



**NALEDZANI ENVIRONMENTAL SERVICES**  
Promoting sustainable use of our natural resources

## **ECOLOGICAL IMPACT ASSESSMENT REPORT**

**THE PROPOSED DEVELOPMENT OF TOWNSHIP KNOWN AS SEVILLE  
EXT. 2 ON PORTION 1 AND 2 OF THE FARM SEVILLE 224KU IN THE  
BUSHBUCKRIDGE LOCAL MUNICIPALITY OF THE ENHLAZENI DISTRICT  
IN THE MPUMALANGA PROVINCE**

**PREPARED FOR:**

**BUSHBUCKRIDGE LOCAL MUNICIPALITY**

**PREPARED BY:**

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**DATE:**

**14 NOVEMBER 2022**



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PROJECT DETAILS	
<b>Project Title</b>	Seville Extension 2 township
<b>Client</b>	Bushbuckridge Local Municipality
<b>Description</b>	The proposed development of township known as Seville ext. 2 on portion 1 and 2 of the farm Seville 224ku in the Bushbuckridge Local Municipality of the Ehlanzeni District in the Mpumalanga Province
<b>Document Status</b>	Final
<b>Prepared by</b>	Mpho Ramalivhana Mpho Ramalivhana Pri Sci. Nat (Hons. Bot.; SAAB; SACNASP)
<b>Approved by</b>	
<b>Date</b>	14 November 2022

## DECLARATION OF INDEPENDENCE

I, Mpho Ramalivhana, declare that I:

- I consider myself bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP).
- At the time of conducting the study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in professional capacity.
- Work performed for this study was done in an objective manner. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being a member of the general public.
- I declare that there are no circumstances that may compromise my objectivity in performing this specialist investigation. I do not necessarily object to or endorse the proposed development, but aim to present facts, findings and recommendations based on relevant professional experience and scientific data.
- I do not have any influence over decisions made by the governing authorities.
- I undertake to disclose all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by a competent authority to such a relevant authority and the applicant.
- I have expertise and experience in conducting specialist reports relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity.
- This document and all information contained herein is and will remain the intellectual property of Naledzani Environmental Services and the specialist investigator responsible for conducting the study. This document, in its entirety or any portion thereof, may not be altered in any manner or form, for any purpose without the specific and written consent of the specialist investigator.
- I will comply with the Act, regulations and all other applicable legislation.
- I realize that a false declaration is an offence in terms of Regulation 71 of NEMA and is punishable in terms of section 24F of the Act.



**Mpho Ramalivhana Pri Sci. Nat** (Hons. Bot.; SAAB; SACNASP, EAPASA)

## SPECIALIST INFORMATION

Mpho Ramalivhana of Naledzani Environmental Consultant holds an Honours Degree in Botany from the University of Limpopo (Turloop Campus) and has 11 years' professional experience in biodiversity assessment & management, and ecological research. He is a registered member for South African Council for Natural Scientist Professions (**400395/14**), Environmental Assessment Practitioner Association of South Africa.

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## 1. INTRODUCTION

Naledzani Environmental Services has been appointed by Nkanivo Development Consultants on behalf of Bushbuckridge Local Municipality to conduct a terrestrial ecological assessment for the proposed development of township known as Seville ext. 2 on portion 1 and 2 of the farm Seville 224KU in the Bushbuckridge Local Municipality of the Ehlanzeni District in the Mpumalanga Province to determine the sensitivity of the site.

### 1.1 Scope of study

The terms of reference for this investigation are limited to a terrestrial ecological assessment with the following objectives:

- To assess the proposed development in order to determine the general ecological state of the proposed project area;
- To survey and delineate environmentally sensitive areas;
- To assess the proposed development in terms of faunal and floral taxa including the potential for species to occur;
- To provide mapping of the environmentally sensitive and critical areas with respect to the proposed development;
- To assess and identify the potential impacts that may arise from the proposed project on the fauna and flora taxa;
- To provide mitigation measures to prevent and/or mitigate identified environmental impacts that may occur due to the proposed project; and
- The provision of an assessment report, indicate findings, recommendations and maps indicating sensitivities and/or no-go areas.

### 1.2 Assumptions and limitations

Ecological studies should be conducted during the growing season of all plant species that may potentially occur. This may require more than one season's survey with two visits undertaken preferably from November to February. However, due to the EIA timeframes in relation to this project, this assessment was conducted in August 2022 before the rainfall and as such many plant species including grasses were still not yet in their growing period.

The entire site was walked on foot and sampled by the specialist. All species included in the plant species list were observed and recorded in the study area and any comments or observations made in this regard are based on observations, literature review, the expert knowledge and relevant professional experience of the specialist.

## 2. PROJECT DESCRIPTION

The entails the proposed infrastructure development of the following as per the layout plan

Land-use	Land uses	Number of stands	Area (ha)
Residential 1	Dwelling units	483	28.34

Business 1	Shops/Retail	3	0.20
Institutional	Place of worship	3	0.61
Educational	Secondary/creche	3	4.30
Municipality/ governmental	Municipal purpose	3	2.06
Public open spaces	Open spaces	3	1.49
Roads	Proposed roads		15.02

### 3. LEGISLATIVE REQUIREMENTS

A summary of the relevant sections of the acts that govern the activities and potential impacts to the environment associated with the development are listed below. It should be noted that these acts are listed below only with specific reference to biodiversity studies.

Table 1: Acts and regulations relating to the project

Legislation/Policy	Description
<b>The Convention of Biological Diversity (Rio de Janeiro, 1992).</b>	The purpose of the Convention on Biological Diversity is to conserve the variability among living organisms, at all levels (including diversity between species, within species and of ecosystems). Primary objectives include (i) conserving biological diversity, (ii) using biological diversity in a sustainable manner and (iii) sharing the benefits of biological diversity fairly and equitably.
<b>South African Constitution 108 of 1996</b>	The Constitution is the supreme law of the land and includes the Bill of rights which is the cornerstone of democracy in South Africa and enshrines the rights of people in the country. It includes the right to an environment which is not harmful to human health or well-being and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures.
<b>Strategic Framework for Sustainable Development in South Africa</b>	The development of a broad framework for sustainable development was initiated to provide an overarching and guiding National Sustainable Development Strategy. The Draft Strategic Framework for Sustainable Development (SFSD) in South Africa (September



	2006) is a goal orientated policy framework aimed at meeting the Millennium Development Goals. Biodiversity has been identified as one of the key crosscutting trends in the SFSD. The lack of sustainable practices in managing natural resources, climate change effects, loss of habitat and poor land management practices were raised as the main threats to biodiversity.
<b>National Environmental Management Act 107 of 1998</b>	This is a fundamentally important piece of legislation and effectively promotes sustainable development and entrenches principles such as the 'precautionary approach', 'polluter pays' principle, and requires responsibility for impacts to be taken throughout the life cycle of a project NEMA provides the legislative backing (Including Impact Assessment Regulations) for regulating development and ensuring that a risk-averse and cautious approach is taken when making decisions about activities.
<b>Environmental Impact Assessment (EIA) regulations</b>	New regulations have been promulgated in terms of Chapter 5 of NEMA and were published on 07 April 2017 in Government Notice No. R. 326. Development and land use activities which require Environmental Authorisation in terms of the NEMA EIA Regulations, 2017, are in Listing Notice 1 and 3 identified via geographic areas with the intention being that activities only require Environmental Authorisation when located within designated sensitive areas. These sensitive/geographic areas were identified and published for each of the nine (9) Provinces.
<b>National Environmental Management: Biodiversity Act No 10 of 2004</b>	The Biodiversity Act provides listing threatened or protected ecosystems, in one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Protected (Government Gazette, 2011). The main purpose of listing threatened ecosystems is to reduce the rate of ecosystem and species extinction and includes the prevention of further degradation and loss of structure, function and composition of threatened ecosystems.
<b>Conservation of Agricultural Resources Act 43 of 1967</b>	The intention of this Act is to control the over-utilization of South Africa's natural agricultural resources, and to promote the conservation of soil and water resources and natural vegetation. The CARA has categorised a large number of invasive plants together with associated obligations of the land owner, including the requirement to remove categorised invasive plants and taking measures to prevent further spread of alien plants.
<b>National Forest Act 84 of 1998</b>	The protection, sustainable management and use of forests and trees within South Africa are provided for under the National Forests Act (Act 84 of 1998).
<b>National Environmental Management: Protected Areas Act 57 of 2003</b>	This Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It also seeks to provide for the sustainable utilization of protected areas and to promote participation of local communities in the management of protected areas.

<b>The RAMSAR Convention</b>	Emphasis is placed on protecting wetlands and implementing initiatives to maintain or improve the state of wetland resources.
<b>Convention on Biological Diversity</b>	Countries are to rehabilitate or restore degraded ecosystem through the formulation of appropriate strategies and plans;
<b>United Nations Convention to Combat Desertification</b>	South Africa has responded to the UN Convention to Combat Desertification by developing a National Action Plan. The aim of the NAP is to implement at current and future policies that affect natural resource management and rural development, and establish partnerships between government departments, overseas development agencies, the private sector and NGOs
<b>Mpumalanga Nature Conservation Act (10 of 1998)</b>	To consolidate and amend the laws relating to nature conservation within the Province and to provide for matter connected therewith

## 4. DESCRIPTION OF THE ENVIRONMENT

### 4.1. Project Location

The proposed are is situated within ward 33 under portion 1 and 2 of the farm Seville 224KU in the Bushbuckridge Local Municipality of the Ehlanzeni District in the Mpumalanga Province. The centre coordinates for the area of interest is as follows:

- Southing - 24° 39' 48.05" and Easting - 31° 24' 40.24"

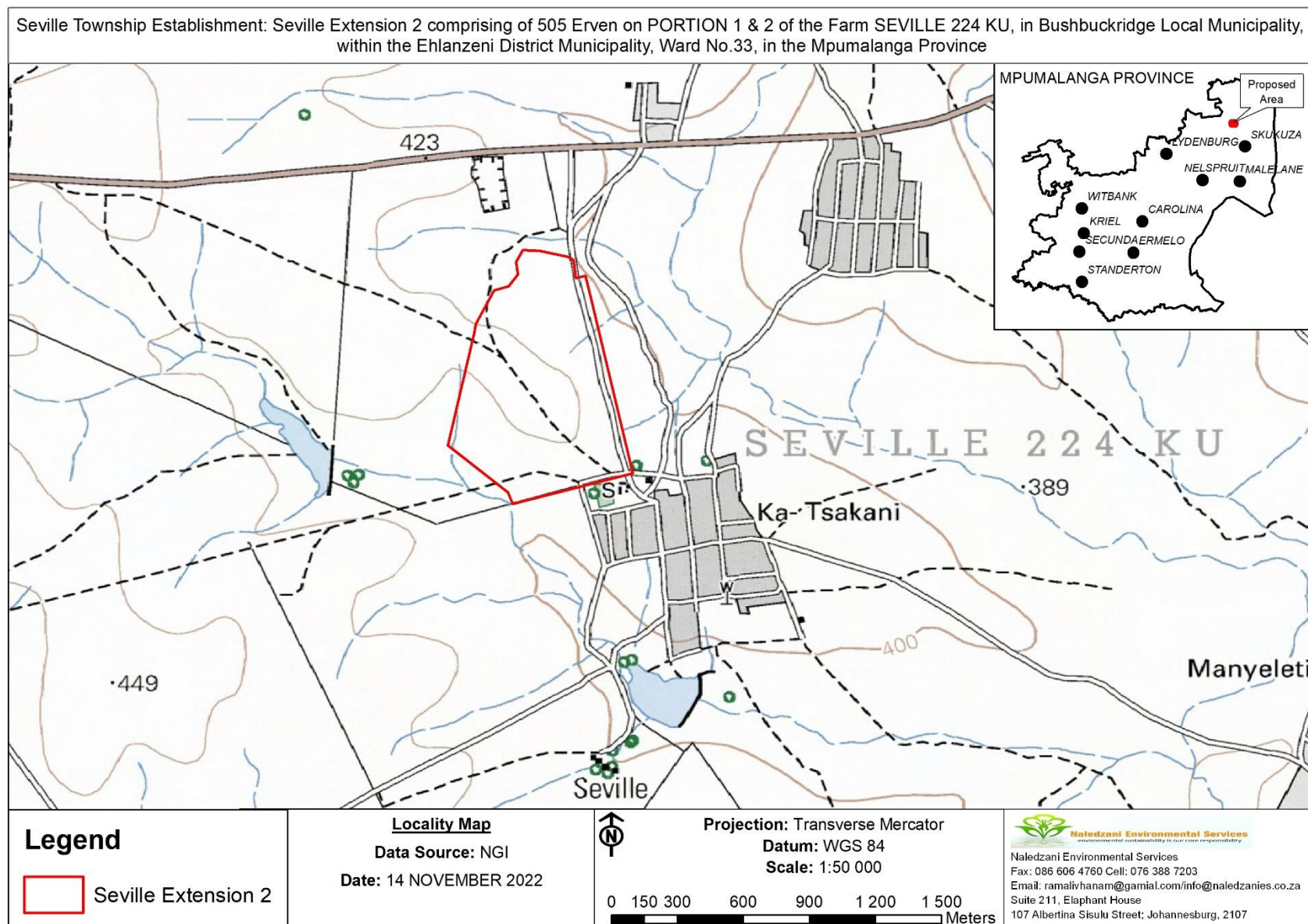


Figure 1: Site locality map



Seville Township Establishment: Seville Extension 2 comprising of 505 Erven on PORTION 1 & 2 of the Farm SEVILLE 224 KU, in Bushbuckridge Local Municipality, within the Ehlanzeni District Municipality, Ward No.33, in the Mpumalanga Province

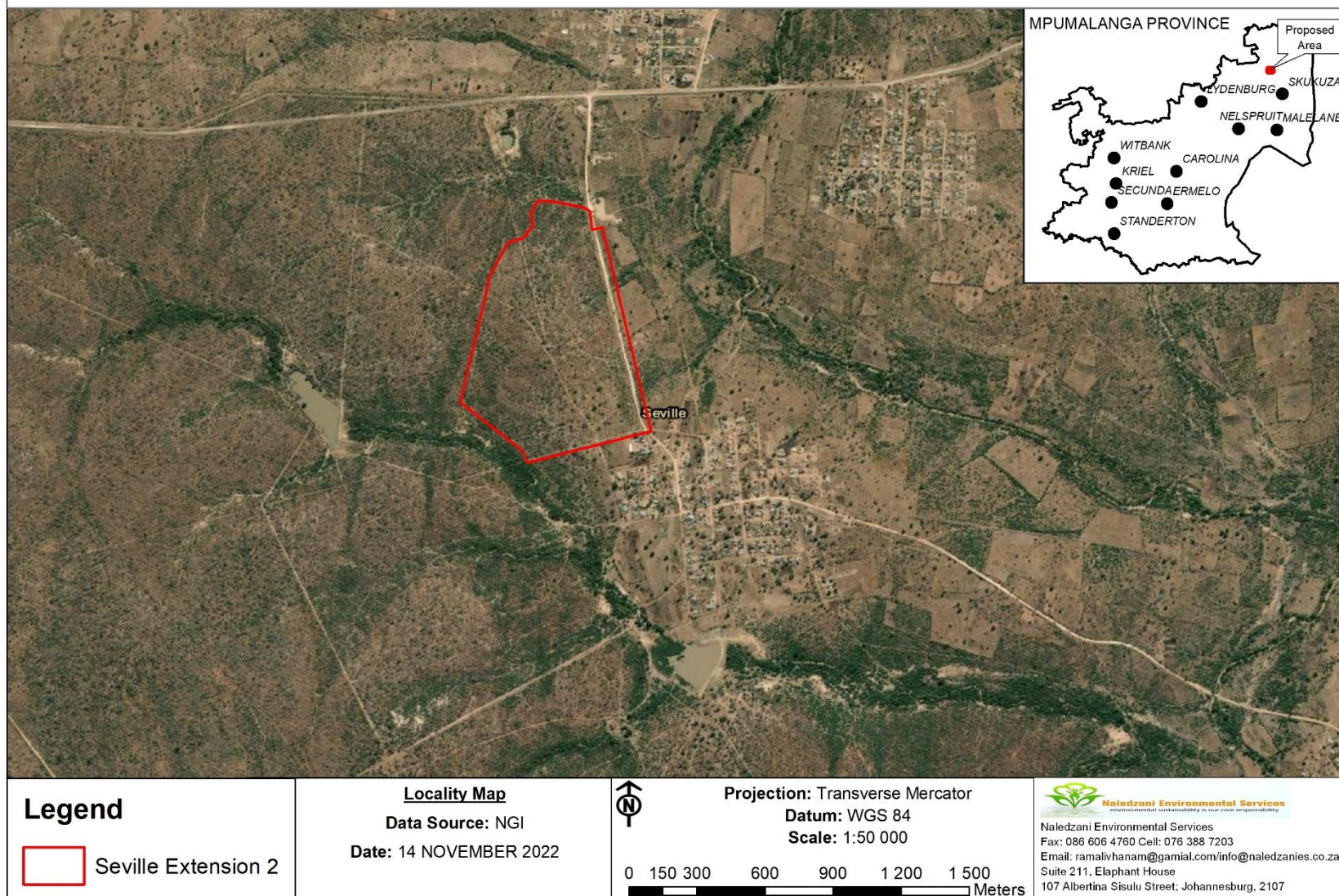


Figure 2: Goggle earth-view for the site

## **4.2. Biome type**

Rutherford and Westfall (1994) described the project as falling within the Savanna Biome. The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the lowveld and Kalahari region of South Africa and is also the dominant vegetation in neighbouring Botswana, Namibia and Zimbabwe. It is characterized by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground vegetation may be referred to as Shrubveld, where it is dense as Woodland, and the intermediate stages are locally known as Bushveld.

The environmental factors delimiting the biome are complex: altitude ranges from sea level to 2000 m; rainfall varies from 235 to 1000 mm per year; frost may occur from 0 to 120 days per year; and almost every major geological and soil type occurs within the biome. A major factor delimiting the biome is the lack of sufficient rainfall which prevents the upper tree layer from dominating, coupled with fires and grazing, which keep the grass layer dominant. Summer rainfall is essential for grass dominance, which, with its fine material, fuels near-annual fires. In fact, almost all species are adapted to survive fires, usually with less than 10% of plants, both in the grass and tree layer, killed by fire. Even with severe burning, most species can re-sprout from the stem bases.

The grass layer is dominated by C 4-type grasses, which are at an advantage where the growing season is hot. But where rainfall has a stronger winter component, C 3-type grasses dominate. The shrub-tree layer may vary from 1 to 20 m in height, but in Bushveld typically varies from 3 to 7 m. The shrub-tree element may come to dominate the vegetation in areas which are being overgrazed.

Most of the Savanna vegetation types are used for grazing, mainly by cattle or game. In the southernmost Savanna types, goats are a major stock. In some areas crops and subtropical fruit are cultivated. These mainly include the Clay Thorn Bushveld, parts of Mixed Bushveld, and Sweet Lowveld Bushveld. Conservation status of Savanna is comparatively good, mainly due to the presence of the Kruger and Kalahari Gemsbok National Parks within the biome. However, the high area conserved in South Africa, belies the fact that half of Savanna vegetation types are inadequately conserved, in having less than 5% of their area in reserves and, much of the area is used for game-farming and can thus be considered effectively preserved, provided that sustainable stocking levels are maintained. The importance of tourism and big game hunting in the conservation of the area must not be underestimated.

## **4.3. Broad-Scale vegetation patterns**

The study area falls within the within the **Granite Lowveld vegetation**. The vegetation is found mainly in Limpopo and Mpumalanga Provinces and Swaziland. It forms a north-south belt on the plains east of the escarpment from Thohoyandou in the north, interrupted in the Bolobedu area, continued in the Bitavi area, with an eastward extension

on the plains around the Murchison Range and southwards to Abel Erasmus Pass, Mica and Hoedspruit areas to the area east of Bushbuckridge. Substantial parts are found in the Kruger National Park spanning areas east of Orpen Camp southwards through Skukuza and Mkhulu. It is found at altitudes of 250 – 700 m.

Granite Lowveld comprises tall shrubland with few trees to moderately dense low woodland dominated by *Terminalia sericea*, *Combretum zeyheri* and *C. apiculatum* (small trees) and a ground layer consisting of *Pogonarthria squarrosa*, *Tricholaena monache* and *Eragrostis rigidior* (grasses). In the lowland areas dense thicket to open savanna with *Acacia nigrescens* (tall tree) and *Dichrostachys cinerea* and *Grewia bicolor* (tall shrubs) dominate theory layer. The dense herbaceous layer is mainly comprised of *Digitaria eriantha*, *Panicum maximum* and *Aristida congesta* (grasses) on fine-textured soils, while brackish bottomland soils support *Sporobolus nitens* (grass). A dense fringe of *T. sericea* and *Eragrostis gummiflua* occurs in areas where the topography changes from convex to concave.

This vegetation unit is considered **vulnerable** with the conservation target of 19%. Some 175 is currently conserved statutorily in the Kruger National Park. About the same amount conserved in private game reserves mainly the Selati, Klaseri, Timbavati, Mala, Sabi Sand and Manyeleti. More than 20% is already transformed, mainly by cultivation and by settlement development. Erosion is very low to moderate.



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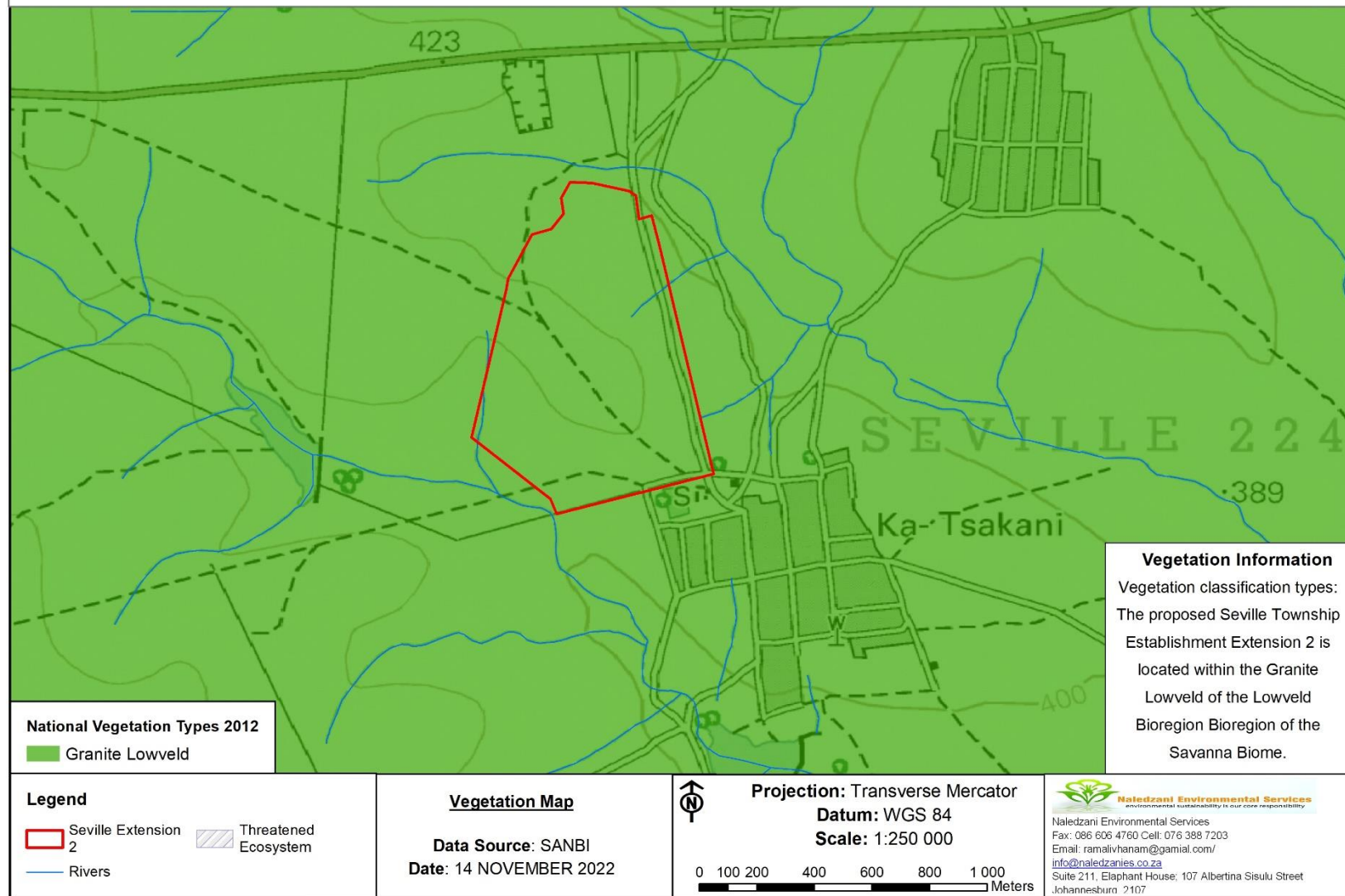


Figure 3: Broad vegetation map for the site

#### **4.4. Climate**

The project is situated in the lowveld region of Mpumalanga which has a subtropical climate strongly influenced by proximity to the Indian Ocean. It is in a summer rainfall region with rains season normally lasting from October to March. The average mean annual precipitation for the Ehlanzeni district varies between 750 and 860 mm (DWAF 2000) with winter rainfall considered rare (Robin, 2017). In terms of temperature, historically there has been a strong seasonality between the winter and summer months. The cooler winter season ranges between May and August with the warmer summer months occurring between December and February. The coolest and hottest months have historically been June and February respectively with records showing a very moderate temperature variation between winter and summer months (Robin, 2017).

#### **4.5. Land use and existing impacts**

The main land use in the study area is Woodland, Thicket & Bushland. Adjacent land cover is farming (subsistence) as well as settlements



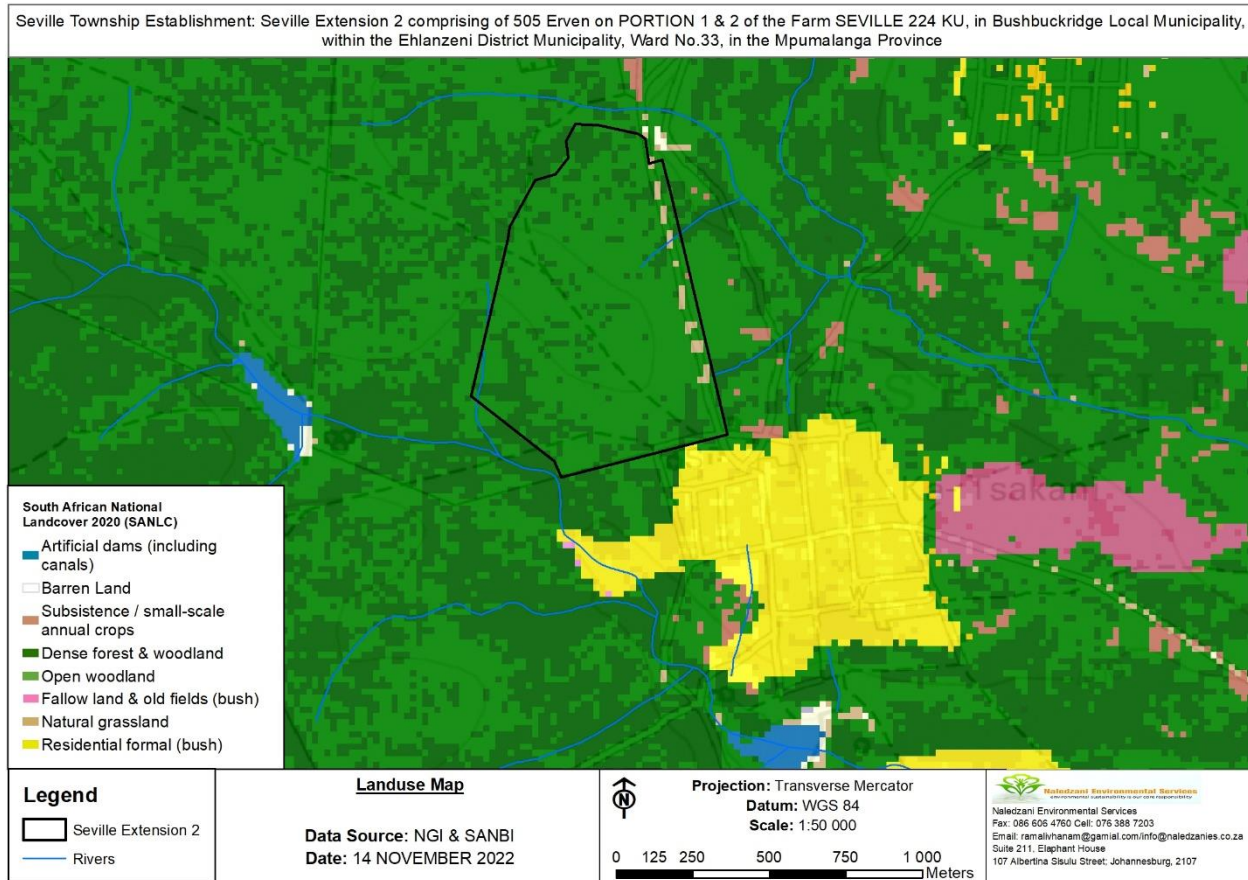


Figure 4:land-use map for the site

#### 4.6. Terrestrial threatened ecosystem

The South African National Biodiversity Institute (SANBI), in conjunction with the Department of Environmental Affairs (DEA), released a draft report in 2009 entitled “Threatened Ecosystems in South Africa: Descriptions and Maps”, to provide background information on the List of Threatened Ecosystems (SANBI, 2009). The purpose of this report was to present a detailed description of each of South Africa’s ecosystems and to determine their status using a credible and practical set of criteria. The following criteria were used in determining the status of threatened ecosystems:

- Irreversible loss of natural habitat;
- Ecosystem degradation and loss of integrity;
- Limited extent and imminent threat;
- Threatened plant species associations;
- Threatened animal species associations; and

- Priority areas for meeting explicit biodiversity targets as defined in a systematic conservation plan.

In terms of section 52 (1) (a), of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), a new national list of ecosystems that are threatened and in need of protection was gazetted on 9 December 2012 (Government Notice 1002 (Driver *et. al.*, 2004). The list classified all threatened or protected ecosystems in South Africa in terms of four categories; *Critically Endangered* (CR), *Endangered* (EN), *Vulnerable* (VU), or *Protected*. The purpose of categorizing these ecosystems is to prioritize conservation areas in order to reduce the rates of ecosystem and species extinction, as well as preventing further degradation and loss of structure, function, and composition of these ecosystems. It is estimated that threatened ecosystems make up 9.5% of South Africa, with critically endangered and endangered ecosystems accounting for 2.7%, and vulnerable ecosystems 6.8% of the land area. It is therefore vital that Threatened Terrestrial Ecosystems inform proactive and reactive conservation and planning tools, such as Biodiversity Sector Plans, municipal Strategic Environmental Assessments (SEAs) and Environmental Management Frameworks (EMFs), Environmental Impact Assessments (EIAs) and other environmental applications (Mucina *et al.*, 2006). According to data sourced from South African National Biodiversity Institute (SANBI), the site is located within the vulnerable Ecosystem (**Granite Lowveld**).

## 5. METHODOLOGY AND REPORTING

The information provided in this terrestrial biodiversity report is based mainly on the observations that were made during the field survey and a review of the available reports that contain known and predicted biodiversity and ecological information regarding the site. A wide range of spatial data sets were interrogated and relevant information was extracted for the study site. A basic ecological sensitivity analysis was performed to identify areas of special interest or concern. The various approaches used and aspects taken into account are detailed below:

### 5.1. General

A desktop survey utilising aerial images and photography was undertaken to assemble background information regarding the different features and vegetation communities present within the proposed project footprint. The site was fully surveyed on the 24<sup>th</sup> August 2022 to ensure that the true floristic reflection of the site is recorded.

### 5.2. Vegetation

The PRECIS list of plants recorded in the 2431CB quarter degree grid square was obtained from SANBI. This list was consulted to verify the record of occurrence of the plant species seen on the site. A desk-top study of the habitats of the red-listed and orange-listed species known to occur in the area was done before the site visits. The rapid visual

assessment was used to assess the abundance of floral species. The vegetation units of Mucina & Rutherford (2006) were also used as reference but where necessary communities are named according to the recommendations for a standardized South African syntaxonomic nomenclature system. By combining the available literature with the survey results, stratification of vegetation communities was possible.

### 5.3. Fauna

The faunal assessment is based on desktop analysis and observations that were made during the site visit. During the time on site, no mammals were noticed and it was deemed necessary that a desktop analysis be done to explore all different kinds of animals to habit the area. The occurrence of some key bird species was verified according to the distribution record obtained during the Southern African Bird Atlas period from 1981 to 1993 (Harrison et al., 1997) as well as records from 1974 to 1987 according to Tarboton et al (1987).

### 5.4. Sensitivity Map

Following the site visit, an ecological sensitivity map of the site has been generated by integrating the information collected on-site with the available biodiversity information available in the literature and various spatial databases as described above. The ecological sensitivity of the different units identified in the mapping procedure was rated according to the following scale:

- **Low** - Units with a low sensitivity where there is likely to be a negligible impact on ecological processes and terrestrial biodiversity. This category is reserved specifically for areas where the natural vegetation has already been transformed, usually for intensive agricultural purposes such as cropping. Most types of development can proceed within these areas with little ecological impact.
- **Medium** - Areas of natural or previously transformed land where the impacts are likely to be largely local and the risk of secondary impact such as erosion low. Development within these areas can proceed with relatively little ecological impact provided that appropriate mitigation measures are taken.
- **High** - Areas of natural or transformed land where a high impact is anticipated due to the high biodiversity value, sensitivity or important ecological role of the area. Development within these areas is highly undesirable and should only proceed with caution as it may not be possible to mitigate all impacts appropriately.

- **Very High** - Critical and unique habitats that serve as habitat for rare/endangered species or perform critical ecological roles. These areas are essentially no-go areas from a developmental perspective and should be avoided at all costs.

## 5.5. Methodology Adapted in Assessing the Impacts

The significance of the impacts will be assessed considering the following descriptors:

Table 2: Impact assessment table

Nature of the impact		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly, and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).

Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified, and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
<b>Extent</b>		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
<b>Duration</b>		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.

Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
<b>Probability of occurrence</b>		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) \times \text{Probability}$$

The significance of the heritage impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the Table 3 below.

Table 3: Definition of significance rating

Significance of predicted <b>NEGATIVE</b> impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted <b>POSITIVE</b> impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

## 6. RESULTS OF THE ASSESSMENT

### 6.1. Vegetation Survey

The grass layer along this vegetation unit was found to be dry with few grasses species confirmed to the species level. These include *Melinis repens*, *Panicum maximum*, *Perotis patens*, *Tricholaena monachne*, *Pogonarthria squarrosa*, *Brachiaria nigropedata*, *Eragrostis curvula*, *Brachiaria serrata*, *Digitaria eriantha* and *Eragrostis rigidior*.





Figure 5: Dry grass layer on site with small *Acacia sieberiana*

The shrub and tree layer consists mainly of *Vachellia nilotica*, *Sclerocarya birrea*, *Senegalia. Nigrescens*, *Dichrostachys cinerea*, *Ziziphus mucronata*, *Peltophorum africanum*, *Terminalia sericea*, *Combretum imberbe*, *Combretum apiculatum*, *Combretum zeyheri*, *Terminalia sericea*, *Ficus Stuhlmannii*, *Pterocarpus rotundifolius*, *Schotia brachypetala*, *Diospyros lycioides*, *Gymnosporia buxifolia*, *Englerophytum magalismontanum*, *Acacia sieberiana*, *Acacia caffra*, *Ximenia caffra*, and *Strychnos madagascariensis*.

Herbs and forbs recorded include *Gerbera viridifolia*, *Waltheria indica*, *Hypoxis rigidula*, *Xerophyta retinervis*, *Vahlia capensis*, *Hibiscus praeteritus*, *commelina africana*, *Aspilia mossambicensis* and *Indigofera filipes*.





Figure 6: Overview of the site

## **6.2. Nationally Protected Trees**

The National Forest Act, 1998 (Act No. 84 of 1998) enforces the protection of several indigenous trees. This national list of protected trees was developed through the application of objective scientific criteria which was supported by a computerised scoring system.

Criteria for listing the trees as protected included:

- The rarity of the species;
- Importance of the species in the maintenance of an ecosystem, also known as keystone species;
- The utilization pressure on a species;
- Cultural or spiritual value (including landscaping) of the species; and
- The degree to which a species is already protected under provincial legislation.

The recorded nationally protected trees area *Combretum imberbe* and *Sclerocarya birrea*.



Figure 7: One of the *Combretum imberbe* recorded as a national protected tree

### 6.3. Alien invasive plants

Declared weeds and invaders have the tendency to dominate or replace the herbaceous layer of natural ecosystems, thereby transforming the structure, composition and function of natural ecosystems. Therefore, it is important that all these transformers be eradicated and controlled by means of an eradication and monitoring programme. Some invader plants may also degrade ecosystems through superior competitive capabilities to exclude native plant species (Henderson, 2001).

According to the published Alien and Invasive Species regulations in terms of section 97(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) four categories of problem plants are identified as:

- **Category 1a** plants are high-priority emerging species requiring compulsory control. All breeding, growing, moving and selling are banned.
- **Category 1b** plants are widespread invasive species controlled by a management programme.
- **Category 2** plants are invasive species controlled by area. Can be grown under permit conditions in demarcated areas. All breeding, growing, moving, and selling are banned without a permit.
- **Category 3** plants are ornamental and other species that are permitted on a property but may no longer be planted or sold.

Table 4 lists the alien species as well as the various NEMBA categories for the alien species recorded during the survey.

Table 4: Alien species recorded in the study area.

Scientific name	Common name	NEMBA Category
<i>Ricinus communis</i>	Castor oil plant	2
<i>Solanum maritimum</i>	Bug weed	1b
<i>Lantana camara</i>	Bird's brandy; cherry pie; tick-berry	1b
<i>Argemone Mexicana</i>	Mexican prickly poppy	1b

#### 6.4. Description of the CBAs

Critical Biodiversity Areas (CBA's) are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services (SANBI, 2007). These form the key output of a systematic conservation assessment and are the biodiversity sectors inputs into multi-sectoral planning and decision making tools.

The primary purpose of CBA's is to inform land-use planning and the land-use guidelines attached to CBA's aim to promote sustainable development by avoiding loss or degradation of important natural habitat and landscapes in these areas and the landscape as a whole. CBA's can also be used to inform protected area expansion and development plans. The use of CBA's here follows the definition laid out in the guideline for publishing bioregional plans (Anon, 2008):

- **“Critical biodiversity areas (CBAs)** are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near-natural state then biodiversity conservation targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity-compatible land uses and resource uses”.
- **“Ecological support areas (ESA's)** are areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development,

such as water provision, flood mitigation or carbon sequestration. The degree of restriction on land use and resource use in these areas may be lower than that recommended for critical biodiversity areas.”

The guideline for bioregional plans defines three basic CBA categories based on three high-level land management objectives.

Table 5: A framework for linking spatial planning categories (CBAs) to land-use planning and decision-making guidelines based on a set of high-level land biodiversity management objectives.

CBA category	Land Management Objective
PA & CBA 1	<p><b>Natural landscapes:</b></p> <ul style="list-style-type: none"> <li>• Ecosystems and species fully intact and undisturbed</li> <li>• These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the biodiversity features targeted in these areas are lost, then targets will not be met.</li> <li>• These are landscapes that are at or past their limits of acceptable change.</li> </ul>
CBA 2	<p><b>Near-natural landscapes:</b></p> <ul style="list-style-type: none"> <li>• Ecosystems and species largely intact and undisturbed.</li> <li>• Areas with intermediate irreplaceability or some flexibility in terms of area required to meet biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising our ability to achieve targets.</li> <li>• These are landscapes that are approaching but have not passed their limits of acceptable change.</li> </ul>
Ecological Support Areas (ESA)	<p><b>Functional landscapes:</b></p> <ul style="list-style-type: none"> <li>• Ecosystems moderately to significantly disturbed but still able to maintain basic functionality.</li> <li>• Individual species or other biodiversity indicators may be severely disturbed or reduced.</li> </ul>



CBA category	Land Management Objective
	<ul style="list-style-type: none"> <li>These are areas with low irreplaceability with respect to biodiversity pattern targets only.</li> </ul>
Other Natural Areas (ONA) and Transformed	<b>Production landscapes:</b> manage land to optimize sustainable utilization of natural resources.

According to the Mpumalanga Conservation plan, the entire site is situated within an Ecological Support Area. This is because the site has potential to harbour national protected plants as listed above.

Seville Township Establishment: Seville Extension 2 comprising of 505 Erven on PORTION 1 & 2 of the Farm SEVILLE 224 KU, in Bushbuckridge Local Municipality, within the Ehlanzeni District Municipality, Ward No.33, in the Mpumalanga Province

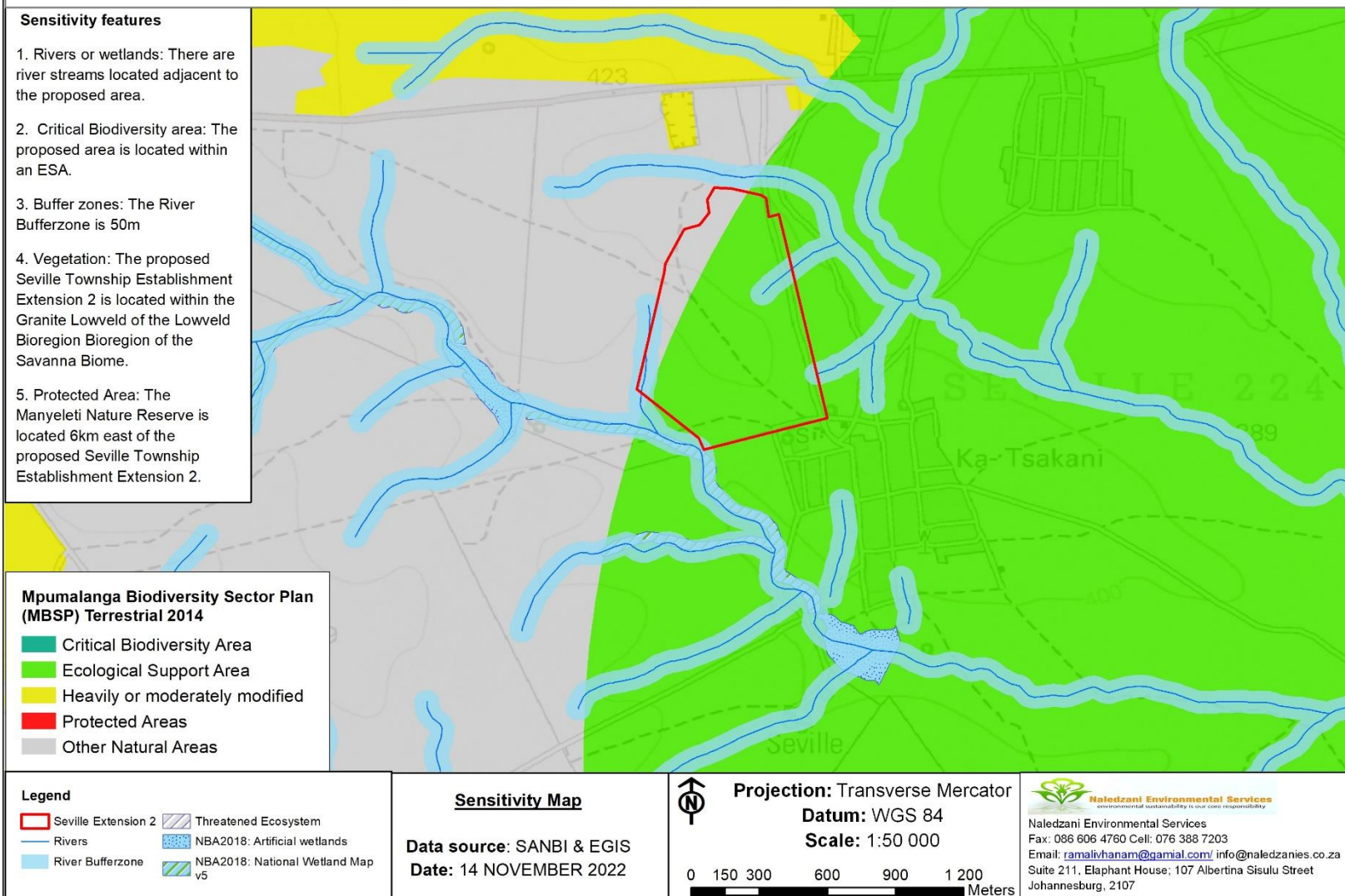


Figure 8: CBA map of the site

## 6.5. Mammals

According to MammalMap (Animal Demographic Unit) a total of 13 species have been recorded within the 2431CB quarter degree square (QDS). However, it must be noted that approximately 85% of these species are largely restricted to nature reserves/privately owned conservation areas. The remaining species diversity is low and is likely attributed to a lack of sampling effort coupled with anthropogenic habitat modification and associated pressures within the QDS.

Terrestrial and arboreal habitats were the dominant niches from a spatial perspective associated with the project area. The project area represents a relatively large tract of remaining habitat within the Ladysmith urban landscape. Therefore, although not pristine, the area provides refuge as well as some degree of connectivity to surrounding micro-habitats characterised by unique ecological features including unique floral assemblages and specific micro-climate conditions. As such these habitats provide elevated niche heterogeneity and subsequently higher species richness than adjacent anthropogenically modified areas. During the August 2022 site investigation, *Rattus rattus*, *Bos Taurus*, *Pronolagus crassicaudatus* and *Capra aegagrus hircus* were identified within the project area based on direct and indirect signs.

## 6.6. Avi-fauna

Birds can be viewed as good ecological indicators, since their presence or absence tends to represent conditions pertaining to the proper functioning of the ecosystem. Bird communities and ecological condition are linked to land cover, as the land cover changes so do the types of birds in the area. The project site is situated outside an important bird area (IBA) but the Kruger National Park which is identified as an IBA as well as Manyeleti Game Reserve located approximately 6km away from the site. Kruger National Park as well as Manyeleti Game Reserve harbours globally threatened species, regionally threatened species and restricted range and biome-restricted species.

According to the South African Bird Atlas Project (SABAP2), almost 300 species of birds have been identified within the bigger project area, *i.e. grid cell*. All birds that could be present within the vicinity of the study site are listed in Appendix 2.

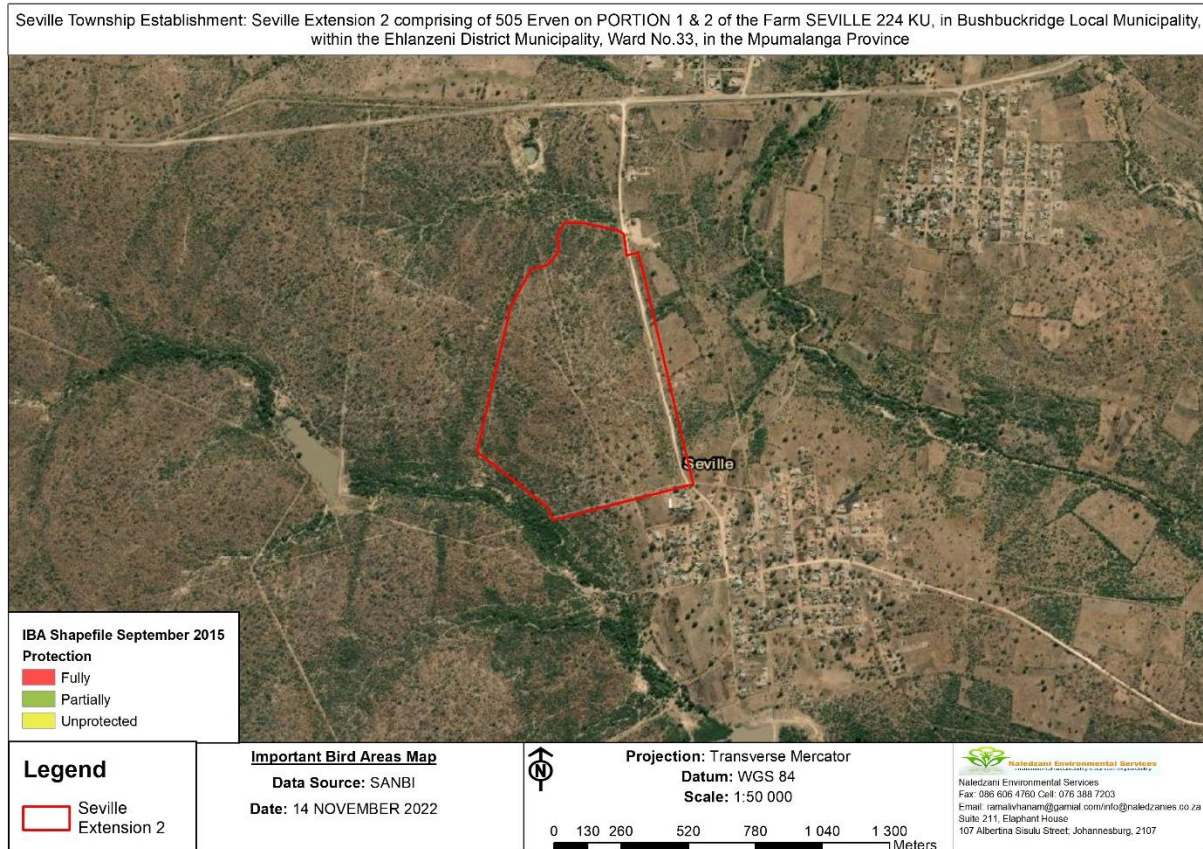


Figure 9: Important Bird Area Map in relation to the site

## 7. ASSESSMENT OF IMPACTS

### 7.1. Introduction

The Regulations in terms of Chapter 5 of the National Environmental Management, Act No. 107 of 1998 requires that a description must be given of the potential impacts the proposed development will have on the environment. The details indicated the identified impacts for the area and their proposed mitigation measures.



Table 6: Environmental Impacts assessed by combining the consequences (extent, duration, intensity) with the probability of occurrence before and after mitigation for the proposed project

Impact	Stage	Management measures	Magnitude	Scale	Duration	Probability	Significance before mitigation
Destruction of protected plants	Construction	WOM	Moderate (6)	Site only (1)	Long term (4)	Definite (5)	Medium (55)
		WM	Medium (6)	Site (1)	short terms (1)	Probable (2)	Negligible (12)
Removal of the natural vegetation	Construction	WOM	Moderate (6)	Site (1)	Permanent (5)	Definite (5)	Medium (60)
		WM	Low (4)	Site (1)	Permanent (5)	Medium (3)	Low (30)

Establishment and spread of declared weeds	Construction	WOM	High (8)	Local (2)	Long term (4)	Definite (5)	High (70)
		WM	Probable (2)	Site (1)	Short term (2)	Definite (5)	Low (20)
Positive impact by removing alien invasive plants, although care must be taken not to remove all vegetation at once, especially within the rainy season (could result in soil erosion and soil loss).	Operational and maintenance	WOM	High (8)	Local (2)	medium Term (3)	Probable (2)	Low (24)
		WM	Medium (6)	Site (1)	short terms (1)	Probable (2)	Negligible (12)
Disturbance of animals on site	Construction	WOM	Moderate (6)	Local (2)	Long term (4)	Definite (5)	Medium (48)

		WM	Probable (2)	Site (1)	Short term (2)	Definite (5)	Low (20)
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## **7.2. Mitigation Measures**

### **7.2.1. Destruction of natural vegetation and destruction of protected plants**

The construction would inevitably require the removal of vegetation. Areas where structures are stored would flatten vegetation that could be detrimental to the persistence of the vegetation. In addition, the illegal disposal of construction material such as oil, cement etc. could destroy natural vegetation.

#### Mitigation Measures

- An independent Ecological Control Officer (ECO) should be appointed to oversee construction.
- Areas designated for vegetation clearing should be identified and visibly marked off.
- Vegetation clearing in natural areas should be kept to a minimum and restricted to the proposed development footprint only.
- A temporary fence or demarcation must be erected around the construction area (include the servitude, construction camps, areas where material is stored and the actual footprint of the development) to prevent access to sensitive environs.
- No open fires are permitted within naturally vegetated areas.
- A vegetation rehabilitation plan should be implemented. Grass can be removed as sods and stored within transformed vegetation – remove alien invasive vegetation prior to storing grasslands sods in transformed areas. Smaller shrubs and bulbs should also be removed and used for rehabilitation. The plants must preferably be removed during the winter months and be replanted by latest springtime. The grass sods should not be stacked on top of each other. Once construction is completed, these sods should be used to rehabilitate the disturbed areas from where they have been removed. In the absence of timely rainfall, the sods should be watered well after planting and at least twice more over the next 2 weeks.
- Construction workers may not remove flora and neither may anyone collect seed from the plants without permission from the local authority.

### **7.2.2. Exposure to erosion**

The removal of surface vegetation will expose the soils, which in rainy events would wash down into moist grasslands, causing sedimentation. In addition, indigenous vegetation communities are unlikely to colonise eroded soils successfully and seeds from proximate alien invasive plants can spread easily into these eroded soil.

#### Mitigation Measures

- Obtain a permit to cut or disturb protected plants.
- Do not allow erosion to develop on a large scale before taking action.

- Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area.
- Runoff from roads must be managed to avoid erosion and pollution problems.
- Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover. The grassland can be removed as sods and re-established after construction is completed.
- Colonisation of the disturbed areas by plants species from the surrounding natural vegetation must be monitored to ensure that vegetation cover is sufficient within one growing season. If not, then the areas need to be rehabilitated with a grass seed mix containing species that naturally occur within the study area.
- Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.

### **7.2.3. Establishment and spread of declared weeds**

The seed of alien invasive plant species that occur on and in the vicinity of the construction areas could spread into the disturbed and stockpiled soil. Also, the construction vehicles and equipment were likely used on various other sites and could introduce alien invasive plant seeds or indigenous plants not belonging to this vegetation unit to the construction site.

#### Mitigation Measures

- Alien invasive species that were identified within the study area should be removed prior to construction-related soil disturbances. By removing these species, the spread of seeds will be prevented into disturbed soils which could thus have a positive impact on the surrounding natural vegetation.
- All alien seedlings and saplings must be removed as they become evident for the duration of construction.
- Manual / mechanical removal is preferred to chemical control.
- All construction vehicles and equipment, as well as construction material should be free of plant material. Therefore, all equipment and vehicles should be thoroughly cleaned prior to access on to the construction areas. This should be verified by the ECO.

### **7.2.4. Mitigation from the Faunal Perspective**

#### **Avoid:**

- Direct destructive impacts on the sensitive faunal habitats such as the riparian zone. This can be achieved by:
  - The establishment and implementation of ecological buffer zones and open space systems. These act as important wildlife corridors and must be incorporated into the final approved layout;

- Position any parking bays, temporary load-off areas or turning areas in sites that are already disturbed and have an associated low ecological sensitivity. Optimal sites would be those close to existing disturbances in order to localise impacts;
  - Construct a permanent barrier to disable vehicle and machinery access to more sensitive faunal habitats; Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.
  - Dogs or other pets (even though the site is close to houses) are not allowed to the worksite as they are threats to the natural wild animal
  - A low speed limit should be enforced on site to reduce wild animal-vehicle collisions
  - No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.
  - Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species.
  - Hunting weapons are prohibited on site.
  - Contract employees must be educated about the value of wild animals and the importance of their conservation.
  - The ECO must conduct regular site inspections of removing any snares or traps that have been erected.
  - Any faunal species located on the site during the construction phase, which cannot relocate themselves (e.g. fossorial species), must be moved to a more suitable location. This should be undertaken by a suitable qualified ecologist/faunal specialist;
- Prior to any new groundworks:
    - The implementation of an environmental awareness programme for all construction personnel. This must focus on biodiversity issues pertaining to the degradation of sensitive habitats, collection of fauna and ensuring that no wildlife is harmed unnecessarily.

#### **7.2.5. Positive impact by removing alien invasive plants**

Alien invasive plants could spread into the soils disturbed by the construction. In addition, the invasive species could out-compete natural vegetation, displace natural grassland and lead to a species poor transformed landscape. By removing alien vegetation, the numbers of alien species, as well as the potential for these plants to spread into disturbed soil are reduced, provided that rehabilitation was successful.

#### Mitigation measures

- Compile and implement an alien invasive monitoring plan to remove alien invasive plant species prior to construction.
- Rehabilitate all areas cleared of invasive plants as soon as practically possible, utilising specified methods and species.
- Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge. Monitoring should continue for at least two years after construction is complete.

- Follow manufacturer's instruction when using chemical methods, especially in terms of quantities, time of application etc.
- Ensure that only properly trained people handle and make use of chemicals.
- Dispose of the eradicated plant material at an approved solid waste disposal site.
- Only indigenous plant species naturally occurring in the area should be used during the rehabilitation of the areas affected by the construction activities

### **7.3. Cumulative impacts**

Section 2 of the NEMA requires the consideration of cumulative impacts as part of any environmental assessment process. EIAs have traditionally, however, failed to come to terms with such impacts, largely as a result of the following considerations:

- Cumulative effects may be local, regional or global in scale and dealing with such impacts requires coordinated institutional arrangements; and
- EIA's or floral assessments are typically carried out on specific development area, whereas cumulative impacts result from broader biophysical, social and economic considerations, which typically cannot be addressed at the project level.

. In terms of this study, cumulative impacts that may arise are:

- The removal of vegetation within the area as there is Seville ext 1 and 3 proposed close to the Seville ext 2 site.
- However, cumulative impacts on the vegetation can be prevented if mitigation measures as set out in this report are adhered to as a minimum.

## 8. CONCLUSION AND RECOMMENDATIONS

Based on the impact assessment, the impact on the floral and faunal ecology arising from the township proclamation activities will range from high to medium significance prior to the implementation of mitigation measures. With mitigation as stipulated in this report effectively implemented, all impacts can be reduced, ranging from moderately low to very low. Field survey was undertaken in August 2022 to ascertain the ecological state of proposed project area. Based on the data presented in this report as well as observations made during the survey, specific conclusions and recommendations are listed below:

- A permit to disturb cut or remove any protected plant species (*Sclerocarya birrea* and *Combretum imberbe*) should be acquired from the relevant provincial authority prior to such disturbance taking place should the pits, structure or infrastructure related to the proposed township disturb such plants;
- An alien and invasive management plan must be adhered to at all times; and
- Exposed areas must be rehabilitated with indigenous plants to the project area as soon as construction is finished.

Important mitigation recommendations associated with the proposed development would include ensuring that the disturbed footprint is kept to a minimum, and ensuring compliance to the recommended mitigation measures by any contractors (project proponent) used on the project. It is recommended that the management measures stipulated in this report be included into the proposed projects official EMP and that these are assessed for efficacy during all phases of the project and adapted accordingly to ensure minimal disturbance of the study areas' ecology.

Provided that the mitigation measures as suggested can be implemented, Naledzani Environmental Services including the author of the report **does support** the proposed development as the overall impact of the development components would be of low overall significance



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## **APPENDIX A: SPECIES RECORDED ON SITE**

*Acacia caffra*

*Acacia sieberiana*

*Amaranthus hybridus*

*Aspilia mossambicensis*

*Brachiaria nigropedata*

*Brachiaria serrata*

*Combretum apiculatum*

*Combretum imberbe*

*Combretum zeyheri*

*Commelina africana*

*Dichrostachys cinerea*

*Digitaria eriantha*

*Diospyros lycioides*

*Englerophytum magalismontanum*

*Eragrostis curvula*

*Eragrostis rigidior*

*Eragrostis rigidior*

*Ficus Stuhlmannii*

*Gerbera viridifolia*

*Gymnosporia buxifolia*

*Hibiscus praeteritus*

*Hypoxis rigidula*

*Indigofera filipes*

*Lantana camara*

*Melinis repens*

*Panicum maximum*

*Peltophorum africanum*

*Perotis patens*

*Pogonarthria squarrosa*

*Pterocarpus rotundifolius*

*Ricinus communis*

*Schotia brachypetala*

*Sclerocarya birrea*

*Senagalia Nigrescens*

*Solanum marianthum*

*Strychnos madagascariensis.*

*Terminalia sericea*

*Terminalia sericea*

*Tricholaena monachne*

*Vachellia nilotica*

*Vahlia capensis*

*Waltheria indica*

*Xerophyta retinervis*

*Ximenia caffra*

*Ziziphus mucronata*

## APPENDIX B: BIRD SPECIES LIKELY TO INHABIT THE SITE

Common species	Genus	Species
Bateleur	<i>Terathopius</i>	<i>ECAUDATUS</i>
Brubru	<i>Nilaus</i>	<i>AFER</i>
Neddicky	<i>Cisticola</i>	<i>FULVICAPILLA</i>
Shikra	<i>Accipiter</i>	<i>BADIUS</i>
Yellow-breasted	<i>Apalis</i>	<i>FLAVIDA</i>
Arrow-marked	<i>Turdoides</i>	<i>JARDINEII</i>
Acacia Pied	<i>Tricholaema</i>	<i>LEUCOMELAS</i>
Black-collared	<i>Lybius</i>	<i>TORQUATUS</i>
Crested	<i>Trachyphonus</i>	<i>VAILLANTII</i>
Chinspot	<i>Batis</i>	<i>MOLITOR</i>
European	<i>Merops</i>	<i>APIASTER</i>
Little	<i>Merops</i>	<i>PUSILLUS</i>
White-fronted	<i>Merops</i>	<i>BULLOCKOIDES</i>
Southern	<i>Laniarius</i>	<i>FERRUGINEUS</i>
Terrestrial	<i>Phyllastrephus</i>	<i>TERRESTRIS</i>
Dark-capped	<i>Pycnonotus</i>	<i>TRICOLOR</i>
Cinnamon-breasted	<i>Emberiza</i>	<i>TAHAPISI</i>
Golden-breasted	<i>Emberiza</i>	<i>FLAVIVENTRIS</i>
Grey-headed	<i>Malaconotus</i>	<i>BLANCHOTI</i>
Orange-breasted	<i>Chlorophoneus</i>	<i>SULFUREOPECTUS</i>
Lizard	<i>Kaupifalco</i>	<i>MONOGRAMMICUS</i>
Green-backed	<i>Camaroptera</i>	<i>BRACHYURA</i>
Yellow-fronted	<i>Crithagra</i>	<i>MOZAMBICA</i>
Rattling	<i>Cisticola</i>	<i>CHINIANA</i>
Red-faced	<i>Cisticola</i>	<i>ERYTHROPS</i>

Common species	Genus	Species
Burchell's	<i>Centropus</i>	<i>burchellii</i>
Long-billed	<i>Sylvietta</i>	<i>rufescens</i>
Pied	<i>Corvus</i>	<i>albus</i>
African	<i>Cuculus</i>	<i>gularis</i>
Diederik	<i>Chrysococcyx</i>	<i>caprius</i>
Klaas's	<i>Chrysococcyx</i>	<i>klaas</i>
Levaillant's	<i>Clamator</i>	<i>levaillantii</i>
Red-chested	<i>Cuculus</i>	<i>solitarius</i>
Black	<i>Campephaga</i>	<i>flava</i>
Cape Turtle	<i>Streptopelia</i>	<i>capicola</i>
Emerald-spotted Wood	<i>Turtur</i>	<i>chalcospilos</i>
Laughing	<i>Spilopelia</i>	<i>senegalensis</i>
Namaqua	<i>Oena</i>	<i>capensis</i>
Red-eyed	<i>Streptopelia</i>	<i>semitorquata</i>
Rock	<i>Columba</i>	<i>livia</i>
Fork-tailed	<i>Dicrurus</i>	<i>adsimilis</i>
White-faced Whistling	<i>Dendrocygna</i>	<i>viduata</i>
Black-chested Snake	<i>Circaetus</i>	<i>pectoralis</i>
Brown Snake	<i>Circaetus</i>	<i>cinereus</i>
Western Cattle	<i>Bubulcus</i>	<i>ibis</i>
Yellow-bellied	<i>Eremomela</i>	<i>icteropygialis</i>
African	<i>Lagonosticta</i>	<i>rubricata</i>
Red-billed	<i>Lagonosticta</i>	<i>senegala</i>
Southern	<i>Lanius</i>	<i>collaris</i>
Ashy	<i>Muscicapa</i>	<i>caerulescens</i>
Pale	<i>Melaenornis</i>	<i>pallidus</i>



Common species	Genus	Species
Southern Black	<i>Melaenornis</i>	<i>pammelaina</i>
Crested	<i>Dendroperdix</i>	<i>sephaena</i>
Grey	<i>Crinifer</i>	<i>concolor</i>
Egyptian	<i>Alopochen</i>	<i>aegyptiaca</i>
Dark Chanting	<i>Melierax</i>	<i>metabates</i>
Little	<i>Tachybaptus</i>	<i>ruficollis</i>
Sombre	<i>Andropadus</i>	<i>importunus</i>
Helmeted	<i>Numida</i>	<i>meleagris</i>
White-crested	<i>Prionops</i>	<i>plumatus</i>
Grey	<i>Ardea</i>	<i>cinerea</i>
Lesser	<i>Indicator</i>	<i>minor</i>
African	<i>Upupa</i>	<i>africana</i>
African Grey	<i>Lophoceros</i>	<i>nasutus</i>
Southern Ground	<i>Bucorvus</i>	<i>leadbeateri</i>
Southern Red-billed	<i>Tockus</i>	<i>rufirostris</i>
Southern Yellow-billed	<i>Tockus</i>	<i>leucomelas</i>
Hadada	<i>Bostrychia</i>	<i>hagedash</i>
African	<i>Actophilornis</i>	<i>africanus</i>
Brown-hooded	<i>Halcyon</i>	<i>albiventris</i>
Malachite	<i>Corythornis</i>	<i>cristatus</i>
Striped	<i>Halcyon</i>	<i>chelicuti</i>
Red-crested	<i>Lophotis</i>	<i>ruficrista</i>
Blacksmith	<i>Vanellus</i>	<i>armatus</i>
Crowned	<i>Vanellus</i>	<i>coronatus</i>
Rufous-naped	<i>Mirafr</i>	<i>africana</i>
Sabota	<i>Calendulauda</i>	<i>sabota</i>

Common species	Genus	Species
Lesser	<i>Ploceus</i>	<i>intermedius</i>
Lesser	<i>Paragallinula</i>	<i>angulata</i>
Red-faced	<i>Urocolius</i>	<i>indicus</i>
Speckled	<i>Colius</i>	<i>striatus</i>
Common	<i>Acridotheres</i>	<i>tristis</i>
Black-headed	<i>Oriolus</i>	<i>larvatus</i>
Western Barn	<i>Tyto</i>	<i>alba</i>
African Barred	<i>Glaucidium</i>	<i>capense</i>
Pearl-spotted	<i>Glaucidium</i>	<i>perlatus</i>
Red-billed	<i>Buphagus</i>	<i>erythrorhynchus</i>
Yellow-billed	<i>Buphagus</i>	<i>africanus</i>
Brown-headed	<i>Poicephalus</i>	<i>cryptoxanthus</i>
African Green	<i>Treron</i>	<i>calvus</i>
African	<i>Anthus</i>	<i>cinnamomeus</i>
Three-banded	<i>Charadrius</i>	<i>tricoloris</i>
Tawny-flanked	<i>Prinia</i>	<i>subflava</i>
Black-backed	<i>Dryoscopus</i>	<i>cubla</i>
Red-billed	<i>Quelea</i>	<i>quelea</i>
White-throated	<i>Cossypha</i>	<i>humeralis</i>
Lilac-breasted	<i>Coracias</i>	<i>caudatus</i>
Purple	<i>Coracias</i>	<i>naevius</i>
White-browed	<i>Cercotrichas</i>	<i>leucophrys</i>
Magpie	<i>Urolestes</i>	<i>melanoleucus</i>
Cape	<i>Passer</i>	<i>melanurus</i>
House	<i>Passer</i>	<i>domesticus</i>
Southern Grey-headed	<i>Passer</i>	<i>diffusus</i>

Common species	Genus	Species
Yellow-throated Bush	<i>Gymnoris</i>	<i>superciliaris</i>
Natal	<i>Pternistis</i>	<i>natalensis</i>
Burchell's	<i>Lamprotornis</i>	<i>australis</i>
Cape	<i>Lamprotornis</i>	<i>nitens</i>
Violet-backed	<i>Cinnyricinclus</i>	<i>leucogaster</i>
Wattled	<i>Creatophora</i>	<i>cinerea</i>
African	<i>Saxicola</i>	<i>torquatus</i>
Woolly-necked	<i>Ciconia</i>	<i>episcopus</i>
Collared	<i>Hedydipna</i>	<i>collaris</i>
Marico	<i>Cinnyris</i>	<i>mariquensis</i>
Scarlet-chested	<i>Chalcomitra</i>	<i>senegalensis</i>
White-bellied	<i>Cinnyris</i>	<i>talatala</i>
Barn	<i>Hirundo</i>	<i>rustica</i>
Lesser Striped	<i>Cecropis</i>	<i>abyssinica</i>
Red-breasted	<i>Cecropis</i>	<i>semirufa</i>
Wire-tailed	<i>Hirundo</i>	<i>smithii</i>
Black-crowned	<i>Tchagra</i>	<i>senegalus</i>
Brown-crowned	<i>Tchagra</i>	<i>australis</i>
Groundscraper	<i>Turdus</i>	<i>litsitsirupa</i>
Kurrichane	<i>Turdus</i>	<i>libonyana</i>
Yellow-fronted	<i>Pogoniulus</i>	<i>chrysoconus</i>
Grey Penduline	<i>Anthoscopus</i>	<i>caroli</i>
Southern Black	<i>Melaniparus</i>	<i>niger</i>
Hooded	<i>Necrosyrtes</i>	<i>monachus</i>
White-backed	<i>Gyps</i>	<i>africanus</i>
Willow	<i>Phylloscopus</i>	<i>trochilus</i>

Common species	Genus	Species
Blue	<i>Uraeginthus</i>	<i>angolensis</i>
Common	<i>Estrilda</i>	<i>astrild</i>
Southern Masked	<i>Ploceus</i>	<i>velatus</i>
Spectacled	<i>Ploceus</i>	<i>ocularis</i>
Pin-tailed	<i>Vidua</i>	<i>macroura</i>
Green	<i>Phoeniculus</i>	<i>purpureus</i>
Bearded	<i>Chloropicus</i>	<i>namaquus</i>
Bennett's	<i>Campethera</i>	<i>bennettii</i>
Cardinal	<i>Dendropicos</i>	<i>fuscescens</i>
Stierling's	<i>Calamonastes</i>	<i>stierlingi</i>