



Vegetation Assessment for the proposed Venetia Limpopo Nature Reserve (VLNR) Lodge

Venetia, Limpopo Province

November 2020

AVD001_11_2020

CLIENT



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VEGETATION ASSESSMENT FOR THE PROPOSED VENETIA LIMPOPO NATURE RESERVE (VLNR) LODGE	
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Reference	Venetia Lodge
Submitted to	
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Declaration	<p>The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.</p>

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1 Introduction

The Biodiversity Company was appointed to conduct a vegetation assessment for a proposed Venetia Limpopo Nature Reserve (VLNR) Lodge, Alldays, Limpopo Province. The proposed development (Figure 1-1) will consist of:

- A lodge comprising of one communal building and 12 units (maximum 24 guests);
- Central building;
- Swimming pool and lapa;
- Storeroom;
- Fencing;
- Reception and administrative office;
- Sewerage package plant;
- Staff quarters and locker room;
- Birdhide; and
- Gravel access road (existing and will just be upgraded) (DeBeers, 2020).

An early wet season survey was conducted in October 2020, across the whole development footprint hereafter referred to as the “project area”. The survey focused on the project footprint and the areas directly adjacent to the project area. Furthermore, identification and description of any sensitive receptors were recorded across the project area, and the manner in which these sensitive receptors may be affected by the proposed development were also investigated

The approach has taken cognisance of the recently published Government Notice 320 in terms of NEMA dated 30 October 2020: “Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation”. The National Web based Environmental Screening Tool has characterised the plant species theme for the project area as “low sensitivity”.

This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making with regards to the proposed project.

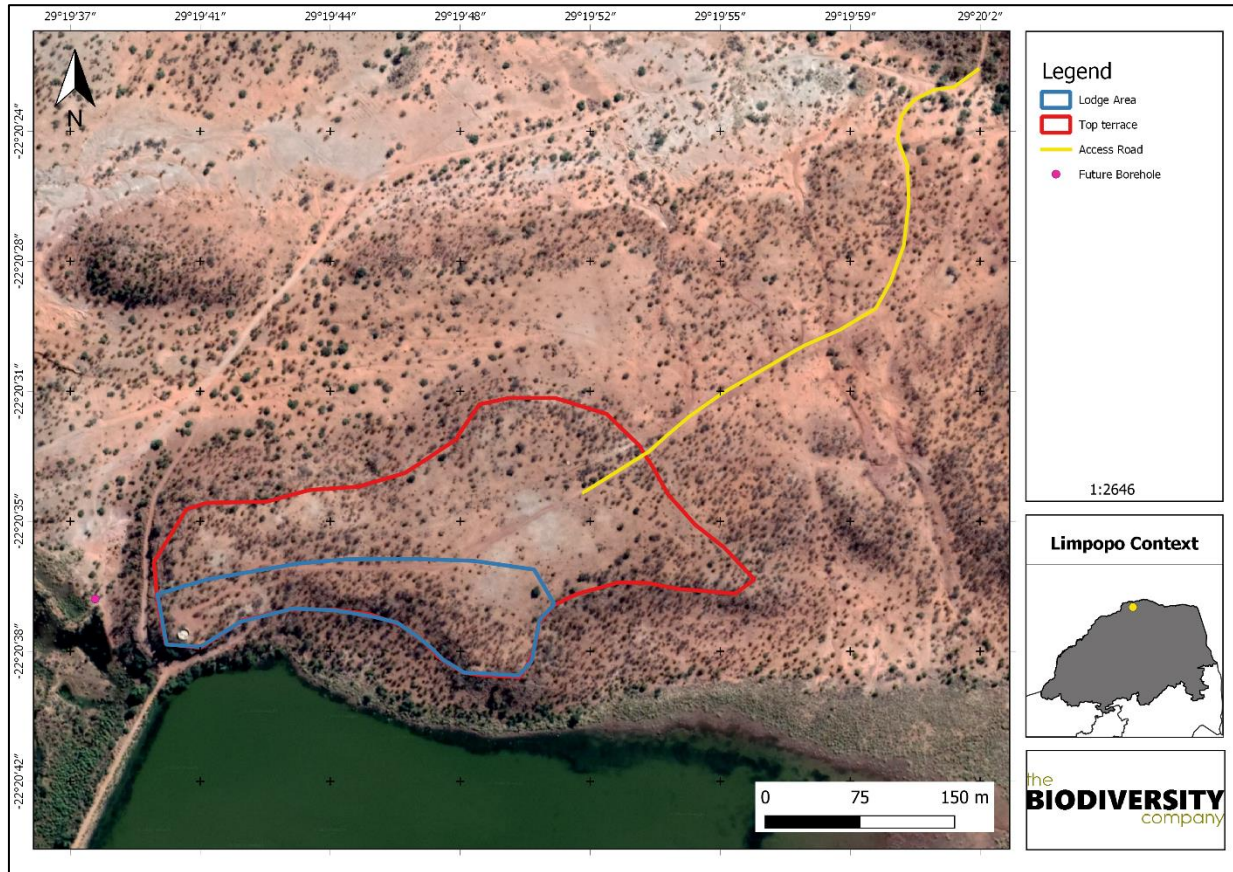


Figure 1-1 Project layout

2 Project Area

The VLNR (22°20'S; 29°17'E) is situated approximately 80 km west of Musina, 40 km north-east of Alldays and 10 km south of the intersection of the international borders of Botswana, Zimbabwe and South Africa (DeBeers, 2015). The VLNR is situated between R521 and R572 roads linking Alldays and Musina, approximately 500 km north of Johannesburg and falls within the Musina Local Municipality of the Vhembe District of the Limpopo Province. The VLNR is 31 855 ha in extent, measuring 22 km from north to south, and approximately 18 km from east to west. It ranges from its highest point at 780 m in the South Eastern corner to the lowest point at 540 m in the North West (DeBeers, 2015). The project area falls within the nature reserve. The location of the project area is shown in Figure 2-1.

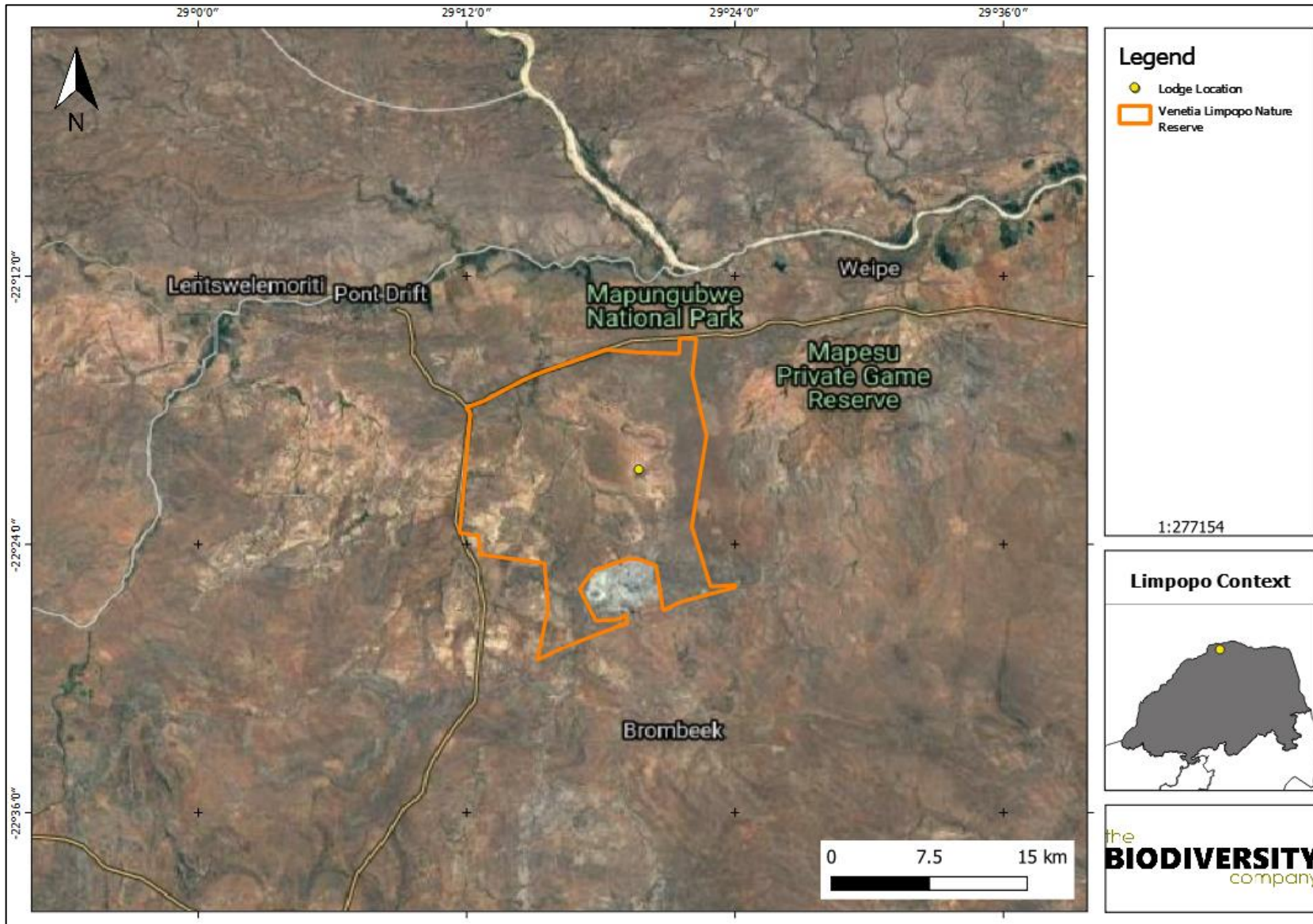


Figure 2-1 The location of the proposed project area
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3 Scope of Work

The Terms of Reference (ToR) include the following:

- Desktop description of the baseline receiving environment specific to the field of expertise (general surrounding as well as site specific environment);
- Identification and description of any sensitive receptors that occur in the project area, and the manner in which these sensitive receptors may be affected by the activity;
- Site visit to verify desktop information and to undertake an assessment of the vegetation community;
- Screening to identify any critical issues (potential fatal flaws) that may result in project delays or rejection of the application;
- Provide a map identifying sensitive receptors in the project area, based on available maps, database information & site visit verification; and
- Recommend mitigation measures and rehabilitation measures where required for inclusion in the Environmental Management Programme.

4 Methodologies

4.1 Geographic Information Systems (GIS) Mapping

Existing data layers were incorporated into a GIS to establish how the proposed development might influence the flora in the area. Emphasis was placed around the following spatial datasets:

- Vegetation types (SANBI, 2018); and
- National Biodiversity Assessment (NBA, 2018).

Field surveys were conducted to confirm the presence of species identified in the desktop assessment. The specialist disciplines were completed for this study:

- Botanical.

Brief descriptions of the standardised methodologies applied in the specialist disciplines are provided below. More detailed descriptions of survey methodologies are available upon request.

4.2 Botanical Assessment

The approach encompassed an assessment of all the vegetation units and habitat types within the project area. The focus was on a full assessment of habitat types as well as identification for any red-data species within the known distribution of the project area. The methodology included the following survey techniques:

- Timed meanders;
- Sensitivity analysis based on structural and species diversity; and
- Identification of floral red-data species.

4.2.1 Literature study

A literature review was conducted as part of the desktop study to identify the potential habitats present within the project area. The SANBI provides an electronic database system, namely the Botanical Database of Southern Africa (BODATSA), to access distribution records on southern African plants. This is a new database which replaces the old Plants of Southern Africa (POSA) database. The POSA database provided distribution data of flora at the quarter degree square (QDS) resolution.

The Red List of South African Plants website (SANBI, 2019) was utilized to provide the most current account of the national status of flora. Relevant field guides and texts consulted for identification purposes in the field during the surveys included the following:

- A Field Guide to Wild Flowers (Pooley, 1998);
- Field Guide to Trees of Southern Africa (Van Wyk & Van Wyk, 1997);
- Guide to grasses of Southern Africa (Van Oudtshoorn, 1999);
- Orchids of South Africa (Johnson & Bytebier, 2015); and
- Guide to the Aloes of South Africa (Van Wyk & Smith, 2014);

Additional information regarding ecosystems, vegetation types, and species of conservation concern (SCC) included the following sources:

- The Vegetation of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006); and
- Red List of South African Plants (Raimondo *et al.*, 2009; SANBI, 2019).

5 Limitation

The following limitations are relevant for this project:

- The assessment was based on the results of a single early wet season survey only, and information provided should be interpreted accordingly;
- This assessment has not assessed any temporal trends for the project; and
- The GPSs used for delineations is accurate to within five meters. Therefore, the habitats delineated plotted digitally and the plant locations in the final report may be offset by at least five meters to either side.

6 Early Wet Season Fieldwork

The fieldwork and sample sites were placed within targeted areas (i.e. target sites) perceived as ecologically sensitive based on the preliminary interpretation of satellite imagery (Google Corporation) and GIS analysis (which included the latest applicable biodiversity datasets) available prior to the fieldwork. The focus of the fieldwork was therefore to maximise coverage and navigate to each target site in the field in order to perform a rapid vegetation and ecological assessment at each sample site. Emphasis was placed on sensitive habitats, especially those overlapping with the proposed project area.

At each sample site notes were made regarding current impacts (e.g. fencing, roads, erosion etc.), subjective recording of dominant vegetation species and any sensitive features (e.g. wetlands, outcrops etc.). In addition, opportunistic observations were made while navigating through the project area. Effort was made to cover all the different habitat types within the limits of time and access. The geographic location of sample sites and site coverage are shown under the Results section.

7 Key Legislative Requirements

The legislation, policies and guidelines listed below are applicable to the current project in terms of biodiversity and ecological support systems. The list below, although extensive, may not be complete and other legislation, policies and guidelines may apply in addition to those listed below (Table 7-1).

Table 7-1 A list of key legislative requirements relevant to biodiversity and conservation in the Limpopo Province

INTERNATIONAL	Convention on biological diversity (CBD, 1993)
	The United Nations Framework Convention on Climate Change (UNFCCC, 1994)
	The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1973)
	The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, 1979)
NATIONAL	Constitution of the Republic of South Africa (Act No. 108 of 2006)
	The National Environmental Management Act (NEMA) (Act No. 107 of 1998)
	The National Environmental Management Protected Areas Act (Act No. 57 of 2003)
	The National Environmental Management Biodiversity Act (Act No. 10 of 2004)
	The National Environmental Management: Waste Act, 2008 (Act 59 of 2008);
	The Environment Conservation Act (Act No. 73 of 1989)
	National Environmental Management Air Quality Act (No. 39 of 2004)
	National Protected Areas Expansion Strategy (NPAES)
	Natural Scientific Professions Act (Act No. 27 of 2003)
	National Biodiversity Framework (NBF, 2009)
	National Forest Act (Act No. 84 of 1998)
	National Water Act, 1998 (Act 36 of 1998)
	National Freshwater Ecosystem Priority Areas (NFEPA's)
	National Spatial Biodiversity Assessment (NSBA)
	World Heritage Convention Act (Act No. 49 of 1999)
	National Heritage Resources Act, 1999 (Act 25 of 1999)
	Municipal Systems Act (Act No. 32 of 2000)
	Alien and Invasive Species Regulations, 2014
	South Africa's National Biodiversity Strategy and Action Plan (NBSAP)
	Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)
Sustainable Utilisation of Agricultural Resources (Draft Legislation).	
White Paper on Biodiversity	
PROVINCIAL	Limpopo Conservation Plan (2018)

	Limpopo Environmental Management Act (2003)
	Vhembe District Bioregional Plan (LEDET, 2017)

8 Results and Discussion

8.1 Desktop Spatial Assessment

The following features describes the general area and habitat, this assessment is based on spatial data that are provided by various sources such as the provincial environmental authority and the SANBI. The desktop analysis and their relevance to this project are listed in Table 8-1.

Table 8-1 Desktop spatial features examined.

Desktop Information Considered	Relevant/Not relevant	Section
Conservation Plan	The project area overlaps with a CBA 1 area	8.1
Ecosystem Threat Status	The project area falls within an ecosystem which is listed as LC ecosystem.	8.1.2.1
Ecosystem Protection Level	The project area falls in a “well protected” and “moderately protected” area.	8.1.2.2
Endemic species	Low numbers of endemic species are expected in the project area	8.1.2.3
Protected area	Based on the SAPAD data the project area overlaps with the <ul style="list-style-type: none"> • Mapungubwe Cultural landscape; and • Seduka Private Nature reserve, Based on the SACAD dataset: <ul style="list-style-type: none"> • In the Vhembe Biosphere 	8.1.3
Biome	Located in the Savanna Biome	8.1.4
Vegetation Type	The project area occurs in the Limpopo Ridge Bushveld and the Musina Mopane Bushveld	8.1.5

8.1.1 The Biodiversity Conservation Plan

The Limpopo Conservation Plan, Version 2 (LCPv2), was completed in 2018 for the Limpopo Department of Economic Development, Environment & Tourism (LEDET) (Desmet *et al.*, 2018). The purpose of the LCPv2 was to develop the spatial component of a bioregional plan (i.e. map of Critical Biodiversity Areas and associated land-use guidelines). The previous Limpopo Conservation Plan (LCPv1) was completely revised and updated (Desmet *et al.*, 2018). A Limpopo Conservation Plan map was produced as part of this plan and sites were assigned to the following CBA categories based on their biodiversity characteristics, spatial configuration and requirement for meeting targets for both biodiversity pattern and ecological processes:

- Critical Biodiversity Area 1 (CBA1);
- Critical Biodiversity Area 2 (CBA2);
- Ecological Support Area 1 (ESA1);
- Ecological Support Area 2 (ESA2);
- Other Natural Area (ONA);
- Protected Area (PA); and
- No Natural Remaining (NNR).

Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. Thus, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses (Desmet *et al.*, 2018).

Ecological Support Areas (ESA's) are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of Critical Biodiversity Areas and/or in delivering ecosystem services (SANBI, 2017). Critical Biodiversity Areas and Ecological Support Areas may be terrestrial or aquatic.

Other Natural Areas (ONAs) consist of all those areas in good or fair ecological condition that fall outside the protected area network and have not been identified as CBAs or ESAs. A biodiversity sector plan or bioregional plan must not specify the desired state/management objectives for ONAs or provide land-use guidelines for ONAs (Desmet *et al.*, 2018).

Areas with No Natural Habitat Remaining (NNR) are areas in poor ecological condition that have not been identified as CBAs or ESAs. They include all irreversibly modified areas (such as urban or industrial areas and mines), and most severely modified areas (such as cultivated fields and forestry plantations). A biodiversity sector plan or bioregional plan must not specify the desired state/management objective or provide land-use guidelines for NNR areas (Desmet *et al.*, 2018).

Figure 8-1 shows the project area superimposed on the Terrestrial CBA map. The project area overlaps with a CBA 1 area.

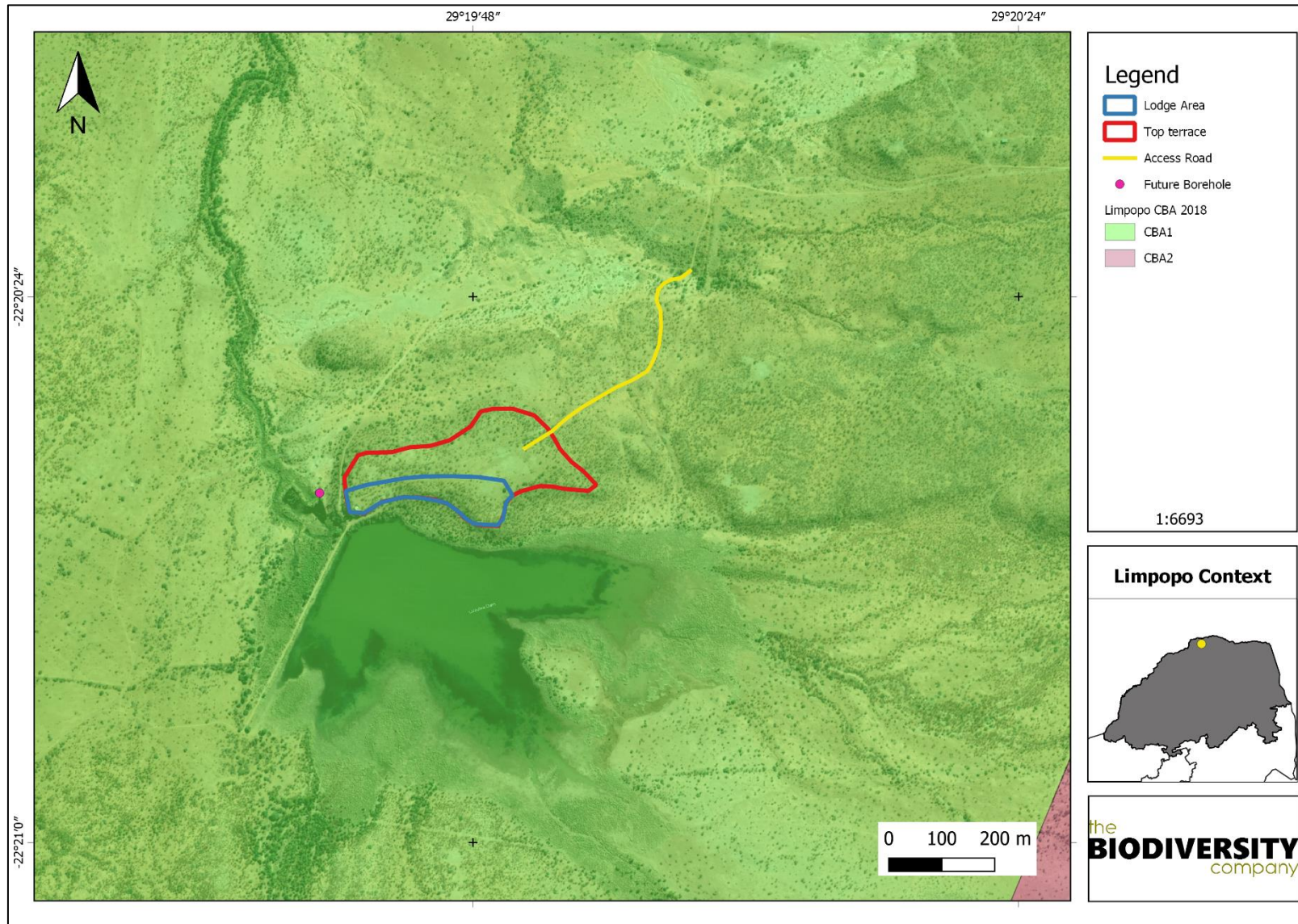


Figure 8-1 Project area superimposed on the Limpopo Conservation Plan terrestrial map

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8.1.2 Project Area in Relation to the NBA

The two headline indicators assessed in the NBA are ecosystem threat status and ecosystem protection level (Skowno *et al*, 2019).

8.1.2.1 Ecosystem Threat Status

Ecosystem threat status outlines the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function and composition, on which their ability to provide ecosystem services ultimately depends (Skowno *et al.*, 2019).

Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Least Concerned (LC), based on the proportion of each ecosystem type that remains in good ecological condition (Skowno *et al.*, 2019).

The project area was superimposed on the terrestrial ecosystem threat status (Figure 8-2). The project area overlaps entirely with ecosystems that are listed as LC.

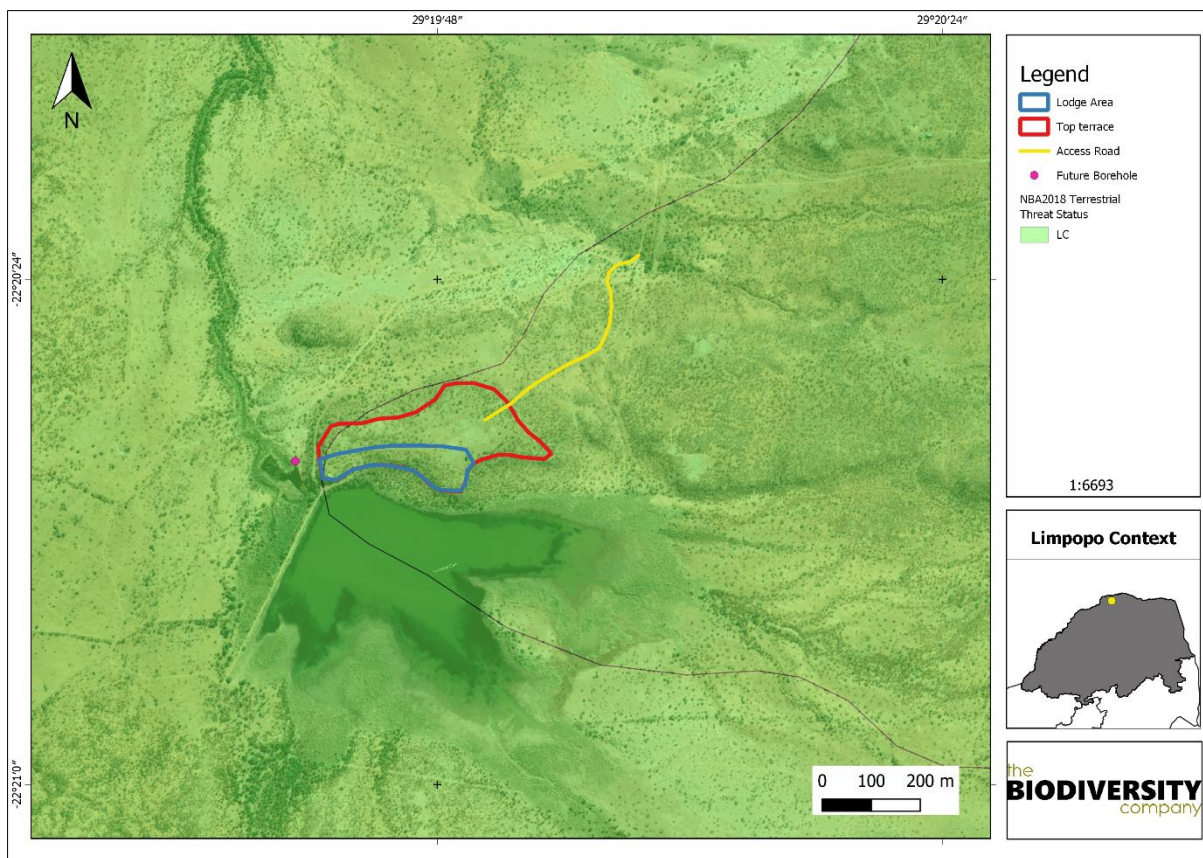


Figure 8-2 The project area showing the ecosystem threat status of the associated terrestrial ecosystems (NBA, 2018)

8.1.2.2 Ecosystem Protection Level

Ecosystem protection level tells us whether ecosystems are adequately protected or under-protected. Ecosystem types are categorised as not protected, poorly protected, moderately protected or well protected, based on the proportion of each ecosystem type that occurs within a protected area recognised in the Protected Areas Act (Skowno *et al*, 2019).

The project area was superimposed on the ecosystem protection level map to assess the protection status of terrestrial ecosystems associated with the development (Figure 8-3). Based on Figure 8-3 majority of the project area falls in an area classified as *Well Protected*, while a section on the western side fall in a *Moderately Protected* area.

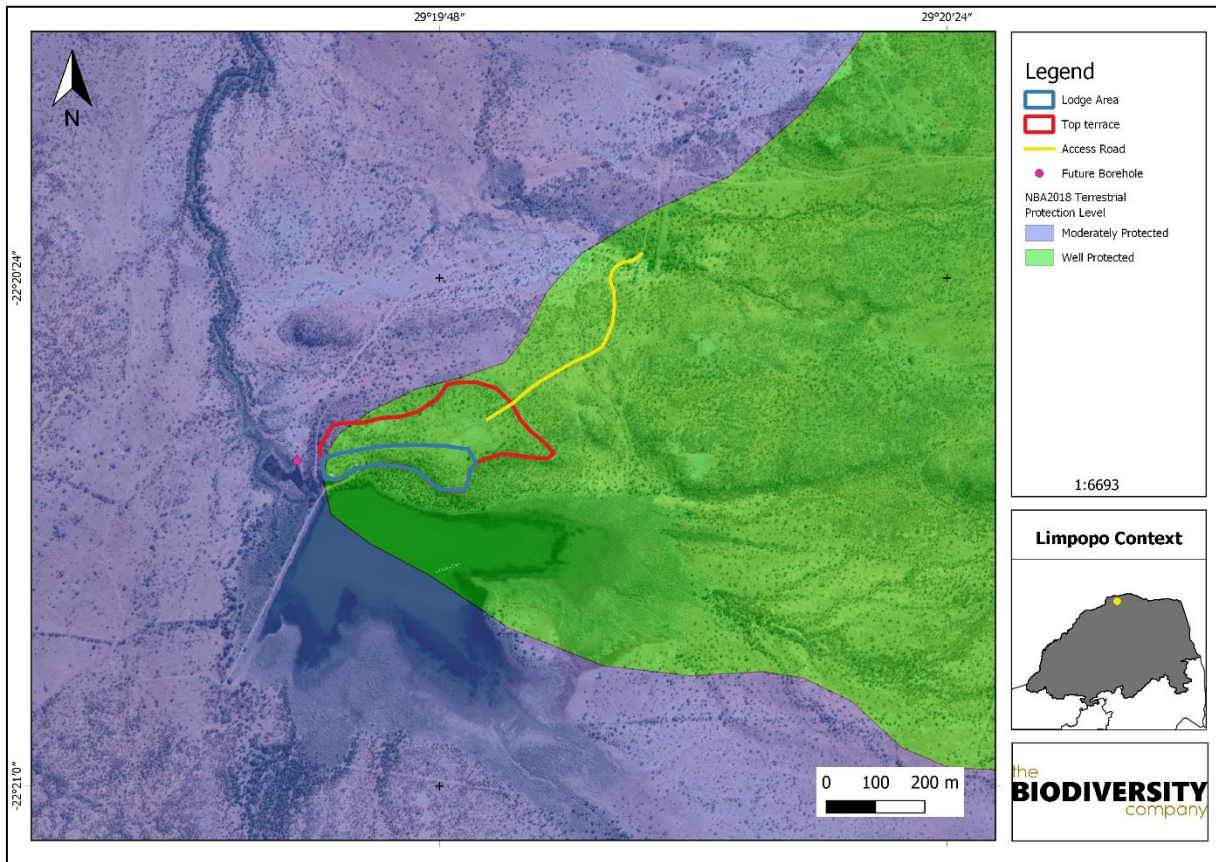


Figure 8-3 The project area showing the level of protection of terrestrial ecosystems (NBA, 2018).

8.1.2.3 Endemism

The NBA (2018) dataset provides the option to determine whether the project area has endemic flora species or not. Based on this (Figure 8-4) and the expected species shown in section 9.1.2 it can be seen that the level of endemism is regarded as not likely.

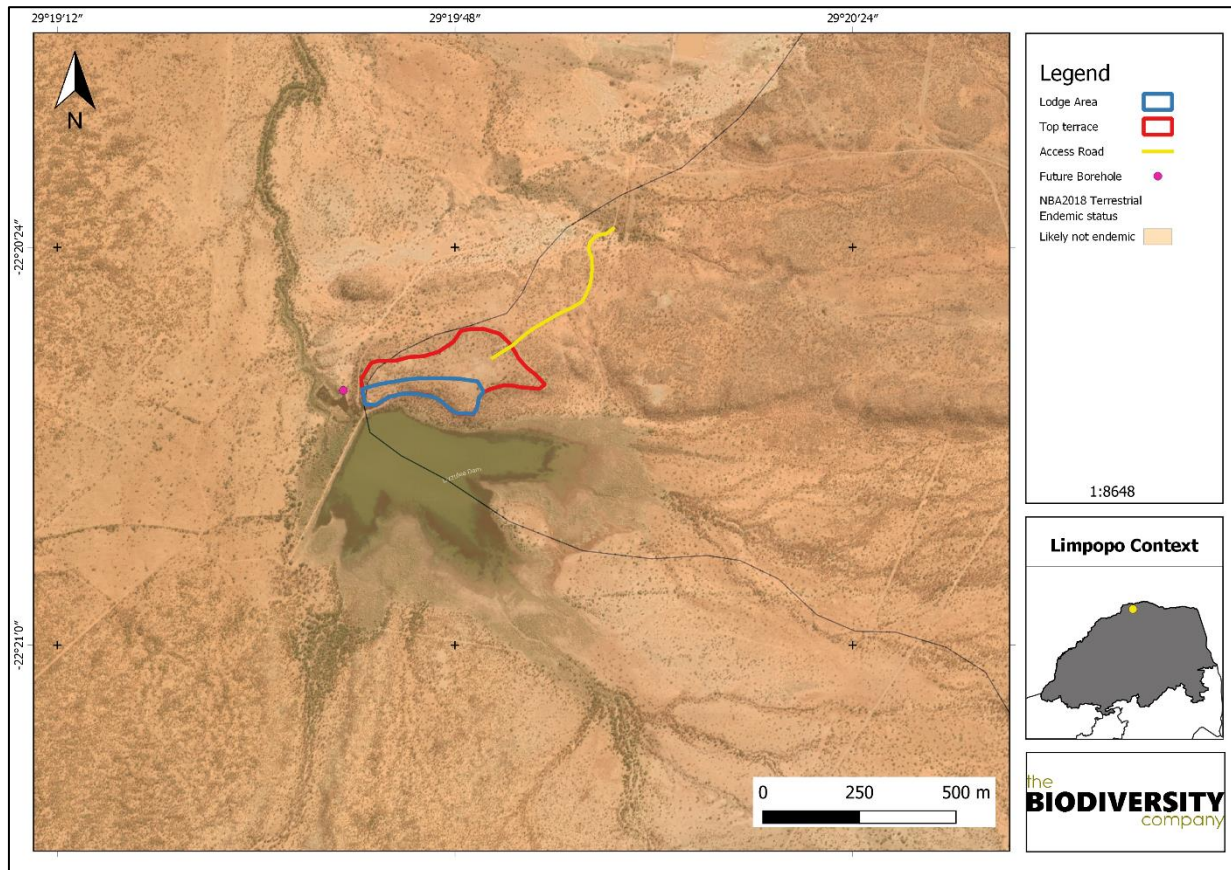


Figure 8-4 The endemism in the project area

8.1.3 Protected Areas

The Department of Environmental Affairs maintains a spatial database on Protected Areas and Conservation Areas. Protected Areas and Conservation Areas (PACA) Database scheme that used for classifying protected areas (South Africa Protected Areas Database-SAPAD, 2020) and conservation areas (South Africa Conservation Areas Database-SACAD, 2020) into types and sub-types in South Africa.

The definition of protected areas used in these documents follows the definition of a protected area as defined in the National Environmental Management: Protected Areas Act, (Act 57 of 2003). Chapter 2 of the National Environmental Management: Protected Areas Act, 2003 sets out the “System of Protected Areas”, which consists of the following kinds of protected areas:

- Special nature reserves:
- National parks:
- Nature reserves and
- Protected environments (1-4 declared in terms of the National Environmental Management: Protected Areas Act, 2003);
- World heritage sites declared in terms of the World Heritage Convention Act;
- Marine protected areas declared in terms of the Marine Living Resources Act;

- Specially protected forest areas, forest nature reserves, and forest wilderness areas declared in terms of the National Forests Act, 1998 (Act No. 84 of 1998); and
- Mountain catchment areas declared in terms of the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970).

The types of conservation areas that are currently included in the database are the following:

- Biosphere reserves;
- Ramsar sites;
- Stewardship agreements (other than nature reserves and protected environments);
- Botanical gardens;
- Transfrontier conservation areas;
- Transfrontier parks;
- Military conservation areas and
- Conservancies.

Based on the SAPAD data the project area (Figure 8-5) overlap with the Mapungubwe Cultural Landscape World Heritage Site and the Seduka Private Nature reserve, it does fall outside of the 10km protected area buffer around the Mapungubwe National Park. The project area falls within the Vhembe Biosphere reserve according to the SACAD data (Figure 8-6). The VLNR footprint was provided by Alta Van Dyk Environmental.

Based on the Protected area register portal (<https://portal.environment.gov.za/>), the project area fall within:

CA: Biosphere Reserve: Buffer Area:

- *Vhembe Biosphere Reserve*

RSA Transfrontier Conservation Area:

- *Greater Mapungubwe Transfrontier Conservation Area*

Protected Area:

- *World Heritage Site: Mapungubwe Cultural Landscape*
- *Nature Reserve: Venetia Limpopo Nature Reserve (VLNR), specifically Seduka Private Nature Reserve*

Conservation area:

- *Biosphere Reserve-Vhembe Biosphere Reserve*

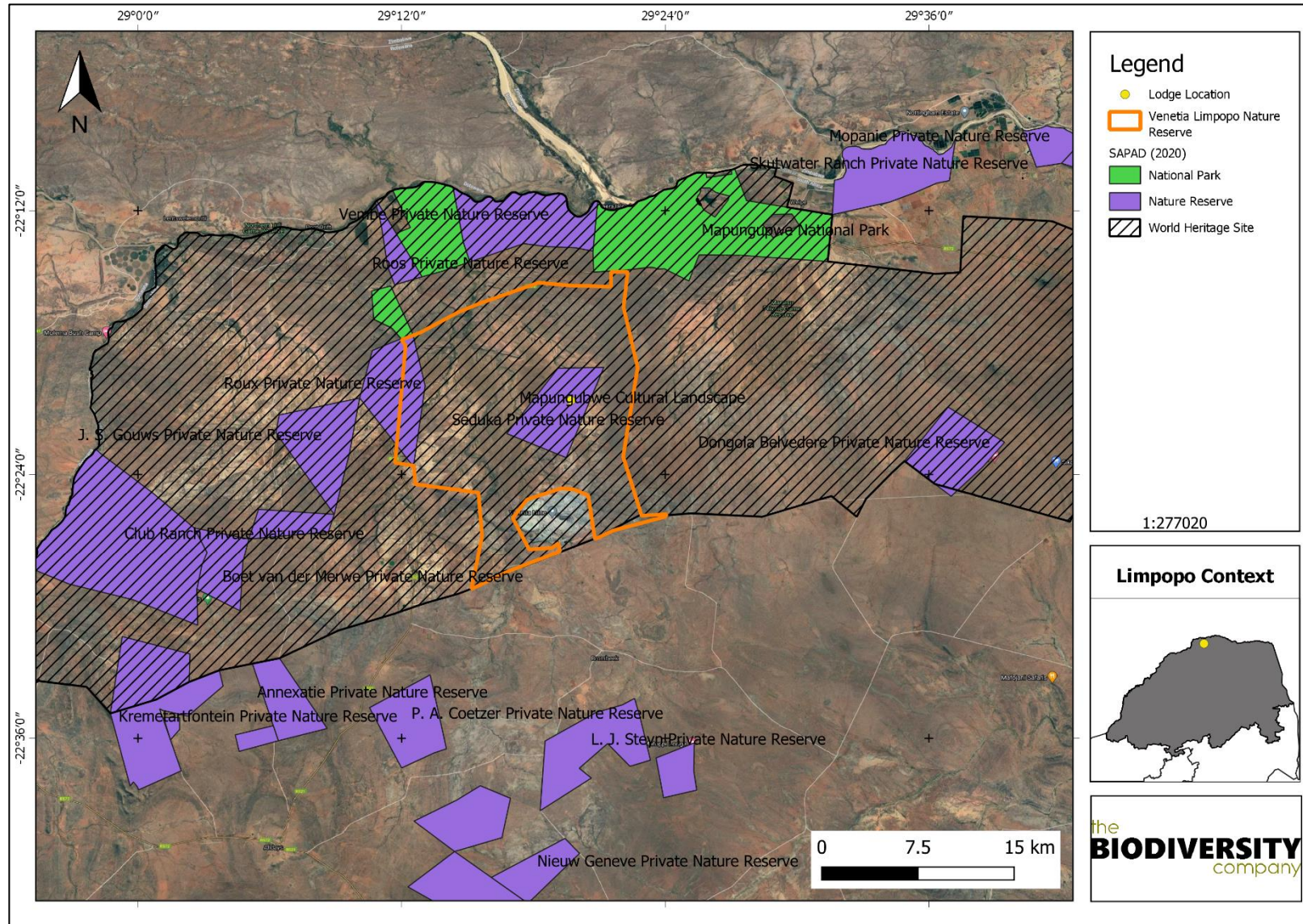


Figure 8-5 The project area in relation to the SAPAD data

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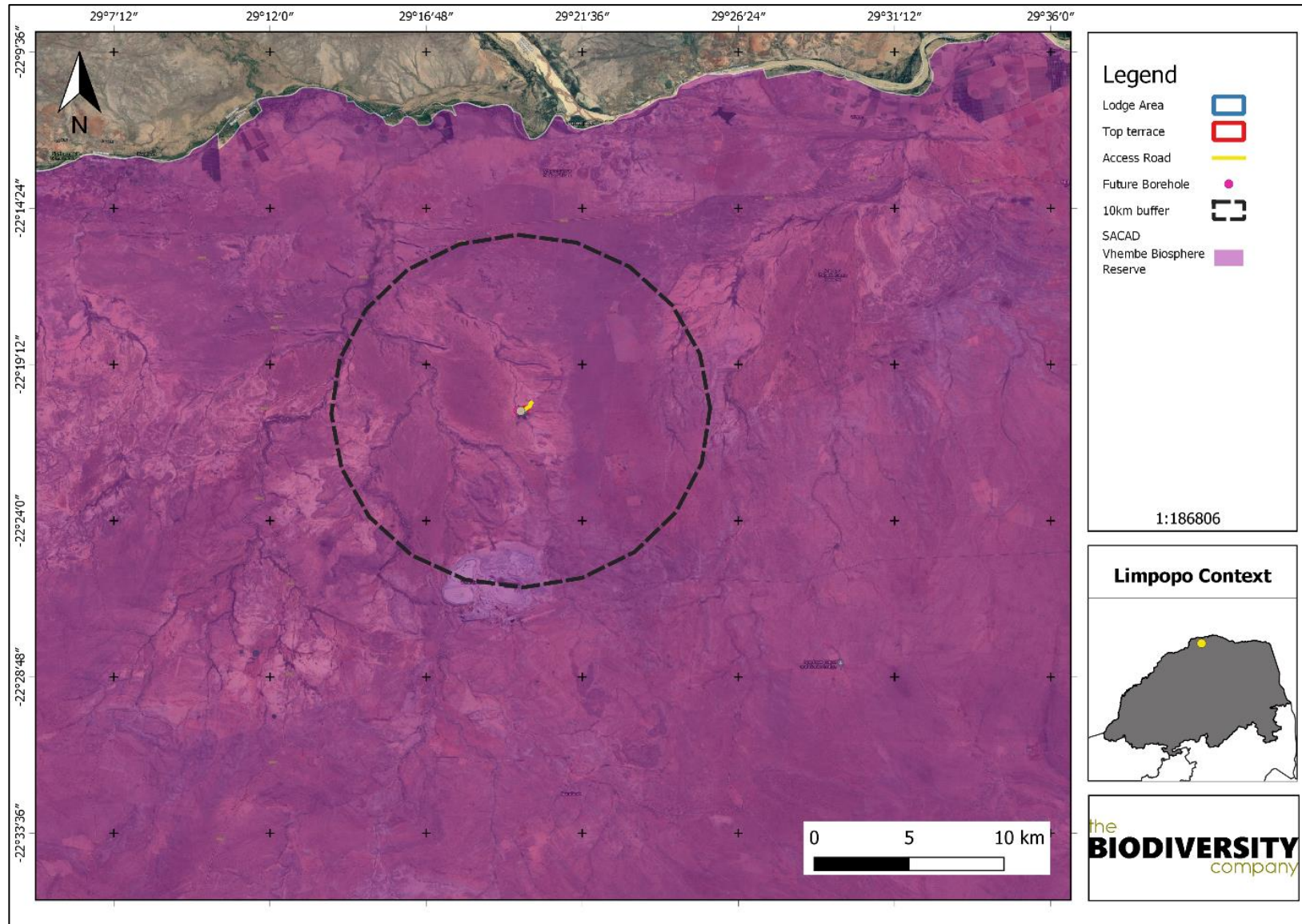


Figure 8-6 The project area in relation to the SACAD data

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8.1.4 Biome

The project area is situated in the Savanna biome. The savanna vegetation of South Africa represents the southernmost extension of the most widespread biome in Africa (Mucina & Rutherford, 2006). Major macroclimatic traits that characterise the Savanna biome include:

- a) Seasonal precipitation; and
- b) (Sub) tropical thermal regime with no or usually low incidence of frost (Mucina & Rutherford, 2006).

Most savanna vegetation communities are characterised by a herbaceous layer dominated by grasses and a discontinuous to sometimes very open tree layer (Mucina & Rutherford, 2006).

The savanna biome is the largest biome in South Africa, extending throughout the east and north-eastern areas of the country. Savannas are characterised by a dominant grass layers, over-topped by a discontinuous, but distinct woody plant layer. At a structural level, Africa's savannas can be broadly categorised as either fine-leaved (microphyllous) savannas or broad-leaved savannas. Fine-leaved savannas typically occur on nutrient rich soils and are dominated by microphyllous woody plants of the Mimosaceae family (Common genera include *Vachellia*, *Senegalia* and *Albizia*) and a generally dense herbaceous layer (Scholes & Walker, 1993).

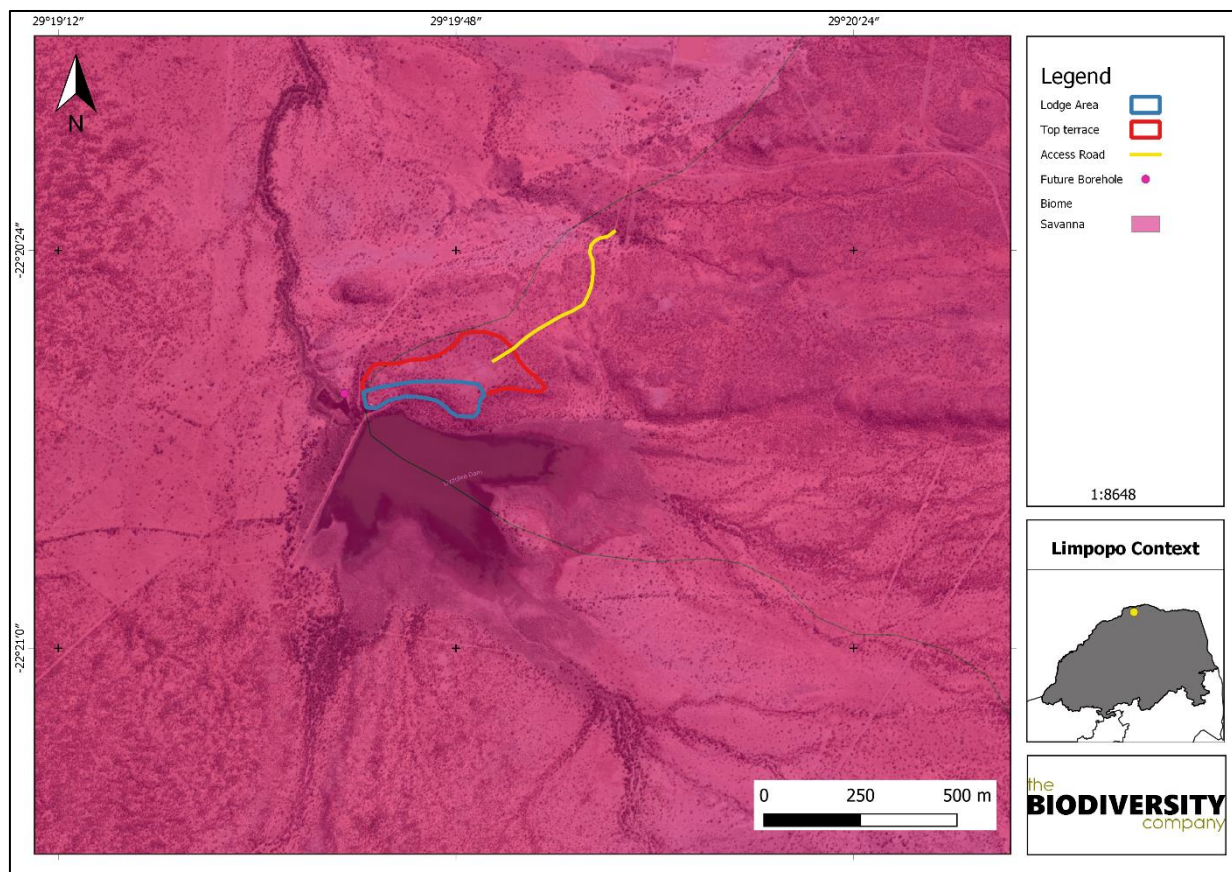


Figure 8-7 The biome in which the project area is situated

8.1.5 Vegetation Type

The project area is situated within two vegetation types; the Limpopo Ridge Bushveld and the Musina Mopane Bushveld, according to Mucina & Rutherford (2006) (Figure 8-8).

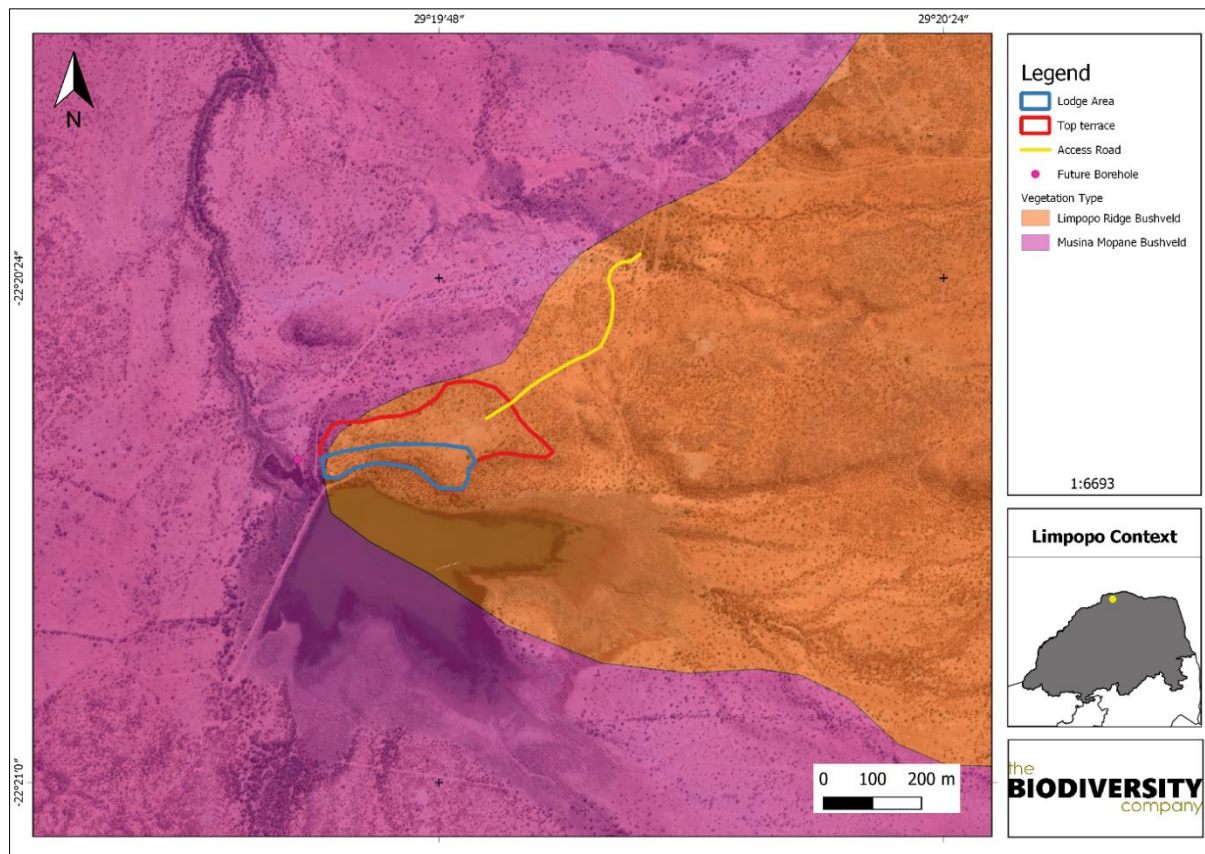


Figure 8-8 Project area showing the vegetation type based on the Vegetation Map of South Africa, Lesotho & Swaziland (BGIS, 2017).

8.1.5.1 Limpopo Ridge Bushveld

The Limpopo Ridge Bushveld is found across irregular plains of ridges and hills. Some open savanna areas can be found. In the ridge regions *Kirkia acuminata* is dominant with *Adansonia digitata* protruding out. This vegetation type is found only in the Limpopo Province at altitudes from 300 m to 700 m.

Important Taxa:

Important plant taxa are those species that have a high abundance, a frequent occurrence or are prominent in the landscape within a particular vegetation type (Mucina & Rutherford, 2006). The following species are important in the Limpopo Ridge Bushveld:

Tall Trees: *Adansonia digitata*, *Senegalia nigrescens*, *Sclerocarya birrea* subsp. *caffra*.

Small Trees: *Colophospermum mopane*, *Commiphora glandulosa*, *C. tenuipetiolata*, *Terminalia prunioides*, *Senegalia senegal* var. *leiorhachis*, *Vachellia tortilis* subsp. *heteracantha*, *Boscia albitrunca*, *Combretum apiculatum*, *C. imberbe*, *Commiphora mollis*, *Ficus abutilifolia*, *F. tettensis*, *Kirkia acuminata*, *Sterculia rogersii*, *Ximenia americana*.

Tall Shrubs: *Catophractes alexandri*, *Commiphora pyracanthoides*, *Gardenia resiniflua*, *Grewia bicolor*, *G. villosa*, *Hibiscus calyphyllus*, *H. micranthus*.

Low Shrubs: *Barleria affinis*, *Blepharis diversispina*, *Neuracanthus africanus*, *Plinthus rehmannii*, *Ptychlobium contortum*.

Woody Climber: *Cissus cornifolia*. Graminoids: *Aristida adscensionis*, *A. stipitata* subsp. *graciliflora*, *Digitaria eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *Panicum maximum*, *Schmidtia pappophoroides*, *Stipagrostis uniplumis*.

Succulent Herb: *Tavaresia barklyi*.

Endemic Taxa

Low Shrub: *Pavonia dentata*.

Herb: *Cleome oxyphylla* var. *robusta*.

Conservation Status:

According to Mucina and Rutherford (2006), this vegetation type is classified as LC. The national target for conservation protection for this vegetation type is 19%. Some 18% is statutorily being conserved, mainly in the Kruger and Mapungubwe National Parks. An additional 2% is conserved in the Baobab Tree Reserve. Only about 1% is transformed, mainly for cultivation and mining.

8.1.5.2 Musina Mopane Bushveld

Musina Mopane Bushveld is found in the Limpopo province on undulating to very irregular plains on some hills. The western section consists of open woodland to moderately closed shrubveld dominated by *Colophospermum mopane* and *Combretum apiculatum*. The eastern section consists of moderately closed to open shrubveld, dominated by *Colophospermum mopane* and *Terminalia prunioides*. On areas with deep sandy soils, moderately open savanna dominated by *Colophospermum mopane*, *T. sericea*, *Grewia flava* and *Combretum apiculatum* can be found.

Important Taxa:

Important plant taxa are those species that have a high abundance, a frequent occurrence or are prominent in the landscape within a particular vegetation type (Mucina & Rutherford, 2006). The following species are important in the Musina Mopane Bushveld:

Tall Trees: *Senegalia nigrescens*, *Adansonia digitata*, *Sclerocarya birrea* subsp. *caffra*.

Small Trees: *Colophospermum mopane*, *Combretum apiculatum*, *Senegalia senegal* var. *leiorhachis*, *Vachellia tortilis* subsp. *heteracantha*, *Boscia albitrunca*, *B. foetida* subsp. *rehmanniana*, *Commiphora glandulosa*, *C. tenuipetiolata*, *C. viminea*, *Sterculia rogersii*, *Terminalia prunioides*, *T. sericea*, *Ximenia americana*.

Tall Shrubs: *Grewia flava*, *Sesamothamnus lugardii*, *Commiphora pyracanthoides*, *Gardenia volkensii*, *Grewia bicolor*, *Maerua parvifolia*, *Rhigozum zambesiicum*, *Tephrosia polystachya*.

Low Shrubs: *Acalypha indica*, *Aptosimum lineare*, *Barleria senensis*, *Dicoma tomentosa*, *Felicia clavipilosa* subsp. *transvaalensis*, *Gossypium herbaceum* subsp. *africanum*, *Hermannia glanduligera*, *Neuracanthus africanus*, *Pechuel-Loeschea leubnitziae*, *Ptychlobium contortum*, *Seddera suffruticosa*.

Succulent Shrub: *Hoodia currorii* subsp. *lugardii*.

Herbaceous Climber: *Momordica balsamina*.

Graminoids: *Schmidtia pappophoroides*, *Aristida adscensionis*, *A. congesta*, *Bothriochloa insculpta*, *Brachiaria deflexa*, *Cenchrus ciliaris*, *Digitaria eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *Eragrostis lehmanniana*, *E. pallens*, *Fingerhuthia africana*, *Heteropogon contortus*, *Sporobolus nitens*, *Stipagrostis hirtigluma* subsp. *patula*, *S. uniplumis*, *Tetrapogon tenellus*, *Urochloa mosambicensis*.

Herbs: *Acrotome inflata*, *Becium filamentosum*, *Harpagophytum procumbens* subsp. *transvaalense*, *Heliotropium steudneri*, *Hermbstaedtia odorata*, *Oxygonum delagoense*.

Succulent Herbs: *Stapelia gettliffei*, *S. kwebensis*.

Conservation Status:

According to Mucina & Rutherford (2006), this vegetation type is classified as LC. The national target for conservation protection is 19%, but only 3% are statutorily conserved in Mapungubwe National Park, Nwanedi and Honnet Nature Reserves and the Baobab Tree Reserve.

8.1.6 Plant Species of Conservation Concern

Based on the Plants of Southern Africa (BODATSA-POSA, 2016) database, 398 plant species are expected to occur in the area (Figure 8-9). The list of expected plant species is provided in Appendix A.

Of the 398 plant species, 7 species are listed as being Species of Conservation Concern (SCC), they are provincially protected under the Limpopo Environmental Management Act (act no 7 of 2003, Schedule 12), while one species is a nationally protected tree under the National Forest Act, 1998 (Act No. 84 of 1998).

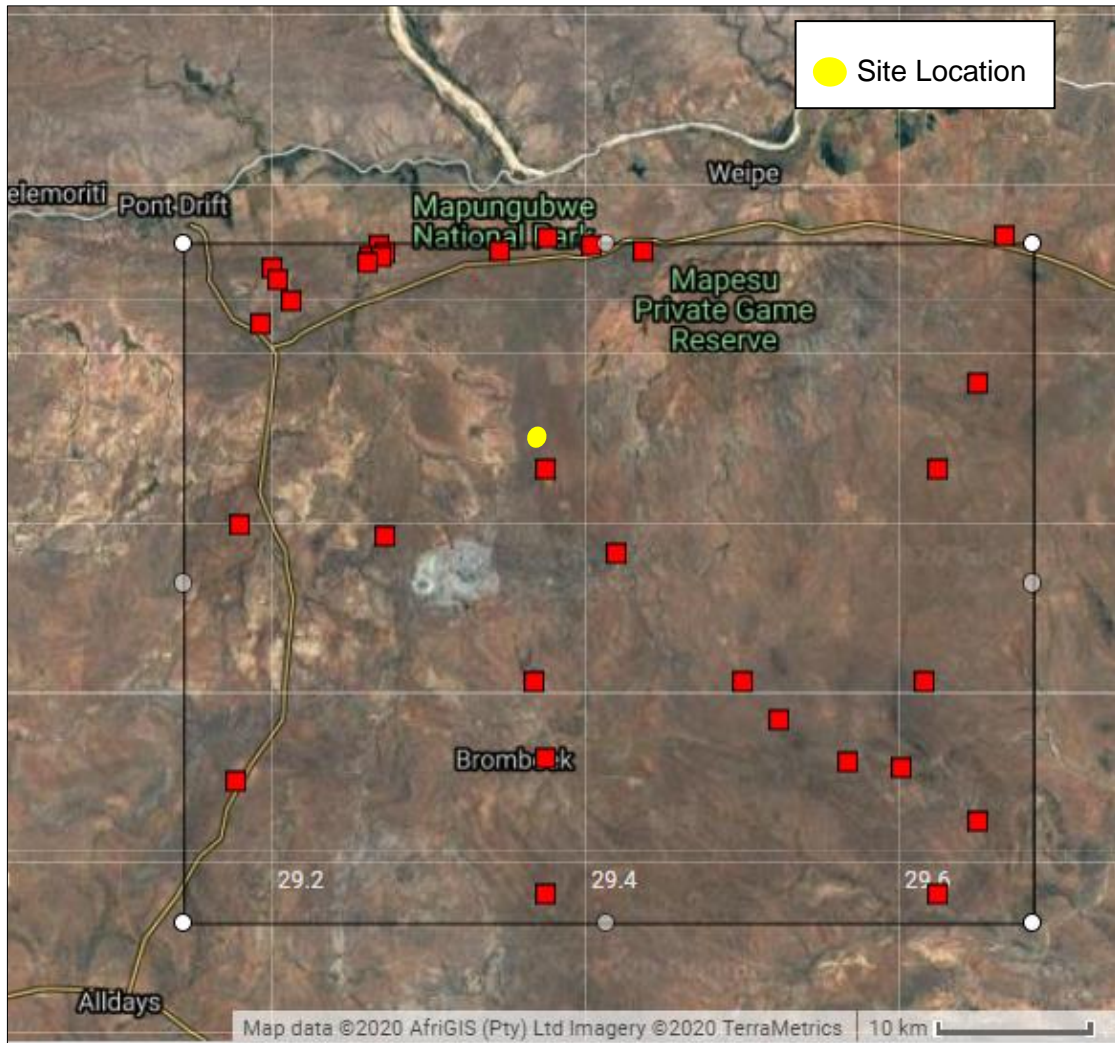


Figure 8-9 Map showing the grid drawn in order to compile an expected species list (BODATSA-POSA, 2016).

Table 8-2 Expected flora SCC

Family	Taxon	Author	IUCN	Ecology	Provincially and Nationally Protected	Habitat
Malvaceae	<i>Adansonia digitata</i>	L.	LC	Indigenous	Schedule 12, Limpopo 2003	Restricted to hot, dry woodland on stony, well drained soils, in frost-free areas that receive low rainfall.
Apocynaceae	<i>Adenium oleifolium</i>	Stapf	LC	Indigenous	Schedule 12, Limpopo 2003	On loose sandy or rocky soils in bushland.
Asphodelaceae	<i>Aloe globuligemma</i>	Pole-Evans	LC	Indigenous	Schedule 12, Limpopo 2003	In hot and dry areas, in bare or sparsely grassed, eroded places and open deciduous woodland.
Capparaceae	<i>Boscia albitrunca</i>	(Burch.) Gilg & Gilg-Ben.	LC	Indigenous	Nationally protected tree	In hot and dry open bushveld, often on termite mounds.
Apocynaceae	<i>Huernia zebrina subsp. zebrina</i>	N.E.Br.	LC	Indigenous	Schedule 12, Limpopo 2003	In well drained soils
Ochnaceae	<i>Ochna glauca</i>	I.Verd.	LC	Indigenous	Schedule 12, Limpopo 2003	Occurring among boulders and in crevices on granite hills and koppies.
Apocynaceae	<i>Orbea rogersii</i>	(L.Bolus) Bruyns	LC	Indigenous	Schedule 12, Limpopo 2003	In open Acacia or Mopane woodland.

8.1.7 Venetia Limpopo Nature Reserve Ecological Plan

The VLNR ecological plan lists ten flora species of conservation concern that has been found on the reserve. These species are provincially (Limpopo Environmental Management Act (2003), Schedule 12 (Protected Plants)) and, in some cases, nationally protected (Biodiversity Act, 2004 (Act 10 of 2004), in the category 'Protected Species') (Figure 8-3). It is pertinent that prior to the development the area must be searched for these species, as it is likely that based on the period of the survey that these species could have been dormant and non-flowering.

Table 8-3 Flora SCCs identified in the VLNR Ecological Plan (DeBeers, 2015)

Family	Taxon	Common Name	IUCN	Provincially and Nationally Protected
Apocynaceae	<i>Adenium oleifolium</i>	Summer-flowering impala lily	LC	Schedule 12
Orchidaceae	<i>Ansellia africana</i>	Leopard orchid	VU	Schedule 12
Apocynaceae	<i>Hoodia currorii</i> subsp. <i>lugardii</i>		LC	Schedule 12
Pedaliaceae	<i>Harpagophytum procumbens</i>	Devils claw	LC	Act 10 of 2004
Apocynaceae	<i>Huernia zebrina</i> subsp. <i>magniflora</i>	Zebra Huernia	LC	Schedule 12
Apocynaceae	<i>Orbea carnososa</i> subsp. <i>keithii</i>	Fleshy Orbea	LC	Schedule 12
Apocynaceae	<i>Orbea rogersii</i>		LC	Schedule 12
Apocynaceae	<i>Stapelia gigantea</i>	Carrion flower	LC	Schedule 12
Apocynaceae	<i>Stapelia kwebensis</i>		LC	Schedule 12
Apocynaceae	<i>Tavaresia barklyii</i>	Devil's Trumpet.	LC	Schedule 12

8.2 Botanical Assessment

The field survey for the project area flora was conducted on the 22nd of October 2020. During the survey the floral communities in the project area were assessed. The area was ground-truthed on foot, which included spot checks and meanders in pre-selected areas to validate desktop data. Photographs were recorded during the site visits and some are provided under the Results section in this report. All site photographs are available on request.

8.2.1.1 Vegetation Recordings

A total of 35 tree, shrub and herbaceous plant species were recorded in the proposed project area during the field assessment (Table 8-4). Alien/Exotic/Invader plant species appear in blue text, NEMBA Category 1 Plants in green. Three (3) are provincially protected under the Limpopo Environmental Management Act (act no 7 of 2003, Schedule 12), and three (3) species are nationally protected tree under the National Forest Act, 1998 (Act No. 84 of 1998). NEMBA Category 1a and b is defined as:

- Category 1a: Invasive species requiring compulsory control. Remove and destroy. Any specimens of Category 1a listed species need, by law, to be eradicated from the environment. No permits will be issued.
- Category 1b: Invasive species requiring compulsory control as part of an invasive species control programme. Remove and destroy. These plants are deemed to have such a high invasive potential that infestations can qualify to be placed under a government sponsored invasive species management programme. No permits will be issued.

Table 8-4 Trees, shrubs and weeds recorded at the proposed project area .

Scientific Name	Common Name	Threat Status (SANBI, 2017)	SA Endemic	Alien Category
<i>Adansonia digitata</i>	Baobab	Least Concern (LC) Nationally Protected Tree	Not Endemic	
<i>Adenium oleifolium</i>	Bitterkambro	LC-Schedule 12 Protected	Not Endemic	
<i>Asparagus cooperi</i>	Haakdoring	LC	Not Endemic	
<i>Boscia albitrunca</i>	Shepherds Tree	LC-Nationally Protected Tree	Not Endemic	
<i>Boscia foetida subsp. minima</i>	Stink Shepherds-tree	LC-Schedule 12 Protected	Not Endemic	
<i>Cissus cactiformis</i>	Cactus Vine	LC	Not Endemic	
<i>Colophospermum mopane</i>	Mopane	LC	Not Endemic	
<i>Combretum apiculatum</i>	Red Bush Willow	LC	Not Endemic	
<i>Combretum imberbe</i>	Leadwood	LC-Nationally Protected Tree	Not Endemic	
<i>Cynodon dactylon</i>	Couch Grass	LC	Not Endemic	
<i>Dichrostachys cinerea</i>	Sickle Bush	LC	Not Endemic	
<i>Ehretia rigida</i>	Puzzle Bush	LC	Endemic	
<i>Euphorbia cooperi</i>	Bushveld Candelabra Tree	LC	Not Endemic	
<i>Flaveria bidentis</i>	Smeltersbossie			NEMBA 1b
<i>Grewia tenax</i>	Small-leaved White Raisin	LC	Not Endemic	
<i>Gymnosporia buxifolia</i>	Common Spike-thorn	LC	Not Endemic	
<i>Heliotropium nelsonii</i>	Common String-of-stars	LC	Not Endemic	
<i>Heteropogon contortus</i>	Spear Grass	LC	Not Endemic	
<i>Hoodia currorii subsp. lugardii</i>	Ghaap	LC-Schedule 12 Protected	Not Endemic	
<i>Kirkia acuminata</i>	White Seringa	LC	Not Endemic	
<i>Lycium schizocalyx</i>	Savanna Honey-thorn	LC	Not Endemic	
<i>Melinis repens</i>	Natal Red Top	LC	Not Endemic	
<i>Phragmites mauritianus</i>	Lowveld Reed	LC	Not Endemic	
<i>Pterodiscus ngamicus</i>	Botswana Sandkambro	LC	Not Endemic	
<i>Rhynchosia minima</i>		LC	Not Endemic	
<i>Sansevieria aethiopica</i>	Bowstring Hemp	LC	Not Endemic	
<i>Senegalia mellifera</i>	Black Thorn	LC	Not Endemic	
<i>Sida cordifolia</i>	Flannel Weed	LC	Not Endemic	
<i>Sterculia rogersii</i>	Star-chestnut	LC	Not Endemic	
<i>Tagetes minuta</i>	Khaki Bush			Naturalized exotic weed

Scientific Name	Common Name	Threat Status (SANBI, 2017)	SA Endemic	Alien Category
<i>Terminalia prunioides</i>	Purple-pod Cluster-leaf	LC	Not Endemic	
<i>Tribulus terrestris</i>	Devil's Thorn	LC	Not Endemic	
<i>Typha capensis</i>	Bulrush, Common Cattail	LC	Not Endemic	
<i>Vachellia tortilis</i>	Umbrella Thorn	LC	Not Endemic	
<i>Ziziphus mucronata</i>	Buffalo thorn	LC	Not Endemic	

8.2.1.2 Alien and Invasive Plants (AIP)

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

The National Environmental Management: Biodiversity Act (NEMBA) is the most recent legislation pertaining to alien invasive plant species. In August 2014, the list of Alien Invasive Species was published in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (Government Gazette No 78 of 2014), this list was updated in September 2020 (Act 10 of 2004 no 43726). The Alien and Invasive Species Regulations were published in the Government Gazette No. 43726, 18 September 2020. The legislation calls for the removal and / or control of alien invasive plant species (Category 1 species). In addition, unless authorised thereto in terms of the National Water Act, 1998 (Act No. 36 of 1998), no land user shall allow Category 2 plants to occur within 30 meters of the 1:50 year flood line of a river, stream, spring, natural channel in which water flows regularly or intermittently, lake, dam or wetland. Category 3 plants are also prohibited from occurring within close proximity to a watercourse.

Below is a brief explanation of the three categories in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA):

- Category 1a: Invasive species requiring compulsory control. Remove and destroy. Any specimens of Category 1a listed species need, by law, to be eradicated from the environment. No permits will be issued.
- Category 1b: Invasive species requiring compulsory control as part of an invasive species control programme. Remove and destroy. These plants are deemed to have such a high invasive potential that infestations can qualify to be placed under a government sponsored invasive species management programme. No permits will be issued.
- Category 2: Invasive species regulated by area. A demarcation permit is required to import, possess, grow, breed, move, sell, buy or accept as a gift any plants listed as Category 2 plants. No permits will be issued for Category 2 plants to exist in riparian zones.
- Category 3: Invasive species regulated by activity. An individual plant permit is required to undertake any of the following restricted activities (import, possess, grow, breed, move, sell, buy or accept as a gift) involving a Category 3 species. No permits will be issued for Category 3 plants to exist in riparian zones.

Note that according to the regulations, a person who has under his or her control a category 1b listed invasive species must immediately:

- Notify the competent authority in writing
- Take steps to manage the listed invasive species in compliance with:
 - Section 75 of the Act;
 - The relevant invasive species management programme developed in terms of regulation 4; and
 - Any directive issued in terms of section 73(3) of the Act.

One category 1b species (*Flaveria bidentis*) were recorded at the site and must therefore be removed by implementing an alien invasive plant management programme as per the Nature Reserve Management Plan. The NEMBA listed species identified within the project area are marked in green.

8.3 Habitat Assessment and Sensitivity Analysis

8.3.1 Habitat Assessment

The main habitat types identified across the project area were initially identified largely based on aerial imagery. These main habitat types were refined based on the field coverage and data collected during the survey; the delineated habitats can be seen in Figure 8-10, whereas in Figure 8-11 and Figure 8-12 are illustrations of these habitats. Emphasis was placed on limited timed meander searches within the project area and the habitats with a higher potential of hosting SCCs. The habitat identified is discussed in the sub-sections below.

Limpopo Ridge Bushveld

This habitat type is regarded as natural Bushveld, but slightly disturbed due to human infringement in areas close to roads. The current ecological condition of this habitat are intact, this assumption is based on the high species diversity and density of plant species recorded in these areas. This also highlights the importance of the Nature Reserve for this habitat type.

This habitat unit can thus be regarded as important, not only within the local landscape, but also regionally; as it functions as viable habitat within a conservation area, is utilised for foraging and movement corridors for fauna.

The habitat sensitivity is regarded as high, due to the number of floral SCC recorded as well as the role of this intact habitat in the ecosystem.

Modified Bushveld

This Modified Bushveld habitat comprises of areas where the Limpopo Ridge Bushveld has been altered by historic and/or current human activities. This habitat is comprised of the roads (cleared areas) and their edges. The sensitivity of these areas is regarded as low-moderate based on the importance of these areas as corridors to more sensitive habitats. This habitat also may have a potential to returning to a more natural state if left undisturbed or rehabilitated.

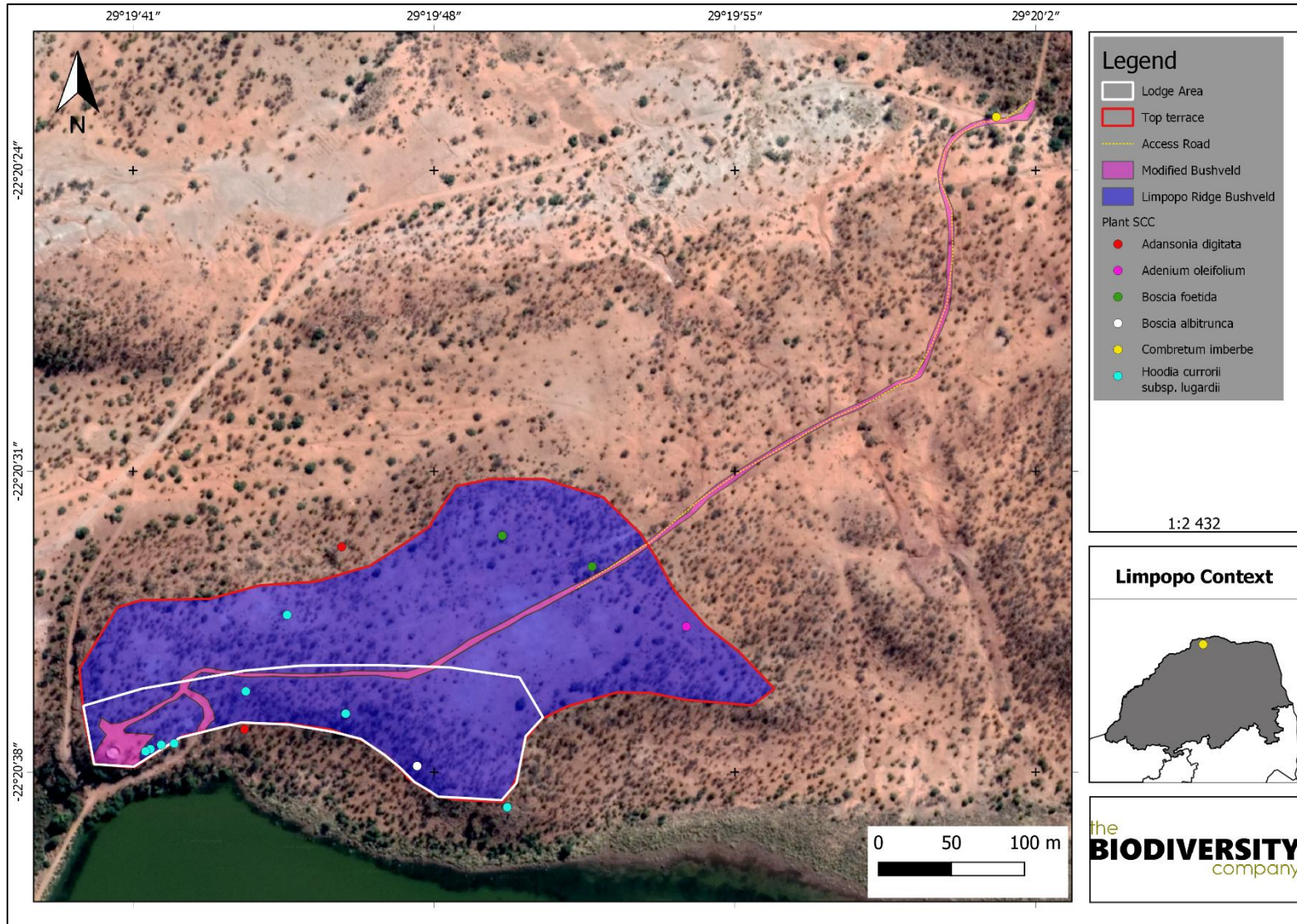


Figure 8-10 Map illustrating location and extent of habitat types within the project area.

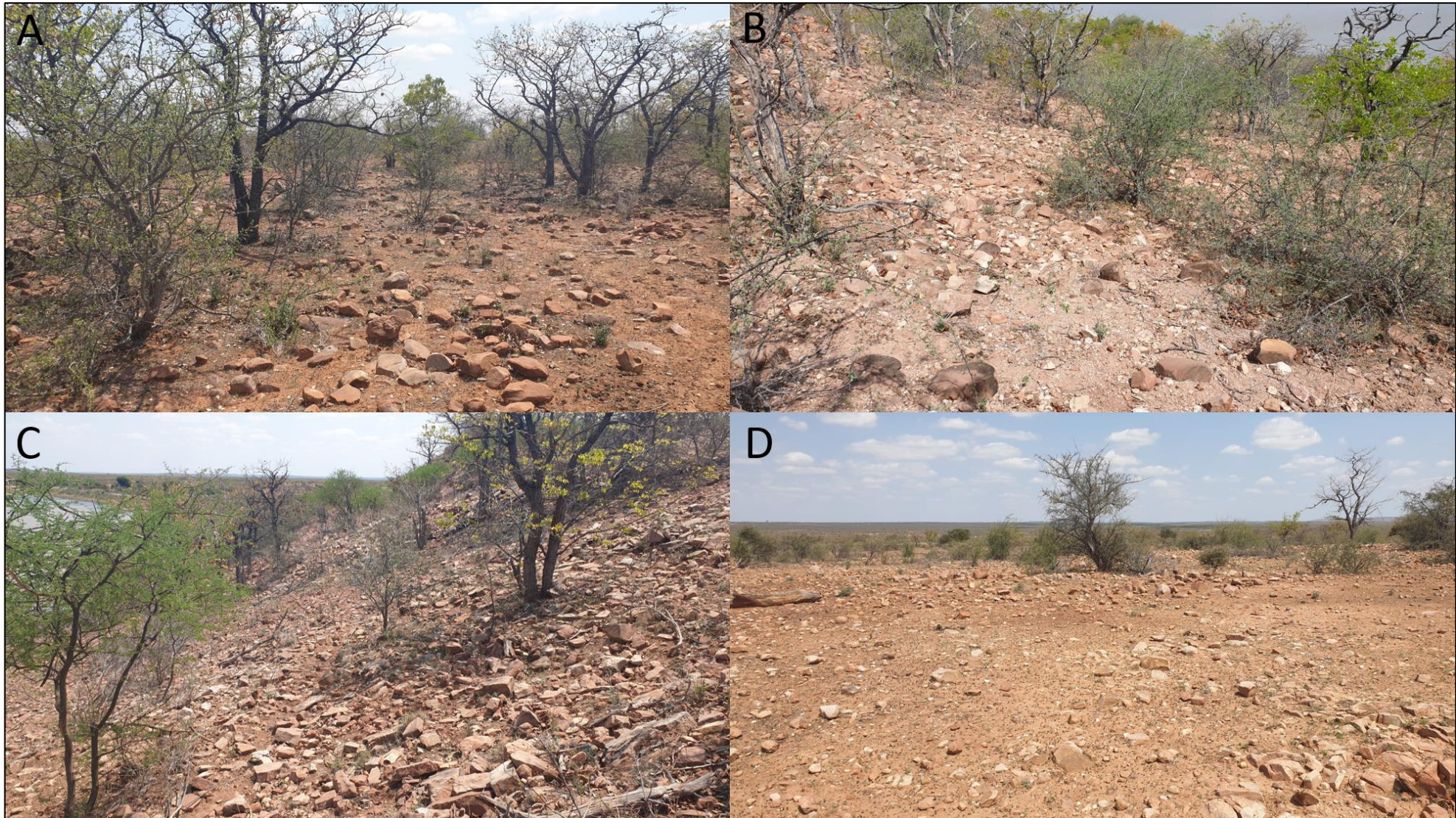


Figure 8-11 Photographs illustrating examples of the Limpopo Ridge Bushveld habitat type.



Figure 8-12 Photographs illustrating examples of the modified Bushveld habitat type.

8.3.2 Sensitivity

The plant species theme sensitivity as indicated in the screening report was derived to be low (Figure 8-13, it can be downloaded at <https://screening.environment.gov.za/screeningtool/#/pages/welcome>).

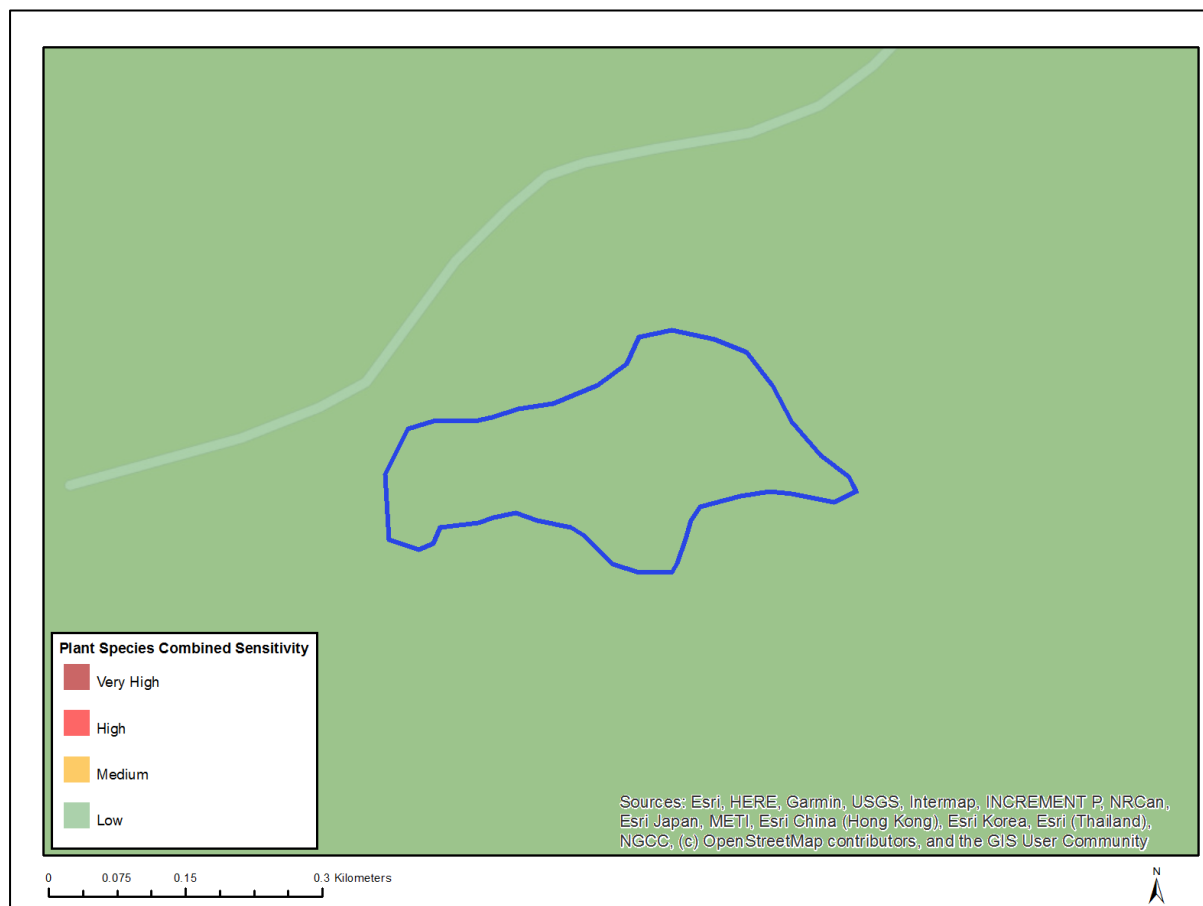


Figure 8-13 Plant Species Theme Sensitivity, TBC Screening Report

The completion of the vegetation assessment resulted in a sensitivity of low-high, and therefore differs from the sensitivity in comparison to the screening report.

In terms of terrestrial habitats, areas that were classified as having a low-moderate sensitivity are those areas which were deemed by the specialists to have been impacted upon and/or were modified from their original condition due to historical impacts. The Modified Bushveld habitat does not represent the CBA-1 classification as proposed by the biodiversity plan as these habitats have been modified and transformed.

The Limpopo Ridge Bushveld habitat were rated as highly sensitive, they still;

- Serve as and represent CBA-1, as identified by the Limpopo Conservation Plan;
- Contribute and act as an integral part of World Heritage Site: Mapungubwe Cultural Landscape, Nature Reserve: Venetia Limpopo Nature Reserve (VLNR) and the Biosphere Reserve-Vhembe Biosphere Reserve; and
- Support various faunal and floral species, especially the SCCs recorded, as habitat and a conservation area.

It is important to note that this map does not replace any local, provincial or government legislation relating to these areas or the land use capabilities or sensitivities of these environments but is done in relation to the legislation.

As per the terms of reference for the project, GIS sensitivity maps are required in order to identify sensitive features in terms of the relevant specialist discipline/s within the project area. The sensitivity scores identified during the field survey for each terrestrial habitat are mapped in Figure 8-14.

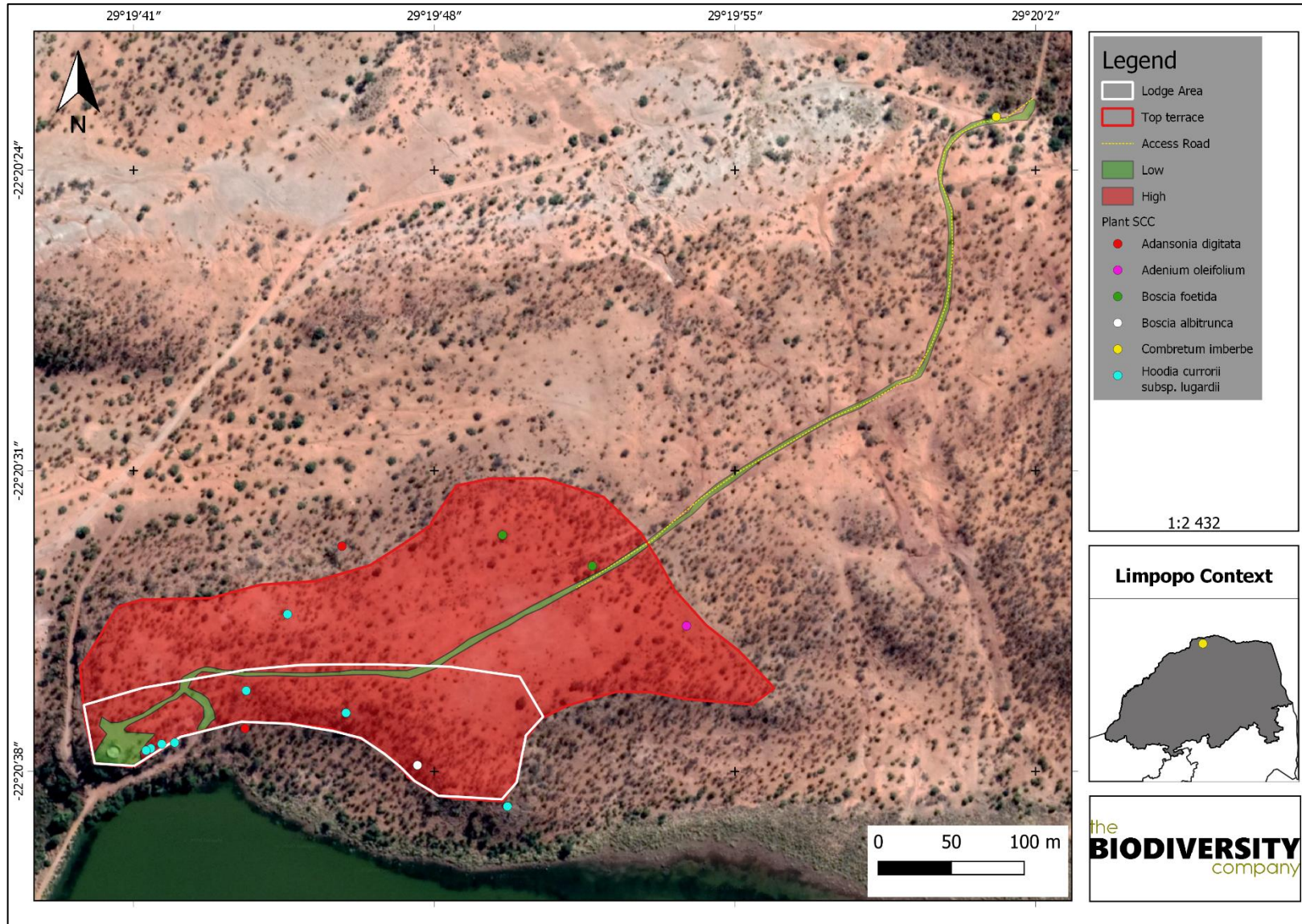


Figure 8-14 Project area sensitivity

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9 Impact Assessment

Potential impacts were evaluated against the data captured during the fieldwork to identify relevance to the project area, specifically the proposed development footprint areas. The significance of the identified impacts will be determined using an accepted methodology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998. As with all impact methodologies, the impact is defined in a semi-quantitative way and will be assessed according to methodology prescribed in the following section (Table 9-1). The method was provided by Alta van Dyk Environmental.

Table 9-1 Scale utilised for the evaluation of the Environmental Risk Ratings

Evaluation Component	Rating	Scale	Description / criteria
MAGNITUDE of negative impact (at the indicated spatial scale)	10	Very high	Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.
	8	High	Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.
	6	Medium	Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.
	4	Low	Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.
	2	Very low	Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.
	0	Zero	Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	10	Very high	Positive: Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.
	8	High	Positive: Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.
	6	Medium	Positive: Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.
	4	Low	Positive: Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.
	2	Very low	Positive: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.
	0	Zero	Positive: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
DURATION	5	Permanent	Impact in perpetuity. –
	4	Long term	Impact ceases after operational phase/life of the activity > 60 years.
	3	Medium term	Impact might occur during the operational phase/life of the activity – 60 years.
	2	Short term	Impact might occur during the construction phase - < 3 years.
	1	Immediate	Instant impact.
EXTENT (or spatial scale/influence of impact)	5	International	Beyond the National boundaries.
	4	National	Beyond provincial boundaries, but within National boundaries.
	3	Regional	Beyond 5 km of the Mothae Diamond Mine and within the provincial boundaries.
	2	Local	Within a 5 km radius of the Mothae Diamond Mine.
	1	Site-specific	On site or within 100 meters of the site boundaries.
	0	None	Zero extent.
IRREPLACEABLE loss of resources	5	Definite	Definite loss of irreplaceable resources.
	4	High potential	High potential for loss of irreplaceable resources.
	3	Moderate potential	Moderate potential for loss of irreplaceable resources.

	2	Low potential	Low potential for loss of irreplaceable resources.
	1	Very low potential	Very low potential for loss of irreplaceable resources.
	0	None	Zero potential.
REVERSIBILITY of impact	5	Irreversible	Impact cannot be reversed.
	4	Low irreversibility	Low potential that impact might be reversed.
	3	Moderate reversibility	Moderate potential that impact might be reversed.
	2	High reversibility	High potential that impact might be reversed.
	1	Reversible	Impact will be reversible.
	0	No impact	No impact.
PROBABILITY (of occurrence)	5	Definite	>95% chance of the potential impact occurring.
	4	High probability	75% - 95% chance of the potential impact occurring.
	3	Medium probability	25% - 75% chance of the potential impact occurring
	2	Low probability	5% - 25% chance of the potential impact occurring.
	1	Improbable	<5% chance of the potential impact occurring.
	0	No probability	Zero probability.
Evaluation Component	Rating scale and description / criteria		
CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>		

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

- **SS (Significance Score) = (magnitude + duration + extent + irreplaceable + reversibility) x probability.**

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 9-2 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after implementation of the recommended mitigation measures.

Table 9-2 Scale used for the evaluation of the Environmental Significance Ratings

Significance Score	Environmental Significance	Description / criteria
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked at.
40 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.

<40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect and is likely to contribute to positive decisions about whether or not to proceed with the project.

9.1 Alternatives Considered

No alternatives were considered in this assessment.

9.2 Terrestrial Impact Assessment

9.2.1 Current impacts

The current impacts observed during surveys are listed below and were notably low.

- Farm roads (and associated traffic and wildlife road mortalities); and
- Alien and/or Invasive Plants (AIP).

9.2.1.1 Anticipated Impacts

Table 9-3 presents the aspects anticipated for the proposed development considered in order to predict and quantify these impacts and assess & evaluate the magnitude on the identified vegetation communities.

Table 9-3 Anticipated impacts for the proposed development on terrestrial biodiversity

Main Impact	Project activities that can cause loss of habitat (especially with regard to the construction of proposed development):	Secondary impacts anticipated
1. Destruction, fragmentation and degradation of habitats and ecosystems	Physical removal of vegetation	Displacement/loss of flora especially the protected plant and trees recorded. Increased potential for soil erosion Habitat fragmentation Increased potential for establishment of alien & invasive vegetation
	Access roads	
	Soil dust precipitation	
	Water leakages	
	Dumping of waste products	
	Random events such as fire (cooking fires or cigarettes)	
Main Impact	Project activities that can cause the spread and/or establishment of alien and/or invasive species	Secondary impacts anticipated
2. Spread and/or establishment of alien and/or invasive species	Vegetation removal	Habitat loss for native flora Spreading of potentially dangerous diseases due to invasive and pest species Alteration of fauna assemblages due to habitat modification
	Vehicles potentially spreading seed	
	Unsanitary conditions surrounding infrastructure promoting the establishment of alien and/or invasive rodents	
	Creation of infrastructure suitable for breeding activities of alien and/or invasive birds	

9.2.2 Impacts

The current layout of the proposed road expansions indicates that the spatial extent of the road network layout will result in crossing through ridge habitats.

9.2.2.1 Construction Phase

This phase refers to the period when construction of the proposed infrastructure is built. This phase usually has the largest direct impact on vegetation and the main anticipated impact

include the clearing of vegetation, thus may lead to the destruction of protected species, ultimately lead to the proliferation of alien plant species along the road and cleared areas.

- Destruction, fragmentation and degradation of habitats, ecosystems and loss of CBA-1; and
- Loss of protected plant and tree species; and
- Spread and/or establishment of alien and/or invasive species.

9.2.2.1.1 Impact Matrix

Table 9-4 represents the impact matrices that were considered for the construction phase, some of the mitigations are presented in the various tables, however a full list of the mitigations can be seen in the specialist management plan (section 10).

Table 9-4 Construction activities impacts to the vegetation communities.

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		M	D	S	I	R	P	TOTAL	SP				M	D	S	I	R	P	TOTAL	SP
Vegetation Impact Assessment																				
Vegetation Impact Assessment	Destruction, fragmentation and degradation of habitats, ecosystems and loss of CBA-1.	7	5	2	4	4	4	88	MH	Low	Negative	<ul style="list-style-type: none"> • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. • Clearing of vegetation should be minimized and avoided where possible. • All construction/operational vehicles and access must make use of the existing roads 	4	2	1	3	2	2	24	L
Vegetation Impact Assessment	Loss of protected plant and tree species	7	5	2	4	4	4	88	MH	Low	Negative	<ul style="list-style-type: none"> • Any individual of the nationally protected trees or protected plants that were observed needs a relocation or destruction permit that will be required for any individual that may be removed or destroyed due to the development, alternatively the trees/plants can be relocated within the property without a permit or otherwise left unharmed. High visibility flags must be placed near any protected trees/plants. • Prior to the construction phase a botanist should identify all protected plants, point out SCC 	4	2	1	2	2	2	22	L
Vegetation Impact Assessment	Spread and/or establishment of alien and/or invasive species	5	4	3	3	3	3	54	M	Low	Negative	<ul style="list-style-type: none"> • Cleared areas must be rehabilitated with indigenous vegetation • Follow existing alien management plan 	4	3	1	2	2	2	24	L

9.2.2.2 Operational Phase

The impacts of the operational phase are anticipated to further the spread of alien invasive plants, as well as result in the deterioration of the habitats due to the increase human movement. The building of a Lodge within a Conservation area has long term positive benefits on the environment if done correctly, especially if done in conjunction with an Environmental Awareness Programme.

The following potential impacts were considered:

- Continued fragmentation and degradation of habitats, ecosystems and CBA-1 areas;
- Spread of alien and/or invasive species; and
- The conservation of the VLNR through the Lodge establishment and anticipated enhancement of environmental support and awareness.

9.2.2.2.1 Impact Matrix

Table 9-5 represents the impact matrices that were considered for the operational phase, some of the mitigations are presented in the various tables, however a full list of the mitigations can be seen in the specialist management plan (section 10).

Table 9-5 Operational activities impacts to the vegetation communities.

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		M	D	S	I	R	P	TOTAL	SP				M	D	S	I	R	P	TOTAL	SP
Environmental noise assessment																				
Vegetation Impact Assessment	Continued fragmentation and degradation of habitats, ecosystems and CBA-1 areas	7	5	2	3	3	4	80	MH	Medium	Negative	All exposed areas to be rehabilitated after construction is concluded. Rehabilitation of the disturbed areas must be made a priority.	4	2	1	2	2	2	22	L
Vegetation Impact Assessment	Spread of alien and/or invasive species	5	4	3	3	3	3	54	M	Low	Negative	Implementation of the Reserve alien vegetation management plan.	2	2	1	2	2	2	18	L
Vegetation Impact Assessment	The conservation of the VLNR through the Lodge establishment and anticipated enhancement of environmental support and awareness.	6	4	4	3	3	3	60	M	Low	Positive	Environmental Awareness Program must be compiled and implemented	8	4	4	2	4	4	88	MH

9.2.3 Unplanned Events

The planned activities will have anticipated impacts as discussed; however, unplanned events may occur on any project and may have potential impacts which will need management.

Table 9-6 is a summary of the findings of an unplanned event assessment from a terrestrial ecology perspective. Note, not all potential unplanned events may be captured herein, and this must therefore be managed throughout all phases according to recorded events.

Table 9-6 Summary of unplanned events for terrestrial biodiversity

Unplanned Event	Potential Impact	Mitigation
Hydrocarbon spills into the surrounding environment	Contamination of habitat as well as water resources associated with a spillage.	A spill response kit must be available at all times. The incident must be reported on and if necessary a biodiversity specialist must investigate the extent of the impact and provide rehabilitation recommendations.
Fire	Uncontrolled/unmanaged fire that spreads to the surrounding natural Bushveld and ridge.	Appropriate/Adequate fire management plan need to be implemented.

9.2.4 Cumulative Impact

The impacts of projects are often assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation this provides a good method of assessing a project's impact. However, in areas where baselines have already been affected, or where future development will continue to add to the impacts in an area or region, it is appropriate to consider the cumulative effects of development. This is similar to the concept of shifting baselines, which describes how the environmental baseline at a point in time may represent a significant change from the original state of the system. This section describes the potential impacts of the project that are cumulative for terrestrial flora.

Localised cumulative impacts include the cumulative effects from activities that are close enough to potentially cause additive effects on the environment or sensitive habitats and fauna.

In theory the whole introduction of the lodge, needs to be conducted in conjunction with the VLNR Nature Reserve Management plan. The unmanaged placement and function of the lodge could cause a major impact as the lodge will become a new source of impacts to the existing fauna; noise, light and alteration of movement patterns will have an impact. This could result in animals avoiding one of the major water sources on the farm with its knock-on effects. This is even more important to consider if further developments are considered, the overall impact would increase. Based on this the expected cumulative impact of the lodge is moderate.

9.3 Recommendations

The following are recommendations made in support of the vegetation assessment. It is possible that some of these recommendations are already being achieved for the existing authorisations and may only need to be expanded on to accommodate this project. These recommendations include:

- The existing vegetation alien invasive management plan for the reserve should be implemented, focusing on the cleared areas within the project area. This plan must be initiated from the onset of the construction phase of the project, and continued for the life of the project;
- The Nature Reserves' fire management plan needs to be updated to add the infrastructure relating to this project;
- A competent Environmental Control Officer (ECO) must oversee the construction and rehabilitation phase of the project, with the protected plant species condition, protection and demarcation as a priority; and
- An infrastructure monitoring and service plan must be compiled and implemented during the operational phase. This will include the monitoring of all stormwater discharge points and energy dissipation structures.

10 Specialist Management Plan

The aim of this section is present mitigation actions which may be incorporated into the Nature Reserve Management Plan which will allow for the successful implementation and auditing of mitigation and monitoring actions. The proposed summarised mitigation actions are presented in Table 10-1.

Table 10-1 Mitigation measures including requirements for timeframes, roles and responsibilities for this report

Management outcome: Vegetation and Habitats				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
<p>Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. Clearing of vegetation should be minimized and avoided where possible.</p>	Life of operation	Project manager, Environmental Officer	Areas of indigenous vegetation	Ongoing
<p>All construction/operational vehicles must make use of the existing roads. Access (footpaths and roads) within and around the lodge areas need to be strictly controlled in order to prevent the degradation of the surrounding habitats. Footpaths and roads need to be monitored for litter and erosion depending on the amount of traffic. The creation of new footpaths must be limited.</p>	Life of operation	Environmental Officer & Design Engineer Lodge Manager	Roads and paths used	Ongoing
<p>No construction materials may not be stored for extended periods of time and must be removed from the project area once the construction phase has been concluded. No storage of vehicles or equipment will be allowed outside of the designated low sensitivity areas.</p>	Construction/Operational Phase	Environmental Officer & Design Engineer	Laydown areas and material storage & placement.	Ongoing
<p>All individuals of the nationally protected trees or protected plants that was observed needs a relocation or destruction permit in order for any individual that may be removed or destroyed due to the development. Preferably, the trees/plants can be relocated within the property without a permit or otherwise left unharmed. High visibility flags must be placed near any protected plants in order to avoid any damage or destruction of the species. If left undisturbed the sensitivity and importance of these species needs to be part of the environmental awareness program. Tree tags can be put up to assist with the identification and education.</p>	Life of operation	Project manager, Environmental Officer Lodge Manager	Protected Tree/Plant species	Ongoing
<p>All areas to be developed must be demarcated so that during the construction phase, only the demarcated areas are impacted upon and to prevent movement of construction workers into sensitive surrounding environments, i.e. Limpopo Ridge Bushveld habitat.</p>	Life of operation	Project manager, Environmental Officer	Access to surrounding areas outside development and demarcation.	Ongoing
<p>Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events. This will also reduce the likelihood of encroachment by alien invasive plant species.</p>	Construction/Operational Phase	Environmental Officer & Contractor	Assess the state of rehabilitation and encroachment of alien vegetation	Quarterly for up to two years after the closure
<p>All exposed areas to be rehabilitated after construction is complete. Rehabilitation of the disturbed areas in the project area must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to</p>	Construction/Operational Phase	Environmental Officer & Contractor	Footprint rehabilitation	Quarterly monitoring

<p>this vegetation type. All large rocks and stones removed for foundations must not be stockpiled; stones may be used to construct footpaths or assist at areas where erosion may occur.</p> <p>Progressive rehabilitation will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. Any woody material removed can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent further erosion.</p>	Closure Phase/Rehabilitation phase	Environmental Officer & Contractor	Footprint rehabilitation	During Phase
<p>A spill management plan must be put in place to ensure that should there be any chemical/hydrocarbon spill that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site. Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers</p>	Life of operation	Environmental Officer & Contractor	Spill events, Vehicles dripping.	Ongoing
<p>Leaking equipment and vehicles must be repaired immediately or be removed from project area to facilitate repair</p>	Life of operation	Environmental Officer & Contractor	Leaks and spills	Ongoing
<p>Storm Water run-off management plan must be compiled to restrict impacts such as erosion</p>	Life of operation	Environmental Officer & Design Engineer	Storm water management must monitor indicators such as erosion	Monthly
<p>It should be made an offence for any staff to take/bring any plant species into/out of any portion of the project area. No plant species whether indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.</p>	Life of operation	Project manager, Environmental Officer	Any instances	Ongoing
<p>Any topsoil that is removed during construction must be appropriately removed and stored according to the national and provincial guidelines. This includes on-going maintenance of such topsoil piles so that they can be utilised during decommissioning phases and re-vegetation</p>	Construction/Operational Phase	Project manager, Environmental Officer	Topsoil removal and storage	Ongoing
<p>Compacted areas must be tilled, to ensure the surface ground gets loosened to assist with rehabilitation</p>	Construction/Operational Phase	Project manager, Environmental Officer	Roads and project area rehabilitation	During Phase
<p>The fire management plan needs to be updated to include the newly proposed Lodge.</p>	Life of operation	Environmental Officer & Contractor	Fire Management	Ongoing
<p>The electric fencing must avoid destroying or affecting any natural vegetation. The fence should rather follow a path were the least trees need to be destroyed</p>	Life of operation	Environmental Officer & Contractor	Destruction of vegetation	Ongoing
<p>Management outcome: Alien Vegetation</p>				

Impact Management Actions	Implementation			Monitoring
	Phase	Responsible Party	Aspect	Frequency
Updating of the Nature Reserve alien vegetation management plan to include the new development area.	Life of operation	Project manager, Environmental Officer & Contractor	Assess presence and encroachment of alien vegetation	Quarterly monitoring
Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site	Life of operation	Environmental Officer & Health and Safety Officer	Presence of waste	Life of operation
Management outcome: Dust				
Impact Management Actions	Implementation			Monitoring
	Phase	Responsible Party	Aspect	Frequency
Dust-reducing mitigation measures must be put in place and must be strictly adhered to, for all roads. This includes wetting of exposed soft soil surfaces and not conducting activities on windy days which will increase the likelihood of dust being generated.	Construction phase	Contractor	Dustfall	As per the air quality report and the dust monitoring program.
Management outcome: Waste management				
Impact Management Actions	Implementation			Monitoring
	Phase	Responsible Party	Aspect	Frequency
Waste management must be a priority and all waste must be collected and stored effectively.	Life of operation	Environmental Officer & Contractor	Waste Removal	Weekly
Monitoring of litter, spills, fuels, chemicals and human waste in and around the project area.	Construction/Closure Phase	Environmental Officer & Health and Safety Officer	Presence of Waste	Daily
A minimum of one toilet must be provided per 10 persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area.	Construction	Environmental Officer & Health and Safety Officer	Number of toilets per staff member. Waste levels	Daily
The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility	Construction	Environmental Officer & Health and Safety Officer	Availability of bins and the collection of the waste.	Ongoing
Where a registered disposal facility is not available close to the project area, the Contractor/ECO shall provide a method statement with regard to waste management. Under no circumstances may domestic waste be burned on site	Life of operation	Environmental Officer, Contractor & Health and Safety Officer	Collection/handling of the waste.	Ongoing
Refuse bins will be emptied and secured Temporary storage of domestic waste shall be in covered waste skips. Maximum domestic waste storage period will be 10 days.	Life of operation	Environmental Officer, Contractor & Health and Safety Officer	Management of bins and collection of waste	Ongoing

Management outcome: Environmental Awareness Training				
Impact Management Actions	Implementation			Monitoring
	Phase	Responsible Party	Aspect	Frequency
<p>All personnel and contractors to undergo Environmental Awareness Training. A signed register of attendance must be kept for proof. Discussions are required on sensitive environmental receptors within the project area to inform contractors and site staff of the presence of protected species, their identification, conservation status and importance, biology, habitat requirements and management requirements the Environmental Authorisation and within the EMPr.</p> <p>Implementation of an Environmental awareness program for all visitors.</p>	Life of operation	Health and Safety Officer	Compliance to the training.	Ongoing
	Life of operation	Reserve Manager Lodge Manager Reserve Ecologist	Creating an environmental awareness during visit.	Ongoing

11 Recommendations

The following recommendations are suggested;

- The mitigations and considerations regarding any infrastructure that may harm/impact or influence faunal species needs to be adhered to and done in conjunction with the Nature Reserve management plan. This pertains especially to any sensory impacts as well as impacts that may arise from new infrastructure within the area, for example the swimming pool may lead to small mammal deaths from drowning, the electrified fence strands (ground wire) that that may lead to the death of small ground dwelling fauna like Pangolin, Pythons and tortoises.
- The monitoring of the protected plant and tree species density and distribution. This will allow for the development of a management plan specific to these species.
- Environmental awareness and education for all staff and visitors regarding the protected plant and tree species, including tree tags and short infographics regarding these species and their importance.

12 Conclusion

It is clear from the regional ecological overview, as well as the baseline data collected to date that the project area has not been impacted except for access roads and limited clearing of vegetation. The project area does represent the CBA 1 that it is classified as and is functional within the conservation area. However, the positive impact expected from the Lodge and its associated environmental awareness and funds generated towards conservation, creates a scenario that if conducted correctly, the positives of the lodge outweigh the negatives of its construction.

13 Impact Statement

An impact statement is required as per the NEMA regulations with regards to the proposed development.

Considering the above-mentioned information, no fatal flaws are evident for the proposed project. It is the opinions of the specialists that the VLNR Lodge Project, may be favourably considered, on condition that all prescribed mitigation measures and supporting recommendations are implemented.

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APPENDIX A: *Flora species expected to occur in the project area*

Family	Taxon	Author	IUCN	Ecology	Provincially and Nationally Protected
Malvaceae	<i>Abutilon angulatum</i> var. <i>angulatum</i>	(Guill. & Perr.) Mast.	NE	Indigenous	
Malvaceae	<i>Abutilon fruticosum</i>	Guill. & Perr.	LC	Indigenous	
Malvaceae	<i>Abutilon grandiflorum</i>	G.Don	LC	Indigenous	
Malvaceae	<i>Abutilon pycnodon</i>	Hochr.	LC	Indigenous	
Malvaceae	<i>Abutilon ramosum</i>	(Cav.) Guill. & Perr.	LC	Indigenous	
Euphorbiaceae	<i>Acalypha indica</i> var. <i>indica</i>	L.	LC	Indigenous	
Lamiaceae	<i>Acrotome inflata</i>	Benth.	LC	Indigenous	
Pteridaceae	<i>Actiniopteris radiata</i>	(J.Koenig ex Sw.) Link	LC	Indigenous	
Malvaceae	<i>Adansonia digitata</i>	L.	LC	Indigenous	Schedule 12
Apocynaceae	<i>Adenium oleifolium</i>	Stapf	LC	Indigenous	Schedule 12
Pteridaceae	<i>Adiantum capillus-veneris</i>	L.	LC	Indigenous	
Lamiaceae	<i>Aeollanthus neglectus</i>	(Dinter) Launert	LC	Indigenous	
Amaranthaceae	<i>Aerva leucura</i>	Moq.	LC	Indigenous	
Fabaceae	<i>Aeschynomene indica</i>	L.	LC	Indigenous	
Iridaceae	<i>Afrosolen bainesii</i>	(Baker) Goldblatt & J.C.Manning		Indigenous	
Loranthaceae	<i>Agelanthus lugardii</i>	(N.E.Br.) Polhill & Wiens	LC	Indigenous	
Fabaceae	<i>Albizia anthelmintica</i>	(A.Rich.) Brongn.	LC	Indigenous	
Fabaceae	<i>Albizia brevifolia</i>	Schinz	LC	Indigenous	
Fabaceae	<i>Albizia harveyi</i>	E.Fourn.	LC	Indigenous	
Hyacinthaceae	<i>Albuca seineri</i>	(Engl. & K.Krause) J.C.Manning & Goldblatt	LC	Indigenous	
Orobanchaceae	<i>Alectra vogelii</i>	Benth.	LC	Indigenous	
Poaceae	<i>Alloteropsis semialata</i> subsp. <i>eckloniana</i>	(R.Br.) Hitchc.	LC	Indigenous	
Asphodelaceae	<i>Aloe globuligemma</i>	Pole-Evans	LC	Indigenous	Schedule 12
Amaranthaceae	<i>Alternanthera sessilis</i>	(L.) DC.		Not indigenous; Naturalised; Invasive	
Amaranthaceae	<i>Amaranthus praetermissus</i>	Brenan	LC	Indigenous	
Acanthaceae	<i>Anisotes rogersii</i>	S.Moore	LC	Indigenous	
Poaceae	<i>Antheophora pubescens</i>	Nees	LC	Indigenous	
Aponogetonaceae	<i>Aponogeton stuhlmannii</i>	Engl.	LC	Indigenous	
Poaceae	<i>Aristida adscensionis</i>	L.	LC	Indigenous	
Poaceae	<i>Aristida congesta</i> subsp. <i>barbicollis</i>	Roem. & Schult.	LC	Indigenous	
Poaceae	<i>Aristida congesta</i> subsp. <i>congesta</i>	Roem. & Schult.	LC	Indigenous	
Poaceae	<i>Aristida meridionalis</i>	Henrard	LC	Indigenous	
Poaceae	<i>Aristida rhiniochloa</i>	Hochst.	LC	Indigenous	

Poaceae	<i>Aristida scabrivalvis</i> subsp. <i>contracta</i>	Hack.	LC	Indigenous	
Poaceae	<i>Aristida</i> sp.				
Poaceae	<i>Aristida spectabilis</i>	Hack.	LC	Indigenous	
Poaceae	<i>Aristida stipitata</i> subsp. <i>graciliflora</i>	Hack.	LC	Indigenous	
Asparagaceae	<i>Asparagus aspergillus</i>	Jessop	LC	Indigenous	
Asparagaceae	<i>Asparagus bechuanicus</i>	Baker	LC	Indigenous	
Asparagaceae	<i>Asparagus nodulosus</i>	(Oberm.) J.-P. Lebrun & Stork	LC	Indigenous	
Zygophyllaceae	<i>Balanites pedicellaris</i> subsp. <i>pedicellaris</i>	Mildbr. & Schltr.	LC	Indigenous	
Acanthaceae	<i>Barleria dinteri</i>	Oberm.	LC	Indigenous	
Acanthaceae	<i>Barleria heterotricha</i> subsp. <i>heterotricha</i>	Lindau		Indigenous	
Acanthaceae	<i>Barleria holubii</i>	C.B. Clarke	LC	Indigenous	
Acanthaceae	<i>Barleria senensis</i>	Klotzsch	LC	Indigenous	
Lamiaceae	<i>Basilicum polystachyon</i>	(L.) Moench	LC	Indigenous	
Rhamnaceae	<i>Berchemia discolor</i>	(Klotzsch) Hemsl.	LC	Indigenous	
Elatinaceae	<i>Bergia salaria</i>	Bremek.	LC	Indigenous	
Acanthaceae	<i>Blepharis aspera</i>	Oberm.	LC	Indigenous	
Acanthaceae	<i>Blepharis diversispina</i>	(Nees) C.B. Clarke	LC	Indigenous	
Nyctaginaceae	<i>Boerhavia diffusa</i> var. <i>diffusa</i>	L.		Not indigenous; Naturalised	
Nyctaginaceae	<i>Boerhavia erecta</i>	L.		Not indigenous; Naturalised	
Capparaceae	<i>Boscia albitrunca</i>	(Burch.) Gilg & Gilg-Ben.	LC	Indigenous	Nationally protected
Poaceae	<i>Bothriochloa radicans</i>	(Lehm.) A. Camus	LC	Indigenous	
Poaceae	<i>Brachiaria deflexa</i>	(Schumach.) C.E. Hubb. ex Robyns	LC	Indigenous	
Asteraceae	<i>Brachylaena huillensis</i>	O. Hoffm.	LC	Indigenous	
Phyllanthaceae	<i>Bridelia mollis</i>	Hutch.	LC	Indigenous	
Capparaceae	<i>Cadaba termitaria</i>	N.E. Br.	LC	Indigenous	
Asteraceae	<i>Calostephane divaricata</i>	Benth.	LC	Indigenous	
Rubiaceae	<i>Canthium armatum</i>	(K. Schum.) Lantz	LC	Indigenous	
Capparaceae	<i>Capparis tomentosa</i>	Lam.	LC	Indigenous	
Sapindaceae	<i>Cardiospermum corindum</i>	L.	LC	Indigenous	
Fabaceae	<i>Cassia abbreviata</i> subsp. <i>beareana</i>	Oliv.	LC	Indigenous	
Celastraceae	<i>Catha edulis</i>	(Vahl) Forssk. ex Endl.	LC	Indigenous	
Bignoniaceae	<i>Catophractes alexandri</i>	D. Don	LC	Indigenous	
Poaceae	<i>Cenchrus ciliaris</i>	L.	LC	Indigenous	
Pedaliaceae	<i>Ceratotheca triloba</i>	(Bernh.) Hook. f.	LC	Indigenous	

Verbenaceae	<i>Chascanum incisum</i>	(H.Pearson) Moldenke	LC	Indigenous	
Pteridaceae	<i>Cheilanthes viridis var. glauca</i>	(Forssk.) Sw.	LC	Indigenous	
Poaceae	<i>Chloris roxburghiana</i>	Schult.	LC	Indigenous	
Poaceae	<i>Chloris virgata</i>	Sw.	LC	Indigenous	
Agavaceae	<i>Chlorophytum galpinii var. matabelense</i>	(Baker) Kativu	LC	Indigenous	
Vitaceae	<i>Cissus cactiformis</i>	Gilg	LC	Indigenous	
Vitaceae	<i>Cissus cornifolia</i>	(Baker) Planch.	LC	Indigenous	
Cleomaceae	<i>Cleome angustifolia subsp. petersiana</i>	Forssk.	LC	Indigenous	
Cleomaceae	<i>Cleome hirta</i>	(Klotzsch) Oliv.	LC	Indigenous	
Cleomaceae	<i>Cleome kalachariensis</i>	(Schinz) Gilg & Gilg-Ben.	LC	Indigenous	
Cleomaceae	<i>Cleome monophylla</i>	L.	LC	Indigenous	
Lamiaceae	<i>Clerodendrum ternatum</i>	Schinz	LC	Indigenous	
Cucurbitaceae	<i>Coccinia rehmannii</i>	Cogn.	LC	Indigenous	
Menispermaceae	<i>Cocculus hirsutus</i>	(L.) W.Theob.		Not indigenous; Naturalised	
Poaceae	<i>Coelachyrum yemenicum</i>	(Schweinf.) S.M.Phillips	LC	Indigenous	
Fabaceae	<i>Colophospermum mopane</i>	(J.Kirk ex Benth.) J.Kirk ex J.Leonard	LC	Indigenous	
Combretaceae	<i>Combretum hereroense</i>	Schinz		Indigenous	
Combretaceae	<i>Combretum imberbe</i>	Wawra	LC	Indigenous	
Combretaceae	<i>Combretum microphyllum</i>	Klotzsch	LC	Indigenous	
Commelinaceae	<i>Commelina benghalensis</i>	L.	LC	Indigenous	
Commelinaceae	<i>Commelina diffusa subsp. diffusa</i>	Burm.f.	LC	Indigenous	
Commelinaceae	<i>Commelina forskalii</i>	Vahl	LC	Indigenous	
Commelinaceae	<i>Commelina livingstonii</i>	C.B.Clarke	LC	Indigenous	
Nyctaginaceae	<i>Commicarpus helenae var. helenae</i>	(Roem. & Schult.) Meikle	NE	Indigenous	
Nyctaginaceae	<i>Commicarpus plumbagineus var. plumbagineus</i>	(Cav.) Standl.	LC	Indigenous	
Burseraceae	<i>Commiphora africana var. africana</i>	(A.Rich.) Engl.	LC	Indigenous	
Burseraceae	<i>Commiphora angolensis</i>	Engl.	LC	Indigenous	
Burseraceae	<i>Commiphora glandulosa</i>	Schinz	LC	Indigenous	
Burseraceae	<i>Commiphora mollis</i>	(Oliv.) Engl.	LC	Indigenous	
Burseraceae	<i>Commiphora pyracanthoides</i>	Engl.	LC	Indigenous	
Burseraceae	<i>Commiphora schimperi</i>	(O.Berg) Engl.	LC	Indigenous	
Burseraceae	<i>Commiphora tenuipetiolata</i>	Engl.	LC	Indigenous	
Burseraceae	<i>Commiphora viminea</i>	Burt Davy	LC	Indigenous	
Malvaceae	<i>Corchorus kirkii</i>	N.E.Br.	LC	Indigenous	

Boraginaceae	<i>Cordia monoica</i>	Roxb.	LC	Indigenous	
Boraginaceae	<i>Cordia ovalis</i>	R.Br. ex A.DC.	LC	Indigenous	
Boraginaceae	<i>Cordia sinensis</i>	Lam.	LC	Indigenous	
Rubiaceae	<i>Cordylostigma virgatum</i>	(Willd.) Groeninckx & Dessein		Indigenous	
Crassulaceae	<i>Cotyledon barbeyi</i> var. <i>soutpansbergensis</i>	Schweinf. ex Baker	LC	Indigenous; Endemic	
Crassulaceae	<i>Cotyledon</i> sp.				
Fabaceae	<i>Crotalaria distans</i> subsp. <i>mediocris</i>	Benth.	LC	Indigenous	
Fabaceae	<i>Crotalaria laburnifolia</i> subsp. <i>australis</i>	L.	LC	Indigenous	
Fabaceae	<i>Crotalaria monteiroi</i> var. <i>monteiroi</i>	Taub. ex Baker f.	LC	Indigenous	
Fabaceae	<i>Crotalaria sphaerocarpa</i> subsp. <i>sphaerocarpa</i>	Perr. ex DC.	LC	Indigenous	
Euphorbiaceae	<i>Croton gratissimus</i> var. <i>gratissimus</i>	Burch.	LC	Indigenous	
Euphorbiaceae	<i>Croton gratissimus</i> var. <i>subgratissimus</i>	Burch.	LC	Indigenous	
Euphorbiaceae	<i>Croton megalobotrys</i>	Mull.Arg.	LC	Indigenous	
Euphorbiaceae	<i>Croton pseudopulchellus</i>	Pax	LC	Indigenous	
Apocynaceae	<i>Cryptolepis oblongifolia</i>	(Meisn.) Schltr.	LC	Indigenous	
Cucurbitaceae	<i>Cucumis anguria</i> var. <i>longaculeatus</i>	L.	LC	Indigenous	
Fabaceae	<i>Cullen tomentosum</i>	(Thunb.) J.W.Grimes	LC	Indigenous	
Convolvulaceae	<i>Cuscuta hyalina</i>	Roth	LC	Indigenous	
Araliaceae	<i>Cussonia paniculata</i> subsp. <i>sinuata</i>	Eckl. & Zeyh.	LC	Indigenous	
Fabaceae	<i>Cyamopsis dentata</i>	(N.E.Br.) Torre	LC	Indigenous	
Poaceae	<i>Cymbopogon caesius</i>	(Hook. & Arn.) Stapf	LC	Indigenous	
Cyperaceae	<i>Cyperus longus</i> var. <i>tenuiflorus</i>	L.	NE	Indigenous	
Cyperaceae	<i>Cyperus obtusiflorus</i> var. <i>obtusiflorus</i>	Vahl	LC	Indigenous	
Cyperaceae	<i>Cyperus pseudokyllingioides</i>	Kuk.	LC	Indigenous	
Vitaceae	<i>Cyphostemma puberulum</i>	(C.A.Sm.) Wild & R.B.Drumm.	LC	Indigenous	
Poaceae	<i>Dactyloctenium aegyptium</i>	(L.) Willd.	LC	Indigenous	
Poaceae	<i>Dactyloctenium giganteum</i>	Fisher & Schweick.	LC	Indigenous	
Poaceae	<i>Danthoniopsis dinteri</i>	(Pilg.) C.E.Hubb.	LC	Indigenous	
Poaceae	<i>Danthoniopsis pruinosa</i>	C.E.Hubb.	LC	Indigenous	
Fabaceae	<i>Decorsea schlechteri</i>	(Harms) Verdc.	LC	Indigenous	
Poaceae	<i>Diandrochloa pusilla</i>	(Hack.) De Winter	LC	Indigenous	
Pedaliaceae	<i>Dicerocaryum forbesii</i>	(Decne.) A.E.van Wyk	LC	Indigenous	
Pedaliaceae	<i>Dicerocaryum senecioides</i>	(Klotzsch) Abels	LC	Indigenous	
Poaceae	<i>Dichanthium annulatum</i> var. <i>papillosum</i>	(Forssk.) Stapf	LC	Indigenous	
Acanthaceae	<i>Dicliptera cliffordii</i>	(K.Balkwill) J.C.Manning & Goldblatt	LC	Indigenous; Endemic	

Acanthaceae	<i>Dicliptera clinopodia</i>	Nees	LC	Indigenous	
Acanthaceae	<i>Dicliptera decorticans</i>	(K.Balkwill) I.Darbysh.		Indigenous	
Acanthaceae	<i>Dicliptera gillilandiorum</i>	(K.Balkwill) I.Darbysh.		Indigenous	
Scrophulariaceae	<i>Diclis reptans</i>	Benth.	LC	Indigenous	
Asteraceae	<i>Dicoma schinzii</i>	O.Hoffm.	LC	Indigenous	
Asteraceae	<i>Dicoma tomentosa</i>	Cass.	LC	Indigenous	
Poaceae	<i>Digitaria eriantha</i>	Steud.	LC	Indigenous	
Poaceae	<i>Digitaria velutina</i>	(Forssk.) P.Beauv.	LC	Indigenous	
Scrophulariaceae	<i>Dischisma sp.</i>				
Hyacinthaceae	<i>Drimia altissima</i>	(L.f.) Ker Gawl.	LC	Indigenous	
Poaceae	<i>Eleusine sp.</i>				
Lamiaceae	<i>Endostemon tenuiflorus</i>	(Benth.) M.Ashby	LC	Indigenous	
Poaceae	<i>Enneapogon cenchroides</i>	(Licht. ex Roem. & Schult.) C.E.Hubb.	LC	Indigenous	
Poaceae	<i>Enneapogon desvauxii</i>	P.Beauv.	LC	Indigenous	
Poaceae	<i>Enneapogon scoparius</i>	Stapf	LC	Indigenous	
Poaceae	<i>Eragrostis aspera</i>	(Jacq.) Nees	LC	Indigenous	
Poaceae	<i>Eragrostis barbinodis</i>	Hack.	LC	Indigenous	
Poaceae	<i>Eragrostis biflora</i>	Hack. ex Schinz	LC	Indigenous	
Poaceae	<i>Eragrostis capensis</i>	(Thunb.) Trin.	LC	Indigenous	
Poaceae	<i>Eragrostis chloromelas</i>	Steud.	LC	Indigenous	
Poaceae	<i>Eragrostis cilianensis</i>	(All.) Vignolo ex Janch.	LC	Indigenous	
Poaceae	<i>Eragrostis lehmanniana var. lehmanniana</i>	Nees	LC	Indigenous	
Poaceae	<i>Eragrostis nindensis</i>	Ficalho & Hiern	LC	Indigenous	
Poaceae	<i>Eragrostis porosa</i>	Nees	LC	Indigenous	
Poaceae	<i>Eragrostis rigidior</i>	Pilg.	LC	Indigenous	
Poaceae	<i>Eragrostis rotifer</i>	Rendle	LC	Indigenous	
Poaceae	<i>Eragrostis sp.</i>				
Poaceae	<i>Eragrostis superba</i>	Peyr.	LC	Indigenous	
Poaceae	<i>Eriochloa meyeriana subsp. meyeriana</i>	(Nees) Pilg.	LC	Indigenous	
Ruscaceae	<i>Eriospermum porphyrovalve</i>	Baker	LC	Indigenous	
Fabaceae	<i>Erythrina lysistemon</i>	Hutch.	LC	Indigenous	
Ebenaceae	<i>Euclea divinorum</i>	Hiern	LC	Indigenous	
Ebenaceae	<i>Euclea natalensis subsp. angustifolia</i>	A.DC.	LC	Indigenous	
Euphorbiaceae	<i>Euphorbia glanduligera</i>	Pax	LC	Indigenous	
Euphorbiaceae	<i>Euphorbia guerichiana</i>	Pax	LC	Indigenous	
Euphorbiaceae	<i>Euphorbia indica</i>	Lam.	NE	Not indigenous; Naturalised	

Euphorbiaceae	<i>Euphorbia maleolens</i>	E.Phillips	LC	Indigenous	
Euphorbiaceae	<i>Euphorbia monteiroi subsp. ramosa</i>	Hook.f.	LC	Indigenous	
Euphorbiaceae	<i>Euphorbia neopolycnemoides</i>	Pax & K.Hoffm.	LC	Indigenous	
Euphorbiaceae	<i>Euphorbia prostrata</i>	Aiton	NE	Not indigenous; Naturalised	
Convolvulaceae	<i>Evolvulus alsinoides</i>	(L.) L.	LC	Indigenous	
Fabaceae	<i>Faidherbia albida</i>	(Delile) A.Chev.	LC	Indigenous	
Asteraceae	<i>Felicia bechuanica</i>	Mattf.	LC	Indigenous	
Moraceae	<i>Ficus abutilifolia</i>	(Miq.) Miq.	LC	Indigenous	
Moraceae	<i>Ficus tettensis</i>	Hutch.	LC	Indigenous	
Cyperaceae	<i>Fimbristylis squarrosa</i>	Vahl	LC	Indigenous	
Poaceae	<i>Fingerhuthia sesleriiformis</i>	Nees	LC	Indigenous	
Phyllanthaceae	<i>Flueggea virosa subsp. virosa</i>	(Roxb. ex Willd.) Royle	LC	Indigenous	
Rubiaceae	<i>Gardenia resiniflua subsp. resiniflua</i>	Hiern	LC	Indigenous	
Rubiaceae	<i>Gardenia volkensii subsp. spatulifolia</i>	K.Schum.	LC	Indigenous	
Asteraceae	<i>Geigeria acaulis</i>	(Sch.Bip.) Benth. & Hook.f. ex Oliv. & Hiern	LC	Indigenous	
Asteraceae	<i>Geigeria burkei subsp. burkei</i>	Harv.	NE	Indigenous	
Asteraceae	<i>Geigeria burkei subsp. fruticulosa</i>	Harv.	LC	Indigenous	
Asteraceae	<i>Geigeria ornativa subsp. ornativa</i>	O.Hoffm.	LC	Indigenous	
Gisekiaceae	<i>Gisekia africana var. decagyna</i>	(Lour.) Kuntze	LC	Indigenous	
Scrophulariaceae	<i>Gomphostigma virgatum</i>	(L.f.) Baill.	LC	Indigenous	
Malvaceae	<i>Gossypium herbaceum subsp. africanum</i>	L.	LC	Indigenous	
Malvaceae	<i>Grewia bicolor var. bicolor</i>	Juss.	LC	Indigenous	
Malvaceae	<i>Grewia flava</i>	DC.	LC	Indigenous	
Malvaceae	<i>Grewia hexamita</i>	Burret	LC	Indigenous	
Malvaceae	<i>Grewia occidentalis var. occidentalis</i>	L.	LC	Indigenous	
Malvaceae	<i>Grewia olukondae</i>	Schinz	LC	Indigenous	
Malvaceae	<i>Grewia subspathulata</i>	N.E.Br.	LC	Indigenous	
Malvaceae	<i>Grewia sulcata var. sulcata</i>	Mast.	LC	Indigenous	
Malvaceae	<i>Grewia tenax</i>	(Forsk.) Fiori	LC	Indigenous	
Malvaceae	<i>Grewia villosa var. villosa</i>	Willd.	LC	Indigenous	
Celastraceae	<i>Gymnosporia senegalensis</i>	(Lam.) Loes.	LC	Indigenous	
Pedaliaceae	<i>Harpagophytum procumbens subsp. transvaalense</i>	(Burch.) DC. ex Meisn.	NE	Indigenous	
Asteraceae	<i>Helichrysum argyrosphaerum</i>	DC.	LC	Indigenous	
Asteraceae	<i>Helichrysum candolleianum</i>	H.Buek	LC	Indigenous	
Boraginaceae	<i>Heliotropium ciliatum</i>	Kaplan	LC	Indigenous	

Boraginaceae	<i>Heliotropium giessii</i>	Fiedr.-Holzh.	LC	Indigenous	
Boraginaceae	<i>Heliotropium nelsonii</i>	C.H.Wright	LC	Indigenous	
Boraginaceae	<i>Heliotropium zeylanicum</i>	(Burm.f.) Lam.	LC	Indigenous	
Poaceae	<i>Hemarthria altissima</i>	(Poir.) Stapf & C.E.Hubb.	LC	Indigenous	
Malvaceae	<i>Hermannia boraginiflora</i>	Hook.	LC	Indigenous	
Malvaceae	<i>Hermannia glanduligera</i>	K.Schum.	LC	Indigenous	
Malvaceae	<i>Hermannia grisea</i>	Schinz	LC	Indigenous; Endemic	
Malvaceae	<i>Hermannia modesta</i>	(Ehrenb.) Mast.	LC	Indigenous	
Amaranthaceae	<i>Hermbstaedia odorata</i> var. <i>odorata</i>	(Burch.) T.Cooke	NE	Indigenous	
Amaranthaceae	<i>Hermbstaedia</i> sp.				
Poaceae	<i>Heteropogon contortus</i>	(L.) Roem. & Schult.	LC	Indigenous	
Heteropyxidaceae	<i>Heteropyxis natalensis</i>	Harv.	LC	Indigenous	
Annonaceae	<i>Hexalobus monopetalus</i> var. <i>monopetalus</i>	(A.Rich.) Engl. & Diels	LC	Indigenous	
Malvaceae	<i>Hibiscus coddii</i> subsp. <i>coddii</i>	Exell	LC	Indigenous	
Malvaceae	<i>Hibiscus engleri</i>	K.Schum.	LC	Indigenous	
Malvaceae	<i>Hibiscus micranthus</i> var. <i>micranthus</i>	L.f.	LC	Indigenous	
Malvaceae	<i>Hibiscus mutatus</i>	N.E.Br.	LC	Indigenous	
Malvaceae	<i>Hibiscus sidiformis</i>	Baill.	LC	Indigenous	
Asteraceae	<i>Hirpicium bechuanense</i>	(S.Moore) Roessler	LC	Indigenous	
Pedaliaceae	<i>Holubia saccata</i>	Oliv.	LC	Indigenous	
Apocynaceae	<i>Huernia zebrina</i> subsp. <i>zebrina</i>	N.E.Br.	LC	Indigenous	Schedule 12
Violaceae	<i>Hybanthus enneaspermus</i> var. <i>enneaspermus</i>	(L.) F.Muell.		Not indigenous; Naturalised	
Fabaceae	<i>Indigostrum costatum</i> subsp. <i>macrum</i>	(Guill. & Perr.) Schrire	LC	Indigenous	
Fabaceae	<i>Indigofera circinnata</i>	Benth. ex Harv.	LC	Indigenous	
Fabaceae	<i>Indigofera heterotricha</i>	DC.	LC	Indigenous	
Fabaceae	<i>Indigofera holubii</i>	N.E.Br.	LC	Indigenous	
Fabaceae	<i>Indigofera</i> sp.				
Fabaceae	<i>Indigofera subulata</i>	Vahl ex Poir.		Indigenous	
Fabaceae	<i>Indigofera torulosa</i> var. <i>torulosa</i>	E.Mey.	LC	Indigenous	
Fabaceae	<i>Indigofera vicioides</i> subsp. <i>vicioides</i>	Jaub. & Spach	LC	Indigenous	
Convolvulaceae	<i>Ipomoea magnusiana</i>	Schinz	LC	Indigenous	
Oleaceae	<i>Jasminum fluminense</i> subsp. <i>fluminense</i>	Vell.	LC	Indigenous	
Euphorbiaceae	<i>Jatropha spicata</i>	Pax	LC	Indigenous	
Acanthaceae	<i>Justicia divaricata</i>	Licht. ex Roem. & Schult.		Indigenous	
Acanthaceae	<i>Justicia flava</i>	(Vahl) Vahl	LC	Indigenous	

Acanthaceae	<i>Justicia rhodesiana</i>	S.Moore		Indigenous	
Apocynaceae	<i>Kanahia laniflora</i>	(Forssk.) R.Br.	LC	Indigenous	
Kirkiaceae	<i>Kirkia acuminata</i>	Oliv.	LC	Indigenous	
Rubiaceae	<i>Kohautia cynanchica</i>	DC.	LC	Indigenous	
Cyperaceae	<i>Kyllinga alba</i>	Nees	LC	Indigenous	
Hydrocharitaceae	<i>Lagarosiphon cordofanus</i>	Casp.	LC	Indigenous	
Cucurbitaceae	<i>Lagenaria sphaerica</i>	(Sond.) Naudin	LC	Indigenous	
Anacardiaceae	<i>Lannea schweinfurthii</i> var. <i>stuhlmannii</i>	(Engl.) Engl.	LC	Indigenous	
Hyacinthaceae	<i>Ledebouria leptophylla</i>	(Baker) S.Venter	LC	Indigenous	
Hyacinthaceae	<i>Ledebouria macowanii</i>	(Baker) S.Venter	LC	Indigenous	
Fabaceae	<i>Leobordea divaricata</i>	Eckl. & Zeyh.	LC	Indigenous	
Lamiaceae	<i>Leonotis glabrata</i> var. <i>glabrata</i>	(Vahl) J.C.Manning & Goldblatt	LC	Indigenous	
Lamiaceae	<i>Leonotis ocymifolia</i>	(Burm.f.) Iwarsson	LC	Indigenous	
Lamiaceae	<i>Leonotis sexdentata</i>	(Skan) J.C.Manning & Goldblatt	LC	Indigenous	
Poaceae	<i>Leptochloa chinensis</i>	(L.) Nees	LC	Indigenous	
Poaceae	<i>Leptochloa eleusine</i>	(Nees) Cope & N.Snow	LC	Indigenous	
Limeaceae	<i>Limeum fenestratum</i> var. <i>fenestratum</i>	(Fenzl) Heimerl	LC	Indigenous	
Limeaceae	<i>Limeum sulcatum</i> var. <i>scabridum</i>	(Klotzsch) Hutch.	LC	Indigenous	
Alismataceae	<i>Limnophyton obtusifolium</i>	(L.) Miq.	LC	Indigenous	
Linderniaceae	<i>Lindernia monroi</i>	(S.Moore) Eb.Fisch.	LC	Indigenous	
Fabaceae	<i>Lotononis laxa</i>	Eckl. & Zeyh.	LC	Indigenous	
Fabaceae	<i>Lotus</i> sp.				
Solanaceae	<i>Lycium schizocalyx</i>	C.H.Wright	LC	Indigenous	
Capparaceae	<i>Maerua angolensis</i> subsp. <i>angolensis</i>	DC.	LC	Indigenous	
Capparaceae	<i>Maerua parvifolia</i>	Pax	LC	Indigenous	
Bignoniaceae	<i>Markhamia zanzibarica</i>	(Bojer ex DC.) K.Schum.	LC	Indigenous	
Apocynaceae	<i>Marsdenia macrantha</i>	(Klotzsch) Schltr.		Indigenous	
Marsileaceae	<i>Marsilea coromandelina</i>	Willd.	LC	Indigenous	
Marsileaceae	<i>Marsilea</i> sp.				
Celastraceae	<i>Maytenus undata</i>	(Thunb.) Blakelock	LC	Indigenous	
Acanthaceae	<i>Megalochlamys revoluta</i> subsp. <i>cognata</i>	(Lindau) Vollesen	LC	Indigenous	
Malvaceae	<i>Melhania acuminata</i> var. <i>acuminata</i>	Mast.	LC	Indigenous	
Malvaceae	<i>Melhania rehmannii</i>	Szysyl.	LC	Indigenous	
Malvaceae	<i>Melhania virescens</i>	(K.Schum.) K.Schum.	LC	Indigenous	
Poaceae	<i>Melinis repens</i> subsp. <i>grandiflora</i>	(Willd.) Zizka	LC	Indigenous	

Poaceae	<i>Melinis repens subsp. repens</i>	(Willd.) Zizka	LC	Indigenous	
Cucurbitaceae	<i>Momordica balsamina</i>	L.	LC	Indigenous	
Geraniaceae	<i>Monsonia glauca</i>	R.Knuth	LC	Indigenous	
Geraniaceae	<i>Monsonia senegalensis</i>	Guill. & Perr.	LC	Indigenous	
Fabaceae	<i>Neonotonia wightii</i>	(Wight ex Arn.) J.A.Lackey	LC	Indigenous	
Fabaceae	<i>Neorautanenia mitis</i>	(A.Rich.) Verdc.	LC	Indigenous	
Amaryllidaceae	<i>Nerine laticoma</i>	(Ker Gawl.) T.Durand & Schinz	LC	Indigenous	
Ochnaceae	<i>Ochna glauca</i>	I.Verd.	LC	Indigenous	Schedule 12
Lamiaceae	<i>Ocimum filamentosum</i>	Forssk.	LC	Indigenous	
Poaceae	<i>Odyssea paucinervis</i>	(Nees) Stapf	LC	Indigenous	
Olacaceae	<i>Olex dissitiflora</i>	Oliv.	LC	Indigenous	
Apocynaceae	<i>Orbea rogersii</i>	(L.Bolus) Bruyns	LC	Indigenous	Schedule 12
Asteraceae	<i>Orbivestus cinerascens</i>	(Sch.Bip.) H.Rob.	LC	Indigenous	
Poaceae	<i>Oropetium capense</i>	Stapf	LC	Indigenous	
Polygonaceae	<i>Oxygonum delagoense</i>	Kuntze	LC	Indigenous	
Amaryllidaceae	<i>Pancratium tenuifolium</i>	Hochst. ex A.Rich.	LC	Indigenous	
Poaceae	<i>Panicum coloratum</i>	L.	LC	Indigenous	
Poaceae	<i>Panicum maximum</i>	Jacq.	LC	Indigenous	
Sapindaceae	<i>Pappea capensis</i>	Eckl. & Zeyh.	LC	Indigenous	
Asteraceae	<i>Parapolydora fastigiata</i>	(Oliv. & Hiern) H.Rob.		Indigenous	
Malvaceae	<i>Pavonia burchellii</i>	(DC.) R.A.Dyer	LC	Indigenous	
Malvaceae	<i>Pavonia dentata</i>	Burt Davy	LC	Indigenous; Endemic	
Asteraceae	<i>Pechuel-Loeschea leubnitziae</i>	(Kuntze) O.Hoffm.	LC	Indigenous	
Asteraceae	<i>Pegolettia retrofracta</i>	(Thunb.) Kies	LC	Indigenous	
Asteraceae	<i>Pegolettia senegalensis</i>	Cass.	LC	Indigenous	
Scrophulariaceae	<i>Peliostomum leucorrhizum</i>	E.Mey. ex Benth.	LC	Indigenous	
Scrophulariaceae	<i>Peliostomum virgatum</i>	E.Mey. ex Benth.	LC	Indigenous	
Apocynaceae	<i>Pergularia daemia subsp. daemia</i>	(Forssk.) Chiov.	LC	Indigenous	
Acanthaceae	<i>Petalidium aromaticum var. canescens</i>	Oberm.	LC	Indigenous	
Fabaceae	<i>Philenoptera violacea</i>	(Klotzsch) Schrire	LC	Indigenous	
Asteraceae	<i>Pluchea bojeri</i>	(DC.) Humbert	LC	Indigenous	
Polygalaceae	<i>Polygala leptophylla var. leptophylla</i>	Burch.	LC	Indigenous	
Polygalaceae	<i>Polygala marensis</i>	Burt Davy	LC	Indigenous	
Polygalaceae	<i>Polygala virgata var. decora</i>	Thunb.	LC	Indigenous	
Portulacaceae	<i>Portulaca quadrifida</i>	L.	LC	Indigenous	

Celastraceae	<i>Pristimera peglerae</i>	(Loes.) R.H.Archer		Indigenous; Endemic	
Verbenaceae	<i>Priva africana</i>	Moldenke	LC	Indigenous	
Asteraceae	<i>Psiadia punctulata</i>	(DC.) Vatke	LC	Indigenous	
Fabaceae	<i>Ptychlobium contortum</i>	(N.E.Br.) Brummitt	LC	Indigenous	
Fabaceae	<i>Ptychlobium plicatum subsp. plicatum</i>	(Oliv.) Harms	LC	Indigenous	
Cyperaceae	<i>Pycreus pelophilus</i>	(Ridl.) C.B.Clarke	LC	Indigenous	
Icacinaeae	<i>Pyrenacantha grandiflora</i>	Baill.	LC	Indigenous	
Apocynaceae	<i>Rauvolfia caffra</i>	Sond.	LC	Indigenous	
Fabaceae	<i>Rhynchosia adenodes</i>	Eckl. & Zeyh.	LC	Indigenous	
Fabaceae	<i>Rhynchosia minima var. prostrata</i>	(L.) DC.	NE	Indigenous	
Fabaceae	<i>Rhynchosia sp.</i>				
Ricciaceae	<i>Riccia congoana</i>	Steph.		Indigenous	
Lamiaceae	<i>Rotheca myricoides</i>	(Hochst.) Steane & Mabb.	LC	Indigenous	
Salicaceae	<i>Salix mucronata subsp. woodii</i>	Thunb.	LC	Indigenous	
Salvadoraceae	<i>Salvadora australis</i>	Schweick.	LC	Indigenous	
Ruscaceae	<i>Sansevieria aethiopica</i>	Thunb.	LC	Indigenous	
Poaceae	<i>Schmidtia pappophoroides</i>	Steud.	LC	Indigenous	
Fabaceae	<i>Schotia brachypetala</i>	Sond.	LC	Indigenous	
Anacardiaceae	<i>Sclerocarya birrea subsp. caffra</i>	(A.Rich.) Hochst.	LC	Indigenous	
Anacardiaceae	<i>Searsia leptodictya forma leptodictya</i>	(Diels) T.S.Yi, A.J.Mill. & J.Wen	NE	Indigenous	
Selaginellaceae	<i>Selaginella dregei</i>	(C.Presl) Hieron.	LC	Indigenous	
Selaginellaceae	<i>Selaginella nivea subsp. nivea</i>	Alston ex Alston	LC	Indigenous	
Fabaceae	<i>Senegalia mellifera subsp. detinens</i>	(Vahl) Seigler & Ebinger	LC	Indigenous	
Fabaceae	<i>Senegalia senegal var. leiorhachis</i>	(L.) Britton	LC	Indigenous	
Fabaceae	<i>Senegalia senegal var. rostrata</i>	(L.) Britton	LC	Indigenous	
Amaranthaceae	<i>Sericorema remotiflora</i>	(Hook.f.) Lopr.	LC	Indigenous	
Pedaliaceae	<i>Sesamothamnus lugardii</i>	N.E.Br. ex Stapf	LC	Indigenous	
Pedaliaceae	<i>Sesamum triphyllum var. triphyllum</i>	Welw. ex Asch.	LC	Indigenous	
Poaceae	<i>Setaria sagittifolia</i>	(A.Rich.) Walp.	LC	Indigenous	
Malvaceae	<i>Sida alba</i>	L.	LC	Indigenous	
Malvaceae	<i>Sida sp.</i>				
Solanaceae	<i>Solanum campylacanthum</i>	Hochst. ex A.Rich.		Indigenous	
Solanaceae	<i>Solanum catombelense</i>	Peyr.	LC	Indigenous	
Solanaceae	<i>Solanum tettense</i>	Klotzsch		Indigenous	
Asteraceae	<i>Sphaeranthus peduncularis subsp. peduncularis</i>	DC.	LC	Indigenous	
Poaceae	<i>Sporobolus consimilis</i>	Fresen.	LC	Indigenous	

Poaceae	<i>Sporobolus ioclados</i>	(Trin.) Nees	LC	Indigenous
Poaceae	<i>Sporobolus rangei</i>	Pilg.	LC	Indigenous
Poaceae	<i>Sporobolus salsus</i>	Mez	LC	Indigenous
Poaceae	<i>Sporobolus spicatus</i>	(Vahl) Kunth	LC	Indigenous
Linderniaceae	<i>Stemodiopsis rivae</i>	Engl.	LC	Indigenous
Malvaceae	<i>Sterculia rogersii</i>	N.E.Br.	LC	Indigenous
Poaceae	<i>Stipagrostis hirtigluma subsp. patula</i>	(Steud.) De Winter	LC	Indigenous
Poaceae	<i>Stipagrostis uniplumis var. neesii</i>	(Licht.) De Winter	LC	Indigenous
Poaceae	<i>Stipagrostis uniplumis var. uniplumis</i>	(Licht.) De Winter	LC	Indigenous
Orobanchaceae	<i>Striga gesnerioides</i>	(Willd.) Vatke	LC	Indigenous
Loganiaceae	<i>Strychnos madagascariensis</i>	Poir.	LC	Indigenous
Loganiaceae	<i>Strychnos spinosa subsp. spinosa</i>	Lam.	LC	Indigenous
Lamiaceae	<i>Syncolostemon canescens</i>	(Gurke) D.F.Otieno	LC	Indigenous
Myrtaceae	<i>Syzygium legatii</i>	Burt Davy & Greenway	LC	Indigenous; Endemic
Fabaceae	<i>Tephrosia albissima subsp. zuluensis</i>	H.M.L.Forbes	LC	Indigenous; Endemic
Fabaceae	<i>Tephrosia polystachya var. hirta</i>	E.Mey.	LC	Indigenous
Fabaceae	<i>Tephrosia sp.</i>			
Fabaceae	<i>Tephrosia villosa subsp. ehrenbergiana</i>	(L.) Pers.	NE	Indigenous
Combretaceae	<i>Terminalia prunioides</i>	M.A.Lawson	LC	Indigenous
Combretaceae	<i>Terminalia sericea</i>	Burch. ex DC.	LC	Indigenous
Poaceae	<i>Tetrapogon tenellus</i>	(Roxb.) Chiov.	LC	Indigenous
Poaceae	<i>Themeda triandra</i>	Forssk.	LC	Indigenous
Menispermaceae	<i>Tinospora fragosa</i>	(I.Verd.) I.Verd. & Troupin	LC	Indigenous
Asphodelaceae	<i>Trachyandra saltii var. saltii</i>	(Baker) Oberm.	LC	Indigenous
Euphorbiaceae	<i>Tragia okanyua</i>	Pax	LC	Indigenous
Euphorbiaceae	<i>Tragia rupestris</i>	Sond.	LC	Indigenous
Zygophyllaceae	<i>Tribulus terrestris</i>	L.	LC	Indigenous
Zygophyllaceae	<i>Tribulus zeyheri subsp. zeyheri</i>	Sond.	LC	Indigenous
Poaceae	<i>Tricholaena monachne</i>	(Trin.) Stapf & C.E.Hubb.	LC	Indigenous
Poaceae	<i>Trichoneura sp.</i>			
Turneraceae	<i>Tricliceras glanduliferum</i>	(Klotzsch) R.Fern.	LC	Indigenous
Salicaceae	<i>Trimeria grandifolia subsp. grandifolia</i>	(Hochst.) Warb.	LC	Indigenous
Poaceae	<i>Urochloa mosambicensis</i>	(Hack.) Dandy	LC	Indigenous
Poaceae	<i>Urochloa trichopus</i>	(Hochst.) Stapf	LC	Indigenous
Lentibulariaceae	<i>Utricularia arenaria</i>	A.DC.	LC	Indigenous

Lentibulariaceae	<i>Utricularia stellaris</i>	L.f.	LC	Indigenous	
Fabaceae	<i>Vachellia nebrownii</i>	(Burt Davy) Seigler & Ebinger	LC	Indigenous	
Fabaceae	<i>Vachellia stuhlmannii</i>	(Taub.) Kyal. & Boatwr.	LC	Indigenous	
Asteraceae	<i>Verbesina encelioides subsp. encelioides</i>	(Cav.) Benth. & Hook.f. ex A.Gray		Not indigenous; Naturalised; Invasive	
Fabaceae	<i>Vigna sp.</i>				
Fabaceae	<i>Vigna unguiculata subsp. unguiculata</i>	(L.) Walp.	NE	Indigenous	
Lamiaceae	<i>Vitex pooara</i>	Corbishley	LC	Indigenous; Endemic	
Malvaceae	<i>Waltheria indica</i>	L.	LC	Indigenous	
Fabaceae	<i>Xanthocercis zambesiaca</i>	(Baker) Dumaz-le-Grand	LC	Indigenous	
Convolvulaceae	<i>Xenostegia tridentata subsp. angustifolia</i>	(L.) D.F.Austin & Staples	LC	Indigenous	
Velloziaceae	<i>Xerophyta humilis</i>	(Baker) T.Durand & Schinz	LC	Indigenous	
Velloziaceae	<i>Xerophyta viscosa</i>	Baker	LC	Indigenous	
Olacaceae	<i>Ximenia americana var. microphylla</i>	L.	LC	Indigenous	
Potamogetonaceae	<i>Zannichellia palustris</i>	L.	LC	Indigenous	
Rhamnaceae	<i>Ziziphus mucronata subsp. mucronata</i>	Willd.	LC	Indigenous	