and a *Generally Protected B Field Rating*. The site will be conserved *in-situ*.



Map 19: General locality of Site LVR-14

Plate 55: General view of Site LVR-14 [1]

Plate 57: Stone densities at Site LVR-14

Plate 56: Selected artefacts from Site LVR-14

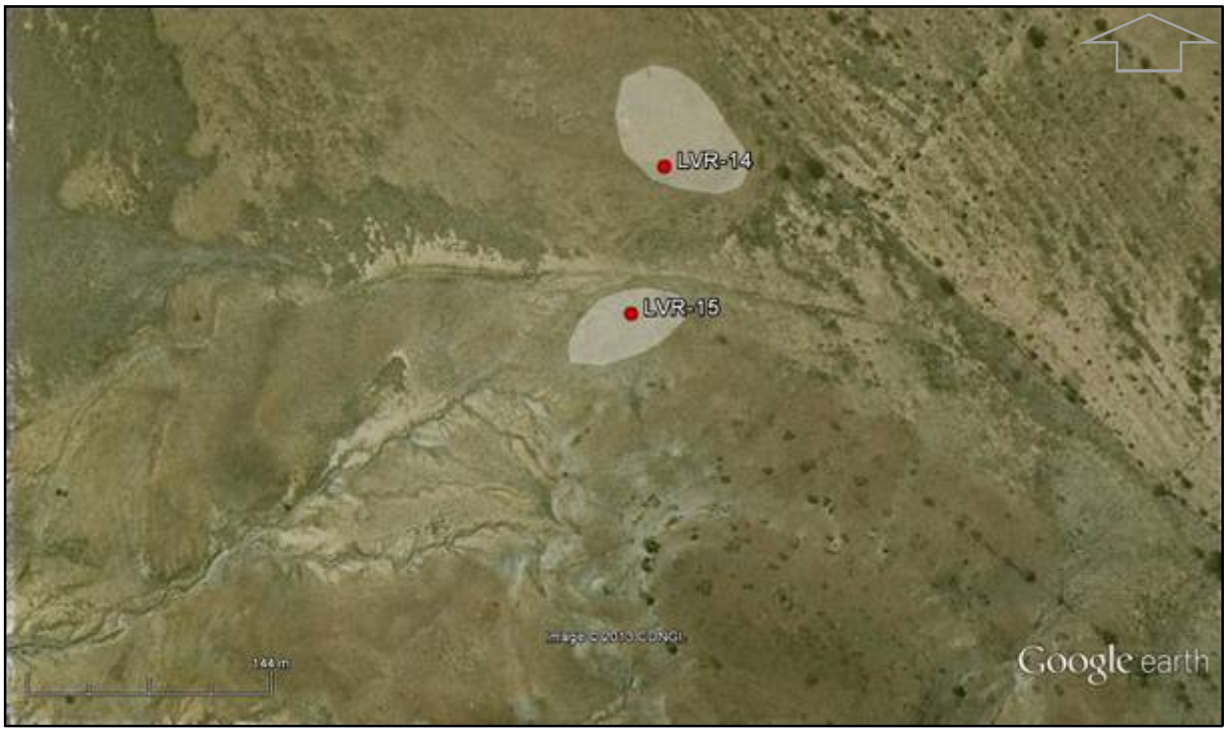
Plate 58: General view of Site LVR-14 [2]

2.1.15) SITE LVR-15 – STONE AGE (MSA) – S30°28'15.6"; E25°09'21.2"

Site LVR-15, situated at general co-ordinate S30°28'15.6"; E25°09'21.2" on the property Blaauwkrans 45, just south of Site LVR-14 amidst the rich drainage system of the steam (name unknown) mouthing into the Orange River approximately 1km north north-west of the site, is again characterized by its low raised terrain where a rich array of Stone Age lithics were found. Artefacts are ascribed to a Volman (1984) MSA2a and MSA2b typology with cores, flakes and scrapers including a notable number of flake-blades and blades typifying the collection. Artefact densities varied markedly across the site area, with artefact ratio (artefacts: m²) heights of 10:1 recorded, but with areas where artefacts are merely clustered together in small clusters of 5-7 artefacts at most. Depth of the seeming deflated artefact context is unknown and no organic material associated with the lithic collection was found. Local '*amandelklip*' or hornfels were used as primary raw material source for knapping. Minimum site size measures approximately 70x40m in extent.

Site LVR-15 is ascribed a SAHRA *Low-Medium Significance* and a *Generally Protected C Field Rating*.

The site is not threatened by development impact and will be conserved *in-situ.*



Map 20: General locality of Site LVR-15

Plate 59: General view of Site LVR-15 [1]

Plate 61: A cluster of artefacts from Site LVR-15

Plate 60: General view of Site LVR-15 [2]

Plate 62: Selected artefacts from Site LVR-15

3) CONCLUSION AND RECOMMENDATIONS

Fifteen archaeological sites were recorded during the Archaeological Site Inspection (ASI) of the Lahou Valley Reserve, Northern Cape and Free State, namely Sites LVR-1 to LVR-15, with sites falling into the Stone Age and Iron Age categories, the majority of which are Stone Age sites, with Site LVR-7 being the only Iron Age site recorded to date. Recommendations regarding archaeological resources on the reserve are for purposes of this report briefly discussed according to archaeological type site category:

LAOHU VALLEY RESERVE					
NORTHERN CAPE AND FREE STATE					
Code	Site	Type / Period	Description	Co-ordinates	Recommendations
Laohu Valley Reserve, Northern Cape and Free State					
LVR-1	LVR-1	Stone Age (MSA)	Open air	S30°17'14.0"; E25°06'20.2"	***In-situ* Conservation**
LVR-2	LVR-2	Stone Age (MSA)	Open air	S30°16'54.6"; E25°05'30.1"	***In-situ* Conservation**
LVR-3	LVR-3	Stone Age (MSA)	Open air	S30°16'31.3"; E25°05'24.0"	***In-situ* Conservation**
LVR-4	LVR-4 SARADA: RSA-KRT1	Stone Age (LSA)	Rock Art Shelter (Khoe)	S30°16'28.1"; E25°03'23.4"	***In-situ* Conservation**
LVR-5	LVR-5	Stone Age (MSA & LSA)	Open air	S30°16'18.0"; E25°03'37.2"	***In-situ* Conservation**
LVR-6	LVR-6	Stone Age (MSA & LSA)	Open air	S30°17'00.7"; E25°03'55.7"	***In-situ* Conservation**
LVR-7	LVR-7	Iron Age (LIA)	Structures	S30°21'06.3"; E25°02'26.6"	**Impacted on by Vanderkloof Dam development**
LVR-8	LVR-8	Stone Age (MSA)	Open air	S30°31'22.8"; E25°09'35.7"	***In-situ* Conservation**
LVR-9	LVR-9	Stone Age (ESA, MSA & LSA)	Open air	S30°31'01.3"; E25°10'02.2"	***In-situ* Conservation**
LVR-10	LVR-10	Stone Age (MSA & LSA)	Open air	S30°30'24.9"; E25°10'35.6"	***In-situ* Conservation**
LVR-11	LVR-11	Stone Age (LSA)	Open air	S30°28'55.1"; E25°10'30.2"	***In-situ* Conservation**
LVR-12	LVR-12	Stone Age (MSA)	Open air	S30°28'35.9"; E25°09'54.8"	***In-situ* Conservation**
LVR-13	LVR-13	Stone Age (MSA & LSA)	Open air	S30°28'25.7"; E25°09'37.9"	***In-situ* Conservation**
LVR-14	LVR-14	Stone Age (LSA)	Open air	S30°28'12.8"; E25°09'22.1"	***In-situ* Conservation**
LVR-15	LVR-15	Stone Age (MSA)	Open air	S30°28'15.6"; E25°09'21.2"	***In-situ* Conservation**

Table 2: Archaeological Site Inspection findings – co-ordinate details

❖ Stone Age Sites

The ASI yielded an unexpected wealth of Stone Age sites, with recorded sites being far from an all-inclusive record of Stone Age sites on the reserve. All Stone Age sites recorded (Sites LVR-1 to LVR-6 and LVR-8 to LVR-15) aside from Site LVR-4, a LSA Rock Art site, are open-air sites, characterized by notably large site sizes, with the range of record extending from the ESA through to the various phases of the MSA and including both a macro- and microlithic LSA; providing for a remarkably significant and rather rare sequential variation despite the inferred deflated context often associated with open-air sites.

All recorded sites will be conserved, with current impact on sites being limited to vehicle access tracks across the sites. At present impact does not warrant recommendations for rerouting.

Site sizes recorded during the survey represent minimum site sizes, based on rough recordings during the field inspection and extrapolations from aerial imagery – actual site sizes may well extend significantly beyond the indicated minimum boundaries. Based on the vast size of the reserve (378km²), the wealth of Stone Age sites recorded during the ASI and that expected across the property, and the large sizes of these sites, conventional methods of archaeological field survey may well not be the most constructive method of identifying archaeological Stone Age sites on the reserve. **In order for the reserve to create a record of Stone Age resources, for purposes of record keeping and conservation, it is recommended that the Laohu Valley Reserve rather considers aerial survey combined with GIS, with specific cognizance to geological and current and palaeo-water sources, an inferred more resourceful method of Stone Age site identification for purposes of the reserve.** Such a survey should be complimented by archaeological field inspections to verify indicated areas and further describe relevant deposits. Aerial survey should preferably be done systematically – selected portions of the reserve can thus be addressed at various intervals making it possible for the process to be integrated with farm management over time.

In addition the Laohu Valley Reserve may consider a small display on the Stone Age record of the property. Such a display may be of significant '*public awareness*' value, to visitors of the reserve but also the local community. A display platform can also be used to further educate and inform the public about relevant heritage legislation and related processes.

With reference to the Site LVR-4 LSA Rock Art site the following site specific recommendations were made in the Section 2.1) site description, including:

1. **A site specific management / conservation plan**, to tailor site specific conservation and be used in conjunction with the Moodley & Kriek (2010) Rock Art Pack;
2. Digitized representation of the site, to allow virtual visitation of the site without direct impact on, or damage to the art; and
3. Archaeological test pits (to be done under a SAHRA excavation permit) will serve to verify the absence / presence of sub-surface archaeological deposits after which further recommendations regarding the archaeology of the site, if present, can be made.

❖ Iron Age Sites

The only Iron Age site recorded to date comprise of Site LVR-7, an inferred Later Iron Age site now submerged under water levels of the Vanderkloof Dam. Archaeologist Cobus Dreyer is of the opinion that the site definitely does not represent a '*corbelled*' hut type site as originally inferred. According to Dreyer Type V, N and R settlement patterns would need to be revisited in an attempt to identify and interpret the site. **It is recommended that the Laohu Valley Reserve contacts an archaeologist for a site inspection as soon as levels of the dam drop to where Site LVR-7 is visible**. Further than that the recommendation that **the site be assessed by diving** remains the only option for a more in depth site description and possible interpretation. The site has effectively already been impacted on, but any attempt or measure to further describe and classify the site may have a potentially significant scientific value.

More Iron Age resources can reasonably be expected to be present on the property. Again **aerial survey** may prove to be a valuable method, where structures are often visible on aerial imagery. In addition **consultation** with former land owners may add significant value to both attempts of identification as well as interpretation. Former landowner Piet Venter indicated that a couple of farmworkers' areas are known to him and information gained

from consultation in this case may be of significant complimentary nature to the material or tangible archaeological record.

❖ Colonial Period Sites

No Colonial Period sites were recorded during the survey but sites are present on the property, most possibly as early farmsteads and infrastructure, including for example the Villa Tiger-Lee Colonial Period facility. Again, development does not threaten any of the Colonial Period resources, some of which are still in use and as a result well maintained, but the Laohu Valley Reserve should be cognizant of the fact that all structures older than 60 years are formally protected by law (NHRA 1999) and that any alteration or impact thereon should be done under a permit from the relevant provincial heritage authority. **It is recommended that effort be done to include as priority at least all known Colonial Period sites in the reserve's heritage record for purposes of management and maintenance.**

❖ Cemeteries, Graves and Human Remains

No cemeteries or graves are known to be present on the reserve, but the possibility of such type resources being discovered in time cannot be excluded. As a rule of thumb *in-situ* conservation or conservation 'as is', remains the preferred heritage management option. Should cemeteries or graves be encountered the localities should be recorded and included in the heritage record of the reserve and relevant management and maintenance recommendations be made.

Because effectively no development is proposed on the property the chances of graves being accidentally impacted on remain low, but natural agents such as water, erosion or burrowing animals can expose graves and human remains. In such an event all graves or human remains older than 60 year are to be reported immediately to SAHRA and the reserve should ensure that an archaeological site inspection be done. Graves or human remains younger than 60 years are to be reported directly to the nearest police station.

❖ General

The Laohu Valley Reserve can consider commissioning an archaeological desktop study which would aim to collect all database and additional literature information regarding possible other known sites on the reserve or in the immediate vicinity to further the general understanding and interpretation of the receiving cultural environment.

It is recommended that the Laohu Valley Reserve considers commissioning a palaeontological desktop assessment to ensure that possible sensitive palaeontological (fossil) areas are highlighted and relevant recommendations made for purposes of farm management.

4) REFERENCES

1. http://en.wikipedia.org/wiki/Vanderkloof_Dam.

2. Maggs, T.M.O'C. 1976. *Iron Age communities of the southern Highveld*. Pietermaritzburg: Natal Museum.

3. Maggs, T.M.O'C. 1994. *The Early Iron Age in the extreme south: some patterns and problems*. Azania 29/30:171-178.

4. Moodley, S. & Kriek, J. (Rock Art Department, National Museum Bloemfontein). 2010. *Information on Southern African Rock Art (Rock Art Pack).* (Unpublished guidelines.)

5. South African Government. (No. 25 of) 1999. *National Heritage Resources Act*.

6. South African Heritage Resources Agency. 2007. *Minimum standards for the archaeological and heritage components of impact assessments*. (Unpublished guidelines.)

7. Viljoen, P. 2010. *Laohu Valley Reserve. Total Area Game Count.* (Unpublished report to Laohu Valley Reserve.)

8. Viljoen, P. 2011. *Laohu Valley Reserve – Northern Cape Section. Aerial Wildlife Survey.* (Unpublished report to Laohu Valley Reserve.)

9. Volman T.P. 1984. *Early prehistory of southern Africa.* In Klein, R.G. Southen Africa Prehsitory and Palaeoenvironments. Rotterdam: A.A. Balkema.

APPENDIX – A –

INTRODUCTION TO THE ARCHAEOLOGY OF SOUTH AFRICA

Archaeologically the southern African cultural environment is roughly divided into the Stone Age, the Iron Age and the Colonial Period, including its subsequent Industrial component. This cultural division has a rough temporal association beginning with the Stone Age, followed by the Iron Age and the Colonial Period. The division is based on the identified primary technology used. The hunter-gatherer lifestyle of the Stone Age is identified in the archaeological record through stone being the primary raw material used to produce tools. Iron Age people, known for their skill to work iron and other metal, also practiced agriculture and animal husbandry. Kingships and civilizations associated with the Iron Age are indicative of a complex social hierarchy. The Colonial Period is marked by the advent of writing, in southern Africa primarily associated with the first European travelers (Mitchell 2002).

During the latter part of the Later Stone Age (LSA) hunter-gatherers shared their cultural landscape with both pastoralists and Iron Age people, while the advent of the Colonial Period in South Africa is marked by a complex cultural mosaic of people; including LSA hunter-gatherers, pastoralists, Later Iron Age farming communities and Colonial occupation.

1) EARLY HOMININ EVOLUTION

DNA studies indicates that humans and chimpanzees shared a common ancestor between 6-8Mya (Sibley & Ahlquist 1984). By 4Mya, based on fossil evidence from Ethiopia and Kenya, hominins (humans and their immediate fossil ancestors and relatives) had already evolved. The earliest fossils are ascribed to *Ardipithecus ramidus* (4.4Mya), succeeded by *Australopithecus anamensis* (4.2-3.9Mya). These fossils are inferred to lie at the base from which all other hominins evolved (Leakey *et al.* 1995; White *et al.* 1994).

In South Africa the later hominins are classed into 3 groups or distinct genera; *Australopithecus* (gracile australopithecines), *Paranthropus* (robust australopithecines) and *Homo.* South Africa has 3 major hominin sites: Taung in the North-West Province, where Raymond Dart identified the first *Australopithecus* fossil in 1924 (Dart 1925); The Cradle of Humankind (Sterkfontein Valley) sites in Gauteng, the most prolific hominin locality in the world for the period dating 3.5-1.5Mya which have yielded numerous *Australopithecus, Paranthropus* and limited *Homo* fossils (Keyser *et al.* 2000; Tobias 2000); and Makapansgat in the Limpopo Province, where several more specimens believed to be older than most of the Cradle specimens were discovered (Klein 1999).

A. africanus, represented at all 3 sites are believed to have been present on the South African landscape from about 3Mya. From approximately 2.8Mya they shared, at least in the Cradle area, the landscape with *P. robustus* and from roughly 2.3Mya with early forms of *Homo* (Clarke 1999). Global climatic cooling around 2.5Mya may have stimulated a burst of species turnover amongst hominins (Vrba 1992); the approximate contemporary appearance of the first stone tools suggests that this was a critical stage in human evolution. But exactly which early hominin population is to be accredited as the ancestor of *Homo* remains elusive.

H. ergaster is present in the African palaeo-anthropological record from around 1.8Mya and shortly thereafter the first exodus from Africa is evidenced by *H. erectus* specimens from China, Indonesia and even Europe (Klein 1999).

2) THE STONE AGE

2.1) The Earlier Stone Age

In South Africa the only Earlier Stone Age (ESA) Oldowan lithic assemblage comes from Sterkfontein Cave. The predominant quartz assemblage is technologically very simple, highly informal and inferred to comprise exclusively of multi-purpose tools (Kuman *et al.* 1997). The latter part of the ESA is characterized by the Acheulean Industrial Complex, present in the archaeological record from at least 1.5Mya. Both *H. ergaster* and *P. robustus* may be accredited with the production of these tools. The association between stone tools and increased access to meat and marrow supporting the greater dietary breath of *Homo* may have been vital to *Homo's* evolutionary success; and the eventual extinction of the robust australopithecines (Klein 1999).

Probably the longest lasting artefact tradition ever created by hominins, the Acheulean is found from Cape Town to north-western Europe and India, occurring widely in South Africa. Despite the many sites it is still considered a '*prehistoric dark age*' by many archaeologists, encompassing one of the most critical periods in human evolution; the transition from *H. ergaster* to archaic forms of *H. Sapiens* (Klein 1999).

The Acheulean industry is characterized by handaxes and cleavers as *fosilles directeurs* (signatory artefact types), in association with cores and flakes. Handaxes and cleavers were multi-purpose tools used to work both meat and plant matter (Binneman & Beaumont 1992). Later Acheulean flaking techniques involved a degree of core preparation that allowed a single large flake of predetermined shape and size to be produced. This

Victoria West technique indicates an origin within the Acheulean for the *Levallois technique* of the Middle Stone Age (Noble & Davidson 1966). The lithic artefact component was supplemented by wood and other organic material (Deacon 1970).

2.2) The Middle Stone Age

The Middle Stone Age (MSA), dating from approximately 500kya to 40-27/23kya is interpreted as an intermediate technology between the Acheulean and the Later Stone Age (LSA) (Goodwin & van Riet Lowe 1929). The MSA is typologically characterized by the absence of handaxes and cleavers, the use of prepared core techniques and the production of blades, triangular and convergent flakes, with convergent dorsal scars and faceted striking platforms, often produced by means of the *Levallois technique* (Volman 1984). The widespread occurrence of MSA technology across Africa and its spread into much of Eurasia in Oxygen Isotope Stage (OIS) 7 is viewed as part of a process of population dispersal associated with both the ancestors of the later Neanderthals in Europe and anatomically modern humans in Africa (Foley & Lahr 1997).

After the riches offered by the Cradle sites and Makapansgat, southern Africa's Middle Pleistocene fossil record is comparatively poor. Early Middle Pleistocene fossil evidence suggests an archaic appearance and fossils are often assigned to *H. heidelbergensis* and *H. sapiens rhodesiensis* (Rightmire 1976). Modern looking remains, primarily from Border Cave (KwaZulu-Natal) and Klasies River Mouth (Eastern Cape) raised the possibility that anatomically modern humans had, by 120kya, originated south of the Sahara before spreading to other parts of the world (Brauer 1982; Stringer 1985). Subsequent studies of modern DNA indicated that African populations are genetically more diverse and probably older than those elsewhere (Cann *et al*. 1994). Combined, the fossil and genetic evidence underpins the so-called *Out of Africa 2* model (arguing that gene flow and natural selection led regional hominin populations along distinct evolutionary trajectories after *Homo's* expansion from Africa in the Lower Pleistocene *Out of Africa 1* model) of modern human origins and the continuing debate as to whether it should be preferred to its *Multiregional* alternative (arguing that modern humans evolved more or less simultaneously right across the Old World) (Mellars & Stringer 1989; Aitken *et al*. 1993; Nitecki & Nitecki 1994).

Persuasive evidence of ritual activity or bodily decoration is evidenced by the widespread presence of red ochre at particularly MSA 2 sites (after Volman's 1984 MSA 1-4 model; Hensilwood & Sealy 1997), while evidence from Lion Cave, Swaziland, indicates that specularite may have been mined as early as 100kya (Beaumont 1973). Evidence for symbolic behavioral activity is largely absent; no evidence for rock art or formal burial practices exists.

2.3) The Later Stone Age

Artefacts characteristic of the Later Stone Age (LSA) appear in the archaeological record from 40/27-23kya and incorporates micolithic as well as macrolithic assemblages. Artefacts were produced by modern *H. sapien* or *H. sapien sapien,* who subsisted on a hunter-gatherer way of life (Deacon 1984; Mitchell 2002).

According to Deacon (1984) the LSA can temporally be divided into 4 broad units directly associated with climatic, technological and subsistence changes:

1. Late Pleistocene microlithic assemblages (40-12kya);
2. Terminal Pleistocene / early Holocene non-microlithic assemblages (12-8kya);
3. Holocene microlithic assemblages (8kya to the Historic Period); and
4. Holocene assemblages with pottery (2kya to the Historic Period) closely associated with the influx of pastoralist communities into South Africa (Mitchell 2002).

Elements of material culture characteristic of the LSA reflect modern behavior. Deacon (1984) summarizes these as:

1. Symbolic and representational art (paintings and engravings);
2. Items of personal adornment such as decorated ostrich eggshell, decorated bone tools and beads, pendants and amulets of ostrich eggshell, marine and freshwater shells;
3. Specialized hunting and fishing equipment in the form of bows and arrows, fish hooks and sinkers;
4. A greater variety of specialized tools including bone needles and awls and bone skin-working tools;
5. Specialized food gathering tools and containers such as bored stone digging stick weights, carrying bags of leather and netting, ostrich eggshell water containers, tortoiseshell bowls and scoops and later pottery and stone bowls;
6. Formal burial of the dead in graves (sometimes covered with painted stones or grindstones and accompanied by grave goods);
7. The miniaturization of selected stone tools linked to the practice of hafting for composite tools production; and
8. A characteristic range of specialized tools designed for making some of the items listed above.

- Rock Art

Rock Art is one of the most visible and informative components of South Africa's archaeological record. Research into LSA ethnography (as KhoiSan history) has revolutionized our understanding of both painted and engraved (petroglyph) images, resulting in a paradigm shift in Stone Age archaeology (Deacon & Dowson 2001). Paintings are concentrated in the Drakensberg / Maluti mountains, the eastern Free State, the Cape Fold Mountains, the Waterberg Plateau and the Soutpansberg mountains. Engravings on the other hand are found throughout the Karoo, the western Free State and North-West Province (Mitchell 2002). Both forms of LSA art drew upon a common stock of motifs, derived from widely shared beliefs and include a restricted range of naturalistically depicted animals, geometric imagery, human body postures and non-realistic combinations of human and animal figures (anthropomorphic figurines). LSA Rock Art is closely associated with spiritual or magical significance (Lewis-Williams & Dowson 1999).

Aside from LSA or KhoiSan Rock Art, thus art produced by both hunter-gatherer and pastoralist and agro-pastoralist groups, Rock Art produced by Iron Age populations are known the be present towards the north of the country.

- Shell Middens ('Strandloper' Cultures)

South Africa's nearly 3,000km coastline is dotted by thousands of shell middens, situated between the high water mark and approximately 5km inland, bearing witness to long-term exploitation of shellfish mainly over the past 12,000 years. These LSA shell middens are easily distinguishable from natural accumulations of shells and deposits can include bones of animals eaten such as shellfish, turtles and seabirds, crustaceans like crabs and crayfish and marine mammal remains of seals, dolphins and occasionally whales. Artefacts and hearth and cooking remains are often found in shell midden deposits. Evidence exist that fish were speared, collected by hand, reed baskets and by means of stone fish traps in tidal pools (Mitchell 2002).

Shell midden remains were in the past erroneously assigned to 'Strandloper cultures'. Deacon & Deacon (1999) explain that '*no biological or cultural group had exclusive rights to coastal resources.*' Some LSA groups visited the coast periodically while others stayed year round and it is misleading to call them all by the same name. Two primary sources of archaeological enquiry serves to shed more light on the lifestyles of people who accumulated shell middens, one being the analysis of food remains in the middens itself and the other being the analysis of LSA human skeletal remains of people buried either in shell middens or within reasonable proximity to the coast.

Shell middens vary in character ranging from large sites tens of meters in extent and with considerable depositional depth to fairly small ephemeral collections, easily exposed and destroyed by shifting dune action. Shell middens are also found inland, along rivers where fresh water mussels occur. These middens are often fairly small and less common; in the Eastern Cape often dated to within the past 3,000 years (Deacon & Deacon 1999).

In addition shell middens are not exclusively assigned to LSA cultures; shellfish were exploited during the Last Interglacial, indicating that the practice was most probably continuous for the past 120,000 years (MSA shell middens). Along the coast of KwaZulu-Natal evidence exist for the exploitation of marine food resources by Iron Age communities. These shell middens are easily distinguished from Stone Age middens by particularly rich, often decorated ceramic artefact content. Colonial Period shell middens are quite rare and extremely ephemeral in character; primarily the result of European shipwreck survivors and reported on along the coast of KwaZulu-Natal and the Transkei, Eastern Cape.

3) THE IRON AGE

For close to 2 millennia people combining cereal agriculture with stock keeping have occupied most of southern Africa's summer rainfall zone. The rapid spread of farming, distinctive ceramics and metallurgy is understood as the expansion of a Bantu-speaking population, in archaeological terms referred to as the Iron Age.

3.1) The Early Iron Age

Ceramic typology is central to current discussions of the expansion of iron using farming communities. The most widely used approach is that of Huffman (1980), who employs a multidimensional analysis (vessel profile, decoration layout and motif) to reconstruct different ceramic types. Huffman (1998) argues that ceramics can be used to trace the movements of people, though not necessarily of specific social or political groupings. Huffman's Urewe Tradition coincides largely with Phillipson's (1977) Eastern Stream. A combined Urewe Tradition / Eastern Stream model for the Early Iron Age can be summarized as:

1. The Kwale branch (extending along the coast from Kenya to KwaZulu-Natal);
2. The Nkope branch (located inland and reaching from southern Tanzania through Malawi and eastern Zambia into Zimbabwe); and
3. The Kalundu branch (strething from Angola through western Zambia, Botswana and Zimbabwe into South Africa).

In southern Africa, recent work distinguishes two phases of the Kwale branch: The earlier Silver Leaves facies (250-430AD) occurring as far south as the Northern Province. The later expression or Mzonjani facies (420-580AD) occurs in the Northern Province a well as along the KwaZulu-Natal coastal belt (Huffman 1998). Since the Silver Leaves facies is only slightly younger than the Kwale type site in Kenya, very rapid movement along the coast, perhaps partly by boat, is inferred (Klapwijk 1974). Subsequently (550-650AD) people making Mzonjani derived ceramics settled more widely in the interior of South Africa.

Assemblages attributable to the Nkope branch appear south of the Zambezi but north of South Africa from the 5th Century. Ziwa represents an early facies, with Gokomere deriving jointly from Ziwa and Bambata. A subsequent phase is represented by the Zhizo facies of the Shashe-Limpopo basin, and by Taukome (Huffman 1994). Related sites occur in the Kruger National Park (Meyer 1988). Zhizo (7th – 10th Century) is ancestral to the Toutswe tradition which persisted in eastern Botswana into the 13th Century.

Kalundu origins need further investigation; its subsequent development is however better understood. A post Bambata phase is represented by the 5th – 7th Century sites of Happy Rest, Klein Africa and Maunatlana in the Northern Province and Mpumalanga (Prinsloo 1974, 1989). Later phases are present at the Lydenburg Heads site (Whitelaw & Moon 1996) and by the succession of Mzuluzi, Ndondonwane and Ntshekane in KwaZulu-Natal (7th – 10th Centuries) (Prins & Grainger 1993). Later Kalundu facies include Klingbeil and Eiland in the northern part of the country (Evers 1980) with Kgopolwe being a lowveld variant in Mpumalanga (10th – 12th Century). Broadhurst and other sites indicate a still later survival in Botswana (Campbell 1991).

Despite the importance accorded to iron agricultural implements in expanding the spread of farming and frequent finds of production debris, metal objects are rare. Metal techniques were simple, with no particular sign of casting, wire drawing or hot working. Jewelry (bangles, beads, pendants etc.) constitute by far the largest number of finds but arrows, adzes, chisels, points and spatulae are known (Miller 1996).

Early Iron Age people were limited to the Miombo and Savannah biomes; excluded from much of the continents western half by aridity and confined in the south during the 1st millennium to bushveld areas of the old Transvaal. Declining summer rainfall restricted occupation to a diminishing belt close to the East Coast and north of S33° (Maggs 1994); sites such as Canasta Place (800AD), Eastern Cape, mark the southern-most limit of Early Iron Age settlement (Nogwaza 1994).

- The Central Cattle Pattern

The Central Cattle Pattern (CCP) was the main cognitive pattern since the Early Iron Age (Huffman 1986). The system can be summarized as opposition between male pastoralism and female agriculture; ancestors and descendants; rulers and subjects; and men and women. Cattle served as the primary means of transaction; they represented symbols exchanged for the fertility of wives, legitimacy of children and appeasement of ancestors. Cattle were also used as tribute to rulers confirming sub-ordination and redistribution as loan cattle by the ruler to gain political support. Cattle represented healing and fertilizing qualities (Huffman 1998; Kuper 1980).

This cognitive and conceptual structure underlies all cultural behavior, including the placement of features in a settlement. The oppositions of male and female, pastoralism and agriculture, ancestors and descendants, rulers and subjects, cool and hot are represented in spatial oppositions, either concentric or diametric (Huffman 1986).

A typical CCP village comprise of a central cattle enclosure (byre) where men are buried. The *Kgotla* (men's meeting place / court) is situated adjacent to the cattle enclosure. Surrounding the enclosure is an arc of houses, occupied according to seniority. Around the outer perimeter of the houses is an arc of granaries where women keep their pots and grinding stones (Huffman 1986). The model varies per ethnic group which helps to distinguish ethnicity throughout the Iron Age, but more studies are required to recognize the patterns.

3.2) The Middle Iron Age

The hiatus of South African Middle Iron Age activity was centered in the Shashe-Limpopo Valley and characterized by the 5-tier hierarchical Mapungubwe State spanning some 30,000km². By the 1st millennium ivory and skins were already exported overseas, with sites like Sofala and Chibuene, Mosambique, interfacing between interior and transoceanic traders. Exotic glass beads, cloth and Middle Eastern ceramics present at southern African sites mark the beginning of the regions incorporation into the expanding economic system that, partly tied together with maritime trading links across the Indian Ocean, increasingly united Africa, Asia and Europe long before Da Gama or Columbus (Eloff & Meyer 1981; Meyer 1998).

Occupation was initially focused at Bambandanyalo and K2. The Bambananyalo main midden (1030-1220AD) stands out above the surrounding area, reaching more than 6m in places and covering more than 8ha the site may have housed as many as 2,000 people (Meyer 1998). The CCP was not strictly followed; whether this is ideologically significant or merely a reflection of local typography remains unclear. The midden, the size of which may reflect the status of the settlement's ruler, engulfed the byre around 1060-1080AD, necessitating relocation of

the cattle previously kept there. The re-organization of space and worldview implied suggests profound social changes even before the sites' abandonment in the early 13th century, when the focus of occupation moved to Mapungubwe Hill, 1 km away (Huffman 1998).

Excavations at Mapungubwe Hill, though only occupied for a few decades (1220-1290AD), yielded a deep succession of gravel floors and house debris (Eloff & Meyer 1981). Huffman (1998) suggests that the suddenness with which Mapungubwe was occupied may imply a deliberate decision to give spatial expression to a new social order in which leaders physically removed themselves from ordinary people by moving onto more inaccessible, higher elevations behind the stone walls demarcating elite residential areas. Social and settlement changes speak of considerable centralization of power and perhaps the elaboration of new ways of linking leaders and subjects.

At Bambandanyalo and Mapungubwe elite burial grave goods include copper, bone, ivory and golden ornaments and beads. Social significance of cattle is reinforced by their importance among the many human and animal ceramic figurines and at least 6 'beast burials' (Meyer 1998).

Today the drought prone Shashe-Limpopo Valley receives less than 350mm of rainfall per annum, making cereal cultivation virtually impossible. The shift to drier conditions in the late 1200's across the Shashe-Limpopo basin and the eastern Kalahari may have been pivotal in the break-up of the Mapungubwe polity, the collapse of Botswana's Toutswe tradition and the emergence of Great Zimbabwe (1220-1550AD), southern Africa's best known and largest (720ha) archaeological site (Meyer 1998).

South of the Limpopo and north of the Soutpansberg, Mapungubwe derived communities survived into the 14th Century, contemporary with the establishment of Sotho-speaking makers of Maloko pottery.

3.3) The Later Iron Age

South African farming communities of the 2nd millennium experienced increased specialization of production and exchange, the development of more nucleated settlement patterns and growing political centralization, albeit not to the same extent as those participating in the Zimbabwe tradition. However, together they form the background to the cataclysmic events of the late 18th / early 19th Century *Mfecane* (Mitchell 2002).

Archaeological evidence of settlement pattern, social organization and ritual practice often differ from those recorded ethnographically. The Moloko ceramic tradition seems to be ancestral to modern Sotho-Tswana speakers (Evers 1980) and from about 1,100AD a second tradition, the Blackburn tradition, appears along South Africa's eastern coastline. Blackburn produced mostly undecorated pottery (Davies 1971), while Mpambanyoni assemblages, reaching as far south as Transkei, includes examples of rim notching, incised lines and burnished ochre slip (Robey 1980). At present, no contemporary farming sites are known further inland in KwaZulu-Natal or the Eastern Cape.

Huffman (1989) argues that similarities between Blackburn and early Maloko wares imply a related origin, presumably in the Chifumbaze of Zambia or the Ivuna of Tanzania, which contains a range of ceramic attributes important in the Blackburn as well as beehive grass huts similar to those made by the Nguni. This is one of the few suggestions of contact between Sotho-Tswana and Nguni speakers on the one hand and farming communities who, if Huffman is correct, were already long established south of the Limpopo. Both ethnographic and archaeological data demonstrate that Sotho-Tswana and Nguni are patrilineal and organize their settlements according to the CCP (Kuper 1980).

From 1,300AD there is increasing evidence for the beginning of agro-pastoralist expansion considerably beyond the area of previous occupation. It is also to this time that the genealogies of several contemporary Bantu speaking groups can be traced (Wilson & Thompson 1969). Associated with this expansion was the regular employment of stone, rather than wood, as building material, an adaptation that has greatly facilitated the discovery and identification of settlements. Maggs (1976) describes 4 basic settlement types all characterized by the use of semi weathered dolorite to produce hard binding *daga* for house floors and a wall building tradition employing larger more regular stones for the inner and outer faces and smaller rubble for the infill. As with the more dispersed homesteads of KwaZulu-Natal and the Eastern Cape, sites tend to be in locally elevated situations, reflecting a deep seated Sotho and Nguni preference for benign higher places rather than supernaturally dangerous riverside localities; another important contrast to both 1st millennium (Maggs 1976) and later Zulu Kingdom settlement patterns (Hall & Maggs 1979).

The lack of evidence for iron production in the interior and eastern part of South Africa emphasize exchange relationships between various groups and associated more centralized polities. By the 19th Century iron production in KwaZulu-Natal was concentrated in particular clans and lineages and associated with a range of social and religious taboos (Maggs 1992). South of Durban comparatively few smelting sites are known (Whitelaw 1991), a trend even more apparent in Transkei (Feely 1987). However, metal remained the most important and archaeologically evident item traded between later farming communities. (Other recorded trade items include glass and ostrich eggshell beads; Indian Ocean seashells; siltstone pipes; *dagga,* and later on tobacco; pigments including ochre, graphite and specularite; hides and salt.)
Rising polity settlements are particularly evident in the north of the country and dated to the 17th Century, including Molokwane, capital of the Bakwena chiefdom (Pistorius 1994) and Kaditshwene, capital of a major section of the Hurutshe, whose population of 20,000 in 1820 almost

equals contemporary Cape Town in size (Boeyens 2000). The agglomeration of Tswana settlements in the north of the country was fuelled by both population growth and conflict over access to elephant herds for ivory and long distance trade with the East Coast. During this period ceramic decoration became blander and more standardized than the earlier elaborate decoration that included red ochre and graphite coloring.

The *Mfecane* refers to the wars and population movements of the early 19th Century which culminated in the establishment of the Zulu Kingdom and came to affect much of the interior, even beyond the Zambezi: The late 18th Century was marked by increasing demands for ivory (and slaves) on the part of European traders at Delagoa Bay; as many as 50 tones of ivory were exported annually from 1750-1790. As elephant populations declined, competition increased both for them and for the post 1790 supply of food to European and American whalers calling at Delagoa Bay (Smith 1970). Cattle raiding, conflict over land and changes in climatic and subsistence strategies characterized much of the cultural landscape of the time.

Competition for access to overseas trade encouraged some leaders to replace locally organized circumcision schools and age-sets with more permanently maintained military regiments. These were now used to gain access through warfare to land, cattle and stored food. By 1810 three groups, the Mthethwa, Ndwandwe and Ngwane dominated northern KwaZulu-Natal (Wright 1995). The Mthethwa paramountcy was undermined by the killing of its leader Dingiswayo in *circa* 1818, which led to a brief period of Ndwandwe dominance. In consequence one of Dingiswayo's former tributaries, Shaka, established often forceful alliances with chiefdoms further south. Shaka's Zulu dominated coalition resisted the Ndwandwe who in return fled to Mozambique. As the Zulu polity expanded it consolidated its control over large areas, incorporating many communities into it. Others sought refuge from political instability by moving south of the Thukela River, precipitating a further *domino effect* as far as the Cape Colony's eastern border (Wright 1995).

4) THE COLONIAL PERIOD

In the 15th Century Admiral Zheng He and his subordinates impressed the power of the Ming Dynasty rulers in a series of voyages as far afield as Java, Sri Lanka, southern Arabia and along the East African coast, collecting exotic animals *en route.* But nothing more came of his expeditions and China never pursued opportunities for trade or colonization (Mote 1991).

Portuguese maritime expansion began around the time of Zheng He's voyages; motivated by a desire to establish a sea route to the riches of the Far East. By 1485 Diogo Cao had reached Cape Cross, 3 years later Bartolomeu Dias rounded the Cape of Good Hope and less than a decade later Vasco da Gama called at several places along South Africa's coast, trading with Khoekhoen (Khoi) at Mossel Bay before reaching Mozambique and crossing the ocean to India. His voyage initiated subsequent Portuguese bases from China to Iraq. In Africa interest was focused on seizing important coastal trading towns such as Sofala and gaining access to the gold of Zimbabwe. Following the 1510 Portuguese-Khoekhoen battle at Table Bay, in which the viceroy of India was killed, Portuguese ships ceased to call along the South African coast (Elphick 1985).

A number of shipwrecks, primarily along the eastern coast attest to Portuguese activity including the Sao Joao, wrecked in 1552 near Port Edward and the Sao Bento, destroyed in 1554 off the Transkei coast. Survivors' accounts provided the 1st detailed information on Africa's inhabitants (Auret & Maggs 1982).

By the late 1500's Portuguese supremacy of the Indian Ocean was threatened. From 1591 numerous Dutch and English ships called at Table Bay and in 1652 the Dutch East Indian Company (VOC) established a permanent base, with the intent to provide fresh food and water to VOC ships. In an attempt to improve the food supply a few settlers (free burghers) were allowed to establish farms. The establishment of an intensive mixed farming economy failed due to shortages of capital and labor, and free burghers turned to wheat cultivation and livestock farming. While the population grew slowly the area of settlement expanded rapidly with new administrative centers established at Stellenbosch (1676), Swellendam (1743) and Graaf-Reinet (1785). By the 1960's the Colony's frontier was too long to be effectively policed by VOC officials (Elphick 1985).

From the 1700's many settlers expanded inland over the Cape Fold Mountain Belt. The high cost of overland transport constrained the ability to sell their produce while settlement of the interior was increasingly made difficult by resident KhoiSan groups, contributing due to a lack of VOC military support to growing Company opposition in the years before British control of the Cape (1795 / 1806) (Davenport & Saunders 2000).

In 1820 a major British settlement was implanted on the eastern frontier of the Cape Colony, resulting in large numbers of the community moving into the interior, initially to KwaZulu-Natal, and then after Britain annexed Natal (1843), further into the interior to beyond the Vaal River. Disruptions of the *Mfecane* eased their takeover of African lands and the *Boers* (farmers) established several Republics. A few years later the 2nd South African War saw both the South African and Orange Free State Republics annexed by Britain, a move largely motivated by British desire to control the goldfields of the Witwatersrand. With adjacent regions of the sub-continent also falling, directly or indirectly, under British rule and German colonization of Namibia, European control of the whole of southern Africa was firmly established before the 1st World War (Davenport & Saunders 2000).

- Xhosa Iron Age Cultures meets Colonists in the Eastern Cape

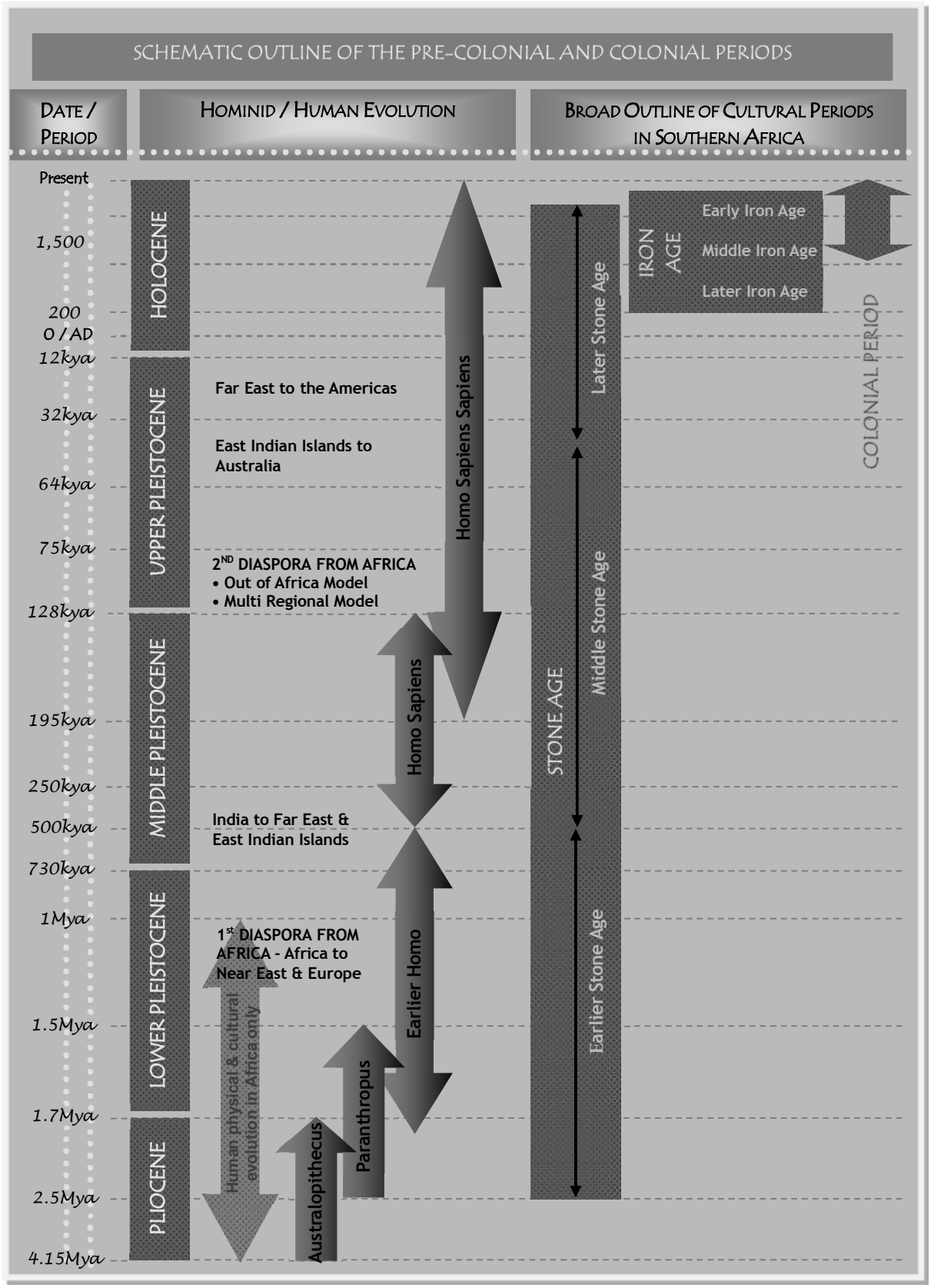
From the late 1600's conflict between migrants from the Cape (predominantly Boers) and Xhosa people in the region of the Fish River were strife, ultimately resulting in a series of 9 Frontier Wars (1702-1878) (Milton 1983). Both cultures were heavily based and reliant on agriculture and cattle farming. As more Cape migrants, and later settlers from Britain (1820) and elsewhere arrived, population pressures and competition over land, cattle and good grazing became intense. Cattle raiding became endemic on all sides, with retaliatory raids launched in response. As missionaries arrived with evangelical messages, confrontations with hostile chiefs who saw them as undermining traditional Xhosa ways of life resulted in conflicts which flared into wars.

As pressures between the European settlers and the Xhosa grew, settlers organized themselves into local militia, counteracted by Xhosa warring skills: But both sides were limited by the demands of seasonal farming and the need for labor during harvest. Wars between the Boers and the Xhosa resulted in shifting borders, from the Fish to the Sundays River, but it was only after the British annexed the Cape in 1806 that authorities turned their attention to the Eastern regions and petitions by the settlers about Xhosa raids. British expeditions, in particular under Colonel John Graham in 1811 and later Harry Smith in 1834, were sent not only to secure the frontier against the Xhosa, but also to impose British authority on the settlers, with the aim to establish a permanent British presence. Military forts were built and permanently manned. Over time the British came to dominate the area both militarily and through occupation with the introduction of British settlers. The imposition of British authority led to confrontations not only with the Xhosa but also with disaffected Boers and other settlers, and other native groups such as the Khoikhoi, the Griqua and the Mpondo. The frontier wars continued over a period of about 150 years; from the 1st arrival of the Cape settlers, and with the intervention of the British military ultimately ending in the subjugation of the Xhosa people. Fighting ended on the Eastern Cape frontier in June 1878 with the annexation of the western areas of the Transkei and administration under the authority of the Cape Colony (Milton 1983).

- The Industrial Revolution

The Industrial Revolution refers roughly to the period between the 18th - 19th Centuries, typified by major changes in agriculture, manufacturing, mining, transport, and technology. Changing industry had a profound effect on socio-economic and socio-cultural conditions across the world: The Industrial Revolution marks a major turning point in human history; almost every aspect of daily life was eventually influenced in some way. Average income and population size began to exhibit unprecedented growth; in the two centuries following 1800 the world's population increased over 6-fold, associated with increasing urbanization and demand of resources. Starting in the latter part of the 18th century, the transition from manual labor towards machine-based manufacturing changed the face of economic activity; including the mechanization of the textile industries, the development of iron-making techniques and the increased use of refined coal. Trade expansion was enabled by the introduction of canals, improved roads and railways. The introduction of steam power fuelled primarily by coal and powered machinery was underpinned by dramatic increases in production capacity. The development of all-metal machine tools in the first two decades of the 19th century facilitated the manufacture of more production machines in other industries (More 2000).

Effects of the Industrial Revolution were widespread across the world, with its enormous impact of change on society, a process that continues today as 'industrialization'.


SCHEMATIC OUTLINE OF THE PRE-COLONIAL AND COLONIAL PERIODS
DATE / PERIOD
HOMINID / HUMAN EVOLUTION
BROAD OUTLINE OF CULTURAL PERIODS IN SOUTHERN AFRICA
Present
1,500
200
0 / AD
12kya
32kya
64kya
75kya
128kya
195kya
250kya
500kya
730kya
1Mya
1.5Mya
1.7Mya
2.5Mya
4.15Mya
HOLOCENE
UPPER PLEISTOCENE
MIDDLE PLEISTOCENE
LOWER PLEISTOCENE
PLIOCENE
Far East to the Americas
East Indian Islands to Australia
2ND DIASPORA FROM AFRICA
• Out of Africa Model
• Multi Regional Model
India to Far East & East Indian Islands
1st DIASPORA FROM AFRICA - Africa to Near East & Europe
Human physical & cultural evolution in Africa only
Homo Sapiens Sapiens
Homo Sapiens
Earlier Homo
Paranthropus
Australopithecus
STONE AGE
Later Stone Age
Middle Stone Age
Earlier Stone Age
IRON AGE
Early Iron Age
Middle Iron Age
Later Iron Age
COLONIAL PERIOD

5) REFERENCES CITED

1. Aitken, M.J., Stringer, C.B. & Mellars, P.A. (eds). 1993. *The origin of modern humans and the impact of chronometric dating.* Princeton: Princeton University Press
2. Auret, C. & Maggs, T.M.O'C 1982. *The great ship São Bento: remains from a mid-sixteenth century Portuguese wreck on the Pondoland coast*. Annals of the Natal Museum 25:1-39
3. Beaumont, P.B. 1973. *The ancient pigment mines of South Africa.* South African Journal of Science 69: 41-46
4. Binneman, J.N.F. & Beaumont, P.B. 1992. *Use-wear analysis of two Acheulean handaxes from Wonderwerk Cave, Northern Cape.* South African Field Archaeology 1:92-97
5. Boeyens, J.C.A. 2000. *In search of Kadishwene.* South African Archaeological Bulletin 55:3-17
6. Brauer, G. 1982. *Early anatomically modern man in Africa and the replacement of the Mediterranean and European Neanderthals*. In De Lumley, H. (ed) L'Home erectus et la place de l'homme de tautavel parmi les hominids fossils. Nice: Centre National de la Recherche Scientifique
7. Cann, R.L., Rickards, O. & Lum, J.K. 1994. *Mitochondrial DNA and human evolution: our one lucky mother.* Nature 325: 31-36
8. Campbell, A.C. 1991. *The riddle of the stone walls.* Botswana Notes and Records 23:243-249
9. Clarke, R.J. 1999. *A discovery of complete arm and hand of the 3.3 million year old Australopithecus skeleton from Sterkfontein.* South African Journal of Science 95:447-480
10. Dart, R.A. 1925. *Australopithecus africanus: the man-ape of South Africa.* Nature 115:195-199
11. Davenport, T.R.H. & Saunders, C. 2000. *South Africa: A modern history.* London: Macmillan
12. Davies, O. 1971. *Excavations at Blackburn.* South African Archaeological Bulletin 26: 165-178
13. Deacon, H.J. 1970. *The Acheulian occupation at Amanzi Springs, Uitenhage District, Cape Province.* Annals of the Cape Provincial Museums 8:89-189
14. Deacon, J. 1984. *Later Stone Age people and their descendants in southern Africa*. In Klein, R.G. (ed). Southern Africa prehistory and paleoenvironments. Rotterdam: A.A. Balkema
15. Deacon, H.J. & Deacon., J. 1999. *Human Beginnings in South Africa. Uncovering the Secrets of the Stone Age.* Cape Town: David Phillip Publlishers
16. Deacon, J. & Dowson, A.D. (eds.) 2001. *Voices from the past. /Xam Bushmen and the Bleek and Lloyd Collection.* Johannesburg: Witwatersrand University Press
17. Eloff, J.F. & Meyer, A. 1981. *The Greefswald sites*. In Voigt, E.A. (ed) Guide to archaeological sites in the northern and eastern Transvaal. Pretoria: South African Association of Archaeologists
18. Elphick, R. 1985. *Khoikhoi and the founding of white South Africa*. Johannesburg: Ravan Press
19. Evers, T.M. 1980. *Klingbeil Early Iron Age sites, Lydenburg, Eastern Transvaal, South Africa.* South African Archaeological Bulletin 35:46-57
20. Feeley, .M. 1987. *The early farmers of Transkei, southern Africa, before AD 1870.* Oxford: British Archaeology Reports
21. Foley, R.A & Lahr, M.M. 1997. *Mode 3 technologies and the evolution of modern humans.* Cambridge Archaeological Journal 7:3-36
22. Goodwin A.J.H. & van Riet Lowe, C. 1929. *The Stone Age cultures of South Africa*. Annals of the South African Museum 27:1-289
23. Hall, M. & Maggs, T.M.O'C. 1979. *Nqabeni: a later Iron Age site in Zululand.* South African Archaeological Society Goodwin Series 3:159-176
24. Hensilwood, C. & Sealy, J.C. 1997. *Bone artefacts from the Middle Stone Age at Blombos Cave, southern Cape, South Africa.* Current Anthropology 38:390-395
25. Huffman, T.N. 1980. *Ceramics, classification and Iron Age entities.* African Studies 39:123-174
26. Huffman, T.N. 1989. *Ceramics, settlements and late Iron Age migrations*. African Archaeological Review 7: 155-182
27. Huffman, T.N. 1986. *Iron Age settlement patterns and the origin of class distinction in southern Africa.* Advances in World Archaeology 5:291-338
28. Huffman, T.N. 1994. Toteng pottery and the origins of Bambata. Southern African Field Archaeology 3:3-9
29. Huffman, T.N. 1998. *The antiquity of Iobola.* South African Archaeological Bulletin 53:57-62
30. Keyser, A., Menter, C.G., Moggi-Cheggi, J., Pickering T.R, & Berger, L.R. 2000. *Drimolen: A new hominid bearing site in Gauteng, South Africa.* South African Journal of Science 96:193-197
31. Klapwijk, M. 1974. *A preliminary report on pottery from the north-eastern Transvaal, South Africa.* South African Archaeological Bulletin 29:19-23
32. Klein, R.G. 1999. *The human career: human biological and cultural origins.* Chicago: University of Chicago Press
33. Kuman, K, Field, A.S. & Thackeray, J.F. 1997. *Discovery of new artefacts at Kromdraai.* South African Journal of Science 93: 187-193
34. Kuper, A. 1980. *Symbolic dimensions of the southern Bantu homestead*. Africa 1:8-23

35. Leakey, M.G., Feibel, C.S., McDougall, I & Walker, A.C. 1995. *New four-million-year-old hominid species from Kanopi and Allia Bay, Kenya*. Nature 376:565-57 1
36. Lewis-Williams, D. & Dowson, T. 1999. *Images of Power. Understanding San Rock Art*. Halfway House: Southern Book Ppublishers
37. Maggs, T.M.O'C. 1976. *Iron Age communities of the southern Highveld*. Pietermaritzburg: Natal Museum
38. Maggs, T.M.O'C. 1992. *'My father's hammer never ceased its' song day and night': the Zulu ferrous metalworking industry*. Natal Museum Journal of Humanities 4:65-87
39. Maggs, T.M.O'C. 1994. *The Early Iron Age in the extreme south: some patterns and problems*. Azania 29/30:171-178
40. Mellars, P.A. & Stringer, C.B. (eds). 1989. *The human revolution: behavioural and biological perspectives on the origins of modern humans.* Edinburgh: Edinburgh University Press
41. Miller, D.E. 1996. *The Tsodilo jewellery: metal work from northern Botswana.* Cape Town: University of Cape Town Press
42. Milton, J. 1983. *The Edges of War. A history of Frontier Wars (1702-1878)*. Kenwyn: Juta & Co.
43. Mitchell, P. 2002. *The archaeology of southern Africa.* Cambridge: Cambridge University Press
44. Meyer, A. 1988. *N kultuurhistories interpretasie van die Ystertydperk in die Nasionale Krugerwildtuin.* Phd thesis, University of Pretoria
45. Meyer, A. 1998. *The archaeological sites of Greefswald.* Pretoria: University of Pretoria Press
46. More, C. 2000. *Understanding the Industrial Revolution*. London: Routledge
47. Mote, F.W. 1991. *China in the Age of Columbus.* In Levenson, J.A. (ed) Circa 1492: Art in the Age of Exploration. New Haven: Yale University Press
48. Nitecki, M.H. & Nitecki, D.V. (eds). 1994. *Origins of anatomically modern humans.* New York: Plenum
49. Noble, W & Davidson, I. 1996. *Human evolution, language and mind: a psychological and archaeological enquiry*. Cambridge: Cambridge University Press
50. Nogwaza, T. 1994. *Early Iron Age pottery from Canasta Place, East London district.* South African Field Archaeology 3:103-106
51. Pakenham, T. 1993. *The Illustrated Boer War*. Parklands: Jonathan Ball Publishers.
52. Pistorius, J.C.C. 1992. *Molokwane an Iron Age Bakwena Village. Early Tswana settlement in the western Transvaal*. Johannesburg: Perskor Press.
53. Prins, F.E. & Graigner, J.E. 1993. *Early farming communities in northern Transkei: The evidence from Ntsitsana and adjacent areas.* Natal Museum Journal of Humanities 5:153-174
54. Phillipson, D.W. 1977. *The later prehistory of eastern and southern Africa*. London: Heineman
55. Prinsloo, H. P. 1974. *Early Iron Age site at Klein Afrika near Wyliespoort, Soutpansberg mountains, South Africa.* South African Journal of science 70:27 1-273
56. Prinsloo, H.P. 1989. *Vroe Ystertydperk terreine in die Soutpansberg.* M.A. Thesis, Universiy of Pretoria
57. Rightmire, G.P. 1976. *Relationships of Middle and Upper Pleistocene hominids from sub-Saharan Africa.* Nature 260:238-240
58. Robey, T.S. 1980. *Mpanbanyoni, a Late Iron Age site on the Natal south coast.* Annals of the Natal Museum 24:147-164
59. Sibley, C.G. & Ahlquist, J.E. 1884. *The phylogeny of the hominid primates as indicated by DNA-DNA hybridization.* Journal of molecular evolution 20:2-15
60. Smith, A.K. 1970. *The struggle for the control of southern Mozambique* 1720-1835. Ossa 63-96
61. Stringer, C.B. 1985. *Middle Pleistocene hominid variability and the origin of Late Pleistocene humans.* In Delson, E. (ed) Ancestors: the hard evidence. New York: Alan Liss
62. Tobias, P.V. 2000. *The fossil hominids.* In Partridge, T.C. & Maud, R,R. The Cenozoic of southern Africa. Oxford: Oxford University Press
63. Volman T.P. 1984. *Early prehistory of southern Africa*. In Klein, R.G. Southen Africa Prehsitory and palaeoenvironments. Rotterdam: A.A. Balkema
64. Vrba, E.S. 1992. *Mammals as a key to evolutionary theory*. Journal of Mammology 73:1-28
65. White, T.D., Suwa, G. & Asfaw, B. 1994. *Australopithecus ramidus: a new species of early hominid from Aramis, Ethiopia.* Nature 371:306-312
66. Whitelaw, G. 1991. *Precolonial Iron production around Durban and in southern KwaZulu-Natal*. Natal Museum Journal of Humanities 3:29-39
67. Whitelaw, G. & Moon, M. 1996. *The distribution and ceramics of pioneer agriculturists in KwaZulu-Natal.* Natal Museum Journal of Humanities 8:53-79
68. Wilson, M. & Thompson, L. (eds) 1969. *Oxford history of South Africa.* Oxford: Oxford University Press
69. Wright, J.B. 1995. *Political transformations in the Thukela-Mzimkhulu region in the late eighteenth and early nineteenth centuries*. In Hamilton, C. The *Mfecane* aftermath: Reconstructive debates in southern African history. Johannesburg: Witwatersrand University Press

APPENDIX – B –

EXTRACTS FROM THE NATIONAL HERITAGE RESOURCES ACT, NO 25 OF 1999

DEFINITIONS

Section 2

In this Act, unless the context requires otherwise:

ii. "*Archaeological*" means –
- a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10 m of such representation;
- c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic,… and any cargo, debris, or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation.

viii. "*Development*" means any physical intervention, excavation or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –
- a) construction, alteration, demolition, removal or change of use of a place or structure at a place;
- b) carrying out any works on or over or under a place;
- c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- d) constructing or putting up for display signs or hoardings;
- e) any change to the natural or existing condition or topography of land; and
- f) any removal or destruction of trees, or removal of vegetation or topsoil;

xiii. "*Grave*" means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

xxi. "*Living heritage*" means the intangible aspects of inherited culture, and may include –
- a) cultural tradition;
- b) oral history;
- c) performance;
- d) ritual;
- e) popular memory;
- f) skills and techniques;
- g) indigenous knowledge systems; and
- h) the holistic approach to nature, society and social relationships.

xxxi. "*Palaeontological*" means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trance;

xli. "*Site*" means any area of land, including land covered by water, and including any structures or objects thereon;

xliv. "*Structure*" means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith;

NATIONAL ESTATE

Section 3

1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

2) Without limiting the generality of subsection 1), the national estate may include –
- a) places, buildings, structures and equipment of cultural significance;
- b) places to which oral traditions are attached or which are associated with living heritage;
- c) historical settlements and townscapes;
- d) landscapes and natural features of cultural significance;
- e) geological sites of scientific or cultural importance
- f) archaeological and palaeontological sites;
- g) graves and burial grounds, including –
  - i. ancestral graves;
  - ii. royal graves and graves of traditional leaders;
  - iii. graves of victims of conflict
  - iv. graves of individuals designated by the Minister by notice in the Gazette;
  - v. historical graves and cemeteries; and
  - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- h) sites of significance relating to the history of slavery in South Africa;
- i) movable objects, including –

i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
ii. objects to which oral traditions are attached or which are associated with living heritage;
iii. ethnographic art and objects;
iv. military objects;
v. objects of decorative or fine art;
vi. objects of scientific or technological interest; and
vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

STRUCTURES

Section 34

1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

ARCHAEOLOGY, PALAEONTOLOGY AND METEORITES

Section 35

3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
4) No person may, without a permit issued by the responsible heritage resources authority –
    a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
    b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
    c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
    d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may –
    a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
    b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
    c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph a) to apply for a permit as required in subsection 4); and
    d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.
6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated, serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

BURIAL GROUNDS AND GRAVES

Section 36

3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
    a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
    b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
    c) bring onto or use at a burial ground or grave referred to in paragraph a) or b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction of any burial ground or grave referred to in subsection 3a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection 3b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority –
    a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority –
   a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
   b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-internment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

HERITAGE RESOURCES MANAGEMENT

Section 38

1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorised as –
   a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
   b) the construction of a bridge or similar structure exceeding 50 m in length;
   c) any development or other activity which will change the character of a site –
      i. exceeding 5 000 m² in extent; or
      ii. involving three or more existing erven or subdivisions thereof; or
      iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
      iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
   d) the rezoning of a site exceeding 10 000 m² in extent; or
   e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

   must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.
2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
   a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
   b) notify the person concerned that this section does not apply.
3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) …
4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
   a) whether or not the development may proceed;
   b) any limitations or conditions to be applied to the development;
   c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
   d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
   e) whether the appointment of specialists is required as a condition of approval of the proposal.

APPOINTMENT AND POWERS OF HERITAGE INSPECTORS

Section 50

7) Subject to the provision of any other law, a heritage inspector or any other person authorised by a heritage resources authority in writing, may at all reasonable times enter upon any land or premises for the purpose of inspecting any heritage resource protected in terms of the provisions of this Act, or any other property in respect of which the heritage resources authority is exercising its functions and powers in terms of this Act, and may take photographs, make measurements and sketches and use any other means of recording information necessary for the purposes of this Act.
8) A heritage inspector may at any time inspect work being done under a permit issued in terms of this Act and may for that purpose at all reasonable times enter any place protected in terms of this Act.
9) Where a heritage inspector has reasonable grounds to suspect that an offence in terms of this Act has been, is being, or is about to be committed, the heritage inspector may with such assistance as he or she thinks necessary –
   a) enter and search any place, premises, vehicle, vessel or craft, and for that purpose stop and detain any vehicle, vessel or craft, in or on which the heritage inspector believes, on reasonable grounds, there is evidence related to that offence;
   b) confiscate and detain any heritage resource or evidence concerned with the commission of the offence pending any further order from the responsible heritage resources authority; and
   c) take such action as is reasonably necessary to prevent the commission of an offence in terms of this Act.
10) A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible heritage resources authority.