

Phase 1 Archaeological and Heritage Impact Assessment on Portion
216 and 217 of the farm Guernsey 81 KU in respect of the proposed
construction of accommodation facilities associated infrastructure and
watercourse crossings at Siviti Lodge in the Thornybush Game Reserve,
Mpumalanga Province.

Compiled by:



For Eco 8 Environmental Planners

Surveyor: Mr JP Celliers

20 May, 2022

I, Jean-Pierre Celliers as authorized representative of Kudzala Antiquity CC , hereby confirm my independence as a specialist and declare that neither I or the Kudzala Antiquity CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which I was appointed as Heritage Consultant, other than fair remuneration for work performed on this project.

SIGNATURE: 

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Executive summary

Site name and location: Two areas of approximately 8 and ha on Portions 216 and 217 of the farm Guernsey 81 KU in respect of the construction of new accommodation facilities.

Purpose of the study: An archaeological and heritage study in order to identify cultural heritage resources in respect of the establishment of new accommodation facilities for tourists.

Topographical Maps: 1:50 000 2431 CA (1970, 1986); 1:250 000 2430 (1942).

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Report date: 20 May 2022

Description and findings:

An Archaeological and Heritage Impact Assessment was undertaken by Kudzala Antiquity CC in respect of the proposed construction of additional accommodation and associated facilities. This is located close to the existing Siviti Lodge, within two areas of approximately 8 and 9 hectares on Portions 216 and 217 of the farm Guernsey 81 KU in the Thornybush Game Reserve near Hoedspruit, Mpumalanga Province. The study was done with the aim of identifying sites which are of heritage significance on the identified project areas and assess their current preservation condition, significance and possible impact of the proposed action. This forms part of legislative requirements as appears in section 38 of the National Heritage Resources Act (Act 25 of 1999). This report can be submitted in support of the National Environmental Management Act (Act 25 of 1998).

The survey was conducted on foot and with the aid of a motor vehicle in an effort to locate archaeological remains and historic sites, structures and features. Archival information including scrutiny of previous heritage surveys of the area formed the baseline information against which the survey was conducted. No sites or features of heritage significance was recorded or located within the project areas during the physical survey.

A total of six survey orientation locations were documented, sites SO 1-6 which includes a GPS location and photographs of the landscape at that particular location.

In terms of section 34 of the National Heritage Resources Act (NHRA, 25 of 1999), no significant buildings or structures were located.

In terms of section 35 of the NHRA, no significant archaeological sites or features were located.

In terms of section 36 of the NHRA, no graves or gravesites and burial grounds were located.

It is not within the expertise of this report or the surveyor to comment on possible palaeontological remains which may be located in the study area.

Disclaimer: *Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Kudzala Antiquity CC will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The technology described in any report; and
- Recommendations delivered to the client.

Introduction

1.1. Terms of reference

Kudzala Antiquity CC was commissioned to conduct an archaeological and heritage resources survey in respect of the proposed construction of new accommodation facilities as well as upgrading of five existing watercourse crossings over the Timbavati River. These will be located close to the existing Siviti Lodge on two project areas with a combined size of 17 hectares on Portions 216 and 217 of the farm Guernsey 81 KU located within the Thornybush Game Reserve in Mpumalanga Province. The survey was conducted in order to assess the potential impact that the proposed activity may have on archaeological and heritage resources. The survey was conducted for Eco 8 Environmental Planners.

1.1.1 Project overview

The client is in the process of obtaining environmental authorization to construct additional accommodation and related facilities near as an extension of the existing Siviti Lodge in Thornybush Game Reserve. Suitable areas within this identified area are earmarked for this activity pending environmental authorization.

1.1.2. Constraints and limitations

The archaeological survey consisted of non-intrusive methods which exclusively rely on surface observations. Most of the project footprint area was relatively easy of access but certain areas were difficult to access due to dense vegetation growth which resulted in archaeological visibility being low.

1.2. Legislative Framework

The National Heritage Resources Act (NHRA) (Act No. 25, 1999) and the National Environmental Management Act (NEMA) (Act 25 of 1998) require that individuals or institutions have specialist heritage impact assessment studies undertaken whenever development activities are planned and such activities trigger activities listed in the legislation. This report is the result of an archaeological and heritage study in accordance with the requirements as set out in Section 38 (3) of the NHRA in an effort to ensure that heritage features or sites that qualify as part of the national estate are properly managed and not damaged or destroyed.

The study aims to address the following objectives:

- Analysis of heritage issues;
- Assess the cultural significance of identified places including archaeological sites and features, buildings and structures, graves and burial grounds within a specific historic context;
- Identifying the need for more research;
- Surveying and mapping of identified places including archaeological sites and features, buildings and structures, graves and burial grounds;
- A preliminary assessment of the feasibility of the proposed development or construction from a heritage perspective;
- Identifying the need for alternatives when necessary; and
- Recommending mitigation measures to address any negative impacts on archaeological and heritage resources.

Heritage resources considered to be part of the national estate include those that are of archaeological, cultural or historical significance or have other special value to the present community or future generations.

The national estate may include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and paleontological sites;
- 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 other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to slavery in South Africa;
- movable objects including:
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological 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 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Cultural resources are unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities (Van Vollenhoven 1995:3). These would be any man-made structure, tool, object of art or waste that was left behind on or beneath the soil surface by historic or pre-historic communities. These remains, when studied in their original context by archaeologists, are interpreted in an attempt to understand, identify and reconstruct the activities and lifestyles of past communities. When these items are removed from their original context, any meaningful information they possess is lost, therefore it is important to locate and identify such remains before construction or development activities commence.

1.2.1. Heritage in Protected areas

In February 2016 Government Gazette no. 40593 the Department of Environmental Affairs published Cultural Heritage Survey Guidelines and Assessment tools for protected areas in South Africa, under the National Environmental Management: Protected Areas Act, 2003 (Act 57, 2003).

In protected areas a basic inventory of the property facilitates confirmation of national heritage resources; conducting of heritage audits; site condition monitoring; prioritising sites by ranking their significance; evaluation of a protected area's heritage; assistance in planning for heritage resources and allocating resources.

The properties (Portions 216 and 217 of the farm Guernsey 81-KU are incorporated within the Thornybush Private Nature Reserve's management area, however the properties are not proclaimed or located in a protected area as defined in terms of the National Environmental Management Protected Areas Act, 2003.

A concise history of the establishment and history of the Thornybush Reserve is discussed in section 4.1.6. of this report.

1.3. Approach and statutory requirements

The SAHRA Minimum standards of 2007 guideline documents, forms the background against which the survey was planned and the report compiled. An Archaeological Impact Assessment (AIA) consists of three phases. This document deals with the first phase. This (phase 1) investigation is aimed at getting an overview of cultural resources in the project area, assigning significance to these resources, assessing the possible impact that the proposed activity may have on these resources, making recommendations pertaining to the management of heritage resources and putting forward mitigation measures where applicable.

When the archaeologist or heritage specialist encounters a situation where the planned project will lead to the destruction or alteration of an archaeological/ heritage site or feature, a second phase investigation is normally recommended. During a phase two investigation mitigation measures are put in place and detailed investigation into the nature of the cultural material is undertaken. Often at this stage, archaeological excavation and detailed mapping of a site is carried out in order to document and preserve the cultural heritage.

Phase three consists of the compiling of a management plan for the safeguarding, conservation, interpretation and utilization of cultural resources (Van Vollenhoven, 2002).

Continuous communication between the developer and heritage specialist after the initial assessment has been carried out may result in the modification of a planned route or development to incorporate or protect existing archaeological and heritage sites.

2. Description of surveyed area

The study area falls within the Thorny Bush Private Nature Reserve, Mpumalanga Province. The survey was carried out on a project footprint consisting of approximately 17 hectares of Granite Lowveld vegetation.

Landscape: Natural and wetland vegetation previously Granite Lowveld vegetation and soils.

Visibility: Good-Poor in certain areas due to dense vegetation cover.

Veld type: The vegetation is classed as Granite Lowveld comprising tall shrubland with few trees to moderately dense woodland on the deep sandy uplands with *Terminalia sericea*, *Combretum*

zeyheri and *C. Tricholaena Eragrostis rigidior*. Dense thicket to open savanna in the bottomlands. The dense herbacious layer contains the dominant *Digitaria eriantha*, *Panicum maximum* and *Astrida congesta* on fine-textured soils. The brackish bottomlands support *Sporobolus nitens*, *Urochloa mosambicensis* and *Chloris virgata* (Mucina and Rutherford, 2009).

Geology and soils: Swazian Goudplaats Gneiss, Makhutswi Gneiss and Nelspruit Suite occur from north to south. Further south, the younger Mpuluzi Granite form the major base geology of the area. Archaean gneiss and granite weather into sandy soils in the uplands and clayey soils with high sodium content in the lowlands (Mucina and Rutherford, 2009).

3. Methodology

This study consists of a detailed archival study in order to understand the study area in a historical timeframe, an archaeological background study which include scrutiny of previous archaeological reports of the area, obtained through the SAHRIS database, and published as well as unpublished written sources on the archaeology of the area, social consultation with people who live nearby and a lastly a physical survey of the affected and immediate area.

The South African Heritage Resources Agency (SAHRA) and the relevant legislation (NHRA) require that the following components be included in an archaeological impact assessment:

- Archaeology;
- Shipwrecks;
- Battlefields;
- Graves;
- Structures older than 60 years;
- Living heritage;
- Historical settlements;
- Landscapes;
- Geological sites; and
- Paleontological sites and objects.

All the above-mentioned heritage components are addressed in this report, except shipwrecks, geological sites and paleontological sites and objects.

The **purpose** of the archaeological, archival and heritage study is to establish the whereabouts and nature of cultural heritage sites should they occur on project area. This includes settlements, structures and artefacts which have value for an individual or group of people in terms of historical, archaeological, architectural and human (cultural) development.

The **aim** of this study is to locate and identify such objects or places in order to assess and rate their significance and establish if further investigation is needed. Mitigation measures can then be suggested and put in place when necessary.

3.1. Archaeological and Archival background studies

The purpose of the desktop study is to compile as much information as possible on the heritage resources of the area. This helps to provide an historical context for located sites. Sources used for this study include published and unpublished documents, archival material and maps. Information obtained from the following institutions or individuals were consulted:

- Published and unpublished archaeological reports and articles;
- Published and unpublished historical reports and articles;
- Archival documents from the National Archives in Pretoria;
- Historical maps; and
- South African Heritage Resource Information System (SAHRIS) database.

3.1.1. Previous archaeological studies in the area

Some archaeological impact assessments (AIA's) and heritage impact assessments have been done in the vicinity of the proposed development area.

In 2002 Mr FP Coetzee conducted an Archaeological Investigation on Antwerpen Game Farm in the Hoedspruit District. He noted that some Middle Stone Age and early Iron Age remains in the form of stone tool flakes and pottery shards were found in an erosion donga to the West of the farm.

In 2003 Mr F Roodt compiled a report in respect of a lodge development on the farm Avoca 88 for R&R Cultural Resources Consultants. He found some pottery fragments which were eroded from a nearby anthill. He did not ascribe any significance to the fragments.

In 2005 Dr Udo Kúsel conducted a "*Cultural Heritage Resources Impact Assessment of a Portion of Kapama Hoedspruit (Guernsey 81 KU Portions 6, 34, 98, 109, 56, 204 and 210)*". He stated that "except for a few isolated Stone Age flakes no important cultural heritage resources could be found".

3.1.2. Historic maps

Historical maps were scrutinized and features that were regarded as important in terms of heritage value were identified and if they were located within the boundaries of the project area they were physically visited in an effort to determine:

- (i) whether they still exist;
- (ii) their current condition; and
- (iii) Significance.

3.1.3. Physical survey

- The survey of the proposed project area was conducted on 27 April 2022
- The survey took one day to complete.
- The documented sites were numbered sequentially.
- Sites were recorded by using a handheld Garmin Oregon 450 GPS unit and the unit was given time to reach an accuracy of at least 5 metres.
- Sites were plotted on 1:50 000 topographical maps which are geo-referenced (WGS 84) and also on Google Earth.
- No sites of archaeological or heritage significance were located. A number of survey orientation locations were mapped for survey purposes.

3.2. Heritage site significance

The South African Heritage Resources Agency (SAHRA) formulated guidelines for the conservation of all cultural resources (sections 6 and 7 of the NHRA, 1999) and therefore also divided such sites into three main categories. These categories might be seen as guidelines that suggest the extent of protection a given site might receive. They include sites or features of local (Grade 3) provincial (Grade 2) national (Grade 1) significance, grades of *local significance* and *generally protected* sites with a variety of degrees of significance.

For practical purposes the surveyor uses his own classification for sites or features and divides them into three groups, those of low or no significance, those of medium significance and those of high significance (**Also see table 5.2. Significance rating guidelines for sites**).

Values used to assign significance and impact characteristics to a site include:

- **Types of significance**

The site's scientific, aesthetic and historic significance or a combination of these is established.

- **Degrees of significance**

The archaeological or historic site's rarity and representative value is considered. The condition of the site is also an important consideration.

- **Spheres of significance**

Sites are categorized as being significant in the international, national, provincial, regional or local context. Significance of a site for a specific community is also taken into consideration.

To arrive at the specific allocation of significance of a site or feature, the specialist considers the following:

- Historic context;
- Archaeological context or scientific value;
- Social value;
- Aesthetic value; and
- Research value.

More specific criteria used by the specialist in order to allocate value or significance to a site include:

- The unique nature of a site;
- The integrity of the archaeological deposit;
- The wider historic, archaeological and geographic context of the site;
- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined or is known);
- The preservation condition of the site;
- Quality of the archaeological or historic material of the site; and
- Quantity of sites and site features.

Archaeological and historic sites containing data, which may significantly enhance the knowledge that archaeologists currently have about our cultural heritage, should be considered highly valuable. In all instances these sites should be preserved and not damaged during construction activities. However, when development activities jeopardize the future of such a site, a second and third phase in the Cultural Resource Management (CRM) process is normally advised. This

entails the excavation or rescue excavation of cultural material, along with a management plan to be drafted for the preservation of the site or sites.

Graves are considered very sensitive sites and should never under any circumstances be jeopardized by development activities. Graves and burial grounds are incorporated in the NHRA under section 36 and in all instances where graves are found by the surveyor, the recommendation would be to steer clear of these areas. If this is not possible or if construction activities have for some reason damaged graves, specialized consultants are normally contacted to aid in the process of exhumation and re-interment of the human remains.

4. History and Archaeology

4.1. Historic period

4.1.1. Early History

In Southern Africa the domestication of the environment began only a couple of thousands of years ago, when agriculture and herding were introduced. At some time during the last half of the first millennium BC, people living in the region where Botswana, Zambia and Angola are today, started moving southward, until they reached the Highveld and the Cape in the area of modern South Africa. As time passed and the sub-continent became fully settled, these agro-pastoralists, who spoke Bantu languages, started dominating all those areas which were ecologically suitable for their way of life. This included roughly the eastern half of modern South Africa, the eastern fringe of Botswana and the north of Namibia. Historians agree that the earliest Africans to inhabit the Lowveld in Mpumalanga were of Nguni origin.

Up until the 1930s, malaria would have occurred sporadically in the study area during the rainy season. During the first half of the nineteenth century, Tsetse flies also thrived in this area. Pastoralists would have avoided the moist low-lying valleys and thickly wooded regions where these insects preferred to congregate. It is unlikely that populations would be dense in areas where malaria and the “sleeping sickness” transferred by Tsetse flies was a constant threat to humans and their stock (Bergh 1999: 3; Shillington 1995: 32).

In a few decades, the course of history in the old Transvaal province would change forever. The Difaqane (Sotho), or Mfekane (“the crushing” in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820s until the late 1830s. It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka’s Zulus to attack other tribes.

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa – some as early as the 1720’s. One such an adventurer was Robert Schoon, who formed part of a group of Scottish travellers and traders who had travelled the northern provinces of South Africa in the late 1820s and early 1830s. Schoon had gone on two long expeditions in the late 1820’s and once again ventured eastward and northward of Pretoria in 1836 (Bergh, 1999: 13, 116-121).

By the late 1820s, a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the

Great Trek. This migration resulted in a massive increase in the numbers of people of European descent.

The discovery of gold in South Africa had a major impact in the region. In 1873 gold was discovered in Pilgrims Rest, 80 kilometres north of Nelspruit. This drew scores of prospectors into the region. The establishment of Barberton in 1884, after the discovery of the Sheba gold reef, also brought about greater activity in the area. The Nelspruit settlement first received official recognition in August 1884 (South African History Online, 2013).

4.1.2. European settlement

The Groot Trek of the Voortrekkers started with the Tregardt- van Rensburg trek in 1835. The two men met where Tregardt and his followers crossed the Orange River at Buffelsvlei (Aliwal North). Here van Rensburg joined the trek northwards. On August 23, 1837 the Tregardt trek left for Delagoabay from the Soutpansberg. They travelled eastwards alongside the Olifants River to the eastern foothills of the Drakensberg. From here they travelled through the Lowveld and the current Kruger National Park where they eventually crossed the Lebombo Mountains in March 1838. They reached the Fortification at Lourenço Marques on 13 April 1838 (Bergh, 1998:124-125).

Permanent European (Voortrekker) settlement of the eastern areas of Mpumalanga can be traced back to a commission under the leadership of A.H. (Hendrik) Potgieter who negotiated with the Portuguese Governor at Delagoabaai in 1844 for land. It was agreed that these settlers could settle in an area that was four days journey from the east coast of Africa between the 10° and 26° south latitudes. Voortrekkers started migrating into the area in 1845. Andries-Ohrigstad was the first town established in this area in July 1845 after the Voortrekkers successfully negotiated for land with the Pedi Chief Sekwati. Farms were given out as far west as the Olifants River. The western boundary was not officially defined but at a Volksraad meeting in 1849 it was decided that the Elands River would be the boundary between the districts of Potchefstroom and Lydenburg as this eastern portion of the Transvaal was then known (Bergh, 1998).

Due to internal strife and differences between the various Voortrekker groups that settled in the broader Transvaal region, the settlers in the Ohrigstad area now governed from the town of Lydenburg decided to secede from the Transvaal Republic in 1856. The Republic of Lydenburg laid claim to a large area that included not only the land originally obtained from the Pedi Chief Sekwati in 1849 but also other areas of land negotiated for from the Swazis. The Republic of Lydenburg was a vast area and stretched from the northern Strydpoort Mountains to Wakkerstroom in the south and Bronkhortsspruit in the west to the Swazi border and the Lebombo mountains east.

In 1839 Mswati succeeded Sobhuza (also known as Somhlomo) as king of the Swazi. Threatened by the ambitions of his half-brothers, including Malambule, who had support from the Zulu king Mpande, he turned to the Ohrigstad Boers for protection. He claimed that the land that the Boers had settled on was Swazi property. The Commandant General of the Ohrigstad settlement, Andries Hendrik Potgieter, responded that the land was ceded to him by the Pedi leader Sekwati, in return for protection of the Pedi from Swazi attacks (Giliomee, 2003).

However, in reaction to the increasingly authoritarian way in which Potgieter conducted affairs at Ohrigstad, the Volksraad of Ohrigstad saw Mswati's offer as a means to obtain more respectable title deeds for the property (Bonner, 1978). According to a sales contract set up between the Afrikaners and the Swazi people on 25 July 1846, the whites were the rightful owners of the land that had its southern border at the Crocodile River, which stretched out in a westerly direction up to Elandspruit; of which the eastern border was where the Crocodile and Komati rivers joined and then extended up to Delagoa bay in the north (Van Rooyen, 1951). The Europeans bought the land for a 100 heads of cattle (Huyser).

4.1.3. History of the Anglo Boer War (1899-1902) in the area

The discovery of diamonds and gold in the Northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intentions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa's history.

Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicised, and as a consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims (Du Preez, 1977).

During the British advance between February to September 1900, Lord Roberts replaced Genl. Buller as the supreme commander and applied a different tactic in confronting the Boer forces instead of a frontal attack approach he opted to encircle the enemy. This proved successful and resulted for instance in the surrender of Genl. Piet Cronje and 4000 burghers at Paardeberg on 27 February 1900.

This was the start of a number of victories for the British and shortly after they occupied Pretoria on 5 June 1900, a skirmish at Diamond Hill resulted in the Boer forces under command of Louis Botha, retreated alongside the Delagoa Bay railway to the east. Between the 21-27 August, Botha and 5000 burghers defended their line at Bergendal (Dalmanutha) but were overwhelmed by superior numbers and artillery. This resulted in the Boer forces retreating even further east from Hectorspruit in a north-western direction towards Pilgrim's Rest and further north to Pietersburg (Bergh, 1999:51). No further skirmishes took place along this route or near the study area. Three weeks later the British reached Komatipoort and thus the whole of the Eastern Transvaal south of the Delagoa Bay railway line was now occupied by British Forces.

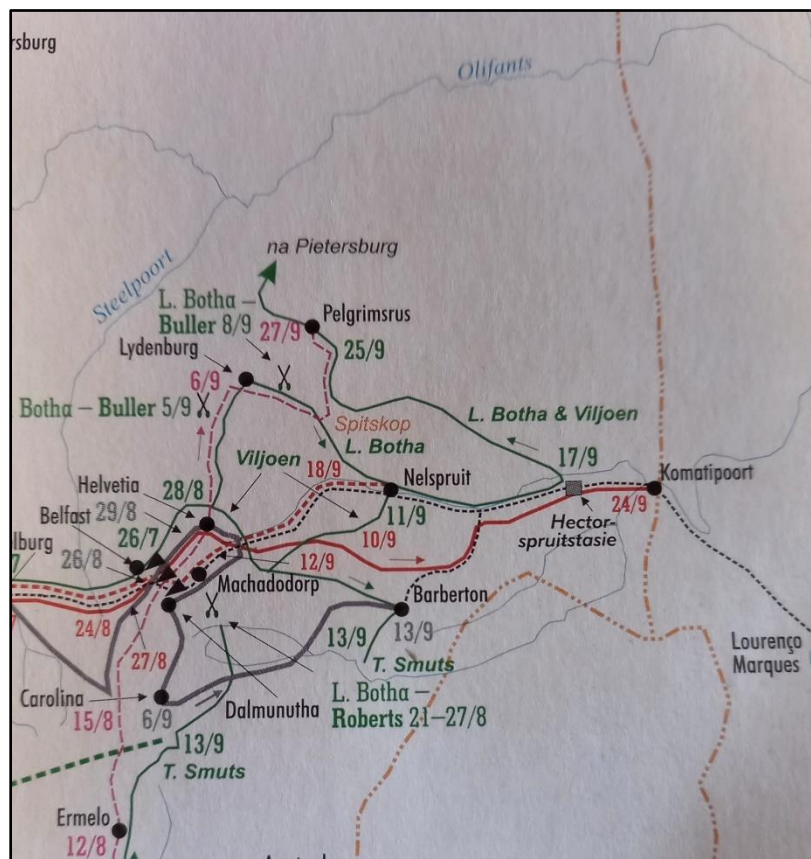


Figure 4.1. The British advance February-September 1900. Genl. Louis Botha's retrieval route towards the east and north-west. No skirmishes took place along this route or near the study area (Bergh, 1999:51).

4.1.4. Railway history in the Eastern Lowveld

By June 1892, the new railway constructed from Lourenco Marques to Pretoria, reached Nelspruit. In November 1891 the Hall family opened a new hotel, mainly to accommodate railway construction workers. This hotel was moved to the centre of the town in June 1892 and was named the Fig Tree Hotel.

Railway expansion continued up until the Anglo-Boer War (1899-1902) and thereafter (Bergh, 1999). After the establishment of the Union of South Africa on 31 May 1910 the Transvaal had the most railway track in terms of distance. Some 2 730km of railway connected the economic centres of this province. Railways made a huge contribution towards economic development especially in the Witwatersrand area where it served as important platform for mining and industrial development (Bergh, 1999).

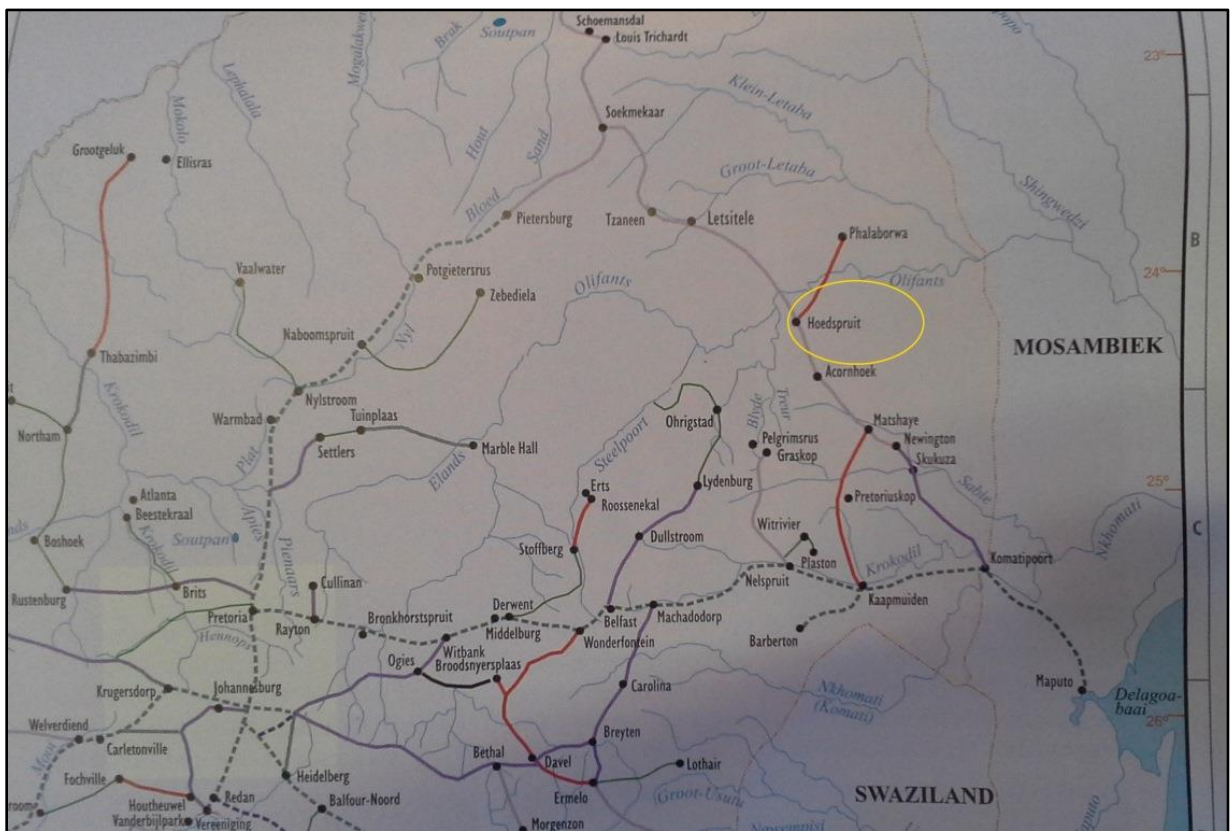


Figure 4.2. Railway development in the Transvaal, 1889-1980 (Bergh, 1999: 79)

The decade after establishment of the Union is characterised by a sharp increase in railway development, especially between 1911 – 1916, after which a period of inactivity followed due to the First World War (Bergh, 1999). Most of the development took place in the Eastern Transvaal and five railway lines were constructed in order to promote the growing agricultural industry.

Ermelo was linked with Piet Retief and further to the south with Comondale and Vryheid in Natal (Fig. 4.1.). The Komatipoort – Newington line was extended and passed over Acornhoek, Hoedspruit, Letsitele, Tzaneen and Soekmekaar where it connects with the northern line from Pietersburg towards Louis Trichardt and Schoemansdal (Bergh, 1999).

4.1.5. Historic maps of the study area

Since the mid-1800s up until the present, South Africa has been divided and re-divided into various districts. Since 1845, the property under investigation formed part of the Lydenburg district. By 1902 it formed part of the Ohrigstad ward of the Lydenburg district. In 1924 the Pilgrimsrest district was proclaimed, and the property fell under its jurisdiction. As of 1990 the study area formed part of the Phalaborwa magisterial district, and this was still the case by 1994 (Bergh, 1999: 17, 20-27).

Before 1950 the property under investigation was known as Guernsey 239 and after the incorporation of several farms into a single larger farm in 1942, it became part of Guernsey 81 KU.

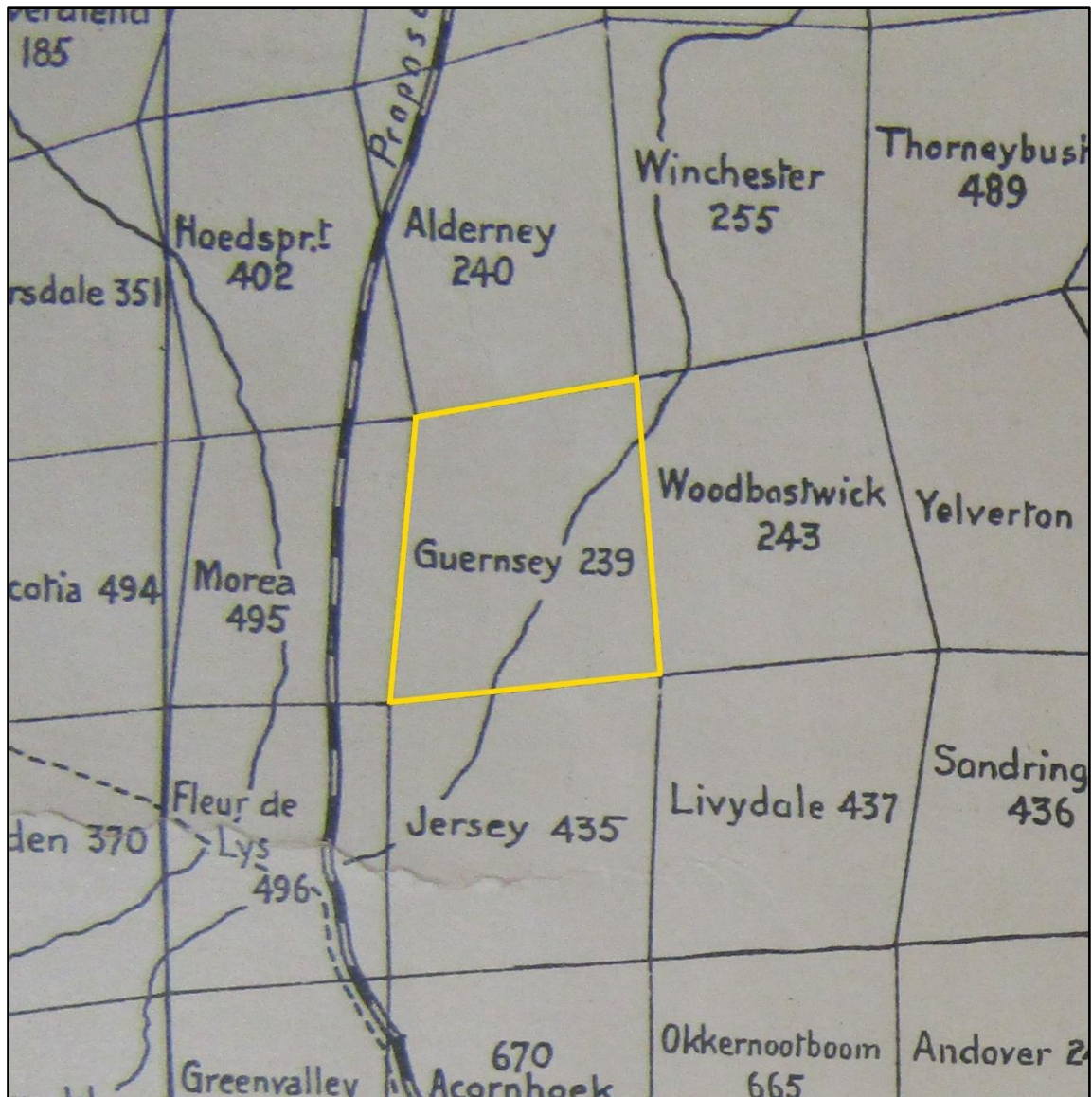


Figure 4.3. An early 1900s map of the magisterial district of Lydenburg. At the time, the farm was known as Guernsey 239. The proposed Selati Railway can be seen to the west of the farm and the Klaserie River flows through the property (NARSSA Maps: 2/226).

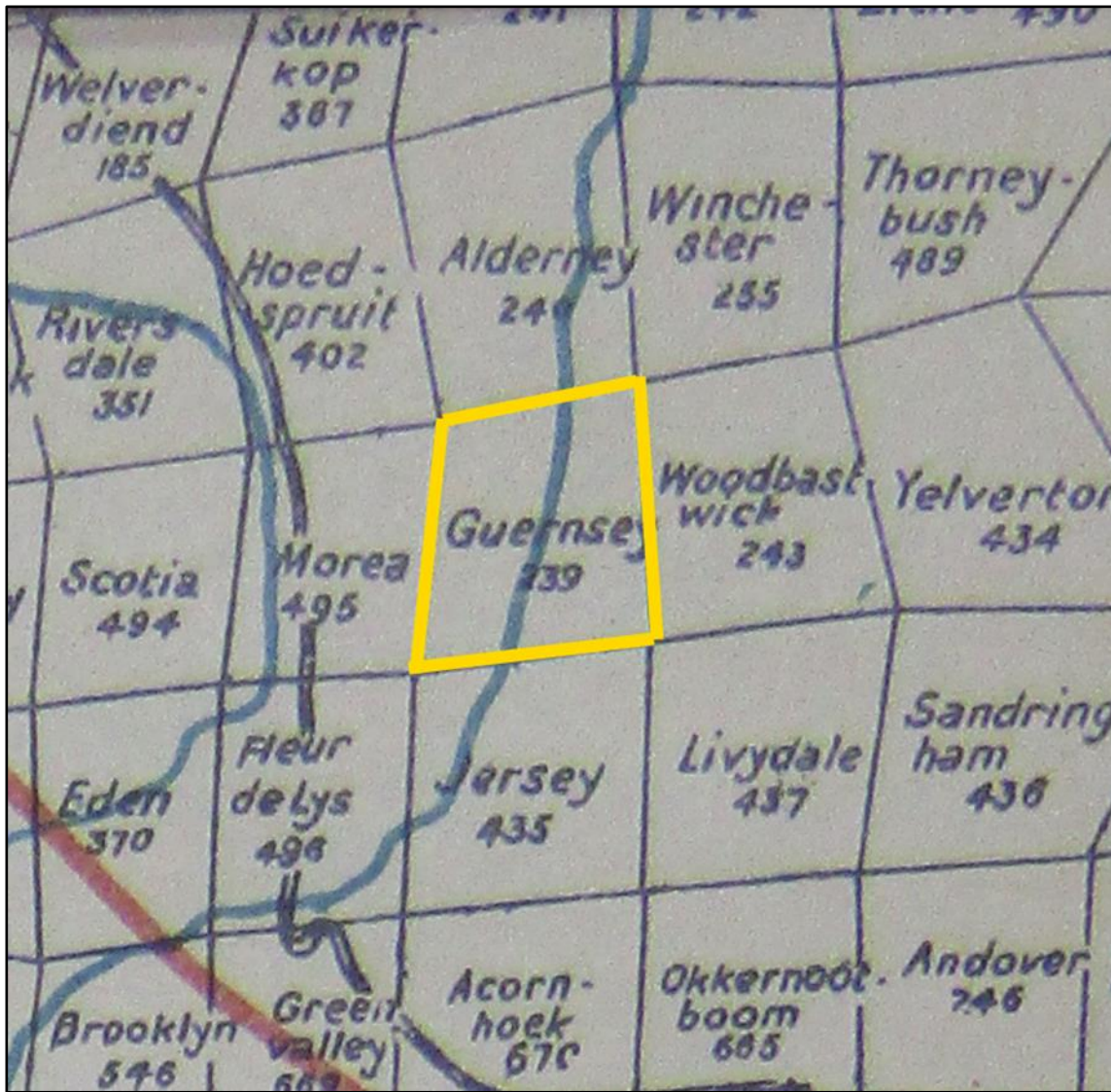


Figure 4.4. A Map of the Transvaal during the 1920's. At the time, the farm was known as Guernsey 239 (Anon, 1920s).

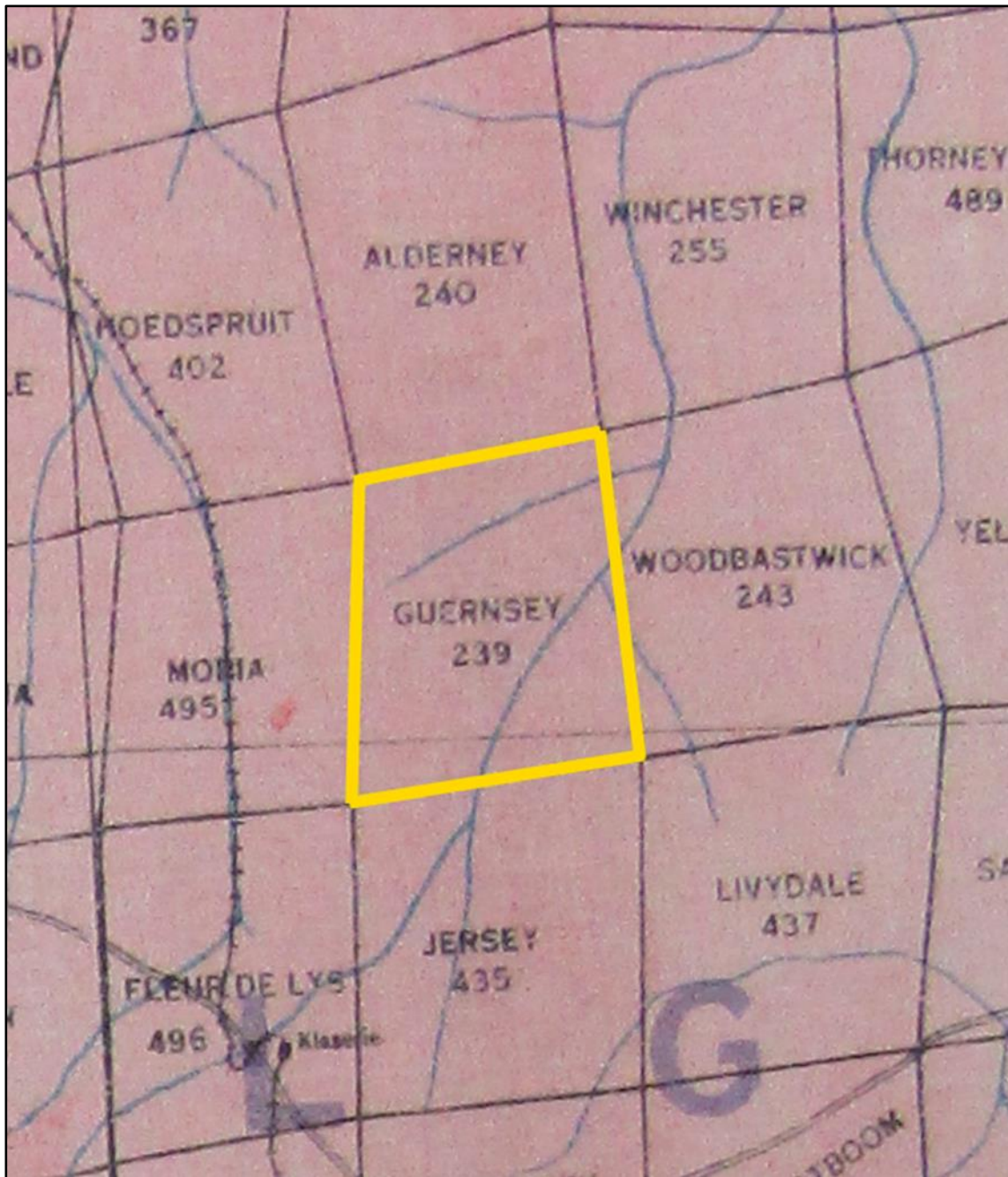


Figure 4.5. A Map of the Kruger National Park, dating approximately to the 1930s. At the time, Guernsey 239 formed part of the Pilgrimsrest district (NARSSA Maps: 3/1254).

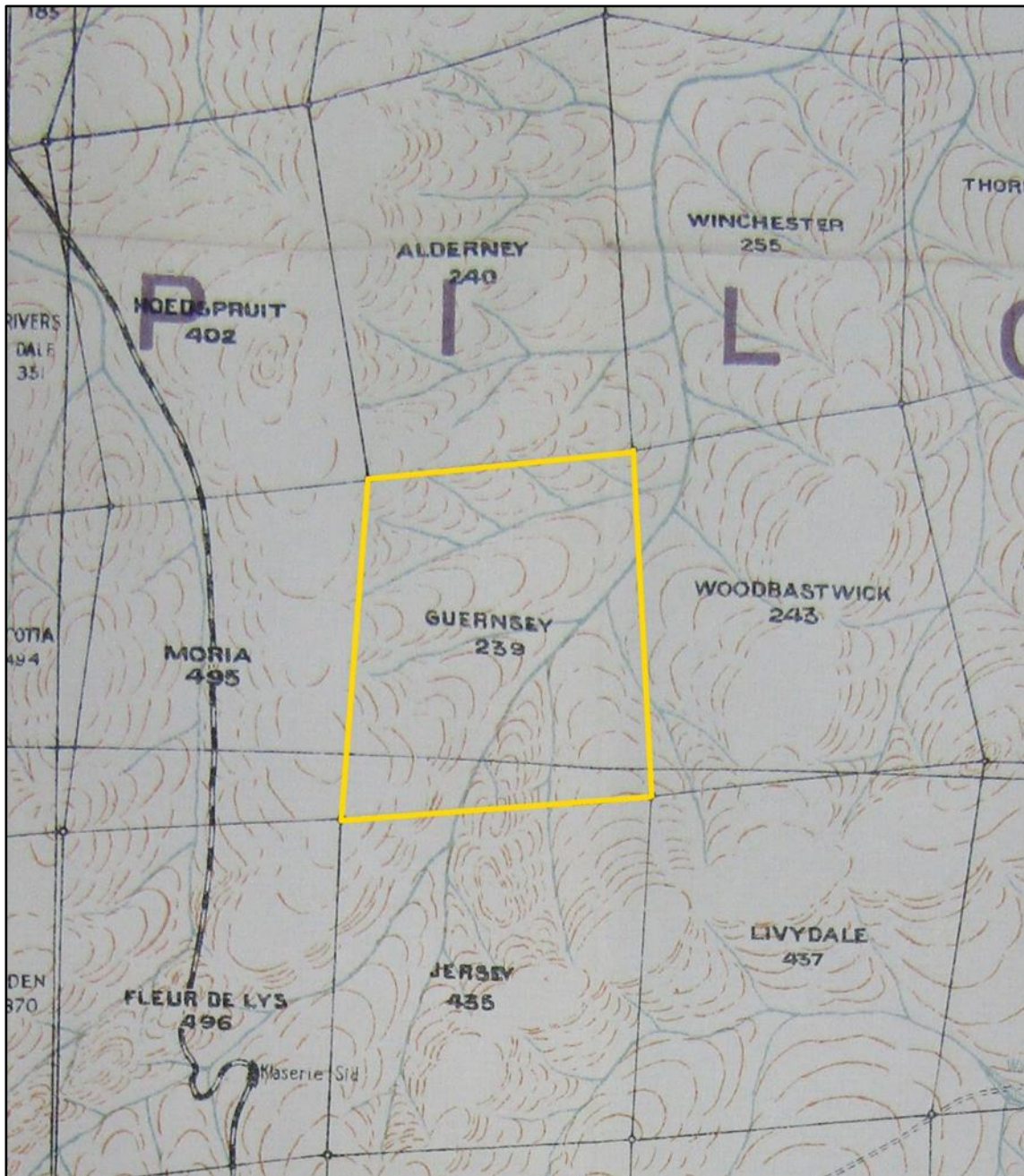


Figure 4.6. A 1930's Map of the Umbabat District. The farm Guernsey 239 is shown with a yellow border. No developments can be seen on the property (Office of the Surveyor-General, 1930).

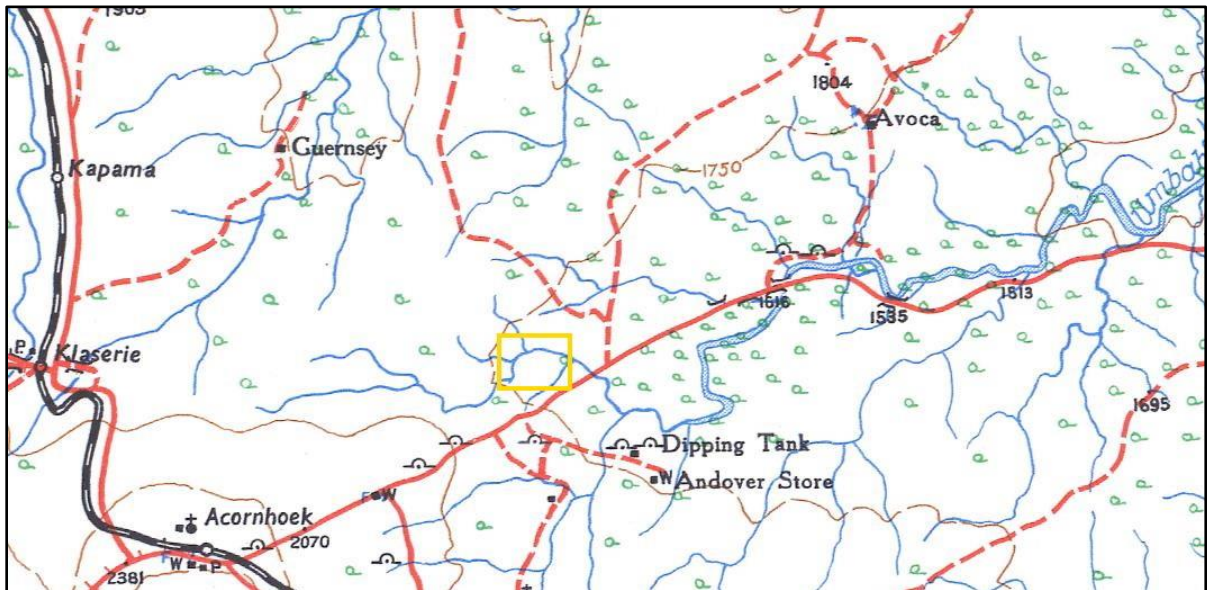


Figure 4.7. A Topographical map of the study area, dated 1942. The approximate location of the farm Guernsey 81 KU is indicated within a yellow border. A footpath leading to huts just north of the farm can be seen (Topographical Map, 1942).

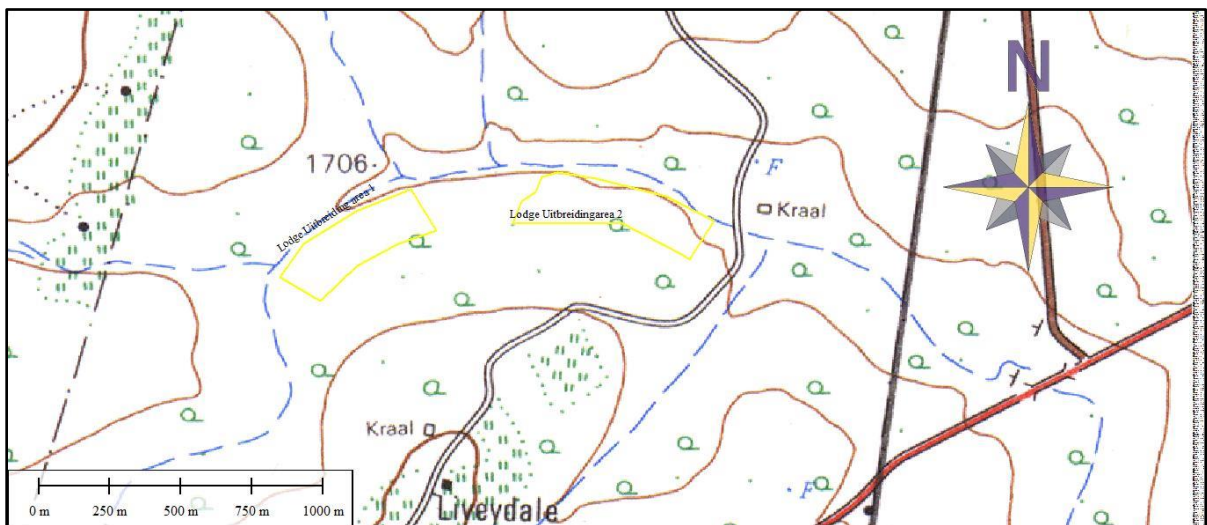


Figure 4.8. A Topographical map of the project area dated 1970. A yellow border shows the approximate location of the study areas. The study areas consists of natural bushveld and a stream is visible which meanders north of the study areas. A single building visible south of the study areas, a kraal east and a secondary road is visible east of the study area (Topographical Map, 2431 CA, 1970).

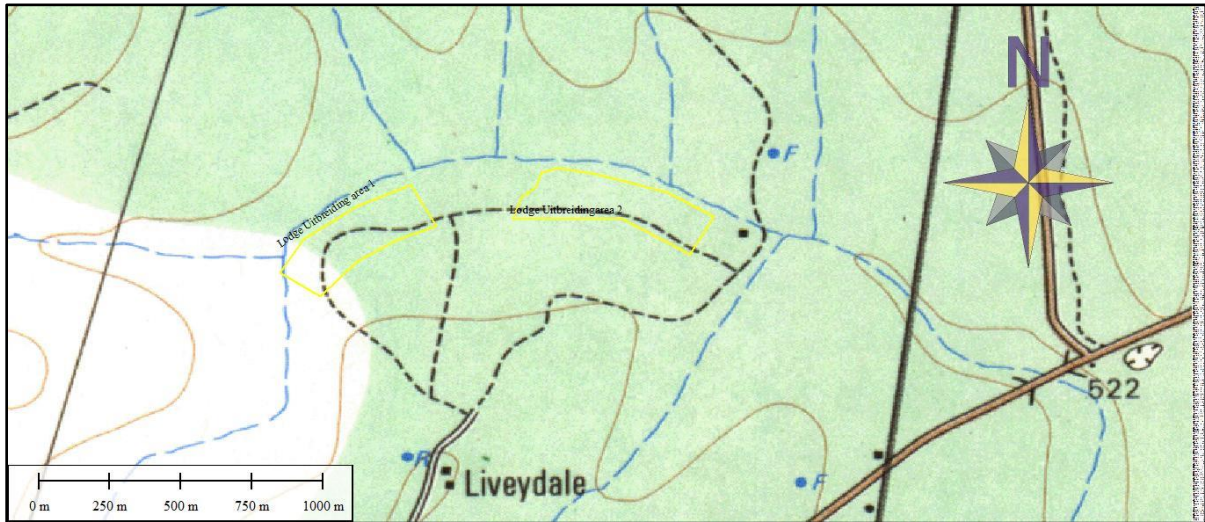


Figure 4.9. A Topographical map of the project area dated 1986. A yellow border shows the approximate location of the study areas. The stream is still visible to the north of the study area. Liveydale camp is indicated outside of and south of the study areas as well some secondary roads. A single building is shown outside of and east of the study areas (Topographical Map, 2431 CA, 1986).

4.1.6. Historical overview and development of the farm Guernsey 81 KU

Online sources and information found at the National Archives Repository of South Africa were used to compile a historic background for the property. Firstly, a record of historical landowners will be provided. Thereafter follows a discussion of how the study area and surrounds was historically used and developed.

Record of historical landowners

The farm Guernsey 239, ward Ohrigstad River, Lydenburg District, was first inspected on 24 July 1868 by P. D. de Villiers and measured an estimated 3000 morgen. On 3 August 1895, it was re-inspected by P. B. Swart, and measured 3700 morgen. On 16 July 1869, the title deed to the property was awarded to Gerhardus Petrus Jacobus Horn (NARSSA TAB, RAK: 2900).

The following details could be found regarding subsequent historical landowners of Guernsey 239:

Entry	Date of transfer	Portion	Transported from	Transported to	Sale Price
2	20/7/1869	Farm	G.P.J. Horn	Albert Broodrick	£5
3	20/7/1869	Farm	A. Broodrick	John Robert Lys	£5
4	30/11/1869	Farm	J.R. Lys	William Smerdon	£225
5	3/10/1889	Farm	W. Smerdon	Alvis Hugo Nellmapius	£4 000
6	9/12/1889	Farm	A.H. Nellmapius	The Transvaal Estates and	£191.9.9

				Development Company Ltd	
7	4/7/1929	Farm	Tvl. Est. & Dev. Coy. Ltd	African & European Investment Coy Ltd	See Trf.
8	21/12/1939	Farm	African & European Investment Coy Ltd	The Government	£40 377

(NARSSA TAB, RAK: 2900; NARSSA TAB, RAK: 2939)

On or about 1942, the farms Jersey 435, Alderney 240, Woodbastwick 243, Winchester 255, Liveydale 437 and Guernsey 239 were consolidated and became Guernsey 81 KU (NARSSA TAB, RAK: 2939). The following details could be found regarding historical landowners of Guernsey 81 KU:

Date of transfer	Portion	Transported from	Transported to	Sale Price
21/10/42	Farm	Cancel title	Government	
16/2/44	Portion 20 from Entry 1	Grant dd. 2/2/44	Josiah McDonald	£55.13.6
8/4/44	Portion 20 from entry 2	J. McDonald	Johannes Paulus Steyn	£2572.9.6
1955	Portion 10	Crown Grant	Bernardus Hermanus Wessels	£2655.0.0
1956	Portion 11	Crown Grant	Johannes Cornelus Cornelius	£2205.0.0
1956	Portion 15	Crown Grant	Clement Renier Lens	£2511.11.6
1956	Portion 5	Crown Grant	Arie Abraham Topham	£1967.0.0
1956	Portion 3	Crown Grant	Andries Johannes Joubert	£2270.17.11
1956	Portion 12	Crown Grant	William Frederick Owen	£2585.3.3
1957	Portion 1	Crown Grant	Norman William Wiggill	£2005.0.0
1957	Portion 7	Crown Grant	Valentine Francis Weber	£2440.0.0
1957	Portion 14	Crown Grant	Godfrey Topham	£2100.0.0
1957	Portion 9	Crown Grant	Colin Hollis Wiggill	£2610.0.0
1958	Portion 16	Crown Grant	Hendrik Tjaart van der Walt	£2430.0.0
1958	Portion 17	Crown Grant	Robert Cross	£2125.0.0
1958	Portion 18	Crown Grant	Nicholaas Jacobus Roberts	£2127.7.10
1959	Portion 6	Government	Nicolaas Johannes Grobler	£2496.10.11
1961	Portion 4	Government	Wynand Johannes Smal	R5294.22

(NARSSA TAB, RAK: 2939; NARSSA SAB, URU: 2139 3280; NARSSA SAB, URU:341 1869; NARSSA SAB, URU: 3506 519; NARSSA SAB, URU: 3507 562; NARSSA SAB, URU: 3546 1575; NARSSA SAB, URU: 3583 2442; NARSSA SAB, URU: 3587 2631; NARSSA SAB, URU: 3611 122; NARSSA SAB, URU: 3712 2197; NARSSA SAB, URU: 3729 2493; NARSSA SAB, URU: 3748 2907; NARSSA SAB, URU: 3767 290; NARSSA SAB, ; NARSSA SAB, URU: 3836 2218; NARSSA SAB, URU: 3844 2367; URU: 3919 1252; NARSSA SAB, URU: 4175 701).

Unfortunately, no ownership records could be found for the period from 1961 to 2015. The following information could be found regarding the current owners of the relevant portions of Guernsey 81 KU:

Registration date	Portion	Owner
3/3/2015	259	Pybus Seventy-Three Pty Ltd
23/12/2015	261	Platinum Inv LLC Class A
14/6/2019	262	Trireach Inv LLC
18/12/2017	270	Lions Lair Property Ventures Pty Ltd
18/12/2017	271	Resume SA Pty Ltd

(Windeed Search Engine, 2021).

History of land use

In 1922, Sakalela Zwane Tekwana made application to settle on the farm Guernsey 239, Lydenburg. In terms of the agreement, the applicant was to pay annual rent of £2.10.0 in respect of each wife, plus 3/- a head for large and 3d a head for small stock and the agreement was to commence from the date of approval of the application. The farm was situated in a non-Native area and at the time, was inhabited by 20 families (NARSSA SAB, NTS 7091 71/323).

Despite the application and that Tekwana appears to have taken up residency on Guernsey 239, formal approval was never obtained.

In 1924, Mr. J.E.D. Travers on behalf of the owner of Guernsey 239, The Transvaal Consolidated Land and Exploration Coy. Ltd., approached the Department of Native Affairs to legalize the domicile of Watch Ntsayantsaye and Cement Maningise (NARSSA SAB, NTS 7091 71/323).

The application was recommended by Native Affairs at Graskop, so that the 15 families resident on the farm to continue with the aforementioned lease (NARSSA SAB, NTS 7091 71/323). It was found that the head of the family, one Kazamula, was undoubtedly domiciled on Guernsey prior to the promulgation of The Natives Land Act 27 of 1913 (hereinafter "the Act") and that the application should therefore be governed by section 6(c) of the Act, which means, that they resided legally on the farm. In 1935, the lease was officially renewed (NARSSA SAB, NTS 7091 71/323).

On or about 1940, the Department of Lands concluded the purchase of the following farms from the African and European Investment Company Limited which were eventually consolidated as Guernsey 81 KU:

1. Woodbastwick 243, measuring 4682 morgen 132 square roods
2. Winchester 225, measuring 4834 morgen 161 square roods
3. Jersey 435, measuring 4485 morgen 300 square roods
4. Alderley 240, measuring 5004 morgen 402 square roods
5. Guernsey 239, measuring 4186 morgen 364 square roods
6. Livydale 437, measuring 4746 morgen 50 square roods.

NARSSA SAB, NTS 7144 867/323)

At the time, it was said that the farm Jersey was heavily populated and the Department took steps to remove the people who could not find employment with the European lessees of Guernsey 81 KU. However, the Department believed, that given the poor nature of the soil, that not many of the people would be absorbed by the European settlers on the farm (NARSSA SAB, NTS 7144 867/323).

On 26 April 1940, the Chief Native Commissioner, Northern Areas, reported to the Secretary for Native Affairs that the following Families were still present on the farms making up Guernsey 81 KU:

Farm	Taxpayers (Families)	Population	Cattle	Small Stock
Woodbastwick	Nil	Nil	Nil	Nil
Winchester	59	250	469	Nil
Jersey	208	1050	674	Nil
Alderney	Nil	Nil	Nil	Nil
Guernsey	57	290	210	Nil
Livydale	125	650	432	Nil
Totals	439	2240	1785	Nil

(NARSSA SAB, NTS 7144 867/323)

The people were requested to either settle as labour tenants among the European farmers on Guernsey 81 KU or as rent-payers within the released area. Those who could not find residences were to be settled on Trust farm Islington, some 10km to the southeast. Further, those who could not be accommodated on Islington were to be distributed to other Native Trust lands (NARSSA SAB, NTS 7144 867/323).

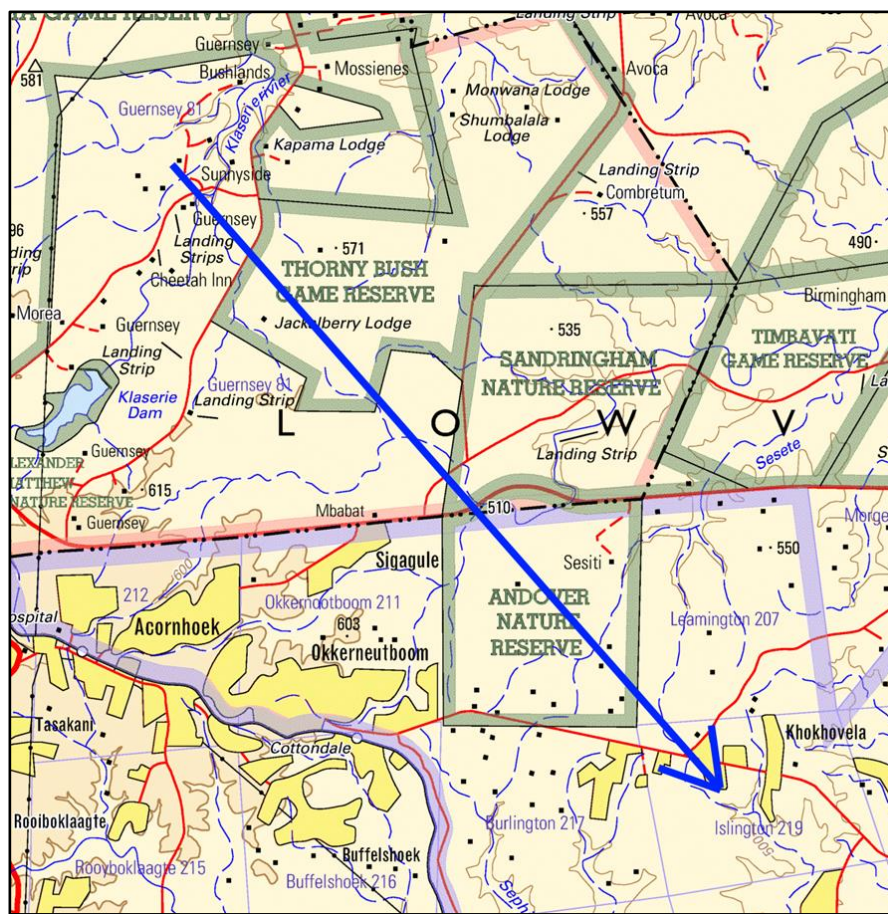


Figure 4.9. Topographical map of the study area dated 1998, showing the farm Guernsey 81 KU in relation to Islington 219. The Natives on Guernsey 81 KU were to be relocated to Native Trust land located on Islington 219 (Topographical Map, 1998).

By 29 July 1940, all people on the farms Jersey and Liveydale were removed and only a few who performed necessary labour on these farms were retained. It is likely that all nonessential people would similarly have been removed from the other farms, including Guernsey 239 (NARSSA SAB, NTS 7144 867/323).

However, in a report of the Inspector of Bantu-Labourers, Graskop, Guernsey Landgoed Edms. Bpk. reported that there were 20 Native labourers present on its premises located on Guernsey 239. Of these, 18 were men and 2 women and they lived dispersed on the farm in makeshift huts (NARSSA SAB, NTS 9957 941/408C (9)).

In about 1942, the farms Jersey 435, Alderney 240, Woodbastwick 243, Winchester 255, Livydale 437 and Guernsey 239 were consolidated and became Guernsey 81 KU (NARSSA TAB, RAK: 2939).

In 1954 the Transvaal Game Ordinance (No 23 of 1949) was amended, and people were allowed to form private reserves under certain conditions. The first reserve that was established was the Umbabat Private Nature Reserve, named after the Umbabat River. This reserve's name was changed in 1956 to Timbavati – the Xitsonga name for the river. In 1961 the Kruger National Park started to fence their western boundary, and the Timbavati Private Nature Reserve was also fenced (Klaserie Reserve, 2018).

Concise history of Thornybush Game Reserve

Thornybush Game Reserve is one of the original nature reserves in the Greater Kruger National Park. The first lodge opened for visitors in 1961. Since then 11 more lodges were added which today operates in both the Thornybush and Sabi Sand Private Nature Reserves.

Since its inception the reserve has been involved in a range of wildlife projects such as the first translocation of an entire elephant herd from Kruger, extensive studies of pangolins, one of the first leopard introductions onto a private reserve, and the first release of a black rhino onto a private nature reserve in the Lowveld.

The fences adjoining Kruger National Park was dropped in 2017, this allowed new herds of wildlife to roam freely across the entire reserve and the full potential of the Thornybush game reserve was realized.

Historic Highlights since the establishment of the reserve include:

1955 – Thornybush is fenced as one of the first private nature reserves in the Greater Kruger Park

1961 – The first game lodge open for tourists

1992 – Elephants are introduced into the reserve and N'kaya, Shumbalala, Serondella and Monwana open.

1993 –Thornybush is proclaimed a nature reserve in April of this year. Bush babies from Natal are released and studied in the reserve.

1994 – The successful reintroduction of cheetah.

1995 – Jackalberry Lodge opens.

1998 – An additional 821 hectares is added to the reserve when it acquires Thornybush Game Lodge.

2000 – Waterbuck Lodge opens.

2001 – Simbambili Lodge opens.

2007 – Originally known as Inzalo, it rebrands as Thornybush Collection and acquires Chapungu Tented Camp adding another 83 hectares to the reserve.

2009 – The River Lodge opens.

2010 – Thornybush becomes the first reserve in the Eastern Lowveld to treat rhino horn as a form of tackling rhino poaching.

2011 – Waterside Lodge opens.

2017 – Thornybush drops its fences and becomes part of the Greater Kruger Park.

2019 – Saseka opens and Thornybush Collection rebrands as Thornybush.

Since the fences have been dropped, animals that had not previously been spotted in some specific parts of the area were suddenly free to come and go as they wish. Hunting in the area became totally obsolete and with time the animals grew used to tourist-packed vehicles. Over the last few years this resulted in the reserve developing a reputation as one of the best where visitors would have an excellent opportunity to enjoy a large variety of animal and bird life (www.thornybush.com).

4.2. Archaeology

4.2.1. Stone Age

In Mpumalanga Province the Drakensberg separates the interior plateau also known as the Highveld from the low-lying subtropical Lowveld, which stretches to the Indian Ocean. A number of rivers amalgamate into two main river systems, the Olifants River and the Komati River. This fertile landscape has provided resources for humans and their predecessors for more than 1.7 million years (Esterhuizen & Smith in Delius, 2007).

The initial attraction of abundant foods in the form of animals and plants eventually also led to the discovery of and utilisation of various minerals including ochre, iron and copper. People also obtained foreign resources by means of trade from the coast. From 900 AD this included objects brought across the ocean from foreign shores.

The Early Stone Age (ESA)

In South Africa the ESA dates from about 2 million to 250 000 years ago, in other words from the early to middle Pleistocene. The archaeological record shows that as the early ancestors progressed physically, mentally and socially, bone and stone tools were developed. One of the most influential advances was their control of fire and diversifying their diet by exploitation of the natural environment (Esterhuizen & Smith in Delius, 2007).

The earliest tools date to around 2.5 million years ago from the site of Gona in Ethiopia. Stone tools from this site shows that early hominids had to cognitive ability to select raw material and shape it for a specific application. Many bones found in association with stone tools like these have cut marks which lead scientists to believe that early hominids purposefully chipped cobblestones to produce flakes with a sharp edge capable of cutting and butchering animal carcasses. This supplementary diet of higher protein quantities ensured that brain development of hominids took place more rapidly.

Mary Leaky discovered stone tools like these in the Olduvai Gorge in Tanzania during the 1960s. The stone tools are named after this gorge and are known as relics from the Oldowan industry. These tools, only found in Africa, are mainly simple flakes, which were struck from cobbles. This method of manufacture remained for about 1.5 million years. Although there is continuing debate about who made these tools, two hominids may have been responsible. The first of these was an early form of *Homo* and the second was *Paranthropus robustus*, which became extinct about 1 million years ago (Esterhuizen & Smith in Delius, 2007).

Approximately 1.7 million years ago, more specialised tools known as Acheulean tools, appeared. These are named after tools from a site in France by the name of Saint Acheul, where they were first

discovered in the 1800s. Most tools of these people have been washed into caves, eroded out of riverbanks and washed downriver. An example in Mpumalanga is Maleoskop on the farm Rietkloof where Early Stone Age (ESA) tools have been found.

Middle Stone Age (MSA)

A greater variety of tools with diverse sizes and shapes appeared by 250 000 before present (BP). These replaced the large hand axes and cleavers of the ESA. This technological advancement introduces the Middle Stone Age (MSA). This period is characterised by tools that are smaller in size but different in manufacturing technique (Esterhuizen & Smith in Delius, 2007).

In contrast to the ESA technology of removing flakes from a core, MSA tools were flakes to start with. They were of a predetermined size and shape and were made by preparing a core of suitable material and striking off the flake so that it was flaked according to a shape which the toolmaker desired. Elongated, parallel-sided blades, as well as triangular flakes are common finds in these assemblages. Mounting of stone tools onto wood or bone to produce spears, knives and axes became popular during the MSA. These early humans not only settled close to water sources but also occupied caves and shelters. The MSA represents the transition of more archaic physical type (*Homo*) to anatomically modern humans, *Homo sapiens*.

The MSA has not been extensively studied in Mpumalanga but evidence of this period has been excavated at Bushman Rock Shelter, a well-known site on the farm Klipfonteinhoek in the Ohrigstad district. This cave was excavated twice in the 1960s by Louw and later by Eloff. The MSA layers show that the cave was repeatedly visited over a long period. Lower layers have been dated to over 40 000 BP while the top layers date to approximately 27 000 BP (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Later Stone Age (LSA)

Early hunter gatherer societies were responsible for a number of technological innovations and social transformations during this period starting at around 20 000 years BP. Hunting of animals proved more successful with the innovation of the bow and link-shaft arrow. These arrows were made up of a bone tip which was poisoned and loosely linked to the main shaft of the arrow. Upon impact, the tip and shaft separated leaving the poisoned arrow-tip imbedded in the prey animal. Additional innovations include bored stones used as digging stick weights to uproot tubers and roots; small stone tools, mostly less than 25mm long, used for cutting of meat and scraping of hides; polished bone tools such as needles; twine made from plant fibres and leather; tortoiseshell bowls; ostrich eggshell beads; as well as other ornaments and artwork (Esterhuizen & Smith in Delius, 2007).

At Bushman Rock Shelter the MSA is also represented and starts at around 12 000 BP but only lasted for some 3 000 years. The LSA is of importance in geological terms as it marks the transition

from the Pleistocene to the Holocene, which was accompanied by a gradual shift from cooler to warmer temperatures. This change had its greatest influence on the higher-lying areas of South Africa. Both Bushman Rock Shelter and a nearby site, Heuningneskrans, have revealed a greater use in plant foods and fruit during this period (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Faunal evidence suggests that LSA hunter-gatherers trapped and hunted zebra, warthog and bovids of various sizes. They also diversified their protein diet by gathering tortoises and land snails (*Achatina*) in large quantities.

Ostrich eggshell beads were found in most of the levels at these two sites. It appears that there is a gap of approximately 4 000 years in the Mpumalanga LSA record between 9 000 BP and 5 000 BP. This may be a result of generally little Stone Age research being conducted in the province. It is, however, also a period known for rapid warming and major climate fluctuation, which may have led people to seek out protected environments in this area. The Mpumalanga Stone Age sequence is visible again during the mid-Holocene at the farm Honingklip near Badplaas in the Carolina district (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

At this location, two LSA sites were located on opposite sides of the Nhlazatshe River, about one kilometre west of its confluence with the Teespruit. These two sites are located on the foothills of the Drakensberg, where the climate is warmer than the Highveld but also cooler than the Lowveld (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Nearby the sites, dated to between 4 870 BP and 200 BP are four panels, which contain rock art. Colouring material is present in all the excavated layers of the site, which makes it difficult to determine whether the rock art was painted during the mid- or later Holocene. Stone walls at both sites date from the last 250 years of hunter gatherer occupation and they may have served as protection from predators and intruders (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

As discussed in section 3.1.1 some Middle Stone Age stone tools were found in an erosion donga on the Antwerpen Game farm in the Hoedspruit district. In addition to this some Stone Age flakes were located by Dr Kusel north of Klaserie. He did not identify the specific period but flakes may point to Middle or Later Stone Age origin. During the 1970's and 1980's PhD research conducted by Prof Andrie Meyer the University of Pretoria resulted in the discovery of Stone Age sites in the vicinity of Skukuza (SK4) and near Pretoriuskop (PR34) in the Kruger National Park (Meyer, 1986). The central Lowveld is under-researched and surveyed in terms of the occurrence of Stone Age remains. The use of this landscape by Stone Age people is however highly probable and therefore evidence of their presence in the form of stone tools is also probable.

4.2.2. Iron Age representation in the Eastern Mpumalanga Lowveld

The Iron Age in Southern Africa is divided into Early Iron Age (AD 200-1000), Middle Iron Age (AD 1000-1500) and Late Iron Age (AD 1500-1840's).

The period referred to as the Early Iron Age (AD 200-1500 approx.) started when presumably Karanga (north-east African) herder groups moved into the north eastern parts of South Africa. It is believed that these people may have been responsible for making of the famous Lydenburg Heads, ceramic masks dating to approximately 600AD.

Iron Age people are known for their manufacture and use of pottery vessels. These are functional but also has distinctive forms and profiles accompanied by artistic decoration motifs. These motifs and styles were transferred by female potters to their daughters and in that way cultural identity was transferred and left as markers in the archaeological record. Researchers use these characteristics of pottery remains to group people and trace their geographical movements through time and space.

Southern migration and settlement of Iron Age farmers basically occurred in a Western stream and Eastern stream (see fig. 1). Southern African ceramic units can be grouped into different clusters which we call Traditions. Based on Iron Age people's different language origins or groups there are two main Traditions who settled Southern Africa namely the Urewe and Kalundu Tradition. Each unit belongs to a time segment also known as a Phase and the unit by itself is referred to as a facies. Changes through time in these facies could lead to new Branches or Sub-branches (Huffman, 2007).

Usually a name ascribed to a certain facies includes the group of people who produced the pottery style for example the Msuluzi people produced the Msuluzi style. Names is also given to facies at the place where they were first discovered or excavated by archaeologists for example Happy Rest facies (500-600 AD) originally found at Happy Rest Nature Reserve near Makhado, Limpopo.

Huffman bases formal pottery analysis on a multi-dimensional approach. This takes into consideration the vessel profile, decoration motif and the design layout i.e. where the motifs are placed on the vessel. Depending on the complexity of decoration, there are up to five identified positions of decoration or motif on a vessel. Different facies are distinguished by their unique combination of these three elements (Huffman, 1980, 2007).

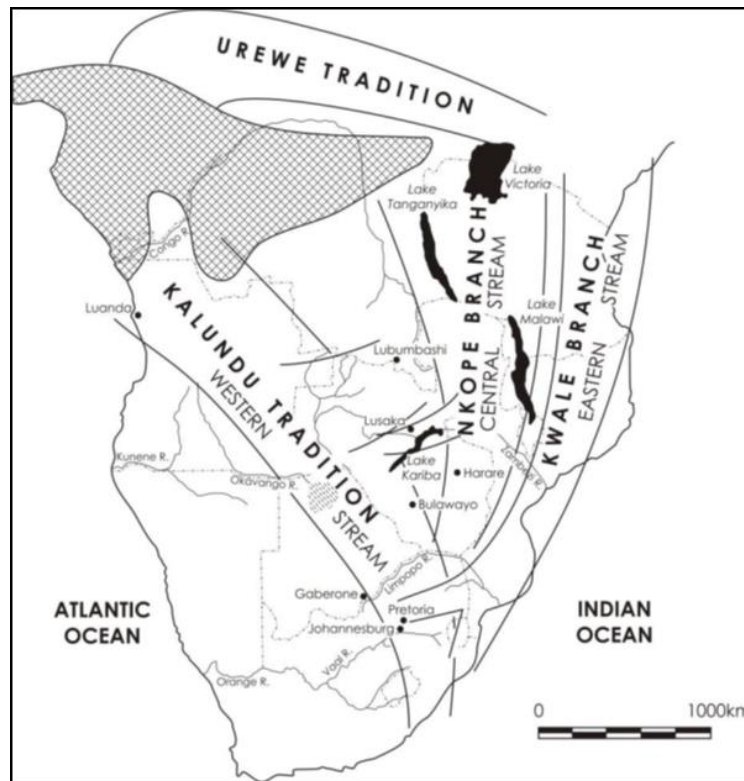


Figure 4.10. Early Iron Age movement towards South Africa in terms of the Kalundu Tradition (Western Stream) and Urewe Tradition (Eastern Stream). Included are the two branches of the Urewe Tradition, the Nkope and Kwale Branch. Taken from Huffman, 2007.

A summary of Iron Age pottery facies, their age, origin and distribution which can be expected in the Eastern and central Lowveld of Mpumalanga and Limpopo is listed in Table 4.1. This is an indication of expected Iron Age archaeological finds in the central Mpumalanga Lowveld and Limpopo.

The earliest work on Iron Age archaeology was conducted by Trevor and Hall in 1912. This revealed prehistoric copper-, gold- and iron mines. Schwelinus (1937) reported smelting furnaces, a salt factory and terraces near Phalaborwa. In the same year D.S. van der Merwe located ruins, graves, furnaces, terraces and soapstone objects in the Letaba area.

Mason (1964, 1965, 1967, 1968) started the first scientific excavation in the Lowveld, followed by N.J. van der Merwe and Scully. M. Klapwijk (1973, 1974) also excavated an EIA site at Silverleaves and Evers and van den Berg (1974) excavated at Harmony and Eiland, both EIA sites.

Recent archaeological research by G. Jordaan (Jordaan, 2016), based on previously located Iron Age settlement sites in the Kruger National Park (Meyer, 1986) nearby Skukuza and Tshokwane, resulted in a Masters Dissertation and positive identification of two Early Iron Age (AD 200-1000) in the KNP.

Table 4.1. Iron Age Pottery and distribution in Eastern Mpumalanga and Limpopo (Huffman, 2007).

Pottery facies	Date range	Tradition	Distribution
Silver Leaves	AD 280-450	Urewe – Western stream	Expected east and north of Mbombela and north of Phalaborwa with easternmost boundary Limpopo River
Mzonjani	AD 450-750	Urewe – Western stream	Expected east and north of Mbombela including the whole of the KNP through Phalaborwa to Musina including Polokwane.
Garonga	AD 750-900	Urewe - Western stream	Phalaborwa
Doornkop	AD 750-1000	Kalundu - Eastern stream	Lydenburg and north-west to Polokwane
Klingbiel	AD 1000-1200	Kalundu – Eastern stream	Lydenburg north-west to Polokwane and south-east to Mbombela
Kgopolwe facies	AD 1030-1350	Kalundu - Eastern stream	Phalaborwa
Maguga	AD 1200-1540	Kalundu – Eastern stream	Mbombela and east towards KNP and south-east including Eswatini
Marateng	AD 1650-1840	Urewe - Western stream	Lydenburg and north west to Polokwane

5. Site descriptions, locations and impact significance assessment

No sites or features of heritage significance was located or recorded during the physical survey.

A total of six survey orientation locations were documented, sites SO 1-6 which includes a GPS location and photographs of the landscape at that particular location.

The survey orientation sites are tabled in Appendix B and their photos in Appendix D. A map of their location is also provided in Appendix C.

Tables indicate the **site significance rating scales and status** in terms of possible impacts of the proposed actions on any located or identified heritage sites (**Table 5.5 & 5.6**).

Table 5.1. Summary of located sites and their heritage significance

Type of site	Identified sites	Significance
Graves and graveyards	None	N/A
Late Iron Age	None	N/A
Early Iron Age	None	N/A
Historical buildings or structures	None	N/A
Historical features and ruins	None	N/A
Stone Age sites	None	N/A

Table 5.2. Significance rating guidelines for sites

Field Rating	Grade	Significance	Recommended Mitigation
National Significance (NS)	Grade 1	High Significance	Conservation, nomination as national site
Provincial Significance (PS)	Grade 2	High Significance	Conservation; Provincial site nomination
Local significance (LS 3A)	Grade 3A	High Significance	Conservation, No mitigation advised
Local Significance (LS 3B)	Grade 3B	High Significance	Mitigation but at least part of site should be retained
Generally Protected A (GPA)	GPA	High/ Medium Significance	Mitigation before destruction
Generally Protected B (GPB)	GPB	Medium Significance	Recording before destruction
Generally Protected C (GPC)	GPC	Low Significance	Destruction

5.1. Description of located sites

Survey orientations:

5.1.1. Site SO 1.

Location: See Appendix B and D (fig. 1)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north

5.1.2. Site SO 2.

Location: See Appendix B and D (fig. 2)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view south-west

5.1.3. Site SO 3.

Location: See Appendix B and D (fig. 3)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view south-east

5.1.4. Site SO 4.

Location: See Appendix B and D (fig. 4)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north-west

5.1.5. Site SO 5.

Location: See Appendix B and D (fig. 5)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view south-east

5.1.6. Site SO 6.

Location: See Appendix B and D (fig. 6)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view south-east

TABLE 5.3. General description of located sites and field rating.

Site No.	Description	Type of significance	Degree of significance	NHRA heritage resource & rating
SO1	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO2	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO3	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO4	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO5	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO6	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None

TABLE 5.4. Site condition assessment and management recommendations.

Site no.	Type of Heritage resource	Integrity of cultural material	Preservation condition of site	Relative location	Quality of archaeological/historic material	Quantity of site features	Recommended conservation management
SO 1	N/A	N/A	N/A	Portions 216 & 217 of Guernsey 81 KU, Thornybush	Archaeology: N/A Historically: N/A	-	N/A
SO 2	N/A	N/A	N/A	Portions 216 & 217 of Guernsey 81 KU, Thornybush	Archaeology: N/A Historically: N/A	-	N/A
SO 3	N/A	N/A	N/A	Portions 216 & 217 of Guernsey 81 KU, Thornybush	Archaeology: N/A Historically: N/A	-	N/A
SO 4	N/A	N/A	N/A	Portions 216 & 217 of Guernsey 81 KU, Thornybush	Archaeology: N/A Historically: N/A	-	N/A
SO 5	N/A	N/A	N/A	Portions 216 & 217 of Guernsey 81 KU, Thornybush	Archaeology: N/A Historically: N/A	-	N/A
SO 6	N/A	N/A	N/A	Portions 216 & 217 of Guernsey 81 KU, Thornybush	Archaeology: N/A Historically: N/A	-	N/A

TABLE 5.5. Significance Rating Scales of Impact

Site No.	Nature of impact	Type of site	Extent	Duration	Intensity	Probability	Score total
SO 1	Accommodation construction	N/A	N/A	Short term	Low (1)	Improbable (1)	2
SO 2	Accommodation construction	N/A	N/A	Short term	Low (1)	Improbable (1)	2
SO 3	Accommodation construction	N/A	N/A	Short term	Low (1)	Improbable (1)	2
SO 4	Accommodation construction	N/A	N/A	Short term	Low (1)	Improbable (1)	2
SO 5	Accommodation construction	N/A	N/A	Short term	Low (1)	Improbable (1)	2
SO 6	Accommodation construction	N/A	N/A	Short term	Low (1)	Improbable (1)	2

***Notes:** Short term ≥ 5 years, Medium term 5-15 years, Long term 15-30 years, Permanent 30+ years

Intensity: Very High (4), High (3), Moderate (2), Low (1)

Probability: Improbable (1), Possible (2), Highly probable (3), Definite (4)

TABLE 5.6. Site current status and future impact scores

Site No.	Current Status	Low impact (0-2 points)	Medium impact (3-5 points)	High impact (6-8 points)	Very high impact (9-10 points)	Score Total
SO 1	Neutral	0	-	-	-	-
SO 2	Neutral	0	-	-	-	-
SO 3	Neutral	0	-	-	-	-
SO 4	Neutral	0	-	-	-	-
SO 5	Neutral	0	-	-	-	-
SO 6	Neutral	0	-	-	-	-

5.2. Cumulative impacts on the heritage landscape

Cumulative impacts can occur when a range of impacts which result from several concurrent processes have impact on heritage resources. The importance of addressing cumulative impacts is that the total impact of several factors together is often greater than one single process or activity that may impact on heritage resources. No heritage sites or features were located during the physical survey and therefore no cumulative impacts are identified. Also see section 6.1. Recommended management measures.

6. Summary of findings and recommendations

No sites or features of heritage significance were located or documented within the proposed project areas during the physical survey.

A total of six survey orientation locations were documented, sites SO 1-6 which includes a GPS location and photographs of the landscape at that particular location.

In terms of the archaeological component of the Act (25 of 1999, section 35) no sites or features were documented.

In terms of the built environment in the project area (section 34 of the Act) no sites were identified in the study area.

In terms of burial grounds and graves (section 36 of the Act) no graves or gravesites were identified in the study area.

It is not within the expertise of this report or the surveyor to comment on possible palaeontological remains which may be located in the study area.

The bulk of archaeological remains are normally located beneath the soil surface. It is therefore possible that some significant cultural material or remains were not located during this survey and will only be revealed when the soil is disturbed. Monitoring during construction activities is recommended as part of the proposed implementation of a chance find protocol in the EMP (Also see section 6.1).

Should excavation or large scale earth moving activities reveal any human skeletal remains, broken pieces of ceramic pottery, large quantities of sub-surface charcoal or any material that can be associated with previous occupation, a qualified archaeologist should be notified immediately. This will also temporarily halt such activities until an archaeologist has assessed the situation. It should be noted that if such a situation occurs it may have further financial implications.

6.1. Recommended management measures and chance find protocol

The possibility of the occurrence of sub surface artefacts cannot be excluded. Therefore if finds such as stone tool concentrations, pieces of pottery or bone and fossils are found, a chance find protocol is recommended. This is done by including a chance find protocol in the EMP which may consist of the following:

- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.

- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage institution such as a museum or SAHRA, preferably one at which an archaeologist is available, in order to evaluate finds. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999).

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MAPS

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Appendix A

Terminology

“Alter” means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

“Archaeological” means –

- 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 artifacts, human and hominid remains and artificial features or structures;
- 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 10m of such representation;
- 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, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found;

“Conservation”, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance;

“Cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance;

“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 –

- construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- carrying out any works on or over or under a place;

- subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil;

“Expropriate” means the process as determined by the terms of and according to procedures described in the Expropriation Act, 1975 (Act No. 63 of 1975);

“Foreign cultural property”, in relation to a reciprocating state, means any object that is specifically designated by that state as being of importance for archaeology, history, literature, art or science;

“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;

“Heritage resource” means any place or object of cultural significance;

“Heritage register” means a list of heritage resources in a province;

“Heritage resources authority” means the South African Heritage Resources Agency, established in terms of section 11, or, insofar as this Act (25 of 1999) is applicable in or in respect of a province, a provincial heritage resources authority (PHRA);

“Heritage site” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority;

“Improvement” in relation to heritage resources, includes the repair, restoration and rehabilitation of a place protected in terms of this Act (25 of 1999);

“Land” includes land covered by water and the air space above the land;

“Living heritage” means the intangible aspects of inherited culture, and may include –

- cultural tradition;
- oral history;
- performance;
- ritual;
- popular memory;
- skills and techniques;
- indigenous knowledge systems; and
- the holistic approach to nature, society and social relationships;

“Management” in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of the Act;

“Object” means any moveable property of cultural significance which may be protected in terms of any provisions of the Act, including –

- any archaeological artifact;
- palaeontological and rare geological specimens;
- meteorites;
- other objects referred to in section 3 of the Act;

“Owner” includes the owner’s authorized agent and any person with a real interest in the property and –

- in the case of a place owned by the State or State-aided institutions, the Minister or any other person or body of persons responsible for the care, management or control of that place;
- in the case of tribal trust land, the recognized traditional authority;

“Place” includes –

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- an open space, including a public square, street or park; and
- in relation to the management of a place, includes the immediate surroundings of a place;

“Site” means any area of land, including land covered by water, and including any structures or objects thereon;

“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.

Appendix B

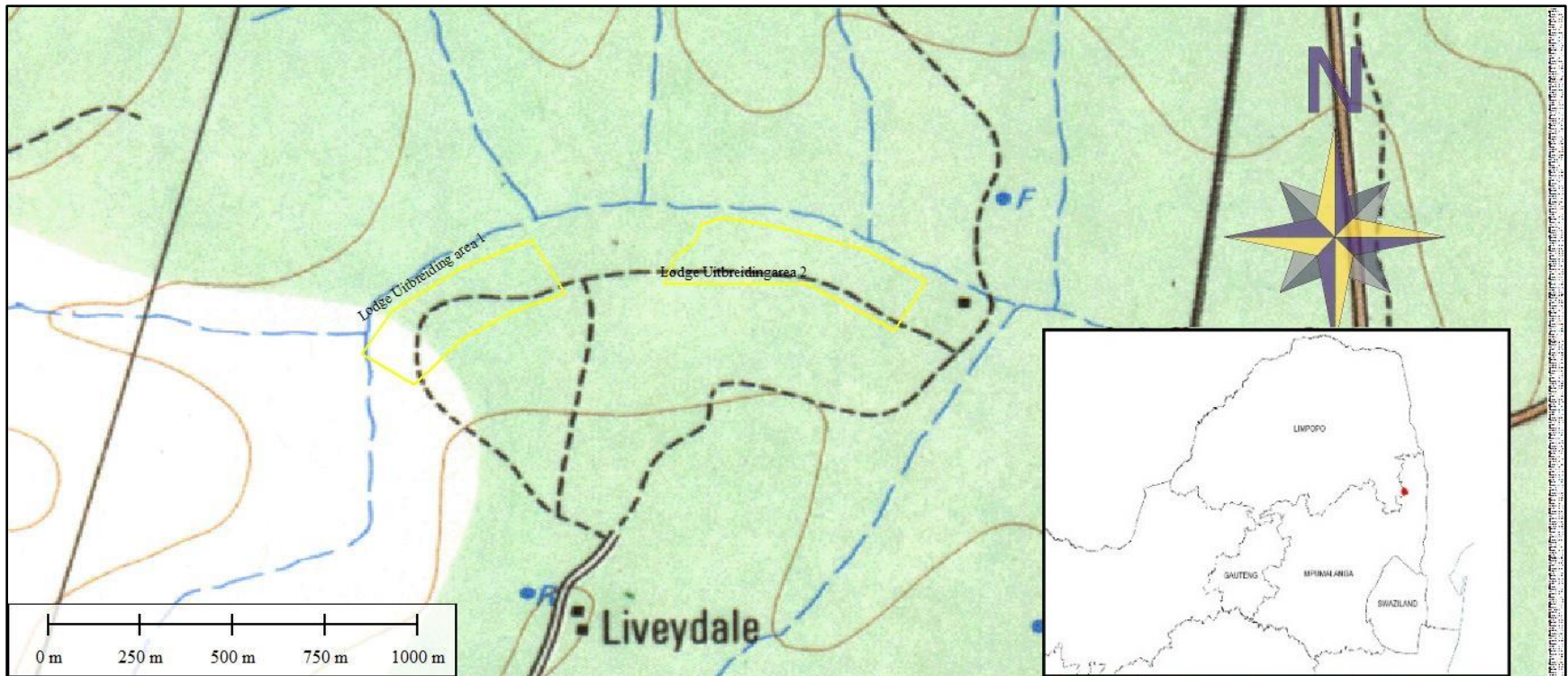
List of sites

No sites or features of heritage significance were recorded. A total of six survey orientation sites were recorded. The sites were named SO 1-6.

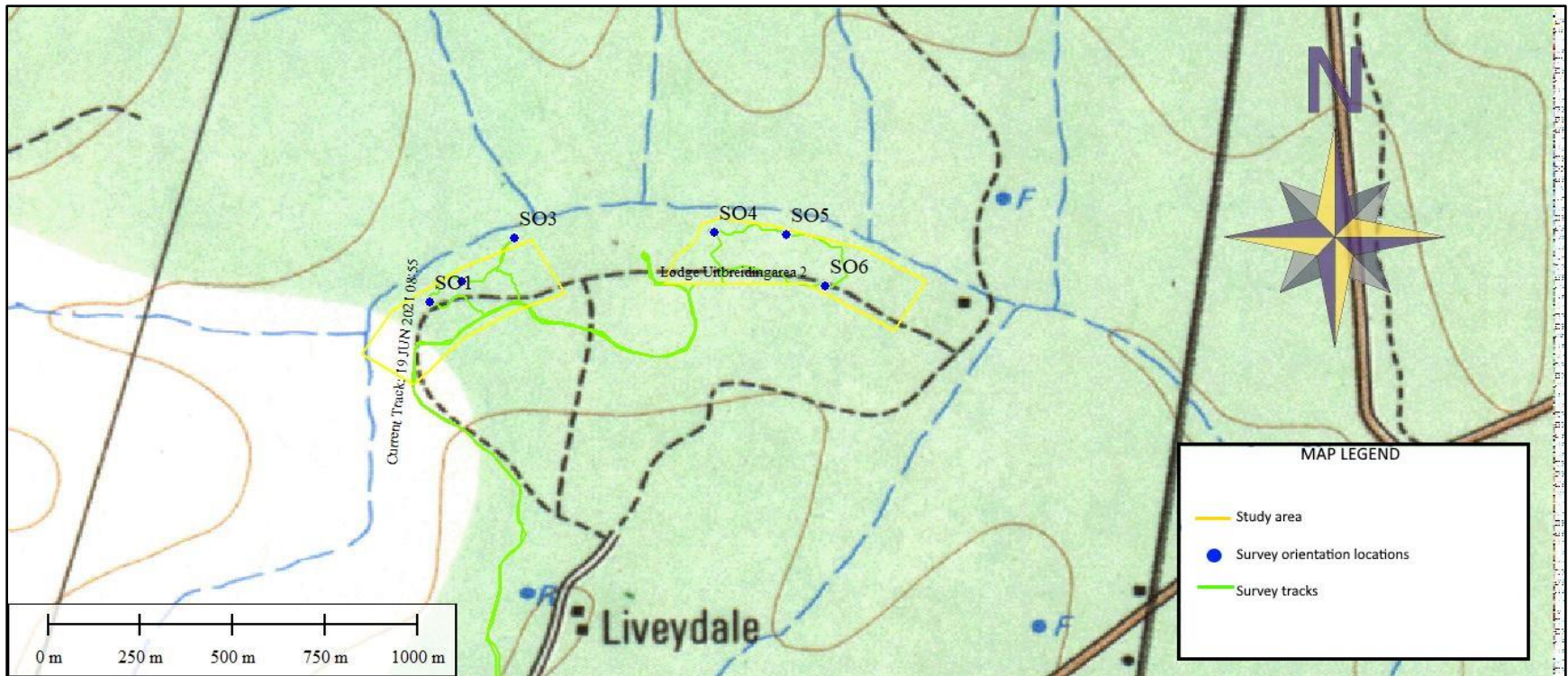
Table A. Survey Orientation Locations.

Site Name	Date of compilation	GPS Coordinates		Photo figure No.
SO 1	27/04/2022	S24°32,5391'	E031°09,1352'	1
SO 2	27/04/2022	S24°32,5082'	E031°09,1814'	2
SO 3	27/04/2022	S24°32,4448'	E031°09,2582'	3
SO 4	27/04/2022	S24°32,4362'	E031°09,5499'	4
SO 5	27/04/2022	S24°32,4396'	E031°09,6546'	5
SO 6	27/04/2022	S24°32,5144'	E031°09,7117'	6

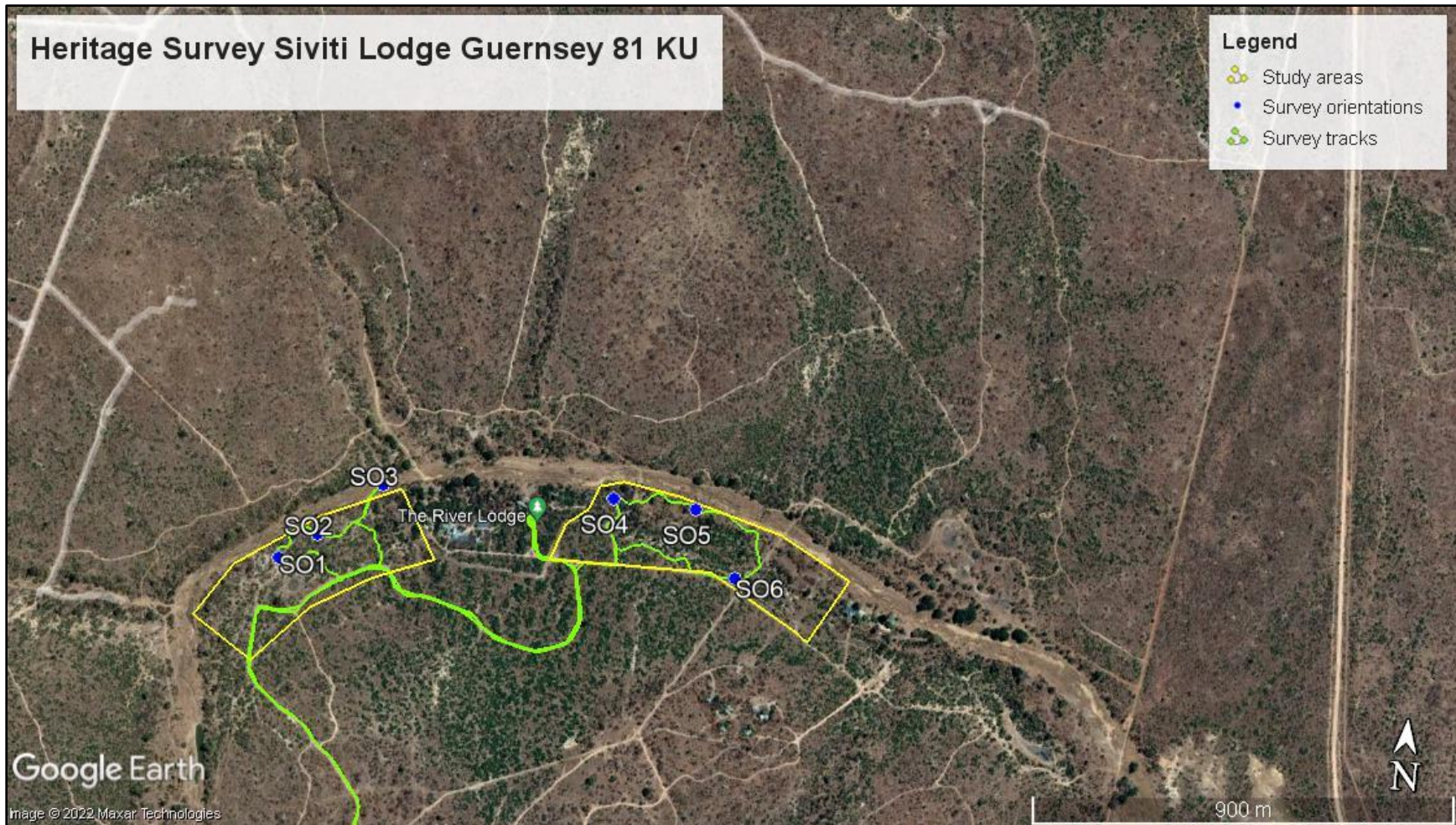
Appendix C



Regional Map 1:50 000 Topographical Map 2431 CA (1986).



Topographical Map 1:50 000 2431 CA (1986)



Aerial view: Google Earth 2022.

Appendix D

Survey Orientation Photos



Fig. 1. Site SO1. Photos taken in a southern and western direction.



Fig. 2. Site SO2. Photos taken in a southern and western direction.



Fig. 3. Site SO3. Photos taken in a southern and and western direction.



Fig. 4. Site SO 4. Photos taken in an eastern and southern direction.



Fig. 5. Site SO 5. Photos taken in an eastern and south-western direction.



Fig. 6. Site SO 6. Photos taken in a northern and western direction.