Biodiversity Assessment Polokwane Smelter

Limpopo Province

May 2017

REFERENCE

Polokwane

CLIENT

WSP

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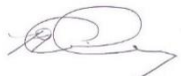
Report Name	**Biodiversity Assessment Polokwane Smelter**	
Reference	**Polokwane**	
Submitted to	**WSP**	
Report writer	**Peter Kimberg**	
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EXECUTIVE SUMMARY

The Biodiversity Company (TBC) was appointed by WSP | Parsons Brinckerhoff to conduct a baseline biodiversity (fauna & flora) assessment as part of the Appendix 6 Level Environmental Impact Assessment (EIA), in the Limpopo Province.

The assessment focussed on the proposed SO_2 Abatement Project, specifically the proposed site and the various road options. The biodiversity related field surveys were conducted on the 24th and 25th of April 2017.

This report, after taking into consideration the findings and recommendation 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 project.

The following conclusions were reached based on the results of this assessment:

- The Polokwane Smelter site is situated in the midst of the Polokwane Plateau Bushveld (SVcb23) vegetation community. The conservation status of this vegetation community was listed by Mucina & Rutherford (2006) as Least Concern (LC);
- A list of plant species of conservation concern was compiled based on the POSA database. Two (2) plant species of conservation concern are expected to occur within QDS 2429AB. The likelihood of occurrence of these plant species in the project area or its immediate vicinity was assessed based on their known habitat preferences and found to be moderate;
- The proposed development is unlikely to impact on any Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs);
- The project area is situated in an environment which is listed as Least Concern (LC) in terms of threat and poorly protected in terms of protection level;
- The most significant anthropogenic impacts identified on site included:
    - Loss of habitat due to the activities at the Smelter;
    - Habitat fragmentation;
    - Dumping of slag and tailings; and
    - The presence of alien invasive plant species;
- The importance and sensitivity of the plant communities associated with the proposed SO_2 Abatement Plant site and road construction was regarded as low due to the absence of plant species of conservation concern, the high degree of anthropogenic disturbance and the prevalence of alien invasive plant species;
- The vegetation community on the farm site was found to be more diverse and intact than that of the SO_2 Abatement Plant site. Although signs of past overgrazing weres prevalent in this area, erosion seems to be limited and given good veldt management practises this area should recover;

- Four (4) category 1b alien invasive plant species were recorded on the site and must therefore be removed by implementing an alien invasive plant management programme in compliance of section 75 of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA);
- The observed bird community included 1 Endangered (EN) bird species namely *Gyps coprotheres* (Cape vulture);
- The faunal diversity of the SO_2 Abatement Plant site was found to be very low. This was attributed to the disturbed nature of the site. The faunal diversity of the farm site was found to be far higher and included the NT mammal species *Parahyaena brunnea* (Brown hyaena);
- Despite the degree of disturbance of the vegetation community on the site the likelihood of occurrence of plant species of conservation concern remains moderate and the significance of potential impacts was rated as moderately significant prior to mitigation. Implementation of the recommended mitigation measures reduced the significance of the impact to low; and
- Construction related impacts on fauna were rated as having a high significance due to the confirmed presence of species of conservation concern. Implementation of the recommended mitigation measures reduced the significance of the impact to low.

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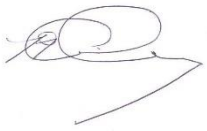
DECLARATION

I, Peter Karl Kimberg 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.



Peter Kimberg

B. Sc. Honours Zoology

The Biodiversity Company

9th May 2017

1 INTRODUCTION

The Biodiversity Company (TBC) was appointed by WSP | Parsons Brinckerhoff to conduct a baseline biodiversity (fauna & flora) assessment as part of the Appendix 6 Level Environmental Impact Assessment (EIA), in the Limpopo Province.

The assessment focussed on the proposed SO_2 Abatement Project, specifically the proposed site and the various road options. The biodiversity related field surveys were conducted on the 24th and 25th of April 2017. The field survey focussed on 2 areas, namely the proposed SO_2 Abatement Plant site immediately adjacent to the smelter, as well as the nearby farm area in order to obtain an idea of regional occurrence of fauna and flora in more undisturbed areas slightly further away from the smelter.

This report, after taking into consideration the findings and recommendation 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 project.

1.1 Terms of Reference

The aim of the study was to undertake and compile a biodiversity baseline and impact assessment for the proposed development.

This biodiversity assessment was informed by the Limpopo Conservation Plan, Version 2 (Desmet *et al*., 2013).

2 LIMITATIONS

The following limitation should be noted for the study:

- Due to the disturbed nature of the site, the limited project footprint and time constraints, intensive sampling and trapping was not implemented for this study. Despite this, the confidence of the findings is high due to the status of the project area, the extent of area ground truthed for the study and the information available to supplement the study; and
- The extent of habitat units that will be directly affected by the proposed project was ground truthed.

3 KEY LEGISLATIVE REQUIREMENTS

The following legal framework and requirements apply to the study:

- 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; and
- Limpopo Conservation Plan, Version 2 (Desmet *et al*., 2013).

4 PROJECT AREA

The Polokane Smelter is situated in the Limpopo Province approximately 15 km south of Polokwane. The proposed development consists of an SO_2 Abatement Project site as well as 3 road options (Figure 1).

The area to be cleared is approximately 13.2 hectares in size, of which a portion has already been converted and most is heavily disturbed (Figure 1).

The proposed road options include the following:

- Prefered road option: approximately 700 m and passing to the south of the existing return water dam and linking to the Kopermyn road;
- Road alternative 1: approximately 780 m and passing between the exisiting return water dam and linking to the Kopermyn road; and
- Road alternative 2: approximately 1.5 km in length, mostly along an exisiting road situated between the Polokwane Smelter and the existing slag dump and linking to the R37 road.

The site is situated in the Northern Plateau ecoregion, the Limpopo Water Management Area (WMA_01) and the Savanna Biome. The site is situated within Quarter Degree Square (QDS) 2429AB.

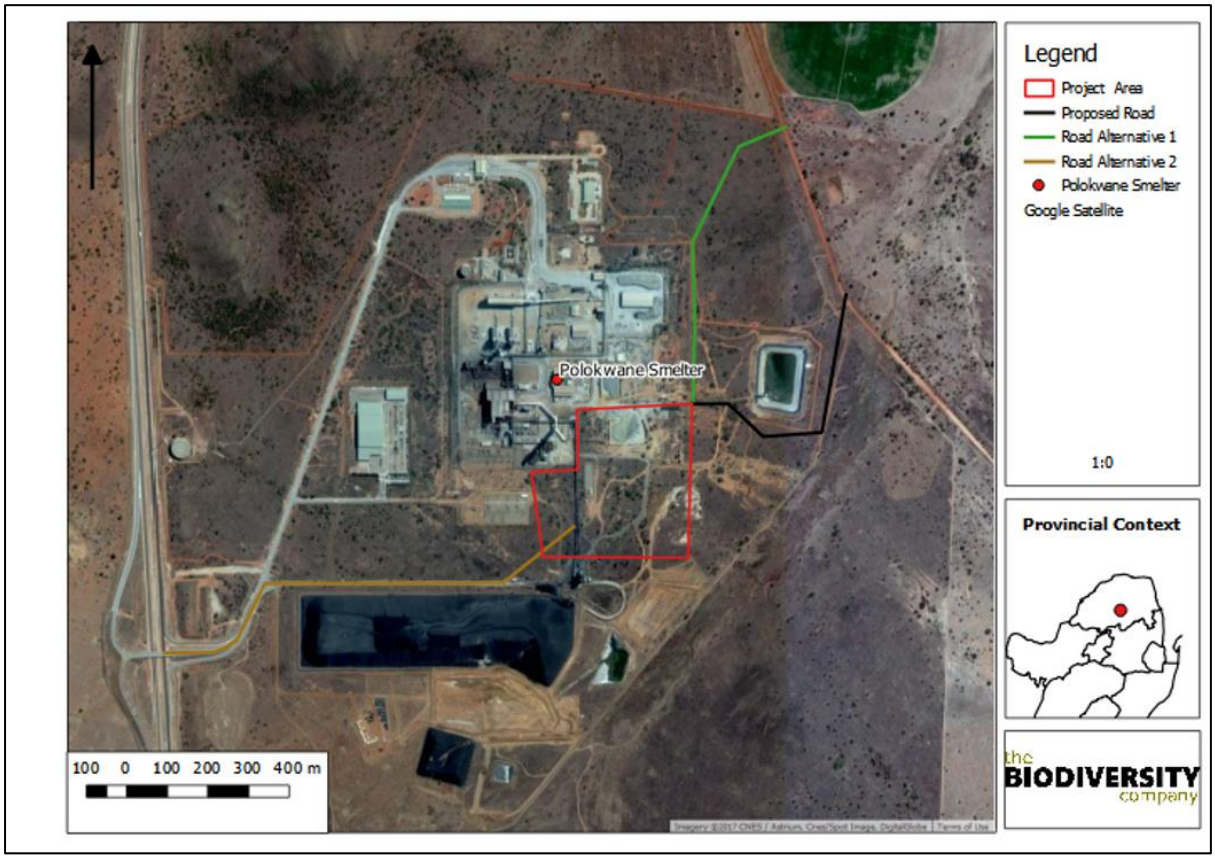


Figure 1: The location of the proposed SO_2 Abatement Plant site and proposed road alternatives at Polokwane smelter

4.1 Limpopo Conservation Plan, Version 2 (LCPv2)

The Limpopo Conservation Plan, Version 2 (LCPv2), was completed in 2013 for the Limpopo Department of Economic Development, Environment & Tourism (LEDET) (Desmet *et al*., 2013). The purpose of the LCPv2 was to develop the spatial component of a bioregional plan (i.e. map of Critical Biodiversity Areas and associated land-use guidelines). The previous Limpopo Conservation Plan (LCPv1) was completely revised and updated (Desmet *et al*., 2013). A Limpopo Conservation Plan map was produced as part of this plan and sites were assigned to the following CBA categories based on their biodiversity characteristics, spatial configuration and requirement for meeting targets for both biodiversity pattern and ecological processes:

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

The Polokwane Smelter project area is situated in an area designated as Other Natural Area (ONA) (Figure 2). These areas are natural and intact areas, but are not required to meet biodiversity targets (Desmet *et al*., 2013). A CBA2 area is situated approximately 2.7 km south west of the project area (Figure 2). An ESA1 area is situated approximately 550 m south of road alternative 2 (Figure 2).

Based on this assessment it can be concluded that the proposed development is unlikely to impact on any CBAs or ESAs.

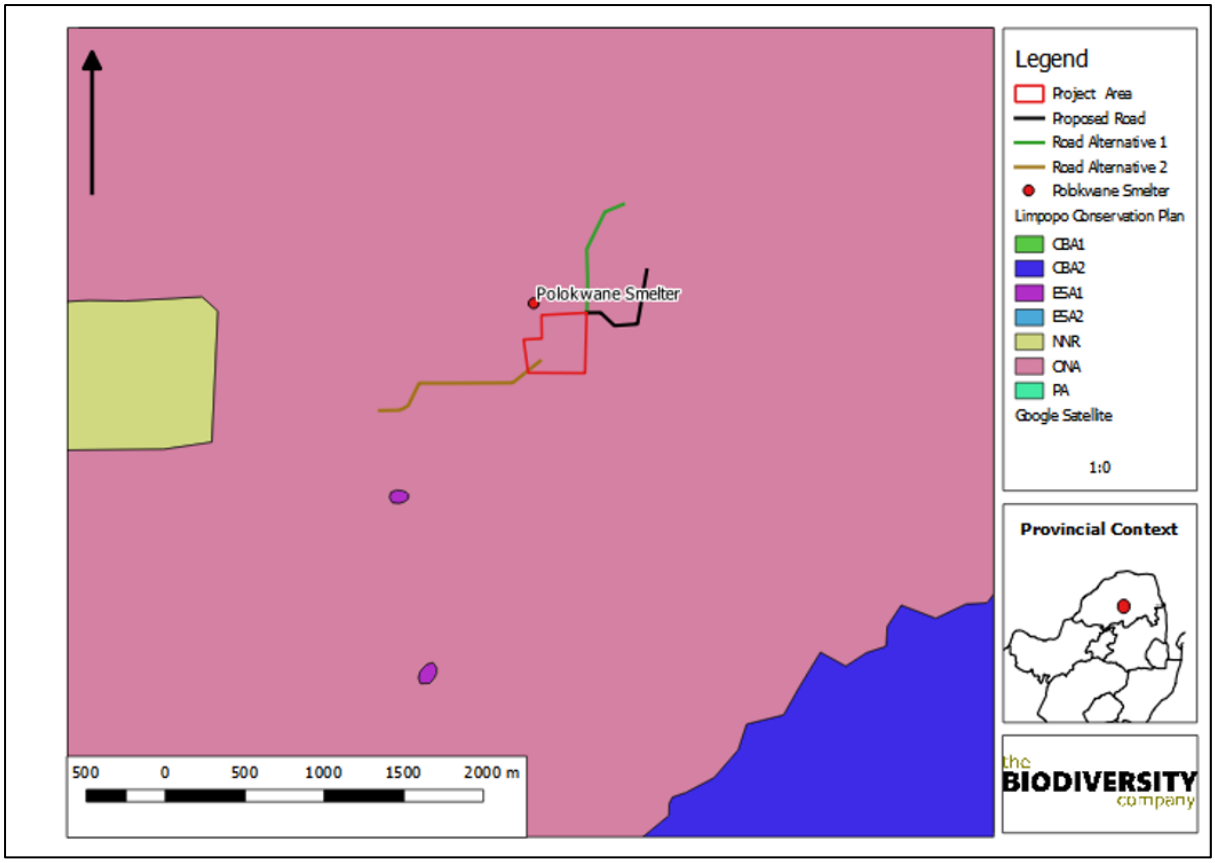


Figure 2: Project area superimposed on the Limpopo Conservation Plan CBA map (Desmet *et al*., 2013)

4.2 National Biodiversity Assessment (NBA, 2011)

The National Biodiversity Assessment (NBA) was completed as collaboration between the South African National Biodiversity Institute (SANBI), the Department of Environmental Affairs and stakeholders, scientists and biodiversity management experts throughout the country over a three-year period (Driver at al., 2012).

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 at al., 2012).

The two headline indicators assessed in the NBA are ecosystem threat status and ecosystem protection level (Driver at al., 2012). The project area is situated in an environment which is listed as Least Concern (LC) in terms of threat and poorly protected in terms of protection level.

4.3 National Freshwater Ecosystem Priority Area (NFEPA) Status

In an attempt to better conserve aquatic ecosystems, South Africa has recently categorised its river systems according to set ecological criteria (i.e. ecosystem representation, water yield, connectivity, unique features, and threatened taxa) to identify Freshwater Ecosystem Priority Areas (FEPAs) (Driver et al. 2011) The FEPAs are intended to be conservation support tools

and envisioned to guide the effective implementation of measures to achieve the National Environment Management Biodiversity Act (NEM:BA) biodiversity goals (Nel et al. 2011).

Figure 3 shows the location of the Polokwane Smelter project area in relation to river FEPAs. The site is situated in the catchment of the Sand River, perched in-between the Diep and Sand rivers to the east and west respectively and the Chunies in the Olifants WMA to the south east. None of these rivers are classified as FEPAs (Figure 4).

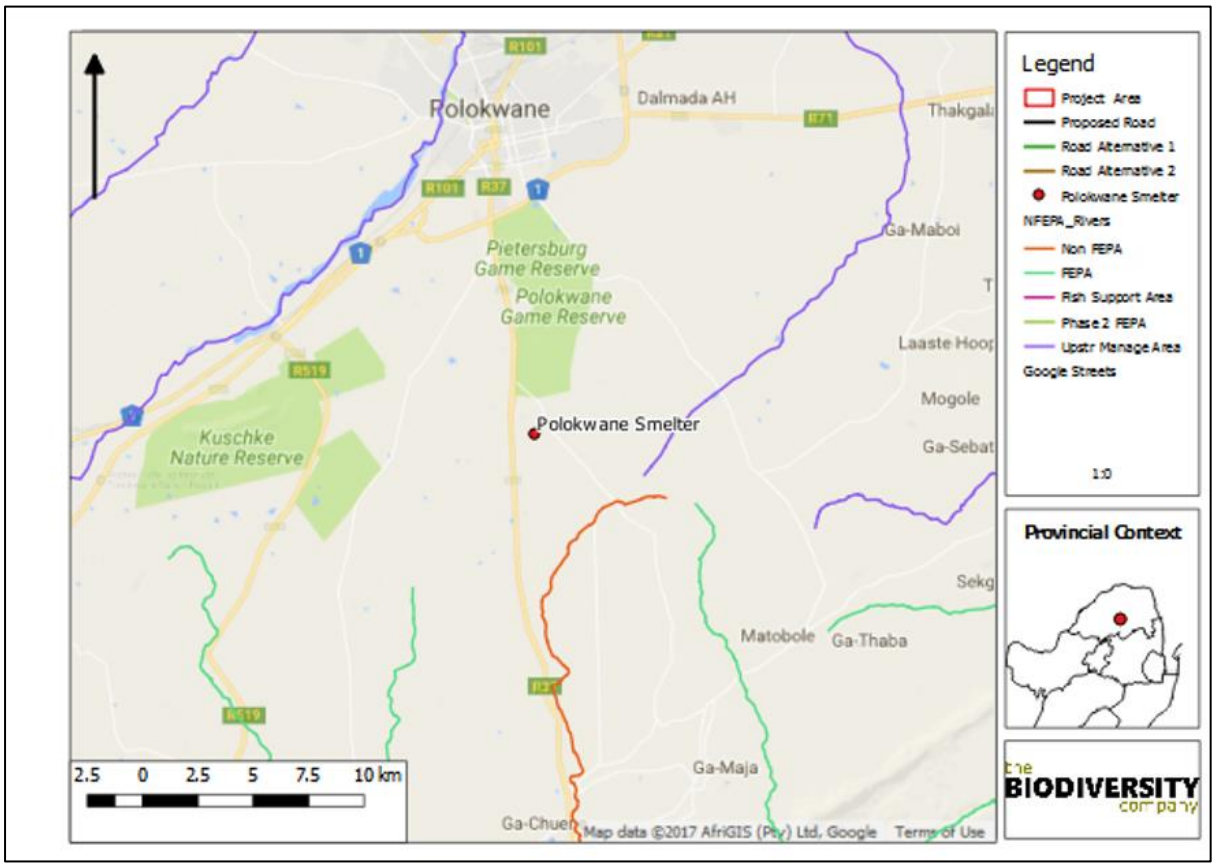


Figure 3: Polokwane Smelter project area in relation to river FEPAs

Figure 4 shows the location of the project area in relation to the wetland FEPAs. Based on the wetland FEPA map, there are numerous small wetlands in close proximity to the project site, however none of these are listed as FEPAs (Figure 4). Interestingly, the large wetland which is situated to the south and east of project area and bisects the farm is not depicted in the FEPA database as either a FEPA or non-FEPA wetland.

Based on the location of the project area in relation to aquatic and wetland FEPAs, it can be concluded that the development is unlikely to impact on any priority areas.

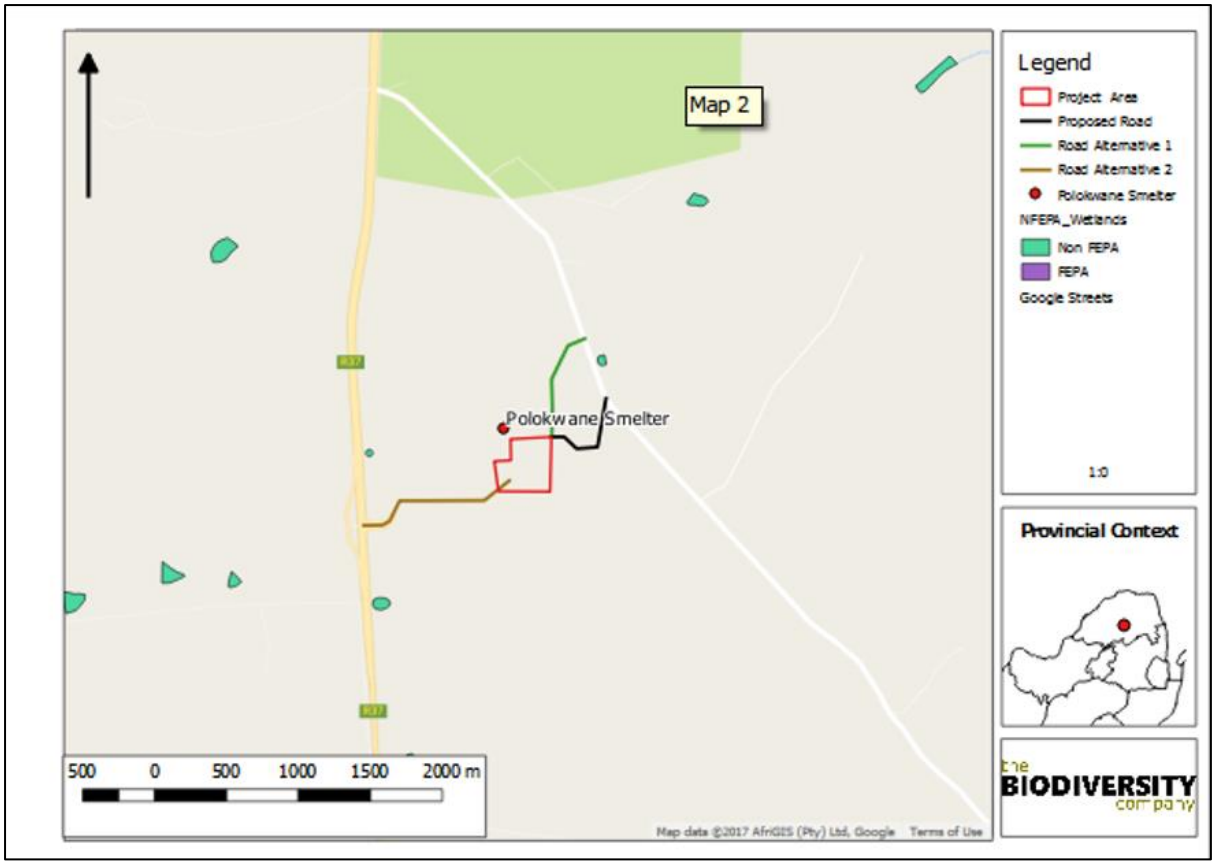


Figure 4: Polokwane Smelter project area in relation to wetland FEPAs

4.4 Protected Areas

Figure 5 shows the location of formally and informally protected areas in relation to the project area. Formally protected areas. Formally protected areas refer to areas protected either by national or provincial legislation whereas informally protected areas refers to privately owned reserves.

The informally protected Pietersburg Game Reserve is situated approximately 3.5 km north of Polokwane Smelter (Figure 5). The formally protected Kuschke Nature Reserve is situated approximately 6.5 km west of the Polokwane Smelter (Figure 5).

Based on the nature of the development, the relatively small project footprint the proposed development is not expected to have an impact on either informally or formally protected areas (Figure 5)).

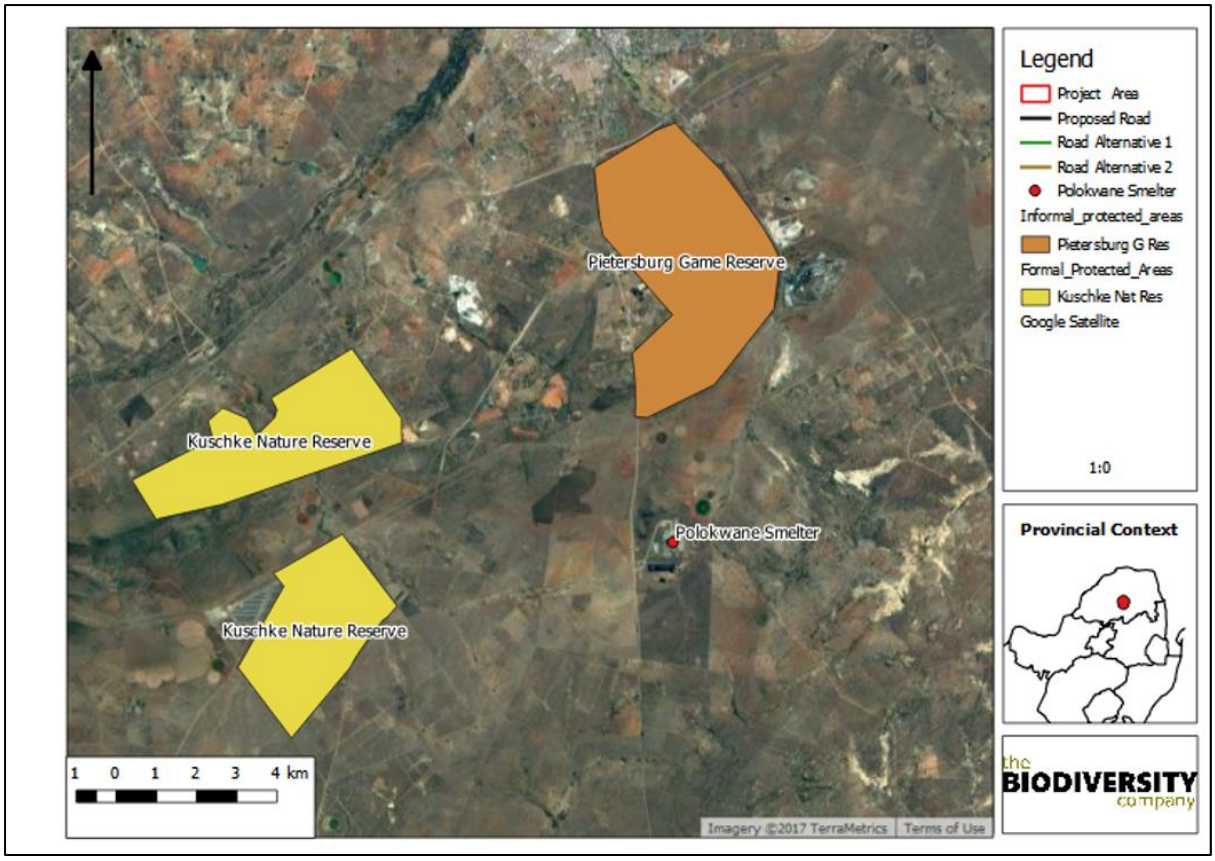


Figure 5: Formally and informally protected areas in relation to the Polokwane Smelter

5 METHODOLOGY

5.1 Desktop Assessment

The requirements of this assessment served to combine aspects of the regional vegetation community (obtained from Mucina and Rutherford 2006) with the field study in order to formulate a series of conclusions and subsequent recommendations. The following datasets and sources were reviewed for the study:

- The Vegetation of South Africa, Lesotho & Swaziland (Mucina & Rutherford, 2006);
- The Southern Africa Bird Atlas Project (SABAP2, 2017) and BirdLife South Africa website (2017);
- Mammal information was referenced from the Animal Demography Unit (ADU, 2016), Skinner & Chimimba (2005) and the IUCN spatial database (IUCN, 2017); and
- Reptiles and amphibians were referenced from ADU (2016), Bates et al. (2014), Du Preez and Carruthers (2009) and the IUCN spatial database (IUCN, 2017) respectively.

The evaluation of species of concern was considered after the field study which served to identify their potential for occurrence. Therefore, all species identified under the above-

mentioned references were not necessarily analysed in detail. Plants were identified using Van Oudtshoorn (2004) and Van Wyk & Van Wyk (1997).

The verification of the presence of red and orange listed plant species was one of the primary ecological requirements of the floral assessment.

5.2 Field Survey

A field survey was conducted on the 24th and 25th of April 2017 by two ecologists where the floral and faunal communities in the project area were assessed. The timing of the study represented late wet-season conditions which were sub-optimal. The project was ground-truthed on foot, which included spot checks in pre-selected areas to validate desktop data. Photographs were recorded during the site visit.

The fieldwork attempted to classify the fauna, flora and habitats, with emphasis on recording the actual and potential presence of Red Data species (also referred to as Red-Listed and Orange-Listed species), which are species of conservation concern in South African (either classified as threatened by the IUCN (2017), protected by NEMBA (2014) or indeed other legislations applicable provincially or nationally).

5.2.1 Vegetation Assessment

The survey included the following:

- A survey for Red and Orange Data plant species;
- Vegetation units will be identified, classified and delineated;
- Habitat types will be classified and delineated;
- The survey will be conducted in consultation with local authorities who have information to be considered; and
- The survey area will include terrestrial ecosystems within 500 m of the proposed development.

5.2.2 Faunal Assessment

The survey included the following:

- Compilation of expected species lists;
- A survey of the terrestrial habitats within the proposed development area (where applicable);
- Compilation of identified species lists;
- Identification of any Red Data or listed species present or potentially occurring in the area;
- A proximity assessment to any protected or ecologically important areas;
- Emphasis will be placed on the probability of occurrence of species of provincial, national and international conservation importance.

6 RESULTS & DISCUSSION

6.1 Desktop Assessment

6.1.1 Vegetation Assessment

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

a) Seasonal precipitation; and

b) (Sub) tropical thermal regime with no or usually low incidence of frost (Mucina & Rutherford, 2006).

Most savanna vegetation communities are characterised by a herbaceous layer dominated by grasses and a discontinuous to sometimes very open tree layer (Mucina & Rutherford, 2006). The Savanna biome comprises many different vegetation types. The Polokwane Smelter site is situated in the midst of the Polokwane Plateau Bushveld (SVcb23) vegetation community (Figure 6). The closest other vegetation community consists of small patches of Mamabolo Mountain Bushveld (SVcb24) that extend in a line stretching from the south-west of Polokwane Smelter to north-east (Figure 6).

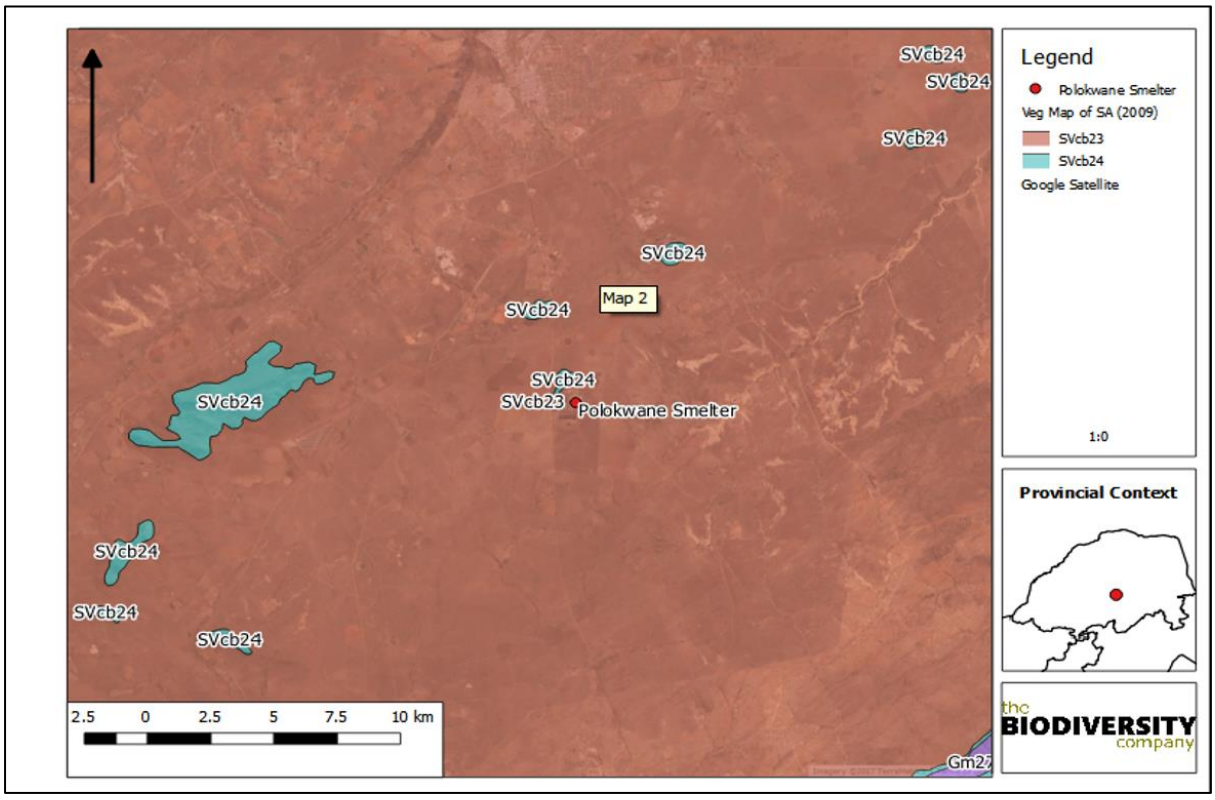


Figure 6: Polokwane Smelter project area showing the vegetation type based on the Vegetation Map of South Africa, Lesotho & Swaziland (Mucina & Rutherford, 2006)

Polokwane Plateau Bushveld occurs on a high-lying plain that extends around the town of Polokwane (Mucina & Rutherford, 2006). The topography consists of a moderately undulating plain with occasional hills and low mountains of Mamabolo Mountain Bushveld (SVcb24) embedded within in it (Mucina & Rutherford, 2006). The Polokwane Plateau Bushveld community is characterised by a short open tree layer with a well developed grass layer (Mucina & Rutherford, 2006).

Approximately 2% of this vegetation community is statutorily conserved, in the Percy Fyfe and Kuschke Nature Reserves (Mucina & Rutherford, 2006). By 2006,17% had already been transformed. The conservation status of this vegetation community was listed by Mucina & Rutherford (2006) as Least Concern (LC).

Based on the Plants of Southern Africa (POSA, 2017) database, 144 plant species are expected to occur in topographical grid square 2429AB. The list of expected plant species is provided in Appendix A.

6.1.1.1 Plant Species of Conservation Concern

A list of plant species of conservation concern was compiled based on the POSA database (POSA, 2017). Two (2) plant species of conservation concern are expected to occur within QDS 2429AB (Table 1). The likelihood of occurrence of these species was assessed based on their known habitat preferences.

Dicliptera fruticose is a South African endemic plant species that occurs in the Limpopo and Mpumalanga Provinces from the Strydpoort Mountains to Ohrigstad (SANBI, 2017). It is listed as Near Threatened (NT) because, although still being relatively common, it is a range restricted species and part of ots range has been lost through ongoing human expansion and agriculture (SANBI, 2017). Its habitat is decribed as savanna and open woodland, shady areas on rocky magnetite and dolomite slopes (SANBI, 2017). Its likehood of occurrence in the project area is rated as moderate.

Adenia fruticosa subsp. *fruticose* is another South African endemic with a range that is restricted to the Limpopo and Mpumalanga Provinces (SANBI, 2017). It is estimated that its population size has been reduced by 20 – 30 % due to habitat loss (SANBI, 2017). It occurs in arid woodland, rocky outcrops, slopes and sandy flats, on dolomite, granite and quartzite (SANBI, 2017). Its likehood of occurrence in the project area is rated as moderate.

Table 1: Plant species of conservation concern expected to occur in grid square 2429AB as well as the conservation status of each (POSA, 2017; SANBI, 2017)

Species	Threat status	SA Endemic
Dicliptera fruticosa K.Balkwill	**NT**	Yes
Adenia fruticosa Burtt Davy subsp. *fruticosa*	**NT**	Yes

6.1.2 Faunal Assessment

6.1.2.1 Avifauna

Based on the South African Bird Atlas Project (SABAP, Version 2) 387 bird species are expected to occur in pentads 2355_2925 and 2400_2925. The full list of potential bird species is provided in Appendix B.

Of these bird species, 25 (6.5%) are listed as being of conservation importance either on a regional or global scale (Table 2).

The expected bird species list includes:

- Five (5) species that are listed as Endangered (EN) on a regional basis;
- Eight (8) species that is listed as Vulnerable (VU) on a regional basis; and
- Nine (9) species that are listed as Near Threatened (NT) on a regional basis (Table 2).

On a global scale, 1 species is listed as CR, 1 as EN, 4 and VU and 5 as NT (Table 2).

Table 2: List of bird species of regional or global conservation importance that are expected to occur in pentads 2355_2925 and 2400_2925 (SABAP2, 2017, ESKOM, 2014; IUCN, 2017)

Species	Common Name	Conservation Status	
		Regional (Eskom, 2016	Global (IUCN, 2017)
Calidris ferruginea	Sandpiper, Curlew	Unlisted	NT
Phoenicopterus minor	Flamingo, Lesser	Unlisted	NT
Mirafra cheniana	Lark, Melodious	LC	NT
Alcedo semitorquata	Kingfisher, Half-collared	NT	LC
Anthropoides paradiseus	Crane, Blue	NT	VU
Certhilauda chuana	Lark, Short-clawed	NT	LC
Ciconia abdimii	Stork, Abdim's	NT	LC
Circus macrourus	Harrier, Pallid	NT	NT
Coracias garrulus	Roller, European	NT	LC
Leptoptilos crumeniferus	Stork, Marabou	NT	LC
Oxyura maccoa	Duck, Maccoa	NT	NT
Rhinoptilus africanus	Courser, Double-banded	NT	LC
Aquila verreauxii	Eagle, Verreaux's	VU	LC
Ciconia nigra	Stork, Black	VU	LC
Eupodotis senegalensis	Korhaan, White-bellied	VU	LC
Falco biarmicus	Falcon, Lanner	VU	LC
Geronticus calvus	Ibis, Southern Bald	VU	VU
Rostratula benghalensis	Painted-snipe, Greater	VU	LC
Sagittarius serpentarius	Secretarybird, Secretarybird	VU	VU
Tyto capensis	Grass-owl, African	VU	LC

Ephippiorhynchus senegalensis	Stork, Saddle-billed	**EN**	LC
Gyps africanus	Vulture, White-backed	**EN**	**CR**
Gyps coprotheres	Vulture, Cape	**EN**	**EN**
Mycteria ibis	Stork, Yellow-billed	**EN**	LC
Polemaetus bellicosus	Martial eagle	**EN**	**VU**

The 2 vulture species, *Gyps africanus* and *G. coprotheres,* are both listed as EN on a regional basis, whilst *G. africanus* is listed as CR on a global basis (Table 2). The presence of large herbivores such as Impala (*Aepyceros melampus*) on the site and especially on the adjacent farm suggests that the likelihood of occurrence of both species is good.

Gyps africanus (White-backed vulture) occurs across sub-Saharan Africa, with the exception of the Congo basin (Birdlife, 2017). The precipitous decline in this species is attributed to habitat loss and conversion to agro-pastoral systems, declines in wild ungulate populations, hunting for trade, persecution, powerline collisions and poisoning (Birdlife, 2017). It is primarily a lowland species of open wooded savanna, particularly areas of Acacia and requires tall trees for nesting (IUCN, 2017).

Gyps coprotheres (Cape vulture) has a more restricted range and only occurs in Southern Africa. According to the IUCN (2017) a decrease in the availability of carrion (particularly during chick-rearing), inadvertent poisoning, electrocution on pylons or collision with cables, loss of foraging habitat and unsustainable harvesting for traditional uses are the most factors contributing to the decline of this species.

Mycteria ibis (Yellow-billed stork) is listed as EN on a regional basis and LC on a global basis (Table 2). 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. Three records exist of this species in pentad 2355_2925 over the period July 2007 to April 2017, the most recent record is for October 2016 (SABAP, 2017). The wetlands on the farm, adjacent to Polokwane Smelter, would provide suitable habitat for this species.

Ephippiorhynchus senegalensis (Saddle-billed stork) is listed as EN on a regional basis and LC on a global basis (Table 2). This species has an extremely large range, but populations are declining due to the disturbance and degradation of wetlands (e.g. pesticide contamination) and conversion to agriculture (IUCN, 2017). Prefered habitats for this species include freshwater wetlands, wet grasslands, the margins of large rivers and lakes, pans and floodplains (IUCN, 2017). The wetlands adjacent to the site would provide suitable habitat for this species, however, no records exist of this species in either of the pentads over the period July 2007 to April 2017 (SABAP, 2017).

Polemaetus bellicosus (Martial eagle) is listed as EN on a regional scale and VU on a global scale (Table 2). 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, thornbush and, in southern Africa, more open country and even subdesert (IUCN, 2017). Based on the expected habitat and the availability of prey items the likelihood of occurrence of this species is considered to be good, however,

no records exist of this species in either of the pentads over the period July 2007 to April 2017 (SABAP, 2017).

6.1.2.2 Mammals

The IUCN Red List Spatial Data (IUCN, 2017) lists 116 mammal species that could be expected to occur within the project area (Appendix C). Of these species, 20 are medium to large conservation dependant species, such as *Diceros bicornis* (Black rhinoceros), *Ourebia ourebi* (Oribi) and *Equus quagga* (Plains zebra) that in South Africa are restricted to protected areas such as game reserves. Although some of these species may be present or have been introduced to the farm, the majority of these species are not expected to occur in the project area.

Of the remaining 96 small to medium sized mammal species, 13 (14%) are listed as being of conservation concern on a regional or global basis (Table 3).

The list of potential species includes 1 species that is listed as EN, 4 that are listed as VU and on a regional basis and 6 that are listed as NT on a regional scale (Table 3). On a global scale, 2 species are listed as VU and 4 as NT (Table 3).

Table 3: 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	
		Regional (SANBI, 2016)	IUCN (2017)
Cloeotis percivali	Short-eared Trident Bat	EN	LC
Felis nigripes	Black-footed Cat	VU	VU
Hydrictis maculicollis	Spotted-Necked Otter	VU	NT
Myosorex cafer	Dark-footed Forest Shrew	VU	LC
Panthera pardus	Leopard	VU	VU
Aonyx capensis	Cape Clawless Otter	NT	NT
Atelerix frontalis	South African Hedgehog	NT	LC
Crocidura mariquensis	Swamp Musk Shrew	NT	LC
Dasymys incomtus	African Marsh Rat	NT	LC
Parahyaena brunnea	Brown Hyaena	NT	NT
Poecilogale albinucha	African Striped Weasel	NT	LC
Dendromus nyikae	Nyika Climbing Mouse	DD	LC
Eidolon helvum	African Straw-coloured Fruit Bat	LC	NT

The expected mammal species of conservation concern are discussed separately below.

Cloeotis percivali (Percival's trident bat) is a poorly known species which is largely confined to southern Africa. It occurs in savanna areas where there is sufficient nearby cover in the form of caves and mine tunnels for day roosting. There are no records of this species in the project area, although being a relatively cryptic and poorly known species that is hardly surprising. Although the habitat is suitable, it is unknown whether suitable roosting sites exist for this species

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 highest densities of this species have been recorded in the arid central Karoo region of South Africa, the habitat in the project area can be considered marginal at best and the likelihood of occurrence therefore moderate to low.

Hydrictis maculicollis (Spotted-Necked Otter) is listed as VU on a regional basis and NT on a regional scale (Table 3). This species has a large distributional range but it restricted to areas of permanent fresh water, offering good shoreline cover and an abundant prey base (IUCN, 2017). Its abundance and density appear to be dependent, in part, on the availability of fish (IUCN, 2017). The absence of permanent open water and fish from the vicinity of the project makes the likelihood of occurrence of this species low.

Myosorex cafer (Dark-footed Forest Shrew) occurs in South Africa, western Mozambique, eastern Zimbabwe and Swaziland (IUCN, 2017). Its preferred habitat comprises primary Afromontane and coastal forest, therefore this species is highly unlikely to occur in the project area (IUCN, 2017).

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 and the likelihood of occurrence in an area with high human density such as the project area can be regarded as 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. Based on the absence of permanently flowing or open water bodies in the project area, the likelihood of occurrence of this species occurring in the project area is considered to be moderate to 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). The likelihood of occurrence of this species in the project area is considered to be good.

Crocidura mariquensis (Swamp Mush 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 confirmed availability of this habitat type in the project area, the likelihood of occurrence of this species occurring in the project area is considered to be good.

Dasymys incomtus (African marsh rat) is listed as NT on a regional scale and LC on a global scale (Table 3). 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. Based on the

presence of grasslands and wetlands adjacent to the project area the likelihood of occurrence of this species in the project area is moderate to good.

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 presence of moderate to large herbivores on the adjacent farm increases the likelihood of occurrence of this species.

Poecilogale albinucha (African Striped Weasel) is usually associated with savanna habitats, although it probably has a wide habitat tolerance (IUCN, 2017). Due to its secretive nature, it is often overlooked in many areas. The likelihood of occurrence of this species in the project area is good.

Dendromus nyikae (Nyika Climbing Mouse) is listed as Data Deficient (DD) on a regional scale and LC on a global scale (Table 3). It inhabits forest/grassland mosaics but is more of a forest specialist (IUCN, 2017). Based on this habitat preference this species is considered to be very unlikely to occur in the project area (IUCN, 2017).

Eidolon helvum (African Straw-coloured Fruit Bat) is listed as LC on a regional scale and NT on a global scale (Table 3). This species has been recorded from very wide range of habitats across the lowland rainforest and savanna zones of Africa (IUCN, 2017). Although considered to be widespread and adundant across its range, certain populations are decreasing due to severe deforestation, hunting for food and medicinal use (IUCN, 2017). This species is known to form large roosts and colonies numbering in the thousands to even millions of individuals (IUCN, 2017). No colonies of this species are known to occur in the project area or in the immediate vicinity and although individuals may occasionaly be recorded it is not expected to be resident in the project area.

6.1.2.3 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) 38 reptile species are expected to occur in the project area (Appendix D). One species of conservation concern, namely *Crocodylus niloticus* (Nile crocodile) is listed as potentially being present in the project area. Based on the absence of any large water bodies with adequate fish population in the vicinity of the project area, the likelihood of occurrence of this species is considered to be highly unlikely.

Based on the IUCN Red List Spatial Data (IUCN, 2017) and the AmphibianMap database provided by the Animal Demography Unit (ADU, 2017) 27 amphibian species are expected to occur in the project area (Appendix D). Of the expected amphibian species, *Pyxicephalus adspersus* (Giant bullfrog) is listed as NT on a regional scale (Appendix D). It is a species of drier savannahs and is fossorial for most of the year, remaining buried in cocoons from where they emerge at the start of the rains, and breed in shallow, temporary waters in pools, pans and ditches (IUCN, 2017). This species is considered to be very likely to occur in the project area.

6.2 Field Survey

6.2.1 Vegetation Assessment

6.2.1.1 SO_2 Abatement Plant Site

The vegetation community in the proposed SO_2 Abatement Plant site was found to be highly disturbed and a portion of this area is already being utilised for the storage of concentrate (Figure 7).

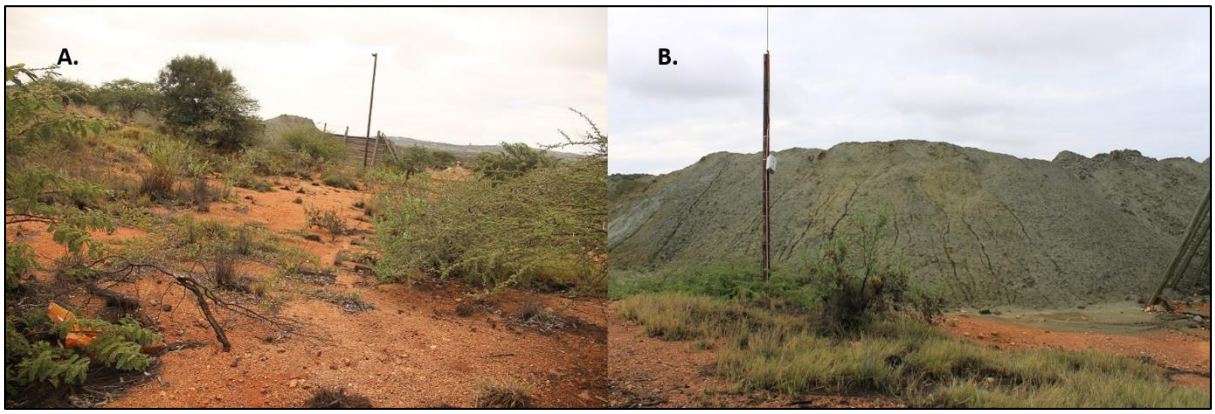


Figure 7: Habitat on the site of the proposed SO_2 Abatement Plant site showing A. The dominant vegetation community and B. Storage of concentrate on a portion of the proposed site

A total of 13 grass species were recorded in this area (Table 4). None of these grass species are species of conservation concern or endemic to South Africa. This included the exotic invasive species *Pennisetum setaceum* (Table 4).

Table 4: Grass species recorded on the proposed SO2 Abatement Plant site

Species	Threat status (SANBI, 2017)	SA Endemic
Aristida junciformis	Unlisted	
Aristrida congesta subsp. *congesta*	Unlisted	
Brachiaria nigropedata	LC	No
Cymbopogon caesius	Unlisted	
Eragrostis superba	Unlisted	
Heteropogon contortus	LC	No
Hyparrhenia hirta	Unlisted	
Melenis nerviglumis	Unlisted	
Melenis repens	Unlisted	
Panicum maximum	LC	No
Pennisetum setaceum	**Exotic**	
Themeda triandra	LC	No
Urochloa mosambicensis	LC	No

A total of 26 tree, shrub and weed species were recorded in the SO_2 Abatement Plant site area (Table 5). No plant species of conservation concern were recorded in this area (Table 5). *Aloe fosteri* was the only South African endemic plant species recorded in this area (Table 5).

The importance and sensitivity of the plant communities associated with the proposed SO_2 Abatement plant was regarded as low due to the absence of plant species of conservation concern and the high degree of anthropogenic disturbance.

Table 5: Trees, shrubs and weeds recorded on the proposed SO_2 Abatement Plant site

Species	Threat status (SANBI, 2017)	SA Endemic
Aloe fosteri	LC	**Yes**
Aloe marlothii	LC	No
Alternanthera pungens	Unlisted	
Amaranthus spinosus	Unlisted	
Chenopodium carinatum	Unlisted	
Clerodendrum glabrum	LC	No
Dichrostachys cinerea (Sickle)	LC	No
Dombeya rotundifolia	LC	No
Garcinia livingstonei	LC	No
Geigeria burkeii	Unlisted	
Lantana rugosa	LC	No
Ledebouria spp		
Lippia javonica	Unlisted	
Gomphocarpus fruticosus	LC	
Nicotiana glauca	Unlisted	
Peltophorum africanum	LC	No
Physalis angulata	Unlisted	
Plumbago auriculata	LC	No
Pyracantha crenulata	Unlisted	
Rosa rubiginosa	Unlisted	
Searsia lancea	LC	No
Searsia pyroides	LC	No
Solanum incanum	LC	No
Vachellia nilotica`	LC	No
Vachellia tortilis	LC	No
Ziziphus mucronata	LC	No

6.2.1.2 Farm site

A total of 5 grass species were recorded on the farm site (Table 6). This included the exotic invasive species *Pennisetum setaceum* (Table 6).

Table 6: Grass species recorded on the farm site

Species	Threat status (SANBI, 2017)	SA Endemic
Eragrostis gummiflua	LC	No
Aristida junciformis	LC	No
Chloris gayana	LC	No
Hyperthelia dissoluta	LC	No
Pennisetum setaceum	Unlisted	**Exotic**

A total of 33 tree, shrub and weed species were recorded on the farm site (Table 7). This included 7 alien invasive plant species (Table 7).

Although none of the observed plant species are listed as Threatened according to the Red List of South African Plants (SANBI, 2017), 2 of the observed plant species are listed as decreasing due to overharvesting.

Boophone disticha (Bushman's poison bulb) occurs in dry grassland and rocky areas in all 9 of South Africa's Provinces (SANBI, 2017). Although still abundant in certain areas, and still listed as LC on the Red List of South African Plants (SANBI, 2017), populations are declining due to habitat loss and harvesting for the medicinal plant trade. A single individual of this species was recorded on the farm area (Figure 8).

Hypoxis hemerocallidea (Yellow star) is widespread in the eastern part of southern Africa from the Eastern Cape to Botswana and Mozambique (SANBI, 2017). Although still listed as LC on the Red List of South African Plants (SANBI, 2017), the corm is consistently heavily harvested for the medicinal plant trade and the species is listed as decreasing. Several individuals of this plant species were recorded in close proximity to the wetland on the farm area (Figure 8).

Table 7: Trees, shrubs and weeds recorded on the farm site

Species	Threat status (SANBI, 2017)	SA Endemic	Nemba category
Acacia dealbata	Unlisted		1b
Agave sisalana	Unlisted		2
Aloe marlothii	LC	No	
Asparagus buchananii	LC	No	
Bidens pilosa	Unlisted		
Boophone disticha	LC	No	
Cirsium vulgare	Unlisted		1b
Clematis brachiata	Unlisted		
Cotyledon orbiculata	LC	No	
Cyperus sexangularis	LC	No	
Dichrostachys cinerea	LC	No	
Diospyrus lycioides	Unlisted		
Dombeya rotundifolia	LC	No	

Gladiolus dalenii	LC	No	
Gymnosporia buxifolia	LC	No	
Hibiscus trionum L.	Not Evaluated	No	
Hypoxis hemerocallidea	LC	No	
Hypoxis rigidula	Unlisted		
Imperata cylindrica	LC	No	
Impomoea crassipes	Unlisted		
Leonotis ocymifolia	LC	No	
Opuntia ficus-indica	Data defficient		1b
Searsia lancea	LC	No	
Seriphium plumosum	Unlisted		
Sida cordifolia	LC	No	
Tagetes minuta	Not evaluated	No	
Tribulus terrestris	LC	No	
Vachellia nilotica`	LC	No	
Vachellia tortilis	LC	No	
Verbena bonariensis	Not evaluated	No	1b
Xanthium strumarium	Unlisted		
Zinnia peruviana	Unlisted		
Ziziphus mucronata	LC	No	

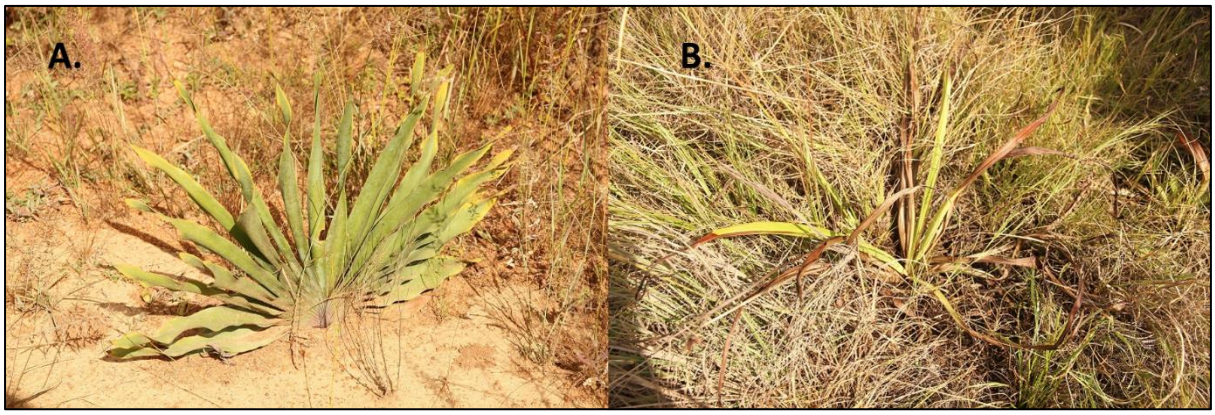


Figure 8: Plant species of conservation concern recorded on the farm area during the April 2017 survey A: *B. disticha* and B. *H. hemerocallidea.* Although both species are listed as LC on the Red List of South African Plant Species, both are declining due to habitat loss and overharvesting

The vegetation community on the farm site was found to be more diverse and intact than that of the SO_2 Abatement Plant site. Although signs of past overgrazing weres prevalent in this area, erosion seems to be limited and given good veldt management practises this area should recover.

6.2.1.3 Alien Invasive Plant Species

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 natural ecosystems. 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 (Henderson, 2001).

The National Environmental Management: Biodiversity Act (NEMBA) is the most recent legislation pertaining to alien invasive plant species. In August 2014, the list of Alien Invasive Species was published in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (Government Gazette No 78 of 2014). 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.

Four (4) category 1b species was recorded and must therefore be removed by implementing an alien invasive plant management programme in compliance of section 75 of the Act as stated above. These species are: *Acacia dealbata (*Silver wattle*)*, *Cirsium vulgare* (Spear thistle), *Opuntia ficus-indica* (Prickly pear) and *Verbena bonariensis* (Tall verbena) (Table 7)).

6.2.2 Faunal Assessment

6.2.2.1 SO_2 Abatement Plant Site

6.2.2.1.1 Avifauna

A total of 8 bird species (2% of expected) were recorded in the SO_2 Abatement Plant site during the April 2017 survey (Table 8). The observed bird community included 1 EN bird species namely *Gyps coprotheres* (Cape vulture) (Table 8). A photograph of the G. coprotheres observed during the April 2017 survey is provided in Figure 9.

The low species diversity was attributed primarily to the small size of the site and the degree of anthropogenic disturbance.

Table 8: Bird species recorded in the SO_2 Abatement Plant site

Species	Common Name	Conservation Status	
		Regional (Eskom, 2016	Global (IUCN, 2017)
Acridotheres tristis	Indian Myna	Unlisted	LC
Corvus albus	Pied Crow	Unlisted	LC
Corythaixoides concolor	Grey-Go-Away Bird	Unlisted	LC
Gyps coprotheres	Cape Vulture	EN	EN
Lanius collaris	Common Fiscal	Unlisted	LC
Passer melanurus	Cape Sparrow	Unlisted	LC
Plocepasser mahali	White Browed Sparrow Weaver	Unlisted	LC
Vanellus armatus	Blacksmith Lapwing	Unlisted	LC

Figure 9: *Gyps coprotheres* (Cape vulture) observed circling over the site of the proposed SO_2 Abatement Plant site

6.2.2.1.2 Mammals

No mammal species were observed or recorded on the site of the proposed SO_2 Abatement Plant.

The absence of mammal species was attributed to the small size of the site and the degree of anthropogenic disturbance.

6.2.2.1.3 Herpetofauna (reptiles & amphibians)

No reptiles or amphibians were observed on the site of the proposed SO_2 Abatement Plant.

The absence of reptile species was attributed to the degree of anthropogenic disturbance.

6.2.2.2 Farm Site

6.2.2.2.1 Avifauna

A total of 12 bird species (3% of expected) were recorded on the farm site during the April 2017 survey (Table 9). No bird species of conservation concern or SA endemic species were recorded in this area, although based on the habitat and the potential availability of prey species the likelihood of occurrence of severeal species of conservation conservation concern is good.

Table 9: Bird species recorded on the farm site during the April 2017 survey

Species	Common Name	Conservation Status	
		Regional (Eskom, 2016	Global (IUCN, 2017)
Apus affinis	Little Swift	Unlisted	LC
Buphagus erythrorhynchus	Red Billed Oxpecker	Unlisted	Unlisted
Dendroperdix sephaena	Crested Francolin	Unlisted	LC
Dicrurus adsimilis	Fork-tailed Drongo	Unlisted	LC
Lanius collaris	Common Fiscal	Unlisted	LC
Numida meleagris	Helmetted guineafowl	Unlisted	LC
Onychognathus morio	Red Wing Starling	Unlisted	LC
Phoeniculus purpureus	Green Wood-hoopoe	Unlisted	LC
Pternistis natalensis	Natal Spurfowl	Unlisted	LC
Telophorus olivaceus	Olive Bush Shrike	Unlisted	LC
Turdoides bicolor	Arrow-Marked Babbler	Unlisted	LC
Vanellus armatus	Blacksmith Lapwing	Unlisted	LC

6.2.2.2.2 Mammals

A total of 10 mammal species were either directly observed or deduced to be present in the farm area during the April 2017 survey (Table 10). The presence of 6 mammal species was confirmed based on direct visual observations, either of the animal or on their tracks and signs (scats or spoor) (Table 10). A further 4 species were confirmed to be present based on visual observations by Mr. Henry Bester, a staff member of Polokwane Smelter (Table 10).

The observed mammal assemblage included *Parahyaena brunnea* (Brown hyaena) which is listed as NT both on a regional and on a global scale (Table 10).

Table 10: Mammal species observed in the farm area during the April 2017 survey or deduced to be present based on signs (scat or spoor)

Species	Common name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Aepyceros melampus	Impala	LC	LC
Canis mesomelas	Black Backed Jackal	LC	LC
Cryptomys hottentotus	Common Mole Rat	LC	LC
Hystrix africaeaustralis	Cape Porcupine	LC	LC
*Ictonyx striatus**	Striped Polecat	LC	LC
Otomys irroratus	Vlei Rat	LC	LC
Parahyaena brunnea	Brown Hyaena	NT	NT
*Phacochoerus africanus**	Common Warthog	LC	LC
*Raphicerus campestris**	Steenbok	LC	LC
*Sylvicapra grimmia**	Duiker	LC	LC

** Based on observations by H. Bester*

Photographs of spoor and dung of selected mammal species is provided in Figure 10.

Figure 10: Tracks and signs of the mammal species in the farm area: A. *H. africaeaustralis* spoor B. *H. africaeaustralis* dung C. *P. brunnea* scat

6.2.2.2.3 Herpetofauna (reptiles and amphibians)

Trachylepis striata (Striped skink) was the only reptile species observed in the farm area during the April 2017 survey (Table 11). A further 2 species were determined to be present based on observations by Mr. Henry Bester (Table 11). None of the observed species are regarded as species of conservation concern.

No amphibian species were observed during the April 2017 survey.

Table 11: Herpetofauna species observed in the farm area during the April 2017 survey

Species	Common name	Conservation Status	
		Regional (Bates et al., 2014)	Global (IUCN, 2017)
Trachylepis striata	Striped Skink	LC	Unlisted
*Python natalensis**	Southern African Python	LC	Unlisted
*Bitis arietans**	Puff Adder	LC	Unlisted

** Based on observations by H. Bester*

7 IMPACT ASSESSMENT

7.1 Methodology

Potential impacts were evaluated against the data captured during the fieldwork to identify relevance to the study area. The relevant impacts were then subjected to a prescribed impact assessment methodology which is described below.

Impacts were assessed in terms of the construction and operational phases. The operational phase refers to that phase of the project where the township has been established and is fully occupied. Due to the nature of this development, the operational phase is assessed as lasting indefinitely and there is no closure or post- closure phases in this scenario.

Mitigation measures were only applied to impacts deemed relevant based on the impact analysis. The likelihood and consequence descriptors are presented in Table 12 and

Table 13. The significance rating matrix is presented in Table 14.

Table 12: Likelihood descriptors

Probability of impact	Rating
Highly unlikely	1
Possible	2
Likely	3
Highly likely	4
Definite	5
Sensitivity of receiving environment	**Rating**
Ecology not sensitive/important	1
Ecology with limited	2
Ecology moderately sensitive/ /important	3
Ecology highly sensitive /important	4
Ecology critically sensitive /important	5

Table 13: Consequence Descriptors

Severity of impact	Rating
Insignificant / ecosystem structure and function unchanged	1
Small / ecosystem structure and function largely unchanged	2
Significant / ecosystem structure and function moderately altered	3
Great / harmful/ ecosystem structure and function largely altered	4
Disastrous / ecosystem structure and function seriously to critically altered	5

Spatial scope of impact	Rating
Activity specific/ < 5 ha impacted / Linear features affected < 100m	1
Development specific/ within the site boundary / < 100 ha impacted / Linear features affected < 100m	2
Local area/ within 1 km of the site boundary / < 5000ha impacted / Linear features affected < 1000m	3
Regional within 5 km of the site boundary / < 2000ha impacted / Linear features affected < 3000m	4
Entire habitat unit / Entire system/ > 2000ha impacted / Linear features affected > 3000m	5
Duration of impact	**Rating**
One day to one month: Temporary	1
One month to one year: Short Term	2
One year to five years: Medium Term	3
Life of operation or less than 20 years: Long Term	4
Permanent	5

Table 14: Significance Rating Matrix

LIKELIHOOD (Frequency of activity + Frequency of impact)	CONSEQUENCE (Severity + Spatial Scope + Duration)														
	0	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

7.2 Identification of Impacts

7.2.1 Construction Phase

7.2.1.1 Potential Impacts on Vegetation Communities

The following potential impacts were considered on terrestrial vegetation communities:

- Loss destruction and/or eradication of plant species of conservation concern/ importance; and

7.2.1.2 Potential Impacts of Faunal Communities

The following potential impacts on faunal communities were considered in this assessment:

- Loss and/or displacement of faunal species of conservation concern; and
- Loss of diversity of indigenous faunal communities.

7.3 Assessment of Significance

7.3.1 Construction Phase

7.3.1.1 Significance of Impacts on Vegetation Communities

Table 15 shows the significance of potential impacts associated with the proposed developments on vegetation communities before and after implementation of mitigation measures. Prior to implementation of mitigation measures the significance of impacts were rated as moderate (Table 15). Implementation of mitigation measures reduced the significance of potential impact on plant species of conservation concern to a low level (Table 15).

7.3.1.2 Significance of Impacts on Faunal Communities

The significance assessment of potential impacts associated with the development on faunal communities is presented in Table 16. Prior to implementation of mitigation measures both impacts were rated as high (Table 16). This is attributed to the high likelihood of occurrence of 6 faunal species of conservation concern. Implementation of mitigation measures reduced the significance of potential impact on faunal species of conservation concern to a moderate level (Table 16).

Table 15: Assessment of significance of potential impacts on vegetation communities associated with the proposed road upgrade and contractors camp construction at Polokwane Smelter 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
Loss of diversity of indigenous floral communities	5	1	2	2	4		5	1	1	2	3	
	Permanent	Activity specific	Small	Limited sensitivity	Highly likely	**Moderate**	Permanent	Activity specific	Insignificant	Limited sensitivity	Likely	**Low**

Table 16: Assessment of significance of potential impacts on faunal communities associated with the proposed road upgrade and contractors camp construction at Polokwane Smelter 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
Loss of habitat for faunal communities including species of conservation concern	5	3	3	4	3		5	3	2	4	2	
	Permanent	Local area	Significant	Highly sensitive	Likely	**High**	Permanent	Local area	Small	Highly sensitive	Possible	**Moderate**

7.4 Potential mitigation measures

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

- Prevent the loss of floral species of conservation concern and
- Prevent the loss of faunal species of conservation concern and to prevent the further reduction of faunal biodiversity.

7.4.1 Mitigation Measures for Impacts on Vegetation Communities

Recommended mitigation and rehabilitation measures include the following:

- 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;
- Compilation of and implementation of an alien vegetation management plan for the entire site.

7.4.2 Mitigation Measures for Impacts on Faunal Communities

Recommended mitigation and rehabilitation measures include the following:

- If any faunal species of conservation importance are recorded during construction, activities should temporarily cease and an appropriate specialist should be consulted to identify the correct course of action;
- 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, lizards, birds or other animals should be strictly prohibited.

8 CONCLUSIONS

The following conclusions were reached based on the results of this assessment:

- The Polokwane Smelter site is situated in the midst of the Polokwane Plateau Bushveld (SVcb23) vegetation community. The conservation status of this vegetation community was listed by Mucina & Rutherford (2006) as Least Concern (LC);
- A list of plant species of conservation concern was compiled based on the POSA database. Two (2) plant species of conservation concern are expected to occur within QDS 2429AB. The likelihood of occurrence of these plant species in the project area or its immediate vicinity was assessed based on their known habitat preferences and found to be moderate;
- The proposed development is unlikely to impact on any Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs);

- The project area is situated in an environment which is listed as Least Concern (LC) in terms of threat and poorly protected in terms of protection level;
- The most significant anthropogenic impacts identified on site included:
    - Loss of habitat due to the activities at the Smelter;
    - Habitat fragmentation;
    - Dumping of slag and tailings; and
    - The presence of alien invasive plant species;
- The importance and sensitivity of the plant communities associated with the proposed SO_2 Abatement Plant site and road construction was regarded as low due to the absence of plant species of conservation concern, the high degree of anthropogenic disturbance and the prevalence of alien invasive plant species;
- The vegetation community on the farm site was found to be more diverse and intact than that of the SO_2 Abatement Plant site. Although signs of past overgrazing weres prevalent in this area, erosion seems to be limited and given good veldt management practises this area should recover;
- Four (4) category 1b alien invasive plant species were recorded on the site and must therefore be removed by implementing an alien invasive plant management programme in compliance of section 75 of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA);
- The observed bird community included 1 Endangered (EN) bird species namely *Gyps coprotheres* (Cape vulture);
- The faunal diversity of the SO_2 Abatement Plant site was found to be very low. This was attributed to the disturbed nature of the site. The faunal diversity of the farm site was found to be far higher and included the NT mammal species *Parahyaena brunnea* (Brown hyaena);
- Despite the degree of disturbance of the vegetation community on the site the likelihood of occurrence of plant species of conservation concern remains moderate and the significance of potential impacts was rated as moderately significant prior to mitigation. Implementation of the recommended mitigation measures reduced the significance of the impact to low;
- Construction related impacts on fauna were rated as having a high significance due to potential presence of species of conservation concern. Implementation of the recommended mitigation measures reduced the significance of the impact to low.

9 IMPACT STATEMENT

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

Considering the above-mentioned conclusions, it is the opinion of the specialist that the project be favourably considered but that all mitigation measures should be strictly adhered to.

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APPENDIX A: EXPECTED PLANT SPECIES

Species	Threat status	SA Endemic
Abildgaardia ovata (Burm.f.) Kral	LC	No
Abutilon austro-africanum Hochr.	LC	No
Acalypha angustata Sond.	LC	No
Acalypha glabrata Thunb. var. glabrata	LC	No
Acalypha indica L. var. indica	LC	No
Acalypha villicaulis Hochst.	LC	No
Achyranthes aspera L. var. aspera	Not Evaluated	No
Achyropsis leptostachya (E.Mey. ex Meisn.) Baker & C.B.Clarke	LC	No
Acokanthera oppositifolia (Lam.) Codd	LC	No
Actiniopteris radiata (J.König ex Sw.) Link	LC	No
Adenia digitata (Harv.) Engl.	LC	No
Adenia fruticosa Burtt Davy subsp. fruticosa	NT	No
Adenostemma caffrum DC.sens.lat.	LC	No
Aerva leucura Moq.	LC	No
Agapanthus inapertus P.Beauv. subsp. inapertus	LC	No
Agathisanthemum bojeri Klotzsch subsp. bojeri	LC	No
Ageratum conyzoides L.	Not Evaluated	No
Agrimonia procera Wallr.	LC	No
Agrostis lachnantha Nees var. lachnantha	LC	No
Aizoon canariense L.	LC	No
Albizia adianthifolia (Schumach.) W.Wight var. adianthifolia	LC	No
Albizia amara (Roxb.) Boivin subsp. sericocephala (Benth.) Brenan	LC	No
Albizia anthelmintica (A.Rich.) Brongn.	LC	No
Albizia tanganyicensis Baker f. subsp. tanganyicensis	LC	No
Albizia versicolor Welw. ex Oliv.	LC	No
Albuca bainesii Baker	Not Evaluated	No
Albuca setosa Jacq.	LC	No
Alectra orobanchoides Benth.	LC	No
Alectra pumila Benth.	LC	No
Alectra sessiliflora (Vahl) Kuntze var. sessiliflora	LC	No
Alectra vogelii Benth.	LC	No
Aloe aculeata Pole-Evans	LC	No
Aloe arborescens Mill.	LC	No
Aloe cryptopoda Baker	LC	No

Aloe greatheadii Schönland var. davyana (Schönland) Glen & D.S.Hardy	LC	No
Aloe greatheadii Schönland var. greatheadii	LC	No
Aloe hahnii Gideon F.Sm. & R.R.Klopper	Not Evaluated	No
Aloe marlothii A.Berger subsp. marlothii	LC	No
Aloe spicata L.f.	LC	No
Aloe vryheidensis Groenew.	DDT	No
Aloe zebrina Baker	LC	No
Alternanthera pungens Kunth	Not Evaluated	No
Alysicarpus rugosus (Willd.) DC. subsp. perennirufus J.Léonard	LC	No
Alysicarpus zeyheri Harv.	LC	No
Amaranthus thunbergii Moq.	LC	No
Ambrosia artemisiifolia L.	Not Evaluated	No
Anacampseros subnuda Poelln. subsp. subnuda	LC	No
Andrachne ovalis (E.Mey. ex Sond.) Müll.Arg.	LC	No
Andropogon eucomus Nees	LC	No
Andropogon schirensis Hochst. ex A.Rich.	LC	No
Anisopappus junodii Hutch.	LC	No
Anisotoma pedunculata N.E.Br.	LC	No
Anthephora pubescens Nees	LC	No
Anthospermum herbaceum L.f.	LC	No
Anthospermum rigidum Eckl. & Zeyh. subsp. rigidum	LC	No
Antidesma venosum E.Mey. ex Tul.	LC	No
Apodytes dimidiata E.Mey. ex Arn. subsp. dimidiata	LC	No
Aptosimum elongatum Engl.	LC	No
Aptosimum lineare Marloth & Engl. var. lineare	LC	No
Archidium acanthophyllum Snider	Not Evaluated	No
Archidium ohioense Schimp. ex Müll.Hal.	Not Evaluated	No
Argyrolobium humile E.Phillips	LC	No
Argyrolobium tomentosum (Andrews) Druce	LC	No
Argyrolobium wilmsii Harms	LC	No
Aristea abyssinica Pax	LC	No
Aristida adscensionis L.	LC	No
Aristida bipartita (Nees) Trin. & Rupr.	LC	No
Aristida canescens Henrard subsp. canescens	LC	No
Aristida congesta Roem. & Schult. subsp. barbicollis (Trin. & Rupr.) De Winter	LC	No

Aristida diffusa Trin. subsp. burkei (Stapf) Melderis	LC	No
Aristida meridionalis Henrard	LC	No
Aristida sciurus Stapf	LC	No
Aristida stipitata Hack. subsp. graciliflora (Pilg.) Melderis	LC	No
Asclepias aurea (Schltr.) Schltr.	LC	No
Asclepias cucullata (Schltr.) Schltr. subsp. cucullata	LC	No
Asclepias densiflora N.E.Br.	LC	No
Asclepias eminens (Harv.) Schltr.	LC	No
Asparagus buchananii Baker	LC	No
Asparagus schroederi Engl.	LC	No
Asparagus suaveolens Burch.	LC	No
Aspidoglossum araneiferum (Schltr.) Kupicha	LC	No
Aspidoglossum lamellatum (Schltr.) Kupicha	LC	No
Aster squamatus (Spreng.) Hieron.	Not Evaluated	No
Asterella bachmannii (Steph.) S.W.Arnell	Not Evaluated	No
Asystasia atriplicifolia Bremek.	LC	No
Athrixia phylicoides DC.	LC	No
Atriplex nummularia Lindl. subsp. nummularia	Not Evaluated	No
Atriplex semibaccata R.Br. var. appendiculata Aellen	LC	No
Avena sativa L.	Not Evaluated	No
Avonia rhodesica (N.E.Br.) G.D.Rowley	LC	No
Baccharoides adoensis (Sch.Bip. ex Walp.) H.Rob. var. kotschyana (Sch.Bip. ex Walp.) Isawumi, El-Ghazaly & B.Nord.	LC	No
Barleria bolusii Oberm.	LC	No
Barleria saxatilis Oberm.	LC	No
Bauhinia galpinii N.E.Br.	LC	No
Berchemia zeyheri (Sond.) Grubov	LC	No
Bergia decumbens Planch. ex Harv.	LC	No
Berkheya carlinopsis Welw. ex O.Hoffm. subsp. magalismontana (Bolus) Roessler	LC	No
Berkheya insignis (Harv.) Thell.	LC	No
Berkheya radula (Harv.) De Wild.	LC	No
Berkheya zeyheri Oliv. & Hiern subsp. rehmannii (Thell.) Roessler var. rehmannii	LC	No
Berula thunbergii (DC.) H.Wolff	LC	No
Bewsia biflora (Hack.) Gooss.	LC	No
Blepharis diversispina (Nees) C.B.Clarke	LC	No
Blepharis inaequalis C.B.Clarke	LC	No

Blepharis innocua C.B.Clarke	LC	No
Blepharis subvolubilis C.B.Clarke	LC	No
Boerhavia coccinea Mill. var. coccinea	LC	No
Bonatea antennifera Rolfe	LC	No
Boscia albitrunca (Burch.) Gilg & Gilg-Ben.	LC	No
Bothriochloa insculpta (Hochst. ex A.Rich.) A.Camus	LC	No
Brachiaria bovonei (Chiov.) Robyns	LC	No
Brachiaria eruciformis (Sm.) Griseb.	LC	No
Brachiaria nigropedata (Ficalho & Hiern) Stapf	LC	No
Brachiaria serrata (Thunb.) Stapf	LC	No
Brachycorythis tenuior Rchb.f.	LC	No
Brachylaena transvaalensis E.Phillips & Schweick.	LC	No
Brachymenium acuminatum Harv.	Not Evaluated	No
Brachymenium nepalense Hook.	Not Evaluated	No
Brachystelma brevipedicellatum Turrill	LC	No
Brachystelma minor E.A.Bruce	VU	No
Bryum argenteum Hedw.	Not Evaluated	No
Buddleja salviifolia (L.) Lam.	LC	No
Bulbine angustifolia Poelln.	LC	No
Bulbine capitata Poelln.	LC	No
Bulbine frutescens (L.) Willd.	LC	No
Bulbine latifolia (L.f.) Schult. & J.H.Schult. var. latifolia	LC	No
Bulbine narcissifolia Salm-Dyck	LC	No
Bulbostylis contexta (Nees) M.Bodard	LC	No
Cadaba aphylla (Thunb.) Wild	LC	No
Cadaba termitaria N.E.Br.	LC	No
Calodendrum capense (L.f.) Thunb.	LC	No
Campylopus flaccidus Renauld & Cardot	Not Evaluated	No
Canthium armatum (K.Schum.) Lantz	Not Evaluated	No
Canthium suberosum Codd	LC	No
Carissa bispinosa (L.) Desf. ex Brenan	LC	No
Carissa edulis (Forssk.) Vahl	LC	No
Cassia abbreviata Oliv. subsp. beareana (Holmes) Brenan	LC	No
Catha edulis (Vahl) Forssk. ex Endl.	LC	No
Celosia trigyna L.	LC	No
Cenchrus ciliaris L.	LC	No
Cephalanthus natalensis Oliv.	LC	No

Cephalaria pungens Szabó	LC	No
Cephalaria zeyheriana Szabó	LC	No
Ceropegia conrathii Schltr.	LC	No
Chaenostoma debile (Hutch.) Kornhall	LC	No
Chaetacanthus burchellii Nees	LC	No
Chamaecrista biensis (Steyaert) Lock	LC	No
Chamaecrista capensis (Thunb.) E.Mey. var. capensis	LC	No
Chamaecrista mimosoides (L.) Greene	LC	No
Chascanum hederaceum (Sond.) Moldenke var. hederaceum	LC	No
Chascanum hederaceum (Sond.) Moldenke var. natalense (H.Pearson) Moldenke	LC	No
Cheilanthes viridis (Forssk.) Sw. var. glauca (Sim) Schelpe & N.C.Anthony	LC	No
Chenopodium album L.	Not Evaluated	No
Chironia palustris Burch. subsp. transvaalensis (Gilg) I.Verd.	LC	No
Chironia purpurascens (E.Mey.) Benth. & Hook.f. subsp. humilis (Gilg) I.Verd.	LC	No
Chloris gayana Kunth	LC	No
Chloris pycnothrix Trin.	LC	No
Chloris virgata Sw.	LC	No
Chlorophytum galpinii (Baker) Kativu var. galpinii	LC	No
Chlorophytum recurvifolium (Baker) C.Archer & Kativu	LC	No
Chlorophytum transvaalense (Baker) Kativu	LC	No
Chrysopogon serrulatus Trin.	LC	No
Cissus cactiformis Gilg	LC	No
Cissus cornifolia (Baker) Planch.	LC	No
Citrullus lanatus (Thunb.) Matsum. & Nakai	LC	No
Cladium mariscus (L.) Pohl subsp. jamaicense (Crantz) Kük.	LC	No
Cleome angustifolia Forssk. subsp. petersiana (Klotzsch ex Sond.) Kers	LC	No
Cleome gynandra L.	LC	No
Cleome monophylla L.	LC	No
Cleome rubella Burch.	LC	No
Clerodendrum glabrum E.Mey.	LC	No
Clerodendrum ternatum Schinz	LC	No
Cliffortia nitidula (Engl.) R.E.& T.C.E.Fr. subsp. pilosa Weim.	Not Evaluated	No
Clivia caulescens R.A.Dyer	NT	No
Clutia monticola S.Moore var. monticola	LC	No
Coccinia adoensis (A.Rich.) Cogn.	LC	No
Coccinia sessilifolia (Sond.) Cogn.	LC	No

Colchicum melanthoides (Willd.) J.C.Manning & Vinn. subsp. melanthoides	LC	No
Combretum apiculatum Sond. subsp. apiculatum	LC	No
Combretum erythrophyllum (Burch.) Sond.	LC	No
Combretum molle R.Br. ex G.Don	LC	No
Combretum zeyheri Sond.	LC	No
Commelina africana L. var. krebsiana (Kunth) C.B.Clarke	LC	No
Commelina livingstonii C.B.Clarke	LC	No
Commelina modesta Oberm.	LC	No
Commelina rogersii Burtt Davy	VU	No
Commicarpus pentandrus (Burch.) Heimerl	LC	No
Commicarpus plumbagineus (Cav.) Standl. var. plumbagineus	LC	No
Commiphora africana (A.Rich.) Engl. var. africana	LC	No
Commiphora marlothii Engl.	LC	No
Commiphora mollis (Oliv.) Engl.	LC	No
Conostomium natalense (Hochst.) Bremek. var. glabrum Bremek.	LC	No
Convolvulus aschersonii Engl.	LC	No
Convolvulus farinosus L.	LC	No
Convolvulus sagittatus Thunb.	LC	No
Conyza bonariensis (L.) Cronquist	Not Evaluated	No
Conyza pinnata (L.f.) Kuntze	LC	No
Conyza ulmifolia (Burm.f.) Kuntze	LC	No
Coptosperma rhodesiacum (Bremek.) Degreef	LC	No
Corchorus asplenifolius Burch.	LC	No
Corchorus confusus Wild	LC	No
Corchorus kirkii N.E.Br.	LC	No
Corchorus tridens L.	Not Evaluated	No
Corchorus trilocularis L.	Not Evaluated	No
Cotyledon barbeyi Schweinf. ex Baker	LC	No
Cotyledon orbiculata L. var. orbiculata	LC	No
Crabbea hirsuta Harv.	LC	No
Crassula alba Forssk. var. alba	LC	No
Crassula lanceolata (Eckl. & Zeyh.) Endl. ex Walp. subsp. transvaalensis (Kuntze) Toelken	LC	No
Craterostigma plantagineum Hochst.	LC	No
Crocosmia masoniorum (L.Bolus) N.E.Br.	VU	No
Crossandra greenstockii S.Moore	LC	No
Crotalaria distans Benth. subsp. distans	LC	No

Crotalaria eremicola Baker f. subsp. eremicola	LC	No
Crotalaria pisicarpa Welw. ex Baker	LC	No
Crotalaria sphaerocarpa Perr. ex DC. subsp. sphaerocarpa	LC	No
Croton gratissimus Burch. var. gratissimus	LC	No
Croton gratissimus Burch. var. subgratissimus (Prain) Burtt Davy	LC	No
Croton megalobotrys Müll.Arg.	LC	No
Croton pseudopulchellus Pax	LC	No
Croton sylvaticus Hochst.	LC	No
Cryptolepis cryptolepidioides (Schltr.) Bullock	LC	No
Cucumis africanus L.f.	LC	No
Cucumis anguria L. var. longaculeatus J.H.Kirkbr.	LC	No
Cucumis zeyheri Sond.	LC	No
Cupressus arizonica Greene var. glabra (Sudw.) Little	Not Evaluated	No
Cuscuta campestris Yunck.	Not Evaluated	No
Cussonia natalensis Sond.	LC	No
Cyanotis speciosa (L.f.) Hassk.	LC	No
Cyathula lanceolata Schinz	LC	No
Cyclospermum leptophyllum (Pers.) Sprague ex Britton & P.Wilson	Not Evaluated	No
Cymbopogon nardus (L.) Rendle	LC	No
Cymbopogon pospischilii (K.Schum.) C.E.Hubb.	Not Evaluated	No
Cynodon dactylon (L.) Pers.	LC	No
Cynoglossum lanceolatum Forssk.	LC	No
Cyperus albostriatus Schrad.	LC	No
Cyperus congestus Vahl	LC	No
Cyperus cyperoides (L.) Kuntze subsp. cyperoides	LC	No
Cyperus decurvatus (C.B.Clarke) C.Archer & Goetgh.	LC	No
Cyperus haematocephalus Boeckeler ex C.B.Clarke	LC	No
Cyperus longus L. var. tenuiflorus (Rottb.) Boeck.	LC	No
Cyperus margaritaceus Vahl var. margaritaceus	LC	No
Cyperus rubicundus Vahl	LC	No
Cyperus rupestris Kunth var. rupestris	LC	No
Cyperus sexangularis Nees	LC	No
Cyperus usitatus Burch.	LC	No
Cyphia elata Harv. var. elata	LC	No
Cyphia elata Harv. var. glabra Harv.	LC	No
Cyphia transvaalensis E.Phillips	LC	No
Cyphostemma dasypleurum (C.A.Sm.) J.J.M.van der Merwe	LC	No

Cyphostemma humile (N.E.Br.) Desc. ex Wild & R.B.Drumm. subsp. dolichopus (C.A.Sm.) Wild & R.B.Drumm.	LC	No
Cyphostemma puberulum (C.A.Sm.) Wild & R.B.Drumm.	LC	No
Cyphostemma simulans (C.A.Sm.) Wild & R.B.Drumm.	LC	No
Dactyloctenium aegyptium (L.) Willd.	LC	No
Datura metel L.	Not Evaluated	No
Decorsea galpinii (Burtt Davy) Verdc.	LC	No
Deverra burchellii (DC.) Eckl. & Zeyh.	LC	No
Dianthus zeyheri Sond. subsp. zeyheri	Not Evaluated	No
Dicerocaryum senecioides (Klotzsch) Abels	LC	No
Dichilus lebeckioides DC.	LC	No
Dichrostachys cinerea (L.) Wight & Arn. subsp. africana Brenan & Brummitt var. africana	LC	No
Dicliptera clinopodia Nees	LC	No
Dicliptera fruticosa K.Balkwill	NT	No
Dicoma anomala Sond. subsp. gerrardii (Harv. ex F.C.Wilson) S.Ortíz & Rodr.Oubiña	LC	No
Dicoma macrocephala DC.	LC	No
Didymodoxa caffra (Thunb.) Friis & Wilmot-Dear	LC	No
Digitaria argyrograpta (Nees) Stapf	LC	No
Digitaria diagonalis (Nees) Stapf var. diagonalis	LC	No
Digitaria eriantha Steud.	LC	No
Digitaria ternata (A.Rich.) Stapf	LC	No
Diheteropogon amplectens (Nees) Clayton var. amplectens	LC	No
Dimorphotheca jucunda E.Phillips	LC	No
Dioscorea cotinifolia Kunth	LC	No
Dioscorea sylvatica Eckl. var. sylvatica	Not Evaluated	No
Diospyros lycioides Desf. subsp. lycioides	LC	No
Diospyros lycioides Desf. subsp. sericea (Bernh.) De Winter	LC	No
Dipcadi glaucum (Burch. ex Ker Gawl.) Baker	LC	No
Dipcadi viride (L.) Moench	LC	No
Disa chrysostachya Sw.	LC	No
Doellia cafra (DC.) Anderb.	LC	No
Dombeya burgessiae Gerrard ex Harv.	LC	No
Dovyalis caffra (Hook.f. & Harv.) Warb.	LC	No
Drimia elata Jacq.	DDT	No
Droguetia iners (Forssk.) Schweinf. subsp. iners	LC	No
Dumortiera hirsuta (Sw.) Nees	Not Evaluated	No

Duvalia polita N.E.Br.	LC	No
Dyschoriste fischeri Lindau	LC	No
Dyschoriste transvaalensis C.B.Clarke	LC	No
Echinochloa holubii (Stapf) Stapf	LC	No
Ehretia obtusifolia Hochst. ex A.DC.	LC	No
Ehretia rigida (Thunb.) Druce subsp. nervifolia Retief & A.E.van Wyk	LC	No
Ehrharta erecta Lam. var. erecta	LC	No
Ekebergia pterophylla (C.DC.) Hofmeyr	LC	No
Elaeodendron transvaalense (Burtt Davy) R.H.Archer	NT	No
Elephantorrhiza burkei Benth.	LC	No
Eleusine coracana (L.) Gaertn. subsp. africana (Kenn.-O'Byrne) Hilu & de Wet	LC	No
Elionurus muticus (Spreng.) Kunth	LC	No
Emilia transvaalensis (Bolus) C.Jeffrey	LC	No
Enicostema axillare (Lam.) A.Raynal subsp. axillare	LC	No
Enneapogon cenchroides (Licht. ex Roem. & Schult.) C.E.Hubb.	LC	No
Enneapogon scoparius Stapf	LC	No
Entandrophragma caudatum (Sprague) Sprague	LC	No
Epilobium salignum Hausskn.	LC	No
Equisetum ramosissimum Desf. subsp. ramosissimum	LC	No
Eragrostis amabilis (L.) Hook. & Arn.	LC	No
Eragrostis aspera (Jacq.) Nees	LC	No
Eragrostis barbinodis Hack.	LC	No
Eragrostis biflora Hack. ex Schinz	LC	No
Eragrostis capensis (Thunb.) Trin.	LC	No
Eragrostis chloromelas Steud.	LC	No
Eragrostis cilianensis (All.) Vignolo ex Janch.	LC	No
Eragrostis crassinervis Hack.	LC	No
Eragrostis curvula (Schrad.) Nees	LC	No
Eragrostis gummiflua Nees	LC	No
Eragrostis habrantha Rendle	LC	No
Eragrostis heteromera Stapf	LC	No
Eragrostis hierniana Rendle	LC	No
Eragrostis inamoena K.Schum.	LC	No
Eragrostis lehmanniana Nees var. lehmanniana	LC	No
Eragrostis patentipilosa Hack.	LC	No
Eragrostis plana Nees	LC	No
Eragrostis racemosa (Thunb.) Steud.	LC	No
Eragrostis rigidior Pilg.	LC	No
Eragrostis rotifer Rendle	LC	No

Eragrostis sclerantha Nees subsp. sclerantha	LC	No
Eragrostis superba Peyr.	LC	No
Eragrostis trichophora Coss. & Durieu	LC	No
Eragrostis viscosa (Retz.) Trin.	LC	No
Erica evansii (N.E.Br.) E.G.H.Oliv.	LC	No
Eriosema burkei Benth. ex Harv. var. burkei	LC	No
Eriosema cordatum E.Mey.	LC	No
Eriosema distinctum N.E.Br.	LC	No
Eriosema nutans Schinz	LC	No
Eriosema pauciflorum Klotzsch var. pauciflorum	LC	No
Eriosema salignum E.Mey.	LC	No
Eriospermum flagelliforme (Baker) J.C.Manning	LC	No
Eriospermum porphyrovalve Baker	LC	No
Erpodium coronatum (Hook.f. & Wilson) Mitt. subsp. transvaaliense (Broth. & Wager) Magill	Not Evaluated	No
Erythrina humeana Spreng.	LC	No
Erythrina lysistemon Hutch.	LC	No
Eucalyptus camaldulensis Dehnh.	Not Evaluated	No
Euclea crispa (Thunb.) Gürke subsp. crispa	LC	No
Euclea natalensis A.DC. subsp. angustifolia F.White	LC	No
Euclea undulata Thunb.	LC	No
Eulophia clitellifera (Rchb.f.) Bolus	LC	No
Eulophia hians Spreng. var. nutans (Sond.) S.Thomas	LC	No
Eulophia ovalis Lindl. var. bainesii (Rolfe) P.J.Cribb & la Croix	LC	No
Euphorbia aeruginosa Schweick.	LC	No
Euphorbia clavarioides Boiss. var. truncata (N.E.Br.) A.C.White, R.A.Dyer & B.Sloane	LC	No
Euphorbia enormis N.E.Br.	LC	No
Euphorbia groenewaldii R.A.Dyer	CR	No
Euphorbia guerichiana Pax	LC	No
Euphorbia inaequilatera Sond. var. inaequilatera	LC	No
Euphorbia kraussiana Bernh. var. kraussiana	LC	No
Euphorbia maleolens E.Phillips	LC	No
Euphorbia neopolycnemoides Pax & K.Hoffm.	LC	No
Euphorbia restricta R.A.Dyer	Rare	No
Euphorbia schinzii Pax	LC	No
Euphorbia tirucalli L.	LC	No
Euphorbia trichadenia Pax var. trichadenia	LC	No
Eustachys paspaloides (Vahl) Lanza & Mattei	LC	No
Evolvulus alsinoides (L.) L.	LC	No

Exormotheca holstii Steph.	Not Evaluated	No
Fabronia gueinzii Hampe	Not Evaluated	No
Fadogia homblei De Wild.	LC	No
Faidherbia albida (Delile) A.Chev.	LC	No
Faurea rochetiana (A.Rich.) Chiov. ex Pic.Serm.	LC	No
Faurea saligna Harv.	LC	No
Felicia mossamedensis (Hiern) Mendonça	LC	No
Felicia muricata (Thunb.) Nees subsp. muricata	LC	No
Ficus abutilifolia (Miq.) Miq.	LC	No
Ficus ingens (Miq.) Miq.	LC	No
Ficus salicifolia Vahl	LC	No
Ficus sur Forssk.	LC	No
Fimbristylis complanata (Retz.) Link	LC	No
Fimbristylis ferruginea (L.) Vahl	LC	No
Fingerhuthia africana Lehm.	LC	No
Fissidens asplenioides Hedw.	Not Evaluated	No
Fissidens ovatus Brid.	Not Evaluated	No
Fissidens rufescens Hornsch.	Not Evaluated	No
Flueggea virosa (Roxb. ex Willd.) Voigt subsp. virosa	LC	No
Fuirena pachyrrhiza Ridl.	LC	No
Fuirena pubescens (Poir.) Kunth var. pubescens	LC	No
Funaria hygrometrica Hedw.	Not Evaluated	No
Gazania krebsiana Less. subsp. arctotoides (Less.) Roessler	LC	No
Gazania krebsiana Less. subsp. serrulata (DC.) Roessler	LC	No
Geigeria burkei Harv. subsp. burkei var. burkei	LC	No
Geigeria burkei Harv. subsp. burkei var. hirtella Merxm.	LC	No
Geranium purpureum Vill.	Not Evaluated	No
Gerbera piloselloides (L.) Cass.	LC	No
Gisekia pharnacioides L. var. pharnacioides	LC	No
Gladiolus oatesii Rolfe	LC	No
Gladiolus permeabilis D.Delaroche subsp. edulis (Burch. ex Ker Gawl.) Oberm.	LC	No
Gloriosa superba L.	LC	No
Gnidia kraussiana Meisn. var. kraussiana	LC	No
Gnidia sericocephala (Meisn.) Gilg ex Engl.	LC	No
Gomphocarpus fruticosus (L.) Aiton f. subsp. fruticosus	LC	No

Gomphrena celosioides Mart.	Not Evaluated	No
Grewia flavescens Juss.	LC	No
Grewia hexamita Burret	LC	No
Grewia monticola Sond.	LC	No
Grewia occidentalis L. var. occidentalis	LC	No
Grewia retinervis Burret	LC	No
Grewia vernicosa Schinz	LC	No
Greyia radlkoferi Szyszyl.	LC	No
Guilleminea densa (Willd. ex Roem. & Schult.) Moq.	Not Evaluated	No
Gymnosporia harveyana Loes. subsp. harveyana	LC	No
Gymnosporia senegalensis (Lam.) Loes.	LC	No
Gymnostomum lingulatum Rehmann ex Sim	Not Evaluated	No
Haplocarpha scaposa Harv.	LC	No
Harpagophytum zeyheri Decne. subsp. zeyheri	LC	No
Harpephyllum caffrum Bernh. ex Krauss	LC	No
Harveya speciosa Bernh.	LC	No
Helichrysum argyrosphaerum DC.	LC	No
Helichrysum candolleanum H.Buek	LC	No
Helichrysum herbaceum (Andrews) Sweet	LC	No
Helichrysum kraussii Sch.Bip.	LC	No
Helichrysum lepidissimum S.Moore	LC	No
Helichrysum nudifolium (L.) Less. var. pilosellum (L.f.) Beentje	LC	No
Helichrysum rugulosum Less.	LC	No
Helichrysum splendidum (Thunb.) Less.	LC	No
Helichrysum subglomeratum Less.	LC	No
Helichrysum zeyheri Less.	LC	No
Helinus integrifolius (Lam.) Kuntze	LC	No
Heliotropium ciliatum Kaplan	LC	No
Heliotropium nelsonii C.H.Wright	LC	No
Heliotropium ovalifolium Forssk.	LC	No
Heliotropium strigosum Willd.	LC	No
Heliotropium zeylanicum (Burm.f.) Lam.	LC	No
Hermannia antonii I.Verd.	LC	No
Hermannia boraginiflora Hook.	LC	No
Hermannia burkei Burtt Davy	LC	No
Hermannia floribunda Harv.	LC	No
Hermannia glanduligera K.Schum.	LC	No
Hermannia quartiniana A.Rich.	LC	No

Hermannia stellulata (Harv.) K.Schum.	LC	No
Hermbstaedtia fleckii (Schinz) Baker & C.B.Clarke	LC	No
Hermbstaedtia odorata (Burch.) T.Cooke var. albi-rosea Suess.	LC	No
Hermbstaedtia odorata (Burch.) T.Cooke var. odorata	LC	No
Heteromorpha arborescens (Spreng.) Cham. & Schltdl. var. abyssinica (Hochst. ex A.Rich.) H.Wolff	LC	No
Heteropogon contortus (L.) Roem. & Schult.	LC	No
Heteropyxis natalensis Harv.	LC	No
Hibiscus calyphyllus Cav.	LC	No
Hibiscus engleri K.Schum.	LC	No
Hibiscus lunarifolius Willd.	LC	No
Hibiscus microcarpus Garcke	LC	No
Hibiscus pedunculatus L.f.	LC	No
Hibiscus praeteritus R.A.Dyer	LC	No
Hibiscus pusillus Thunb.	LC	No
Hibiscus subreniformis Burtt Davy	LC	No
Hibiscus trionum L.	Not Evaluated	No
Hilliardiella aristata (DC.) H.Rob.	LC	No
Hilliardiella hirsuta (DC.) H.Rob.	LC	No
Hirpicium bechuanense (S.Moore) Roessler	LC	No
Hirpicium gorterioides (Oliv. & Hiern) Roessler subsp. schinzii (O.Hoffm.) Roessler	Not Evaluated	No
Huernia zebrina N.E.Br. subsp. insigniflora (C.A.Maass) Bruyns	LC	No
Huperzia verticillata (L.f.) Trevis.	LC	No
Hyparrhenia anamesa Clayton	LC	No
Hyparrhenia cymbaria (L.) Stapf	LC	No
Hyparrhenia dregeana (Nees) Stapf ex Stent	LC	No
Hyparrhenia filipendula (Hochst.) Stapf var. filipendula	LC	No
Hyparrhenia filipendula (Hochst.) Stapf var. pilosa (Hochst.) Stapf	LC	No
Hyparrhenia gazensis (Rendle) Stapf	LC	No
Hyparrhenia hirta (L.) Stapf	LC	No
Hyparrhenia quarrei Robyns	LC	No
Hyparrhenia variabilis Stapf	LC	No
Hypericum aethiopicum Thunb. subsp. sonderi (Bredell) N.Robson	LC	No
Hypericum lalandii Choisy	LC	No
Hypericum revolutum Vahl subsp. revolutum	LC	No
Hypertelis bowkeriana Sond.	LC	No
Hypertelis salsoloides (Burch.) Adamson var. salsoloides	LC	No
Hyperthelia dissoluta (Nees ex Steud.) Clayton	LC	No

Hypoestes forskaolii (Vahl) R.Br.	LC	No
Hypoxis hemerocallidea Fisch., C.A.Mey. & Avé-Lall.	Declining	No
Hypoxis parvifolia Baker	LC	No
Imperata cylindrica (L.) Raeusch.	LC	No
Indigastrum costatum (Guill. & Perr.) Schrire subsp. macrum (E.Mey.) Schrire	LC	No
Indigofera alternans DC. var. alternans	LC	No
Indigofera circinnata Benth. ex Harv.	LC	No
Indigofera cryptantha Benth. ex Harv. var. cryptantha	LC	No
Indigofera filipes Benth. ex Harv.	LC	No
Indigofera heterotricha DC.	LC	No
Indigofera hilaris Eckl. & Zeyh. var. hilaris	LC	No
Indigofera schinzii N.E.Br.	LC	No
Indigofera setiflora Baker	LC	No
Indigofera torulosa E.Mey. var. angustiloba (Baker f.) J.B.Gillett	LC	No
Indigofera tristoides N.E.Br.	LC	No
Indigofera vicioides Jaub. & Spach var. vicioides	LC	No
Inula glomerata Oliv. & Hiern	LC	No
Ipomoea albivenia (Lindl.) Sweet	LC	No
Ipomoea bolusiana Schinz	LC	No
Ipomoea crassipes Hook. var. crassipes	LC	No
Ipomoea gracilisepala Rendle	LC	No
Ipomoea obscura (L.) Ker Gawl. var. obscura	LC	No
Ipomoea papilio Hallier f.	LC	No
Ipomoea purpurea (L.) Roth	Not Evaluated	No
Ipomoea robertsiana Rendle	LC	No
Isoglossa delicatula C.B.Clarke	LC	No
Isoglossa eckloniana (Nees) Lindau	LC	No
Jamesbrittenia atropurpurea (Benth.) Hilliard subsp. atropurpurea	LC	No
Jamesbrittenia burkeana (Benth.) Hilliard	LC	No
Jamesbrittenia micrantha (Klotzsch) Hilliard	LC	No
Jasminum multipartitum Hochst.	LC	No
Jatropha zeyheri Sond.	LC	No
Juncus exsertus Buchenau	LC	No
Juncus punctorius L.f.	LC	No
Juncus rigidus Desf.	LC	No
Justicia anagalloides (Nees) T.Anderson	LC	No
Justicia betonica L.	LC	No
Justicia protracta (Nees) T.Anderson subsp. protracta	LC	No

Justicia protracta (Nees) T.Anderson subsp. rhodesiana (S.Moore) Immelman	LC	No
Kalanchoe rotundifolia (Haw.) Haw.	LC	No
Kanahia laniflora (Forssk.) R.Br.	LC	No
Karomia speciosa (Hutch. & Corbishley) R.Fern. forma speciosa	Not Evaluated	No
Kirkia acuminata Oliv.	LC	No
Kirkia wilmsii Engl.	LC	No
Kleinia galpinii Hook.f.	LC	No
Kleinia longiflora DC.	LC	No
Kleinia stapeliiformis (E.Phillips) Stapf	LC	No
Kleinia venteri Van Jaarsv.	Not Evaluated	No
Knowltonia transvaalensis Szyszyl. var. transvaalensis	LC	No
Kohautia cynanchica DC.	LC	No
Kohautia virgata (Willd.) Bremek.	LC	No
Kyllinga alba Nees	LC	No
Kyphocarpa angustifolia (Moq.) Lopr.	LC	No
Lactuca inermis Forssk.	LC	No
Lagarosiphon muscoides Harv.	LC	No
Laggera crispata (Vahl) Hepper & J.R.I.Wood	LC	No
Landolphia kirkii Dyer ex Hook.f.	LC	No
Lannea discolor (Sond.) Engl.	LC	No
Lannea edulis (Sond.) Engl. var. edulis	LC	No
Lannea schweinfurthii (Engl.) Engl. var. stuhlmannii (Engl.) Kokwaro	LC	No
Lantana mearnsii Moldenke var. latibracteolata Moldenke	LC	No
Lantana rugosa Thunb.	LC	No
Laportea peduncularis (Wedd.) Chew subsp. peduncularis	LC	No
Ledebouria cooperi (Hook.f.) Jessop	LC	No
Ledebouria floribunda (Baker) Jessop	LC	No
Ledebouria marginata (Baker) Jessop	LC	No
Ledebouria revoluta (L.f.) Jessop	LC	No
Leidesia procumbens (L.) Prain	LC	No
Leonotis ocymifolia (Burm.f.) Iwarsson	LC	No
Lepidium bonariense L.	Not Evaluated	No
Lepidium virginicum L.	Not Evaluated	No
Leptodontium viticulosoides (P.Beauv.) Wijk & Margad.	Not Evaluated	No
Leucas capensis (Benth.) Engl.	LC	No

Leucas martinicensis (Jacq.) R.Br.	LC	No
Leucas neuflizeana Courbon	LC	No
Leucas sexdentata Skan	LC	No
Leucobryum acutifolium (Mitt.) Cardot	Not Evaluated	No
Lintonia nutans Stapf	LC	No
Lippia javanica (Burm.f.) Spreng.	LC	No
Lippia scaberrima Sond.	LC	No
Lippia wilmsii H.Pearson	LC	No
Litogyne gariepina (DC.) Anderb.	LC	No
Lobelia erinus L.	LC	No
Lobelia flaccida (C.Presl) A.DC. subsp. mossiana (R.D.Good) Thulin	LC	No
Lobelia thermalis Thunb.	LC	No
Lopholaena coriifolia (Sond.) E.Phillips & C.A.Sm.	LC	No
Lotononis fruticoides B.-E.van Wyk	LC	No
Lotononis laxa Eckl. & Zeyh.	LC	No
Lotus discolor E.Mey. subsp. discolor	LC	No
Loudetia simplex (Nees) C.E.Hubb.	LC	No
Lycium cinereum Thunb.	LC	No
Lycium schizocalyx C.H.Wright	LC	No
Macledium zeyheri (Sond.) S.Ortíz subsp. zeyheri	LC	No
Maerua angolensis DC. subsp. angolensis	LC	No
Maerua parvifolia Pax	LC	No
Maesa lanceolata Forssk.	LC	No
Margelliantha caffra (Bolus) P.J.Cribb & J.Stewart	LC	No
Maytenus undata (Thunb.) Blakelock	LC	No
Megalochlamys kenyensis Vollesen subsp. australis Vollesen	LC	No
Melanospermum foliosum (Benth.) Hilliard	LC	No
Melanthera triternata (Klatt) Wild	Not Evaluated	No
Melhania burchellii DC.	LC	No
Melhania integra I.Verd.	LC	No
Melia azedarach L.	Not Evaluated	No
Melilotus albus Medik.	Not Evaluated	No
Melilotus indicus (L.) All.	Not Evaluated	No
Melinis nerviglumis (Franch.) Zizka	LC	No
Melinis repens (Willd.) Zizka subsp. repens	LC	No
Menodora africana Hook.	LC	No

Mentha longifolia (L.) Huds. subsp. polyadena (Briq.) Briq.	LC	No
Merremia palmata Hallier f.	LC	No
Microchloa caffra Nees	LC	No
Microchloa kunthii Desv.	LC	No
Mimulus gracilis R.Br.	LC	No
Mimusops zeyheri Sond.	LC	No
Miscanthus junceus (Stapf) Pilg.	LC	No
Momordica balsamina L.	LC	No
Monopsis decipiens (Sond.) Thulin	LC	No
Monsonia angustifolia E.Mey. ex A.Rich.	LC	No
Moraea stricta Baker	LC	No
Mosdenia leptostachys (Ficalho & Hiern) Clayton	LC	No
Mundulea sericea (Willd.) A.Chev. subsp. sericea	LC	No
Myrsine africana L.	LC	No
Mystroxylon aethiopicum (Thunb.) Loes. subsp. aethiopicum	LC	No
Neonotonia wightii (Wight. ex Arn.) J.A.Lackey	LC	No
Neorautanenia mitis (A.Rich.) Verdc.	LC	No
Nesaea anagalloides (Sond.) Koehne	LC	No
Nesaea schinzii Koehne	LC	No
Nicotiana glauca Graham	Not Evaluated	No
Nidorella auriculata DC.	LC	No
Nidorella hottentotica DC.	LC	No
Nidorella resedifolia DC. subsp. resedifolia	LC	No
Nuxia congesta R.Br. ex Fresen.	LC	No
Ochna arborea Burch. ex DC. var. arborea	LC	No
Ochna arborea Burch. ex DC. var. oconnorii (E.Phillips) Du Toit	LC	No
Ocimum americanum L. var. americanum	LC	No
Ocimum obovatum E.Mey. ex Benth. subsp. obovatum var. obovatum	LC	No
Ocimum pseudoserratum (M.Ashby) A.J.Paton	LC	No
Oenothera rosea L'Hér. ex Aiton	Not Evaluated	No
Oldenlandia corymbosa L. var. caespitosa (Benth.) Verdc.	LC	No
Oldenlandia herbacea (L.) Roxb. var. herbacea	LC	No
Oldenlandia rupicola (Sond.) Kuntze var. rupicola	LC	No
Ophioglossum gracillimum Welw. ex Hook. & Baker	EN	No
Ophioglossum lusoafricanum Welw. ex Prantl	LC	No
Ophrestia oblongifolia (E.Mey.) H.M.L.Forbes var. oblongifolia	LC	No
Orbea melanantha (Schltr.) Bruyns	LC	No
Ormocarpum trichocarpum (Taub.) Engl.	LC	No

Ornithoglossum vulgare B.Nord.	LC	No
Osteospermum muricatum E.Mey. ex DC. subsp. muricatum	LC	No
Otholobium polyphyllum (Eckl. & Zeyh.) C.H.Stirt.	LC	No
Otholobium wilmsii (Harms) C.H.Stirt.	LC	No
Oxalis convexula Jacq.	LC	No
Oxalis corniculata L.	Not Evaluated	No
Oxalis semiloba Sond. subsp. semiloba	LC	No
Oxygonum dregeanum Meisn. subsp. canescens (Sond.) Germish. var. canescens	LC	No
Oxygonum dregeanum Meisn. subsp. canescens (Sond.) Germish. var. dissectum Germish.	LC	No
Oxygonum sinuatum (Hochst. & Steud. ex Meisn.) Dammer	Not Evaluated	No
Ozoroa albicans R.Fern. & A.Fern.	LC	No
Pachycarpus concolor E.Mey. subsp. concolor	LC	No
Palamocladium leskeoides (Hook.) E.Britton	Not Evaluated	No
Panicum arcurameum Stapf	LC	No
Panicum coloratum L. var. coloratum	LC	No
Panicum maximum Jacq.	LC	No
Panicum natalense Hochst.	LC	No
Panicum schinzii Hack.	LC	No
Pappea capensis Eckl. & Zeyh.	LC	No
Paspalum dilatatum Poir.	Not Evaluated	No
Paspalum distichum L.	LC	No
Paspalum urvillei Steud.	Not Evaluated	No
Pavetta inandensis Bremek.	LC	No
Pavetta schumanniana F.Hoffm. ex K.Schum.	LC	No
Pavonia burchellii (DC.) R.A.Dyer	LC	No
Pearsonia aristata (Schinz) Dummer	LC	No
Pearsonia cajanifolia (Harv.) Polhill subsp. cryptantha (Baker) Polhill	LC	No
Pelargonium dolomiticum R.Knuth	LC	No
Pelargonium graveolens L'Hér.	LC	No
Pelargonium luridum (Andrews) Sweet	LC	No
Pelargonium multicaule Jacq. subsp. multicaule	LC	No
Pellaea calomelanos (Sw.) Link var. calomelanos	LC	No
Peltophorum africanum Sond.	LC	No
Peltula umbilicata (Vain.) Swinscow & Krog	Not Evaluated	No

Pentanisia angustifolia (Hochst.) Hochst.	LC	No
Pentanisia prunelloides (Klotzsch ex Eckl. & Zeyh.) Walp. subsp. latifolia (Hochst.) Verdc.	LC	No
Pentanisia prunelloides (Klotzsch ex Eckl. & Zeyh.) Walp. subsp. prunelloides	LC	No
Pentarrhinum insipidum E.Mey.	LC	No
Peperomia tetraphylla (G.Forst.) Hook. & Arn.	LC	No
Pergularia daemia (Forssk.) Chiov. subsp. daemia	LC	No
Perotis patens Gand.	LC	No
Persicaria hystricula (J.Schust.) Soják	LC	No
Persicaria lapathifolia (L.) Gray	Not Evaluated	No
Philenoptera violacea (Klotzsch) Schrire	LC	No
Philyrophyllum schinzii O.Hoffm.	LC	No
Phyllanthus incurvus Thunb.	LC	No
Phyllanthus parvulus Sond. var. garipensis (E.Mey. ex Drège) Radcl.-Sm.	LC	No
Physalis angulata L.	Not Evaluated	No
Piaranthus atrosanguineus (N.E.Br.) Bruyns	LC	No
Pilea rivularis Wedd.	LC	No
Plagiochila heterostipa Steph.	Not Evaluated	No
Plantago lanceolata L.	LC	No
Plectranthus cylindraceus Hochst. ex Benth.	LC	No
Plectranthus grallatus Briq.	LC	No
Plectranthus grandidentatus Gürke	LC	No
Plectranthus hadiensis (Forssk.) Schweinf. ex Spreng. var. tomentosus (Benth.) Codd	LC	No
Plectranthus neochilus Schltr.	LC	No
Plicosepalus kalachariensis (Schinz) Danser	LC	No
Pluchea bojeri (DC.) Humbert	LC	No
Pogonarthria squarrosa (Roem. & Schult.) Pilg.	LC	No
Pogonarthria squarrosa (Roem. & Schult.) Pilg.	LC	No
Pollichia campestris Aiton	LC	No
Polygala albida Schinz subsp. albida	LC	No
Polygala hottentotta C.Presl	LC	No
Polygala krumanina Burch. ex Ficalho & Hiern	LC	No
Polygala transvaalensis Chodat subsp. transvaalensis	LC	No
Polygala virgata Thunb. var. decora (Sond.) Harv.	LC	No
Polygonum plebeium R.Br.	LC	No
Porella capensis (Gottsche) Steph.	Not Evaluated	No

Portulaca pilosa L.	LC	No
Portulaca quadrifida L.	LC	No
Potamogeton pusillus L.	LC	No
Pouzolzia mixta Solms var. mixta	LC	No
Prosphytochloa prehensilis (Nees) Schweick.	LC	No
Protea gaguedi J.F.Gmel.	LC	No
Protea roupelliae Meisn. subsp. roupelliae	LC	No
Protea rubropilosa Beard	LC	No
Pseudarthria hookeri Wight & Arn. var. hookeri	LC	No
Pseudognaphalium luteo-album (L.) Hilliard & B.L.Burtt	Not Evaluated	No
Pseudolachnostylis maprouneifolia Pax var. maprouneifolia	Not Evaluated	No
Pseudoleskea leskeoides (Paris) Müll.Hal.	Not Evaluated	No
Pseudoleskeopsis claviramea (Müll.Hal.) Thér.	Not Evaluated	No
Pseudoleskeopsis pseudoattenuata (Müll.Hal.) Thér.	Not Evaluated	No
Psiadia punctulata (DC.) Vatke	LC	No
Psilocaulon bicorne (Sond.) Schwantes	LC	No
Psydrax livida (Hiern) Bridson	LC	No
Psydrax obovata (Eckl. & Zeyh.) Bridson subsp. obovata	LC	No
Pteris vittata L.	LC	No
Pterodiscus ngamicus N.E.Br. ex Stapf	LC	No
Pterodiscus speciosus Hook.	LC	No
Pterolobium stellatum (Forssk.) Brenan	LC	No
Ptycholobium plicatum (Oliv.) Harms subsp. plicatum	LC	No
Pulicaria scabra (Thunb.) Druce	LC	No
Pupalia lappacea (L.) A.Juss. var. lappacea	LC	No
Pycnostachys urticifolia Hook.	LC	No
Rabdosiella calycina (Benth.) Codd	LC	No
Racopilum capense Müll.Hal. ex Broth.	Not Evaluated	No
Radula boryana (F.Weber) Mont.	Not Evaluated	No
Ranunculus multifidus Forssk.	LC	No
Raphionacme hirsuta (E.Mey.) R.A.Dyer	LC	No
Raphionacme procumbens Schltr.	LC	No
Rauvolfia caffra Sond.	LC	No
Rendlia altera (Rendle) Chiov.	LC	No
Rhamphicarpa fistulosa (Hochst.) Benth.	LC	No

Rhoicissus tridentata (L.f.) Wild & R.B.Drumm. subsp. tridentata	Not Evaluated	No
Rhynchosia caribaea (Jacq.) DC.	LC	No
Rhynchosia confusa Burtt Davy	Not Evaluated	No
Rhynchosia komatiensis Harms	LC	No
Rhynchosia minima (L.) DC. var. prostrata (Harv.) Meikle	LC	No
Rhynchosia nervosa Benth. ex Harv. var. nervosa	LC	No
Rhynchosia nitens Benth. ex Harv.	LC	No
Rhynchosia spectabilis Schinz	LC	No
Rhynchosia totta (Thunb.) DC. var. totta	LC	No
Rhynchosia venulosa (Hiern) K.Schum.	Not Evaluated	No
Rhynchosia woodii Schinz	LC	No
Riccia cavernosa Hoffm. emend. Raddi	Not Evaluated	No
Riccia okahandjana S.W.Arnell	Not Evaluated	No
Riccia rosea O.H.Volk & Perold	Not Evaluated	No
Riccia volkii S.W.Arnell	Not Evaluated	No
Riocreuxia picta Schltr.	LC	No
Rorippa nudiuscula Thell.	LC	No
Rotheca hirsuta (Hochst.) R.Fern.	LC	No
Rotheca myricoides (Hochst.) Steane & Mabb.	LC	No
Rubia petiolaris DC.	LC	No
Rubus longepedicellatus (Gust.) C.H.Stirt.	LC	No
Ruellia patula Jacq.	LC	No
Ruelliopsis setosa (Nees) C.B.Clarke	LC	No
Rumex crispus L.	Not Evaluated	No
Salvia runcinata L.f.	LC	No
Samolus valerandi L.	LC	No
Sansevieria aethiopica Thunb.	LC	No
Sansevieria pearsonii N.E.Br.	LC	No
Satyrium hallackii Bolus subsp. ocellatum (Bolus) A.V.Hall	LC	No
Satyrium neglectum Schltr. subsp. neglectum var. neglectum	LC	No
Satyrium trinerve Lindl.	LC	No
Scabiosa columbaria L.	LC	No
Schinus molle L.	Not Evaluated	No
Schistostephium artemisiifolium Baker subsp. artemisiifolium	LC	No

Schistostephium heptalobum (DC.) Oliv. & Hiern	LC	No
Schizachyrium sanguineum (Retz.) Alston	LC	No
Schizocarphus nervosus (Burch.) Van der Merwe	LC	No
Schizoglossum bidens E.Mey. subsp. productum (N.E.Br.) Kupicha	LC	No
Schkuhria pinnata (Lam.) Kuntze ex Thell.	Not Evaluated	No
Schlotheimia ferruginea (Bruch ex Hook. & Grev.) Brid.	Not Evaluated	No
Schlotheimia percuspidata Müll.Hal.	Not Evaluated	No
Schmidtia pappophoroides Steud.	LC	No
Schoenoplectus brachyceras (Hochst. ex A.Rich.) Lye	LC	No
Schoenoplectus muricinux (C.B.Clarke) J.Raynal	LC	No
Schoenoplectus muriculatus (Kük.) Browning	LC	No
Schotia brachypetala Sond.	LC	No
Scirpoides dioeca (Kunth) Browning	LC	No
Sclerocarya birrea (A.Rich.) Hochst. subsp. caffra (Sond.) Kokwaro	LC	No
Searsia chirindensis (Baker f.) Moffett	LC	No
Searsia discolor (E.Mey. ex Sond.) Moffett	LC	No
Searsia gueinzii (Sond.) F.A.Barkley	LC	No
Searsia lancea (L.f.) F.A.Barkley	LC	No
Searsia magalismontana (Sond.) Moffett subsp. magalismontana	LC	No
Searsia pentheri (Zahlbr.) Moffett	LC	No
Searsia pyroides (Burch.) Moffett var. pyroides	LC	No
Searsia rehmanniana (Engl.) Moffett var. rehmanniana	LC	No
Searsia rogersii (Schönland) Moffett	LC	No
Searsia transvaalensis (Engl.) Moffett	LC	No
Searsia tumulicola (S.Moore) Moffett var. tumulicola	LC	No
Sebaea junodii Schinz	LC	No
Sebaea leiostyla Gilg	LC	No
Sebaea longicaulis Schinz	LC	No
Sebaea rehmannii Schinz	LC	No
Seddera capensis (E.Mey. ex Choisy) Hallier f.	LC	No
Selaginella kraussiana (Kunze) A.Braun	LC	No
Selago cecilae (Rolfe) Eyles	LC	No
Selago lacunosa Klotzsch	LC	No
Selago rehmannii Rolfe	LC	No
Sematophyllum brachycarpum (Hampe) Broth.	Not Evaluated	No

Senecio inaequidens DC.	LC	No
Senecio inornatus DC.	LC	No
Senecio isatidioides E.Phillips & C.A.Sm.	LC	No
Senecio junodii Hutch. & Burtt Davy	LC	No
Senecio latifolius DC.	LC	No
Senecio oxyriifolius DC. subsp. oxyriifolius	LC	No
Senecio speciosus Willd.	LC	No
Senecio venosus Harv.	LC	No
Senegalia ataxacantha DC.	LC	No
Senegalia burkei Benth.	LC	No
Senna italica Mill. subsp. arachoides (Burch.) Lock	LC	No
Senna septemtrionalis (Viv.) H.S.Irwin & Barneby	Not Evaluated	No
Sesamum alatum Thonn.	LC	No
Sesbania transvaalensis J.B.Gillett	LC	No
Setaria incrassata (Hochst.) Hack.	LC	No
Setaria pumila (Poir.) Roem. & Schult.	LC	No
Setaria sphacelata (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss var. sericea (Stapf) Clayton	LC	No
Setaria sphacelata (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss var. sphacelata	LC	No
Setaria sphacelata (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss var. torta (Stapf) Clayton	LC	No
Setaria verticillata (L.) P.Beauv.	LC	No
Sida chrysantha Ulbr.	LC	No
Sida cordifolia L. subsp. cordifolia	LC	No
Sida rhombifolia L. subsp. rhombifolia	LC	No
Solanum lichtensteinii Willd.	LC	No
Solanum nigrum L.	Not Evaluated	No
Solanum retroflexum Dunal	LC	No
Solanum supinum Dunal var. supinum	LC	No
Solanum terminale Forssk. subsp. terminale	LC	No
Solenostemon latifolius (Hochst. ex Benth.) J.K.Morton	LC	No
Sonchus asper (L.) Hill subsp. asper	Not Evaluated	No
Sonchus dregeanus DC.	LC	No
Sonchus maritimus L.	Not Evaluated	No
Sorghum versicolor Andersson	LC	No
Sparrmannia ricinocarpa (Eckl. & Zeyh.) Kuntze var. ricinocarpa	LC	No
Spermacoce natalensis Hochst.	LC	No

Sphaeranthus peduncularis DC. subsp. peduncularis	LC	No
Sphagnum truncatum Hornsch.	Not Evaluated	No
Sphedamnocarpus pruriens (A.Juss.) Szyszyl. subsp. galphimiifolius (A.Juss.) P.D.de Villiers & D.J.Botha	LC	No
Sphedamnocarpus pruriens (A.Juss.) Szyszyl. subsp. pruriens	LC	No
Sporobolus africanus (Poir.) Robyns & Tournay	LC	No
Sporobolus festivus Hochst. ex A.Rich.	LC	No
Sporobolus fimbriatus (Trin.) Nees	LC	No
Sporobolus ioclados (Trin.) Nees	LC	No
Sporobolus nitens Stent	LC	No
Sporobolus pyramidalis P.Beauv.	LC	No
Sporobolus stapfianus Gand.	LC	No
Stachys spathulata Burch. ex Benth.	LC	No
Stephania abyssinica (Quart.-Dill. & A.Rich.) Walp. var. abyssinica	LC	No
Sterculia rogersii N.E.Br.	LC	No
Stiburus alopecuroides (Hack.) Stapf	LC	No
Stipagrostis hirtigluma subsp. patula (Hack.) De Winter	LC	No
Stomatanthes africanus (Oliv. & Hiern) R.M.King & H.Rob.	LC	No
Streptocarpus parviflorus Hook.f. subsp. parviflorus	LC	No
Striga bilabiata (Thunb.) Kuntze subsp. bilabiata	LC	No
Striga elegans Benth.	LC	No
Striga forbesii Benth.	LC	No
Striga gesnerioides (Willd.) Vatke	LC	No
Stylosanthes fruticosa (Retz.) Alston	LC	No
Suregada procera (Prain) Croizat	LC	No
Swertia welwitschii Engl.	LC	No
Symphyogyna brasiliensis Nees & Mont.	Not Evaluated	No
Synadenium cupulare (Boiss.) L.C.Wheeler	LC	No
Syncolostemon elliottii (Baker) D.F.Otieno	LC	No
Syntrichia fragilis (Taylor) Ochyra	Not Evaluated	No
Syntrichia laevipila Brid.	Not Evaluated	No
Syzygium cordatum Hochst. ex C.Krauss subsp. cordatum	LC	No
Tagetes minuta L.	Not Evaluated	No
Tapinanthus quequensis (Weim.) Polhill & Wiens	LC	No
Tenrhynea phylicifolia (DC.) Hilliard & B.L.Burtt	LC	No
Tephrosia capensis (Jacq.) Pers. var. capensis	LC	No

Tephrosia purpurea (L.) Pers. subsp. leptostachya (DC.) Brummitt var. leptostachya	LC	No
Tephrosia rhodesica Baker f. var. rhodesica	LC	No
Terminalia prunioides M.A.Lawson	LC	No
Terminalia sericea Burch. ex DC.	LC	No
Tetradenia brevispicata (N.E.Br.) Codd	LC	No
Tetraselago nelsonii (Rolfe) Hilliard & B.L.Burtt	LC	No
Teucrium trifidum Retz.	LC	No
Themeda triandra Forssk.	LC	No
Thesium coriarium A.W.Hill	DDT	No
Thesium costatum A.W.Hill var. costatum	LC	No
Thesium goetzeanum Engl.	LC	No
Thunbergia atriplicifolia E.Mey. ex Nees	LC	No
Timmiella pelindaba Magill	Not Evaluated	No
Trachyandra saltii (Baker) Oberm. var. saltii	LC	No
Trachyandra saltii (Baker) Oberm. var. secunda (K.Krause & Dinter) Oberm.	LC	No
Trachypogon spicatus (L.f.) Kuntze	LC	No
Tragus berteronianus Schult.	LC	No
Triaspis glaucophylla Engl.	LC	No
Tribulus terrestris L.	LC	No
Tribulus zeyheri Sond. subsp. zeyheri	LC	No
Tricalysia lanceolata (Sond.) Burtt Davy	LC	No
Trichilia dregeana Sond.	LC	No
Trichodesma angustifolium Harv. subsp. angustifolium	LC	No
Tricholaena monachne (Trin.) Stapf & C.E.Hubb.	LC	No
Trichoneura grandiglumis (Nees) Ekman	LC	No
Trichostomum brachydontium Bruch	Not Evaluated	No
Tricliceras longepedunculatum (Mast.) R.Fern. var. longepedunculatum	LC	No
Tridentea gemmiflora (Masson) Haw.	LC	No
Trifolium africanum Ser. var. africanum	LC	No
Tripteris auriculata S.Moore	LC	No
Triraphis andropogonoides (Steud.) E.Phillips	LC	No
Triraphis schinzii Hack.	LC	No
Tristachya biseriata Stapf	LC	No
Tristachya leucothrix Trin. ex Nees	LC	No
Triumfetta pilosa Roth var. effusa (E.Mey. ex Harv.) Wild	LC	No
Triumfetta pilosa Roth var. tomentosa Szyszyl. ex Sprague & Hutch.	LC	No

Triumfetta rhomboidea Jacq. var. rhomboidea	LC	No
Triumfetta sonderi Ficalho & Hiern	LC	No
Triumfetta welwitschii Mast. var. hirsuta (Sprague & Hutch.) Wild	LC	No
Trochomeria macrocarpa (Sond.) Hook.f. subsp. macrocarpa	LC	No
Tulbaghia leucantha Baker	LC	No
Turraea nilotica Kotschy & Peyr.	LC	No
Tylosema fassoglense (Schweinf.) Torre & Hillc.	LC	No
Typha capensis (Rohrb.) N.E.Br.	LC	No
Urelytrum agropyroides (Hack.) Hack.	LC	No
Urochloa mosambicensis (Hack.) Dandy	LC	No
Urochloa panicoides P.Beauv.	Not Evaluated	No
Urochloa trichopus (Hochst.) Stapf	LC	No
Vachellia davyi N.E.Br.	LC	No
Vachellia gerrardii Benth. subsp. gerrardii var. gerrardii	LC	No
Vachellia hebeclada DC. subsp. hebeclada	LC	No
Vachellia karroo Hayne	LC	No
Vachellia nilotica (L.) Willd. ex Delile subsp. kraussiana (Benth.) Brenan	LC	No
Vachellia permixta Burtt Davy	LC	No
Vachellia rehmanniana Schinz	LC	No
Vachellia robusta Burch. subsp. robusta	LC	No
Vachellia sieberiana DC. var. woodii (Burtt Davy) Keay & Brenan	LC	No
Vachellia tortilis (Forssk.) Hayne subsp. heteracantha (Burch.) Brenan	LC	No
Vahlia capensis (L.f.) Thunb. subsp. capensis	LC	No
Vahlia capensis (L.f.) Thunb. subsp. vulgaris Bridson var. linearis E.Mey. ex Bridson	LC	No
Vangueria madagascariensis J.F.Gmel.	LC	No
Vangueria parvifolia Sond.	Not Evaluated	No
Verbena bonariensis L.	Not Evaluated	No
Verbena brasiliensis Vell.	Not Evaluated	No
Verbena officinalis L.	Not Evaluated	No
Vernonia fastigiata Oliv. & Hiern	LC	No
Vernonia galpinii Klatt	LC	No
Vernonia staehelinoides Harv.	LC	No
Vernonia wollastonii S.Moore	LC	No
Vigna vexillata (L.) A.Rich. var. vexillata	LC	No

Viola abyssinica Steud. ex Oliv.	LC	No
Viscum capense L.f.	LC	No
Viscum combreticola Engl.	LC	No
Viscum rotundifolium L.f.	LC	No
Vitex rehmannii Gürke	LC	No
Wahlenbergia denticulata (Burch.) A.DC. var. denticulata	LC	No
Wahlenbergia undulata (L.f.) A.DC.	LC	No
Wahlenbergia virgata Engl.	LC	No
Waltheria indica L.	LC	No
Widdringtonia nodiflora (L.) Powrie	LC	No
Withania somnifera (L.) Dunal	LC	No
Xanthium spinosum L.	Not Evaluated	No
Xenostegia tridentata (L.) D.F.Austin & Staples subsp. angustifolia (Jacq.) Lejoly & Lisowski	LC	No
Xerophyta humilis (Baker) T.Durand & Schinz	LC	No
Xerophyta schlechteri (Baker) N.L.Menezes	LC	No
Xerophyta viscosa Baker	LC	No
Xylopia parviflora (A.Rich.) Benth.	LC	No
Xyris rehmannii L.A.Nilsson	LC	No
Xysmalobium confusum Scott-Elliot	LC	No
Zaleya pentandra (L.) C.Jeffrey	LC	No
Zaluzianskya elongata Hilliard & B.L.Burtt	LC	No
Zantedeschia albomaculata (Hook.) Baill. subsp. albomaculata	LC	No
Zanthoxylum capense (Thunb.) Harv.	LC	No
Ziziphus mucronata Willd. subsp. mucronata	LC	No
Ziziphus zeyheriana Sond.	LC	No
Ziziphus zeyheriana Sond.	LC	No
Zornia capensis Pers. subsp. capensis	LC	No
Zornia linearis E.Mey.	LC	No
Zygodon intermedius Bruch & Schimp.	Not Evaluated	No

APPENDIX B: EXPECTED AVIFAUNAL SPECIES

Species	Common Name	Conservation Status	
		Regional (Eskom, 2016	Global (IUCN, 2017)
Apalis thoracica	Apalis, Bar-throated	Unlisted	LC
Accipiter badius	Shikra, Shikra	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
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	LC
Amandava subflava	Waxbill, Orange-breasted	Unlisted	LC
Amaurornis flavirostris	Crake, Black	Unlisted	LC
Amblyospiza albifrons	Weaver, Thick-billed	Unlisted	LC
Anaplectes rubriceps	Weaver, Red-headed	Unlisted	LC
Anas capensis	Teal, Cape	Unlisted	LC
Anas erythrorhyncha	Teal, Red-billed	Unlisted	LC
Anas hottentota	Teal, Hottentot	Unlisted	LC
Anas smithii	Shoveler, Cape	Unlisted	LC
Anas sparsa	Duck, African Black	Unlisted	LC
Anas undulata	Duck, Yellow-billed	Unlisted	LC
Andropadus importunus	Greenbul, Sombre	Unlisted	LC
Anhinga rufa	Darter, African	Unlisted	LC
Anomalospiza imberbis	Finch, Cuckoo	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 similis	Pipit, Long-billed	Unlisted	LC
Anthus vaalensis	Pipit, Buffy	Unlisted	LC
Apalis flavida	Apalis, Yellow-breasted	Unlisted	LC
Apalis thoracica	Apalis, Bar-throated	Unlisted	LC
Apus affinis	Swift, Little	Unlisted	LC
Apus 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 pennatus	Eagle, Booted	Unlisted	Unlisted
Aquila pomarina	Eagle, Lesser Spotted	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 melanocephala	Heron, Black-headed	Unlisted	LC
Ardea purpurea	Heron, Purple	Unlisted	LC
Ardeola ralloides	Heron, Squacco	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
Bradornis pallidus	Flycatcher, Pale	Unlisted	LC
Bradypterus baboecala	Rush-warbler, Little	Unlisted	LC
Bubo africanus	Eagle-owl, Spotted	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
Buteo rufofuscus	Buzzard, Jackal	Unlisted	LC
Buteo vulpinus	Buzzard, Steppe	Unlisted	Unlisted
Butorides striata	Heron, Green-backed	Unlisted	LC
Calamonastes fasciolatus	Wren-warbler, Barred	Unlisted	LC
Calendulauda sabota	Lark, Sabota	Unlisted	LC
Calidris ferruginea	Sandpiper, Curlew	Unlisted	NT
Calidris minuta	Stint, Little	Unlisted	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
Caprimulgus europaeus	Nightjar, European	Unlisted	LC
Caprimulgus pectoralis	Nightjar, Fiery-necked	Unlisted	LC
Caprimulgus rufigena	Nightjar, Rufous-cheeked	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 chuana	Lark, Short-clawed	NT	LC
Ceryle rudis	Kingfisher, Pied	Unlisted	LC
Chalcomitra amethystina	Sunbird, Amethyst	Unlisted	LC
Chalcomitra senegalensis	Sunbird, Scarlet-chested	Unlisted	LC
Charadrius pecuarius	Plover, Kittlitz's	Unlisted	LC
Charadrius tricollaris	Plover, Three-banded	Unlisted	LC
Chersomanes albofasciata	Lark, Spike-heeled	Unlisted	LC
Chlidonias leucopterus	Tern, White-winged	Unlisted	LC
Chlorocichla flaviventris	Greenbul, Yellow-bellied	Unlisted	LC
Chrysococcyx caprius	Cuckoo, Diderick	Unlisted	LC
Chrysococcyx klaas	Cuckoo, Klaas's	Unlisted	LC
Ciconia abdimii	Stork, Abdim's	NT	LC
Ciconia 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 macrourus	Harrier, Pallid	NT	NT
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 erythrops	Cisticola, Red-faced	Unlisted	LC
Cisticola fulvicapilla	Neddicky, Neddicky	Unlisted	LC
Cisticola juncidis	Cisticola, Zitting	Unlisted	LC
Cisticola natalensis	Cisticola, Croaking	Unlisted	LC
Cisticola rufilatus	Cisticola, Tinkling	Unlisted	LC

Cisticola textrix	Cisticola, Cloud	Unlisted	LC
Cisticola tinniens	Cisticola, Levaillant's	Unlisted	LC
Clamator jacobinus	Cuckoo, Jacobin	Unlisted	LC
Clamator levaillantii	Cuckoo, Levaillant's	Unlisted	LC
Colius striatus	Mousebird, Speckled	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
Corvinella melanoleuca	Shrike, Magpie	Unlisted	LC
Corvus albicollis	Raven, White-necked	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 heuglini	Robin-chat, White-browed	Unlisted	LC
Cossypha humeralis	Robin-chat, White-throated	Unlisted	LC
Coturnix coturnix	Quail, Common	Unlisted	LC
Coturnix delegorguei	Quail, Harlequin	Unlisted	LC
Creatophora cinerea	Starling, Wattled	Unlisted	LC
Crecopsis egregia	Crake, African	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	Unlisted
Crithagra sulphuratus	Canary, Brimstone	Unlisted	Unlisted
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
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	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	Unlisted
Elanus caeruleus	Kite, Black-shouldered	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 scotops	Eremomela, Green-capped	Unlisted	LC
Eremomela usticollis	Eremomela, Burnt-necked	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 orix	Bishop, Southern Red	Unlisted	LC
Euplectes progne	Widowbird, Long-tailed	Unlisted	LC
Eupodotis senegalensis	Korhaan, White-bellied	**VU**	LC
Eurocephalus anguitimens	Shrike, Southern White-crowned	Unlisted	LC
Falco amurensis	Falcon, Amur	Unlisted	LC
Falco biarmicus	Falcon, Lanner	**VU**	LC
Falco naumanni	Kestrel, Lesser	Unlisted	LC
Falco rupicoloides	Kestrel, Greater	Unlisted	LC
Falco rupicolus	Kestrel, Rock	Unlisted	Unlisted
Falco subbuteo	Hobby, Eurasian	Unlisted	LC
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**
Glaucidium perlatum	Owlet, Pearl-spotted	Unlisted	LC
Granatina granatina	Waxbill, Violet-eared	Unlisted	LC
Gyps africanus	Vulture, White-backed	**EN**	**CR**
Gyps coprotheres	Vulture, Cape	**EN**	**EN**
Halcyon albiventris	Kingfisher, Brown-hooded	Unlisted	LC
Halcyon chelicuti	Kingfisher, Striped	Unlisted	LC
Halcyon leucocephala	Kingfisher, Grey-headed	Unlisted	LC

Halcyon senegalensis	Kingfisher, Woodland	Unlisted	LC
Haliaeetus vocifer	Fish-eagle, African	Unlisted	LC
Himantopus himantopus	Stilt, Black-winged	Unlisted	LC
Hippolais icterina	Warbler, Icterine	Unlisted	LC
Hippolais olivetorum	Warbler, Olive-tree	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
Indicator indicator	Honeyguide, Greater	Unlisted	LC
Indicator minor	Honeyguide, Lesser	Unlisted	LC
Ispidina picta	Pygmy-Kingfisher, African	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 australis	Starling, Burchell's	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
Leptoptilos crumeniferus	Stork, Marabou	**NT**	LC
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 gabar	Goshawk, Gabar	Unlisted	LC
Merops apiaster	Bee-eater, European	Unlisted	LC
Merops bullockoides	Bee-eater, White-fronted	Unlisted	LC

Merops hirundineus	Bee-eater, Swallow-tailed	Unlisted	LC
Merops nubicoides	Bee-eater, Southern Carmine	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
Mirafra africana	Lark, Rufous-naped	Unlisted	LC
Mirafra cheniana	Lark, Melodious	LC	**NT**
Mirafra passerina	Lark, Monotonous	Unlisted	LC
Monticola brevipes	Rock-thrush, Short-toed	Unlisted	LC
Motacilla aguimp	Wagtail, African Pied	Unlisted	LC
Motacilla capensis	Wagtail, Cape	Unlisted	LC
Muscicapa adusta	Flycatcher, African Dusky	Unlisted	LC
Muscicapa striata	Flycatcher, Spotted	Unlisted	LC
Mycteria ibis	Stork, Yellow-billed	**EN**	LC
Myrmecocichla formicivora	Chat, Anteating	Unlisted	LC
Nectarinia famosa	Sunbird, Malachite	Unlisted	LC
Netta erythrophthalma	Pochard, Southern	Unlisted	LC
Nilaus afer	Brubru, Brubru	Unlisted	LC
Numida meleagris	Guineafowl, Helmeted	Unlisted	LC
Nycticorax nycticorax	Night-Heron, Black-crowned	Unlisted	LC
Oena capensis	Dove, Namaqua	Unlisted	LC
Oenanthe bifasciata	Chat, Buff-streaked	Unlisted	LC
Oenanthe monticola	Wheatear, Mountain	Unlisted	LC
Oenanthe pileata	Wheatear, Capped	Unlisted	LC
Onychognathus morio	Starling, Red-winged	Unlisted	LC
Oriolus auratus	Oriole, African Golden	Unlisted	LC
Oriolus larvatus	Oriole, Black-headed	Unlisted	LC
Ortygospiza atricollis	Quailfinch, 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	Unlisted	LC
Philomachus pugnax	Ruff, Ruff	Unlisted	LC
Phoenicopterus minor	Flamingo, Lesser	Unlisted	NT
Phoeniculus purpureus	Wood-hoopoe, Green	Unlisted	LC
Phyllastrephus terrestris	Brownbul, Terrestrial	Unlisted	LC
Phylloscopus trochilus	Warbler, Willow	Unlisted	LC
Pinarocorys nigricans	Lark, Dusky	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 ocularis	Weaver, Spectacled	Unlisted	LC
Ploceus velatus	Masked-weaver, Southern	Unlisted	LC
Podiceps cristatus	Grebe, Great Crested	Unlisted	LC
Pogoniulus chrysoconus	Tinkerbird, Yellow-fronted	Unlisted	LC
Polemaetus bellicosus	Eagle, Martial	EN	VU
Polyboroides typus	Harrier-Hawk, African	Unlisted	LC
Porphyrio madagascariensis	Swamphen, African Purple	Unlisted	Unlisted
Prinia flavicans	Prinia, Black-chested	Unlisted	LC
Prinia hypoxantha	Prinia, Drakensberg	Unlisted	LC
Prinia maculosa	Prinia, Karoo	Unlisted	LC
Prinia subflava	Prinia, Tawny-flanked	Unlisted	LC
Prionops plumatus	Helmet-shrike, White-crested	Unlisted	LC
Prodotiscus regulus	Honeybird, Brown-backed	Unlisted	LC
Psophocichla litsipsirupa	Thrush, Groundscraper	Unlisted	Unlisted
Pternistis natalensis	Spurfowl, Natal	Unlisted	LC
Pternistis swainsonii	Spurfowl, Swainson's	Unlisted	LC
Pterocles bicinctus	Sandgrouse, Double-banded	Unlisted	LC
Pterocles burchelli	Sandgrouse, Burchell's	Unlisted	LC
Ptilopsus granti	Scops-owl, Southern White-faced	Unlisted	Unlisted
Pycnonotus tricolor	Bulbul, Dark-capped	Unlisted	Unlisted
Pytilia melba	Pytilia, Green-winged	Unlisted	LC
Quelea quelea	Quelea, Red-billed	Unlisted	LC

Rhinopomastus cyanomelas	Scimitarbill, Common	Unlisted	LC
Rhinoptilus africanus	Courser, Double-banded	NT	LC
Rhinoptilus chalcopterus	Courser, Bronze-winged	Unlisted	LC
Riparia cincta	Martin, Banded	Unlisted	LC
Riparia paludicola	Martin, Brown-throated	Unlisted	LC
Riparia riparia	Martin, Sand	Unlisted	LC
Rostratula benghalensis	Painted-snipe, Greater	VU	LC
Sagittarius serpentarius	Secretarybird, Secretarybird	VU	VU
Sarkidiornis melanotos	Duck, Comb	Unlisted	LC
Sarothrura rufa	Flufftail, Red-chested	Unlisted	LC
Saxicola torquatus	Stonechat, African	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 bicolor	Mannikin, Red-backed	Unlisted	LC
Spermestes cucullatus	Mannikin, Bronze	Unlisted	Unlisted
Sphenoeacus afer	Grassbird, Cape	Unlisted	LC
Sporopipes squamifrons	Finch, Scaly-feathered	Unlisted	LC
Stenostira scita	Flycatcher, Fairy	Unlisted	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
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
Tchagra australis	Tchagra, Brown-crowned	Unlisted	LC
Tchagra senegalus	Tchagra, Black-crowned	Unlisted	LC
Telophorus quadricolor	Bush-shrike, Gorgeous	Unlisted	LC
Telophorus sulfureopectus	Bush-shrike, Orange-breasted	Unlisted	LC
Terpsiphone viridis	Paradise-flycatcher, African	Unlisted	LC
Thamnolaea cinnamomeiventris	Cliff-chat, Mocking	Unlisted	LC
Threskiornis aethiopicus	Ibis, African Sacred	Unlisted	LC
Tockus damarensis	Hornbill, Damara	Unlisted	LC
Tockus damarensis/erythrorhynchus	Hornbill, Hybrid Damara/Red-billed	Unlisted	Unlisted
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
Turtur tympanistria	Dove, Tambourine	Unlisted	LC
Tyto alba	Owl, Barn	Unlisted	LC
Tyto capensis	Grass-owl, African	**VU**	LC

APPENDIX C: EXPECTED MAMMAL SPECIES

Species	Common name	Conservation Status	
		Regional (SANBI, 2016)	IUCN (2017)
Acomys spinosissimus	Spiny Mouse	LC	LC
Aepyceros melampus	Impala	LC	LC
Aethomys ineptus	Tete Veld Rat	LC	LC
Aethomys namaquensis	Namaqua Rock Rat	Unlisted	LC
Alcelaphus buselaphus caama	Red Hartebeest	LC	LC
Aonyx capensis	Cape Clawless Otter	**NT**	**NT**
Atelerix frontalis	South African Hedgehog	**NT**	LC
Atilax paludinosus	Water Mongoose	LC	LC
Canis mesomelas	Black Backed Jackal	LC	LC
Caracal caracal	Caracal	LC	LC
Ceratotherium simum	Southern White Rhinoceros	**NT**	**NT**
Chlorocebus pygerythrus	Vervet Monkey	LC	LC
Civettictis civetta	African Civet	LC	LC
Cloeotis percivali	Short-eared Trident Bat	**EN**	LC
Connochaetes taurinus	Blue Wildebeest	LC	LC
Cricetomys gambianus	Northern Giant Pouched Rat	Unlisted	LC
Crocidura cyanea	Reddish-grey Musk Shrew	LC	LC
Crocidura fuscomurina	Tiny Musk Shrew	LC	LC
Crocidura hirta	Lesser Red Musk Shrew	LC	LC
Crocidura maquassiensis	Maquassie Musk Shrew	VU	LC
Crocidura mariquensis	Swamp Musk Shrew	**NT**	LC
Crocidura silacea	Lesser Grey-Brown Musk Shrew	LC	LC
Crocuta crocuta	Spotted Hyaena	**NT**	LC
Cynictis penicillata	Yellow Mongoose	LC	LC
Damaliscus lunatus	Tsessebe	VU	LC
Damaliscus pygargus	Blesbok	LC	LC
Dasymys incomtus	African Marsh Rat	**NT**	LC
Dendromus melanotis	Grey Climbing Mouse	LC	LC
Dendromus mystacalis	Chestnut Climbing Mouse	LC	LC
Dendromus nyikae	Nyika Climbing Mouse	**DD**	LC
Diceros bicornis	Southwestern Black Rhinoceros	**EN**	**CR**
Eidolon helvum	African Straw-coloured Fruit Bat	LC	**NT**
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	**NT**
Felis nigripes	Black-footed Cat	**VU**	**VU**
Felis silvestris	African Wildcat	LC	LC
Genetta genetta	Small-spotted Genet	LC	LC
Genetta maculata	Rusty-spotted Genet	LC	LC
Gerbilliscus brantsii	Highveld Gerbil	LC	LC
Gerbilliscus leucogaster	Bushveld Gerbil	LC	LC
Giraffa camelopardalis	South African Giraffe	LC	**VU**
Graphiurus microtis	Large Savannah African Dormouse	LC	LC
Graphiurus murinus	Woodland Dormouse	LC	LC
Graphiurus platyops	Rock Dormouse	LC	LC
Helogale parvula	Dwarf Mongoose	LC	LC
Herpestes sanguineus	Slender Mongoose	LC	LC
Heterohyrax brucei	Yellow-spotted Rock Hyrax	LC	LC
Hipposideros caffer	Sundevall's Leaf-nosed Bat	LC	LC
Hippotragus equinus	Roan Antelope	**EN**	LC
Hippotragus niger	Sable Antelope	**VU**	LC
Hydrictis maculicollis	Spotted-Necked Otter	**VU**	**NT**
Hystrix africaeaustralis	Cape Porcupine	LC	LC
Ictonyx striatus	Striped Polecat	LC	LC
Kerivoula lanosa	Lesser Wooly Bat	LC	LC
Kobus ellipsiprymnus	Common Waterbuck	LC	LC
Lemniscomys rosalia	Single-striped Mouse	LC	LC
Leptailurus serval	Serval	NT	LC
Lepus capensis	Cape Hare	LC	LC
Lepus saxatilis	Scrub Hare	LC	LC
Lepus victoriae	African Savannah Hare	LC	LC
Mastomys coucha	Multimammate Mouse	LC	LC
Mastomys natalensis	Natal Multimammate Mouse	LC	LC
Mellivora capensis	Honey Badger	LC	LC
Mungos mungo	Banded Mongoose	LC	LC
Mus indutus	Desert Pygmy Mouse	LC	LC
Myosorex cafer	Dark-footed Forest Shrew	**VU**	LC
Myotis tricolor	Temnick's Hairy Bat	LC	LC
Myotis welwitschii	Welwitsch's Hairy Bat	LC	LC
Neoromicia capensis	Cape Serotine Bat	LC	LC
Neoromicia nana	Banana Bat	LC	LC
Neoromicia zuluensis	Aloe Bat	LC	LC

Nycteris thebaica	Egyptian Slit-Faced Batg	LC	LC
Oreotragus oreotragus	Klipspringer	LC	LC
Orycteropus afer	Aardvark	LC	LC
Otolemur crassicaudatus	Thick-tailed Bushbaby	LC	LC
Otomys irroratus	Vlei Rat (Fynbos Type)	LC	LC
Panthera pardus	Leopard	VU	VU
Papio ursinus	Chacma Baboon	LC	LC
Parahyaena brunnea	Brown Hyaena	NT	NT
Paraxerus cepapi	Tree Squirrel	LC	LC
Pedetes capensis	Springhare	LC	LC
Pelea capreolus	Grey Rhebok	NT	LC
Phacochoerus africanus	Common Warthog	LC	LC
Pipistrellus anchietae	Anchieta's Bat	Unlisted	LC
Pipistrellus rusticus	Rusty Bat	LC	LC
Poecilogale albinucha	African Striped Weasel	NT	LC
Potamochoerus larvatus	Bushpig	LC	LC
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 rattus	House Rat	Unlisted	LC
Redunca arundinum	Southern Reedbuck	LC	LC
Redunca fulvorufula	Mountain Reedbuck	EN	LC
Rhabdomys pumilio	Xeric Four-striped Mouse	LC	LC
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 pratensis	Fat Mouse	LC	LC
Suncus varilla	Lesser Dwarf Shrew	LC	LC
Sylvicapra grimmia	Common Duiker	LC	LC
Syncerus caffer	Southern Savannah Buffalo	LC	LC
Tadarida aegyptiaca	Egyptian Free-tailed Bat	LC	LC
Taphozous mauritianus	Mauritian Tomb Rat	LC	LC
Thallomys paedulcus	Tree Rat	LC	LC
Thryonomys swinderianus	Greater Cane Rat	LC	LC
Tragelaphus angasii	Nyala	LC	LC
Tragelaphus oryx	Eland	LC	LC

Tragelaphus scriptus	Bushbuck	Unlisted	LC
Tragelaphus strepsiceros	Greater Kudu	LC	LC

APPENDIX D: EXPECTED REPTILE AND AMPHIBIAN SPECIES

Species	Common name	Conservation Status	
		Regional (Bates et al., 2014)	Global (IUCN, 2017)
Acanthocercus atricollis	Southern Tree Agama	LC	LC
Afroedura nivaria	Drakensberg Flat Gecko	Unlisted	LC
Amblyodipsas concolor	Kwazulu-Natal Purple Glossed Snake	Unlisted	LC
Aparallactus capensis	Black-headed Centipede-eater	LC	LC
Atractaspis duerdeni	Duerden's Stiletto Snake	LC	Unlisted
Bitis arietans	Puff Adder	LC	Unlisted
Boaedon capensis	Brown House Snake	LC	Unlisted
Bradypodion transvaalense	Northern Dwarf Chameleon	Unlisted	LC
Chamaeleo dilepis	Common Flap-neck Chameleon	LC	LC
Chondrodactylus turneri	Turner's Gecko	Unlisted	LC
Cordylus vittifer	Common Girdled Lizard	Unlisted	LC
Crocodylus niloticus	Nile Crocodile	VU	LC
Dasypeltis scabra	Rhombic Egg-eater	LC	LC
Dendroaspis polylepis	Black Mamba	LC	LC
Duberria lutrix	South African Slug Eater	Unlisted	LC
Hemidactylus mabouia	Common Tropical House Gecko	LC	Unlisted
Lamprophis aurora	Aurora Snake	Unlisted	LC
Lygodactylus capensis capensis	Common Dwarf Gecko	LC	Unlisted
Mochlus sundevalli	Sundevall'sWrithing Skink	LC	LC
Myriopholis longicauda	Long-tailed Thread Snake	LC	Unlisted
Naja annulifera	Snouted Cobra	LC	Unlisted
Naja mossambica	Mozambique Spitting Cobra	LC	Unlisted
Nucras holubi	Holub's Sandveld Lizard	LC	Unlisted
Pachydactylus vansoni	Van Son's Gecko	Unlisted	LC
Pelusios subniger	Pan Hinged Terrapin	LC	LC
Philothamnus semivariegatus	Spotted Bush Snake	LC	Unlisted
Platysaurus intermedius	Common Flat Lizzard	LC	LC
Prosymna ambigua	East African Shovel Snout	LC	LC
Prosymna bivittata	Two-striped Shovel-snout	Unlisted	LC
Psammophis brevirostris	Short-snouted Grass Snake	Unlisted	LC
Psammophis subtaeniatus	Western Yellow-bellied Sand Snake	LC	LC

Psammophylax tritaeniatus	Striped Grass Snake	LC	LC
Python natalensis	Southern African Python	LC	Unlisted
Rhinotyphlops lalandei	Delalande's Beaked Blind Snake	LC	Unlisted
Stigmochelys pardalis	Leopard Tortoise	LC	LC
Thelotornis capensis	Southern Twig Snake	LC	LC
Trachylepis punctatissima	Speckled Rock Skink	LC	LC
Varanus albigularis albigularis	Rock Monitor	LC	Unlisted
Amietia angolensis	Common River Forg	Unlisted	LC
Breviceps adspersus	Bushveld Rain Frog	LC	LC
Cacosternum boettgeri	Boettger's Caco	LC	LC
Chiromantis xerampelina	Southern Foam Nest 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
Ptychadena anchietae	Plain Grass Frog	LC	LC
Ptychadena mossambica	Broad-banded Grass Frog	LC	LC
Ptychadena porosissima	Striped Grass Frog	LC	LC
Pyxicephalus adspersus	Giant Bullfrog	NT	LC
Pyxicephalus edulis	Edible Bullfrog	LC	LC
Schismaderma carens	Red Toad	LC	LC
Sclerophrys capensis	Raucous Toad	Unlisted	LC
Sclerophrys garmani	Eastern Olive Toad	LC	LC
Sclerophrys gutturalis	Guttaral Toad	LC	LC
Sclerophrys pusilla	Merten's Striped Toad	Unlisted	LC
Strongylopus fasciatus	Striped Stream Frog	LC	LC
Strongylopus grayii	Clicking Stream Frog	LC	LC
Tomopterna cryptotis	Tremolo Sand Frog	LC	LC
Tomopterna krugerensis	Knocking Sand Frog	LC	LC
Tomopterna marmorata	Russet-backed 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