Biodiversity Baseline & Impact Assessment - Proposed Riverside View Expansion 84 Development

Steyn City, Gauteng

REFERENCE

Riverside View

CLIENT

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PRISM Environmental Management Services

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Report Name	**Biodiversity Baseline & Impact Assessment - Proposed Riverside View Expansion 84 Development**
Submitted to	PRISM ENVIRONMENTAL MANAGEMENT SERVICES
Report Writer (GIS, Botany)	**Martinus Erasmus**  Martinus Erasmus (Cand Sci Nat) obtained his B-Tech degree in Nature Conservation in 2016 at the Tshwane University of Technology. Martinus has been conducting basic assessments and assisting specialists in the field during his studies since 2015.
Report Writer	**Lindi Steyn**  Lindi Steyn has a PhD in Biodiversity and Conservation from the University of Johannesburg. She specialises in avifauna and has worked in this specialisation since 2013.
Report Reviewer	**Andrew Husted**  Andrew Husted is Pr Sci Nat registered (400213/11) in the following fields of practice: Ecological Science, Environmental Science and Aquatic Science. Andrew is an Aquatic, Wetland and Biodiversity Specialist with more than 12 years' experience in the environmental consulting field. Andrew has completed numerous wetland training courses, and is an accredited wetland practitioner, recognised by the DWS, and also the Mondi Wetlands programme as a competent wetland consultant.
Declaration	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, 2014 (as amended). 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 principles of science.

DECLARATION

I, Martinus Erasmus, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

Martinus Erasmus

Terrestrial Ecologist

The Biodiversity Company

April 2019

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1 Introduction

The Biodiversity Company (TBC) was appointed by PRISM Environmental Management Services (Pty) Ltd (PRISM) to conduct a biodiversity baseline and impact assessment on the ecosystems associated with the proposed development of Riverside View Ext 84 on portion 185 and 124 of the farm Diepsloot 388JR, Gauteng. The proposed development forms part of the Steyn City Parkland residence and is set to be a modern, mixed land use and mixed income development. The proposed development is approximately 29.4 ha. The land has been divided into land use zones they are as follow:

- Zone 1 (Erf1 and 2): Place of instruction, residential dwelling units, residential buildings, Storage, Offices, including ancillary uses such as restaurant and shops.
- Zone 2 (Erf 3): Private Open Spaces.

A wet season terrestrial biodiversity survey was conducted on the 8th February 2019 by a terrestrial ecologist. The survey was focused primarily on those areas which were most likely to be impacted upon by the proposed development. Furthermore, the 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 activity was also investigated.

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, as to the ecological viability of the proposed development.

2 Project Area

The Riverside View Ext 84 proposed development is suited adjacent to William Nicol drive (R511) and is bordered by Porcupine Park avenue and Zeven street. It is situated on portion 185 and 124 of the farm Diepsloot 388JR, Gauteng, South Africa. The land uses surrounding the project area consists predominantly of some residential areas, a Makro shopping centre, Steyn City Estate and some open fields (Figure 1).

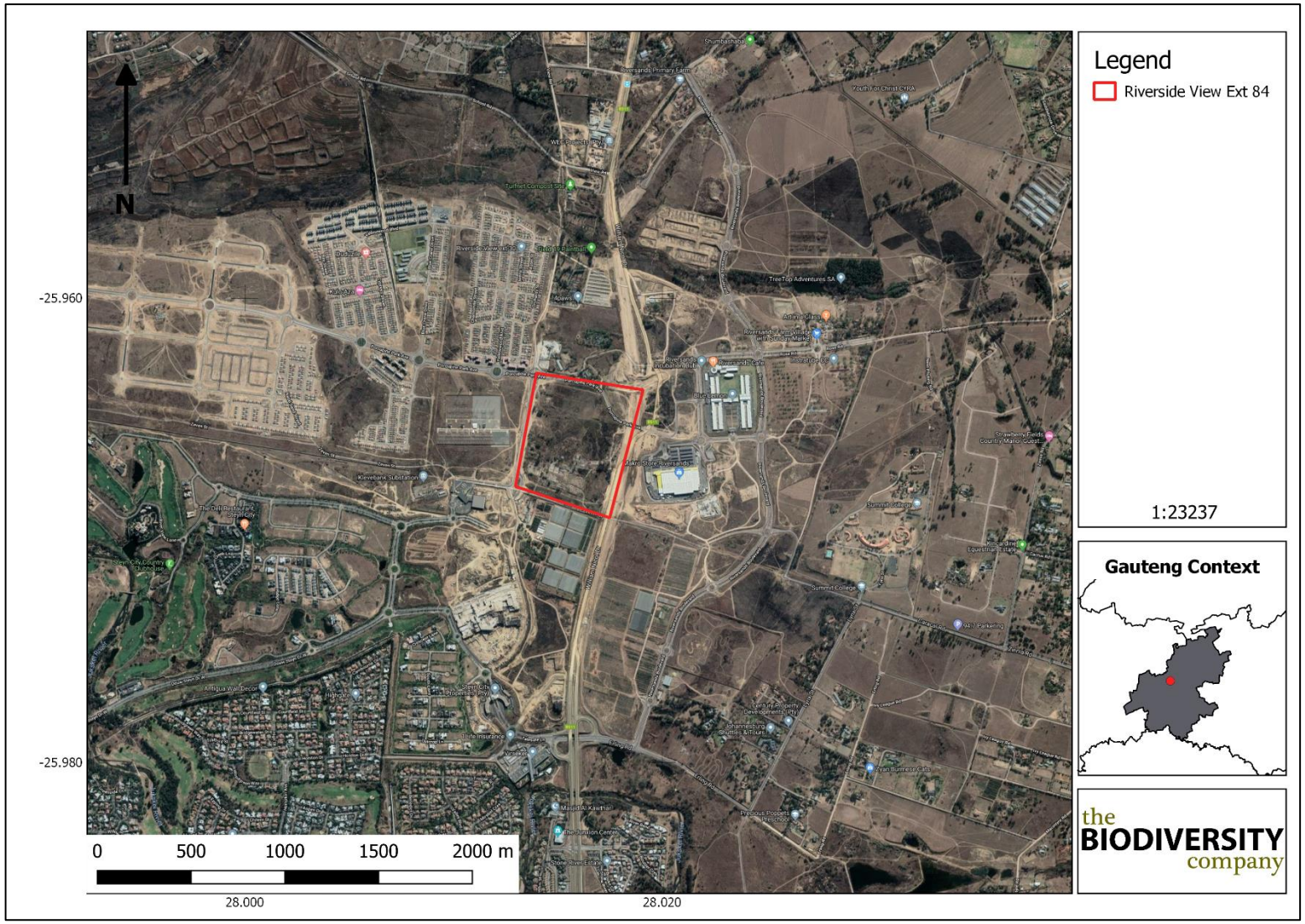

Figure 1: The general location of the project area

3 Scope of Work

TBC was commissioned by PRISM to conduct an ecological baseline assessment for the proposed Riverside View Ext 84 development on portion 185 and 124 of the farm Diepsloot 388JR, Gauteng, South Africa.

The Terms of Reference (ToR) included 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 in terms of relevant specialist disciplines (biodiversity) that occur in the study area, and the manner in which these sensitive receptors may be affected by the activity;
- Identify 'significant' ecological, botanical and zoological features within the proposed development areas;
- Provide a map identifying sensitive receptors in the study area, based on available maps, database information & site visit verification.
- Site visit to verify desktop information; and
- Screening to identify any critical issues (potential fatal flaws) that may result in project delays or rejection of the application.

4 Limitations

The following limitations should be noted for the study:

- As per the scope of work, the fieldwork component of the assessment comprised one assessment only, that was conducted during the wet season. This study has not assessed any temporal trends for the respective seasons;
- The spatial data might not be accurate or based on outdated features; ground truthing has been performed to try and increase the accuracy; and
- Despite these limitations, a comprehensive desktop study was conducted, in conjunction with the detailed results from the surveys, and as such there is a high confidence in the information provided.

5 Methodologies

5.1 Geographic Information Systems (GIS) Mapping

Existing data layers were incorporated into a GIS to establish how the proposed the mining operation interact with these important entities. Emphasis was placed around the following spatial datasets:

- Vegetation Map of South Africa, Lesotho and Swaziland (Mucina et al., 2007);
- Important Bird Areas 2015 – BirdLife South Africa (vector geospatial dataset); and
- Gauteng Conservation Plan (Version 3.3).

- Field surveys were conducted to confirm (or refute) the presence of species identified in the desktop assessment. The specialist disciplines completed for this study included:
- Botanical;
- Fauna (mammals and avifauna); and
- Herpetology (reptiles and amphibians).

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

5.2 Botanical Assessment

The botanical study encompassed an assessment of all the vegetation units and habitat types within the project area. The focus was on an ecological habitat 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.

5.2.1 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, 2016) 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:

- Field Guide to the Wild Flowers of the Highveld (Van Wyk & Malan, 1997);
- A Field Guide to Wild flowers (Pooley, 1998);
- Guide to Grasses of Southern Africa (Van Oudtshoorn, 1999);
- Orchids of South Africa (Johnson & Bytebier, 2015);
- Guide to the Aloes of South Africa (Van Wyk & Smith, 2014);
- Medicinal Plants of South Africa (Van Wyk et al., 2013);
- Freshwater Life: A field guide to the plants and animals of southern Africa (Griffiths & Day, 2016); and
- Identification Guide to Southern African Grasses. An identification manual with keys, descriptions and distributions. (Fish et al., 2015).

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, 2012);
- Grassland Ecosystem Guidelines: landscape interpretation for planners and managers (SANBI, 2013); and
- Red List of South African Plants (Raimondo et al., 2009; SANBI, 2019).

5.3 Wet Season Fieldwork

The wet season 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 and GIS analysis (which included the latest applicable biodiversity datasets) available prior to the fieldwork.

The focus of the fieldwork was to maximise coverage and navigate to each target site in the field in order to perform a rapid vegetation and ecological habitat assessment at each sample site. Emphasis was placed on sensitive habitats.

At each sample site notes were made regarding current impacts (e.g. invasive species, fencing 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.

5.4 Faunal Assessment (Mammals & Avifauna)

The faunal desktop assessment included the following:

- Compilation of identified species lists;
- Compilation of expected species lists;
- Identification of any Red Data or species of conservation concern (SCC) present or potentially occurring in the area; and
- Emphasis was placed on the probability of occurrence of species of provincial, national and international conservation importance.

The field survey component of the study utilised a variety of sampling techniques including, but not limited to, the following:

- Visual observations;
- Identification of tracks and signs; and
- Utilization of local knowledge.

5.5 Herpetology (Reptiles & Amphibians)

A herpetofauna assessment of the project area was also conducted. The herpetological field survey comprised the following techniques:

- Diurnal hand searches - are used for reptile species that shelter in or under particular microhabitats (typically rocks, exfoliating rock outcrops, fallen timber, leaf litter, bark etc.);
- Visual searches - typically undertaken for species whose behaviour involves surface activity or for species that are difficult to detect by hand-searches or pitfall trapping. May include walking transects or using binoculars to view species from a distance without them being disturbed;
- Amphibians – many of the survey techniques listed above will be able to detect species of amphibians. Over and above these techniques, vocalisation sampling techniques are often the best to detect the presence of amphibians as each species has a distinct call; and
- Opportunistic sampling - Reptiles, especially snakes, are incredibly illusive and difficult to observe. Consequently, all possible opportunities to observe reptiles are taken, in order to augment the standard sampling procedures described above. This will include talking to local people and staff at the site and reviewing photographs of reptiles and amphibians that the other biodiversity specialists may come across while on site.

6 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.

Explanation of certain documents or organisations is provided (Table 1) where these have a high degree of relevance to the project and/or are referred to in this assessment.

Table 1: A list of key legislative requirements relevant to biodiversity and conservation in Gauteng

INTERNATIONAL	Convention on Biological Diversity (CBD, 1993)
	The United Nations Framework Convention on Climate Change (UNFCC,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 Veld and Forest Fire Act (101 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	GDARD Requirements for Biodiversity Assessments (Version 3, 2014a)
	Gauteng Department of Agriculture and Rural Development (GDARD): Checklist for Biodiversity Assessments
	GDARD Mining and Environmental Impact Guide

International Legislation and Policy

- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival; and
- The IUCN (World Conservation Union). The IUCN's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

National Level

- Constitution of the Republic of South Africa (Act 108 of 1996). The Bill of Rights, in the Constitution of South Africa states that everyone has a right to a nonthreatening environment and requires that reasonable measures be applied to protect the environment. This protection encompasses preventing pollution and promoting conservation and environmentally sustainable development;
- The National Environmental Management: Biodiversity Act (NEM:BA) No. 10 of 2004: specifically, the management and conservation of biological diversity within the RSA and of the components of such biological diversity;
- National Forests Act, 1998 (Act 84 of 1998), specifically with reference to Protected Tree species;
- National Biodiversity Assessment (NBA): The National Biodiversity Assessment (NBA) was completed as a collaboration between the South African National Biodiversity Institute (SANBI), the Department of Environmental Affairs (DEA) and other stakeholders, including scientists and biodiversity management experts throughout the country over a three-year period (Driver *et al.,* 2011). The purpose of the NBA is to

assess the state of South Africa's biodiversity with a view to understanding trends over time and informing policy and decision-making across a range of sectors (Driver *et al.,* 2011).

Provincial and Municipal Level

In addition to national legislation, South Africa's nine provinces have their own provincial biodiversity legislation, as nature conservation is a concurrent function of national and provincial government in terms of the Constitution (Act 108 of 1996).

The Provincial Department responsible for environmental matters in Gauteng is the Gauteng Department of Agricultural and Rural Development (GDARD). Relevant provincial legislation includes, but is not limited to:

- GDARD Requirements for Biodiversity Assessments (Version 3, 2014a): GDARD Biodiversity Management Directorate has defined minimum necessary requirements for biodiversity studies; and
- One of the activities that may potentially be triggered under NEMA regulations (depending on the final development layouts that the client may provide), is Activity 27: The clearance of an area of 1 hectare or more, of indigenous vegetation.

7 Project Area

7.1 General Land Use

The land uses surrounding the project area consists predominantly of some residential areas, a Makro shopping centre, Steyn City and some open fields. The project area currently consists of old houses in the central section adjacent to a drainage line.

The following infrastructure exists in the project area and surrounds:

- Various roads (e.g. Zeven Street, William Nicol Avenue and Porcupine park Avenue) are found in close proximity to the project area;
- Housing with associated anthropogenic impacts;
- Adjacent road upgrades;
- Makro store with its associated high traffic levels; and
- Existing outbuildings and remainders of old building foundations.

7.2 Gauteng Conservation Plan Version 3.3

The Gauteng Conservation Plan (Version 3.3) (GDARD, 2014b) (Gauteng C-Plan) classified areas within the province on the basis of its contribution to reach the conservation targets within the province. The Gauteng C-Plan uses the following terms to categorise the various land used types according to their biodiversity and environmental importance:

- Critical Biodiversity Area (CBA);
- Ecological Support Area (ESA);
- Other Natural Area (ONA);

- Protected Area (PA); and
- Moderately or Heavily Modified Areas (MMA's or HMA's).

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. CBAs are areas of high biodiversity value and need to be kept in a natural state, with no further loss of habitat or species (GDARD, 2014b). 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 (SANBI-BGIS, 2017).

ESAs are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of CBAs and/or in delivering ecosystem services. CBAs and ESAs may be terrestrial or aquatic (SANBI-BGIS, 2017).

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 (SANBI-BGIS, 2017).

Moderately or Heavily Modified Areas (sometimes called 'transformed' areas) are areas that have been heavily modified by human activity so that they are by-and-large no longer natural, and do not contribute to biodiversity targets (MTPA, 2014). Some of these areas may still provide limited biodiversity and ecological infrastructural functions but, their biodiversity value has been significantly, and in many cases irreversibly, compromised.

As shown in Figure 2, portions of the project area are classified as an ESA and CBA: Important areas.

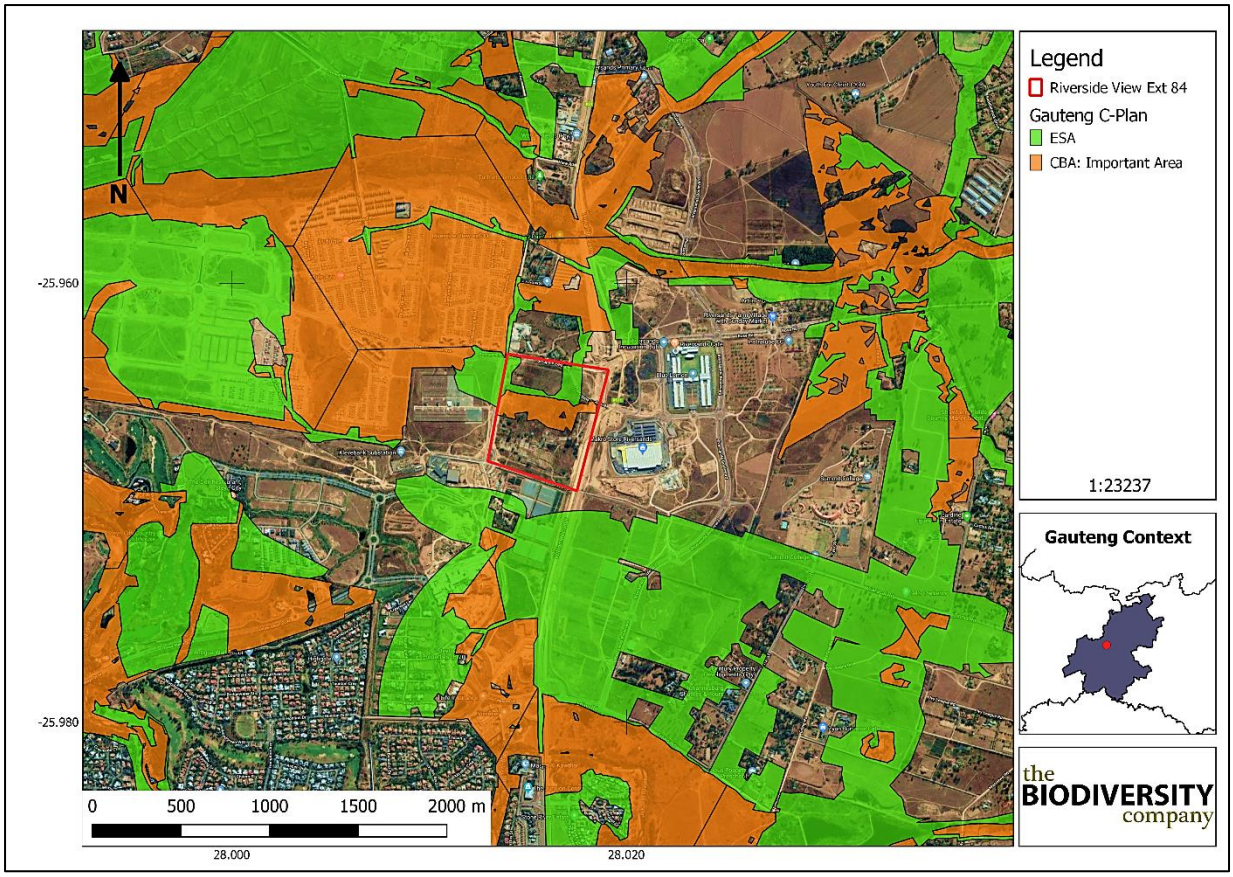

Figure 2: The project area superimposed on the Gauteng Conservation Plan (2014)

7.3 Rocky Ridges

According to the Gauteng Conservation C-Plan (2014), ridges are characterized by high spatial heterogeneity due to the range of differing aspects, slopes and altitudes all resulting in differing soil, temperature, elevation, light and hydrological conditions. This variation is an especially important predictor of biodiversity.

Ridges are characterized by a particularly high biodiversity and it follows that their protection will contribute significantly to the conservation of biodiversity in Gauteng. The ridges of Gauteng are vital habitat for many threatened plant species. Sixty-five percent of Gauteng's threatened plant species and 71% of Gauteng's endemic plant species have been recorded on ridges.

According to the Gauteng C-Plan (2014) the project area does not overlap with any ridges. However, a class 2, class 3 and a class 4 ridge are found approximately 1-2 km from the project area. It is considered unlikely that the development will have an impact on these ridges (Figure 3).

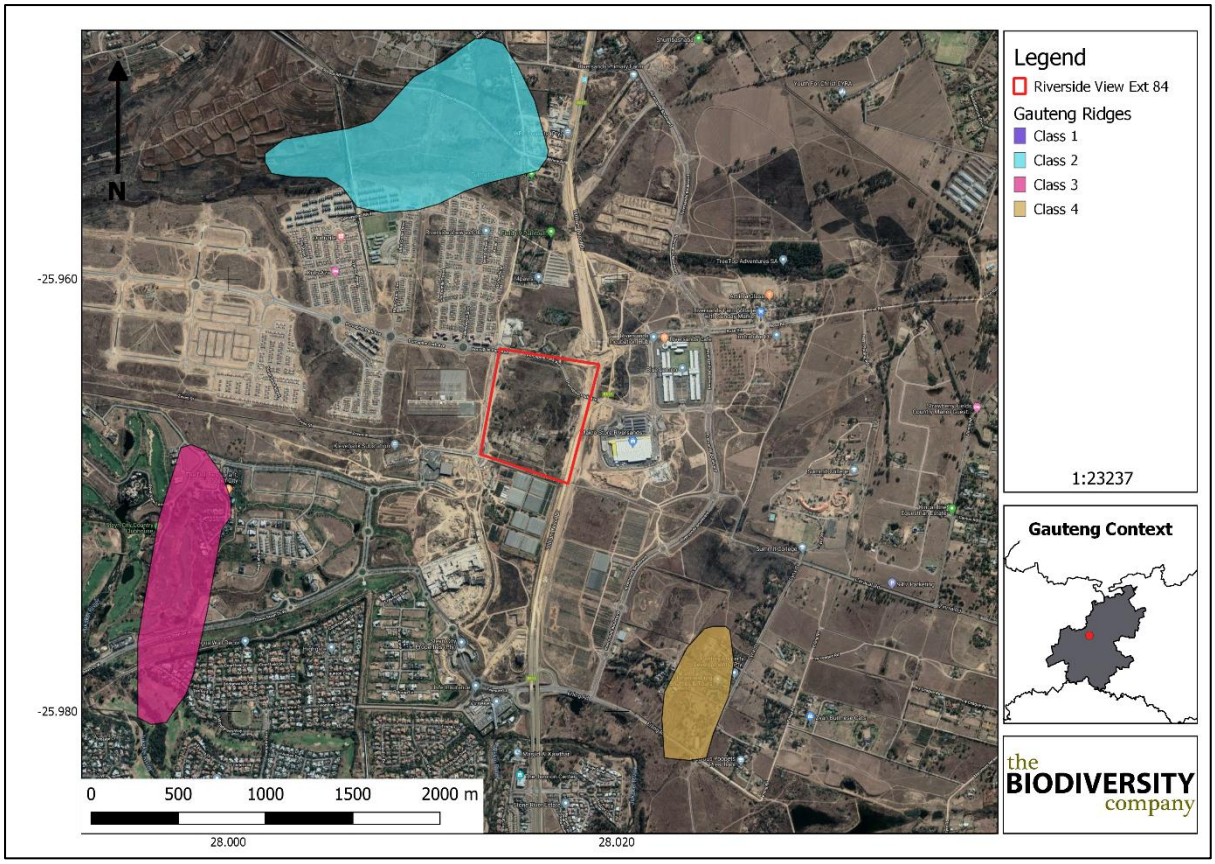

Figure 3:The project area in relation to the rocky ridges.

7.4 National Biodiversity Assessment (NBA)

The NBA was completed as a collaboration between the SANBI, the DEA and other stakeholders, including scientists and biodiversity management experts throughout the country over a three-year period (Driver et al., 2011).

The purpose of the NBA is to assess the state of South Africa's biodiversity with a view to understanding trends over time and informing policy and decision-making across a range of sectors (Driver et al., 2011).

The two headline indicators assessed in the NBA are *ecosystem threat status* and *ecosystem protection level* (Driver *et al.,* 2011).

7.4.1 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 (Driver et al., 2011).

Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Least Threatened (LT), based on the proportion of each ecosystem type that remains in good ecological condition (Driver et al., 2011).

The project area was superimposed on the terrestrial ecosystem threat status (Figure 4). As seen in Figure 4 the project area falls entirely within an ecosystem which is listed as EN.

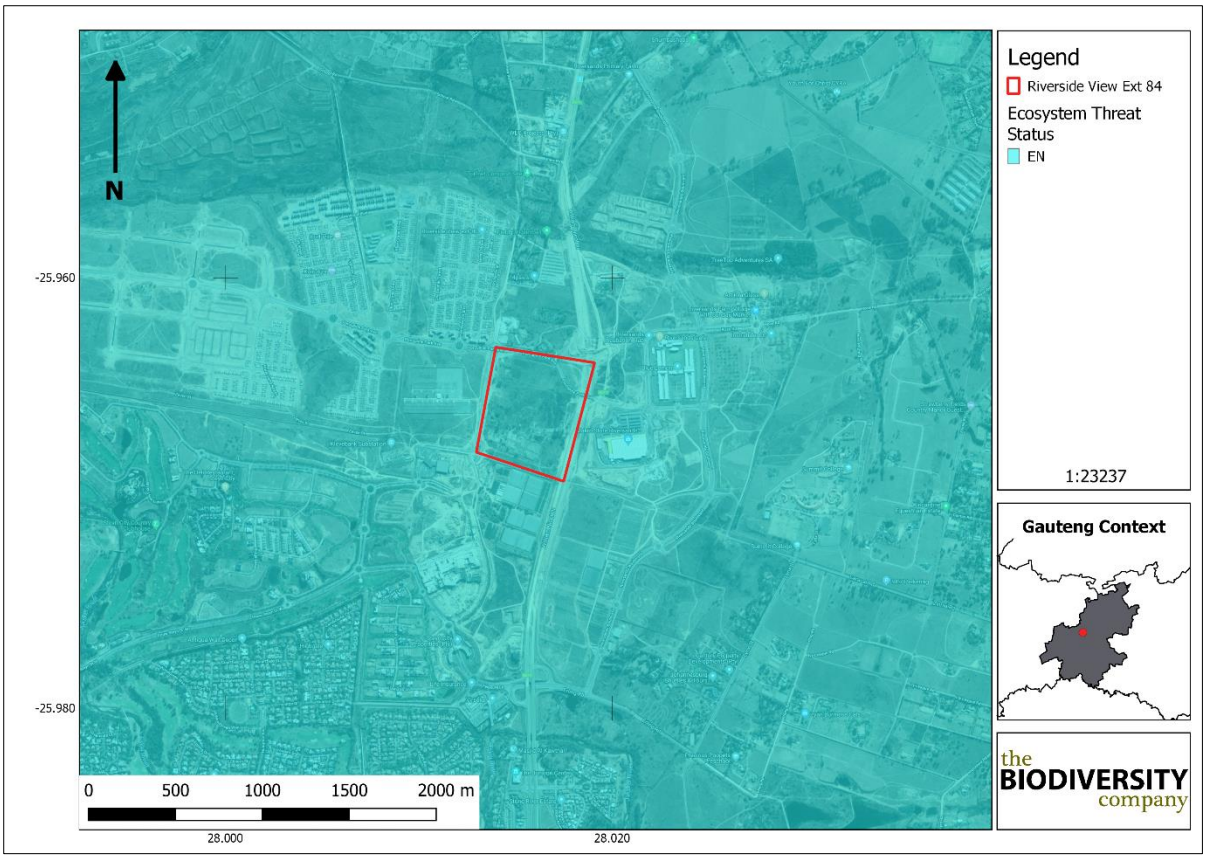

Figure 4: Riverside View project area showing the ecosystem threat status of the associated terrestrial ecosystems (NBA, 2012)

7.4.2 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 (Driver et al., 2011).

The Riverside View project area was superimposed on the ecosystem protection level map to assess the protection status of terrestrial ecosystems associated with the development (Figure 5). Based on Figure 5 all of the terrestrial ecosystems associated with the development (entire project area and surrounds) are rated as *poorly protected*.

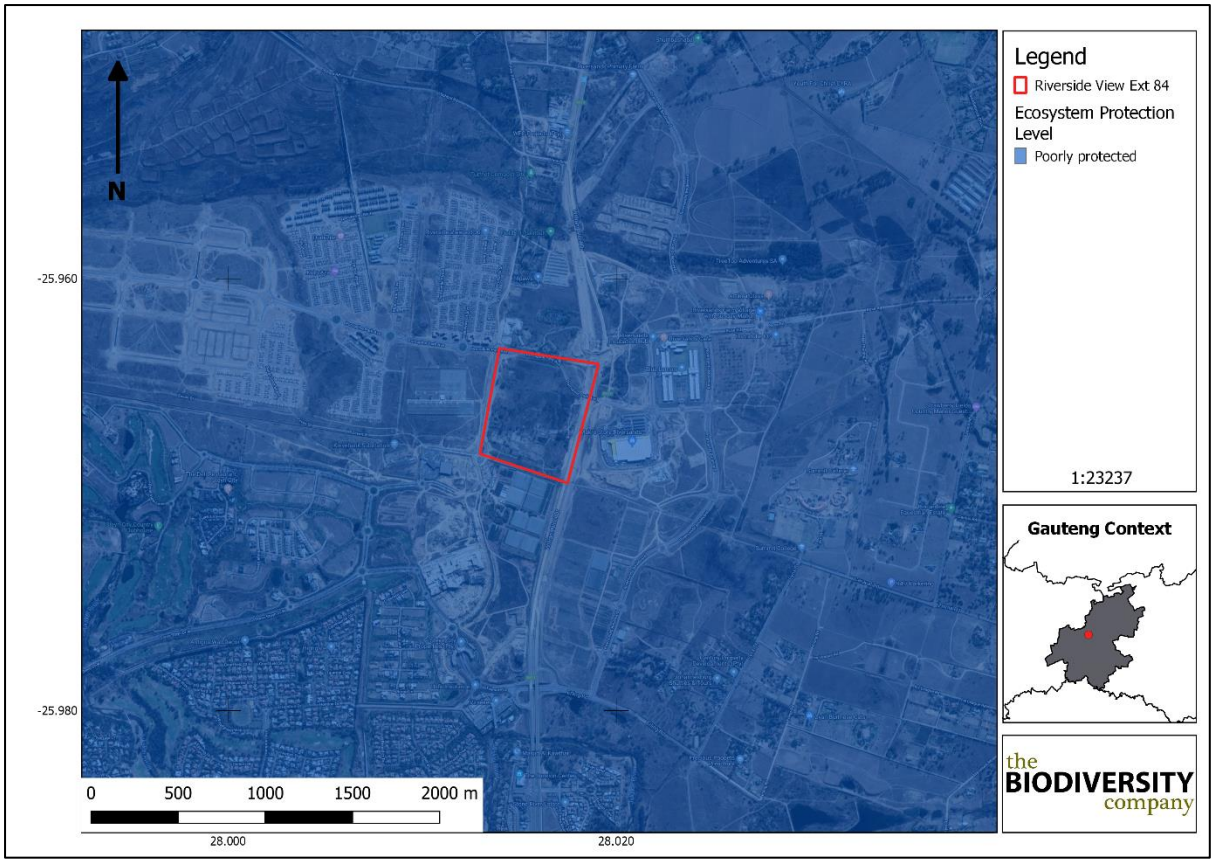

Figure 5: Riverside View project area showing the level of protection of terrestrial ecosystems (NBA, 2012)

7.5 Protected Areas

Figure 6 shows the location of formally protected areas in relation to the project area. Formally protected areas refer to areas that are legally protected either by national or provincial legislation.

Based on the SANBI (2010) Protected Areas Map and the National Protected Areas Expansion Strategy (NPAES) the project area does overlap with any formally or informally protected area (Figure 6).

The closest protected area is situated 5.6 km south of the project area, and as such the development will not have an impact on this, or any other, protected area.

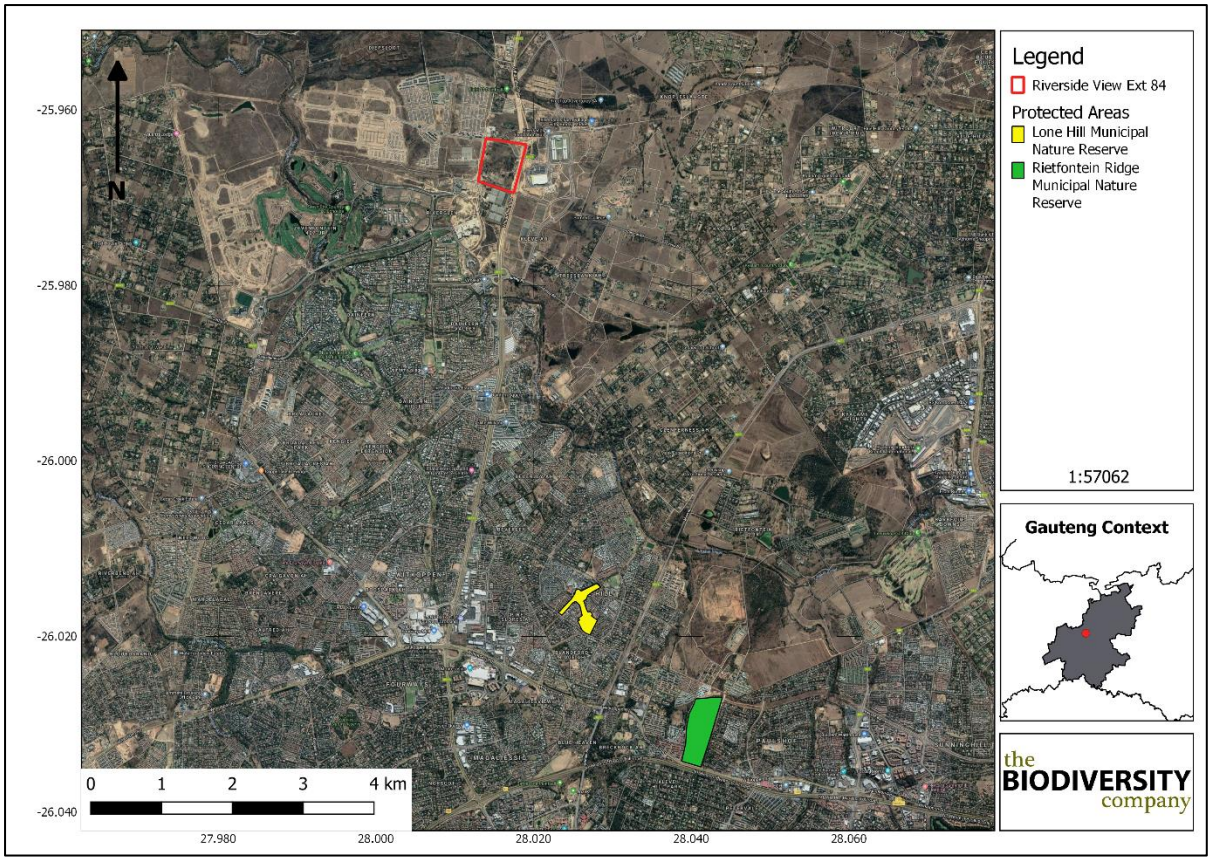

Figure 6: The project area in relation to formally protected areas (SANBI, 2010).

8 Results & Discussion

8.1 Desktop Assessment

8.1.1 Vegetation Assessment

The Riverside View project area is situated within the grassland biome, specifically the Egoli Granite Grassland. This biome is centrally located in southern Africa, and adjoins all except the desert, fynbos and succulent Karoo biomes (Mucina & Rutherford, 2006). Major macroclimatic traits that characterise the grassland biome include:

a) Seasonal precipitation; and
b) The minimum temperatures in winter (Mucina & Rutherford, 2006).

The grassland biome is found chiefly on the high central plateau of South Africa, and the inland areas of KwaZulu-Natal and the Eastern Cape. The topography is mainly flat and rolling but includes the escarpment itself. Altitude varies from near sea level to 2 850 m above sea level.

Grasslands are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. The grassland biome experiences summer rainfall and dry winters with frost (and fire), which are unfavourable for tree growth. Thus, trees are typically absent, except in a few localized habitats. Geophytes (bulbs) are often abundant. Frosts, fire and grazing maintain the grass dominance and prevent the establishment of trees.

8.1.2 Vegetation Types

The grassland biome comprises many different vegetation types. The project area is situated mainly in one vegetation type; the Egoli Granite Grassland (Gh 10), according to Mucina & Rutherford (2006) (Figure 7).

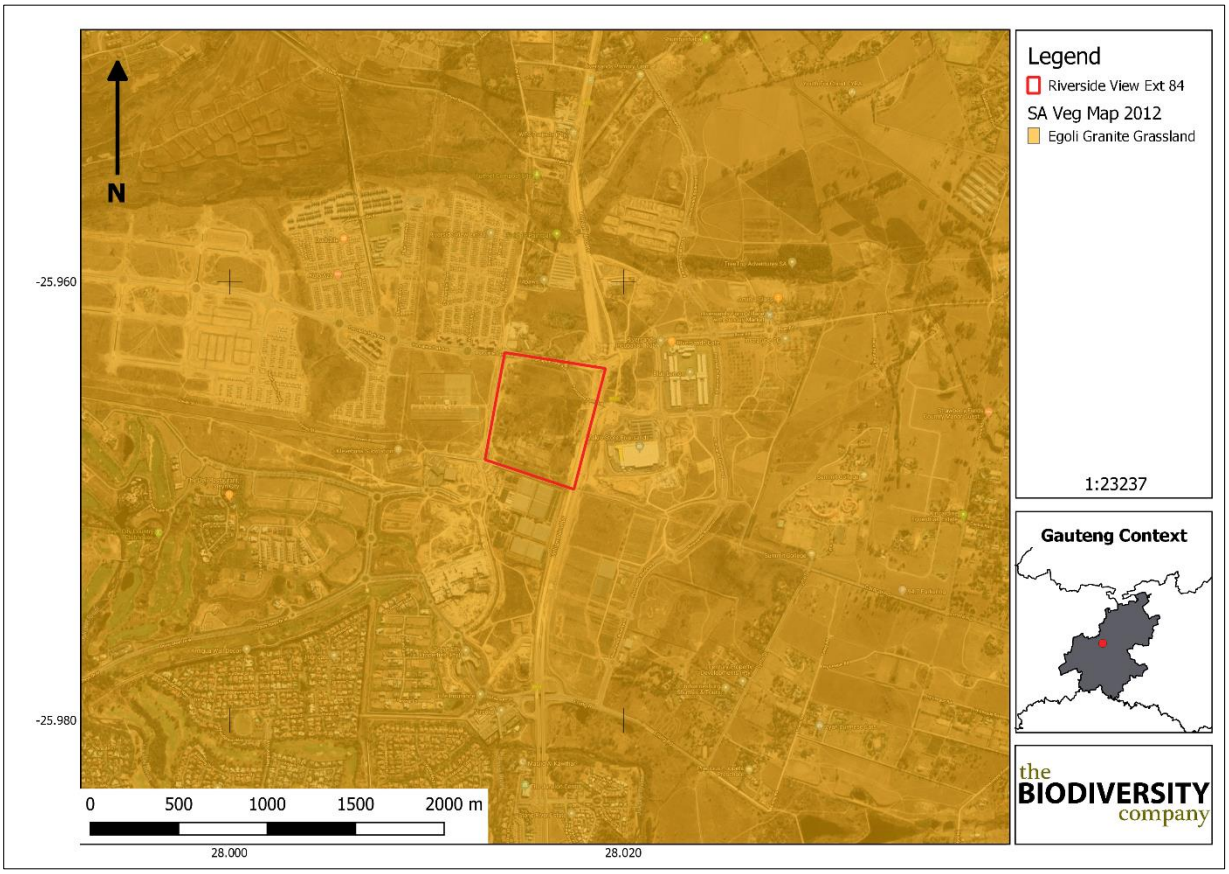

Figure 7: Project area showing the vegetation type based on the Vegetation Map of South Africa, Lesotho & Swaziland (BGIS, 2017)

8.1.3 Egoli Granite Grassland

Egoli Granite Grassland occurs only in the Gauteng province, and less than 32% of this vegetation type remains untransformed. The province has a target to conserve and protect 25% of the remaining vegetation type.

Egoli Granite Grassland is characterised by a high species richness with a patchy dominance of various grass species, and a large variety of forbs (broad leafed herbaceous plant, other than grass), representing a climax or close to climax condition.

8.1.4 Important Plant 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 **Egoli Granite Grassland** vegetation type:

Graminoids: *Aristida canescens, A. congesta, Cynodon dactylon, Digitaria monodactyla, Eragrostis capensis, E. chloromelas, E. curvula, E. racemosa, Heteropogon contortus, Hyparrhenia hirta, Melinis repens subsp. repens, Monocymbium ceresiiforme, Setaria sphacelata, Themeda triandra, Tristachya leucothrix, Andropogon eucomus, Aristida aequiglumis, A. diffusa, A. scabrivalvis subsp. borumensis, Bewsia biflora, Brachiaria serrata, Bulbostylis burchellii, Cymbopogon caesius, Digitaria tricholaenoides, Diheteropogon amplectens, Eragrostis gummiflua, E. sclerantha, Panicum natalense, Schizachyrium sanguineum, Setaria nigrirostris, Tristachya rehmannii, Urelytrum agropyroides.*

Herbs: *Acalypha angustata, A. peduncularis, Becium obovatum, Berkheya insignis, Crabbea hirsuta, Cyanotis speciosa, Dicoma anomala, Helichrysum rugulosum, Justicia anagalloides, Kohautia amatymbica, Nidorella hottentotica, Pentanisia prunelloides subsp. latifolia, Pseudognaphalium luteo-album* and *Senecio venosus.*

Geophytic Herbs: *Cheilanthes deltoidea, C. hirta.*

Low Shrubs*: Anthospermum hispidulum, A. rigidum subsp. pumilum, Gnidia capitata, Helichrysum kraussii, Ziziphus zeyheriana.*

Tall Shrub: *Searsia pyroides.*

Succulent Shrub: *Lopholaena coriifolia.*

8.1.4.1 Conservation Status of the Vegetation Type

According to Mucina & Rutherford (2006), this vegetation type is classified as EN. The national target for conservation protection for both these vegetation types is 24%, but only 3% is conserved in statutory (Diepsloot and Melville Koppies Nature Reserves). More than two thirds of this vegetation unit have already undergone transformation mostly due to urbanisation, cultivation or by building of roads.

8.1.4.2 Plant Species of Conservation Concern

Based on the Plants of Southern Africa (BODATSA-POSA, 2016) database, 543 plant species are expected to occur in the area (Figure 7). The list of expected plant species is provided in Appendix A.

Of the 543-plant species, three (3) species are listed as being Species of Conservation Concern (SCC) (Table 2).

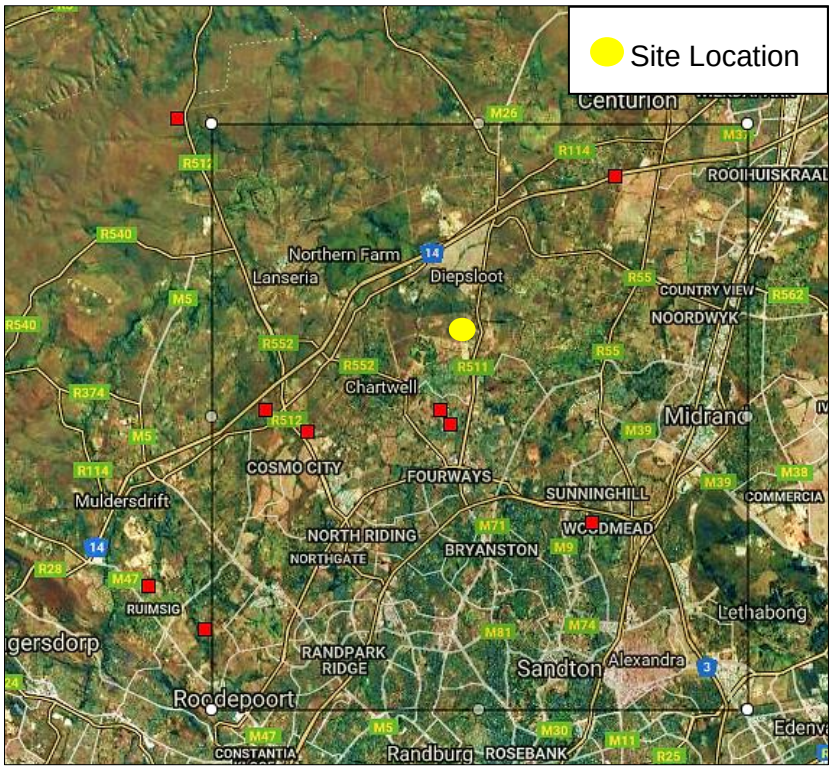

Figure 8: Map showing the grid drawn in order to compile an expected species list (BODATSA-POSA, 2016)

Table 2: Plant SCC expected to occur in the project area (BODATSA-POSA, 2016).

Family	Taxon	Author	IUCN	Ecology
Aizoaceae	*Delosperma leendertziae*	N.E.Br.	NT	Indigenous; Endemic
Fabaceae	*Melolobium subspicatum*	Conrath	VU	Indigenous; Endemic
Fabaceae	*Pearsonia bracteata*	(Benth.) Polhill	NT	Indigenous; Endemic

Delosperma leendertziae is listed as NT according to the Red List of South African Plants (SANBI, 2017) and can be found in the Savanna Veld type, and prefers steep, south-facing slopes of quartzite in mountain grassland. Major threats are due to habitat quality at more than 10 existing locations is declining due to soil erosion, alien plant invasion and inappropriate fire management (Victor et al., 2005).

Melolobium subspicatum is listed as VU according to the Red List of South African Plants (SANBI, 2017) and can be found in Carletonville Dolomite Grassland, Soweto Highveld Grassland, Egoli Granite Grassland. Major threats to these species include habitat loss and degradation (Victor et al., 2005).

Pearsonia bracteata is listed as NT according to the Red List of South African Plants (SANBI, 2017). It is found in the plateau grasslands of the savanna and grassland biomes. This endemic species is threatened by habitat loss to agriculture, urban expansion, mining, quarrying and alien invasive plants.

8.1.5 Faunal Assessment

8.1.5.1 Avifauna

Based on the South African Bird Atlas Project, Version 2 (SABAP2) database, 429 bird species are expected to occur in the vicinity of the project area (pentads 2555_2755; 2550_2800; 2550_2805; 2555_2755; 2555_2800; 2555_2805; 2600_2755; 2600_2800; 2600_2805). The full list of potential bird species is provided in Appendix B.

Of the expected bird species, thirty (30) species (6.6%) are listed as SCC either on a regional (29) or global scale (13) (Table 3).

The SCC include the following:

- One (1) species that are listed as CR on a regional basis; and
- Five (5) species that are listed as EN on a regional basis; and
- Nine (9) species that are listed as VU on a regional basis; and
- Twelve (12) species that are listed as NT on a regional basis.

Table 3: List of bird species of regional or global conservation importance that are expected to occur in pentads 2555_2755; 2550_2800; 2550_2805; 2555_2755; 2555_2800; 2555_2805; 2600_2755; 2600_2800; 2600_2805 (SABAP2, 2017, ESKOM, 2014; IUCN, 2017)

Species	Common Name	Conservation Status		Likelihood of occurrence
		Regional (SANBI, 2016)	IUCN (2017)	
Alcedo semitorquata	Kingfisher, Half-collared	NT	LC	Low
Anthropoides paradiseus	Crane, Blue	NT	VU	Low
Aquila ayresii	Hawk-eagle, Ayres's	NT	LC	Moderate
Aquila verreauxii	Eagle, Verreaux's	VU	LC	Low
Calidris ferruginea	Sandpiper, Curlew	LC	NT	Low
Ciconia abdimii	Stork, Abdim's	NT	LC	Low
Ciconia nigra	Stork, Black	VU	LC	Low
Circus ranivorus	Marsh-harrier, African	EN	LC	Low
Coracias garrulus	Roller, European	NT	LC	Moderate
Egretta vinaceigula	Egret, Slaty	NA	VU	Low
Ephippiorhynchus senegalensis	Stork, Saddle-billed	EN	LC	Low
Eupodotis senegalensis	Korhaan, White-bellied	VU	LC	Low
Falco biarmicus	Falcon, Lanner	VU	LC	High
Falco vespertinus	Falcon, Red-footed	NT	NT	Low
Geronticus calvus	Ibis, Southern Bald	VU	VU	Low
Glareola nordmanni	Pratincole, Black-winged	NT	NT	Moderate
Gyps africanus	Vulture, White-backed	CR	CR	Low
Gyps coprotheres	Vulture, Cape	EN	EN	Low
Limosa lapponica	Godwit, Bar-tailed	LC	NT	Low
Mycteria ibis	Stork, Yellow-billed	EN	LC	Low
Oxyura maccoa	Duck, Maccoa	NT	NT	Low

Phoenicopterus minor	Flamingo, Lesser	NT	NT	Low
Phoenicopterus ruber	Flamingo, Greater	NT	LC	Low
Podica senegalensis	Finfoot, African	VU	LC	Low
Polemaetus bellicosus	Eagle, Martial	EN	VU	Low
Pterocles gutturalis	Sandgrouse, Yellow-throated	NT	LC	Low
Rostratula benghalensis	Painted-snipe, Greater	NT	LC	Moderate
Sagittarius serpentarius	Secretarybird	VU	VU	Low
Sterna caspia	Tern, Caspian	VU	LC	Low
Tyto capensis	Grass-owl, African	VU	LC	High

Alcedo semitorquata (Half-collared Kingfisher) is listed as NT on a regional scale and occurs across a large range. This species generally prefers narrow rivers, streams, and estuaries with dense vegetation onshore, but it may also move into coastal lagoons and lakes. It mainly feeds on fish (IUCN, 2017). Even though a drainage line is found in the project area it is unlikely to have sufficient prey species for this bird and as such the likelihood of occurrence is low.

Anthropoides paradiseus (Blue Crane) is listed as NT on a regional scale and as VU on a global scale. This species has declined, largely owing to direct poisoning, power-line collisions and loss of its grassland breeding habitat owing to afforestation, mining, agriculture and development (IUCN, 2017). This species breeds in natural grass- and sedge-dominated habitats, preferring secluded grasslands at high elevations where the vegetation is thick and short. Due to the lack of extensive open grassland areas within the project site the likelihood of occurrence is rated as low.

Aquila ayresii (Ayres's Hawk-eagle) is categorised as NT regionally. This species is rare in Southern Africa where it generally prefers dense woodland, forest edges and well-wooded suburbia and often roosting in stands of *Eucalyptus* trees. Its numbers are declining due to loss and degradation of woodland, especially miombo (*Brachystegia*). It is also persecuted due to its tendency to kill homing pigeons, and other domestic birds. Some *Eucalyptus sp* is found in the project area and as such a moderate chance of occurrence is likely.

Aquila verreauxii (Verreaux's Eagle) is listed as VU on a regional scale and LC on a global scale. This species is locally persecuted in southern Africa where it coincides with livestock farms, but because the species does not take carrion, is little threatened by poisoned carcasses. Where hyraxes are hunted for food and skins, eagle populations have declined (IUCN, 2017). Prey species are absent from the area and the proximity to urbanization also lowers the chance of occurrence.

Calidris ferruginea (Curlew Sandpiper) is migratory species which breeds on slightly elevated areas in the lowlands of the high Arctic and may be seen in parts of South Africa during winter. During winter, the species occurs at the coast, but also inland on the muddy edges of marshes, large rivers and lakes (both saline and freshwater), irrigated land, flooded areas, dams and saltpans (IUCN, 2017). Adequate aquatic habitats are absent from the project area and as such the likelihood of occurrence is low for this species.

Ciconia abdimii (Abdim's Stork) is listed as NT on a local scale and the species is known to be found in open grassland and savanna woodland often near water but also in semi-arid areas, gathering beside pools and water-holes. They tend to roost in trees or cliffs (IUCN, 2017). The absence of sufficient wet areas decreases the likelihood of occurrence.

Ciconia nigra (Black Stork) is native to South Africa, and inhabits old, undisturbed, open forests. They are known to forage in shallow streams, pools, marshes swampy patches, damp meadows, flood-plains, pools in dry riverbeds and occasionally grasslands, especially where there are stands of reeds or long grass (IUCN, 2017). It is unlikely that this species would occur in the project area due to the lack of suitable habitat in the project area.

Circus ranivorus (African Marsh Harrier) is listed as EN in South Africa (ESKOM, 2014). This species has an extremely large distributional range in sub-equatorial Africa. South African populations of this species are declining due to the degradation of wetland habitats, loss of habitat through over-grazing and human disturbance and possibly, poisoning owing to over-use of pesticides (IUCN, 2017). This species breeds in wetlands and forages primarily over reeds and lake margins. Due to the disturbed nature of the project area the chance of occurrence is low.

Coracias garrulous (European Roller) is a winter migrant from most of South-central Europe and Asia occurring throughout sub-Saharan Africa (IUCN, 2017). The European Roller has a preference for bushy plains and dry savannah areas (IUCN, 2017). There is a moderate chance of this species occurring in the project area as they prefer to forage in open/disturbed areas.

Egretta vinaceigula (Slaty Egret) is categorised as VU on a global scale. This egret inhabits floodplains, freshwater marshes and temporary wetlands. It is mostly seen as a visiting species to South Africa and is resident to south-central Africa. The likelihood of occurrence is low due to the lack of suitable habitat and the vicinity to human inhabitation.

Ephippiorhynchus senegalensis (Saddle-billed Stork) is listed as EN on a local basis and is known to inhabit extensive fresh, brackish or alkaline wetlands in open, semi-arid areas and savanna, with relatively high abundances of fish and with large trees nearby for nesting and roosting (IUCN, 2017). Suitable habitats include shallow freshwater marshes, wet grasslands, the margins of large or small rivers, lake shores pans and flood-plains. Due to the lack of suitable habitat and proximity of the urban area, the likelihood of occurrence is rated as low.

Eupodotis senegalensis (White-bellied Korhaan) is Near-endemic to South Africa, occurring from the Limpopo Province and adjacent provinces, south through Swaziland to KwaZulu-Natal and the Eastern Cape. It generally prefers tall, dense sour or mixed grassland, either open or lightly wooded, occasionally moving into cultivated or burnt land, which doesn't seem present in the project area thus likelihood of occurrence was rated as low (Hockey et al, 2005).

Falco biarmicus (Lanner Falcon) is native to South Africa and inhabits a wide variety of habitats, from lowland deserts to forested mountains (IUCN, 2017). They may occur in groups up to 20 individuals, but have also been observed solitary. Their diet is mainly composed of small birds such as pigeons and francolins. The likelihood of incidental records of this species in the project area is rated as high due to the semi-natural veld condition and the presence of many bird species on which Lanner Falcons may predate.

Falco vespertinus (Red-footed Falcon) is known to breed from eastern Europe and northern Asia to north-western China, heading south in the non-breeding season to southern Angola and southern Africa. Within southern Africa it is locally uncommon to common in Botswana, northern Namibia, central Zimbabwe and the area in and around Gauteng, South Africa (Hockey et al., 2005). The habitat it generally prefers is open habitats with scattered trees,

such as open grassy woodland, wetlands, forest fringes and croplands. These habitats are absent from the project area and as such the likelihood of occurrence is low.

Geronticus calvus (Southern Bald Ibis) is listed as VU on a regional basis and prefers high rainfall (>700 mm p.a.), sour and alpine grasslands, with an absence of trees and a short, dense grass sward and also occurs in lightly wooded and relatively arid country. It forages on recently burned ground, also using unburnt natural grassland, cultivated pastures, reaped maize fields and ploughed areas. It has a varied diet, mainly consisting of insects and other terrestrial invertebrates (IUCN, 2017). It has high nesting success on safe, undisturbed cliffs. Suitable habitat is absent from the project area for both foraging and nesting.

Glareola nordmanni (Black-winged Pratincole) is a migratory species which is listed as NT both globally and regionally. This species has a very large range, breeding mostly in Europe and Russia, before migrating to southern Africa. Overall population declines of approximately 20% for this species are suspected (IUCN, 2017). This species generally occurs near water and damp meadows, or marshes overgrown with dense grass. Due to its migratory nature, this species will only be present in South Africa for a few months during the year and will not breed locally. There is a small amount of suitable habitat within the project area and adjacent to it and as such the likelihood of occurrence is rated as moderate.

Gyps africanus (White-backed Vulture) has a large range and only occurs throughout sub-Saharan Africa. Primarily a lowland species of open wooded savanna, particularly areas of *Acacia (Vachellia*). It requires tall trees for nesting. According to the IUCN (2017) this species faces similar threats to other African vultures, being susceptible to habitat conversion to agro-pastoral systems, loss of wild ungulates leading to a reduced availability of carrion, hunting for trade, persecution and poisoning. The likelihood of suitably large trees for nesting for this species is low at the project site, this combined with the chance of persecution decreases the chance of foraging in the area as well.

Gyps coprotheres (Cape Vulture) is listed as EN on both a regional and global scale. Cape Vultures are long-lived carrion-feeders specialising on large carcasses, they fly long distances over open country, although they are usually found near steep terrain, where they breed and roost on cliffs (IUCN, 2017). Individuals are not likely to forage or nest in the area.

Limosa lapponica (Bar-tailed Godwit) is listed as NT on a global scale. This species has an extremely large range, they breed across the Arctic from northern Europe through Siberia to Alaska (U.S.A.), wintering along the coasts of western Europe, Africa, the Middle East, south- and south-east Asia, Australia and New Zealand. When breeding the species feeds on insects, annelid worms, molluscs and occasionally seeds and berries (del Hoyo et al., 1996). In intertidal areas the species's diet consists of annelids, bivalves and crustaceans, although it will also take cranefly larvae and earthworms on grasslands and occasionally larval amphibians (tadpoles) and small fish (del Hoyo et al., 1996). The likelihood of occurring in the project area is rated as low due to the absence of suitable aquatic habitats.

Mycteria ibis (Yellow-billed Stork) is listed as EN on a regional scale and LC on a global scale. This species is migratory and has a large distributional range which includes much of sub-Saharan Africa. It is typically associated with freshwater ecosystems, especially wetlands and the margins of lakes and dams (IUCN, 2017). The absence of extensive wetlands in the area decreases the likelihood of occurrence.

Oxyura maccoa (Maccoa Duck) has a large northern and southern range, South Africa is part of its southern distribution. During the species' breeding season, it inhabits small temporary and permanent inland freshwater lakes, preferring those that are shallow and nutrient-rich with extensive emergent vegetation such as reeds (*Phragmites spp*.) and cattails (*Typha spp*.) on which it relies for nesting (IUCN, 2017). The likelihood of occurrence of this species in the project area was rated as low.

Phoeniconaias minor (Lesser Flamingo) is listed as NT on a global and regional scale whereas *Phoenicopterus roseus* (Greater Flamingo) is listed as NT on a regional scale only. Both species have similar habitat requirements and the species breed on large undisturbed alkaline and saline lakes, salt pans or coastal lagoons, usually far out from the shore after seasonal rains have provided the flooding necessary to isolate remote breeding sites from terrestrial predators and the soft muddy material for nest building (IUCN, 2017). Due to the absence of its preferred habitat within the project area, combined the proximity of the urban area, the likelihood of occurrence is low.

Podica senegalensis (African Finfoot) occurs in forest and wooded savanna along permanent streams with thick growths of *Syzygium guineense*, along secluded reaches of thickly wooded rivers and on the edges of pools, lakes and dams with well-vegetated banks on the edges of dense papyrus beds far from the shore. It is rarely found away from shoreline vegetation and generally avoids stagnant or fast-flowing water (IUCN, 2017). Due to the proximity to urban areas the likelihood of occurrence is low.

Polemaetus bellicosus (Martial Eagle) is listed as EN on a regional scale and VU on a global scale. This species has an extensive range across much of sub-Saharan Africa, but populations are declining due to deliberate and incidental poisoning, habitat loss, reduction in available prey, pollution and collisions with power lines (IUCN, 2017). It inhabits open woodland, wooded savanna, bushy grassland, thorn-bush and, in southern Africa, more open country and even sub-desert (IUCN, 2017). Roosting habitat might be available in the form of Eskom pylons but due to the close proximity to urbanization the chance of occurrence is decreased.

Pterocles gutturalis (Yellow Throated Sandgrouse) is categorised as NT on a regional scale. The species inhabits short open grassland and recently burnt veld, especially on black clay soils near water. The chance of occurrence is low due to the absence of suitable habitat.

Rostratula benghalensis (Greater Painted-snipe) shows a preference for recently flooded areas in shallow lowland freshwater temporary or permanent wetland, it has a wide range of these freshwater habitats which they occur in, eg. sewage pools, reservoirs, mudflats overgrown with marsh grass of which some are present int eh project area and as such the likelihood of occurrence is rated as moderate.

Sagittarius serpentarius (Secretarybird) occurs in sub-Saharan Africa and inhabits grasslands, open plains, and lightly wooded savanna. It is also found in agricultural areas and sub-desert (IUCN, 2017). The likelihood of occurrence is low due to the absence of grassland habitats and the proximity to urbanization

Sterna caspia (Caspian Tern) is native to South Africa and are known to occur in inland freshwater systems such as large rivers, creeks, floodlands, reservoirs and sewage ponds. Habitat suitability was found to be low and thus the likelihood of occurrence is low.

Tyto capensis (African Grass-owl) is rated as VU on a regional basis. The distribution of the species includes the eastern parts of South Africa. The species is generally solitary, but it does also occur in pairs, in moist grasslands where it roosts (IUCN, 2017). The species prefers thick grasses around wetlands and rivers which are not present in the project area. Furthermore, this species specifically has a preference for nesting in dense stands of the grass species *Imperata cylindrica*. This species has been observed in the area previously.

8.1.5.2 Mammals

The IUCN Red List Spatial Data (IUCN, 2017) lists 91 mammal species that could be expected to occur within the project area (Appendix C). Of these species, 10 are medium to large conservation dependant species, such *Ceratotherium simum* (Southern White Rhinoceros) and *Tragelaphus oryx* (Common Eland) that, in South Africa, are generally restricted to protected areas such as game reserves. These species are not expected to occur in the project area and are removed from the expected SCC list. They are however still included (highlighted in red) in Appendix C.

Of the remaining 91 small to medium sized mammal species, sixteen (16) (17%) are listed as being of conservation concern on a regional or global basis (Table 4).

The list of potential species includes:

- Two (2) that are listed as EN on a regional basis;
- Five (5) that are listed as VU on a regional basis; and
- Nine (9) that are listed as NT on a regional scale (Table 4).

On a global scale, 2 specie is listed as EN, 5 are listed as VU and 9 as NT (Table 4).

Table 4: List of mammal species of conservation concern that may occur in the project area as well as their global and regional conservation statuses (IUCN, 2017; SANBI, 2016)

Species	Common Name	Conservation Status		Likelihood of occurrence
		Regional (SANBI, 2016)	IUCN (2017)	
Aonyx capensis	Cape Clawless Otter	NT	NT	Low
Atelerix frontalis	South Africa Hedgehog	NT	NT	Low
Crocidura maquassiensis	Maquassie Musk Shrew	VU	VU	Low
Crocidura mariquensis	Swamp Musk Shrew	NT	NT	Moderate
Dasymys incomtus	African Marsh Rat	NT	NT	Moderate
Felis nigripes	Black-footed Cat	VU	VU	Low
Hydrictis maculicollis	Spotted-necked Otter	VU	VU	Low
Leptailurus serval	Serval	NT	NT	Low
Mystromys albicaudatus	White-tailed Rat	VU	VU	Moderate
Ourebia ourebi	Oribi	EN	EN	Low
Panthera pardus	Leopard	VU	VU	Low
Parahyaena brunnea	Brown Hyaena	NT	NT	Low
Pelea capreolus	Grey Rhebok	NT	NT	Low
Poecilogale albinucha	African Striped Weasel	NT	NT	Low
Redunca fulvorufula	Mountain Reedbuck	EN	EN	Low

Rhinolophus blasii	Blasius's Horseshoe Bat	**NT**	**NT**	Low

Aonyx capensis (Cape Clawless Otter) is the most widely distributed otter species in Africa (IUCN, 2017). This species is predominantly aquatic, and it is seldom found far from water. A drainage line is found in the project area but it is unlikely that this area will provide sufficient water for this species to survive and as such the likelihood of occurrence is rated as low.

Atelerix frontalis (South African Hedgehog) has a tolerance of a degree of habitat modification and occurs in a wide variety of semi-arid and sub-temperate habitats (IUCN, 2017). Based on the Red List of Mammals of South Africa, Lesotho and Swaziland (2016), *A. frontalis* populations are decreasing due to the threats of electrocution, veld fires, road collisions, predation from domestic pets and illegal harvesting. The proximity to urbanization decreases the likelihood of occurrence.

Crocidura maquassiensis (Maquassie Musk Shrew) is listed as VU on a regional basis and is known to be found in rocky, mountain habitats. It may tolerate a wider range of habitats and individuals have been collected in Kwa-Zulu Natal from a garden, and in mixed bracken and grassland alongside a river at 1,500 m (IUCN, 2017). There is a lack of suitable habitat for this species in the project area and therefore the likelihood of occurrence is rated as low.

Crocidura mariquensis (Swamp Musk Shrew) has very specific habitat requirements. It occurs in close proximity to open water with a distinct preference for marshy ponds, and riverine and semi-aquatic vegetation such as reed beds (IUCN, 2017). It is considered to be common in suitable habitats. Based on the presence of a drainage line in the middle of the project area the likelihood of occurrence is rated as moderate.

Dasymys incomtus (African Marsh Rat) is listed as NT on a regional scale and LC on a global scale. This species has a wide distributional range that includes Central Africa, East Africa and parts of Southern Africa. This species has been recorded from a wide variety of habitats, including forest and savanna habitats, wetlands and grasslands (IUCN, 2017). Based on the aquatic habitat found in the project area the likelihood of occurrence is rated as moderate.

Felis nigripes (Black-footed Cat) is endemic to the arid regions of southern Africa. This species is naturally rare, has cryptic colouring is small in size and is nocturnal. These factors have contributed to a lack of information on this species. Given that the proximity to urban areas and the high density of dogs the likelihood of occurrence is rated as low.

*Hydrictis maculicollis (*Spotted-necked Otter) inhabits freshwater habitats where water is un-silted, unpolluted, and rich in small to medium sized fishes (IUCN, 2017). Suitable habitat may be available in stream and wetland area to the north of the project area, but not within the project area and therefore the likelihood of occurrence is low.

Leptailurus serval (Serval) occurs widely through sub-Saharan Africa and is commonly recorded from most major national parks and reserves (IUCN, 2017). The Serval's status outside reserves is not certain, but they are inconspicuous and may be common in suitable habitat as they are tolerant of farming practices provided there is cover and food available. In sub-Saharan Africa, they are found in habitat with well-watered savanna long-grass environments and are particularly associated with reedbeds and other riparian vegetation types. Due to the absence of natural grassland areas in the project area and human disturbance, the likelihood of occurrence for this species is rated as low.

Mystromys albicaudatus (White-tailed Rat) is listed as VU on a regional basis and EN on a global scale. It is relatively widespread across South Africa and Lesotho; the species is known to occur in shrubland and grassland areas. A major requirement of the species is black loam soils with good vegetation cover. Although the vegetation type is suitable, no black loam seems to be present on site, therefore the likelihood of occurrence of this species is rated as moderate.

Ourebia ourebi (Oribi) has a patchy distribution throughout Africa and is known to occur in South Africa. Populations are becoming more fragmented as it is gradually eliminated from moderately to densely settled areas (IUCN, 2017). Oribi occur in a variety of habitats – from savannahs, floodplains and tropical grasslands with moderate to tall grasses, to montane grasslands at low altitudes. Suitable habitat does not exists within the project area and surrounding areas and therefore the likelihood of occurrence is rated as low.

Panthera pardus (Leopard) has a wide distributional range across Africa and Asia, but populations have become reduced and isolated, and they are now extirpated from large portions of their historic range (IUCN, 2017). Impacts that have contributed to the decline in populations of this species include continued persecution by farmers, habitat fragmentation, increased illegal wildlife trade, excessive harvesting for ceremonial use of skins, prey base declines and poorly managed trophy hunting (IUCN, 2017). Although known to occur and persist outside of formally protected areas, the densities in these areas are considered to be low. The likelihood of occurrence in the project area which is in such close proximity to an urban area, and where they are likely to be persecuted, is regarded as low.

Parahyaena brunnea (Brown Hyaena) is endemic to southern Africa. This species occurs in dry areas, generally with annual rainfall less than 100 mm, particularly along the coast, semi-desert, open scrub and open woodland savanna. Given its known ability to persist outside of formally protected areas the likelihood of occurrence of this species in the project area is moderate to good. The species has a low likelihood of occurrence due to the high level of human disturbance in the project area.

Pelea capreolus (Grey Rhebok) is endemic to a small region in southern Africa, inhabiting montane and plateau grasslands of South Africa, Swaziland, and Lesotho. In South Africa, their distribution is irregular and patchy, and they no longer occur north of the Orange River in the Northern Cape, or in parts of the North-West Province (IUCN, 2017). Grey Rhebok can be found in suitable habitat which has rocky hills, grassy mountain slopes, and montane and plateau grasslands in southern Africa. They are predominantly browsers, and largely water independent, obtaining most of their water requirements from their food. Based on the lack of their favoured habitat within the project area, the likelihood of occurrence of this species is rated as low.

Poecilogale albinucha (African Striped Weasel) is usually associated with savanna habitats, although it probably has a wider habitat tolerance (IUCN, 2017). Due to its secretive nature, it is often overlooked in many areas where it does occur. The proximity to urban areas and human disturbances decreases the likelihood of occurrence.

Redunca fulvorufula (Mountain Reedbuck) is listed as EN both regionally and globally. The South African population has undergone a decline of 61-73% in the last three generations (15 years) (IUCN, 2017). Mountain Reedbuck live on ridges and hillsides in broken rocky country

and high-altitude grasslands (often with some tree or bush cover). No rocky areas are found in the project area and as such the likelihood of occurrence is rated as low.

Rhinolophus blasii (Blasius's Horsehoe Bat) is categorised as near threatened on a regional scale. It typically forages in shrubland and woodland, where it roosts in the summer in natural and artificial underground sites. This species is not very common in South Africa. Threats to the species include loss of woodlands, disturbance and loss of underground habitats, and destruction of roost sites. Due to the lack of suitable roosting areas the likelihood of the species occurring in the project area is rated as low.

8.1.5.3 Herpetofauna (Reptiles & Amphibians)

Based on the IUCN Red List Spatial Data (IUCN, 2017) and the ReptileMap database provided by the Animal Demography Unit (ADU, 2017) 81 reptile species are expected to occur in the project area (Appendix D). Three (3) reptile species of conservation concern could be present in the project area according to the above-mentioned sources (Table 5).

Based on the IUCN Red List Spatial Data (IUCN, 2017) and the AmphibianMap database provided by the Animal Demography Unit (ADU, 2017) 30 amphibian species are expected to occur in the project area (Appendix E). One (1) amphibian species of conservation concern could be present in the project area according to the above-mentioned sources (Table 5).

Table 5: Herpetofauna SCC that may occur in the project area

Species	Common Name	Conservation Status		Likelihood of Occurrence
		Regional (SANBI, 2016)	IUCN (2017)	
REPTILES				
Chamaesaura aenea	Coppery Grass Lizard	NT	NT	Low
Crocodylus niloticus	Nile Crocodile	VU	LC	Low
Homoroselaps dorsalis	Striped Harlequin Snake	NT	LC	Low
AMPHIBIANS				
Pyxicephalus adspersus	Giant Bull Frog	NT	LC	Low

Chamaesaura aenea (Coppery Grass Lizard) is listed as NT globally and regionally (ADU, 2017; IUCN, 2017). The species is found in Southern Africa, in the grassland biome. Their decline is mainly linked to habitat loss as well as a decline in habitat quality. The likelihood of occurrence is rated as low due to the disturbed nature of the habitat.

Crocodylus niloticus (Nile Crocodile) is listed as VU on a regional basis. There is no river present in the project are and as such the likelihood of occurrence is rated as low.

Homoroselaps dorsalis (Striped Harlequin Snake) is partially fossorial and known to inhabit old termitaria in grassland habitat (IUCN, 2017). Most of its range is at moderately high altitudes, reaching 1,800 m in Mpumalanga and Swaziland, but it is also found at elevations as low as about 100 m in KwaZulu-Natal. The likelihood of occurrence was rated as low as suitable habitat is not present in the project area.

The Giant Bull Frog (*Pyxicephalus adspersus*) is a species of conservation concern that will possibly occur in the project area. The Giant Bull Frog is listed as NT on a regional scale. It is a species of drier savannahs. It is fossorial for most of the year, remaining buried in cocoons.

They emerge at the start of the rains, and breed in shallow, temporary waters in pools, pans and ditches (IUCN, 2017). The likelihood of occurrence is rated as low because of the proximity to humans and the chance of persecution.

9 Field Survey

The field survey for the Riverside View project (flora and fauna (mammals, avifauna, amphibians and reptiles)) was conducted on the 8th February 2019. During the survey the floral and faunal communities in the project area were assessed. The project area was ground-truthed on foot, which included spot checks 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.

9.1 Vegetation Assessment

The vegetation assessment was conducted throughout the entire project area (Figure 9). The following habitats were identified in the project area; degraded grassland and transformed habitat.

The degraded grassland area is an area where the habitat is considered to be predominantly intact with the vegetation and species composition in a semi-natural state. This habitat contained the highest diversity of indigenous plant species of the various habitats identified. This area has recovered somewhat from historic impacts and does function as a part of the natural ecosystem in the area. *Imperata cylindrica* was found within this habitat which is known to be directly correlated to *Tyto capensis* (Grass-Owl), which utilise dense stands of this plant species as breeding and foraging habitat. This habitat is however surrounded by transformed areas and is fragmented from any other nearby natural areas. Wet areas were also identified within this habitat; however, it is presumed that the source of the water in these areas is from an artificial source.

The transformed habitat in the project area consisted mainly of dumps and impacts associated with edge effects in relation to the urban area. This habitat hosted a large number of the exotic alien plant species recorded within the project area and has been impacted upon and transformed to such an extent that it will need many years or recovery and active rehabilitation to recover to a near-natural state and therefore this area was given a low sensitivity rating.

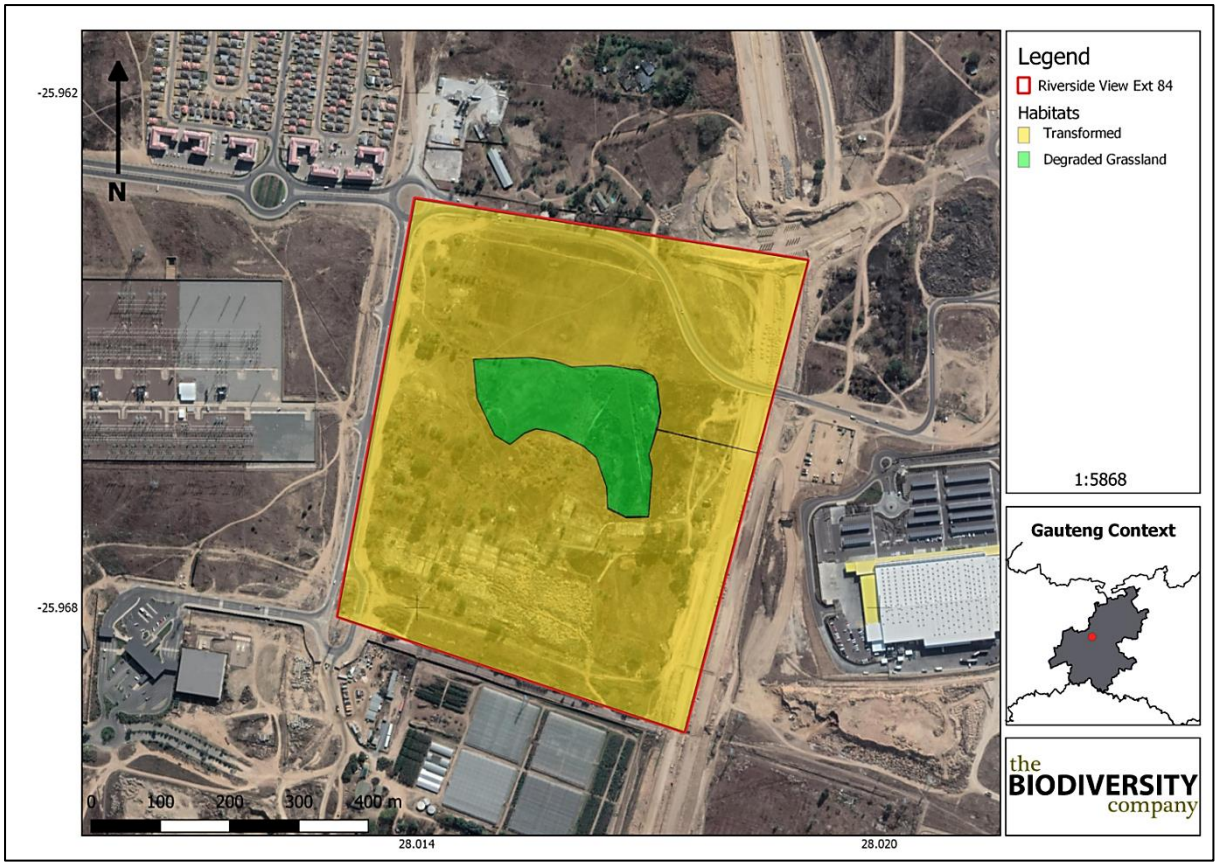

Figure 9: Habitat types identified during the fieldwork

A total of 40 tree, shrub and herbaceous plant species were recorded in the project area during the January 2019 field assessment

Table 6: Trees, shrubs and weeds recorded at the proposed project area (species name in red are listed species

Species	Threat status (SANBI, 2017)	SA Endemic	Alien Category
Acacia mearnsii			**NEMBA Category 2**
Acalypha angustata	LC	No	
Amaranthus hybridus			**Naturalized exotic weed**
Celtis africana	LC	No	
Combretum erythrophyllum			
Conyza bonariensis			**Naturalized exotic weed**
Cymbopogon caesius	LC	No	
Cynodon dactylon			**NEMBA Category 2**
Datura stramonium			**NEMBA Category 1b.**
Digitaria eriantha	LC	No	
Diospyros lycioides	LC	No	
Eragrostis chloromelas	LC	No	
Eragrostis curvula	LC	No	
Eragrostis lehmanniana	LC	No	
Eucalyptus camaldulensis			**NEMBA Category 1b**
Flaveria bidentis			**NEMBA Category 1b.**

Gomphocarpus fruticosus	LC	No	
Gomphrena celosioides			**Not Indigenous**
Hermannia depressa	LC	Yes	
Heteropogon contortus	LC	No	
Hyparrhenia hirta	LC	No	
Hyperthelia dissoluta	LC	No	
Imperata cylindrica	LC	No	
Melia azedarach			**NEMBA Category 1b.**
Melinis repens	LC	No	
Morus alba			**NEMBA Category 3**
Panicum maximum	LC	No	
Pennisetum clandestinum			**NEMBA Category 1b**
Phragmites australis	LC	No	
Richardia brasiliensis			**Not Indigenous**
Robinia pseudoacacia			**NEMBA Category 1b.**
Schkuhria pinnata			**Naturalized exotic weed**
Searsia leptodictya	LC	No	
Senecio inornatum	LC	No	
Solanum mauritianum			**NEMBA Category 1b.**
Tagetes minuta			**Naturalized exotic weed**
Tipuana tipu			**NEMBA Category 3**
Typha capensis	LC	No	
Verbena astrigera			**Naturalized exotic weed**
Verbena bonariensis			**NEMBA Category 1b.**

Figure 10: Some of the plant species observed in the project area: A) Digitaria eriantha, B) Flaveria bidentis, C) Verbena bonariensis, D)Verbena astrigera, E) Phragmites australis and F) Gomphocarpus fruticosus

9.2 Alien and Invasive Plants

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 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). The

Alien and Invasive Species Regulations were published in the Government Gazette No. 37886, 1 August 2014. 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 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.

Six (6) Category 1b invasive species were recorded within the project area and must therefore be removed by implementing an alien invasive plant management programme in compliance of section 75 of the Act as stated above. The NEMBA listed species identified within the project area are marked in green (Table 6)

9.3 Avifauna

During the February 2019 survey nine species of birds were recorded (Table 7 and Figure 11). The site is known to have African Grass-owls (*Tyto capensis*). The Kyalami African Grass Owl Project and EWT noted that an individual of this species which is fitted with a telemetry device does forage within the project area (https://gekco.co.za/kyalami-african-grass-owl-project/). However, no currently-known breeding sites occur here but further surveys may reveal the presence of possible nests. The fact that this species is known to occur in the project area is an important aspect to consider for the development and special mitigations may need to be followed for the protection of this species in this area.

Table 7: A list of the avifaunal species recorded in the project area

Species	Common Name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Anaplectes rubriceps	Weaver, Red-headed	Unlisted	LC
Asio capensis	Owl, Marsh	Unlisted	LC
Bubulcus ibis	Egret, Cattle	Unlisted	LC
Elanus caeruleus	Kite, Black-shouldered	Unlisted	LC
Euplectes orix	Bishop, Southern Red	Unlisted	LC
Hirundo rustica	Swallow, Barn	Unlisted	LC
Ploceus velatus	Masked-weaver, Southern	Unlisted	LC
Streptopelia semitorquata	Dove, Red-eyed	Unlisted	LC
Streptopelia senegalensis	Dove, Laughing	Unlisted	LC

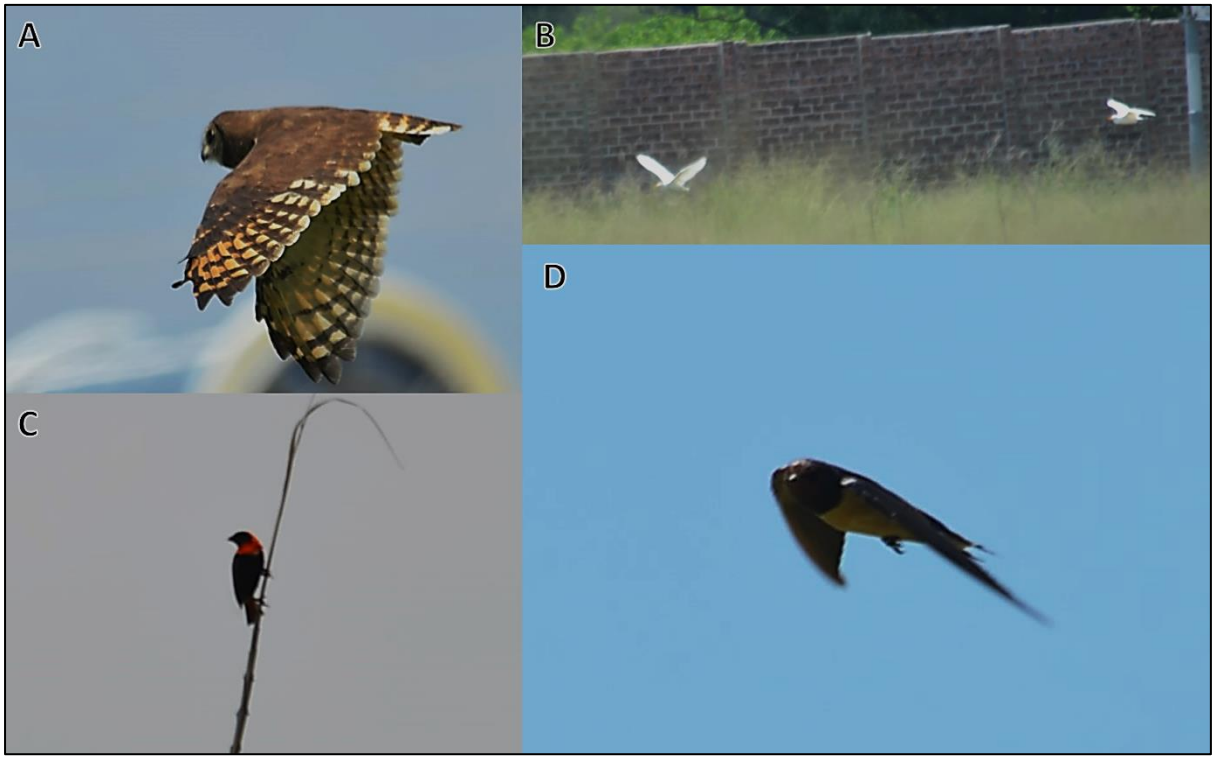

Figure 11: Some of the bird species recorded in the project area: A) Marsh Owl (Asio capensis), B) Cattle Egrets (Bubulcus ibis), C) Southern Red Bishops (Euplectes orix) and D) Barn Swallow (Hirundo rustica)

9.4 Mammals

Overall, mammal diversity in the project area was considered low, with no mammals recoded during this February 2019 survey based on either direct observation, or the presence of visual tracks & signs.

9.5 Herpetofauna (Reptiles & Amphibians)

The herpetofauna diversity was considered low as one reptile species and no amphibian species were recorded during the February 2019 survey (Table 8). It is considered likely that further surveys would reveal the presence of various common amphibian and reptile species, but the likelihood of occurrence of SCC is low.

Table 8: A list of herpetofauna recorded in the project area during the February 2019 survey

Species	Common Name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Trachylepis striata	Striped Skink	LC	Unlisted

Figure 12: Trachylepis striata observed in the project area.

10 Habitat Sensitivity Mapping

As per the terms of reference for the project, a GIS sensitivity map is required in order to identify sensitive features in terms of the relevant specialist discipline/s within the study area. Site sensitivities were classified and mapped (Figure 13).

A low-moderate sensitivity score was given to the middle portion of the project area. These areas were considered the most natural areas within the overall project area and were host to the highest diversity of species. This area was also a relatively wet area as indicated by the presence of *Imperata cylindrica* and other wetland plant species. It was also in this area that Marsh Owls were recorded and where the presence of Grass Owls has been previously recorded (EWT, 2019, *pers. comm.*).

The rest of the property was classified as having a low sensitivity. This means that these areas have already been disturbed or impacted upon by factors such as litter, dumping, previous anthropogenic impacts (such as housing) and/or the presence of various alien plant species.

The most significant current impact is the extensive and uncontrolled dumping of rubble on the southern portion of the project 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.

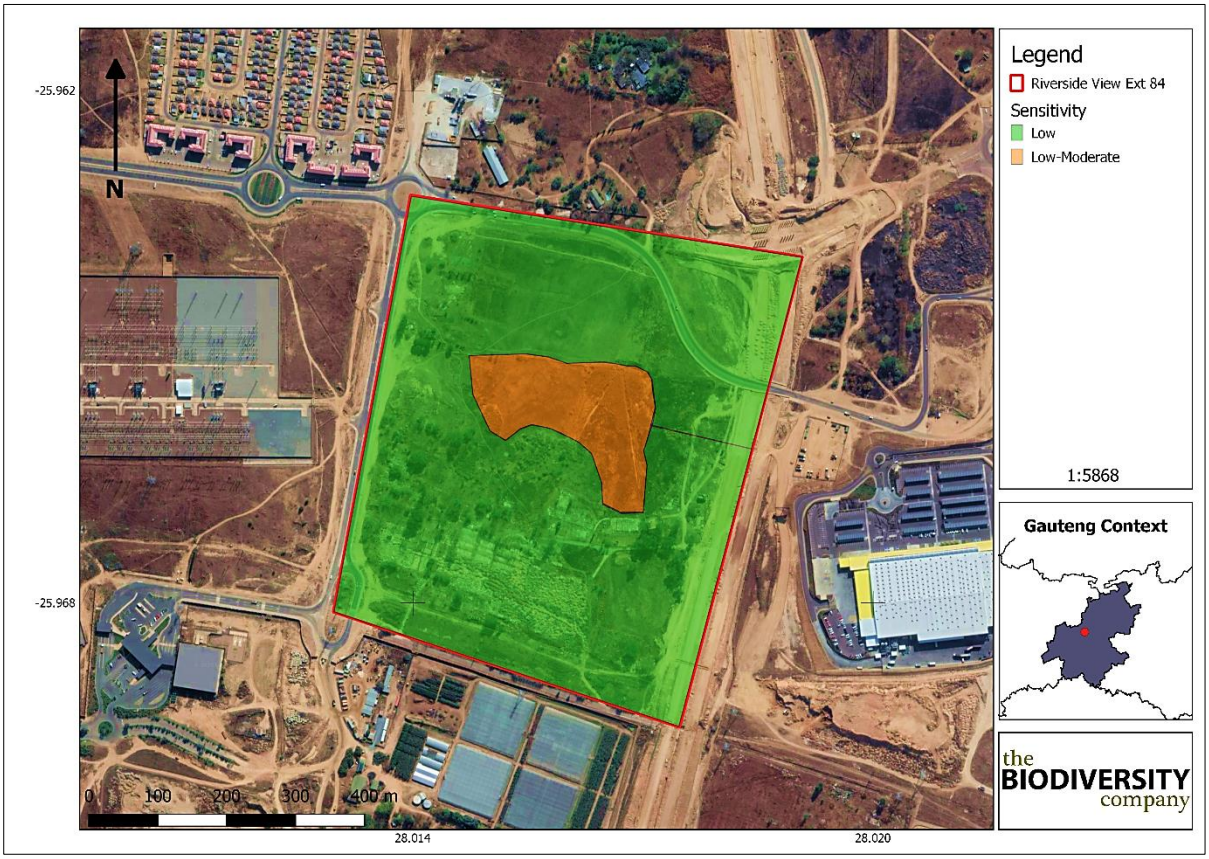

Figure 13: Habitat sensitivity within the project area

11 Impact Assessment

11.1 Impact Assessment Methodology

Potential impacts were evaluated against the data captured during the desktop-and field assessment to identify relevance to the project area. The relevant impacts associated with the proposed development were then subjected to a prescribed impact assessment methodology.

11.2 Current Impacts

During the rapid field survey, the current impacts that are having a negative impact on the area were identified, and are listed below and some are shown in Figure 14;

- Dumping of rubble and litter in the project area;
- Presence of alien invasive plant species;
- Eskom power lines; and

- Fencing (trapping of animals and division of animal corridors).

Figure 14: Some of the impacts observed: A) Eskom powerlines, B) Dumping of building rubble, C) Invasive plant species, and D) Fencing

11.3 Potential Impacts

The proposed development will result in further loss and disturbance of habitat and displacement of fauna and flora. The potential impacts associated with the various project stages are discussed below.

11.3.1 Construction Phase

The following potential impacts were considered for the construction phase. This phase refers to the period during construction when the proposed infrastructure in built/installed. This phase usually has the largest direct impact on biodiversity.

Potential impacts were considered on terrestrial vegetation communities:

- Destruction, further loss and fragmentation of the vegetation community (including an area classified as CBA and ESA as well as an EN vegetation type); and
- Destruction of habitat for the African Grass Owl (especially the central portion of the project area).

Potential impacts on faunal communities include:

- Displacement of faunal community due to habitat loss, direct mortalities and disturbance (noise, dust and vibration).

11.3.2 Operational Phase

The following potential impacts were considered for the operational phase. This phase refers to when construction has been completed and the proposed infrastructure has been built and is functional.

Potential impacts were considered on terrestrial vegetation communities:

- Continued encroachment and displacement of the vegetation community due to alien invasive plant species, particularly in previously disturbed areas.

Potential impacts on faunal communities include:

- Continued displacement and fragmentation of the faunal community due to ongoing anthropogenic disturbances (noise, traffic and dust);
- Loss of faunal species (road mortalities and/or poaching);
- Habitat degradation (litter and alien vegetation encroachment); and
- Introduction of pest species (e.g. rats) due to the new habitats and food sources that are created by an increase in waste levels.

11.4 Assessment of Significance

11.4.1 Construction Phase

Table 9 shows the significance of potential impacts associated with the development on vegetation communities before and after implementation of mitigation measures. The area has already been disturbed and as such the impact will not be extensive. Prior to implementation of mitigation measures the significance of impacts were rated as *Moderately-high* (Table 9). Implementation of avoidance measures as mitigation reduced the significance of potential impact on the vegetation community to *Low* (Table 9). The destruction of habitat for African Grass Owls were rated as *Moderately-High* prior to relocation mitigations and as *Low* post mitigations.

The significance of potential impacts associated with the development on faunal communities before and after mitigation is presented in Table 9. Prior to implementation of mitigation measures the significance of impacts were rated as *Moderate*. Implementation of avoidance measures as mitigation reduced the significance of potential impact on the faunal communities to *Low* (Table 9).

11.4.2 Operational Phase

Table 10 shows the significance of potential operational phase impacts on vegetation communities before and after implementation of mitigation measures. The significance of encroachment of alien invasive plant species on the vegetation community was rated as *Moderate* significant prior to mitigation (Table 10). Implementation of mitigation measures in the form of an alien invasive plant management plan and rehabilitation of project footprint after completion of construction reduced the significance of the impact to *Low* (Table 10). Habitat degradation was rated as *Moderate* as the chance of litter accumulating becoming a problem is significant but by putting mitigations in place the risk was reduced to *Low*.

The significance of operational phase impacts on terrestrial fauna communities was rated as *Moderate-High* or moderate prior to mitigation and low or absent post mitigation). These impacts were attributed to the expected continued loss and fragmentation of the vegetation community in the project area, and the associated loss of the faunal community which it supports unless definitive measures are taken. These measures include:

1. Awareness of the sensitivity of this community (in particular the Endangered vegetation type, CBA and ESA areas);
2. A commitment to safely and properly relocate and faunal or floral SCC that are encountered during the operational phase, especially any African Grass Owls;
    a. It is recommended that, if authorisation is granted, construction only be conducted outside of the breeding season for this species;
3. Storm water from the development must be carefully managed and should include mitigation measures that will catch and polish the water from the area before it is allowed to enter the surrounding environment;
4. Restrict or prevent the use of poison to control rodents;
5. Waste management plan needs to be put in place; and
6. Limiting the construction area to the defined project areas and only impacting those areas where it is unavoidable to do so otherwise.

*Table 9: Assessment of significance of potential **construction impacts** on vegetation communities associated with the proposed development pre- and post- mitigation:*

Impact	Prior to mitigation						Post mitigation					
	Duration of Impact	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance	Duration of Impact	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance
Destruction, further loss and fragmentation of the vegetation community (including an area classified as CBA and ESA as well as an EN vegetation type)	5	3	3	3	4		4	2	2	2	3	
	Permanent	Local	Significant	Ecology moderately sensitive	Highly likely	**Moderately High**	Long Term	Development specific	Small	Limited sensitivity	Likely	**Low**
Destruction of a habitat for the African Grass Owl (especially the centre of the project area)	5	3	3	3	4		4	2	2	2	3	
	Permanent	Local	Significant	Ecology moderately sensitive	Highly likely	**Moderately High**	Long Term	Development specific	Small	Limited sensitivity	Possible	**Low**
Displacement of faunal community due to habitat loss, direct mortalities and disturbance (noise, dust and vibration).	4	3	3	3	3		3	2	2	2	3	
	Long Term	Local	Significant	Ecology moderately sensitive	Possible	**Moderate**	Medium Term	Development specific	Small	Limited sensitivity	Possible	**Low**

*Table 10: Assessment of significance of potential **operational impacts** on terrestrial faunal communities associated with the proposed development pre- and post- mitigation*

Impact	Prior to mitigation						Post mitigation					
	Duration of Impact	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance	Duration of Impact	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance
Continued encroachment and displacement of the vegetation community due to alien invasive plant species, particularly in previously disturbed areas.	5	3	3	3	3		3	2	2	2	2	
	Permanent	Local	Significant	Ecology moderately sensitive	Likely	**Moderate**	Medium term	Development Specific	Small	Ecology with limited sensitivity	Possible	**Low**
Continued displacement and fragmentation of the faunal community due to ongoing anthropogenic disturbances (noise, traffic and dust).	5	3	3	3	3		2	2	2	2	2	
	Permanent	Local	Significant	Ecology moderately sensitive	Likely	**Moderate**	Short term	Activity specific	Small	Ecology with limited sensitivity	Possible	**Low**
Loss of faunal species (road mortalities and/or poaching).	5	3	3	3	3		3	2	2	2	3	
	Permanent	Local	Significant	Ecology moderately sensitive	Likely	**Moderate**	Medium term	Development Specific	Small	Ecology with limited sensitivity	Likely	**Low**
Habitat degradation (litter and alien vegetation encroachment);	5	2	3	3	4		2	2	2	2	3	
	Permanent	Development specific	Significant		Highly likely	**Moderate**	Short term	Development Specific	Small		Likely	**Low**

				Ecology moderately sensitive						Ecology with limited sensitivity		
	5	3	4	3	3		2	2	2	2	2	
Introduction of pest species (e.g. rats and flies) due to the new habitats that's created by an increase in waste levels.	Permanent	Local	Great	Ecology moderately sensitive	Likely	**Moderately High**	Short term	Development Specific	Small	Ecology with limited sensitivity	Possible	**Absent**

11.5 Mitigation Measure Objectives

The focus of mitigation measures should be to reduce the significance of potential impacts associated with the development and thereby to:

- Prevent the further loss and fragmentation of the EN vegetation community, the CBA and ESA; and
- Prevent the loss of the faunal community associated with this vegetation community.

11.5.1 Mitigation Measures for Impacts on Vegetation Communities

Recommended mitigation and rehabilitation measures include the following:

- All laydown, storage areas etc should be restricted to within the project area and all access roads must be kept within this area or from existing access roads;
- Areas of indigenous vegetation should be delineated, and rehabilitation measures implemented in areas where the indigenous community is still present but degraded;
- 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; and
- Compilation of and implementation of an alien vegetation management plan for the entire site.

11.5.2 Mitigation Measures for Impacts on Faunal Communities

Recommended mitigation and rehabilitation measures for faunal community's hinge largely on protecting their habitats and ensuring it remains intact. In additional to this the following measures are recommended:

- Before construction is to take place the area needs be walked through to chase up any faunal species that might be found in the area. If the African Grass Owl is observed in the project area, enough time should be given to the specie to move out of the area; should the species not move away on its own the appropriate authority should be contacted to assist with the relocation. In this case the EWT associated with the Kyalami African Grass Owl project is suggested;
- During the operational phase it is suggested that the open land area be monitored for the presence of the African Grass Owl to assist with its conservation in the area (or access be given to the area to a monitoring program such as the one administered by the EWT);
- 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;
- No trapping, killing or poisoning of any wildlife should be allowed on site;
- Adequate signage should be erected that raises awareness about possible fauna in the area (e.g. amphibians) and speed bumps should be put in place to reduce speeding and faunal road mortalities; and

- Staff should be educated about the sensitivity of faunal species and measures should be put in place to deal with any species that are encountered during the construction process. The intentional killing of any animals including snakes, insects, lizards, birds or other animals should be strictly prohibited.

12 Conclusion

The completion of a comprehensive desktop study, in conjunction with the detailed results from the surveys mean that there is a high confidence in the information provided. The survey which was completed, and the corresponding studies resulted in good site coverage, assessing the major habitats and ecosystems, obtaining a general species (fauna and flora) overview and observing the major current impacts.

It is clear from the regional ecological overview, as well as the baseline data collected to date that the project area has been altered (historically and currently). The area was mainly transformed by large amounts of alien invasive plant species and dumping of large amounts of building rubble.

The following further conclusions were reached based on the results of this assessment (these conclusions are limited due to the unknown extent and type of development which is proposed for the project area):

- The project area falls in an area classified as an ESA and a CBA: Important area;
- The project area falls entirely within an ecosystem which is listed as EN;
- All of the terrestrial ecosystems associated with the development (entire project area and surrounds) are rated as poorly protected;
- The project area does overlap with any formally or informally protected area;
- The project area is situated in one vegetation type; the Egoli Granite Grassland (Gh 10), according to Mucina & Rutherford (2006). This vegetation type is classified as EN;
- Based on the Plants of Southern Africa database, 543 plant species are expected in the project and surrounding areas and three (3) of these species are listed as being Species of Conservation Concern (SCC);
- A total of 40 tree, shrub and herbaceous plant species were recorded in the project area during the January 2019 field assessment. No plant SCC were recorded during the survey;
- Eight (8) Category 1b invasive species were recorded within the project area and must therefore be removed by implementing an alien invasive plant management programme in compliance of section 75 of the Act as stated above; and
- The site is known to have African Grass-owls (*Tyto capensis*), the Kyalami African Grass Owl Project and EWT noted that the bird does not use the area as a nesting site but does forage in the area (https://gekco.co.za/kyalami-african-grass-owl-project/).

13 Impact Statement

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

Based on the results and conclusions presented in this report, and the outcomes of the field survey, it is the opinion of the specialists that the proposed project can be favourably considered should the all the mitigations measures and recommendations be adhered to.

14 References

Animal Demography Unit (2017). Virtual Museum. Accessed on the following date: 2018-02-15

Bird Atlas Project (SABAP2). (2012). http://vmus.adu.org.za/

Du Preez, L.H. & Carruthers, V. (2009). A complete guide to the frogs of southern Africa. Random House Struik, Cape Town.

EWT (Endangered Wildlife Trust). (2017). Threatened Amphibian Programme. Available at FrogMap 2015. The Southern African Frog Atlas Project https://www.ewt.org.za/TAP/refrence.html (SAFAP, now FrogMAP). http://vmus.adu.org.za (January 2019)

FrogMap (2017). The Southern African Frog Atlas Project (SAFAP, now FrogMAP). http://vmus.adu.org.za (Accessed in January 2019).

GDARD (2014): Technical Report for the Gauteng Conservation Plan (Gauteng C-Plan v3.3). Gauteng Department of Agriculture and Rural Development: Nature Conservation Directorate. 60 pages.

GDARD. Requirements for biodiversity assessments: Version 3. Johannesburg: Gauteng Department of Agriculture and Rural Development. (2014).

Hockey, P.A.R., Dean, W.R.J. & Ryna, P.G. (eds.) (2005). Roberts – Birds of Southern Africa, VIIth ed. The Trustees of the John Voelker Bird Book Fund, Cape Town.

IUCN (2017). The IUCN Red List of Threatened Species. Available at www.iucnredlist.org (Accessed in November 2017).

IUCN (2019). The IUCN Red List of Threatened Species. Available at www.iucnredlist.org (January 2019).

Kyalami African Grass Owl Project (https://gekco.co.za/kyalami-african-grass-owl-project/)

Mucina, L. and Rutherford, M.C. (Eds.) (2006). The vegetation of South Africa, Lesotho and Swaziland. Strelizia 19. South African National Biodiversity Institute, Pretoria South African.

POSA (2017). Plants of South Africa - an online checklist. POSA ver. 3.0. Available at: http://posa.sanbi.org.

SANBI. (2017). Technical guidelines for CBA Maps: Guidelines for developing a map of Critical Biodiversity Areas & Ecological Support Areas using systematic biodiversity planning. First Edition (Beta Version), June 2017. Compiled by Driver, A., Holness, S. & Daniels, F. South African National Biodiversity Institute, Pretoria.

South African National Biodiversity Institute (SANBI). (2017). NBA 2011 Terrestrial Formal Protected Areas 2012. Available from the Biodiversity GIS website, downloaded on 03 August 2017.

South African National Biodiversity Institute (SANBI). (2017). Red List of South African Plants version 2017.1. Downloaded from Redlist.sanbi.org on 2017/08/24.

South African Bird Atlas Project (SABAP2). (2017). Available at http://vmus.adu.org.za/

Skinner J.D. & Chimimba, C.T. (2005). The Mammals of the Southern African Subregion (New Edition). Cambridge University Press. South Africa.

Stuart, C & T. (1994) A field guide to the tracks and signs of Southern, Central East African Wildlife. Struik Nature, Cape Town.

Taylor MR, Peacock F, Wanless RM (eds) (2015). The 2015 Eskom Red Data Book of birds of South Africa, Lesotho and Swaziland. BirdLife South Africa, Johannesburg.

Van Oudtshoorn F. (2004). Gids tot die grasse van Suider-Afrika. Second Edition. Pretoria. Briza Publikasies.

Van Wyk, B and Van Wyk, P. (1997). Field guide to trees of Southern Africa. Cape Town. Struik Publishers.

Victor, J.E. & Pfab, M.F.(2005). Delosperma leendertziae N.E.Br. National Assessment: Red List of South African Plants version 2017.1. Accessed on 2018/02/15

Victor, J.E. & Pfab, M.F. (2005). Melolobium subspicatum Conrath. National Assessment: Red List of South African Plants version 2017.1. Accessed on 2018/02/15

Von Staden, L., Hankey, A.J., Mills, L. & Raimondo, D. (2015). National Assessment: Red List of South African Plants version 2017.1. Accessed on 2018/02/10

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

Family	Taxon	Author	IUCN	Ecology
Malvaceae	*Abutilon piloso-cinereum*	A.Meeuse	LC	Indigenous
Malvaceae	*Abutilon pycnodon*	Hochr.	LC	Indigenous
Malvaceae	*Abutilon sonneratianum*	(Cav.) Sweet	LC	Indigenous
Fabaceae	*Acacia dealbata*	Link	NE	Not Indigenous; Naturalised; Invasive
Euphorbiaceae	*Acalypha angustata*	Sond.	LC	Indigenous
Euphorbiaceae	*Acalypha glabrata var. glabrata*	Thunb.	LC	Indigenous
Euphorbiaceae	*Acalypha glabrata var. pilosa*	Thunb.	LC	Indigenous
Euphorbiaceae	*Acalypha villicaulis*	Hochst.	LC	Indigenous
Asteraceae	*Acanthospermum australe*	(Loefl.) Kuntze		Not Indigenous; Naturalised
Asteraceae	*Acanthospermum hispidum*	DC.		Not Indigenous; Naturalised
Amaranthaceae	*Achyranthes aspera var. sicula*	L.		Not Indigenous; Naturalised
Apocynaceae	*Acokanthera oppositifolia*	(Lam.) Codd	LC	Indigenous
Asteraceae	*Adenostemma caffrum*	DC.	LC	Indigenous
Pteridaceae	*Adiantum capillus-veneris*	L.	LC	Indigenous
Crassulaceae	*Adromischus umbraticola subsp. umbraticola*	C.A.Sm.		Indigenous; Endemic
Apiaceae	*Afrosciadium magalismontanum*	(Sond.) P.J.D.Winter	LC	Indigenous
Loranthaceae	*Agelanthus natalitius subsp. zeyheri*	(Meisn.) Polhill & Wiens		Indigenous
Rosaceae	*Agrimonia procera*	Wallr.	LC	Not Indigenous; Naturalised; Invasive
Poaceae	*Agrostis lachnantha var. lachnantha*	Nees	LC	Indigenous
Hyacinthaceae	*Albuca setosa*	Jacq.		Indigenous
Hyacinthaceae	*Albuca sp.*			
Apiaceae	*Alepidea setifera*	N.E.Br.	LC	Indigenous
Poaceae	*Alloteropsis semialata subsp. eckloniana*	(R.Br.) Hitchc.	LC	Indigenous
Poaceae	*Alloteropsis semialata subsp. semialata*	(R.Br.) Hitchc.	LC	Indigenous
Amaranthaceae	*Alternanthera pungens*	Kunth		Not Indigenous; Naturalised
Asteraceae	*Ambrosia artemisiifolia*	L.		Not Indigenous; Naturalised
Amaryllidaceae	*Ammocharis coranica*	(Ker Gawl.) Herb.	LC	Indigenous
Anacampserotaceae	*Anacampseros subnuda subsp. subnuda*	Poelln.		Indigenous
Apocynaceae	*Ancylobotrys capensis*	(Oliv.) Pichon	LC	Indigenous
Poaceae	*Andropogon schirensis*	Hochst. ex A.Rich.	LC	Indigenous
Apiaceae	*Annesorhiza flagellifolia*	Burtt Davy	LC	Indigenous; Endemic
Menispermaceae	*Antizoma angustifolia*	(Burch.) Miers ex Harv.	LC	Indigenous
Icacinaceae	*Apodytes dimidiata subsp. dimidiata*	E.Mey. ex Arn.	LC	Indigenous
Poaceae	*Aristida aequiglumis*	Hack.	LC	Indigenous
Poaceae	*Aristida bipartita*	(Nees) Trin. & Rupr.	LC	Indigenous

Poaceae	*Aristida canescens subsp. canescens*	Henrard	LC	Indigenous
Poaceae	*Aristida congesta subsp. barbicollis*	Roem. & Schult.	LC	Indigenous
Poaceae	*Aristida congesta subsp. congesta*	Roem. & Schult.	LC	Indigenous
Poaceae	*Aristida diffusa subsp. burkei*	Trin.	LC	Indigenous
Poaceae	*Aristida junciformis subsp. junciformis*	Trin. & Rupr.	LC	Indigenous
Poaceae	*Aristida spectabilis*	Hack.	LC	Indigenous
Poaceae	*Aristida stipitata subsp. graciliflora*	Hack.	LC	Indigenous
Poaceae	*Aristida transvaalensis*	Henrard	LC	Indigenous
Asteraceae	*Artemisia afra var. afra*	Jacq. ex Willd.	LC	Indigenous
Apocynaceae	*Asclepias albens*	(E.Mey.) Schltr.	LC	Indigenous
Apocynaceae	*Asclepias brevipes*	(Schltr.) Schltr.	LC	Indigenous; Endemic
Apocynaceae	*Asclepias crispa var. crispa*	P.J.Bergius	LC	Indigenous; Endemic
Apocynaceae	*Asclepias eminens*	(Harv.) Schltr.	LC	Indigenous
Asparagaceae	*Asparagus cooperi*	Baker	LC	Indigenous
Asparagaceae	*Asparagus flavicaulis subsp. flavicaulis*	(Oberm.) Fellingham & N.L.Mey.	LC	Indigenous
Asparagaceae	*Asparagus suaveolens*	Burch.	LC	Indigenous
Apocynaceae	*Aspidoglossum biflorum*	E.Mey.	LC	Indigenous
Aspleniaceae	*Asplenium varians subsp. fimbriatum*	Wall. ex Hook. & Grev.	LC	Indigenous
Asteraceae	*Athrixia elata*	Sond.	LC	Indigenous
Rhamnaceae	*Berchemia zeyheri*	(Sond.) Grubov		Indigenous
Asteraceae	*Berkheya carlinopsis subsp. magalismontana*	Welw. ex O.Hoffm.	LC	Indigenous; Endemic
Asteraceae	*Berkheya zeyheri subsp. zeyheri*	Oliv. & Hiern	LC	Indigenous
Apiaceae	*Berula repanda*	(Hiern) Spalik & S.R.Downie	LC	Indigenous
Apiaceae	*Berula thunbergii*	(DC.) H.Wolff	LC	Indigenous
Poaceae	*Bewsia biflora*	(Hack.) Gooss.	LC	Indigenous
Asteraceae	*Bidens bipinnata*	L.		Not Indigenous; Naturalised
Asteraceae	*Bidens pilosa*	L.		Not Indigenous; Naturalised
Orchidaceae	*Bonatea polypodantha*	(Rchb.f.) L.Bolus	LC	Indigenous
Amaryllidaceae	*Boophone disticha*	(L.f.) Herb.	LC	Indigenous
Capparaceae	*Boscia albitrunca*	(Burch.) Gilg & Gilg-Ben.	LC	Indigenous
Poaceae	*Bothriochloa bladhii*	(Retz.) S.T.Blake	LC	Indigenous
Poaceae	*Bothriochloa insculpta*	(Hochst. ex A.Rich.) A.Camus	LC	Indigenous
Poaceae	*Brachiaria brizantha*	(A.Rich.) Stapf	LC	Indigenous
Poaceae	*Brachiaria nigropedata*	(Ficalho & Hiern) Stapf	LC	Indigenous
Poaceae	*Brachiaria serrata*	(Thunb.) Stapf	LC	Indigenous
Asteraceae	*Brachylaena rotundata*	S.Moore	LC	Indigenous

Apocynaceae	*Brachystelma oianthum*	Schltr.	LC	Indigenous; Endemic
Brachytheciacea e	*Brachythecium ruderale*	(Brid.) W.R.Buck		Indigenous
Phyllanthaceae	*Bridelia mollis*	Hutch.	LC	Indigenous
Poaceae	*Briza minor*	L.	NE	Not Indigenous; Naturalised
Poaceae	*Bromus sp.*			
Bryaceae	*Bryum argenteum*	Hedw.		Indigenous
Bryaceae	*Bryum pycnophyllum*	(Dixon) Mohamed		Indigenous
Scrophulariacea e	*Buddleja saligna*	Willd.	LC	Indigenous
Scrophulariacea e	*Buddleja salviifolia*	(L.) Lam.	LC	Indigenous
Cyperaceae	*Bulbostylis burchellii*	(Ficalho & Hiern) C.B.Clarke	LC	Indigenous
Cyperaceae	*Bulbostylis oritrephes*	(Ridl.) C.B.Clarke	LC	Indigenous
Fabaceae	*Burkea africana*	Hook.	LC	Indigenous
Asteraceae	*Callilepis leptophylla*	Harv.	LC	Indigenous
Asteraceae	*Callilepis salicifolia*	Oliv.	LC	Indigenous
Rutaceae	*Calodendrum capense*	(L.f.) Thunb.	LC	Indigenous
Cannabaceae	*Cannabis sativa var. sativa*	L.	NE	Not Indigenous; Naturalised
Cyperaceae	*Carex acutiformis*	Ehrh.		Not Indigenous; Naturalised
Cyperaceae	*Carex spartea*	Wahlenb.		Indigenous
Apocynaceae	*Carissa bispinosa*	(L.) Desf. ex Brenan	LC	Indigenous
Icacinaceae	*Cassinopsis ilicifolia*	(Hochst.) Kuntze	LC	Indigenous
Cannabaceae	*Celtis africana*	Burm.f.	LC	Indigenous
Apiaceae	*Centella asiatica*	(L.) Urb.	LC	Indigenous
Dipsacaceae	*Cephalaria zeyheriana*	Szabo	LC	Indigenous
Apocynaceae	*Ceropegia multiflora subsp. multiflora*	Baker	LC	Indigenous
Fabaceae	*Chamaecrista biensis*	(Steyaert) Lock	LC	Indigenous
Fabaceae	*Chamaecrista mimosoides*	(L.) Greene	LC	Indigenous
Fabaceae	*Chamaecrista stricta*	E.Mey.	LC	Indigenous
Verbenaceae	*Chascanum hederaceum var. hederaceum*	(Sond.) Moldenke		Indigenous
Amaranthaceae	*Chenopodium carinatum*	R.Br.		Not Indigenous; Naturalised
Gentianaceae	*Chironia palustris subsp. palustris*	Burch.	LC	Indigenous
Gentianaceae	*Chironia palustris subsp. transvaalensis*	Burch.	LC	Indigenous
Agavaceae	*Chlorophytum fasciculatum*	(Baker) Kativu		Indigenous
Thelypteridacea e	*Christella dentata*	(Forssk.) Brownsey & Jermy	LC	Indigenous
Poaceae	*Chrysopogon serrulatus*	Trin.	LC	Indigenous
Asteraceae	*Cineraria aspera*	Thunb.	LC	Indigenous
Asteraceae	*Cineraria sp.*			
Vitaceae	*Cissus sp.*			
Ranunculaceae	*Clematis brachiata*	Thunb.	LC	Indigenous

Cleomaceae	*Cleome gynandra*	L.	LC	Indigenous
Cleomaceae	*Cleome monophylla*	L.	LC	Indigenous
Euphorbiaceae	*Clutia pulchella var. pulchella*	L.	LC	Indigenous
Combretaceae	*Combretum erythrophyllum*	(Burch.) Sond.	LC	Indigenous
Combretaceae	*Combretum molle*	R.Br. ex G.Don	LC	Indigenous
Combretaceae	*Combretum zeyheri*	Sond.	LC	Indigenous
Commelinaceae	*Commelina africana var. barberae*	L.	LC	Indigenous
Convolvulaceae	*Convolvulus ocellatus var. ocellatus*	Hook.	LC	Indigenous
Asteraceae	*Conyza scabrida*	DC.		Indigenous
Malvaceae	*Corchorus asplenifolius*	Burch.	LC	Indigenous
Malvaceae	*Corchorus confusus*	Wild	LC	Indigenous
Malvaceae	*Corchorus trilocularis*	L.	NE	Not Indigenous; Cultivated; Naturalised
Asteraceae	*Cotula anthemoides*	L.	LC	Indigenous
Asteraceae	*Cotula nigellifolia var. nigellifolia*	(DC.) K.Bremer & Humphries	LC	Indigenous; Endemic
Crassulaceae	*Crassula setulosa var. jenkinsii*	Harv.	NE	Indigenous; Endemic
Crassulaceae	*Crassula setulosa var. setulosa*	Harv.	NE	Indigenous
Fabaceae	*Crotalaria lotoides*	Benth.	LC	Indigenous
Fabaceae	*Crotalaria sphaerocarpa subsp. sphaerocarpa*	Perr. ex DC.	LC	Indigenous
Euphorbiaceae	*Croton gratissimus var. subgratissimus*	Burch.	LC	Indigenous
Apocynaceae	*Cryptolepis cryptolepioides*	(Schltr.) Bullock	LC	Indigenous
Apocynaceae	*Cryptolepis oblongifolia*	(Meisn.) Schltr.	LC	Indigenous
Araliaceae	*Cussonia paniculata subsp. sinuata*	Eckl. & Zeyh.		Indigenous
Apiaceae	*Cyclospermum leptophyllum*	(Pers.) Sprague ex Britton & P.Wilson		Not Indigenous; Naturalised
Poaceae	*Cymbopogon caesius*	(Hook. & Arn.) Stapf	LC	Indigenous
Poaceae	*Cymbopogon nardus*	(L.) Rendle	LC	Indigenous
Apocynaceae	*Cynanchum ellipticum*	(Harv.) R.A.Dyer	LC	Indigenous
Cyperaceae	*Cyperus albostriatus*	Schrad.	LC	Indigenous
Cyperaceae	*Cyperus congestus*	Vahl	LC	Indigenous
Cyperaceae	*Cyperus esculentus var. esculentus*	L.	LC	Indigenous
Cyperaceae	*Cyperus leptocladus*	Kunth	LC	Indigenous
Cyperaceae	*Cyperus sp.*			
Lobeliaceae	*Cyphia persicifolia*	C.Presl	LC	Indigenous; Endemic
Lobeliaceae	*Cyphia stenopetala*	Diels	LC	Indigenous
Vitaceae	*Cyphostemma lanigerum*	(Harv.) Desc. ex Wild & R.B.Drumm.		Indigenous
Vitaceae	*Cyphostemma sandersonii*	(Harv.) Desc.		Indigenous
Vitaceae	*Cyphostemma sulcatum*	(C.A.Sm.) J.J.M.van der Merwe		Indigenous; Endemic

Aizoaceae	*Delosperma leendertziae*	N.E.Br.	NT	Indigenous; Endemic
Asteraceae	*Denekia capensis*	Thunb.	LC	Indigenous
Caryophyllaceae	*Dianthus mooiensis subsp. mooiensis*	F.N.Williams		Indigenous; Endemic
Convolvulaceae	*Dichondra micrantha*	Urb.		Not Indigenous; Naturalised
Asteraceae	*Dicoma anomala subsp. gerrardii*	Sond.	LC	Indigenous
Pottiaceae	*Didymodon tophaceus*	(Brid.) Lisa		Indigenous
Poaceae	*Digitaria brazzae*	(Franch.) Stapf	LC	Indigenous
Poaceae	*Digitaria diagonalis var. diagonalis*	(Nees) Stapf	LC	Indigenous
Poaceae	*Digitaria eriantha*	Steud.	LC	Indigenous
Poaceae	*Digitaria longiflora*	(Retz.) Pers.	LC	Indigenous
Poaceae	*Digitaria monodactyla*	(Nees) Stapf	LC	Indigenous
Poaceae	*Digitaria sp.*			
Poaceae	*Digitaria ternata*	(A.Rich.) Stapf	LC	Indigenous
Poaceae	*Digitaria tricholaenoides*	Stapf	LC	Indigenous
Poaceae	*Diheteropogon amplectens var. amplectens*	(Nees) Clayton	LC	Indigenous
Asteraceae	*Dimorphotheca spectabilis*	Schltr.	LC	Indigenous; Endemic
Ebenaceae	*Diospyros lycioides subsp. guerkei*	Desf.		Indigenous
Ebenaceae	*Diospyros lycioides subsp. lycioides*	Desf.		Indigenous
Ebenaceae	*Diospyros whyteana*	(Hiern) F.White		Indigenous
Hyacinthaceae	*Dipcadi marlothii*	Engl.		Indigenous
Hyacinthaceae	*Dipcadi viride*	(L.) Moench		Indigenous
Brassicaceae	*Diplotaxis muralis*	(L.) DC.		Not Indigenous; Naturalised
Sapindaceae	*Dodonaea viscosa var. angustifolia*	Jacq.		Indigenous
Fabaceae	*Dolichos angustifolius*	Eckl. & Zeyh.	LC	Indigenous
Malvaceae	*Dombeya rotundifolia var. rotundifolia*	(Hochst.) Planch.	LC	Indigenous
Salicaceae	*Dovyalis zeyheri*	(Sond.) Warb.	LC	Indigenous
Hyacinthaceae	*Drimia calcarata*	(Baker) Stedje		Indigenous
Hyacinthaceae	*Drimia elata*	Jacq.		Indigenous
Rosaceae	*Duchesnea indica*	(Andrews) Focke		Not Indigenous; Naturalised; Invasive
Poaceae	*Echinochloa colona*	(L.) Link	LC	Indigenous
Poaceae	*Echinochloa jubata*	Stapf	LC	Indigenous
Poaceae	*Ehrharta erecta var. erecta*	Lam.	LC	Indigenous
Fabaceae	*Elephantorrhiza elephantina*	(Burch.) Skeels	LC	Indigenous
Poaceae	*Elionurus muticus*	(Spreng.) Kunth	LC	Indigenous
Rubiaceae	*Empogona lanceolata*	(Sond.) Tosh & Robbr.		Indigenous
Sapotaceae	*Englerophytum magalismontanum*	(Sond.) T.D.Penn.	LC	Indigenous
Poaceae	*Enneapogon pretoriensis*	Stent	LC	Indigenous
Poaceae	*Enneapogon scoparius*	Stapf	LC	Indigenous

Entodontaceae	*Entodon cymbifolius*	Wager & Dixon		Indigenous
Entodontaceae	*Entodon macropodus*	(Hedw.) Mull.Hal.		Indigenous
Poaceae	*Eragrostis barbinodis*	Hack.	LC	Indigenous
Poaceae	*Eragrostis capensis*	(Thunb.) Trin.	LC	Indigenous
Poaceae	*Eragrostis chloromelas*	Steud.	LC	Indigenous
Poaceae	*Eragrostis curvula*	(Schrad.) Nees	LC	Indigenous
Poaceae	*Eragrostis gummiflua*	Nees	LC	Indigenous
Poaceae	*Eragrostis heteromera*	Stapf	LC	Indigenous
Poaceae	*Eragrostis nindensis*	Ficalho & Hiern	LC	Indigenous
Poaceae	*Eragrostis patentipilosa*	Hack.	LC	Indigenous
Poaceae	*Eragrostis racemosa*	(Thunb.) Steud.	LC	Indigenous
Poaceae	*Eragrostis rigidior*	Pilg.	LC	Indigenous
Poaceae	*Eragrostis sclerantha subsp. sclerantha*	Nees	LC	Indigenous
Poaceae	*Eragrostis sp.*			
Poaceae	*Eragrostis superba*	Peyr.	LC	Indigenous
Ericaceae	*Erica woodii var. woodii*	Bolus	LC	Indigenous
Poaceae	*Eriochloa fatmensis*	(Hochst. & Steud.) Clayton	LC	Indigenous
Fabaceae	*Eriosema burkei var. burkei*	Benth. ex Harv.	LC	Indigenous
Fabaceae	*Eriosema cordatum*	E.Mey.	LC	Indigenous
Ruscaceae	*Eriospermum flagelliforme*	(Baker) J.C.Manning	LC	Indigenous
Fabaceae	*Erythrina lysistemon*	Hutch.	LC	Indigenous
Ebenaceae	*Euclea crispa subsp. crispa*	(Thunb.) Gurke		Indigenous
Ebenaceae	*Euclea natalensis subsp. angustifolia*	A.DC.	LC	Indigenous
Ebenaceae	*Euclea sp.*			
Hyacinthaceae	*Eucomis autumnalis subsp. autumnalis*	(Mill.) Chitt.		Indigenous
Orchidaceae	*Eulophia ovalis var. bainesii*	Lindl.	LC	Indigenous
Orchidaceae	*Eulophia streptopetala*	Lindl.	LC	Indigenous
Euphorbiaceae	*Euphorbia cooperi var. cooperi*	N.E.Br. ex A.Berger		Indigenous
Euphorbiaceae	*Euphorbia epicyparissias*	E.Mey. ex Boiss.	LC	Indigenous
Euphorbiaceae	*Euphorbia hirsuta*	L.		Not Indigenous; Naturalised; Invasive
Euphorbiaceae	*Euphorbia inaequilatera var. inaequilatera*	Sond.	NE	Indigenous
Euphorbiaceae	*Euphorbia pseudotuberosa*	Pax	LC	Indigenous
Euphorbiaceae	*Euphorbia schinzii*	Pax	LC	Indigenous
Euphorbiaceae	*Euphorbia spartaria*	N.E.Br.	LC	Indigenous
Poaceae	*Eustachys paspaloides*	(Vahl) Lanza & Mattei	LC	Indigenous
Exormothecaceae	*Exormotheca holstii*	Steph.		Indigenous
Fabroniaceae	*Fabronia pilifera*	Hornsch.		Indigenous
Fabroniaceae	*Fabronia sp.*			
Proteaceae	*Faurea saligna*	Harv.	LC	Indigenous

Moraceae	*Ficus abutilifolia*	(Miq.) Miq.	LC	Indigenous
Moraceae	*Ficus ingens var. ingens*	(Miq.) Miq.		Indigenous
Cyperaceae	*Fimbristylis dichotoma subsp. dichotoma*	(L.) Vahl	LC	Indigenous
Poaceae	*Fingerhuthia africana*	Lehm.	LC	Indigenous
Fissidentaceae	*Fissidens bogosicus*	Mull.Hal.		Indigenous
Fissidentaceae	*Fissidens palmifolius*	(P.Beauv.) Broth.		Indigenous
Fissidentaceae	*Fissidens rufescens*	Hornsch.		Indigenous
Fissidentaceae	*Fissidens sp.*			
Fissidentaceae	*Fissidens submarginatus*	Bruch		Indigenous
Frullaniaceae	*Frullania ericoides*	(Nees) Mont.		Indigenous
Asteraceae	*Galinsoga parviflora*	Cav.		Not Indigenous; Naturalised
Asteraceae	*Garuleum woodii*	Schinz	LC	Indigenous
Asteraceae	*Gazania krebsiana subsp. serrulata*	Less.	LC	Indigenous
Asteraceae	*Gerbera ambigua*	(Cass.) Sch.Bip.	LC	Indigenous
Asteraceae	*Gerbera piloselloides*	(L.) Cass.	LC	Indigenous
Gisekiaceae	*Gisekia pharnaceoides var. pharnaceoides*	L.	LC	Indigenous
Thymelaeaceae	*Gnidia nodiflora*	Meisn.	LC	Indigenous; Endemic
Apocynaceae	*Gomphocarpus fruticosus subsp. fruticosus*	(L.) W.T.Aiton	LC	Indigenous
Apocynaceae	*Gomphocarpus glaucophyllus*	Schltr.	LC	Indigenous
Scrophulariaceae	*Gomphostigma virgatum*	(L.f.) Baill.	LC	Indigenous
Malvaceae	*Grewia flava*	DC.	LC	Indigenous
Malvaceae	*Grewia monticola*	Sond.	LC	Indigenous
Malvaceae	*Grewia occidentalis var. occidentalis*	L.	LC	Indigenous
Celastraceae	*Gymnosporia buxifolia*	(L.) Szyszyl.	LC	Indigenous
Celastraceae	*Gymnosporia sp.*			
Celastraceae	*Gymnosporia tenuispina*	(Sond.) Szyszyl.	LC	Indigenous
Amaryllidaceae	*Haemanthus humilis subsp. humilis*	Jacq.	LC	Indigenous
Stilbaceae	*Halleria lucida*	L.	LC	Indigenous
Asteraceae	*Helichrysum caespititium*	(DC.) Harv.	LC	Indigenous
Asteraceae	*Helichrysum cerastioides var. cerastioides*	DC.	LC	Indigenous
Asteraceae	*Helichrysum chionosphaerum*	DC.	LC	Indigenous
Asteraceae	*Helichrysum setosum*	Harv.	LC	Indigenous
Rhamnaceae	*Helinus integrifolius*	(Lam.) Kuntze	LC	Indigenous
Malvaceae	*Hermannia burkei*	Burtt Davy	LC	Indigenous
Malvaceae	*Hermannia cordata*	(E.Mey. ex E.Phillips) De Winter	LC	Indigenous; Endemic
Malvaceae	*Hermannia depressa*	N.E.Br.	LC	Indigenous
Malvaceae	*Hermannia floribunda*	Harv.	LC	Indigenous
Malvaceae	*Hermannia lancifolia*	Szyszyl.	LC	Indigenous; Endemic
Apiaceae	*Heteromorpha arborescens var. abyssinica*	(Spreng.) Cham. & Schltdl.	LC	Indigenous

Poaceae	*Heteropogon contortus*	(L.) Roem. & Schult.	LC	Indigenous
Malvaceae	*Hibiscus aethiopicus var. ovatus*	L.	LC	Indigenous
Malvaceae	*Hibiscus calyphyllus*	Cav.	LC	Indigenous
Malvaceae	*Hibiscus engleri*	K.Schum.	LC	Indigenous
Malvaceae	*Hibiscus microcarpus*	Garcke	LC	Indigenous
Malvaceae	*Hibiscus subreniformis*	Burtt Davy	LC	Indigenous
Malvaceae	*Hibiscus trionum*	L.		Not Indigenous; Naturalised
Asteraceae	*Hilliardiella aristata*	(DC.) H.Rob.	LC	Indigenous
Asteraceae	*Hilliardiella elaeagnoides*	(DC.) Swelank. & J.C.Manning		Indigenous
Poaceae	*Hyparrhenia hirta*	(L.) Stapf	LC	Indigenous
Poaceae	*Hyparrhenia tamba*	(Steud.) Stapf	LC	Indigenous
Hypericaceae	*Hypericum aethiopicum subsp. sonderi*	Thunb.	LC	Indigenous
Hypoxidaceae	*Hypoxis argentea var. argentea*	Harv. ex Baker	LC	Indigenous
Fabaceae	*Indigofera comosa*	N.E.Br.	LC	Indigenous
Fabaceae	*Indigofera confusa*	Prain & Baker f.	LC	Indigenous
Fabaceae	*Indigofera frondosa*	N.E.Br.	LC	Indigenous
Fabaceae	*Indigofera hedyantha*	Eckl. & Zeyh.	LC	Indigenous
Fabaceae	*Indigofera heterotricha*	DC.	LC	Indigenous
Fabaceae	*Indigofera hilaris*	Eckl. & Zeyh.		Indigenous
Fabaceae	*Indigofera hilaris var. hilaris*	Eckl. & Zeyh.	LC	Indigenous
Fabaceae	*Indigofera melanadenia*	Benth. ex Harv.	LC	Indigenous
Fabaceae	*Indigofera oxalidea*	Welw. ex Baker	LC	Indigenous
Acanthaceae	*Isoglossa woodii*	C.B.Clarke		Indigenous; Endemic
Cyperaceae	*Isolepis cernua var. cernua*	(Vahl) Roem. & Schult.	LC	Indigenous
Oleaceae	*Jasminum quinatum*	Schinz	LC	Indigenous; Endemic
Juncaceae	*Juncus effusus*	L.	LC	Indigenous
Juncaceae	*Juncus exsertus*	Buchenau	LC	Indigenous
Crassulaceae	*Kalanchoe paniculata*	Harv.		Indigenous
Crassulaceae	*Kalanchoe rotundifolia*	(Haw.) Haw.		Indigenous
Crassulaceae	*Kalanchoe thyrsiflora*	Harv.		Indigenous
Achariaceae	*Kiggelaria africana*	L.	LC	Indigenous
Poaceae	*Koeleria capensis*	(Steud.) Nees	LC	Indigenous
Fabaceae	*Lablab purpureus subsp. uncinatus*	(L.) Sweet	LC	Indigenous
Asteraceae	*Lactuca inermis*	Forssk.	LC	Indigenous
Anacardiaceae	*Lannea discolor*	(Sond.) Engl.	LC	Indigenous
Anacardiaceae	*Lannea edulis var. edulis*	(Sond.) Engl.	LC	Indigenous
Thymelaeaceae	*Lasiosiphon capitatus*	(L.f.) Burtt Davy	LC	Indigenous
Thymelaeaceae	*Lasiosiphon microcephalus*	(Meisn.) J.C.Manning & Magee		Indigenous
Thymelaeaceae	*Lasiosiphon sericocephalus*	(Meisn.) J.C.Manning & Boatwr.	LC	Indigenous

Hyacinthaceae	*Ledebouria confusa*	S.Venter		Indigenous
Hyacinthaceae	*Ledebouria inquinata*	(C.A.Sm.) Jessop	LC	Indigenous
Hyacinthaceae	*Ledebouria luteola*	Jessop	LC	Indigenous
Hyacinthaceae	*Ledebouria marginata*	(Baker) Jessop	LC	Indigenous
Hyacinthaceae	*Ledebouria ovatifolia*	(Baker) Jessop		Indigenous
Poaceae	*Leersia hexandra*	Sw.	LC	Indigenous
Araceae	*Lemna gibba*	L.		Indigenous
Fabaceae	*Leobordea divaricata*	Eckl. & Zeyh.	LC	Indigenous
Fabaceae	*Leobordea eriantha*	(Benth.) B.-E.van Wyk & Boatwr.	LC	Indigenous
Fabaceae	*Leobordea pulchra*	(Dummer) B.-E.van Wyk & Boatwr.	LC	Indigenous
Brassicaceae	*Lepidium africanum subsp. africanum*	(Burm.f.) DC.	LC	Indigenous
Brassicaceae	*Lepidium bonariense*	L.		Not Indigenous; Naturalised
Fabaceae	*Lessertia frutescens subsp. microphylla*	(L.) Goldblatt & J.C.Manning	LC	Indigenous
Linaceae	*Linum thunbergii*	Eckl. & Zeyh.	LC	Indigenous
Fabaceae	*Listia heterophylla*	E.Mey.	LC	Indigenous
Lobeliaceae	*Lobelia erinus*	L.	LC	Indigenous
Lobeliaceae	*Lobelia thermalis*	Thunb.	LC	Indigenous
Fabaceae	*Lotononis tenella*	(E.Mey.) Eckl. & Zeyh.	LC	Indigenous; Endemic
Poaceae	*Loudetia flavida*	(Stapf) C.E.Hubb.	LC	Indigenous
Poaceae	*Loudetia simplex*	(Nees) C.E.Hubb.	LC	Indigenous
Asteraceae	*Macledium zeyheri subsp. zeyheri*	(Sond.) S.Ortiz		Indigenous
Capparaceae	*Maerua cafra*	(DC.) Pax	LC	Indigenous
Celastraceae	*Maytenus undata*	(Thunb.) Blakelock	LC	Indigenous
Malvaceae	*Melhania transvaalensis*	Szyszyl.	LC	Indigenous; Endemic
Poaceae	*Melica racemosa*	Thunb.	LC	Indigenous
Poaceae	*Melinis nerviglumis*	(Franch.) Zizka	LC	Indigenous
Poaceae	*Melinis repens subsp. repens*	(Willd.) Zizka	LC	Indigenous
Fabaceae	*Melolobium subspicatum*	Conrath	VU	Indigenous; Endemic
Oleaceae	*Menodora africana*	Hook.	LC	Indigenous
Aizoaceae	*Mesembryanthemum cordifolium*	L.f.		Indigenous; Endemic
Poaceae	*Microchloa caffra*	Nees	LC	Indigenous
Sapotaceae	*Mimusops zeyheri*	Sond.	LC	Indigenous
Geraniaceae	*Monsonia angustifolia*	E.Mey. ex A.Rich.	LC	Indigenous
Geraniaceae	*Monsonia burkeana*	Planch. ex Harv.	LC	Indigenous
Geraniaceae	*Monsonia grandifolia*	R.Knuth	LC	Indigenous; Endemic
Iridaceae	*Moraea stricta*	Baker	LC	Indigenous

Myricaceae	*Morella serrata*	(Lam.) Killick		Indigenous
Moraceae	*Morus sp.*			
Fabaceae	*Mundulea sericea subsp. sericea*	(Willd.) A.Chev.	LC	Indigenous
Myrsinaceae	*Myrsine africana*	L.	LC	Indigenous
Celastraceae	*Mystroxylon aethiopicum subsp. burkeanum*	(Thunb.) Loes.	LC	Indigenous; Endemic
Hydrocharitaceae	*Najas horrida*	A.Braun ex Rendle		Indigenous
Brassicaceae	*Nasturtium officinale*	R.Br.		Not Indigenous; Naturalised; Invasive
Fabaceae	*Neorautanenia ficifolia*	(Benth. ex Harv.) C.A.Sm.	LC	Indigenous
Solanaceae	*Nicotiana glauca*	Graham		Not Indigenous; Naturalised; Invasive
Stilbaceae	*Nuxia congesta*	R.Br. ex Fresen.	LC	Indigenous
Stilbaceae	*Nuxia glomerulata*	(C.A.Sm.) I.Verd.	LC	Indigenous; Endemic
Urticaceae	*Obetia tenax*	(N.E.Br.) Friis		Indigenous
Ochnaceae	*Ochna pulchra*	Hook.f.	LC	Indigenous
Lamiaceae	*Ocimum obovatum subsp. obovatum*	E.Mey. ex Benth.	NE	Indigenous
Onagraceae	*Oenothera affinis*	Cambess.		Not Indigenous; Naturalised; Invasive
Onagraceae	*Oenothera rosea*	L'Her. ex Aiton		Not Indigenous; Naturalised; Invasive
Onagraceae	*Oenothera tetraptera*	Cav.		Not Indigenous; Naturalised; Invasive
Oleaceae	*Olea europaea subsp. cuspidata*	L.		Indigenous
Oliniaceae	*Olinia emarginata*	Burtt Davy	LC	Indigenous
Asteraceae	*Osteospermum muricatum subsp. muricatum*	E.Mey. ex DC.	LC	Indigenous
Santalaceae	*Osyris lanceolata*	Hochst. & Steud.	LC	Indigenous
Oxalidaceae	*Oxalis corniculata*	L.		Not Indigenous; Naturalised; Invasive
Oxalidaceae	*Oxalis depressa*	Eckl. & Zeyh.	LC	Indigenous
Oxalidaceae	*Oxalis obliquifolia*	Steud. ex A.Rich.	LC	Indigenous
Polygonaceae	*Oxygonum dregeanum subsp. canescens*	Meisn.	NE	Indigenous
Anacardiaceae	*Ozoroa paniculosa var. paniculosa*	(Sond.) R.Fern. & A.Fern.	LC	Indigenous
Apocynaceae	*Pachycarpus schinzianus*	(Schltr.) N.E.Br.	LC	Indigenous
Poaceae	*Panicum maximum*	Jacq.	LC	Indigenous
Poaceae	*Panicum natalense*	Hochst.	LC	Indigenous
Sapindaceae	*Pappea capensis*	Eckl. & Zeyh.		Indigenous
Chrysobalanaceae	*Parinari capensis subsp. capensis*	Harv.	LC	Indigenous
Poaceae	*Paspalum distichum*	L.	LC	Indigenous

Poaceae	*Paspalum urvillei*	Steud.	NE	Not Indigenous; Naturalised
Malvaceae	*Pavonia burchellii*	(DC.) R.A.Dyer	LC	Indigenous
Fabaceae	*Pearsonia bracteata*	(Benth.) Polhill	NT	Indigenous; Endemic
Fabaceae	*Pearsonia cajanifolia subsp. cajanifolia*	(Harv.) Polhill	LC	Indigenous; Endemic
Fabaceae	*Pearsonia sessilifolia subsp. sessilifolia*	(Harv.) Dummer	LC	Indigenous
Fabaceae	*Pearsonia uniflora*	(Kensit) Polhill	LC	Indigenous
Geraniaceae	*Pelargonium luridum*	(Andrews) Sweet	LC	Indigenous
Thuidiaceae	*Pelekium versicolor*	(Hornsch. ex Mull.Hal.) Touw		Indigenous
Apocynaceae	*Pentarrhinum insipidum*	E.Mey.	LC	Indigenous
Asteraceae	*Pentzia monocephala*	S.Moore	LC	Indigenous
Bartramiaceae	*Philonotis dregeana*	(Mull.Hal.) A.Jaeger		Indigenous
Bartramiaceae	*Philonotis falcata*	(Hook.) Mitt.		Indigenous
Poaceae	*Phragmites australis*	(Cav.) Steud.	LC	Indigenous
Phyllanthaceae	*Phyllanthus incurvus*	Thunb.	LC	Indigenous
Phyllanthaceae	*Phyllanthus parvulus var. parvulus*	Sond.	LC	Indigenous
Asteraceae	*Phymaspermum athanasioides*	(S.Moore) Kallersjo	LC	Indigenous
Phytolaccaceae	*Phytolacca heptandra*	Retz.	LC	Indigenous
Pittosporaceae	*Pittosporum viridiflorum*	Sims	LC	Indigenous
Aytoniaceae	*Plagiochasma appendiculatum*	Lehm. & Lindenb.		Indigenous
Aytoniaceae	*Plagiochasma rupestre var. rupestre*	(J.R.Forst. & G.Forst.) Steph.		Indigenous
Aytoniaceae	*Plagiochasma rupestre var. volkii*	(J.R.Forst. & G.Forst.) Steph.		Indigenous
Plantaginaceae	*Plantago major*	L.		Not Indigenous; Naturalised
Plantaginaceae	*Plantago sp.*			
Lamiaceae	*Plectranthus montanus*	Benth.		Indigenous
Plumbaginaceae	*Plumbago zeylanica*	L.		Not Indigenous; Naturalised
Polygalaceae	*Polygala albida subsp. albida*	Schinz	LC	Indigenous
Polygalaceae	*Polygala hottentotta*	C.Presl	LC	Indigenous
Polygalaceae	*Polygala krumanina*	Burch. ex Ficalho & Hiern	LC	Indigenous; Endemic
Polygalaceae	*Polygala producta*	N.E.Br.	LC	Indigenous
Polygalaceae	*Polygala transvaalensis subsp. transvaalensis*	Chodat	LC	Indigenous
Potamogetonaceae	*Potamogeton pusillus*	L.	LC	Indigenous
Potamogetonaceae	*Potamogeton schweinfurthii*	A.Benn.	LC	Indigenous
Urticaceae	*Pouzolzia mixta var. mixta*	Solms		Indigenous
Proteaceae	*Protea caffra subsp. caffra*	Meisn.	LC	Indigenous
Proteaceae	*Protea gaguedi*	J.F.Gmel.	LC	Indigenous

Molluginaceae	*Psammotropha mucronata var. mucronata*	(Thunb.) Fenzl	LC	Indigenous
Molluginaceae	*Psammotropha myriantha*	Sond.	LC	Indigenous
Leskeaceae	*Pseudoleskea leskeoides*	(Paris) Mull.Hal.		Indigenous
Celastraceae	*Pterocelastrus echinatus*	N.E.Br.	LC	Indigenous
Racopilaceae	*Racopilum capense*	Mull.Hal. ex Broth.		Indigenous
Ranunculaceae	*Ranunculus multifidus*	Forssk.	LC	Indigenous
Apocynaceae	*Raphionacme galpinii*	Schltr.	LC	Indigenous
Apocynaceae	*Raphionacme hirsuta*	(E.Mey.) R.A.Dyer	LC	Indigenous
Apocynaceae	*Raphionacme sp.*			
Apocynaceae	*Rauvolfia caffra*	Sond.	LC	Indigenous
Rhamnaceae	*Rhamnus prinoides*	L'Her.		Indigenous
Vitaceae	*Rhoicissus tridentata subsp. cuneifolia*	(L.f.) Wild & R.B.Drumm.		Indigenous
Fabaceae	*Rhynchosia caribaea*	(Jacq.) DC.	LC	Indigenous
Fabaceae	*Rhynchosia minima var. prostrata*	(L.) DC.	NE	Indigenous
Fabaceae	*Rhynchosia nervosa var. nervosa*	Benth. ex Harv.	LC	Indigenous
Fabaceae	*Rhynchosia nitens*	Benth. ex Harv.	LC	Indigenous
Fabaceae	*Rhynchosia totta var. venulosa*	(Thunb.) DC.		Indigenous
Apocynaceae	*Riocreuxia polyantha*	Schltr.	LC	Indigenous
Rosaceae	*Rubus rigidus*	Sm.	LC	Indigenous
Celastraceae	*Salacia rehmannii*	Schinz	LC	Indigenous; Endemic
Salicaceae	*Salix babylonica var. babylonica*	L.		Not Indigenous; Naturalised
Salicaceae	*Salix mucronata subsp. woodii*	Thunb.	LC	Indigenous
Lamiaceae	*Satureja biflora*	(Buch.-Ham. ex D.Don) Briq.	LC	Indigenous
Dipsacaceae	*Scabiosa columbaria*	L.	LC	Indigenous
Asteraceae	*Schistostephium crataegifolium*	(DC.) Fenzl ex Harv.	LC	Indigenous
Poaceae	*Schizachyrium sanguineum*	(Retz.) Alston	LC	Indigenous
Hyacinthaceae	*Schizocarphus nervosus*	(Burch.) Van der Merwe		Indigenous
Apocynaceae	*Schizoglossum nitidum*	Schltr.	LC	Indigenous
Asteraceae	*Schkuhria pinnata*	(Lam.) Kuntze ex Thell.		Not Indigenous; Naturalised
Salicaceae	*Scolopia zeyheri*	(Nees) Harv.	LC	Indigenous
Anacardiaceae	*Searsia dentata*	(Thunb.) F.A.Barkley		Indigenous
Anacardiaceae	*Searsia discolor*	(E.Mey. ex Sond.) Moffett		Indigenous
Anacardiaceae	*Searsia lancea*	(L.f.) F.A.Barkley		Indigenous
Anacardiaceae	*Searsia leptodictya forma leptodictya*	(Diels) T.S.Yi, A.J.Mill. & J.Wen		Indigenous
Anacardiaceae	*Searsia magalismontana subsp. magalismontana*	(Sond.) Moffett		Indigenous
Anacardiaceae	*Searsia pallens*	(Eckl. & Zeyh.) Moffett		Indigenous

Anacardiaceae	*Searsia pyroides var. gracilis*	(Burch.) Moffett		Indigenous
Anacardiaceae	*Searsia pyroides var. pyroides*	(Burch.) Moffett		Indigenous
Anacardiaceae	*Searsia rigida var. margaretae*	(Mill.) F.A.Barkley		Indigenous; Endemic
Anacardiaceae	*Searsia rigida var. rigida*	(Mill.) F.A.Barkley		Indigenous; Endemic
Anacardiaceae	*Searsia undulata*	(Jacq.) T.S.Yi, A.J.Mill. & J.Wen		Indigenous
Anacardiaceae	*Searsia zeyheri*	(Sond.) Moffett		Indigenous; Endemic
Gentianaceae	*Sebaea sedoides var. confertiflora*	Gilg	LC	Indigenous
Apocynaceae	*Secamone alpini*	Schult.	LC	Indigenous
Asteraceae	*Senecio albanensis var. doroniciflorus*	DC.	LC	Indigenous
Asteraceae	*Senecio coronatus*	(Thunb.) Harv.	LC	Indigenous
Asteraceae	*Senecio erubescens var. erubescens*	Aiton	NE	Indigenous; Endemic
Asteraceae	*Senecio lydenburgensis*	Hutch. & Burtt Davy	LC	Indigenous
Asteraceae	*Senecio oxyriifolius subsp. oxyriifolius*	DC.	LC	Indigenous
Asteraceae	*Senecio pentactinus*	Klatt	LC	Indigenous
Asteraceae	*Senecio sp.*			
Asteraceae	*Senecio striatifolius*	DC.	LC	Indigenous
Asteraceae	*Senecio venosus*	Harv.	LC	Indigenous
Fabaceae	*Senegalia ataxacantha*	(DC.) Kyal. & Boatwr.	LC	Indigenous
Fabaceae	*Senna italica subsp. arachoides*	Mill.	LC	Indigenous
Asteraceae	*Seriphium plumosum*	L.		Indigenous
Poaceae	*Setaria lindenbergiana*	(Nees) Stapf	LC	Indigenous
Poaceae	*Setaria megaphylla*	(Steud.) T.Durand & Schinz	LC	Indigenous
Poaceae	*Setaria pumila*	(Poir.) Roem. & Schult.	LC	Indigenous
Poaceae	*Setaria sphacelata var. torta*	(Schumach.) Stapf & C.E.Hubb. ex M.B.Moss	LC	Indigenous
Malvaceae	*Sida dregei*	Burtt Davy	LC	Indigenous
Malvaceae	*Sida rhombifolia subsp. rhombifolia*	L.	LC	Indigenous
Malvaceae	*Sida spinosa var. spinosa*	L.	LC	Indigenous
Malvaceae	*Sida ternata*	L.f.	LC	Indigenous
Brassicaceae	*Sisymbrium officinale*	(L.) Scop.		Not Indigenous; Naturalised
Solanaceae	*Solanum campylacanthum*	Hochst. ex A.Rich.		Indigenous
Asteraceae	*Sonchus dregeanus*	DC.	LC	Indigenous
Poaceae	*Sorghum versicolor*	Andersson	LC	Indigenous
Rubiaceae	*Spermacoce senensis*	(Klotzsch) Hiern	LC	Indigenous
Malpighiaceae	*Sphedamnocarpus pruriens subsp. galphimiifolius*	(A.Juss.) Szyszyl.	LC	Indigenous
Malpighiaceae	*Sphedamnocarpus pruriens subsp. pruriens*	(A.Juss.) Szyszyl.	LC	Indigenous
Fabaceae	*Sphenostylis angustifolia*	Sond.	LC	Indigenous

Araceae	*Spirodela punctata*	(G.Mey.) C.H.Thomps.		Indigenous
Poaceae	*Sporobolus fimbriatus*	(Trin.) Nees	LC	Indigenous
Poaceae	*Sporobolus nitens*	Stent	LC	Indigenous
Poaceae	*Sporobolus sp.*			
Poaceae	*Sporobolus stapfianus*	Gand.	LC	Indigenous
Lamiaceae	*Stachys natalensis var. natalensis*	Hochst.	LC	Indigenous
Apocynaceae	*Stapelia gigantea*	N.E.Br.	LC	Indigenous
Poaceae	*Stipa dregeana var. elongata*	Steud.	LC	Indigenous
Poaceae	*Stipagrostis zeyheri subsp. sericans*	(Nees) De Winter	LC	Indigenous
Orobanchaceae	*Striga asiatica*	(L.) Kuntze	LC	Indigenous
Loganiaceae	*Strychnos pungens*	Soler.	LC	Indigenous
Loganiaceae	*Strychnos usambarensis*	Gilg	LC	Indigenous
Myrtaceae	*Syzygium sp.*			
Asteraceae	*Tagetes minuta*	L.		Not Indigenous; Naturalised; Invasive
Loranthaceae	*Tapinanthus quequensis*	(Weim.) Polhill & Wiens	LC	Indigenous
Loranthaceae	*Tapinanthus rubromarginatus*	(Engl.) Danser	LC	Indigenous
Asteraceae	*Tarchonanthus camphoratus*	L.	LC	Indigenous
Fabaceae	*Tephrosia multijuga*	R.G.N.Young	LC	Indigenous
Fabaceae	*Tephrosia rhodesica var. evansii*	Baker f.	LC	Indigenous
Fabaceae	*Tephrosia rhodesica var. rhodesica*	Baker f.	LC	Indigenous
Fabaceae	*Tephrosia semiglabra*	Sond.	LC	Indigenous
Combretaceae	*Terminalia sericea*	Burch. ex DC.	LC	Indigenous
Lamiaceae	*Teucrium trifidum*	Retz.	LC	Indigenous
Thelypteridaceae	*Thelypteris confluens*	(Thunb.) C.V.Morton	LC	Indigenous
Poaceae	*Themeda triandra*	Forssk.	LC	Indigenous
Santalaceae	*Thesium costatum var. costatum*	A.W.Hill	LC	Indigenous
Santalaceae	*Thesium transvaalense*	Schltr.	LC	Indigenous; Endemic
Santalaceae	*Thesium utile*	A.W.Hill	LC	Indigenous
Timmiellaceae	*Timmiella pelindaba*	Magill		Indigenous
Asteraceae	*Tolpis capensis*	(L.) Sch.Bip.	LC	Indigenous
Pottiaceae	*Tortella humilis*	(Hedw.) Jenn.		Indigenous
Pottiaceae	*Tortella xanthocarpa*	(Schimp. ex Mull.Hal.) Broth.		Indigenous
Poaceae	*Trachypogon spicatus*	(L.f.) Kuntze	LC	Indigenous
Euphorbiaceae	*Tragia rupestris*	Sond.	LC	Indigenous
Poaceae	*Tragus berteronianus*	Schult.	LC	Indigenous
Zygophyllaceae	*Tribulus terrestris*	L.	LC	Indigenous
Poaceae	*Trichoneura grandiglumis*	(Nees) Ekman	LC	Indigenous
Pottiaceae	*Trichostomum brachydontium*	Bruch		Indigenous
Poaceae	*Triraphis andropogonoides*	(Steud.) E.Phillips	LC	Indigenous
Poaceae	*Tristachya rehmannii*	Hack.	LC	Indigenous

Malvaceae	*Triumfetta sonderi*	Ficalho & Hiern	LC	Indigenous; Endemic
Meliaceae	*Turraea obtusifolia*	Hochst.	LC	Indigenous
Typhaceae	*Typha capensis*	(Rohrb.) N.E.Br.		Indigenous
Poaceae	*Urelytrum agropyroides*	(Hack.) Hack.	LC	Indigenous
Poaceae	*Urochloa panicoides*	P.Beauv.	LC	Indigenous
Fabaceae	*Vachellia hebeclada subsp. hebeclada*	(DC.) Kyal. & Boatwr.	LC	Indigenous
Fabaceae	*Vachellia tortilis subsp. heteracantha*	(Forssk.) Galasso & Banfi	LC	Indigenous
Rubiaceae	*Vangueria infausta subsp. infausta*	Burch.	LC	Indigenous
Rutaceae	*Vepris lanceolata*	(Lam.) G.Don	LC	Indigenous
Plantaginaceae	*Veronica anagallis-aquatica*	L.	LC	Indigenous
Fabaceae	*Vigna unguiculata subsp. stenophylla*	(L.) Walp.	LC	Indigenous
Fabaceae	*Vigna vexillata var. vexillata*	(L.) A.Rich.	LC	Indigenous
Santalaceae	*Viscum combreticola*	Engl.		Indigenous
Santalaceae	*Viscum rotundifolium*	L.f.		Indigenous
Santalaceae	*Viscum verrucosum*	Harv.		Indigenous
Lamiaceae	*Vitex zeyheri*	Sond.		Indigenous
Campanulaceae	*Wahlenbergia banksiana*	A.DC.	LC	Indigenous
Campanulaceae	*Wahlenbergia magaliesbergensis*	Lammers	LC	Indigenous; Endemic
Campanulaceae	*Wahlenbergia sp.*			
Campanulaceae	*Wahlenbergia undulata*	(L.f.) A.DC.	LC	Indigenous
Pottiaceae	*Weissia sp.*			
Solanaceae	*Withania somnifera*	(L.) Dunal	LC	Indigenous
Olacaceae	*Ximenia caffra var. caffra*	Sond.		Indigenous
Rutaceae	*Zanthoxylum capense*	(Thunb.) Harv.	LC	Indigenous
Asteraceae	*Zinnia peruviana*	(L.) L.		Not Indigenous; Naturalised; Invasive
Asteraceae	*Zinnia sp.*			
Rhamnaceae	*Ziziphus mucronata subsp. mucronata*	Willd.		Indigenous
Rhamnaceae	*Ziziphus zeyheriana*	Sond.		Indigenous
Fabaceae	*Zornia linearis*	E.Mey.	LC	Indigenous

APPENDIX B*: Avifaunal species expected to occur in the project area*

Species	Common Name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Accipiter badius	Shikra	Unlisted	LC
Accipiter melanoleucus	Sparrowhawk, Black	Unlisted	LC
Accipiter minullus	Sparrowhawk, Little	Unlisted	LC
Accipiter ovampensis	Sparrowhawk, Ovambo	Unlisted	LC
Acridotheres tristis	Myna, Common	Unlisted	LC
Acrocephalus arundinaceus	Reed-warbler, Great	Unlisted	LC
Acrocephalus baeticatus	Reed-warbler, African	Unlisted	Unlisted
Acrocephalus gracilirostris	Swamp-warbler, Lesser	Unlisted	LC
Acrocephalus palustris	Warbler, Marsh	Unlisted	LC
Acrocephalus schoenobaenus	Warbler, Sedge	Unlisted	LC
Actitis hypoleucos	Sandpiper, Common	Unlisted	LC
Actophilornis africanus	Jacana, African	Unlisted	LC
Afrotis afraoides	Korhaan, Northern Black	Unlisted	LC
Agapornis roseicollis	Lovebird, Rosy-faced	Unlisted	LC
Alcedo cristata	Kingfisher, Malachite	Unlisted	Unlisted
Alcedo semitorquata	Kingfisher, Half-collared	NT	LC
Alopochen aegyptiacus	Goose, Egyptian	Unlisted	LC
Amadina erythrocephala	Finch, Red-headed	Unlisted	LC
Amadina fasciata	Finch, Cut-throat	Unlisted	Unlisted
Amandava subflava	Waxbill, Orange-breasted	Unlisted	Unlisted
Amaurornis flavirostris	Crake, Black	Unlisted	LC
Amblyospiza albifrons	Weaver, Thick-billed	Unlisted	LC
Anaplectes rubriceps	Weaver, Red-headed	Unlisted	LC
Anas acuta	Pintail, Northern	Unlisted	LC
Anas capensis	Teal, Cape	Unlisted	LC
Anas erythrorhyncha	Teal, Red-billed	Unlisted	LC
Anas hottentota	Teal, Hottentot	Unlisted	LC
Anas platyrhynchos	Duck, Mallard	Unlisted	LC
Anas platyrhynchos	Duck, Mallard	Unlisted	LC
Anas smithii	Shoveler, Cape	Unlisted	LC
Anas sparsa	Duck, African Black	Unlisted	LC
Anas undulata	Duck, Yellow-billed	Unlisted	LC
Anastomus lamelligerus	Openbill, African	Unlisted	LC
Anhinga rufa	Darter, African	Unlisted	LC
Anomalospiza imberbis	Finch, Cuckoo	Unlisted	LC
Anser	Goose, Domestic	Unlisted	LC
Anthoscopus caroli	Penduline-tit, Grey	Unlisted	LC
Anthoscopus minutus	Penduline-tit, Cape	Unlisted	LC
Anthropoides paradiseus	Crane, Blue	NT	VU
Anthus caffer	Pipit, Bushveld	Unlisted	LC
Anthus cinnamomeus	Pipit, African	Unlisted	LC
Anthus leucophrys	Pipit, Plain-backed	Unlisted	LC
Anthus lineiventris	Pipit, Striped	Unlisted	LC

Anthus similis	Pipit, Long-billed	Unlisted	LC
Anthus vaalensis	Pipit, Buffy	Unlisted	LC
Apalis thoracica	Apalis, Bar-throated	Unlisted	LC
Apus affinis	Swift, Little	Unlisted	LC
Apus	Swift, Common	Unlisted	LC
Apus barbatus	Swift, African Black	Unlisted	LC
Apus caffer	Swift, White-rumped	Unlisted	LC
Apus horus	Swift, Horus	Unlisted	LC
Aquila ayresii	Hawk-eagle, Ayres's	NT	LC
Aquila pennatus	Eagle, Booted	Unlisted	LC
Aquila spilogaster	Hawk-eagle, African	Unlisted	LC
Aquila verreauxii	Eagle, Verreaux's	VU	LC
Aquila wahlbergi	Eagle, Wahlberg's	Unlisted	LC
Ardea cinerea	Heron, Grey	Unlisted	LC
Ardea goliath	Heron, Goliath	Unlisted	LC
Ardea melanocephala	Heron, Black-headed	Unlisted	LC
Ardea purpurea	Heron, Purple	Unlisted	LC
Ardeola ralloides	Heron, Squacco	Unlisted	LC
Ardeola rufiventris	Heron, Rufous-bellied	Unlisted	LC
Asio capensis	Owl, Marsh	Unlisted	LC
Aviceda cuculoides	Hawk, African Cuckoo	Unlisted	LC
Batis molitor	Batis, Chinspot	Unlisted	LC
Bostrychia hagedash	Ibis, Hadeda	Unlisted	LC
Bradornis mariquensis	Flycatcher, Marico	Unlisted	LC
Bradypterus baboecala	Rush-warbler, Little	Unlisted	LC
Bubo africanus	Eagle-owl, Spotted	Unlisted	LC
Bubo capensis	Eagle-Owl, Cape	Unlisted	LC
Bubo lacteus	Eagle-owl, Verreaux's	Unlisted	LC
Bubulcus ibis	Egret, Cattle	Unlisted	LC
Buphagus erythrorhynchus	Oxpecker, Red-billed	Unlisted	Unlisted
Burhinus capensis	Thick-knee, Spotted	Unlisted	LC
Burhinus vermiculatus	Thick-knee, Water	Unlisted	LC
Buteo rufofuscus	Buzzard, Jackal	Unlisted	LC
Buteo vulpinus	Buzzard, Common	Unlisted	Unlisted
Butorides striata	Heron, Green-backed	Unlisted	LC
Calamonastes fasciolatus	Wren-warbler, Barred	Unlisted	LC
Calandrella cinerea	Lark, Red-capped	Unlisted	LC
Calendulauda africanoides	Lark, Fawn-coloured	Unlisted	LC
Calendulauda sabota	Lark, Sabota	Unlisted	LC
Calidris ferruginea	Sandpiper, Curlew	LC	NT
Calidris minuta	Stint, Little	LC	LC
Camaroptera brachyura	Camaroptera, Green-backed	Unlisted	LC
Camaroptera brevicaudata	Camaroptera, Grey-backed	Unlisted	Unlisted
Campephaga flava	Cuckoo-shrike, Black	Unlisted	LC
Campethera abingoni	Woodpecker, Golden-tailed	Unlisted	LC
Campethera bennettii	Woodpecker, Bennett's	Unlisted	LC

Caprimulgus europaeus	Nightjar, European	Unlisted	LC
Caprimulgus pectoralis	Nightjar, Fiery-necked	Unlisted	LC
Caprimulgus rufigena	Nightjar, Rufous-cheeked	Unlisted	LC
Caprimulgus tristigma	Nightjar, Freckled	Unlisted	LC
Centropus burchellii	Coucal, Burchell's	Unlisted	Unlisted
Centropus superciliosus	Coucal, White-browed	Unlisted	LC
Cercomela familiaris	Chat, Familiar	Unlisted	LC
Cercotrichas leucophrys	Scrub-robin, White-browed	Unlisted	LC
Cercotrichas paena	Scrub-robin, Kalahari	Unlisted	LC
Certhilauda benguelensis	Lark, Benguela Long-billed	Unlisted	Unlisted
Certhilauda curvirostris	Lark, Cape Long-billed	Unlisted	LC
Certhilauda semitorquata	Lark, Eastern Long-billed	Unlisted	LC
Certhilauda subcoronata	Lark, Karoo Long-billed	Unlisted	LC
Ceryle rudis	Kingfisher, Pied	Unlisted	LC
Chalcomitra amethystina	Sunbird, Amethyst	Unlisted	LC
Charadrius hiaticula	Plover, Common Ringed	Unlisted	LC
Charadrius pecuarius	Plover, Kittlitz's	Unlisted	LC
Charadrius tricollaris	Plover, Three-banded	Unlisted	LC
Chersomanes albofasciata	Lark, Spike-heeled	Unlisted	LC
Chlidonias hybrida	Tern, Whiskered	Unlisted	LC
Chlidonias leucopterus	Tern, White-winged	Unlisted	LC
Chloropeta natalensis	Warbler, Dark-capped Yellow	Unlisted	LC
Chrysococcyx caprius	Cuckoo, Diderick	Unlisted	LC
Chrysococcyx klaas	Cuckoo, Klaas's	Unlisted	LC
Ciconia abdimii	Stork, Abdim's	NT	LC
Ciconia	Stork, White	Unlisted	LC
Ciconia nigra	Stork, Black	VU	LC
Cinnyricinclus leucogaster	Starling, Violet-backed	Unlisted	LC
Cinnyris afer	Sunbird, Greater Double-collared	Unlisted	LC
Cinnyris mariquensis	Sunbird, Marico	Unlisted	LC
Cinnyris talatala	Sunbird, White-bellied	Unlisted	LC
Circaetus cinereus	Snake-eagle, Brown	Unlisted	LC
Circaetus pectoralis	Snake-eagle, Black-chested	Unlisted	LC
Circus ranivorus	Marsh-harrier, African	EN	LC
Cisticola aberrans	Cisticola, Lazy	Unlisted	LC
Cisticola aridulus	Cisticola, Desert	Unlisted	LC
Cisticola ayresii	Cisticola, Wing-snapping	Unlisted	LC
Cisticola chiniana	Cisticola, Rattling	Unlisted	LC
Cisticola fulvicapilla	Neddicky, Neddicky	Unlisted	LC
Cisticola juncidis	Cisticola, Zitting	Unlisted	LC
Cisticola lais	Cisticola, Wailing	Unlisted	LC
Cisticola textrix	Cisticola, Cloud	Unlisted	LC
Cisticola tinniens	Cisticola, Levaillant's	Unlisted	LC
Clamator glandarius	Cuckoo, Great Spotted	Unlisted	LC
Clamator jacobinus	Cuckoo, Jacobin	Unlisted	LC
Clamator levaillantii	Cuckoo, Levaillant's	Unlisted	LC

Coccopygia melanotis	Waxbill, Swee	Unlisted	LC
Colius	Mousebird, White-backed	Unlisted	LC
Colius striatus	Mousebird, Speckled	Unlisted	LC
Columba arquatrix	Olive-pigeon, African	Unlisted	LC
Columba guinea	Pigeon, Speckled	Unlisted	LC
Columba livia	Dove, Rock	Unlisted	LC
Coracias caudatus	Roller, Lilac-breasted	Unlisted	LC
Coracias garrulus	Roller, European	NT	LC
Coracias naevius	Roller, Purple	Unlisted	LC
Corvus albus	Crow, Pied	Unlisted	LC
Corvus capensis	Crow, Cape	Unlisted	LC
Corythaixoides concolor	Go-away-bird, Grey	Unlisted	LC
Cossypha caffra	Robin-chat, Cape	Unlisted	LC
Cossypha humeralis	Robin-chat, White-throated	Unlisted	LC
Coturnix	Quail, Common	Unlisted	LC
Coturnix delegorguei	Quail, Harlequin	Unlisted	LC
Creatophora cinerea	Starling, Wattled	Unlisted	LC
Crecopsis egregia	Crake, African	Unlisted	LC
Crex	Crake, Corn	Unlisted	LC
Crithagra atrogularis	Canary, Black-throated	Unlisted	LC
Crithagra flaviventris	Canary, Yellow	Unlisted	LC
Crithagra gularis	Seedeater, Streaky-headed	Unlisted	LC
Crithagra mozambicus	Canary, Yellow-fronted	Unlisted	LC
Cuculus canorus	Cuckoo, Common	Unlisted	LC
Cuculus clamosus	Cuckoo, Black	Unlisted	LC
Cuculus gularis	Cuckoo, African	Unlisted	LC
Cuculus solitarius	Cuckoo, Red-chested	Unlisted	LC
Cursorius temminckii	Courser, Temminck's	Unlisted	LC
Cygnus olor	Swan, Mute	Unlisted	LC
Cypsiurus parvus	Palm-swift, African	Unlisted	LC
Delichon urbicum	House-martin, Common	Unlisted	LC
Dendrocygna bicolor	Duck, Fulvous	Unlisted	LC
Dendrocygna viduata	Duck, White-faced Whistling	Unlisted	LC
Dendroperdix sephaena	Francolin, Crested	Unlisted	LC
Dendropicos fuscescens	Woodpecker, Cardinal	Unlisted	LC
Dendropicos namaquus	Woodpecker, Bearded	Unlisted	LC
Dicrurus adsimilis	Drongo, Fork-tailed	Unlisted	LC
Dryoscopus cubla	Puffback, Black-backed	Unlisted	LC
Egretta alba	Egret, Great	Unlisted	LC
Egretta ardesiaca	Heron, Black	Unlisted	LC
Egretta garzetta	Egret, Little	Unlisted	LC
Egretta intermedia	Egret, Yellow-billed	Unlisted	LC
Egretta vinaceigula	Egret, Slaty	NA	VU
Elanus caeruleus	Kite, Black-shouldered	Unlisted	LC
Emberiza capensis	Bunting, Cape	Unlisted	LC
Emberiza flaviventris	Bunting, Golden-breasted	Unlisted	LC

Emberiza impetuani	Bunting, Lark-like	Unlisted	LC
Emberiza tahapisi	Bunting, Cinnamon-breasted	Unlisted	LC
Ephippiorhynchus senegalensis	Stork, Saddle-billed	EN	LC
Eremomela icteropygialis	Eremomela, Yellow-bellied	Unlisted	LC
Eremomela usticollis	Eremomela, Burnt-necked	Unlisted	LC
Eremopterix leucotis	Sparrowlark, Chestnut-backed	Unlisted	LC
Estrilda astrild	Waxbill, Common	Unlisted	LC
Estrilda erythronotos	Waxbill, Black-faced	Unlisted	LC
Euplectes afer	Bishop, Yellow-crowned	Unlisted	LC
Euplectes albonotatus	Widowbird, White-winged	Unlisted	LC
Euplectes ardens	Widowbird, Red-collared	Unlisted	LC
Euplectes axillaris	Widowbird, Fan-tailed	Unlisted	LC
Euplectes capensis	Bishop, Yellow	Unlisted	LC
Euplectes orix	Bishop, Southern Red	Unlisted	LC
Euplectes progne	Widowbird, Long-tailed	Unlisted	LC
Eupodotis senegalensis	Korhaan, White-bellied	VU	LC
Falco amurensis	Falcon, Amur	Unlisted	LC
Falco biarmicus	Falcon, Lanner	VU	LC
Falco naumanni	Kestrel, Lesser	Unlisted	LC
Falco peregrinus	Falcon, Peregrine	Unlisted	LC
Falco rupicoloides	Kestrel, Greater	Unlisted	LC
Falco rupicolus	Kestrel, Rock	Unlisted	LC
Falco subbuteo	Hobby, Eurasian	Unlisted	LC
Falco vespertinus	Falcon, Red-footed	NT	NT
Fulica cristata	Coot, Red-knobbed	Unlisted	LC
Gallinago nigripennis	Snipe, African	Unlisted	LC
Gallinula angulata	Moorhen, Lesser	Unlisted	LC
Gallinula chloropus	Moorhen, Common	Unlisted	LC
Geronticus calvus	Ibis, Southern Bald	VU	VU
Glareola nordmanni	Pratincole, Black-winged	NT	NT
Glaucidium perlatum	Owlet, Pearl-spotted	Unlisted	LC
Granatina	Waxbill, Violet-eared	Unlisted	LC
Gyps africanus	Vulture, White-backed	CR	CR
Gyps coprotheres	Vulture, Cape	EN	EN
Halcyon albiventris	Kingfisher, Brown-hooded	Unlisted	LC
Halcyon chelicuti	Kingfisher, Striped	Unlisted	LC
Halcyon senegalensis	Kingfisher, Woodland	Unlisted	LC
Haliaeetus vocifer	Fish-eagle, African	Unlisted	LC
Himantopus	Stilt, Black-winged	Unlisted	LC
Hippolais icterina	Warbler, Icterine	Unlisted	LC
Hirundo abyssinica	Swallow, Lesser Striped	Unlisted	LC
Hirundo albigularis	Swallow, White-throated	Unlisted	LC
Hirundo cucullata	Swallow, Greater Striped	Unlisted	LC
Hirundo dimidiata	Swallow, Pearl-breasted	Unlisted	LC
Hirundo fuligula	Martin, Rock	Unlisted	Unlisted
Hirundo rustica	Swallow, Barn	Unlisted	LC

Hirundo semirufa	Swallow, Red-breasted	Unlisted	LC
Hirundo spilodera	Cliff-swallow, South African	Unlisted	LC
Indicator	Honeyguide, Greater	Unlisted	LC
Indicator minor	Honeyguide, Lesser	Unlisted	LC
Ixobrychus minutus	Bittern, Little	Unlisted	LC
Ixobrychus sturmii	Bittern, Dwarf	Unlisted	LC
Jynx ruficollis	Wryneck, Red-throated	Unlisted	LC
Kaupifalco monogrammicus	Buzzard, Lizard	Unlisted	LC
Lagonosticta rhodopareia	Firefinch, Jameson's	Unlisted	LC
Lagonosticta rubricata	Firefinch, African	Unlisted	LC
Lagonosticta senegala	Firefinch, Red-billed	Unlisted	LC
Lamprotornis nitens	Starling, Cape Glossy	Unlisted	LC
Laniarius atrococcineus	Shrike, Crimson-breasted	Unlisted	LC
Laniarius ferrugineus	Boubou, Southern	Unlisted	LC
Lanius collaris	Fiscal, Common (Southern)	Unlisted	LC
Lanius collurio	Shrike, Red-backed	Unlisted	LC
Lanius minor	Shrike, Lesser Grey	Unlisted	LC
Larus cirrocephalus	Gull, Grey-headed	Unlisted	LC
Larus fuscus	Gull, Lesser Black-backed	Unlisted	LC
Larus heuglini	Gull, Heuglin's	Unlisted	LC
Larus pipixcan	Gull, Franklin's	Unlisted	LC
Leptoptilos crumeniferus	Stork, Marabou	Unlisted	LC
Limosa lapponica	Godwit, Bar-tailed	LC	NT
Limosa	Godwit, Black-tailed	NT	NT
Locustella fluviatilis	Warbler, River	Unlisted	LC
Lophaetus occipitalis	Eagle, Long-crested	Unlisted	LC
Lophotis ruficrista	Korhaan, Red-crested	Unlisted	LC
Lybius torquatus	Barbet, Black-collared	Unlisted	LC
Macronyx capensis	Longclaw, Cape	Unlisted	LC
Malaconotus blanchoti	Bush-shrike, Grey-headed	Unlisted	LC
Megaceryle maximus	Kingfisher, Giant	Unlisted	Unlisted
Melaenornis pammelaina	Flycatcher, Southern Black	Unlisted	LC
Melierax canorus	Goshawk, Southern Pale Chanting	Unlisted	LC
Melierax gabar	Goshawk, Gabar	Unlisted	LC
Merops apiaster	Bee-eater, European	Unlisted	LC
Merops bullockoides	Bee-eater, White-fronted	Unlisted	LC
Merops persicus	Bee-eater, Blue-cheeked	Unlisted	LC
Merops pusillus	Bee-eater, Little	Unlisted	LC
Milvus aegyptius	Kite, Yellow-billed	Unlisted	Unlisted
Milvus migrans	Kite, Black	Unlisted	LC
Milvus migrans	Kite, Black	Unlisted	LC
Mirafra africana	Lark, Rufous-naped	Unlisted	LC
Mirafra apiata	Lark, Cape Clapper	Unlisted	LC
Mirafra cheniana	Lark, Melodious	LC	LC
Mirafra fasciolata	Lark, Eastern Clapper	Unlisted	LC
Mirafra marjoriae	Lark, Agulhas Clapper	Unlisted	Unlisted

Mirafra passerina	Lark, Monotonous	Unlisted	LC
Mirafra rufocinnamomea	Lark, Flappet	Unlisted	LC
Monticola brevipes	Rock-thrush, Short-toed	Unlisted	LC
Monticola explorator	Rock-thrush, Sentinel	Unlisted	LC
Monticola rupestris	Rock-thrush, Cape	Unlisted	LC
Motacilla aguimp	Wagtail, African Pied	Unlisted	LC
Motacilla capensis	Wagtail, Cape	Unlisted	LC
Motacilla flava	Wagtail, Western Yellow	Unlisted	LC
Muscicapa striata	Flycatcher, Spotted	Unlisted	LC
Mycteria ibis	Stork, Yellow-billed	EN	LC
Myioparus plumbeus	Tit-flycatcher, Grey	Unlisted	LC
Myrmecocichla formicivora	Chat, Anteating	Unlisted	LC
Nectarinia famosa	Sunbird, Malachite	Unlisted	LC
Netta erythrophthalma	Pochard, Southern	Unlisted	LC
Nilaus afer	Brubru	Unlisted	LC
Numida meleagris	Guineafowl, Helmeted	Unlisted	LC
Nycticorax	Night-Heron, Black-crowned	Unlisted	LC
Oena capensis	Dove, Namaqua	Unlisted	LC
Oenanthe monticola	Wheatear, Mountain	Unlisted	LC
Oenanthe pileata	Wheatear, Capped	Unlisted	LC
Onychognathus morio	Starling, Red-winged	Unlisted	LC
Oriolus larvatus	Oriole, Black-headed	Unlisted	LC
Oriolus	Oriole, Eurasian Golden	Unlisted	LC
Ortygospiza atricollis	Quailfinch, African	Unlisted	LC
Otus senegalensis	Scops-owl, African	Unlisted	LC
Oxyura maccoa	Duck, Maccoa	NT	NT
Pandion haliaetus	Osprey, Osprey	Unlisted	LC
Parisoma subcaeruleum	Tit-babbler, Chestnut-vented	Unlisted	Unlisted
Parus cinerascens	Tit, Ashy	Unlisted	LC
Parus niger	Tit, Southern Black	Unlisted	Unlisted
Passer diffusus	Sparrow, Southern Grey-headed	Unlisted	LC
Passer domesticus	Sparrow, House	Unlisted	LC
Passer griseus	Sparrow, Northern Grey-headed	Unlisted	LC
Passer melanurus	Sparrow, Cape	Unlisted	LC
Passer motitensis	Sparrow, Great	Unlisted	LC
Pavo cristatus	Peacock, Common	Unlisted	LC
Peliperdix coqui	Francolin, Coqui	Unlisted	LC
Pernis apivorus	Honey-buzzard, European	Unlisted	LC
Petronia superciliaris	Petronia, Yellow-throated	Unlisted	LC
Phalacrocorax africanus	Cormorant, Reed	Unlisted	LC
Phalacrocorax carbo	Cormorant, White-breasted	LC	LC
Phalaropus fulicaria	Phalarope, Red	Unlisted	Unlisted
Philomachus pugnax	Ruff	Unlisted	LC
Phoenicopterus minor	Flamingo, Lesser	NT	NT
Phoenicopterus ruber	Flamingo, Greater	NT	LC
Phoeniculus purpureus	Wood-hoopoe, Green	Unlisted	LC

Phylloscopus trochilus	Warbler, Willow	Unlisted	LC
Platalea alba	Spoonbill, African	Unlisted	LC
Plectropterus gambensis	Goose, Spur-winged	Unlisted	LC
Plegadis falcinellus	Ibis, Glossy	Unlisted	LC
Plocepasser mahali	Sparrow-weaver, White-browed	Unlisted	LC
Ploceus capensis	Weaver, Cape	Unlisted	LC
Ploceus cucullatus	Weaver, Village	Unlisted	LC
Ploceus intermedius	Masked-weaver, Lesser	Unlisted	LC
Ploceus velatus	Southern Masked-weaver, Southern	Unlisted	LC
Podica senegalensis	Finfoot, African	VU	LC
Podiceps cristatus	Grebe, Great Crested	Unlisted	LC
Podiceps nigricollis	Grebe, Black-necked	Unlisted	LC
Pogoniulus chrysoconus	Tinkerbird, Yellow-fronted	Unlisted	LC
Poicephalus meyeri	Parrot, Meyer's	Unlisted	LC
Polemaetus bellicosus	Eagle, Martial	EN	VU
Polyboroides typus	Harrier-Hawk, African	Unlisted	LC
Porphyrio madagascariensis	Swamphen, African Purple	Unlisted	Unlisted
Porzana	Crake, Spotted	Unlisted	LC
Prinia flavicans	Prinia, Black-chested	Unlisted	LC
Prinia subflava	Prinia, Tawny-flanked	Unlisted	LC
Prionops plumatus	Helmet-shrike, White-crested	Unlisted	LC
Prodotiscus regulus	Honeybird, Brown-backed	Unlisted	LC
Psittacula krameri	Parakeet, Rose-ringed	Unlisted	LC
Psophocichla litsipsirupa	Thrush, Groundscraper	Unlisted	Unlisted
Pternistis natalensis	Spurfowl, Natal	Unlisted	LC
Pternistis swainsonii	Spurfowl, Swainson's	Unlisted	LC
Pterocles gutturalis	Sandgrouse, Yellow-throated	NT	LC
Ptilopsis granti	Scops-owl, Southern White-faced	Unlisted	Unlisted
Pycnonotus nigricans	Bulbul, African Red-eyed	Unlisted	LC
Pycnonotus tricolor	Bulbul, Dark-capped	Unlisted	Unlisted
Pytilia melba	Pytilia, Green-winged	Unlisted	LC
Quelea	Quelea, Red-billed	Unlisted	LC
Rallus caerulescens	Rail, African	Unlisted	LC
Recurvirostra avosetta	Avocet, Pied	Unlisted	LC
Rhinopomastus cyanomelas	Scimitarbill, Common	Unlisted	LC
Riparia cincta	Martin, Banded	Unlisted	LC
Riparia paludicola	Martin, Brown-throated	Unlisted	LC
Riparia	Martin, Sand	Unlisted	LC
Rostratula benghalensis	Painted-snipe, Greater	NT	LC
Sagittarius serpentarius	Secretarybird	VU	VU
Sarkidiornis melanotos	Duck, Comb	Unlisted	LC
Sarothrura elegans	Flufftail, Buff-spotted	Unlisted	LC
Sarothrura rufa	Flufftail, Red-chested	Unlisted	LC
Saxicola torquatus	Stonechat, African	Unlisted	LC
Scleroptila levaillantii	Francolin, Red-winged	Unlisted	LC
Scleroptila levaillantoides	Francolin, Orange River	Unlisted	LC

Scleroptila shelleyi	Francolin, Shelley's	Unlisted	LC
Scopus umbretta	Hamerkop, Hamerkop	Unlisted	LC
Serinus canicollis	Canary, Cape	Unlisted	LC
Sigelus silens	Flycatcher, Fiscal	Unlisted	LC
Spermestes cucullatus	Mannikin, Bronze	Unlisted	Unlisted
Sphenoeacus afer	Grassbird, Cape	Unlisted	LC
Spizocorys conirostris	Lark, Pink-billed	Unlisted	LC
Sporopipes squamifrons	Finch, Scaly-feathered	Unlisted	LC
Spreo bicolor	Starling, Pied	Unlisted	LC
Stenostira scita	Flycatcher, Fairy	Unlisted	LC
Sterna caspia	Tern, Caspian	VU	LC
Streptopelia capicola	Turtle-dove, Cape	Unlisted	LC
Streptopelia semitorquata	Dove, Red-eyed	Unlisted	LC
Streptopelia senegalensis	Dove, Laughing	Unlisted	LC
Struthio camelus	Ostrich, Common	Unlisted	LC
Sturnus vulgaris	Starling, Common	Unlisted	LC
Sylvia borin	Warbler, Garden	Unlisted	LC
Sylvia communis	Whitethroat, Common	Unlisted	LC
Sylvietta rufescens	Crombec, Long-billed	Unlisted	LC
Tachybaptus ruficollis	Grebe, Little	Unlisted	LC
Tachymarptis melba	Swift, Alpine	Unlisted	LC
Tadorna cana	Shelduck, South African	Unlisted	LC
Tchagra australis	Tchagra, Brown-crowned	Unlisted	LC
Tchagra senegalus	Tchagra, Black-crowned	Unlisted	LC
Telophorus sulfureopectus	Bush-shrike, Orange-breasted	Unlisted	LC
Telophorus zeylonus	Bokmakierie, Bokmakierie	Unlisted	LC
Terpsiphone viridis	Paradise-flycatcher, African	Unlisted	LC
Thalassornis leuconotus	Duck, White-backed	Unlisted	LC
Thamnolaea cinnamomeiventris	Cliff-chat, Mocking	Unlisted	LC
Threskiornis aethiopicus	Ibis, African Sacred	Unlisted	LC
Tockus erythrorhynchus	Hornbill, Red-billed	Unlisted	LC
Tockus leucomelas	Hornbill, Southern Yellow-billed	Unlisted	LC
Tockus nasutus	Hornbill, African Grey	Unlisted	LC
Trachyphonus vaillantii	Barbet, Crested	Unlisted	LC
Treron calvus	Green-pigeon, African	Unlisted	LC
Tricholaema leucomelas	Barbet, Acacia Pied	Unlisted	LC
Tringa glareola	Sandpiper, Wood	Unlisted	LC
Tringa nebularia	Greenshank, Common	Unlisted	LC
Tringa ochropus	Sandpiper, Green	Unlisted	LC
Tringa stagnatilis	Sandpiper, Marsh	Unlisted	LC
Turdoides bicolor	Babbler, Southern Pied	Unlisted	LC
Turdoides jardineii	Babbler, Arrow-marked	Unlisted	LC
Turdus libonyanus	Thrush, Kurrichane	Unlisted	Unlisted
Turdus olivaceus	Thrush, Olive	Unlisted	LC
Turdus smithi	Thrush, Karoo	Unlisted	LC
Turnix sylvaticus	Buttonquail, Kurrichane	Unlisted	LC

Turtur chalcospilos	Wood-dove, Emerald-spotted	Unlisted	LC
Tyto alba	Owl, Barn	Unlisted	LC
Tyto capensis	Grass-owl, African	VU	LC
Upupa africana	Hoopoe, African	Unlisted	LC
Uraeginthus angolensis	Waxbill, Blue	Unlisted	LC
Urocolius indicus	Mousebird, Red-faced	Unlisted	LC
Urolestes melanoleucus	Shrike, Magpie	Unlisted	LC
Vanellus armatus	Lapwing, Blacksmith	Unlisted	LC
Vanellus coronatus	Lapwing, Crowned	Unlisted	LC
Vanellus senegallus	Lapwing, African Wattled	Unlisted	LC
Vidua chalybeata	Indigobird, Village	Unlisted	LC
Vidua funerea	Indigobird, Dusky	Unlisted	LC
Vidua macroura	Whydah, Pin-tailed	Unlisted	LC
Vidua paradisaea	Paradise-whydah, Long-tailed	Unlisted	LC
Vidua purpurascens	Indigobird, Purple	Unlisted	LC
Vidua regia	Whydah, Shaft-tailed	Unlisted	LC
Zosterops pallidus	White-eye, Orange River	Unlisted	LC
Zosterops virens	White-eye, Cape	Unlisted	LC

APPENDIX C: *Mammals species expected to occur in the project area*

Species	Common Name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Aethomys ineptus	Tete Veld Rat	LC	LC
Aethomys namaquensis	Namaqua Rock Rat	LC	LC
Alcelaphus buselaphus	Hartebeest	LC	LC
Antidorcas marsupialis	Sclater's Shrew	LC	LC
Aonyx capensis	Cape Clawless Otter	NT	NT
Atelerix frontalis	South Africa Hedgehog	NT	NT
Atilax paludinosus	Water Mongoose	LC	LC
Canis mesomelas	Black-backed Jackal	LC	LC
Caracal	Caracal	LC	LC
Ceratotherium simum	White Rhinoceros	NT	NT
Connochaetes gnou	Black Wildebeest	LC	LC
Connochaetes taurinus	Blue Wildebeest	LC	LC
Crocidura cyanea	Reddish-grey Musk Shrew	LC	LC
Crocidura maquassiensis	Makwassie musk shrew	VU	VU
Crocidura mariquensis	Swamp Musk Shrew	NT	NT
Crocidura silacea	Lesser Grey-brown Musk Shrew	LC	LC
Cryptomys hottentotus	Common Mole-rat	LC	LC
Cynictis penicillata	Yellow Mongoose	LC	LC
Damaliscus pygargus	Blesbok	LC	LC
Dasymys incomtus	African Marsh Rat	NT	NT
Dendromus melanotis	Grey Climbing Mouse	LC	LC
Desmodillus auricularis	Short-tailed Gerbil	LC	LC
Diceros bicornis	Black Rhinoceros	EN	EN
Eidolon helvum	African Straw-colored Fruit Bat	LC	LC
Elephantulus brachyrhynchus	Short-snouted Sengi	LC	LC
Elephantulus myurus	Eastern Rock Sengi	LC	LC
Epomophorus wahlbergi	Wahlberg's epauletted fruit bat	LC	LC
Eptesicus hottentotus	Long-tailed Serotine Bat	LC	LC
Equus quagga	Plains Zebra	LC	LC
Felis nigripes	Black-footed Cat	VU	VU
Felis silvestris	African Wildcat	LC	LC
Genetta	Small-spotted Genet	LC	LC
Gerbilliscus brantsii	Highveld Gerbil	LC	LC
Gerbilliscus leucogaster	Bushveld Gerbil	LC	LC
Graphiurus platyops	Rock Dormouse	LC	LC
Herpestes sanguineus	Slender Mongoose	LC	LC
Hydrictis maculicollis	Spotted-necked Otter	VU	VU
Hystrix africaeaustralis	Cape Porcupine	LC	LC
Ichneumia albicauda	White-tailed Mongoose	LC	LC
Ictonyx striatus	Striped Polecat	LC	LC
Kerivoula lanosa	Lesser Woolly Bat	LC	LC
Leptailurus serval	Serval	NT	NT
Lepus saxatilis	Scrub Hare	LC	LC

Lepus victoriae	African Savanna Hare	LC	LC
Mastomys coucha	Multimammate Mouse	LC	LC
Mellivora capensis	Honey Badger	LC	LC
Mungos mungo	Banded Mongoose	LC	LC
Myotis tricolor	Temminck's Hairy Bat	LC	LC
Myotis welwitschii	Welwitsch's Hairy Bat	LC	LC
Mystromys albicaudatus	White-tailed Rat	VU	VU
Neoromicia capensis	Cape Serotine Bat	LC	LC
Neoromicia nana	Banana Bat	LC	LC
Neoromicia zuluensis	Aloe Bat	LC	LC
Nycteris thebaica	Egyptian Slit-faced Bat	LC	LC
Orycteropus afer	Aardvark	LC	LC
Otomys angoniensis	Angoni Vlei Rat	LC	LC
Otomys irroratus	Vlei Rat (Fynbos type)	LC	LC
Ourebia ourebi	Oribi	EN	EN
Panthera pardus	Leopard	VU	VU
Papio ursinus	Chacma Baboon	LC	LC
Parahyaena brunnea	Brown Hyaena	NT	NT
Pedetes capensis	Springhare	LC	LC
Pelea capreolus	Grey Rhebok	NT	NT
Phacochoerus africanus	Common Warthog	LC	LC
Poecilogale albinucha	African Striped Weasel	NT	NT
Procavia capensis	Rock Hyrax	LC	LC
Pronolagus randensis	Jameson's Red Rock Rabbit	LC	LC
Proteles cristata	Aardwolf	LC	LC
Raphicerus campestris	Steenbok	LC	LC
Rattus	House Rat	Exotic (Not listed)	Exotic (Not listed)
Redunca fulvorufula	Mountain Reedbuck	EN	EN
Rhabdomys pumilio	Xeric Four-striped Mouse	LC	LC
Rhinolophus blasii	Blasius's horseshoe bat	NT	NT
Rhinolophus clivosus	Geoffroy's Horseshoe Bat	LC	LC
Rhinolophus darlingi	Darling's Horseshoe Bat	LC	LC
Rhinolophus simulator	Bushveld Horseshoe Bat	LC	LC
Saccostomus campestris	Pouched Mouse	LC	LC
Sauromys petrophilus	Flat-headed Free-tail Bat	LC	LC
Scotophilus dinganii	Yellow House Bat	LC	LC
Steatomys krebsii	Krebs's Fat Mouse	LC	LC
Steatomys pratensis	Fat Mouse	LC	LC
Suncus varilla	Lesser Dwarf Shrew	LC	LC
Suricata suricatta	Suricate	LC	LC
Sylvicapra grimmia	Common Duiker	LC	LC
Syncerus caffer	African Buffalo	LC	LC
Tadarida aegyptiaca	Egyptian Free-tailed Bat	LC	LC
Taphozous mauritianus	Mauritian Tomb Bat	LC	LC
Thallomys paedulcus	Tree Rat	LC	LC
Tragelaphus oryx	Common Eland	LC	LC

Tragelaphus scriptus	Cape Bushbuck	LC	LC
Vulpes chama	Cape Fox	LC	LC

APPENDIX D: *Reptile species expected to occur within the project area*

Species	Common Name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Acanthocercus atricollis	Southern Tree Agama	LC	LC
Acontias gracilicauda	Thin-tailed Legless Skink	LC	LC
Afroedura nivaria	Drankensberg Flat Gecko	LC	LC
Afrotyphlops bibronii	Bibron's Blind Snake	LC	LC
Agama aculeata distanti	Eastern Ground Agama	LC	LC
Agama atra	Southern Rock Agama	LC	LC
Amblyodipsas polylepis	Purple Gloss Snake	Unlisted	Unlisted
Aparallactus capensis	Black-headed Centipede-eater	LC	LC
Atractaspis bibronii	Bibron's Stiletto Snake	LC	Unlisted
Bitis arietans	Puff Adder	LC	Unlisted
Boaedon capensis	Brown House Snake	LC	LC
Causus rhombeatus	Rhombic Night Adder	LC	LC
Chamaeleo dilepis	Common Flap-neck Chameleon	LC	LC
Chamaesaura aenea	Coppery Grass Lizard	NT	NT
Chondrodactylus turneri	Turner's Gecko	LC	Unlisted
Cordylus jonesii	Jones' Girdled Lizard	LC	Unlisted
Cordylus vittifer	Common Girdled Lizard	LC	LC
Crocodylus niloticus	Nile Crocodile	VU	LC
Crotaphopeltis hotamboeia	Red-lipped Snake	LC	Unlisted
Dasypeltis scabra	Rhombic Egg-eater	LC	LC
Dendroaspis polylepis	Black Mamba	LC	LC
Dispholidus typus	Boomslang	LC	Unlisted
Elapsoidea sundevallii	Sundevall's Garter Snake	LC	Unlisted
Gerrhosaurus flavigularis	Yellow-throated Plated Lizard	LC	Unlisted
Gracililima nyassae	Black File Snake	LC	LC
Hemachatus haemachatus	Rinkhals	LC	LC
Hemidactylus mabouia	Common Tropical House Gecko	LC	Unlisted
Homoroselaps dorsalis	Striped Harlequin Snake	NT	LC
Homoroselaps lacteus	Spotted Harlequin Snake	LC	LC
Ichnotropis capensis	Ornate Rough-scaled Lizard	LC	Unlisted
Kinixys lobatsiana	Lobatse hinged-back Tortoise	LC	LC
Kinixys spekii	Speke's Hinged-Back Tortoise	LC	Unlisted
Lamprophis aurora	Aurora House Snake	LC	LC
Leptotyphlops scutifrons	Peters' Thread Snake	LC	Unlisted
Limaformosa capensis	Common File Snake	LC	Unlisted
Lycodonomorphus inornatus	Olive House Snake	LC	LC
Lycodonomorphus rufulus	Brown Water Snake	LC	Unlisted
Lycophidion capense	Cape Wolf Snake	LC	Unlisted
Lygodactylus capensis	Common Dwarf Gecko	LC	Unlisted
Lygodactylus nigropunctatus	Cryptic Dwarf Gecko	DD	DD
Lygodactylus ocellatus	Spotted Dwarf Gecko	LC	LC
Meroles squamulosus	Common Rough-scaled Lizard	LC	Unlisted
Mochlus sundevallii	Sundevall's Writhing Skink	LC	LC

Naja annulifera	Snouted Cobra	LC	Unlisted
Naja mossambica	Mozambique Spitting Cobra	LC	Unlisted
Nucras holubi	Holub's Sandveld Lizard	LC	Unlisted
Nucras intertexta	Spotted Sandveld Lizard	LC	Unlisted
Nucras ornata	Ornate Sandveld Lizard	LC	Unlisted
Pachydactylus affinis	Transvaal Gecko	LC	LC
Pachydactylus capensis	Cape Gecko	LC	Unlisted
Panaspis wahlbergi	Wahlberg's Snake-eyed Skink	LC	Unlisted
Pedioplanis lineoocellata	Spotted Sand Lizard	LC	Unlisted
Pelomedusa galeata	South African Marsh Terrapin	Not evaluated	Unlisted
Pelomedusa subrufa	Central Marsh Terrapin	LC	Unlisted
Pelusios sinuatus	Serrated Hinged Terrapin	LC	Unlisted
Philothamnus hoplogaster	South Eastern Green Snake	LC	Unlisted
Philothamnus occidentalis	Western Natal Green Snake	Unlisted	Unlisted
Philothamnus semivariegatus	Spotted Bush Snake	LC	Unlisted
Prosymna ambigua	Angolan Shovel-snout	Unlisted	LC
Prosymna bivittata	Two-Striped Shovel-Snout	LC	Unlisted
Prosymna sundevallii	Sundevall's Shovel-snout	LC	LC
Psammophis angolensis	Dwarf Sand Snake	LC	Unlisted
Psammophis brevirostris	Short-snouted Grass Snake	LC	Unlisted
Psammophis orientalis	Eastern Stripe-bellied Sand Snake	Unlisted	Unlisted
Psammophis subtaeniatus	Stripe-bellied Sand Snake	LC	LC
Psammophis trinasalis	Fork-marked Sand Snake	LC	Unlisted
Psammophylax rhombeatus	Spotted Grass Snake	LC	Unlisted
Psammophylax tritaeniatus	Striped Grass Snake	LC	LC
Pseudaspis cana	Mole Snake	LC	Unlisted
Python natalensis	Southern African Python	LC	Unlisted
Rhinotyphlops lalandei	Delalande's Beaked Blind Snake	LC	Unlisted
Smaug vandami	Van Dam's Dragon Lizard	LC	LC
Stigmochelys pardalis	Leopard Tortoise	LC	LC
Telescopus semiannulatus	Eastern Tiger Snake	LC	Unlisted
Thelotornis capensis	Southern Twig Snake	LC	LC
Trachylepis capensis	Cape Skink	LC	Unlisted
Trachylepis margaritifera	Rainbow Skink	LC	LC
Trachylepis punctatissima	Speckled Rock Skink	LC	LC
Trachylepis varia	Variable Skink	LC	LC
Varanus albigularis	Southern Rock Monitor	LC	Unlisted
Varanus niloticus	Water Monitor	LC	Unlisted

APPENDIX E: *Amphibian species expected to occur within the project area*

Species	Common Name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Amietia angolensis	Angola River Frog	LC	LC
Amietia delalandii	Delalande's River Frog	LC	Unlisted
Amietia fuscigula	Cape River Frog	LC	LC
Amietia poyntoni	Poynton's River Frog	LC	LC
Breviceps adspersus	Bushveld Rain Frog	LC	LC
Cacosternum boettgeri	Common Caco	LC	LC
Hemisus marmoratus	Mottled Shovel-nosed Frog	LC	LC
Hyperolius marmoratus	Painted Reed Frog	LC	LC
Kassina senegalensis	Bubbling Kassina	LC	LC
Phrynobatrachus natalensis	Snoring Puddle Frog	LC	LC
Phrynomantis bifasciatus	Banded Rubber Frog	LC	LC
Poyntonophrynus fenoulheti	Northern Pygmy Toad	LC	LC
Poyntonophrynus vertebralis	Southern Pygmy Toad	LC	LC
Ptychadena anchietae	Plain Grass Frog	LC	LC
Ptychadena mossambica	Mozambique Ridged Frog	LC	LC
Ptychadena porosissima	Striped Grass Frog	LC	LC
Pyxicephalus adspersus	Giant Bullfrog	NT	LC
Pyxicephalus edulis	African Bullfrog	LC	LC
Schismaderma carens	African Red Toad	LC	LC
Sclerophrys capensis	Raucous Toad	LC	LC
Sclerophrys garmani	Olive Toad	LC	LC
Sclerophrys gutturalis	Guttural Toad	LC	LC
Sclerophrys poweri	Power's Toad	LC	LC
Sclerophrys pusilla	Flatbacked Toad	LC	LC
Semnodactylus wealii	Rattling Frog	LC	LC
Strongylopus fasciatus	Striped Stream Frog	LC	LC
Strongylopus grayii	Clicking Stream Frog	LC	LC
Tomopterna cryptotis	Tremelo Sand Frog	LC	LC
Tomopterna natalensis	Natal Sand Frog	LC	LC
Tomopterna tandyi	Tandy's Sand Frog	LC	LC
Xenopus laevis	Common Platanna	LC	LC