Proposed Kopanya Solar Photovoltaic (PV) 2 Project – Terrestrial Biodiversity Assessment

Thaba Chweu Local Municipality, Ehlanzeni District Municipality in the Mpumalanga Province, South Africa

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Report Name	**Proposed Kopanya Solar Photovoltaic (PV) 2 Project – Terrestrial Biodiversity Assessment**
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Declaration	The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.

Executive Summary

The Biodiversity Company (TBC) was appointed to assess the likely terrestrial biodiversity implications of the proposed Kopanya Solar Photovoltaic (PV) 2 Project at the existing Booysendal South Mine in Mpumalanga. The Project involves the development of a 20 MWAC solar PV facility and associated infrastructure, such as an overhead power line, substations, internal roads, and temporary construction and operational support areas. The assessment was based on both desktop research and a field survey conducted in January 2026, during the wet season when plants and animals are most detectable.

The Project Area of Influence (PAOI) is situated within a broader landscape recognised for its ecological importance. It overlaps with Sekhukhune Montane Grassland, a Key Biodiversity Area (Steelpoort), and priority areas for protected area expansion. National wetland datasets also identify sensitive water-related features within the site. However, the area has already been significantly disturbed by nearby mining, roads, fencing, powerlines, and the spread of alien invasive plants. As a result, while the surrounding landscape holds high biodiversity value, much of the PAOI itself is already degraded to varying degrees.

Within the PAOI, four (4) habitat types were identified from a terrestrial biodiversity perspective: Disturbed Grassland, Alien Stands, Modified, and a set of Water Resources. The Disturbed Grassland retains some ecological function but has been degraded by grazing, the spread of alien and invasive plants (AIP), and edge effects. The Alien Stands are heavily infested by AIP species, with little indigenous vegetation remaining. Modified areas have been transformed by mining and agriculture and have very limited ecological value. The Water Resources are the most sensitive parts of the site, providing important ecological functions and movement corridors for animals.

The field survey recorded forty-two (42) plant species, of which thirty-three (33) were indigenous. No protected or threatened plant species were found. Nine (9) AIP species were recorded, several of which require legal control. No amphibians or reptiles were observed, though suitable habitat exists for some common species. Six (6) common mammal species were recorded, and no threatened or protected animal species were confirmed on site, although some Species of Conservation Concern (SCC) may occasionally use certain habitats, especially around water resources.

The report disputes the national Screening Tool's overall Terrestrial Biodiversity Theme Sensitivity of Very high. The specialist assessment found the area to range from Very low (Modified), to Low (Alien Stands), Medium (Disturbed Grassland), and High (Water Resources) sensitivity. The Plant Species Theme Sensitivity rating from the Screening Tool was validated as Low, but the Animal Species Theme Sensitivity rating was disputed as Medium instead of High, for non-volant fauna.

The main impacts expected from the Project include vegetation clearing, habitat loss and fragmentation, the spread of alien invasive species, disturbance to animals, and possible direct animal deaths from vehicles, construction activities, open excavations, noise, light, dust, and poaching. The construction phase is likely to cause the greatest short-term damage due to clearing and direct disturbance, while operational impacts will continue through long-term habitat fragmentation and ongoing disturbance.

The report states that these impacts can be reduced if mitigation is strictly applied. Key measures include avoiding water resources and their buffers as much as possible, prioritising development in already modified and invaded areas, and using micro-siting to shift infrastructure away from more sensitive areas. Clearing should be limited to what is necessary, indigenous vegetation should be retained beneath solar panels where possible, and lower-impact foundation methods should be used to reduce soil disturbance. Before construction, an ecologist should conduct a walkdown to identify any protected plants, SCC, or active animal nests, burrows, or dens that may need protection or permits.

Additional mitigation measures include compiling and implementing an Alien Invasive Management Plan, a Rehabilitation Management Plan, an Erosion Management Plan, and a Stormwater Management Plan. Construction should remain within clearly marked authorised areas, and unnecessary disturbance outside these areas should be avoided. Environmental awareness training for workers, strict waste management, speed limits, wildlife-friendly fencing, safe relocation of animals at

risk, careful management of lighting, and regular monitoring and control of invasive plants are also recommended.

In conclusion, the report finds that the proposed Project is acceptable from a terrestrial biodiversity perspective only if all recommended mitigation measures are fully implemented. Most of the site is considered developable at low to medium sensitivity, especially in alien-invaded and already modified areas. The Disturbed Grassland habitat is more sensitive and should be avoided unless lower sensitivity areas have been prioritised and no practical alternatives exist. Water resources are the most sensitive and must be avoided and managed according to the findings of the separate assessment (TBC, 2026b). With proper management, the overall impact of the project can be reduced to low negative significance, and the implementation of management plans may even improve some degraded parts of the site by controlling invasive species and supporting rehabilitation.

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Table of Abbreviations and Units of Measurement

Abbreviation/Acronym	Full Definition/Meaning
AIMP	Alien and Invasive Management Plan
AIP	Alien Invasive Plant
BI	Biodiversity Importance
BS	Booysendal South
CARA	Conservation of Agricultural Resources Act
CBA	Critical Biodiversity Area
CI	Conservation Importance
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR	Critically Endangered
CV	Curriculum Vitae
°C	Degrees Celsius
DD	Data Deficient
DEA	Department of Environmental Affairs
DFFE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EGI	Strategic Transmission Corridors
EI	Ecological Importance
EIA	Environmental Impact Assessment
EN	Endangered
EO	Environmental Officer
EOO	Extent of Occurrence
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
FI	Functional Integrity
GBIF	Global Biodiversity Information Facility
GCS	GCS Environment South Africa (Pty) Ltd
GG	Government Gazette
GIS	Geographic Information System
GN	Government Notice
GPS	Global Positioning System
ha	Hectare
HGM	Hydrogeomorphic
HMA	Heavily Modified Area
IBA	Important Bird Area
IUCN	International Union for Conservation of Nature

kV	Kilovolt
KBA	Key Biodiversity Area
km	Kilometre
LC	Least Concern
LT	Least Threatened
m	Metre
m²	Square metre
m³	Cubic metre
m.a.s.l.	Metres above sea level
MBSP	Mpumalanga Biodiversity Sector Plan
MBCP	Mpumalanga Biodiversity Conservation Plan
mm	Millimetre
MMA	Moderately Modified Area
MP	Moderately Protected
MPAES	Mpumalanga Protected Areas Expansion Strategy
MPHG	Mpumalanga Highveld Grassland Wetlands
MTPA	Mpumalanga Tourism and Parks Agency
MW	Megawatt
MWAC	Megawatt Alternating Current
NBA	National Biodiversity Assessment
NCG	National Coordination Group
NE	Not Evaluated
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NEMWA	National Environmental Management: Waste Act
NFA	National Forests Act
NFEPA	National Freshwater Ecosystem Priority Area
NP	Not Protected
NT	Near Threatened
NPAES	National Protected Area Expansion Strategy
NWA	National Water Act
OHL	Overhead powerline
ONA	Other Natural Area
PA	Protected Area
PAOI	Project Area of Influence
POSA	Plants of Southern Africa
PP	Poorly Protected
Pr. Sci. Nat.	Professional Natural Scientist

PV	Photovoltaic
Q3	Quarter 3
REEA	Renewable Energy Environmental Application Database
REDZ	Renewable Energy Development Zone
RLE	Red List of Ecosystems
RR	Receptor Resilience
SACAD	South Africa Conservation Areas Database
SAPAD	South Africa Protected Areas Database
SAIIAE	South African Inventory of Inland Aquatic Ecosystems
SANBI	South African National Biodiversity Institute
SAPAD	South Africa Protected Areas Database
SCC	Species of Conservation Concern
SEI	Site Ecological Importance
sp.	Species (singular, unspecified)
spp.	Species (plural)
subsp.	Subspecies
SWSA	Strategic Water Source Area
TBC	The Biodiversity Company
TOPS	Threatened or Protected Species
VU	Vulnerable
W	Watt
WP	Well Protected
%	Percent

1 Introduction

1.1 Background

The Biodiversity Company was appointed by GCS Environment South Africa (Pty) Ltd (GCS)to undertake a terrestrial assessment for the proposed Kopanya Photovoltaic (PV) 2 Project (the proposed Project). The development layout provided was used to determine the Project Area of Influence (PAOI). The PAOI is inclusive of the entire development footprint. (Figure 1-1). The Project boundary provided, was used as the PAOI and is delineated to incorporate the proposed Project components (Figure 1-2).

This assessment was conducted in accordance with the amendments to the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended by GNR 1816, in GG 45999 of 3 March 2022) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The approach has taken cognisance of the recently published Government Notices (GN) 320 (20 March 2020) and GN 1150 (30 October 2020) in terms of NEMA, dated 20 March and 30 October 2020: *"Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation"* (Reporting Criteria).

The National Web-Based Environmental Screening Tool (Screening Tool) has characterised:

- Terrestrial Biodiversity Theme Sensitivity of the PAOI as 'very high';
- Animal Species Theme Sensitivity of the PAOI is 'high'; and
- Plant Species Theme Sensitivity of the PAOI is 'low'.

The purpose of the terrestrial assessment is to provide relevant input into the environmental assessment process and provide a report for the proposed activities associated with the proposed Project. This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making, as to the ecological viability of the proposed Project.

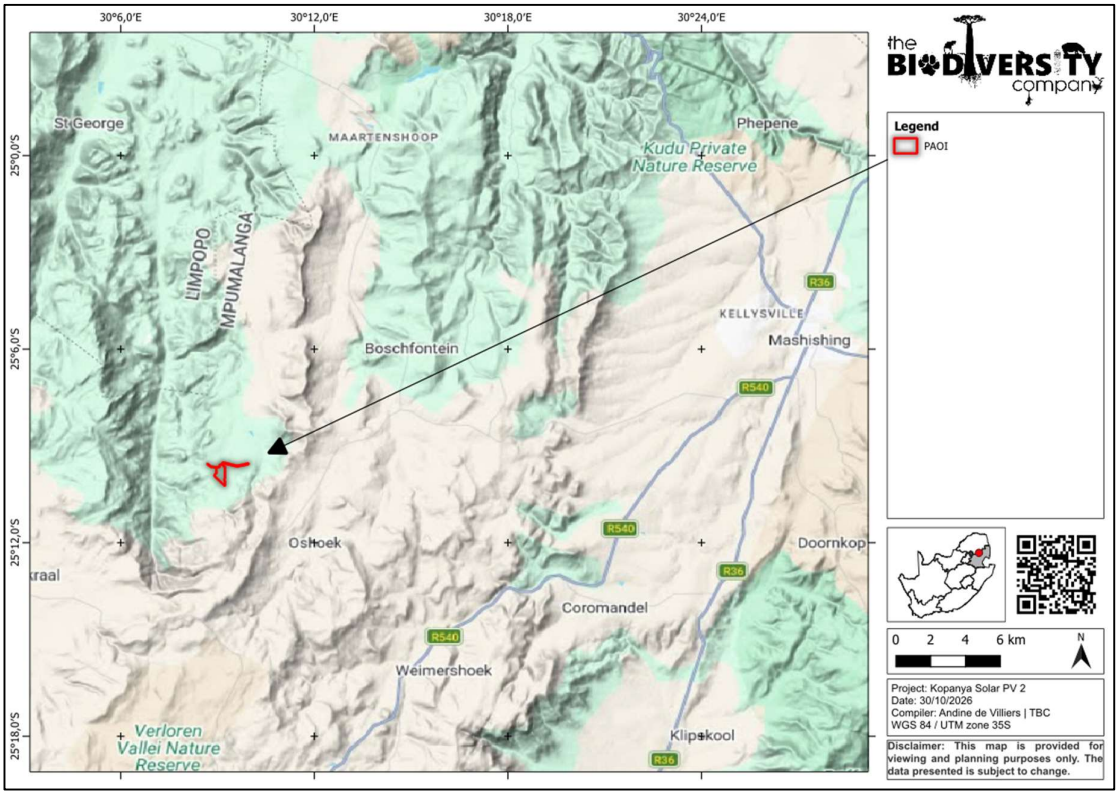


Figure 1-1 The proposed Project Area of Influence in proximity to the nearby towns

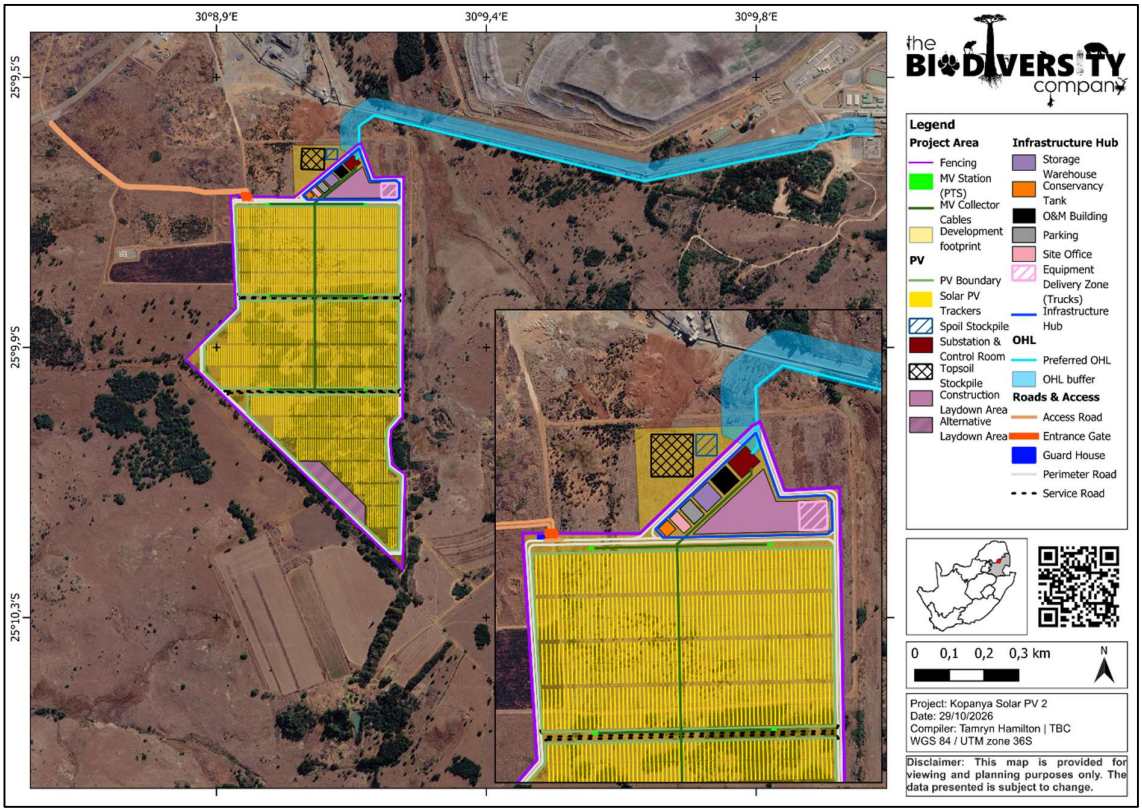


Figure 1-2 Map illustrating the proposed Project Area of Influence

1.2 Project Description

The following has been provided by GCS.

1.2.1 Introduction

Booysendal Platinum (Pty) Ltd (the Applicant / Booysendal) proposes to develop the Kopanya Solar Photovoltaic 2 Project (the proposed Project), comprising a 20-megawatt alternating current (MWAC) utility-scale solar photovoltaic facility and associated infrastructure at the Booysendal South Mine in Mpumalanga Province. The proposed Project will be located within the existing Booysendal Mining Right held by Booysendal, a subsidiary of Northam Platinum Holdings Limited.

The proposed Project requires Environmental Authorisation (EA) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), read with the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) Government Notice Regulation (GN R) 982 (EIA Regulations, 2014). A Basic Assessment (BA) process is being undertaken to assess potential environmental impacts and risks, consider reasonable and feasible alternatives, facilitate participation by interested and affected parties (I&APs) and relevant organs of state, and provide the competent authority with sufficient information to decide the application.

GCS Environment South Africa (Pty) Ltd (GCS) has been appointed as the independent Environmental Assessment Practitioner (EAP) responsible for managing the environmental assessment process, facilitating public participation and preparing the application documentation for submission to the Department of Mineral and Petroleum Resources (DMPR).

1.2.1.1 Project Background

The proposed Project will be located on Portion 8, the Remaining Extent of Portion 15 and Portion 17 of the Farm No. 53 JT, approximately 30 kilometres (km) west of Mashishing, within the Thaba Chweu Local Municipality and Ehlanzeni District Municipality. The proposed development footprint is approximately 41 hectares (ha).

The proposed Project will comprise up to approximately 35,000 bifacial photovoltaic panels mounted on single-axis tracking systems, together with an on-site substation, inverters, transformer stations, electrical houses, access and internal roads, operations and maintenance facilities, security and telecommunications infrastructure, and an overhead power line of up to 132 kilovolts (kV). A detailed Project description is provided in Section 1.2.2.

Electricity generated by the proposed Project will primarily supplement the electricity requirements of the Booysendal South Mine. The proposed Project forms part of Northam Platinum Holdings Limited's energy resilience and sustainability strategy.

1.2.2 Description of the Proposed Development

This section describes the principal components, supporting infrastructure and lifecycle activities associated with the proposed Project.

1.2.2.1 Project Overview

The Project comprises a 20 MWAC solar PV facility and associated grid connection and support infrastructure within the existing Booysendal South Mine. Electricity generated will primarily supply the Mine, with any surplus export subject to the applicable grid connection arrangements.

1.2.2.2 Project Components

1.2.2.2.1 Overview of the Proposed Facility

The facility will have an installed generation capacity of 20 MWAC and will integrate with existing mining and electrical infrastructure.

The proposed Project will utilise single-axis tracking bifacial solar photovoltaic panels to optimise solar exposure throughout the day. Locating the facility within an established mining area and using modular infrastructure may reduce the need for additional land disturbance.

1.2.2.2.2 Solar PV Arrays and Tracking System

The facility will comprise up to approximately 35,000 bifacial PV panels, each with a typical capacity greater than 600 watts (W), mounted on single-axis tracking systems to optimise energy yield.

The racking and tracking systems will be constructed from steel sections supported by driven piles, reducing the need for extensive concrete foundations and limiting ground disturbance. Panel structures will be designed to accommodate site-specific geotechnical conditions, wind loading, and long-term operational requirements.

1.2.2.2.3 Electrical Infrastructure and Grid Connection

The Project will include the following electrical and grid connection infrastructure:

- An overhead power line of up to 132 kV connecting the solar PV facility to the grid connection infrastructure;
- An on-site PV substation to collect and regulate electricity generated by the PV arrays;
- A substation adjacent to the existing Eskom substation; and
- Power transformer stations, inverters and associated electrical infrastructure housed in prefabricated units or electrical houses.

Electricity generated will primarily supply the Booysendal South Mine. Any surplus export will be subject to the final grid connection arrangements.

1.2.2.2.4 Temporary Construction Infrastructure

Temporary infrastructure required during the construction phase will include:

- A construction yard and laydown areas of approximately 1 ha;
- Site offices, storage areas, and temporary ablution facilities;
- Internal access roads and construction traffic routes; and
- Temporary services required to support construction activities.

Construction of the proposed Project is anticipated to occur over a period of approximately 15 months. At peak construction, an estimated 300 personnel will be employed, comprising skilled and semi-skilled labour associated with civil works, electrical installation, and commissioning activities.

1.2.2.2.5 Permanent Operational Infrastructure

Permanent operational infrastructure associated with the proposed Project will include:

- Buildings for operations, maintenance, control, and storage purposes;
- An operations and maintenance warehouse;

- Parking areas for operational staff and service vehicles; and
- Security facilities, including access control points.

The operational lifespan of the proposed Project is anticipated to be approximately 25 years, during which an estimated 20 personnel will be employed for routine operation, maintenance, and security functions.

1.2.2.2.6 Supporting Infrastructure and Services

Additional supporting infrastructure will include:

- Water-supply infrastructure and conservancy tanks for the collection of domestic wastewater;
- Internal and access roads, linking the facility to existing Mine infrastructure;
- Security and access control infrastructure, including perimeter fencing of up to approximately 3 100 metres (m); and
- Telecommunications systems to support monitoring, control, and security operations.

Stormwater infrastructure will be designed to maintain natural drainage patterns, promote dispersed flow and infiltration, and prevent erosion, sedimentation and concentrated discharge into wetlands and drainage features. The final design may include vegetated swales, berms, energy dissipation measures, cross-drainage structures and sediment-control measures.

1.2.2.2.7 Water Requirements and Management

Water will be required during construction for dust suppression, concrete works and general construction activities. Total construction phase demand is estimated at approximately 1 790 m³.

Operational water demand, associated mainly with domestic use and routine maintenance, is estimated at approximately 518 m³/a.

Water will be sourced from existing authorised Mine supplies and/or boreholes. No new abstraction infrastructure is proposed, and water use will be managed in accordance with the Mine's water management procedures.

No process wastewater will be generated during normal operation. Domestic wastewater will be collected in conservancy tanks and removed by an appropriately authorised service provider for disposal at an approved facility.

1.2.2.2.8 Waste Management

Waste generated during construction, operation and decommissioning will be managed in accordance with the Mine's approved waste management procedures, the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), and applicable good practice.

1.2.2.2.8.1 Construction Phase Waste

During the construction phase, both non-hazardous and hazardous waste streams will be generated. Waste volumes are anticipated to be temporary and largely associated with civil works, installation activities, and workforce-related activities.

Non-hazardous waste will include:

- General domestic waste generated by construction personnel;

- Packaging materials associated with solar PV components, including wooden pallets, cardboard, plastics, polystyrene, and strapping materials;
- Scrap metal arising from mounting structures, tracker systems, cable trays, and minor steel off-cuts;
- Construction off-cuts, including electrical cabling, conduits and plastic materials;
- Minor quantities of inert waste, such as concrete residues generated during foundation works; and
- Damaged, defective, or broken solar PV panels arising from transport, handling, or installation activities.

Solar PV panels damaged during delivery or installation will be handled with care to prevent further breakage. Intact but defective panels will, where possible, be returned to the supplier under warranty agreements. Broken panels will be stored in a designated, secure area to prevent glass dispersion and environmental contamination. Panels suitable for recycling will be sent to appropriately authorised recycling facilities.

Hazardous waste generated during construction will be limited in volume and will include:

- Small quantities of waste fuels, oils and hydraulic fluids generated during the use and maintenance of construction vehicles and equipment;
- Oily rags, absorbent materials, used filters, and contaminated materials; and
- Empty containers that previously contained hazardous substances, such as oils, greases, and cleaning agents.

Hazardous waste will be stored in clearly demarcated, bunded areas with impermeable surfaces. Waste will be removed by appropriately registered or authorised service providers and taken to authorised facilities.

1.2.2.2.8.2 Operational Phase Waste

Waste generation during the operational phase is expected to be minimal and largely associated with routine maintenance and administrative activities.

- Non-hazardous waste during operation will primarily include:
- Limited domestic waste generated by operational and maintenance personnel;
- Minor packaging waste associated with spare parts and replacement components; and
- Scrap metal and redundant components arising from maintenance activities.

Hazardous or potentially hazardous waste may include:

Used oils, lubricants, and cleaning materials associated with maintenance activities;

- Oily rags, absorbent materials and used filters;
- Damaged or replaced solar PV panels arising from storm events, mechanical failure, vandalism, or routine replacement; and

- Electrical components such as inverters or transformers containing oils or electronic parts.

Damaged, defective and end-of-life PV panels will be assessed and managed according to their condition and applicable waste classification requirements. Supplier take-back, reuse and recycling will be prioritised where reasonably available, and panels awaiting removal will be stored in a secure, weather-protected area.

All operational waste will be collected, transported and disposed of in accordance with approved waste management procedures.

1.2.2.2.8.3 Decommissioning Phase Waste

At the end of the proposed Project's operational lifespan, the facility may be decommissioned, repowered, or refurbished. The decommissioning phase will generate both non-hazardous and hazardous waste streams associated with dismantling and removal of infrastructure.

Waste generated during decommissioning will include:

- Non-hazardous waste, such as dismantled equipment, scrap metal, concrete material, fencing, and general waste associated with infrastructure removal;
- Solar PV panels, including damaged, obsolete, or end-of-life panels and associated mounting structures and electrical components; and
- Hazardous waste, including electronic components, oils and other hazardous materials.

Solar PV panels removed during decommissioning will represent a primary waste stream. Functional panels may be reused, resold or incorporated into a repowering programme, while end-of-life panels will be prioritised for recycling to recover glass, aluminium frames and other reusable materials.

Electrical components, including inverters and transformers, will be assessed for potential refurbishment or recycling. Hazardous materials will be separated and managed in accordance with applicable waste legislation.

Decommissioning waste will be transported by appropriately registered or authorised service providers to authorised waste management or recycling facilities. Material recovery, reuse and recycling will be prioritised to minimise disposal to landfill.

1.3 Scope of Work

The Scope of Work for this Project included the following:

- Desktop assessment to identify the relevant ecologically important geographical features within the PAOI;
- Desktop assessment to compile an expected species list and possible threatened flora and fauna species that occur within the PAOI;
- Field survey to ascertain the species composition of the present flora and fauna community within the PAOI;
- Delineate and map the habitats and their respective sensitivities that occur within the PAOI;
- Identify the manner that the proposed Project impacts the flora and fauna community and assess the level of risk of these potential impacts; and

- The prescription of mitigation measures and recommendations for identified risks to minimise these as far as possible.

1.4 Assumptions and Limitations

The following assumptions and limitations are applicable for this assessment:

- Only available information sources were used and referenced for this assessment report. It is assumed that all third-party information utilised in the compilation of this report is correct at the time of compilation (e.g., spatial data, online databases, and species lists);

- The assessment area was based on the study area provided by the Applicant and any alterations to the area and/or missing Geographic Information System (GIS) information pertaining to the assessment area would have affected the area surveyed;

- The area was surveyed during a single site visit conducted in the wet season (specifically, January 2026). This assessment does not consider temporal trends across multiple seasons. However, the wet season represents the optimal period for this type of specialist assessment, as it is when ecological activity is at its peak and most detectable. Therefore, the data collected during this period are considered sufficient to establish a meaningful baseline for the study objectives. The seasonality of the survey does not negatively affect the study outcomes, as the wet season is the most appropriate and informative time for this assessment discipline;

- Whilst every effort is made to cover as much of the site as possible, representative sampling is completed and by its nature, it is possible that some plant and animal species that are present on site were not recorded during the field investigations. The PAOI had not yet received sufficient rainfall at the time of assessment and as a result, this assessment does not account for temporal trends or variations that may occur with increased precipitation. However, it is the opinion of the specialist that an accurate representative sample of the ecological components considered within this assessment was collected;

- The Global Positioning System (GPS) used in the assessment has an accuracy of 5 m and consequently any spatial features may be offset by up to 5 m. Please note that a GPS positional accuracy of up to 5 m is considered adequate for the purposes of this study, given the scale of the assessment and the objectives of the assessment;

- This report must be read in conjunction with the separate reports:

    - The Biodiversity Company. 2026. Proposed Kopanya Solar Photovoltaic (PV) 2 Project - Avifauna Assessment (TBC, 2026a);

    - The Biodiversity Company. 2026. Wetland Functional and Impact Assessment for the Proposed Kopanya Solar Photovoltaic (PV) 2 Project (TBC, 2026b); and

    - The Biodiversity Company. 2026. Soil and Agricultural Compliance Statement for the proposed Kopanya Solar Photovoltaic (PV) 2 Project (TBC, 2026c).

- This assessment includes non – volant mammals and herpetofauna (reptiles and amphibians) only; and

- The purpose of the study is to inform the impact assessment for the proposed Project such that the competent authority can make an informed decision on the application for environmental authorisation. This included consideration of impacts on habitats, including those where

sensitive species could be located. This approach is considered acceptable and in accordance with the requirements for an EIA process.

1.5 Key Legislative Requirements

The legislation, policies, protocols and guidelines listed below in Table 1-1 are applicable to the current proposed Project. The list below, although extensive, may not be complete and other legislation, policies, protocols and guidelines may apply in addition to those listed below.

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

Region	Legislation / Guideline	Comment
National	National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)	Environmental Impact Assessment (EIA) Regulations. 2014 (GNR 326, 7 April 2017), Appendix 6 requirements
	The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA), Threatened or Protected Species Regulations	The protection of species and ecosystems that warrant protection
	Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (March 2020)	The minimum criteria for reporting.
	Protocols for the Specialist Assessment and Minimum Report Content Requirements of Environmental Impacts on Terrestrial Animal Species, Terrestrial Plant Species, and Terrestrial Biodiversity (October 2020)	Protocol for the specialist assessment and minimum report content requirements.
	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA)	The regulation of waste management to protect the environment.
	National Water Act, 1998 (Act No. 36 of 1998) (NWA)	The regulation of water uses.
	National Forests Act, 1998 (Act No. 84 of 1998) (NFA)	Provides for the protection of natural forests and listed protected tree species.
	Government Notice (GN) 1003 of Government Gazette (GG) 43726 of 18 September 2020	The regulation and management of alien invasive species.
	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA)	To provide for control over the utilisation of the natural agricultural resources, including the vegetation and the combating of weeds and invader plants.
	Species Environmental Assessment Guideline (SANBI, 2020)	Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for Environmental Impact Assessments in South Africa.
	Environmental Assessment Guideline for Ecosystems (SANBI, 2022)	Guideline to support the implementation of the Terrestrial and Aquatic Biodiversity Protocols for environmental impact assessment in South Africa.
Provincial	Mpumalanga Parks Board, 1995 (Act No. 6 of 1995)	To provide for the management and conservation of the province's biophysical environment and protected areas.
	Mpumalanga Conservation Act, 1998 (Act No. 10 of 1998)	
	Mpumalanga Tourism and Parks Agency Act, 2005 (Act No 5 of 2005)	To inform land use planning, environmental assessments, land and water use authorisations, as well as natural resource management.
	Mpumalanga Biodiversity Sector Plan (2025)	

1.6 Definitions

1.6.1 Species of Conservation Concern

In accordance with the National Red List of South African Plants website, managed and maintained by the South African National Biodiversity Institute (SANBI), a Species of Conservation Concern (SCC) is a species that has a high conservation importance in terms of preserving South Africa's rich biodiversity. This classification covers a range of Red List categories as illustrated in Figure 1-3.

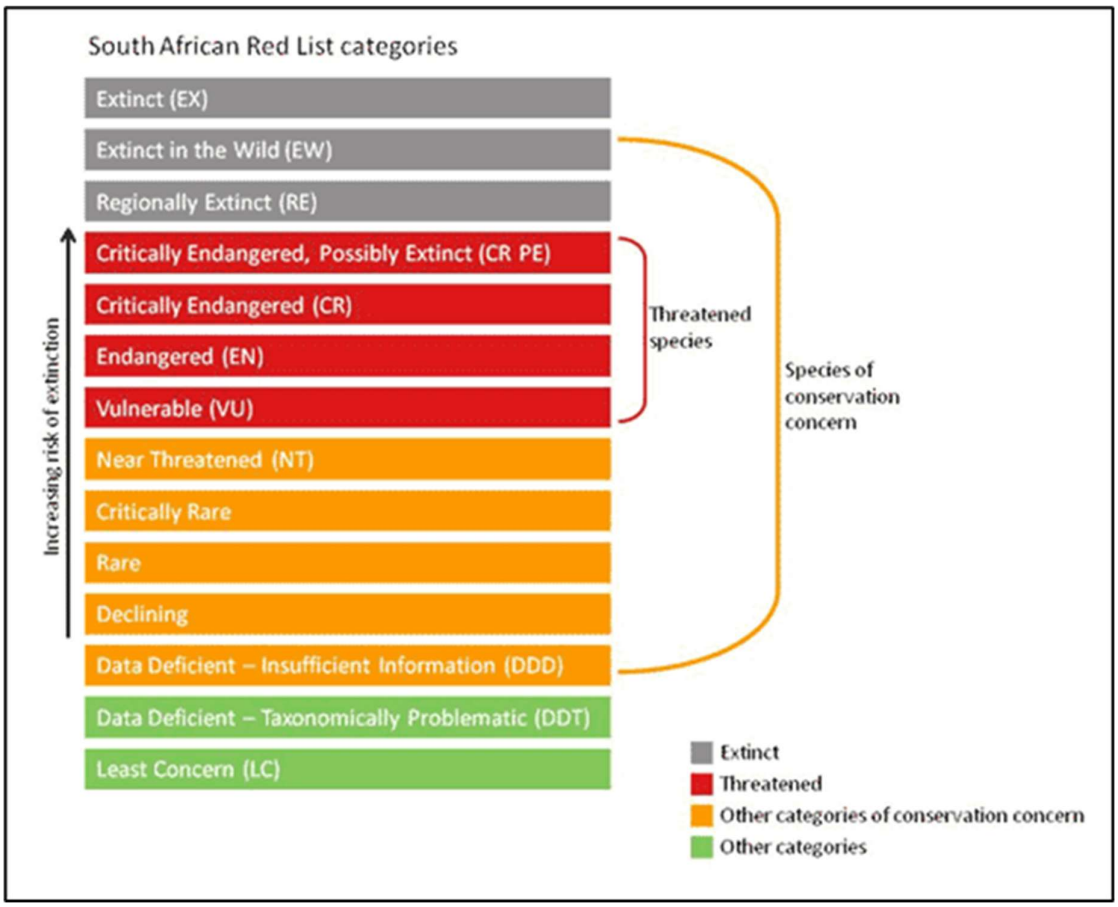


Figure 1-3 Threatened species and Species of Conservation Concern (SANBI, 2016)

South Africa uses the internationally endorsed International Union for Conservation of Nature (IUCN) Red List Categories and Criteria (IUCN, 2012). This scientific system is designed to measure species' risk of extinction and its purpose is to highlight those species that are in need of critical conservation action. As this system has been adopted from the IUCN, the definition of an SCC as described and categorised above is extended to all Red List classifications relevant to fauna as well as the IUCN categories, for the purposes of this report.

1.6.2 Protected Species

Protected species include both flora and fauna species that are protected according to some form of relevant legislation, be it provincial, national, or international. Provincial legislation may include that published in the form of a provincial ordinance, bill, or act, and national legislation includes that which is published in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) or the National Forests Act, 1998 (Act No. 84 of 1998) (NFA). Relevant international legislation includes the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 2021).

2 Fieldwork

2.1 Biodiversity Field Assessment

The field survey was conducted from the 26th to the 30th of January 2026, which constitutes a wet season (summer) survey. The various habitat types were delineated, and their associated sensitivities were determined. The field surveys were also conducted to determine the presence of any local fauna and flora SCC within the PAOI. Every effort was made to cover all the respective habitat types within the PAOI within the limits of time. The site visits conducted by the specialist are considered sufficient for delineating habitat and assessing sensitivities associated with the proposed Project (Figure 2-1).

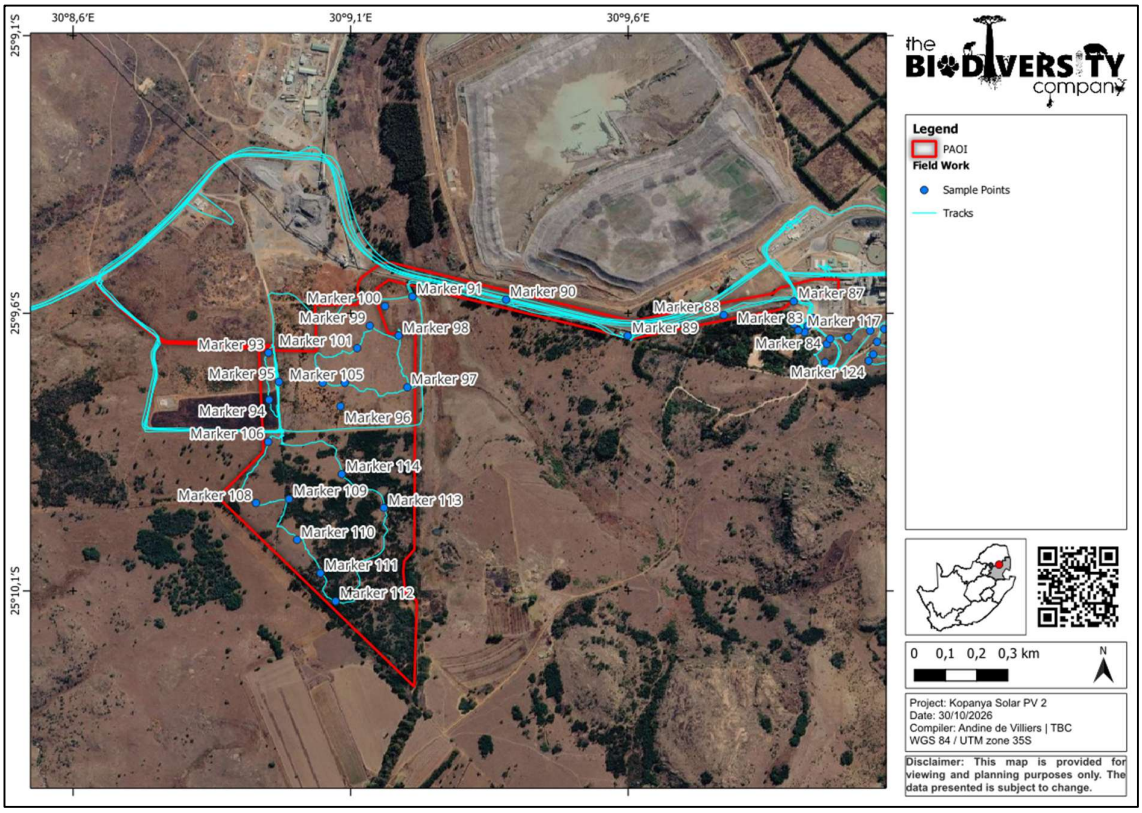


Figure 2-1 Map illustrating the field tracks of the field survey

3 Results and Discussion

3.1 Ecologically Important Landscape Features

The GIS analysis pertaining to the relevance of the proposed Project to ecologically important landscape features is summarised in Table 3-1.

Table 3-1 Summary of the ecologically important landscape features

Desktop Information Considered	Relevance	Reasoning	Report section
Ecosystem Threat Status (RLE 2022 and RLE 2025)	Relevant	The Project Area of Influence (PAOI) overlaps with a Least Concern (LC) ecosystem.	3.1.1
Mpumalanga Intact Grasslands	Relevant	The PAOI overlaps with Mpumalanga Intact Grasslands.	3.1.2
Mpumalanga Ecological Corridors	Irrelevant	The PAOI does not overlap with any ecological corridors.	-
Ecosystem Protection Level	Relevant	The PAOI overlaps with a Not Protected (NP) ecosystem.	3.1.3
Provincial Conservation Plan	Relevant	The PAOI overlaps with Other Natural Areas, Moderately Modified – Old lands and Heavily Modified.	3.1.4
South Africa Protected Areas Database (SAPAD) and South Africa Conservation Areas Database (SACAD)	Relevant	The PAOI is situated under 3 km from the Davel Private Nature Reserve (SAPAD and SACAD, 2026 Q2) and approximately 8 km from the Tim Tilden-Davis Nature Reserve (SAPAD, 2026 Q2) and the Verloren Vallei Nature Reserve (SACAD, 2026 Q2).	3.1.5
National Protected Areas Expansion Strategy (NPAES)	Relevant	The PAOI overlaps with NPAES Priority Focus Areas.	3.1.6
Mpumalanga Protected Areas Expansion Strategy (MPAES)	Relevant	The PAOI overlaps with National protected area expansion according to the MPAES.	3.1.6
Key Biodiversity Areas (KBA)	Relevant	The PAOI overlaps with the Steelpoort KBA.	3.1.7
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	Irrelevant	The PAOI does not overlap any SAIIAE wetlands or rivers.	-
National Freshwater Priority Area (NFEPA)	Irrelevant	The PAOI does not overlap any FEPA wetlands or rivers.	-
Mpumalanga Highveld Grassland Wetlands (MPHG)	Irrelevant	The PAOI does not overlap with any MPHG wetlands.	-
Strategic Water Source Areas (SWSA)	Irrelevant	The PAOI does not overlap with any SWSA.	-
Strategic Transmission Corridors (EGI)	Relevant	The PAOI overlaps with the International Corridor.	3.1.8
Renewable Energy Development Zones (REDZ)	Irrelevant	The PAOI does not overlap with any REDZ.	-
Renewable Energy Database	Relevant	Other approved renewable energy projects occur within a 50 km buffer of the PAOI.	3.1.9

3.1.1 Ecosystem Threat Status

The Ecosystem Threat Status is an indicator of an ecosystem's wellbeing, based on the level of change in structure, function or composition. Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) or Least Concern (LC), based on the proportion of the original extent of each ecosystem type that remains in good ecological condition. The revised list (known as the Red List of Ecosystems (RLE) 2022) is based on assessments that followed the IUCN Red List of Ecosystems Framework (version 1.1) and covers all 456 terrestrial ecosystem types described in South Africa (Mucina & Rutherford 2006; with updates described in Dayaram *et al.,* 2019). The revised list identifies 120 threatened terrestrial ecosystem types (55 Critically Endangered, 51 Endangered and 14 Vulnerable types). The revised list was published in the Government Gazette (GG) (47526, Notice Number 2747) and came into effect on 18 November 2022.

Ecosystem Threat Status (ETS) is a headline indicator of the risk of ecosystem collapse, reflecting the degree to which an ecosystem type has lost key aspects of its structure, function or composition. For NBA 2025, the International Union for Conservation of Nature (IUCN) Red List of Ecosystems (RLE) framework was applied systematically across all nationally recognised terrestrial ecosystem types. In the terrestrial realm, 463 ecosystem types were assessed and assigned to one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU) and Least Concern (LC). The threatened categories comprise CR, EN and VU. The current assessment indicates that 141 of the 463 terrestrial ecosystem types are threatened, comprising 63 Critically Endangered, 68 Endangered and 10 Vulnerable ecosystem types. These figures reflect refinements to the National Vegetation Map since NBA 2018, which increased the number of nationally recognised terrestrial ecosystem types from 456 to 463 (Monyeki & Skowno, 2026).

The proposed PAOI overlaps with a LC ecosystem (Figure 3-1).

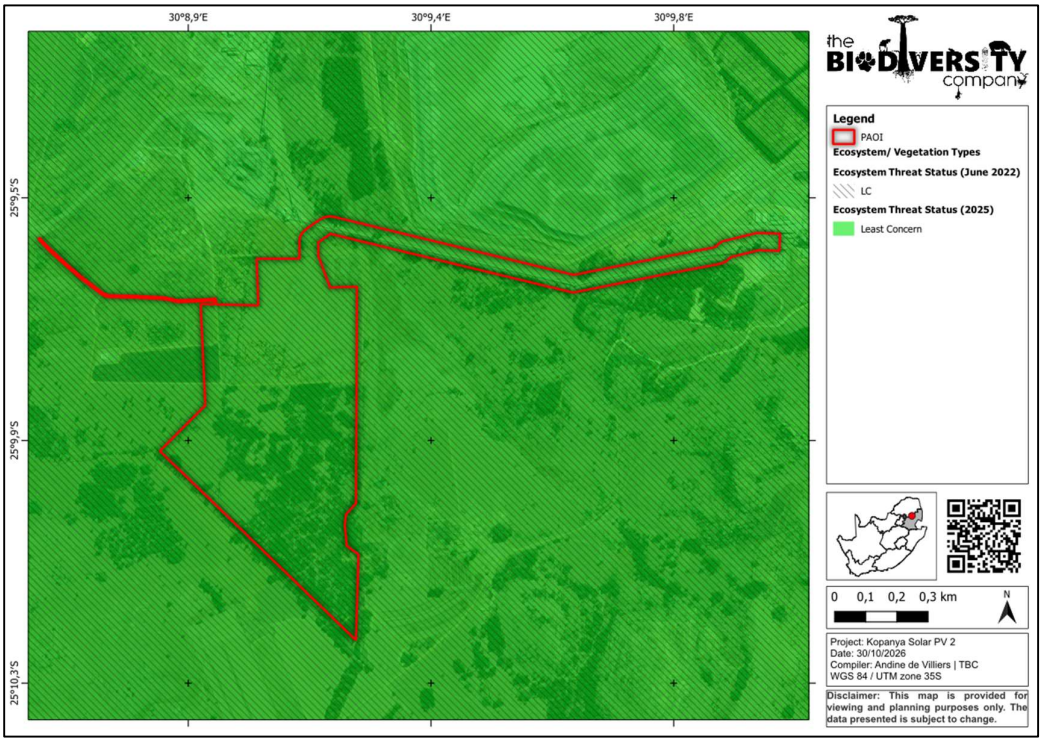


Figure 3-1 Map illustrating the Ecosystem Threat Status associated with the PAOI

According to the 2021 National Biodiversity Assessment, sections of the LC Sekhukhune Montane Grassland vegetation type has been modified, with some areas still considered as remnants of this vegetation type within the PAOI.

3.1.2 Mpumalanga Biodiversity Spatial Plan Intact Grassland

Given that grasslands within Mpumalanga are very fragmented (with only 50.7% of grassland areas still in a natural state), quantifying and prioritising the connectivity importance of remaining intact grassland patches was thought to be important in supporting species and ecosystems to adapt to climate change. These intact grassland patches are envisaged to provide habitat for species to thrive (access to resources, ability to reproduce, and protection from edge effects), and allow for the dispersal of smaller mobile mammal, avifaunal and plant species. Maintain functional intact grassland patches which support species (in response to climate change) and allow for natural ecological processes such as fire regimes, pollination, etc. to persist (MTPA, 2025).

The PAOI overlaps with intact grasslands identified by the Mpumalanga Biodiversity Spatial Plan (MBSP) (Figure 3-2).

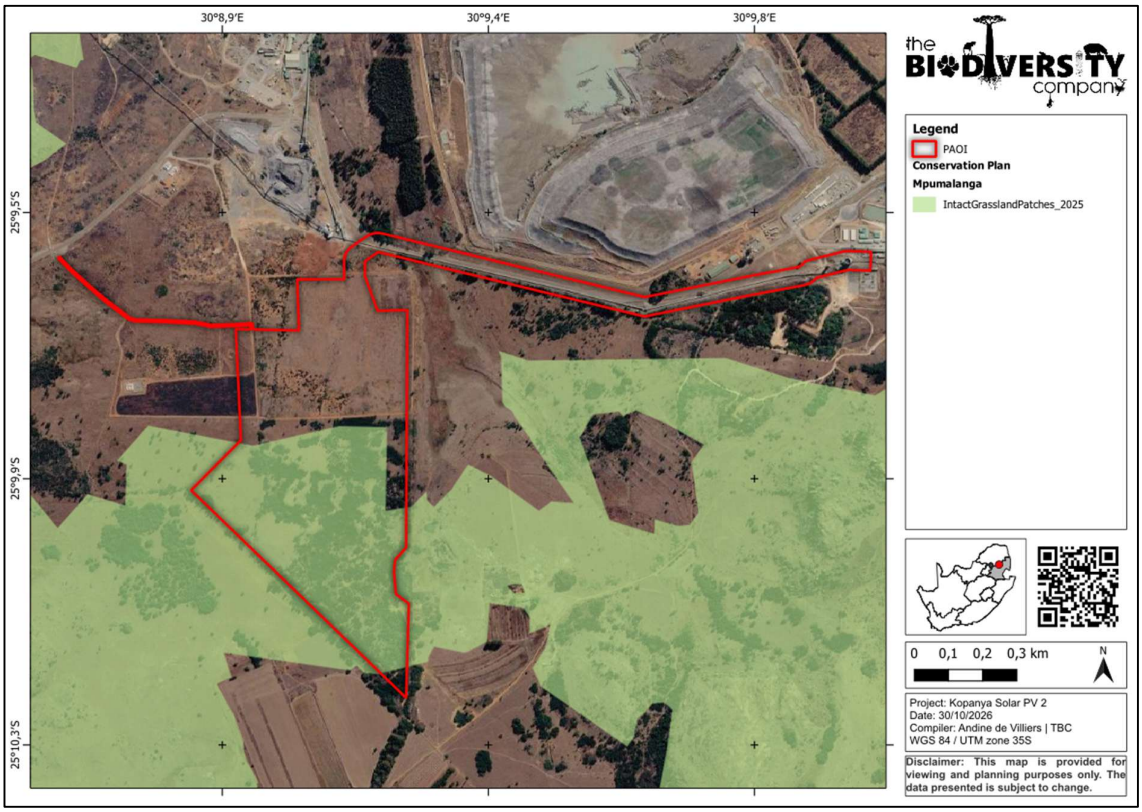


Figure 3-2 Map illustrating the PAOI in relation to the Mpumalanga Biodiversity Spatial Plan Intact Grassland dataset

3.1.3 Ecosystem Protection Level

This is an indicator of the extent to which ecosystems are adequately protected or under-protected. Ecosystem types are categorised as Well Protected (WP), Moderately Protected (MP), Poorly Protected (PP), or Not Protected (NP), based on the proportion of the biodiversity target for each ecosystem type that is included within one or more protected areas. NP, PP or MP ecosystem types are collectively referred to as under-protected ecosystems.

Ecosystem Protection Level (EPL) is an indicator of the extent to which ecosystem types are represented within South Africa's protected area network relative to ecosystem-specific conservation targets. In NBA 2025, terrestrial ecosystem types were classified as Well Protected (WP), Moderately Protected (MP), Poorly Protected (PP) or Not Protected (NP), according to the proportion of the ecosystem target achieved within the protected area network. A total of 463 terrestrial ecosystem types were assessed, of which 121 (26.1%) are Well Protected, 67 (14.5%) are Moderately Protected, 163 (35.2%) are Poorly Protected, and 112 (24.2%) are Not Protected. At the start of 2025, approximately 9.9% of South Africa's landmass was formally protected (Skowno, Monyeki & Khatieb, 2026).

The PAOI overlaps with a NP ecosystem (Figure 3-3).

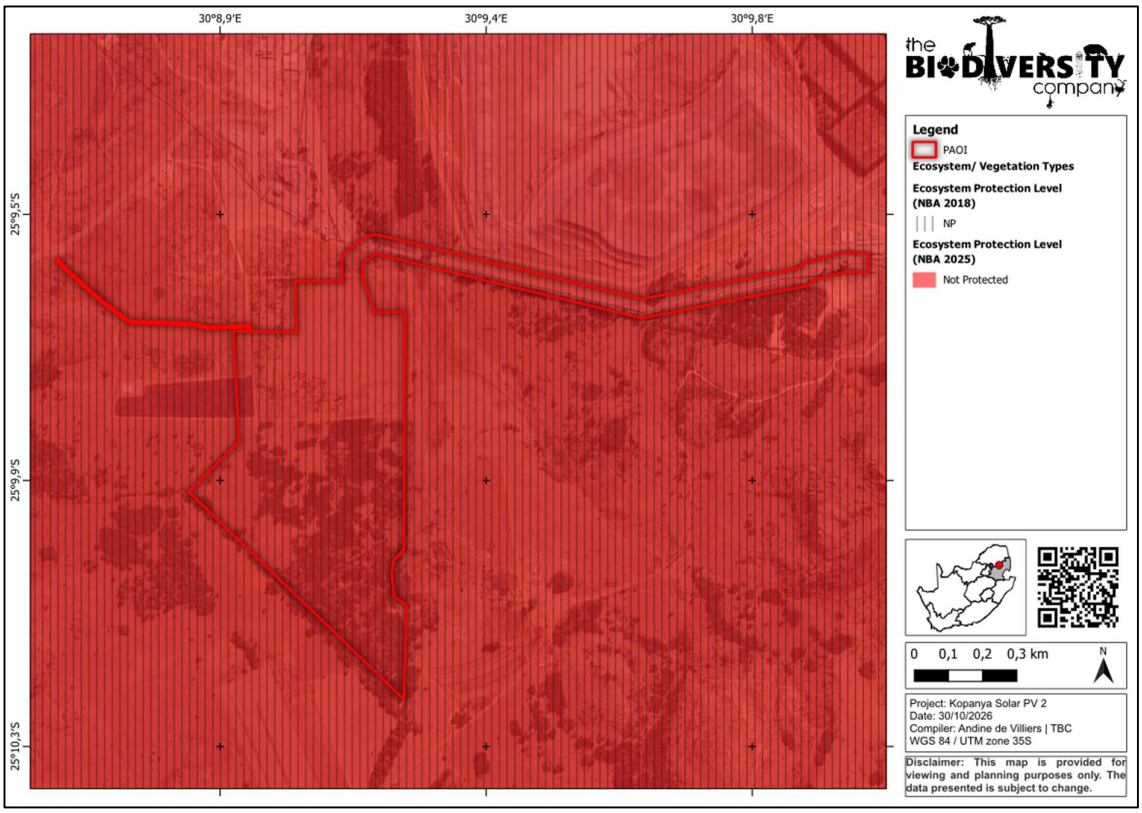


Figure 3-3 Map illustrating the ecosystem Protection Level associated with the PAOI

3.1.4 Mpumalanga Biodiversity Spatial Plan

The key output of this systematic biodiversity plan is a map of biodiversity priority areas (MTPA, 2025). The MBSP map delineates Critical Biodiversity Areas (CBA), Ecological Support Areas (ESA), Other Natural Areas (ONA), Protected Areas (PA), Protected Area buffers and areas that have been irreversibly modified from their natural state (MTPA, 2025). The MBSP uses the following terms to categorise the various land use types according to their biodiversity and environmental importance:

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

According to the MBSP dataset, the PAOI overlaps with ONA, MMA – old lands, and HMA (Figure 3-4).

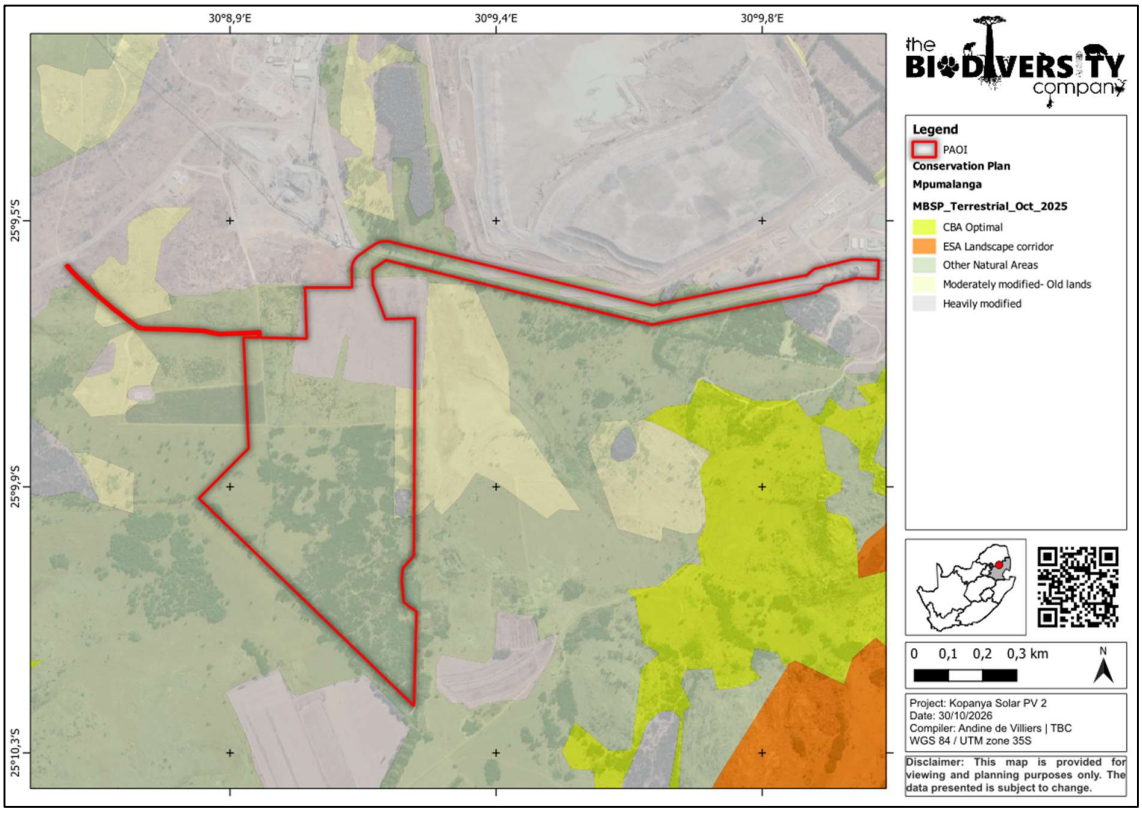


Figure 3-4 Map illustrating the PAOI in relation to the Mpumalanga Biodiversity Sector Plan

3.1.5 Protected Areas

According to the datasets (Figure 3-5) from South Africa Protected Areas Database (SAPAD) (2026, Q2) and South Africa Conservation Areas Database (SACAD) (2026, Q2), at the nearest point, the PAOI is situated under 3 km from the Davel Private Nature Reserve (SAPAD and SACAD, 2026 Q2) and approximately 8 km from the Tim Tilden-Davis Nature Reserve (SAPAD, 2026 Q2) and the Verloren Vallei Nature Reserve (SACAD, 2026 Q2).

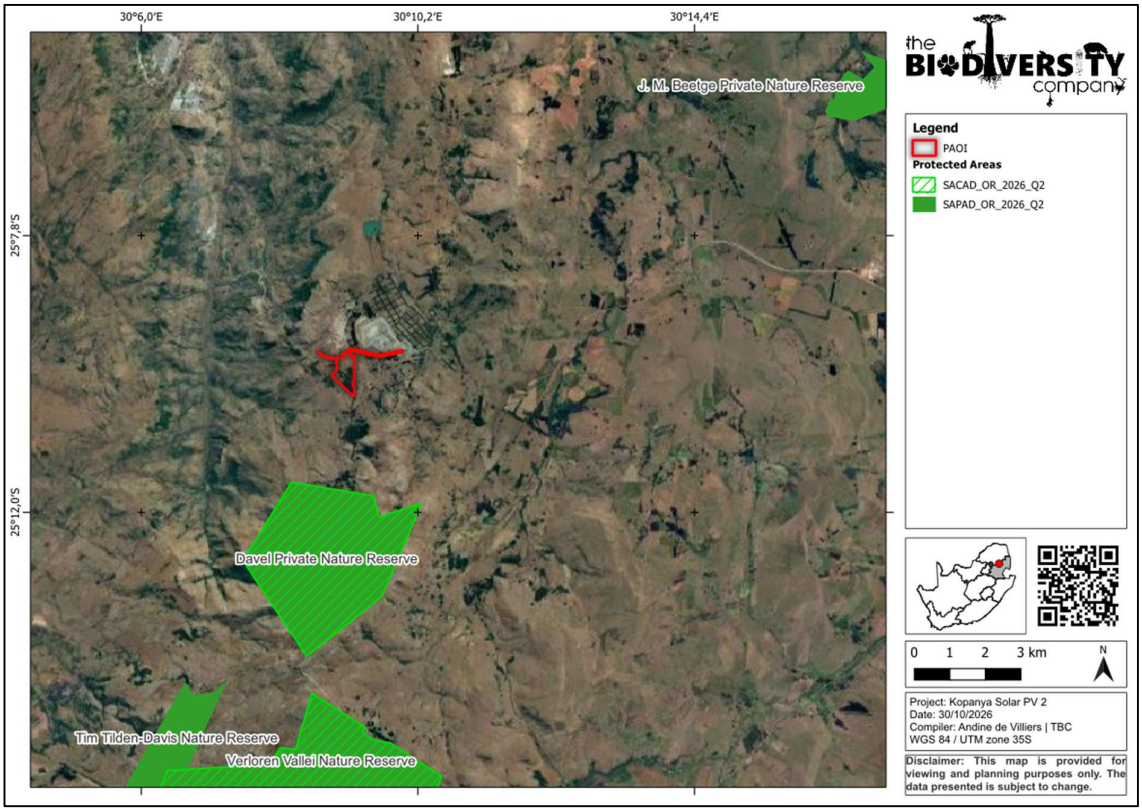


Figure 3-5 The PAOI in relation to the South Africa Protected Areas Database and South Africa Conservation Areas Database datasets

3.1.6 National Protected Area Expansion Strategy

National Protected Area Expansion Strategy 2018 (NPAES) were identified through a systematic biodiversity planning process. They present the best opportunities for meeting the ecosystem-specific protected area targets set in the NPAES and were designed with strong emphasis on climate change resilience and requirements for protecting freshwater ecosystems. These areas should not be seen as future boundaries of PAs, as in many cases only a portion of a particular focus area would be required to meet the protected area targets set in the NPAES. They are also not a replacement for fine scale planning which may identify a range of different priority sites based on local requirements, constraints and opportunities (NPAES, 2018).

The Mpumalanga Protected Area Expansion Strategy (MPAES, 2013), commissioned by the MTPA, serves to function as a provincial framework for an integrated, coordinated and uniform approach in the expansion and consolidation of the Provincial PAs, in line with the requirements of the NPAES.

The priority areas for PA Expansion within Mpumalanga were spatially established based on the premise that the primary goal of these areas is to protect biodiversity targets. Several biodiversity data sources were used for the assessment, namely the: Threatened Ecosystems, MBCP Terrestrial Assessment, MBCP Aquatic Assessment, MBCP Irreplaceability, C-plan Irreplaceability, and the National Spatial Biodiversity Assessment Priority areas. A combination of all these were used, together with the spatial priorities established within the NPAES, to establish the spatial priority areas that will guide the MPAES (2018) over the next 20 years.

The PAOI overlaps with NPAES priority focus areas and National Protected Area Expansion Priority according to the MPAES (Figure 3-6).

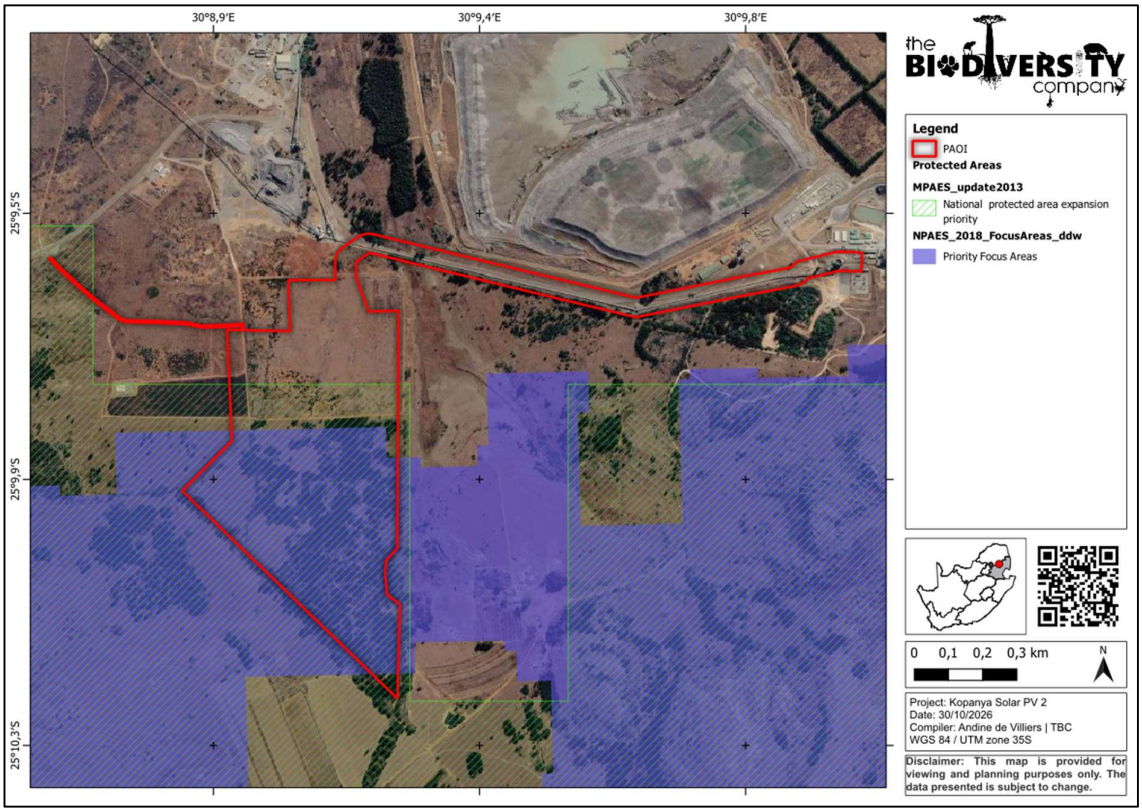


Figure 3-6 Map illustrating the PAOI in relation to the National Protected Area Expansion Strategy dataset

3.1.7 Key Biodiversity Areas

A new set of Key Biodiversity Areas (KBA) specific to South Africa has been identified using the Global Standard for the Identification of Key Biodiversity Areas version 1.2 (IUCN 2016), applied to South African species and ecosystems. KBAs are critical sites that play a vital role in maintaining global biodiversity by serving as essential habitats for species. The identification of KBAs enables governments and civil society to pinpoint key locations crucial for species and their habitats worldwide. This understanding facilitates collaborative efforts to manage and conserve these areas, thereby safeguarding global biological diversity and supporting international biodiversity objectives.

Unlike the Important Bird Areas (IBAs), which primarily focus on birds, the KBA framework encompasses a broader spectrum of biodiversity, including mammals, amphibians, plants, and other taxa. BirdLife South Africa, in consultation with the KBA National Coordination Group, has opted to retire IBAs and integrate KBAs into its conservation strategy. This strategic shift acknowledges the necessity of investing resources effectively to protect avian and other macroecological elements at the site level within a comprehensive framework of biodiversity conservation (KBA NCG, 2024).

The PAOI overlaps with the Steelpoort KBA (Figure 3-7). Steelpoort, located in Limpopo, South Africa, is a large terrestrial site with limited protection, characterised by diverse habitats including dry microphyllous and broad-leaved savanna on hills and mountain slopes (Sekhukhune Mountain Bushveld), open bushveld on ultramafic soils rich in edaphic specialists, and dense, sour grasslands (Sekhukhune Montane Grassland and Rand Highveld Grassland) on slopes and plains. Steelpoort qualifies as a KBA of international significance, meeting three criteria of the Global Standard for the Identification of KBAs: it supports significant proportions of the global populations of four threatened species (criterion A1), contains the entire global populations of two Critically Endangered species, regularly holds eight geographically restricted species (criterion B1), and is 100% irreplaceable for the global persistence of four species (criterion E). Additionally, the site encompasses significant portions of one threatened ecosystem (criterion A2) and two geographically restricted ecosystems (criterion B4), with KBA trigger species including butterflies, fish, plants, and reptiles.

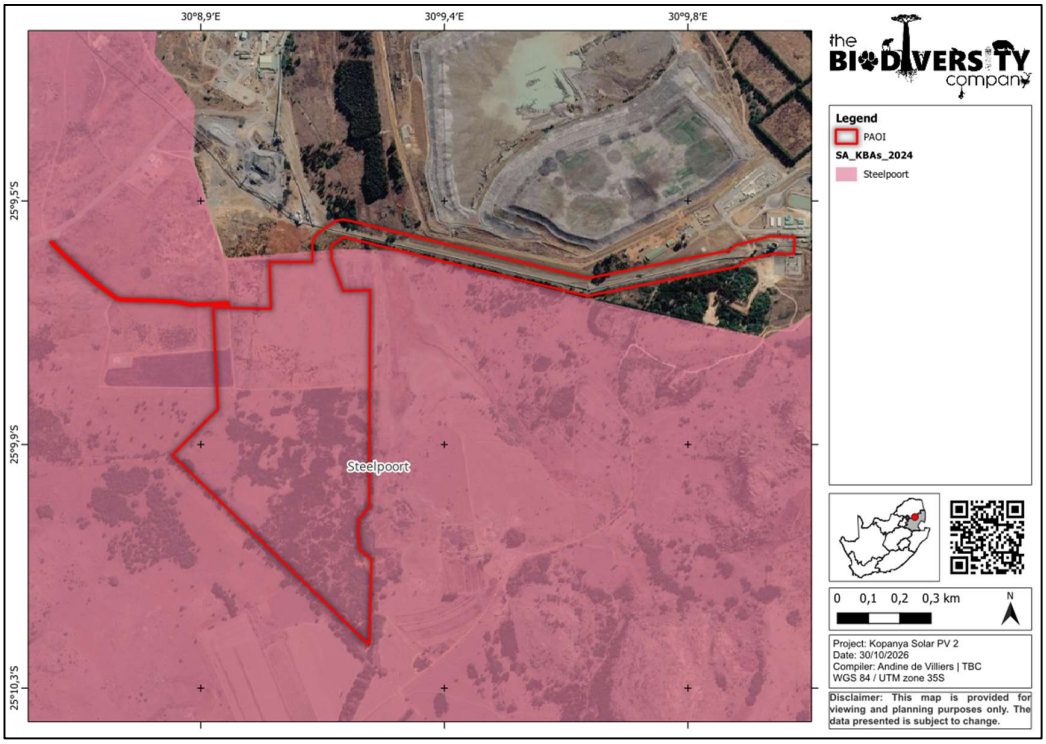


Figure 3-7 The PAOI in relation to the Key Biodiversity Areas dataset

3.1.8 Strategic Transmission Corridors

On the 16 February 2018 Minister Edna Molewa published GN No. 113 in GG No. 41445 which identified 5 strategic transmission corridors important for the planning of electricity transmission and distribution infrastructure as well as procedure to be followed when applying for environmental authorisation for electricity transmission and distribution expansion when occurring in these corridors.

On 29 April 2021, Minister Barbara Dallas Creecy published GN No. 383 in GG No. 44504, which expanded the eastern and western transmission corridors and gave notice of the applicability of the application procedures identified in GN No. 113, to these expanded corridors. More information on this can be obtained from https://egis.environment.gov.za/egi.

The PAOI overlaps with the International Corridor (Figure 3-8).

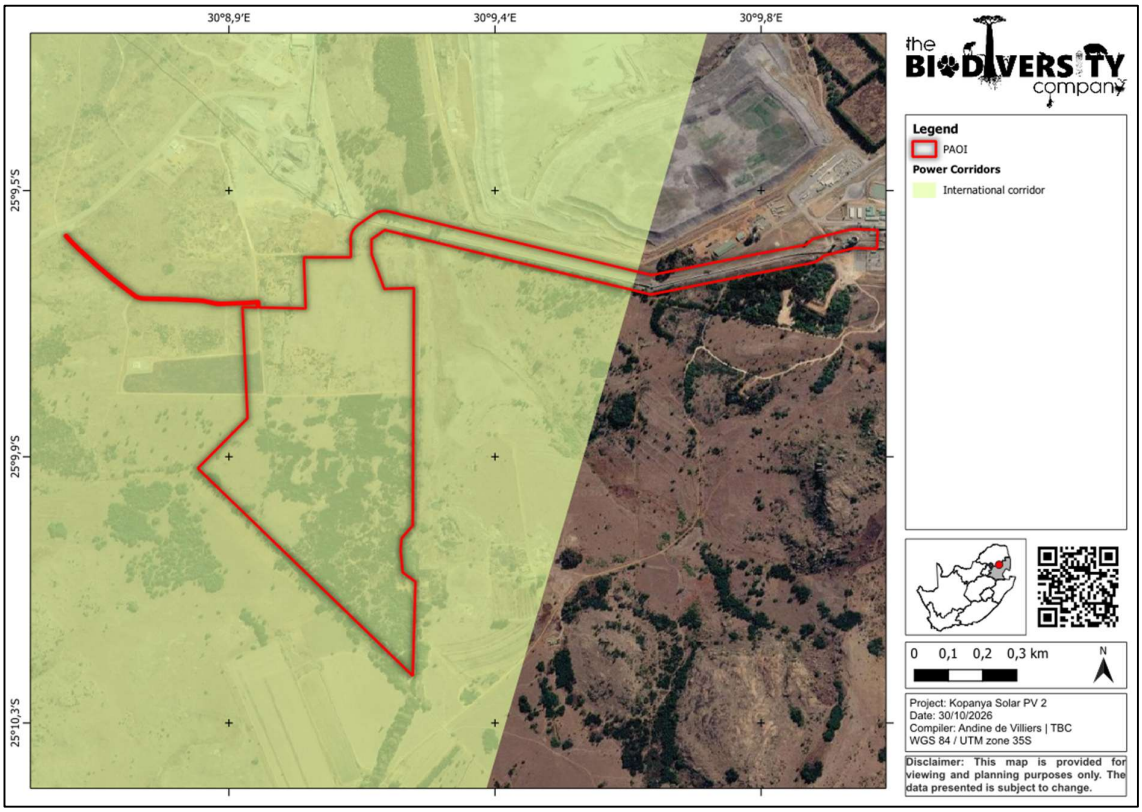


Figure 3-8 The PAOI in relation to the Strategic Transmission Corridors dataset

3.1.9 Renewable Energy Environmental Authorisations Database

The Renewable Energy Environmental Authorisations Database (REEA) (http://egis.environment.gov.za/), shows that there are other “approved” projects in the near vicinity (Figure 3-9). This increases the overall impact on the habitats in the area.

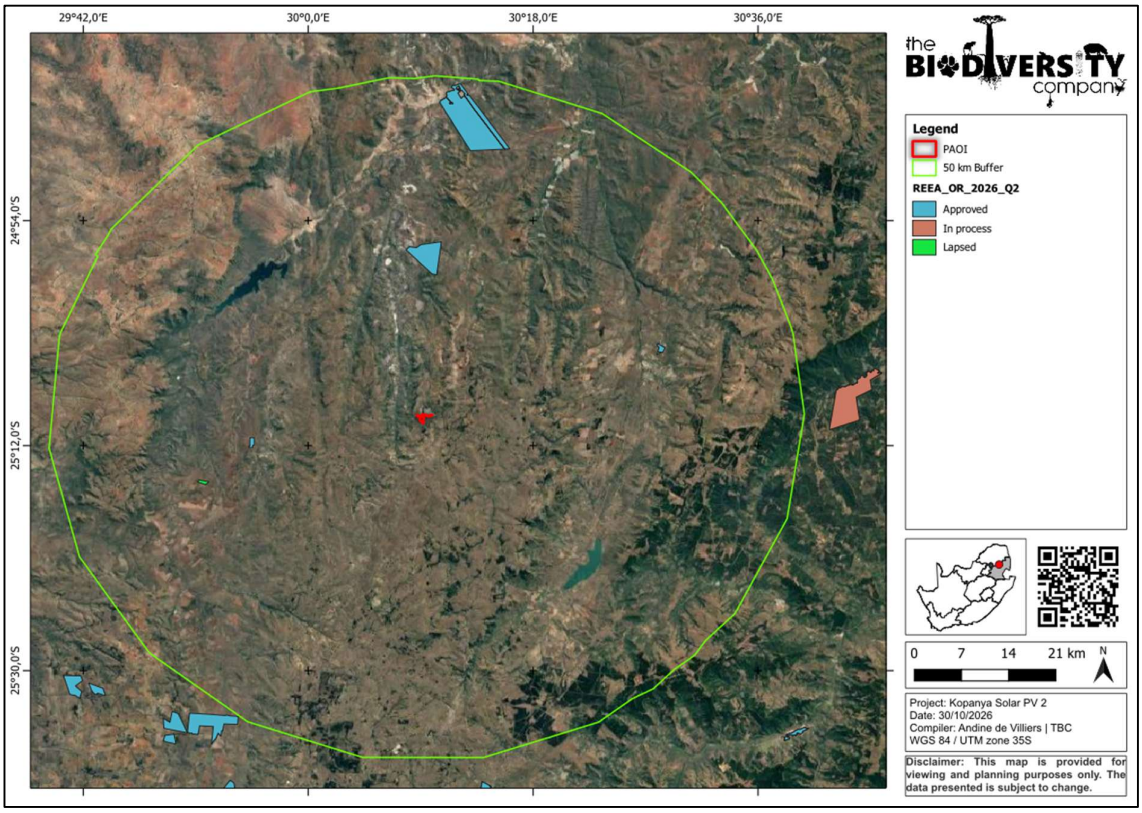


Figure 3-9 Map illustrating the PAOI in relation to the Renewable Energy Environmental Authorisations Database approved projects within a 50 km buffer

3.2 Desktop Flora Assessment

3.2.1 Vegetation Type

The PAOI is situated in the Grassland Biome.

The Grassland Biome is centrally located in southern Africa, and adjoins all except the desert, fynbos, and succulent Karoo biomes (Mucina & Rutherford, 2006). Major macroclimatic traits that characterise the Grassland Biome include:

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

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

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

The PAOI overlaps with Sekhukhune Montane Grassland vegetation unit (Figure 3-10).

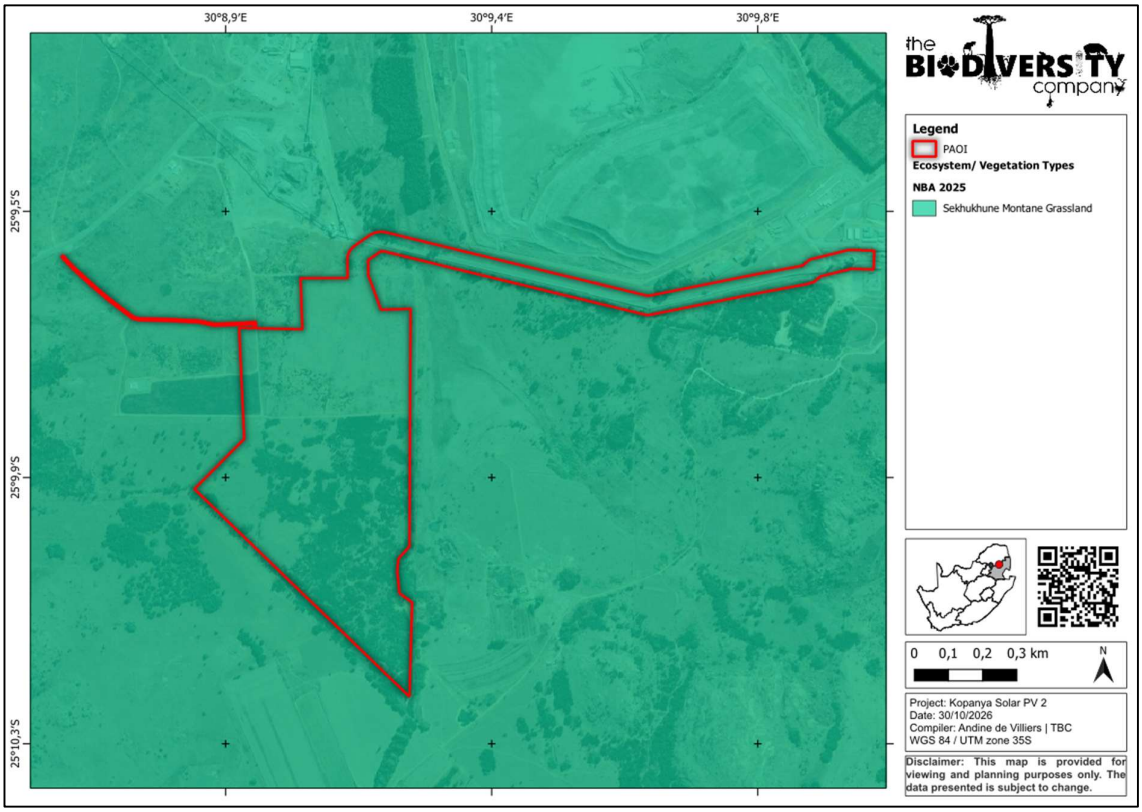


Figure 3-10 Map illustrating the vegetation type associated with the PAOI

3.2.1.1 Sekhukhune Montane Grassland

The vegetation type is known for chains of hills that transect the area and have a north-south orientation, creating moderately steep slopes, with predominantly eastern and western aspects. Sour grassland occurs on slopes of mountains and undulating hills, with scattered clumps of trees and shrubs in sheltered habitats. Turf and clay soils characterise the open plains between the chains of hills and culminate in an open plain in the Stoffberg area. Dense, tall grassland is found on the plains and encroachment by indigenous or invasion by alien microphyllous tree species is common in places. (Mucina & Rutherford,2006).

Important Plant Taxa

Based on Mucina & Rutherford's (2006) vegetation classification, important plant taxa are those species that have a high abundance; a frequent occurrence (not being particularly abundant); or are prominent in the landscape within a particular vegetation type (d=dominant):

Small Trees: *Protea caffra subsp. caffra (d), Senegalia caffra, Apodytes dimidiata subsp. dimidiata, Canthium suberosum, Cussonia transvaalensis, Seemannaralia gerrardii.*

Woody Climbers: *Rhoicissus tridentata (d), Jasminum quinatum, Triaspis glaucophylla*.

Tall Shrubs: *Euclea crispa subsp. crispa (d), Brachylaena ilicifolia, Diospyros austro-africana, Euclea linearis, Pavetta zeyheri.*

Low Shrubs: *Gnidia caffra (d), Senecio microglossus (d), Dyschoriste rogersii, Elephantorrhiza praetermissa, Leonotis leonurus, Polygala uncinata, Rhus discolor, R. tumulicola var. meeuseana, R. wilmsii.*

Geoxylic Suffrutex: *Elephantorrhiza elephantina*.

Graminoids: *Aristida junciformis subsp. galpinii (d), Diheteropogon amplectens (d), Elionurus muticus (d), Eragrostis chloromelas (d), E. racemosa (d), Heteropogon contortus (d), Microchloa caffra (d), Monocymbium ceresiiforme (d), Setaria sphacelata (d), Themeda triandra (d), Tristachya leucothrix (d), Andropogon schirensis, Aristida aequiglumis, Brachiaria serrata, Cymbopogon caesius, Digitaria diagonalis, D. monodactyla, Ehrharta capensis, Eragrostis capensis, E. nindensis, E. plana, Hyparrhenia hirta, Loudetia simplex, Panicum natalense, Setaria nigrirostris, Trachypogon spicatus, Triraphis andropogonoides.*

Herbs: *Acalypha punctata (d), Berkheya setifera (d), Rotheca hirsuta (d), Senecio latifolius (d), Tephrosia purpurea subsp. leptostachya (d), Berkheya insignis, Gerbera jamesonii, Helichrysum nudifolium var. nudifolium, Ipomoea crassipes, Jamesbrittenia silenoides, Macledium zeyheri subsp. argyrophylum, Pegolettia lanceolata, Pentanisia prunelloides subsp. prunelloides, Senecio coronatus, Vernonia galpinii, V. natalensis, V. oligocephala, Xerophyta retinervis.*

Geophytic Herbs: *Hypoxis rigidula var. pilosissima (d), Cheilanthes hirta, Eucomis montana, Hypoxis hemerocallidea, Pachycarpus transvaalensis.*

Succulent Herb: *Kleinia stapeliiformis.*

Biogeographically Important Taxa (^{N}Northern sourveld endemic, ^{SK}Sekhukhune endemic):

Small Trees: *Euclea sekhukhuniensis^{SK}, Lydenburgia cassinoides^{SK}, Rhus sekhukhuniensis^{SK}.*

Woody Climber: *Rhoicissus sekhukhuniensis^{SK}.*

Tall Shrub: *Vitex obovata subsp. wilmsii^{N}.*

Low Shrubs: *Dyschoriste perrottetii^{SK}, Grewia vernicosa^{N}, Helichrysum uninervium^{N}, Jamesbrittenia macrantha^{SK}, Melhania randii^{N}.*

Succulent Shrub: *Aloe castanea*[N], *Herbs: Berkheya densifolia*[N], *Cyanotis pachyrrhiza*[N], *Graderia linearifolia*[N], *Ipomoea bathycolpos var. sinuatodentata*[SK], *Rhynchosia rudolfii*[N], *Tetraselago wilmsii*[N].

Geophytic Herbs: *Gladiolus sekukuniensis*[SK], *Zantedeschia pentlandii*[SK].

Succulent Herb: *Huernia insigniflora*[N].

Endemic Taxa:

Succulent Shrubs: *Aloe reitzii var. reitzii, Delosperma deilanthoides.*

Geophytic Herbs: *Resnova sp. nov. ('megaphylla'), Zantedeschia pentlandii.*

Conservation Status:

Listed as LC according to Red List of Ecosystems (RLE) (2022). Conservation target 24%. Approximately 30% of this area is under commercial or subsistence cultivation. (Mucina & Rutherford, 2006).

3.2.1.2 Mesic Highveld Grassland

According to the Grasslands Ecosystem Guidelines (SANBI, 2013) the Sekhukhune Montane Grassland is classified as a Mesic Highveld Grassland type. Mesic Highveld Grasslands are highly productive sourveld systems dominated by long-lived, resprouting grasses and plants with underground storage organs, enabling them to withstand above-ground disturbances. They are adapted to high summer rainfall (700–1 200 mm), warm summers, and cool to cold winters with frequent frost. Found at mid-altitudes (1 300–1 800 m), they occur across diverse landscapes, including plains, hills, rocky outcrops, and river valleys. Soils are generally deep, fertile, and free-draining, though impervious layers may be present, with soil diversity influenced by underlying sedimentary and igneous geology. These grasslands experience frequent natural fires caused by summer storms and lightning, along with frost and hail, which help maintain their open, treeless character, except on rocky ridges where shrublands occur. Mesic Highveld Grassland is also well adapted to grazing, provided stocking rates are low to moderate and rest periods are allowed (SANBI, 2013).

Disrupting the hydrology of Mesic Highveld Grassland through reduced vegetation cover, soil disturbance, or changes to water runoff and filtration can have significant negative impacts on the ecosystem, its services, and the people and economic activities that rely on them. The main concerns in these grasslands arise from the expansion of activities such as coal-mining, commercial agriculture and unplanned urban development (SANBI, 2013).

Below are some of the ecosystem-specific management best-practices for Mesic Highveld Grassland: listed by the Grasslands Ecosystem Guidelines (SANBI, 2013) (refer to guidelines for a more detailed list and description):

- All large remnants must be preserved and managed to maintain biodiversity, especially for birds, plants, and wetlands;
- Fire management should use varied intervals (mainly two to three years) and consider fuel load, with burns ideally between May and August;
- Grazing should be flexible and within agricultural norms, as these grasslands tolerate regular disturbance but are vulnerable to root-damaging activities like ploughing or overgrazing;
- The grassland should be managed as a water-production landscape, with all wetlands and catchments protected; and

- Land use applications must include accurate, ground-truthed wetland maps as part of EIA process.

The Grasslands Ecosystem Guidelines (SANBI, 2013) further suggests broad spatial guidelines for locating land uses in Mesic Highveld Grassland (refer to guidelines for a more detailed list and description):

- Avoid further fragmentation by directing development to already disturbed areas and away from habitats or species of special concern;
- Maintain landscape connectivity by establishing natural grassland corridors, and implement buffers, at least 200 m wide, around PAs, wetlands, and rivers, especially in sensitive regions;
- Avoid non-conservation land uses on dolomitic grasslands to prevent subsidence and sinkholes; and
- Mitigate urban sprawl by maintaining strong urban edges, planning open spaces that include biodiversity priorities, and ensuring effective management and monitoring.

3.2.1.2.1 Grassland Transformation, Fire Regime and Shading Impacts

The installation of large – scale PV arrays can result in grassland transformation due to impacts such as artificial shading and altered fire regimes. Table 3-2 lists possible impacts of PV developments on the integrity of grassland habitats.

Table 3-2 Possible impacts from PV on grassland habitats

Artificial Shading	
Impact	**Description**
Reduced Photosynthesis and Grass Productivity (Amstrong *et. al*., 2016)	Solar panels block sunlight, reducing the amount of light available for photosynthesis. This can suppress the growth of native grasses and forbs, leading to a decline in primary productivity and a shift in plant community composition
Microclimate Alteration (Walston *et al*., 2018; SANBI, 2013)	Shading changes soil temperature and moisture regimes beneath panels, which can favour shade-tolerant or invasive species over native grassland flora.
Habitat Fragmentation (Gasparatos et. al., 2017; SANBI, 2013)	The physical footprint of solar arrays and associated infrastructure fragments the landscape, further reducing habitat quality for grassland-dependent species
Altered Fire Regimes	
Fire Suppression (Uys *et al*., 2004; Parr and Andersen, 2006; SANBI, 2013)	To protect infrastructure, fire is often actively suppressed around solar farms. This allows for the accumulation of biomass and the encroachment of woody or alien species, which can outcompete native grasses
Reduced Fire Frequency and Intensity (Uys *et al*., 2004; SANBI, 2013)	The presence of solar panels and access roads can act as firebreaks, reducing the spread and intensity of fires, resulting in changes from the natural fire regime. This further promotes the establishment of non-grassland species and alters nutrient cycling
Management Challenges	Balancing fire management for biodiversity with the protection of solar infrastructure is complex, often resulting in suboptimal outcomes for grassland conservation
Combined Effects and Conservation Implications	
Loss of Grassland Character	Reduced light and fire lead to a decline in grassland species, with a shift toward more shade-tolerant or invasive plants.
Biodiversity Decline	Many endemic and threatened species in the Soweto Highveld Grassland are adapted to open, frequently-burned habitats and may be lost as conditions change
Ecosystem Service Reduction	Transformed grasslands provide fewer services such as grazing, pollination, and water regulation.
Altered Grazing Patterns	Livestock may preferentially graze in shaded areas, leading to uneven grazing pressure and further altering plant community

	structure. Grazing livestock beneath solar panels is not considered an adequate conservation measure for maintaining grassland integrity.

Despite potential negative impacts, grass growth and regeneration remain possible, particularly if mitigation and rehabilitation measures are properly implemented. Figure 3-11 and Figure 3-12 show examples of *Themeda triandra* (Red Grass) in areas associated with PV development. *Themeda triandra* is a high-value grazing species, classified as a decreaser and climax species, which reflects positively on the ecological condition of the area.



Figure 3-11 Photograph illustrating an example of grass growth associated with a PV development



Figure 3-12 Photograph illustrating an example of grass growth between solar panels associated with a PV development

3.2.2 Expected Flora Species of Conservation Concern

The Plants of Southern Africa (POSA) database indicates that 667 species of plants are expected to occur within the PAOI and surrounding landscape. Table 7-2 provides the list of species and their respective conservation status and endemism. Twenty-five (25) SCC are expected, including five (5) listed by the Screening Tool (Table 3-3).

Please note that the Screening Tool report includes lists of bird, mammal, reptile, amphibian, butterfly, and plant SCC known or expected to occur on the proposed Project footprint. Some of these SCC are sensitive to illegal harvesting. Such species have had their names obscured and are listed as sensitive plant unique number/sensitive animal unique number. As per the best practise guideline that

accompanies the protocol and Screening Tool, **the name of the sensitive species may not appear in the final EIA report nor any of the specialist reports** released into the public domain. It should be referred to as *sensitive plant* or *sensitive animal* and its threat status may be included, e.g. *critically endangered sensitive plant* or *endangered sensitive animal.*

Table 3-3 Threatened flora species that are expected to occur within the PAOI

Family	Scientific Name	IUCN	Ecology	Habitat	Likelihood of Occurrence	Reason
Aizoaceae	*Delosperma deilanthoides*	VU	Indigenous; Endemic	Shallow quartzitic soils in rocky outcrops, 2 000 - 2 250 m.	Low	No suitable habitat
Aizoaceae	*Khadia beswickii*	VU	Indigenous; Endemic	Open shallow soil over rocks in grassland	Moderate	Some suitable habitat
Anacardiaceae	*Searsia batophylla*	VU	Indigenous; Endemic	Dry bushveld, in low-lying areas and along watercourses, 650 - 975 m	Low	No suitable habitat
Apiaceae	*Alepidea attenuata*	NT	Indigenous	Plants grow in wetlands, in grassland up to 2 200 m	Moderate	Some suitable habitat
Apocynaceae	*Asclepias dissona*	CR	Indigenous; Endemic	Damp grassland	Moderate	Some suitable habitat
Apocynaceae	*Asclepias schlechteri*	EN	Indigenous	Ngongoni Veld, sandy soils in tall grasslands	Low	No suitable habitat
Asphodelaceae	*Aloe reitzii var. reitzii*	NT	Indigenous; Endemic	It occurs on rocky slopes and in granite outcrops in montane grassland	Low	No suitable habitat
Asteraceae	*Euryops discoideus*	DD	Indigenous; Endemic	Unknown, probably grassland on quartzite sourveld if collected on the escarpment	Moderate	Some suitable habitat
Caryophyllaceae	*Dianthus basuticus subsp. fourcadei*	VU	Indigenous; Endemic	Rocky slopes in renosterveld and lower sandstone slopes	Low	No suitable habitat
Fabaceae	*Crotalaria monophylla*	VU	Indigenous; Endemic	Rocky quartzitic ridges in montane grassland	Low	No suitable habitat
Fabaceae	*Pearsonia hirsuta*	VU	Indigenous; Endemic	Low grassland between rocks, in humus-rich, sandy soil	Low	No suitable habitat
Lobeliaceae	*Monopsis kowynensis*	VU	Indigenous; Endemic	Along forest margins in mistbelt grassland	Low	No suitable habitat
Oliniaceae	*Olinia huillensis subsp. Burttdavii*	VU	Indigenous; Endemic	Windswept rocky outcrops in the high-altitude mistbelt	Low	No suitable habitat
Orchidaceae	*Disa alticola*	VU	Indigenous; Endemic	In seepages and wet hollows among dolerite boulders and bedrock, in short and heavily grazed grassland, 2000 m	Low	No suitable habitat
Orchidaceae	*Disa maculomarronina*	NT	Indigenous; Endemic	Swamps, montane grassland on the edges of Black Reef Quartzite, 1 500-1 700 m	Low	No suitable habitat
Orchidaceae	*Habenaria barbertoni*	NT	Indigenous; Endemic	Rocky hillsides, in bushveld in association with acacias, 1 000-1 500 m	Low	No suitable habitat
Orobanchaceae	*Graderia linearifolia*	VU	Indigenous; Endemic	Sparse montane grassland on poor, gravely, quartzitic soil, 2 255 m.	Moderate	Some suitable habitat
Proteaceae	*Protea parvula*	NT	Indigenous	It grows in rocky, exposed grassland in acid soils, 1300-2200 m. It is a long-lived species, and survives fires by	Low	No suitable habitat

				resprouting from underground boles or rootstocks. Wind-dispersed seeds are not stored on the plant, and are released immediately after ripening. It is pollinated by birds.		
Scrophulariaceae	*Jamesbrittenia macrantha*	NT	Indigenous; Endemic	Grassy slopes with other scattered shrubs, restricted to norite.	Low	No suitable habitat
Thymelaeaceae	*Gnidia variabilis*	VU	Indigenous; Endemic	Well-drained grassland, 900-1800 m.	Moderate	Some suitable habitat
	Sensitive Species 1086	EN				
	Sensitive Species 1167	EN				
	Sensitive Species 264	VU				
	Sensitive Species 691	VU				
	Sensitive Species 998	EN				

Threat Status: NT – Near Threatened, VU – Vulnerable, EN – Endangered, CR – Critically Endangered, and DD – Data Deficient

3.3 Fauna Assessment

3.3.1 Expected Fauna and Species of Conservation Concern

This section of the report details the lists of expected SCC fauna species that may occur within the PAOI and surrounding area, where the fauna species considered include non-volant mammals and herpetofauna (reptiles and amphibians). A separate Avifauna Study was conducted and should be consulted (TBC, 2026).

3.3.1.1 Herpetofauna

Based on AmphibianMAP, thirty-seven (37) amphibian species could occur within the area. The full list is provided in Table 7-3. None of these are SCC. Furthermore, the Screening Tool does not list any amphibians. Based on ReptileMAP database, one hundred (100) reptile species are expected to occur in the area. Five (5) of these species are threatened. No reptile species are listed by the Screening Tool. The full list can be seen in Table 7-4 and the threatened species can be seen in Table 3-4.

Table 3-4 Threatened reptile species that are expected to occur within the PAOI

Family	Species	Common Name	Conservation Status		Habitat	Likelihood of Occurrence	Reason
			Regional	Global			
Cordylidae	*Chamaesaura aenea*	Coppery Grass Lizard	NT	LC	Found on the grassy slopes and plateau of the eastern escarpment and Highveld	Low	Limited suitable habitat, disturbance
Cordylidae	*Chamaesaura macrolepis*	Large-scaled Grass Lizard	NT	LC	Dry, open, sandy grasslands near the coast and on the Lebombo Mountains	Low	Lack of suitable substrate
Crocodylidae	*Crocodylus niloticus*	Nile Crocodile	VU	LC	Inhabits swamps, lakes, rivers and river mouths	Low	No suitable habitat

Gerrhosauridae	*Tetradactylus breyeri*	Breyer's Long-tailed Seps	VU	NT	Montane and Highveld grasslands	Low	Limited suitable habitat, disturbance
Lamprophiidae	*Homoroselaps dorsalis*	Striped Harlequin Snake	NT	LC	Inhabit old termitaria in grassland habitat	Low	Limited suitable habitat, disturbance

Threat Status: LC – Least Concern, NT – Near Threatened, and VU – Vulnerable.

3.3.1.2 Mammals

The MammalMAP database list one hundred thirty-seven (137) mammal species that could occur within the area. Twenty-two (22) of these species, including five (5) listed by the Screening Tool, are threatened. The full list can be seen in Table 7-5 and the threatened species can be seen in Table 3-5.

Table 3-5 Threatened mammal species that are expected to occur within the PAOI.

Family	Species	Common Name	Conservation Status		Habitat	Likelihood of Occurrence	Reason
			Regional	Global			
Bovidae	*Cephalophus natalensis*	Red Duiker	NT	LC	Indigenous forests and dense thickets, including coastal, riverine, swamp and montane slope forests	Low	No suitable forests or thickets.
Bovidae	*Ourebia ourebi*	Oribi	EN	LC	Savannah woodlands, floodplains and other open grasslands	Low	High levels of disturbance, ongoing operations and fencing.
Bovidae	*Pelea capreolus*	Vaal Rhebok	NT	NT	Rocky hills, grassy mountain slopes, and plateau grasslands	Low	High levels of disturbance, ongoing operations and fencing.
Bovidae	*Redunca fulvorufula*	Mountain Reedbuck	EN	EN	Grass-covered ridges and hillsides in broken rocky country and high-altitude grasslands	Low	High levels of disturbance, ongoing operations and fencing.
Canidae	*Lycaon pictus*	African Wild Dog	EN	EN	Most habitat types as long as the habitat is large enough, contains sufficient suitable prey and is free from direct threats such as accidental and deliberate persecution.	Low	Restricted to game reserves.
Cercopithecidae	*Cercopithecus albogularis*	Samango Monkey	NT	NT	Variety of forest habitats	Low	No suitable forest habitat.
Chrysochloridae	*Amblysomus robustus*	Robust Golden Mole	VU	VU	Montane grasslands and marshes in Moist Sandy Highveld Grassland. Friable soils.	Low	Previous and current disturbance levels.
Chrysochloridae	*Chrysospalax villosus*	Rough-haired Golden Mole	VU	Unlisted	Sandy soils in grasslands, meadows and along edges of marshes in Savanna and Grassland	Low	No sandy soils present.

Erinaceidae	*Atelerix frontalis*	Southern African Hedgehog	NT	LC	Savannah and grassland vegetation types, within which it is found in a wide variety of semi-arid and sub-temperate habitats, with ample ground cover	Moderate	Limited suitable habitat.
Felidae	*Leptailurus serval*	Serval	NT	LC	In and around marshland, well-watered savannah and long-grass environments, and are particularly associated with reed-beds and other riparian vegetation types	Moderate	No suitable habitat.
Felidae	*Panthera pardus*	Leopard	VU	VU	Woodland, grassland savannah and mountain habitats but also occur widely in coastal scrub, shrubland and semi-desert. Densely wooded and rocky areas are preferred.	Low	High levels of disturbance, ongoing operations and fencing.
Hyaenidae	*Hyaena brunnea*	Brown Hyena	NT	NT	Desert areas with annual rainfall less than 100 mm (particularly along the Skeleton Coast in Namibia), semi-desert, open scrub and open woodland savannah with a maximum rainfall up to about 700 mm	Low	High levels of disturbance, ongoing operations and fencing.
Muridae	*Dasymys incomtus*	African Marsh Rat	NT	LC	Wide variety of habitats, including forest and savannah, swampland and grasslands, but they rely on intact wetlands in these areas	Low	Limited suitable habitat.
Muridae	*Otomys auratus*	Southern African Vlei Rat (Grassland type)	NT	NT	Mesic grasslands and wetlands within alpine, montane and sub-montane regions	Moderate	Some suitable habitat present.
Muridae	*Otomys laminatus*	KwaZulu Vlei Rat	NT	NT	Grassland and marshes in fynbos and thicket habitats	Low	No suitable habitat.
Mustelidae	*Aonyx capensis*	African Clawless Otter	NT	NT	Permanent water.	Low	No suitable waterbodies.
Mustelidae	*Hydrictis maculicollis*	Spotted-necked Otter	VU	NT	Inhabit freshwater habitats where water is not silt-laden, and is unpolluted	Low	No suitable waterbodies.
Mustelidae	*Poecilogale albinucha*	African Striped Weasel	NT	LC	Savannah and grassland habitats, although it probably has a wide habitat tolerance and has been recorded from lowland rainforest,	Moderate	Some suitable habitat present.

					semi-desert grassland, fynbos (with dense grass) and pine plantations		
Muridae	Dasymys robertsii	Robert's Shaggy Rat	NT	LC	Wide variety of habitats, including forest and savannah, swampland and grasslands, but they rely on intact wetlands in these areas	Low	Limited suitable habitat.
Soricidae	*Crocidura maquassiensis*	Makwassie Musk Shrew	VU	LC	May tolerate a wide range of habitats, including urban and rural landscapes	Moderate	Some suitable habitat present.
Soricidae	*Crocidura mariquensis*	Swamp Musk Shrew	NT	LC	Only close to open water with intact riverine and semi-aquatic vegetation	Low	No intact riverine habitat present.
Soricidae	*Myosorex cafer*	Dark-footed Mouse Shrew	VU	LC	Moist, densely vegetated forests and grasslands	Low	No densely vegetated grasslands.

Threat Status: LC – Least Concern, NT – Near Threatened, VU – Vulnerable, and EN – Endangered.

3.4 Field Assessment

The following sections provide the results from the field survey (26th to 30th of January 2026, wet season) for the proposed Project that was undertaken.

3.4.1 Flora Survey

This section is divided into two sections:

- Indigenous flora;
- Protected and SCC Plants; and
- Alien Invasive Plants (AIPs).

3.4.1.1 Indigenous Flora

The vegetation assessment was conducted throughout the extent of the PAOI. A total of forty-two (42) plant species were recorded in the PAOI during the field assessment. Of these species, thirty-three (33) are indigenous species. Notably, this is not a complete list of indigenous flora located within the survey area, but only species that could be recorded and positively identified within the constraints of time and seasonality (Table 3-6). Some of the plant species recorded can be seen in Figure 3-13. No protected (provincially or nationally) or threatened (SCC) flora species were observed.

Table 3-6 Some of the plant species recorded.

Family	Scientific Name	Regional Conservation Status	Notes
Apocynaceae	*Gomphocarpus fruticosus*	LC	
Asteraceae	*Cosmos bipinnatus*	NE	Naturalised exotic
Asteraceae	*Felicia muricata*	LC	
Asteraceae	*Gerbera ambigua*	LC	
Asteraceae	*Gomphocarpus fruticosus*	LC	
Asteraceae	*Helichrysum nudifolium*	LC	

Asteraceae	*Helichrysum oreophilum*	LC	
Asteraceae	*Helichrysum rugulosum*	LC	
Asteraceae	*Nidorella hottentotica*	LC	
Asteraceae	*Senecio inornatus*	LC	
Asteraceae	*Tagetes minuta*	NE	Naturalised exotic
Brassicaceae	*Cleome monophylla*	LC	
Campanulaceae	*Wahlenbergia undulata*	LC	
Caryophyllaceae	*Dianthus mooiensis*	LC	
Commelinaceae	*Commelina africana*	LC	
Convolvulaceae	*Ipomoea crassipes*	LC	
Cyperaceae	*Cyperus esculentus*	LC	
Dennstaedtiaceae	*Pteridium aquilinum*	LC	
Ebenaceae	*Diospyros lycioides*	LC	
Fabaceae	*Acacia dealbata*	NE	National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA) Category 2
Fabaceae	*Acacia mearnsii*	NE	NEMBA Category 2
Hyacinthaceae	*Ledebouria ovatifolia subsp. ovatifolia*	LC	
Hypoxidaceae	*Hypoxis obtusa*	LC	
Hypoxidaceae	*Hypoxis rigidula*	LC	
Iridaceae	*Babiana bainesii*	LC	
Lamiaceae	*Salvia tiliifolia*	NE	NEMBA Category 1b
Myrtaceae	*Eucalyptus diversicolor*	NE	NEMBA Category 1b
Phytolaccaceae	*Phytolacca octandra*	NE	NEMBA Category 1b
Plantaginaceae	*Plantago lanceolata*	LC	
Poaceae	*Anatherum eucomum*	LC	
Poaceae	*Aristida congesta subsp. congesta*	LC	
Poaceae	*Cynodon dactylon*	LC	
Poaceae	*Eragrostis curvula*	LC	
Poaceae	*Eragrostis racemosa*	LC	
Poaceae	*Loudetia simplex*	LC	
Poaceae	*Melinis repens*	LC	
Poaceae	*Perotis patens*	LC	
Poaceae	*Trichanthecium natalense*	LC	
Scrophulariaceae	*Selago densiflora*	LC	
Scrophulariaceae	*Selago densiflora*	LC	
Solanaceae	*Datura stramonium*	NE	NEMBA Category 1b
Solanaceae	*Solanum mauritianum*	NE	NEMBA Category 1b

Threat Status: LC – Least Concern and NE – Not Evaluated



Figure 3-13 Photos illustrating some of the flora species within the PAOI: A – Gomphocarpus fruticosus, B – Perotis patens, C – Loudetia simplex, D – Babiana bainesii, and E – Pteridium aquilinum

3.4.1.2 Alien Invasive Plants

AIPs tend to dominate or replace indigenous flora, thereby transforming the structure, composition and functioning of ecosystems. Therefore, it is important that these plants are controlled by means of an eradication and monitoring programme. Some invader plants may also degrade ecosystems through superior competitive capabilities to exclude native plant species.

The NEMBA is the most recent legislation pertaining to AIP species. In August 2014, the list of alien invasive species was published in terms of the NEMBA (GG No 78 of 2014). The Alien and Invasive Species Regulations were published in the GG No. 44182, 24 February 2021. The legislation calls for the removal and/or control of AIP species (Category 1 species). In addition, unless authorised thereto in terms of the NWA, no land user shall allow Category 2 plants to occur within 30 m 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. A brief explanation of the three categories in terms of the 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 Alien and Invasive Species Regulations, a person who has under his or her control a category 1b listed invasive species must immediately:

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

Nine (9) AIP species were recorded within the PAOI. Five (5) species are considered as Category 1b and according to NEMBA (Table 3-7) and must be controlled by implementing an AIP Management Programme, in compliance of section 75 of the NEMBA. Some of the plant species recorded can be seen in Figure 3-14.

Table 3-7 Summary of AIP recorded within the PAOI during the field survey periods

Family	Scientific Name	Category
Asteraceae	*Cosmos bipinnatus*	Naturalised exotic
Asteraceae	*Tagetes minuta*	Naturalised exotic
Fabaceae	*Acacia dealbata*	National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA) Category 2
Fabaceae	*Acacia mearnsii*	NEMBA Category 2
Lamiaceae	*Salvia tiliifolia*	NEMBA Category 1b
Myrtaceae	*Eucalyptus diversicolor*	NEMBA Category 1b
Phytolaccaceae	*Phytolacca octandra*	NEMBA Category 1b
Solanaceae	*Datura stramonium*	NEMBA Category 1b
Solanaceae	*Solanum mauritianum*	NEMBA Category 1b



Figure 3-14 Photos illustrating some of the AIP within the PAOI: A – Datura stramonium, B – Acacia dealbata, C – Cosmos bipinnatus, and D – Phytolacca octandra.

3.4.2 Fauna Survey

Herpetofauna and non – volant mammal observations and recordings fall under this section. A separate avifaunal report was compiled for this Project (TBC, 2026).

3.4.2.1 Herpetofuana

No herpetofauna (amphibians and reptiles) were observed during the site assessments. It is however likely that various common species are present due to suitable habitat within the PAOI. The lack of observations could be due to the fact that certain herpetofauna species are secretive and require long term surveys to ensure capture.

3.4.2.2 Mammals

Six (6) mammal species were observed during the survey of the PAOI (Table 3-8) based on either direct observation or the presence of visual tracks and signs. Note, although the area is largely fenced and surrounded by ongoing mining operations, common mammal species are expected within the area. Moreover, additional mammal species were observed in the nearby natural areas. These species, especially those that can pass fencelines (such as vervet monkeys) are expected to forage or move through the area occasionally.

Table 3-8 Summary of mammals recorded within the PAOI.

Family	Scientific Name	Common Name	Conservation Status	
			Regional	Global
Bovidae	*Raphicerus campestris*	Steenbok	LC	LC
Bovidae	*Sylvicapra grimmia*	Common Duiker	LC	LC
Cercopithecidae	*Papio ursinus*	Chacma Baboon	LC	LC

Hystricidae	*Hystrix africaeaustralis*	Cape Porcupine	LC	LC
Leporidae	*Lepus saxatilis*	Scrub Hare	LC	LC
Suidae	*Phacochoerus africanus*	Common Warthog	LC	LC

Threat Status: LC – Least Concern

3.5 Habitat Assessment

The main habitat types identified across the PAOI were initially delineated largely based on aerial imagery. These main habitat types were then refined based on the field coverage and data collected during the field surveys. Emphasis was placed on limiting timed meander searches to within the most functional habitats, and therefore habitats with a higher potential of hosting SCC.

Four (4) main habitat types (Table 3-9) were delineated, and these are mapped in Figure 3-15 below. Water Resources are discussed in a separate Wetland Assessment Report (TBC, 2026).

The four (4) main habitat types delineated include:

- Disturbed Grassland;
- Alien Stand;
- Modified; and
- Water Resources (HGM 1 – Unchannelled Valley Bottom).

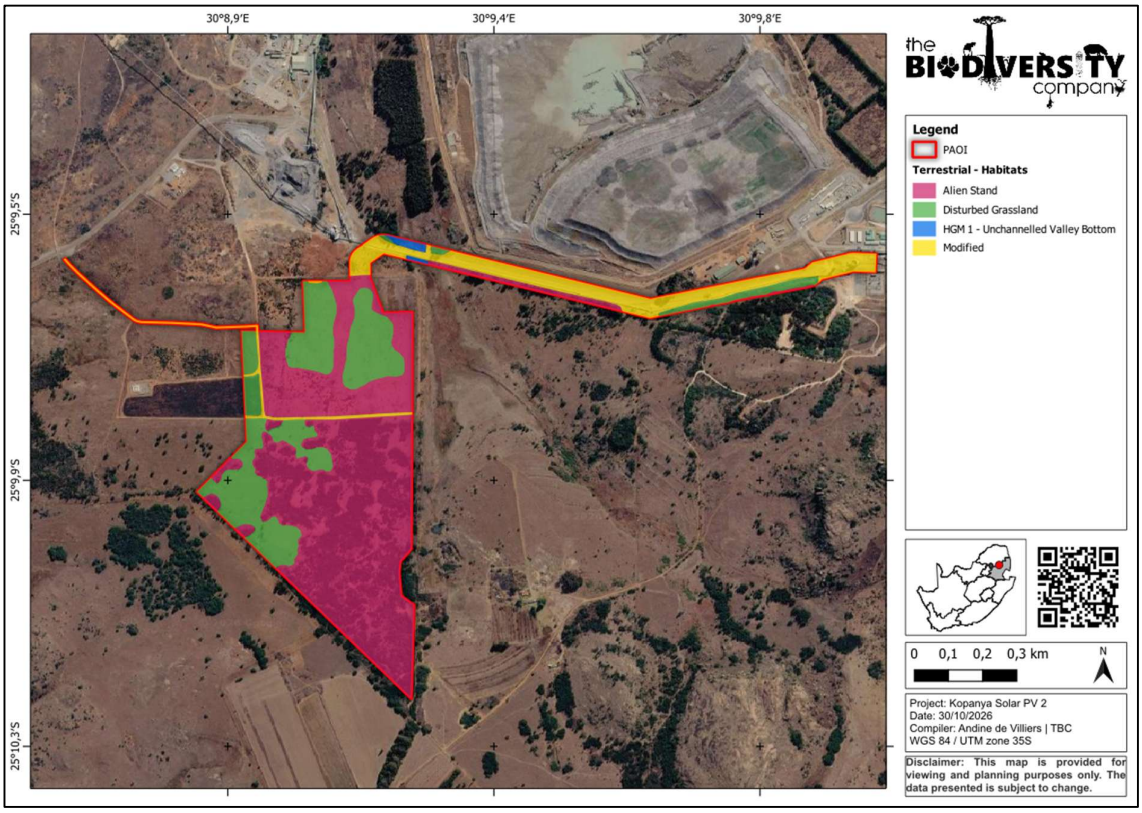


Figure 3-15 Map illustrating the habitats identified within the PAOI

Table 3-9 Summary of habitat types delineated within PAOI

Habitat	Description	Ecosystem Processes and Services
Disturbed Grasslands	Characterised by open grassland impacted by weed populations, low pioneer grasses, and Alien and Invasive Plants (AIPs). The habitat is not entirely modified but in a constant disturbed state and cannot recover to a more natural state due to ongoing disturbances and impacts received from grazing, edge effects from land use and mismanagement. This habitat can be found in different conditions of disturbance, but in many cases has either been infested by AIPs or impacted by grazing and other edge effects. This habitat is somewhat representative of the Sekhukhune Montane Grassland, although in a disturbed state. No flora or fauna Species of Conservation Concern (SCC) were observed, and none are expected to be resident. Some fauna SCC may sporadically occur within the area for movement or foraging.	Provides refuge, grazing and foraging resources for indigenous fauna and livestock. Capture and filter precipitation and runoff. Provides unique habitat for numerous fauna and flora species. Aids in the filtration of water permeating through the soil into the drainage areas and provides erosion control. Contributes to the processes of pollination and seed dispersal



25° 9'43.22"S 30° 9'4.30"E



25° 9'49.34"S 30° 8'58.65"E

Alien Stand	Characterised by grassland that has completely been invaded by AIPs, most dominantly *Acacia spp.* in the south and *Datura stramonium, Salvia tiliifolia* and *Solanum mauritianum* in the north. This habitat has very little indigenous vegetation remaining. The habitat is not entirely modified but in a constant disturbed state and cannot recover to a more natural state due to ongoing infestation and spread of AIPs. No fauna or flora SCC observed, and none are expected.	Reduces streamflow and alters local water balance through high water uptake. Stabilises soil and limits erosion but suppresses indigenous groundcover. Provides limited habitat for generalist fauna and flora species. Alters nutrient cycling and increases fuel loads, changing natural fire regimes.



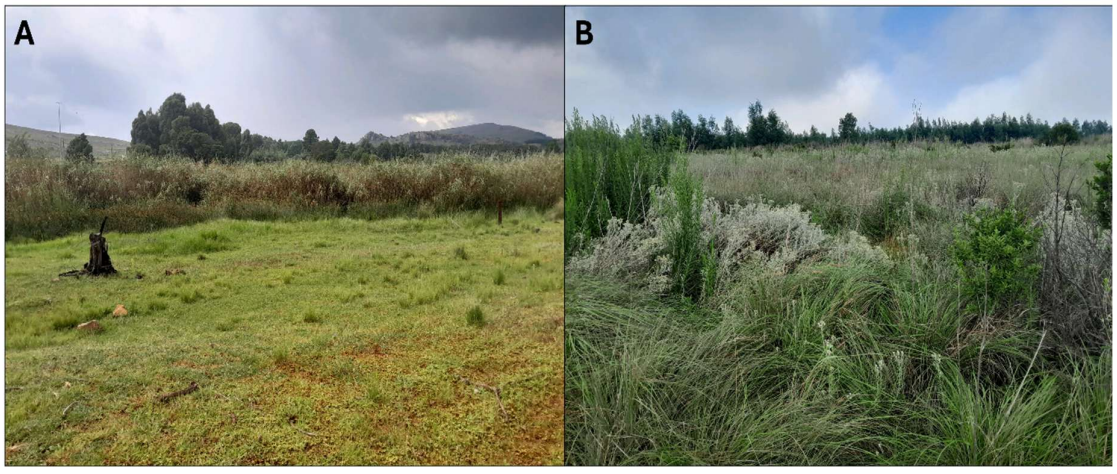
	25° 9'55.27"S 30° 9'0.81"E	
		
	25° 9'38.31"S 30° 9'12.18"E	
Modified	The modified areas have little to no remaining natural vegetation due to land transformation by historic and current mining, agriculture and mismanagement. These habitats exist in a constant disturbed state, as it cannot recover to a more natural state due to ongoing disturbances and impacts it receives. No flora or fauna SCC were observed, and none are expected to be resident.	The ecological services provided by this habitat are limited due to the extensive cover of impermeable surfaces and the large amount of bare land. Locally common bird species will forage and nest in the larger trees; and parts of the area may be considered a movement corridor.
		

25° 9'34.59"S 30° 9'23.33"E



25° 9'38.34"S 30° 9'35.95"E

Water Resources (HGM 1)	Impacted permanently to seasonally wet portions of land, as delineated by the wetland specialist. Even though somewhat disturbed, the ecological integrity, importance and functioning of these areas play a crucial role as a water resource system locally and regionally and an important habitat for various fauna and flora. No fauna or flora SCC observed. No flora SCC are expected. Fauna SCC may be present, especially during hunting, foraging or movement.	Provides refuge and grazing areas. Aids in trapping sediment and nutrients derived from land runoff. Provides grazing and foraging resources for indigenous fauna and livestock. Important corridor for fauna dispersion within the landscape. The preservation of this system is the most important aspect to consider for the proposed Project. This habitat needs to be protected and improved due to the role of this habitat as a water resource.



A) Unchannelled valley bottom; and B) Seep

3.6 Site Ecological Importance

All habitats within the PAOI were allocated a sensitivity category (Table 3-10). In order to identify and spatially present sensitive features in terms of the relevant specialist discipline, the sensitivities of each of the habitat types delineated within the PAOI are mapped in Figure 3-16.

It is important to note that this map (Figure 3-16) does not replace any local, provincial, or national government legislation relating to these areas or the land use capabilities or sensitivities of these environments. Refer to the Wetland Assessment Report for more detail pertaining to the sensitivities of the Water Resources (TBC, 2026).

Table 3-10 Summary of habitat types delineated within field assessment area

Habitat Type	Conservation Importance	Functional Integrity	Biodiversity Importance[1]	Receptor Resilience	Site Ecological Importance[2]
Disturbed Grassland	**Medium** > 50% of receptor contains natural habitat with potential to support Species of Conservation Concern (SCC).	**Medium** Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches. Mostly minor current negative ecological impacts, with some major impacts and a few signs of minor past disturbance.	**Medium**	**Medium** Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.	**Medium** Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Alien Stand	**Low** < 50% of receptor contains natural habitat with limited potential to support SCC.	**Medium** Mostly minor current negative ecological impacts with some major impacts and a few signs of minor past disturbance. Moderate rehabilitation potential.	**Low**	**Medium** Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a moderate likelihood of returning to a site once the disturbance or impact has been removed.	**Low** Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
Water Resources	**Medium** > 50% of receptor contains natural habitat with potential to support SCC.	**Medium** Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches.	**Medium**	**Very low** Habitat that is unable to recover from major impacts	**High** Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to limit the amount of habitat impacted, limited development activities

[1] Considered as the 'sensitivity'.
[2] Considered as the sensitivity in relation to the project component. Subject to change depending on layout.

Habitat Type	Conservation Importance	Functional Integrity	Biodiversity Importance[1]	Receptor Resilience	Site Ecological Importance[2]
		Mostly minor current negative ecological impacts, with some major impacts and a few signs of minor past disturbance.			of low impact are acceptable. Offset mitigation may be required for high impact activities.
Modified	**Low** < 50% of receptor contains natural habitat with limited potential to support SCC.	**Very low** Several major current negative ecological impacts.	**Very low**	**Very High** Habitat that can recover rapidly (~ less than 5 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a very high likelihood of returning to a site once the disturbance or impact has been removed.	**Very low** Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

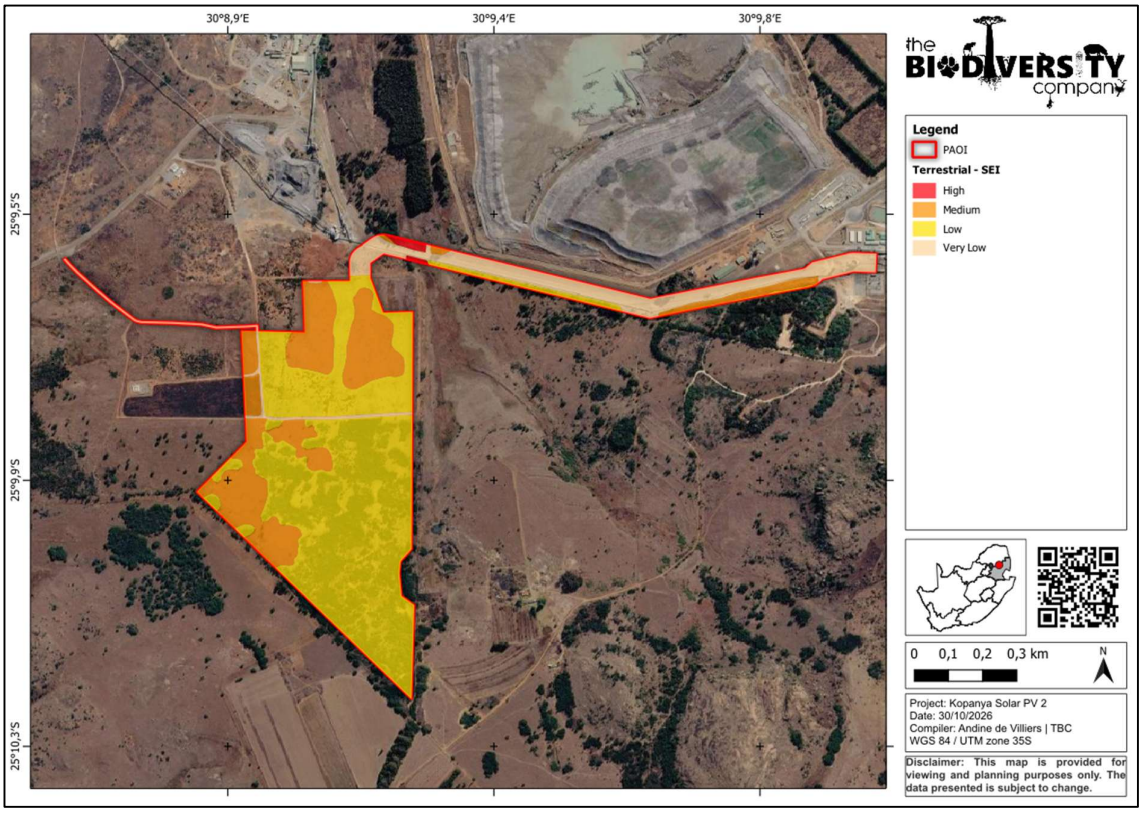
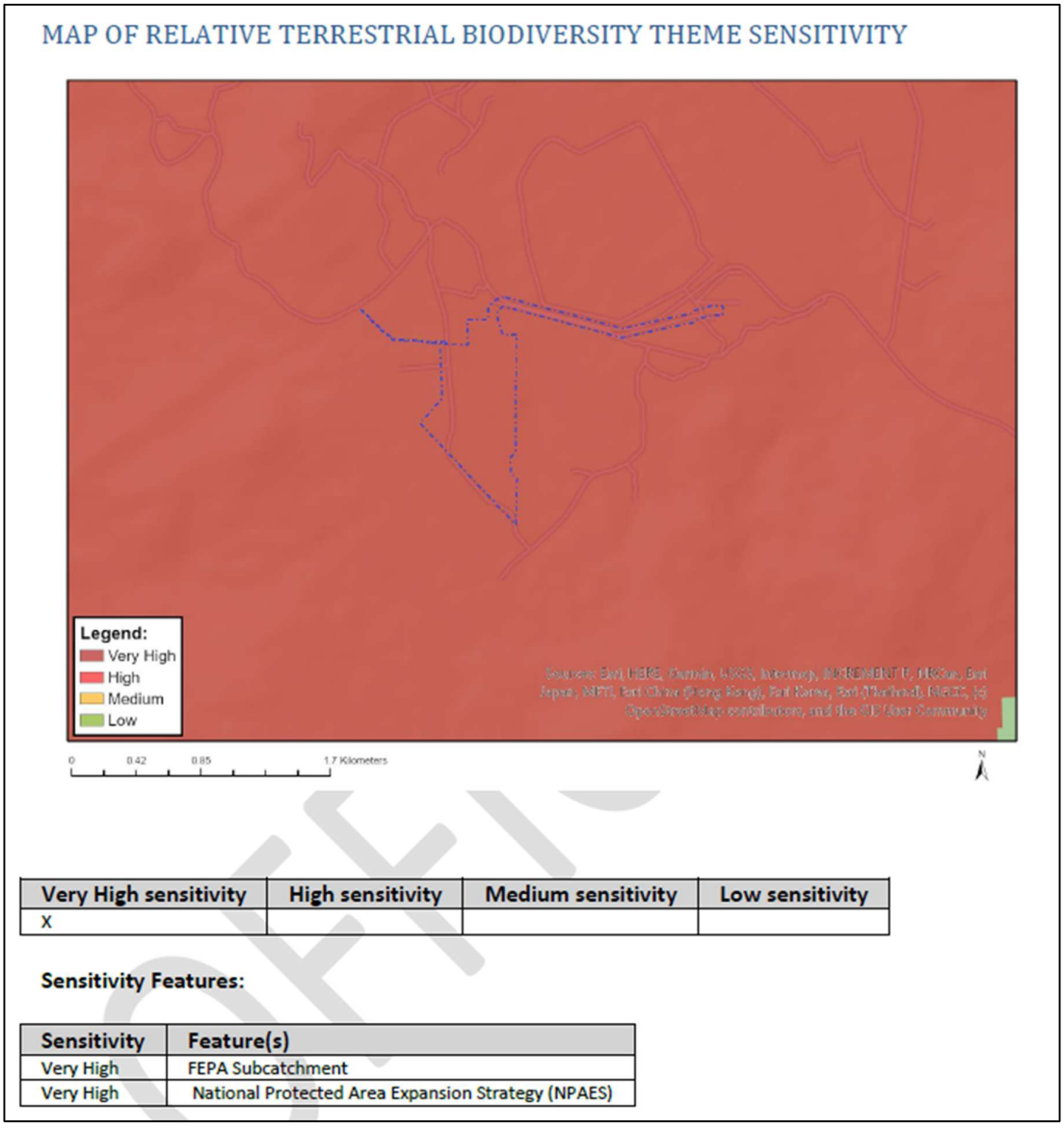


Figure 3-16 Map illustrating the Site Ecological Importance of the PAOI

3.6.1 Desktop Ecological Sensitivity

The following is deduced from the National Web-Based Environmental Screening Tool Regulation 16(1)(v) of the EIA Regulations 2014, as amended):

- Terrestrial Biodiversity Theme Sensitivity is 'very high' for the proposed PAOI due to the overlap with a FEPA Sub-catchment and the National Protected Area Expansion Strategy (Figure 3-17);
- Plant Species Theme Sensitivity is 'medium' for the proposed PAOI due to the potential occurrence of five (5) medium sensitivity species (Figure 3-18); and
- Animal Species Theme Sensitivity is 'high' for the proposed PAOI due to the potential presence of five (5) avifauna species with medium and/or high sensitivity and seven (7) medium sensitivity mammal species. Please note, the avifauna species are assessed separately (TBC, 2026) (Figure 3-19).



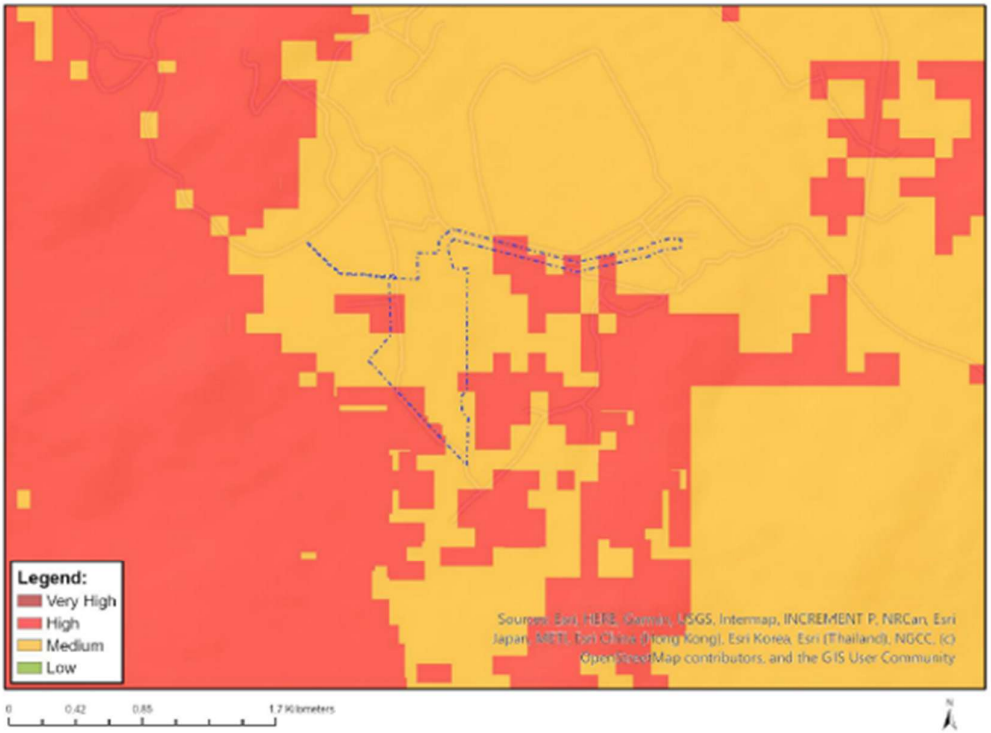
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	FEPA Subcatchment
Very High	National Protected Area Expansion Strategy (NPAES)

Figure 3-17 Relative Terrestrial Biodiversity Theme Sensitivity for the PAOI

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

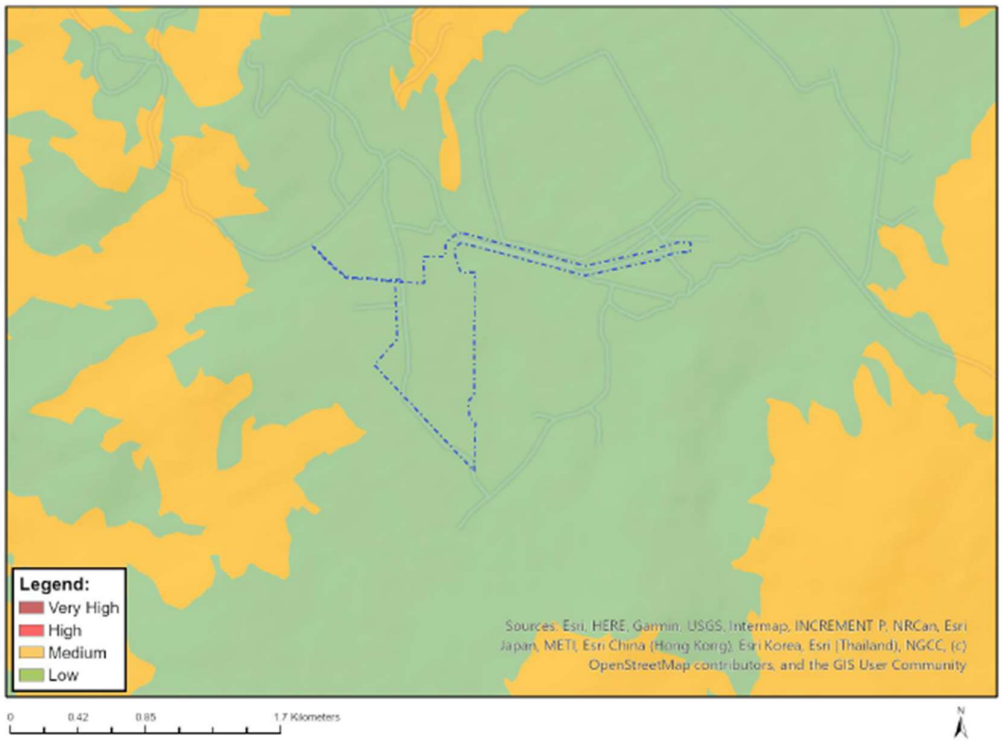
Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Neotis denhami
High	Aves-Balearica regulorum
High	Aves-Geronticus calvus
High	Aves-Eupodotis senegalensis
Medium	Aves-Circus ranivorus
Medium	Aves-Neotis denhami
Medium	Aves-Balearica regulorum
Medium	Aves-Eupodotis senegalensis
Medium	Mammalia-Amblysomus robustus
Medium	Mammalia-Chrysospalax villosus
Medium	Mammalia-Crocidura maquassiensis
Medium	Mammalia-Dasymys robertsii
Medium	Mammalia-Hydrictis maculicollis

Medium	Mammalia-Lycaon pictus
Medium	Mammalia-Ourebia ourebi ourebi
Medium	Actinopterygii-Kneria sp nov south africa

Figure 3-18 Relative Animal Species Theme Sensitivity for the PAOI

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

Figure 3-19 Relative Plant Species Theme Sensitivity for the PAOI

3.6.2 Screening Tool Comparison

The allocated sensitivities for each of the relevant themes are either disputed or validated for the assessed areas in Table 3-11 below. A summative explanation for each result is provided as relevant. The specialist assigned sensitivity ratings are based largely on the SEI process followed in the previous section, and consideration is given to any observed or likely presence of SCC or protected species.

Table 3-11 Summary of the Screening Tool vs specialist assigned sensitivities

Screening Tool Theme	Screening Tool	Habitat	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Terrestrial Biodiversity Theme	Very High	Disturbed Grassland	Medium	Disputed – Indigenous vegetation is still present. This habitat remains functional and somewhat representative of the Sekhukhune Montane Grassland, although in a disturbed state. The habitat will continue to degrade and will not recover without intervention.
		Alien Stand	Low	Disputed – These areas are dominated by alien and invasive vegetation. Some ecosystem servicing and processes still remain.
		Modified	Very low	Disputed – Highly modified habitat.
		Water Resources	High	Disputed – Largely natural and functional, providing ecosystem services and acting as a source of free water in the broader environment.
Plant Theme	Low	-	Low	Validated – No flora Species of Conservation Concern (SCC) were observed and none are expected.
Animal Theme	High	-	Medium	Disputed – No fauna SCC were observed. Some could occasionally occur within certain habitats (Water Resources) during movement or foraging.

4 Impact Risk Assessment

4.1 Biodiversity Risk Assessment Method

The sections below serve to outline and summarise the types of perceived impacts from the proposed Project activities on the terrestrial biodiversity and ecology of the PAOI. The associated significance of each impact is evaluated as relevant to the local biodiversity and the likely propsoed Project activities. The standard impact assessment methodology may be used in the capture of generic anticipated impacts and potential mitigation measures for the environmental impact report. The methodology described herein complies with the requirements of the EIA Regulations (2014), promulgated in terms of the NEMA. The impacts assessed here are assessed based on the loss of the full area of the site as well as all habitats present.

Refer to Appendix G: Impact Rating in section 7.7 for the impact assessment methodology.

4.2 Current Impacts to Biodiversity

Considering the anthropogenic activities and influences within the landscape, negative impacts to biodiversity were observed within the PAOI (Figure 4-1). These include:

- AIPs;
- Roads, associated traffic and wildlife mortalities;
- Powerlines;
- Mining operations (including overhead rope conveyor and land conveyor); and
- Fences.



Figure 4-1 Photographs illustrating some of the impacts to biodiversity. A – Powerlines and roads, B – Fences, roads, and mining infrastructure, and C – Alien and Invasive Plants

4.3 Identification of Additional Potential Impacts

The potential impacts during the construction and operation phases of the proposed Project are presented in Table 4-1.

Table 4-1 Potential impacts to biodiversity associated with the proposed activity

Impact	Project activities that can cause loss/impacts to habitat (especially regarding the proposed infrastructure areas):	Secondary impacts anticipated
1. Destruction, fragmentation and degradation of habitats and ecosystems	Physical removal of vegetation, including potential Species of Conservation Concern (SCC) and protected species.	Displacement/loss of flora & fauna (including potential SCC) Increased potential for soil erosion Habitat fragmentation Increased potential for establishment of alien & invasive vegetation
	Blasting	
	Access roads and servitudes	
	Soil dust precipitation	
	Water leakages	
	Dumping of waste products	
	Random events such as fire (cooking fires or cigarettes)	
Main Impact	**Project activities that can cause the spread and/or establishment of alien and/or invasive species**	**Secondary impacts anticipated**
2. Spread and/or establishment of alien and/or invasive species	Vegetation removal	Habitat loss for native flora & fauna (including SCC) Spreading of potentially dangerous diseases due to invasive and pest species Alteration of fauna assemblages due to habitat modification
	Vehicles potentially spreading seeds	
	Unsanitary conditions surrounding infrastructure promoting the establishment of alien and/or invasive rodents	
	Creation of infrastructure suitable for breeding activities of alien and/or invasive birds	
Main Impact	**Project activities that can cause direct mortality of fauna**	**Secondary impacts anticipated**
3. Direct mortality of fauna	Clearing of areas, including blasting	Secondary impacts anticipated. Loss of ecosystem services Increase in rodent populations and associated disease risk
	Roadkill due to vehicle collision	
	Pollution of water resources due to dust effects, chemical spills etc.	
	Intentional killing of fauna for food (hunting)	
Main Impact	**Project activities that can cause reduced dispersal/migration of fauna**	**Secondary impacts anticipated**
4. Reduced dispersal/migration of fauna	Loss of landscape used as corridor	Secondary impacts associated with reduced dispersal/migration of fauna. Loss of ecosystem services Reduced plant seed dispersal
	Roads	
	Removal of vegetation	
Main Impact	**Project activities that can cause pollution in water courses and the surrounding environment**	**Secondary impacts anticipated**
5. Environmental pollution due to water/ Mine drainage runoff	Project activities that can cause pollution in water courses and the surrounding environment	Secondary impacts associated with pollution in water courses and the surrounding environment. Faunal mortality (direct and indirectly) Groundwater pollution Loss of ecosystem services
	Chemical (organic/inorganic) spills	
	Erosion	
Main Impact	**Project activities that can cause disruption/alteration of ecological life cycles due to sensory disturbance.**	**Secondary impacts anticipated**
6.Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise, heat radiation, dust, and light pollution.	Operation of machinery (Large earth moving machinery, generators, vehicles)	Secondary impacts associated with disruption/alteration of ecological life cycles due to noise Loss of ecosystem services Secondary impacts associated with disruption/alteration of ecological life cycles due to dust Loss of ecosystem services
	Project activities that can cause disruption/alteration of ecological life cycles due to dust	

4.4 Alternatives Considered

Three (3) alternative overhead powerline routes are considered; namely, Preferred OHL route, Alternative OHL route, and Alternative OHL route 2. From a terrestrial biodiversity perspective, all three alternatives are similar and acceptable due to their similar length and overlap with predominantly Low and Very low sensitivity areas. No other alternatives were provided.

4.5 Quantitative Impact Assessment

The various identified impacts are assessed below for the different phases of the development. The impacts assessed here as assessed based on the loss of the full area of the site as well as all habitats present.

The purpose of the impact assessment is to:

- Assess impacts of proposed activities on biodiversity of the proposed Project area;
- Assess whether proposed activities are likely to have significant impacts on biodiversity and specifically Species of Conservation Concern; and
- Identify practical, implementable mitigation measures to reduce the significance of proposed Project activities on biodiversity.

It is important to note that the ratings applied within the risk assessment model, considered impacts to open space or natural habitats within the development area and not for areas already transformed.

These impacts should be considered in conjunction with the associated reports as provided by The Biodiversity Company (2026a, 2026b, and 2026c).

4.5.1 Construction Phase

Four main impacts on the terrestrial biodiversity of the PAOI were considered for the construction phase of the proposed activities (based on the framework discussed above). This phase refers to the period during site preparation, clearing and construction and is considered to have the largest short-term and direct impact on biodiversity - partly as a result of the high levels of regular activity, and the extensive clearing that usually takes place. The following potential impacts to terrestrial biodiversity were considered for the construction phase (Table 4-2):

- Destruction, loss and fragmentation of habitats, functional ecosystems and the vegetation community;
- Introduction of AIP species and invasive fauna;
- Displacement of the indigenous faunal community due to habitat loss; and
- Displacement of the indigenous faunal community (including potential SCC) due to direct mortalities and disturbance (road collisions, noise, dust, light, vibration, and poaching).

Table 4-2 Impacts to biodiversity and mitigation measures associated with the construction phase

Activity	Pre- Mitigation							Post Mitigation							Confidence
	Duration	Extent	Potential for irreplaceable resources impact on	Severity	Consequence	Probability	Significance	Duration	Extent	Severity	Potential for irreplaceable resources impact on	Consequence	Probability	Significance	
Destruction, loss and fragmentation of habitats, functional ecosystems and the vegetation community	4	2	1	-3	-21	2	-42	4	2	-2	1	-14	1	-14	High
Recommended Mitigation Measures	• Avoid water resources and their associated buffers as far as possible. The applicable buffers and mitigation measures must be confirmed in the Wetland Assessment Report (TBC, 2026). • Prioritise development within areas classified as Very low and Low Site Ecological Importance (SEI). • Areas classified as Medium SEI may only be considered where development within Very Low and Low SEI areas is not feasible. • Avoidance Mitigation: o Micro-siting of infrastructure: Changing the layout of proposed Project infrastructure to avoid sensitive areas, such as watercourses and wetland buffers, protected plants, Species of Conservation Concern (SCC), sensitive habitats, and faunal movement corridors. o Designing infrastructure to avoid or reduce ecological impacts, including the use of low-impact foundation options (e.g. driven piles instead of concrete foundations). • Avoid blanket clearing where possible. Selective clearing must be used to retain vegetation and reduce erosion. • Restrict blasting to rock excavation areas where mechanical excavation or minor infrastructure realignment is not reasonably feasible. Record the justification in the construction method statement. • Clearly demarcate the blasting footprint, access routes and adjacent habitat no-go areas before drilling. Keep drilling equipment, vehicles and spoil within the designated disturbance areas. • Have the blasting contractor design charges, delays and stemming to limit overbreak and flyrock outside the excavation footprint. Use blast mats where the blast assessment identifies a risk to adjacent sensitive habitat. • Keep blast spoil, equipment and explosives-handling areas outside wetlands, watercourses and their project-defined buffers. Install sediment controls where runoff from the excavation could enter these features. • Inspect adjacent habitat after each blast. Record any flyrock deposition or unintended damage and revise the blast controls before the next blast where damage has occurred. Retrieve debris using methods that avoid further habitat disturbance. • Progressively stabilise disturbed areas no longer required for construction. Reinstate drainage, replace available topsoil and revegetate with locally appropriate indigenous species during the next suitable establishment period. • Indigenous vegetation to be maintained (no clearing) under the solar panels to ensure biodiversity is maintained and to prevent soil erosion (Beatty *et al*, 2017; Sinha *et al*, 2018).													

	○ Solar panels must be mounted on pile-driven or screw foundations, such as post-support spikes, where feasible. Heavy foundations, such as trench-fill or mass concrete foundations, must be avoided to reduce impacts on soil functioning and biodiversity. • Conduct a pre-construction ecological walkdown of the approved development footprint (within the correct flowering and rainfall season) before any vegetation clearing or site establishment takes place. • The walkdown must identify: ○ Provincially or nationally protected plants; ○ SCC; and ○ Active nests, burrows, or dens. • If any active burrows, nests or dens, SCC or protected species are observed, the buffer and permit requirements must be adhered to before construction commences. Vegetation clearing may commence only after the necessary permits for SCCs or protected plants have been obtained. • Protected plants that will remain undisturbed must be clearly demarcated with high-visibility markers or flags. If left undisturbed the sensitivity and importance of these species needs to be part of the environmental awareness programme. • Restrict all construction activities to the authorised development footprint, approved access roads and designated laydown areas. • Clearly maintain demarcated construction zones and no-go areas throughout construction using visible barriers, signage or danger tape. • No vegetation clearing is permitted outside the authorised development footprint. The footprint must be clearly demarcated. • Use authorised access routes only. Any new access roads must be approved before use. • It must be made an offence for any staff to take any indigenous plant species out of any portion of the PAOI or bring any alien plant species into any portion of the PAOI outside of approved rehabilitation activities. This is to prevent the spread of exotic or invasive species or the illegal collection of indigenous plants. • Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood and wind events. This will also reduce the likelihood of encroachment by Alien Invasive Plant species. An Erosion Management Plan must be compiled and implemented. • A Rehabilitation Management Plan must be compiled and be implemented. An acceptable plan must be in place prior to the commencement of construction activities. • Any material must be removed from the Project Area of Influence (PAOI) once the construction phase has been concluded. No permanent construction phase structures must be permitted. Construction buildings should preferably be prefabricated or constructed of reusable/recyclable materials. No storage of vehicles or equipment will be allowed outside of the designated development areas. • Environmental Control Officer (ECO) to provide supervision and oversight of vegetation clearing activities. • Compile and implement a Stormwater Management Plan.														
Introduction of AIP species and invasive fauna	4	3	1	-1	-8	2	-16	3	2	-1	1	-6	1	-6	High

Recommended Mitigation Measures	• Compile and implement an Alien Invasive Management Plan from the onset of construction. • The plan must include the following: o Identification of affected areas; o Appropriate removal methods; o Follow-up control; o Monitoring; and o Updating of the plan as new information becomes available. • Monitoring of (and associated necessary removals, if any, according to the plan) must occur every three months (at a minimum) during the entire construction phase, as well as once upon completion of the construction phase. • Implement a stormwater management plan for all developable areas. • Implementation of a waste management plan. • Temporary storage of domestic waste shall be in covered animal proof waste bins and /or skips. • Removal of domestic waste on a regular basis (as a minimum every second week), no overspill is permitted.														
Displacement of the indigenous faunal community due to habitat loss	4	3	1	-1	-8	2	-16	3	2	-1	1	-6	1	-6	High
Recommended Mitigation Measures	• Clearly mark construction zones to prevent impact on surrounding areas, using physical barriers like safety tape and signs instead of painted lines. • Utilise quiet foundations construction methods wherever possible to reduce noise and vibration (Eg. Screw piles or vibration-dampened pile drivers instead of traditional driven piles). • Roads and road edges should be designed to facilitate faunal movement. The roads must be well sign-posted with speed controls enforced. • Prior to vegetation clearing activities, the area to be cleared should be walked on foot by the ECO or appointed environmental representative and another individual (two people) to create a disturbance in order for fauna to move off. Disturbance must occur as soon as possible (before vegetation clearing) and no unnecessary disturbance to the area is permitted. o Any tortoises present should be removed and safely relocated to suitable habitat within the near surroundings (property) from the affected areas before the start of site clearing/ construction and relocated them to safe areas with the PAOI. o Any fauna threatened by the construction activities should be removed and safely relocated to suitable habitat within the near surroundings (property) by an appropriately qualified environmental officer or removal specialist. • Construction should take place during the dry season (May to July) as much as is feasible. Where not feasible, wet season construction is permitted, with construction limited to daylight hours. • Safely relocate any wildlife at risk from construction activities with the help of a qualified ECO or specialist. • Inspect each blast footprint before drilling or charging for fauna, occupied burrows, active nests and roosts; record findings. • If fauna or occupied refuges may be affected, pause work locally and obtain specialist advice on avoidance or authorised rescue. Only suitably qualified personnel may handle animals. • Allow fauna to leave uncharged areas voluntarily via unobstructed escape routes; do not chase animals or seal occupied burrows.														

	• Blast during daylight and include a wildlife check in the contractor's pre-firing clearance. Delay firing if animals remain within the blast danger area.
	• After the contractor's all-clear, check for injured or dead fauna, record incidents and review controls before further blasting where casualties occur.
	• Design fencing to allow movement of small fauna.
	  ○ Wildlife-permeable fencing, such as ClearVu or similar must be used, with visibility markers installed to reduce collision risk.
	  ○ Additionally, 20 cm by 20 cm openings must be incorporated at the bottom of the fence to facilitate the free movement of ground-dwelling species. These openings must not be placed next to major roads where they could increase roadkill risk.
	• Minimise the time between clearing an area and starting development to prevent wildlife from returning to disturbed sites.
	• Conduct excavations progressively and do not leave open excavations unattended where avoidable.
	• Open excavations must be covered overnight or fitted with escape ramps to prevent fauna from becoming trapped.
	• Excavations must be inspected before backfilling to ensure no fauna are trapped inside.
	• Focus work on one area at a time to reduce the extent of on-site activities, allowing wildlife to relocate as the Project progresses. This helps smaller animals find refuge in nearby undisturbed areas.
	• Where possible, instead of clearing the entire area at once, work on specific sections as needed. This approach involves focusing on one area at a time and following a systematic process. By doing so, the amount and scope of on-site activities are minimised, which allows wildlife to gradually relocate as the Project advances. This method provides smaller birds, mammals, and reptiles the opportunity to cope with the disturbance by staying in nearby undisturbed areas that are close to their natural habitats.
	• Use the latest available solar panel technology with anti-reflective coating. Where anti-reflective panels are not used, suitable reflection-reduction measures, such as non-polarising white tape, should be applied where required. This will also improve the light transmittance and, therefore, increases the overall efficiency. If panels do not possess anti-reflective coatings, then non-polarising white tape can be used around and/or across panels to minimise reflection (Bennun *et al*, 2021).
	• All infrastructure must be removed if the facility is decommissioned.

Displacement of the indigenous faunal community (including potential SCC) due to direct mortalities and disturbance (road collisions, noise, dust, light, vibration, and poaching).	4	2	1	-2	-14	2	-28	2	1	-1	1	-4	1	-4	High

Recommended Mitigation Measures	• Prior to vegetation clearing activities, the area to be cleared should be walked on foot by 2 individuals to create a disturbance in order for fauna to move off. Disturbance must occur as soon as possible (before vegetation clearing) and no unnecessary disturbance to the area is permitted.
	  o Any tortoises present should be removed from the affected areas before the start of site clearing/ construction and relocated them to safe areas with the PAOI.
	  o Any fauna threatened by the construction activities should be removed safely by an appropriately qualified environmental officer or removal specialist.
	• Construction should take place during the dry season (May to July) as much as is feasible. Where not feasible, wet season construction is permitted, with construction limited to daylight hours.
	• Safely relocate any wildlife at risk from construction activities with the help of a qualified ECO or specialist.
	• Limit construction vehicle speeds to 40 km/h to prevent accidents and install appropriate speed control measures and signage.
	  o Driving on access roads at night should be restricted to maximum 20 km/h to reduce or prevent wildlife road mortalities which occur more frequently during this period.
	• Minimise the time between clearing an area and starting development to prevent wildlife from returning to disturbed sites.
	• Conduct excavations progressively and do not leave open excavations unattended where avoidable.
	• Open excavations must be covered overnight or fitted with escape ramps to prevent fauna from becoming trapped.
	• Excavations must be inspected before backfilling to ensure no fauna are trapped inside.
	• Focus work on one area at a time to reduce the extent of on-site activities, allowing wildlife to relocate as the Project progresses. This helps smaller animals find refuge in nearby undisturbed areas.
	• Design outdoor lighting to minimise impacts on wildlife by:
	  o Directing lights downward and away from sensitive areas;
	  o Using baffles, hoods, or louvres;
	  o Avoiding unnecessary lighting near wetlands and natural areas;
	  o Using motion-detection lighting where feasible; and
	  o Avoiding fluorescent and mercury vapour lights where suitable alternatives (such as sodium vapour/yellow lights) are available.
	• Provide all personnel and contractors to undergo Environmental Awareness Training to all personnel and contractors. A signed register of attendance must be kept for proof. The training must include. The training must include:
	  o Protection of fauna and flora;
	  o Prohibition on hunting, harming, collecting or disturbing animals;
	  o Prohibition on removing indigenous plants;
	  o Prohibition on bringing alien plant species onto site;
	  o Protection of owls, reptiles, tortoises and other commonly persecuted fauna;
	  o Speed limits and road safety;
	  o Waste management;
	  o No-go areas; and
	  o Incident reporting procedures.
	• All infrastructure must be removed if the facility is decommissioned.

4.5.2 Operation Phase

This phase refers to when construction has been completed and the proposed infrastructure has been built and is functional. The impacts of daily activities associated with the operational phase of the proposed Project are anticipated to lead to the further deterioration of habitats due to the increased anthropogenic presence, continued spread of AIP species, dust and other edge effect impacts. Dust inhibits the ability of plants to photosynthesise and thus leads to the degradation of surrounding natural areas. Finally, the operation is anticipated to continue impacting the local fauna community, by causing sensory disturbances and restrictions to movement, affecting their life cycles, as well as displacement and potential direct mortalities.

The operational phase is often the longest phase of a project and as such the effects from impacts have the opportunity to cumulate over long periods of time and cause significant cumulative damage to the environment. It is important to actively and continuously implement and update the relevant mitigation measures for this phase so as to effectively reduce this compounding effect. The following potential impacts on terrestrial biodiversity were considered for the construction phase (Table 4-3):

- Continued fragmentation and degradation of habitats and ecosystems;
- Spread of alien and/or invasive species; and
- Ongoing displacement and direct mortalities of faunal community (including possible SCC) due to disturbance (road collisions, noise, light, dust, vibration).

Table 4-3 Impacts to biodiversity and mitigation measures associated with the operation phase

Component Being Impacted On	Activity Which May Cause the Impact	Activity	Pre- Mitigation							Post Mitigation							Confidence
			Duration	Extent	Potential for impact on irreplaceable resources	Severity	Consequence	Probability	Significance	Duration	Extent	Severity	Potential for impact on irreplaceable resources	Consequence	Probability	Significance	
Biodiversity	Ongoing operations	Continued fragmentation and degradation of functional habitats and ecosystems	4	2	1	-3	-21	2	-42	4	1	-1	1	-6	2	-12	High
Recommended Mitigation Measures	• Restrict all activities to authorised footprint areas only. All vehicle and foot traffic must be restricted to existing roads only. No ingress into the natural environment (surrounding and within the PAOI) is allowed. Signs must be put up to enforce this. No stockpiles, laydowns or dumping of material is allowed. The footprint must be clearly demarcated, and signage must be put up to enforce adherence to the boundaries. • Implement the stormwater management plan, including all monitoring requirements, including after significant rainfall events, or flooding. • Address any observed erosion promptly using suitable erosion control and revegetation methods, as prescribed in the Erosion Management Plan. • Continue implementation of the rehabilitation plan. Conduct follow-up rehabilitation and revegetation of any bare areas with local indigenous grasses, shrubs, and trees.																
Biodiversity	Ongoing operations	Continuing spread of AIP and weed species.	4	3	1	-3	-24	2	-48	3	2	-1	1	-6	1	-6	High
Recommended Mitigation Measures	• Develop and execute a plan for managing alien vegetation. ○ Conduct regular checks for Alien Invasive Plant (AIPs) encroachment during the operational phase to prevent alien invasion issues due to disturbances. During the operational phase, monitoring should occur every twice a year for the first two years and annually thereafter for the Project's duration. ○ Remove or control all AIP species using the appropriate methods outlined in the Alien and Invasive Management Plan (AIMP). ○ The area of the PAOI bordering the intact grassland on the east should be a priority within the AIMP's monitoring and control. • Create and implement a Solid Waste Management Plan. Prioritise waste management by ensuring all waste is collected, stored, and disposed of properly. It is recommended to remove waste from the site at least weekly. • Implement a pest control plan, ensuring that no poisons are used.																

Indigenous Fauna	Ongoing operations	Ongoing displacement and direct mortalities of the faunal community due to continued disturbance (road collisions, noise, light, dust, vibration, poaching, etc.).	4	3	1	-2	-16	2	-32	3	2	-1	1	-6	2	-12	High
Recommended Mitigation Measures	• Outdoor lighting must remain wildlife-sensitive and must: ○ Be directed downward; ○ Be shielded with baffles, hoods or louvres; ○ Be directed away from wetlands and sensitive habitats; ○ Use motion-detection lighting where feasible; ○ Avoid fluorescent and mercury vapour lights where suitable; and ○ Avoid unnecessary illumination. • Limit, or prohibit if feasible, vehicle traffic and the use of vehicle lights at night. • Keep noise levels low from dusk to dawn to avoid disturbing amphibians and nocturnal animals. • Safely relocate any wildlife threatened by maintenance and operational activities with the help of a qualified individual. • All construction vehicles should adhere to a speed limit of maximum 40 km/h to avoid collisions. Appropriate speed control measures and signs must be erected.																

4.5.3 Cumulative Impacts

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

Cumulative impacts are assessed within the context of the extent of the proposed PAOI, other similar developments and activities in the area (existing and in-process), and general habitat loss and transformation resulting from any other activities in the area. Localised cumulative impacts include those from operations that are close enough (within 50 km) to potentially cause additive effects on the local environment or any sensitive receptors (relevant operations include nearby large road networks, other solar PV facilities, and power infrastructure). Relevant impacts include the overall reduction of foraging and habitat where reproduction takes place, dust deposition, noise and vibration, disruption of functional corridors of habitat important for movement and migration, disruption of waterways, groundwater drawdown, increase risk of collisions; and groundwater and surface water quality depletion.

Long term cumulative impacts associated with the site development activities can lead to the loss of endemic and threatened species, including natural habitat and vegetation types, and these impacts can even lead to the degradation of conserved areas such as game parks and reserves. In order to spatially quantify the cumulative effects of the proposed development, the proposed Project in isolation is compared with the overall effects of surrounding developments (including total transformation and transformation as a result of new and proposed developments of a similar type, i.e., solar).

The total area within the 50 km buffer around the PAOI amounts to 798726.35 ha, but when considering the transformation (244 007.71 ha) that has taken place within this radius, 554 718.64 ha of intact habitat remains according to the 2022 National Biodiversity Assessment. Therefore, the area within 50 km of the proposed Project has experienced approximately 30.55% loss in natural habitat. Considering this context, the PAOI (78.92 ha) and similar projects that exist in the 50 km region (as per the latest South African Renewable Energy EIA Application Database) amounts to 6 261.29 ha. This means that the total amount of remaining habitat lost as a result of the solar Project amounts to 1.14% (PV developments of the proposed Project and similar projects as a percentage of the total remaining habitat), which means that the total cumulative loss for the 50 km area amounts to 31.69%. Table 4-4 outlines the calculation procedure for the spatial assessment of cumulative impacts.

In consideration of the aforementioned information, the cumulative impact was determined to be of a negative moderate significance, post mitigation (Table 4-5). Figure 4-2 illustrates the cumulative impacts of the proposed Project.

Table 4-4 Cumulative impact assessment of the proposed Project

Total Habitat (ha)	Tot. Remaining Habitat (ha)	Tot. Habitat Loss (ha)	Total Historical Loss	Footprint (ha)	Similar Projects (ha)	Habitat Lost	Cumulative Habitat Lost
798726.35	554718.64	244007.71	30.55%	78.92	6261.29	1.14%	31.69% (30.55% + 1.14%)

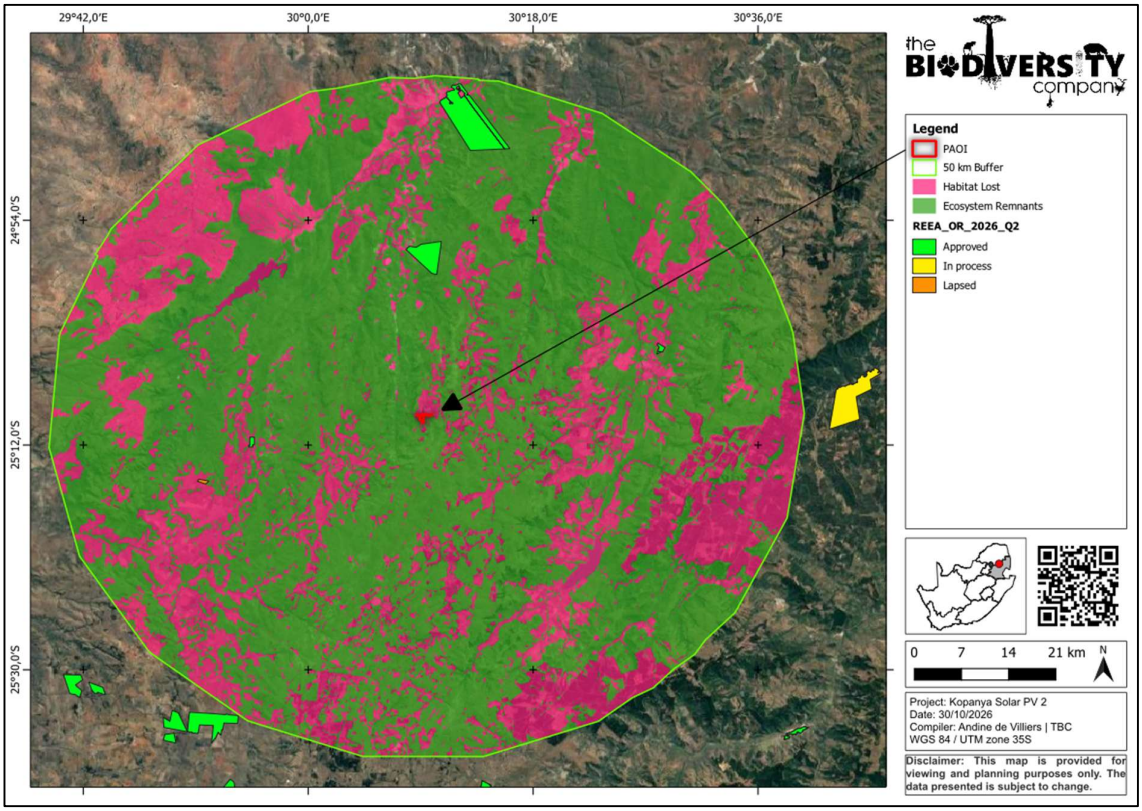


Figure 4-2 ***Cumulative habitat loss in 50 km surrounding the PAOI according to the Renewable Energy Environmental Authorisations Database dataset (2026, Q2)***

Table 4-5 ***Cumulative impacts to biodiversity associated with the proposed Project***

Component Being Impacted On	Activity Which May Cause the Impact	Activity	Pre- Mitigation						
			Duration	Extent	Severity	Potential for Impact on Irreplaceable Resources	Consequence	Probability	Significance
Biodiversity	Construction and operation of the Project	Impact in isolation	4	3	1	-3	-24	1	-24

		Cumulative Impact	4	3	1	-3	-24	2	-48
Component Being Impacted On	**Activity Which May Cause the Impact**	**Activity**	**Post Mitigation**						
			Duration	**Extent**	**Severity**	**Potential for Impact on Irreplaceable Resources**	**Consequence**	**Probability**	**Significance**
Biodiversity	Construction and operation of the Project	Impact in isolation	4	2	-2	1	-14	1	-14
		Cumulative Impact	4	3	-2	1	-16	2	-32

4.5.4 General Mitigation Measures

Mitigation measures are discussed for each phase in the previous relative sections. However, Table 4-6 below lists general mitigation measures applicable to the proposed Project.

Table 4-6 General mitigation measures for the proposed Project

Mitigation: Action/control

• Dust-reducing mitigation measures must be put in place and must be strictly adhered to, for all roads and bare (unvegetated) areas.
  ○ Reduce the dust generated by operational vehicles and earth moving machinery, through wetting the soil surface and putting up signs to enforce speed limits to enforce reduced speeds.
  ○ No non-environmentally friendly suppressants may be used as this could result in pollution of water sources.
• Infrastructure must be consolidated where possible in order to minimise the amount of ground and air space used.
• Cement must be mixed in a designated area on a liner away from water sources and buffers and that successful rehabilitation of the construction areas can take place.
• Leaking equipment and vehicles must be repaired immediately or be removed from Project Area of Influence (PAOI) to facilitate repair.
• A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.
  ○ Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use.
  ○ No servicing of equipment on site unless necessary.
  ○ All contaminated soil/yard stone shall be treated ***in situ*** or removed and be placed in containers.
  ○ Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them from leaking and entering the environment.
  ○ All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the PAOI.

5 Conclusion

The PAOI is situated within a landscape of high ecological value, overlapping with biodiversity features such as Sekhukhune Montane Grassland, Intact Mpumalanga Grasslands, and the Steelpoort KBA. Despite this, the site is subject to significant historical and ongoing anthropogenic disturbance, including edge effects from nearby mining, and the proliferation of AIPs.

Four main habitat types were delineated: Disturbed Grassland, Alien Stand, Modified, and Water Resources. The majority of the PAOI consists of Alien Stand and Modified habitats, both of which exhibit reduced ecological integrity due to persistent disturbance. Water Resources, although somewhat impacted, remain ecologically significant and provide critical ecosystem services and movement corridors for fauna. The assessment found no protected or threatened fauna or flora species during field surveys. The natural habitats overlap with ONAs according to the MBSP.

Completion of the Terrestrial Biodiversity Assessment led to the dispute of the overall very high classification for the Terrestrial Biodiversity Theme Sensitivity as allocated by the Screening Tool. The Water Resources were allocated a high sensitivity; however, the Wetland Assessment Report (TBC, 2025) should be consulted for details regarding Water Resource sensitivities. The PAOI is instead assigned an overall terrestrial sensitivity of Very low (Modified), low (Alien Stand) and medium (Disturbed Grassland). The reduced sensitivity is mostly due to historical and current disturbances observed throughout the PAOI. However, despite this, the PAOI still provides valuable ecological functions and services within the immediate as well as broader landscape. The Animal Species Theme Sensitivity of high is disputed as medium, while the Plant Species Theme Sensitivity of low is validated.

The ecological integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the proposed Project.

5.1 Impact Statement

The primary expected impacts of the proposed Project will be vegetation clearance, habitat loss and emigration of fauna. Based on the outcomes of the SEI determination, the majority of the PAOI is considered to have a Low SEI. This denoted development activities of medium to high impact are acceptable followed by appropriate restoration activities. Sections classified as Medium SEI denotes development activities of medium impact followed by appropriate restoration activities. Some Water Resources are classified as having high SEI. Refer to the Wetland Assessment Report (TBC, 2026) for further information regarding these systems.

The construction of the proposed Project is considered to be of an overall low negative impact (-24 significance score), without mitigation, in isolation. Specific impacts were rated as having a low, moderate or high negative impact significance within the construction and operational phases without mitigation. However, these scores are all reduced to low and neutral with strict adherence to all prescribed mitigation measures. The proposed PAOI covers a large area, and species will need to be cleared, which will most likely include protected and endemic species, subsequently altering the functionality of the ecosystem. However, large parts are infested and dominated by alien and invasive species. Indeed, the implementation of the required management plans, together with the development adhering to the prescribed mitigations, may in fact improve the ecological condition of the PAOI. With proper management and mitigations measures, the overall impact is reduced to low negative (-14 significance score) in isolation.

5.2 Specialist Opinion

It is the opinion of the specialist that the proposed Project is favourable only if all mitigation measures provided in this and other specialist reports are implemented, and the following are achieved:

- The following management plans are compiled and implemented for the duration of the project:
    - Alien and Invasive Plant Management Plan;
    - Stormwater Management Plan;
    - Waste Management Plan;
    - Rehabilitation and Revegetation Plan; and
    - Environmental Awareness Training material.
- All inputs and recommendations provided in the associated reports (TBC, 2026a, 2026b, and 2026c) must be adhered to.

Some areas of the PAOI overlap with ONA, and Intact Mpumalanga Grassland areas. Areas classified as having a Low SEI (Alien Stand) could be considered for development due to the disturbed state as a result of the existing alien infestation.) The terrestrial Medium SEI areas (Disturbed Grassland habitat) are considered as more sensitive as the Low SEI (Alien Stand) areas. These areas should preferably be avoided and only be considered if low and Very low SEI areas have been prioritised for development and no alternatives exist.

Table 5-1 indicates the recommended developability of the habitats identified within the PAOI.

Table 5-1 Table presenting the habitats within the PAOI and their respective sensitivities

Habitat	SEI	Developability
Alien Stand	Low	Mitigated development of medium to high impact permitted, with concurrent rehabilitation..
Disturbed Grassland	Medium	Mitigated development of medium impact permitted, with concurrent rehabilitation
Modified	Very low	Mitigated development of medium to high impact permitted, with concurrent rehabilitation.
Water Resource	High	Permissible as outlined by the wetland assessment (TBC, 2026b)

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7 Appendix Items

7.1 Appendix A: Methodology

7.1.1 Desktop Dataset Assessment

The desktop assessment was principally undertaken using a Geographic Information System (GIS) to access the latest available spatial datasets in order to develop digital cartographs and species lists. These datasets and their date of publishing are provided below.

7.1.1.1 Spatially Relevant Legislative Boundaries

Two aspects of legislation apply with regards to the development of certain project types within South Africa, and these have important implications for the environmental authorisation processes for these project types. These two aspects are briefly discussed below. Where relevant the spatial orientation of the proposed project is referenced with respect to these important legislative boundaries, as the applicable legislation may be relevant to not only the overall EIA process, but also the specialist assessment process that is to be followed.

Strategic Transmission Corridors (EGI):

On the 16th of February 2018 Minister Edna Molewa published Government Notice No. 113 in Government Gazette No. 41445 which identified 5 strategic transmission corridors important for the planning of electricity transmission and distribution infrastructure as well as procedure to be followed when applying for environmental authorisation for electricity transmission and distribution expansion when occurring in these corridors.

On the 29th of April 2021, Minister Barbara Dallas Creecy published Government Notice No. 383 in Government Gazette No. 44504, which expanded the eastern and western transmission corridors and gave notice of the applicability of the application procedures identified in Government Notice No. 113, to these expanded corridors.

In June 2022 the Standard for the Development and Expansion of Power Lines and Substations within Identified Geographical Areas Revision 2, Prepared by the Council for Scientific and Industrial Research (CSIR) and SANBI, was published. This standard was then adopted as per Government Notice No. 2313 of Government Gazette No. 47095 of 27 July 2022. The Standard was prepared to allow a proponent to achieve planning, routing, siting and remediation objectives that will ensure the acceptability of the impacts of the development of EGI (including substations) on the environment, independently from the need for an assessment by the competent authority. The standard enforces the following key environmental principles as part of its application with regards to the planning of powerline routes and substation positions (Note: several additional principles apply as relevant to avifauna assessments, however these are not included below):

- There must be no removal of threatened plant species;
- There must be no impact on Tier 1 plant species (i.e. threatened species reliant on critical habitat) identified through the screening process and site verification process;
- Clear-cutting during construction must be kept to a maximum of 8 m; and
- Wetlands must be avoided or, where wetland crossing is unavoidable, the power line should be routed over the narrowest part of the wetland. For the most part, wetlands and rivers can be traversed by the power line with little to no impact by placing the pylons outside of the wetland.

Renewable Energy Development Zones (REDZs):

On 16 February 2018, Minister Edna Molewa published Government Notice No. 114 in Government Gazette No. 41445 which identified 8 renewable energy development zones important for the development of large scale wind and solar photovoltaic facilities. The Government Notice included the procedure to be followed when applying for environmental authorisation for large scale wind and solar photovoltaic energy facilities when occurring in these REDZs.

On 26 February 2021, Minister Barbara Dallas Creecy, published Government Notice No. 142, 144 and 145 in Government Gazette No. 44191 which identified 3 additional REDZs for implementation as well as the procedures to be followed when applying for environmental authorisation for electricity transmission or distribution infrastructure or large scale wind and solar photovoltaic energy facilities in these REDZs.

7.1.1.2 Ecologically Important Landscape Features

Existing ecologically relevant data layers were incorporated into a GIS to establish how the proposed project might interact with any ecologically important entities. Emphasis was placed around the following spatial datasets:

- National Biodiversity Assessment 2018 (Skowno *et al,* 2019) (NBA) - The purpose of the NBA is to assess the state of South Africa's biodiversity based on best available science, with a view to understanding trends over time and informing policy and decision making across a range of sectors. The NBA deals with all three components of biodiversity: genes, species, and ecosystems; and assesses biodiversity and ecosystems across terrestrial, freshwater, estuarine and marine environments. The two headline indicators assessed in the NBA are:

- Ecosystem Threat Status – indicator of an ecosystem's wellbeing, based on the level of change in structure, function or composition. Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) or Least Concern (LC), based on the proportion of the original extent of each ecosystem type that remains in good ecological condition. The revised list [known as the Red List of Ecosystems (RLE 2022)] is based on assessments that followed the International Union for Conservation of Nature (IUCN) Red List of Ecosystems Framework (version 1.1) and covers all 456 terrestrial ecosystem types described in South Africa (Mucina & Rutherford 2006; with updates described in Dayaram *et al.,* 2019). The revised list identifies 120 threatened terrestrial ecosystem types (55 Critically Endangered, 51 Endangered and 14 Vulnerable types). The revised list was published in the Government Gazette (Gazette Number 47526, Notice Number 2747) and came into effect on 18 November 2022 (Skowno & Monyeki, 2021).

- Ecosystem Protection Level – indicator of the extent to which ecosystems are adequately protected or under-protected. Ecosystem types are categorised as Well Protected (WP), Moderately Protected (MP), Poorly Protected (PP), or Not Protected (NP), based on the proportion of the biodiversity target for each ecosystem type that is included within one or more protected areas. NP, PP or MP ecosystem types are collectively referred to as under-protected ecosystems.

    - Protected areas - South Africa Protected Areas Database (SAPAD) (DEA, 2023) – The SAPAD Database contains spatial data pertinent to the conservation of South African biodiversity. It includes spatial and attribute information for both formally protected areas and areas that have less formal protection. SAPAD is updated on a continuous basis and forms the basis for the Register of Protected Areas, which is a legislative requirement under the National Environmental Management: Protected Areas Act, Act 57 of 2003.

- National Protected Areas Expansion Strategy (NPAES) (SANBI, 2018) – The NPAES provides spatial information on areas that are suitable for terrestrial ecosystem protection. These focus areas are large, intact and unfragmented and therefore, of high importance for biodiversity, climate resilience and freshwater protection.

- Mpumalanga Biodiversity Sector Plan (MBSP) (Table 7-1):

  - The key output of this systematic biodiversity plan is a map of biodiversity priority areas (Mpumalanga Tourism and Parks Agency (MTPA), 2022). The MBSP CBA map delineates Critical Biodiversity Areas (CBA), Ecological Support Areas (ESA), Other Natural Areas (ONA), Protected Areas (PA), and areas that have been irreversibly modified from their natural state (MTPA, 2014).
  - **CBAs** are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near natural state, to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. CBAs are areas of high biodiversity value and need to be kept in a natural state, with no further loss of habitat or species (MTPA, 2014). Thus, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses (SANBI-BGIS, 2017).
  - The Mpumalanga Biodiversity Sector Plan (MBSP) specifies two different CBA areas, **Irreplaceable CBAs and Optimal CBAs**. Irreplaceable CBAs include: (1) areas required to meet targets and with irreplaceability biodiversity values of more than 80%; (2) critical linkages or pinch-points in the landscape that must remain natural; or (3) CR ecosystems (MTPA, 2014).
  - **ESAs** are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of CBAs and/or in delivering ecosystem services. CBAs and ESA may be terrestrial or aquatic (SANBI-BGIS, 2017).
  - **ONAs** consist of all those areas in good or fair ecological condition that fall outside the protected area network and have not been identified as CBAs or ESAs. A biodiversity sector plan or bioregional plan must not specify the desired state/management objectives for ONAs or provide land use guidelines for ONAs (SANBI-BGIS, 2017).
  - **Moderately or Heavily Modified Areas** (sometimes called ‘transformed’ areas) are areas that have been heavily modified by human activity so that they are by-and-large no longer natural, and do not contribute to biodiversity targets (MTPA, 2014). Some of these areas may still provide limited biodiversity and ecological infrastructural functions but, their biodiversity value has been significantly, and in many cases irreversibly, compromised.

Table 7-1 Land use guidelines for terrestrial Critical Biodiversity Areas (Mpumalanga Biodiversity Sector Plan Handbook, 2014)

MAP CATEGORY	DESIRED MANAGEMENT OBJECTIVE	GENERAL GUIDELINES
Protected Areas	Must be kept in a natural state, with a management plan focused on maintaining or improving the state of biodiversity. A benchmark for biodiversity.	■ All operational aspects of managing these areas must be subject to their main purpose, which is to protect and maintain biodiversity and ecological integrity, and should be governed by a formally approved management plan and land-use activities that support the primary function of these areas as primary sites for biodiversity conservation. ■ The management plan must identify allowable activities, which should be consistent at least with the CBA Irreplaceable category; the location of these allowable activities should be captured in a zonation plan in the management plan. ■ Activities relating to the construction of roads, administrative or tourism infrastructure and services (such as water reticulation systems, power lines and the likes) that are required to support the primary function of the protected area and its allowable activities, must be subject to at least a basic scoping report, or a full EIA, as specified by NEMA, and the protected area management plan. ■ In the case of **Protected Environments,** a variety of agricultural land uses may be allowed, such as livestock grazing, plantation forestry and some cultivation. The location of these land-use activities must be informed by the CBA maps, and should be specified in the zonation plan of the management plan for the protected environment. All areas of natural habitat that are zoned for conservation use, should be subject to implementation of the land-use guidelines for protected areas, CBAs, and ESAs.
Critical Biodiversity Areas	Maintain in a natural state with no further loss of natural habitat.	■ Allow low-impact land-uses that are compatible with maintaining CBAs in a natural state, with no loss of habitat or species. ■ Earmark CBAs as priority sites for land care projects such as Working for Water, Working for Wetlands, and Working on Fire and other compatible, conservation activities. ■ Avoid activities identified in the three Listing Notices (R544, R545 and R546), if at all possible, as they are in conflict with the desired management objectives for terrestrial CBAs. Where they cannot be avoided, the impacts of these activities should be minimised and remedied, and EIA conditions should be strictly applied by the competent authority. ■ In larger geographically sensitive areas, environmental management frameworks (provided for under sections 24 (5)(i) and 44 of NEMA) should be developed and implemented to inform environmental authorisations, promote sustainability, secure biodiversity and ecological functionality and promote co-operative governance. The information and maps of the MBSP should be used to promote and support compilation of any Environmental Management Frameworks.

Irreplaceable CBAs	Maintain in a natural state with no further loss of natural habitat.	■ Biodiversity loss and land-use change in Irreplaceable CBAs should be monitored as a matter of priority, to prevent unauthorised land-use change or degradation by neglect or ignorance. ■ Where appropriate, these areas should be incorporated into the formal Protected Area system through biodiversity stewardship agreements (contract Nature Reserves or Protected Environments). ■ Ideally, conservation management activities should be the primary land-use in all irreplaceable areas, *or* they should at least be managed in ways that have no negative impact on species, ecosystems or ecosystem services. ■ Extensive (widespread, low-intensity) livestock or game ranching, if well-managed, is compatible with the desired management objectives for these areas. These land-uses are acceptable if they take into account the specific biodiversity features (e.g. rare species or vegetation remnants) and vulnerabilities (e.g. infestation by invasive alien plants) at each site, if they comply with recommended stocking rates, if any associated infrastructure (required to support the ranching activities) is kept to low levels.	■ In general, Irreplaceable sites must be avoided in terms of the mitigation hierarchy. ■ A specialist study must be part of the Scoping and EIA process for all land-use applications in these areas, using the services of an experienced and locally knowledgeable biodiversity expert who is approved by the MTPA. ■ Applications for land use of any kind should be referred to the biodiversity specialists in MTPA and DARDLEA for evaluation. ■ Degraded areas included in the land parcel, but not the land-use proposal, should be restored to natural ecosystem functioning where possible. ■ Provision of alternative land as a 'biodiversity offset' in exchange for biodiversity loss in these areas CANNOT be considered except in exceptional circumstances and would need to be considered on a case by case basis.
Optimal CBAs (referred to as Important and Necessary in MBCP)	Maintain in a natural state with no further loss of natural habitat.	■ Acceptable land uses are those that are least harmful to biodiversity, such as conservation management, or extensive livestock or game farming. Large-scale cultivation, mining and urban or industrial development are not appropriate. ■ Extensive (widespread, low-intensity) livestock and game ranching, if well-managed (see above), is compatible with the desired management objectives for these areas.	■ If small-scale land-use change is unavoidable, it must be located and designed to be as biodiversity-sensitive as possible. ■ A specialist study must be part of the scoping and EIA process for all land-use applications in these areas, using the services of an experienced and locally knowledgeable biodiversity expert who is SACNASP registered. ■ Provision for biodiversity offsets in exchange for biodiversity loss should only be considered as a last resort and at a ratio consistent with national policy.

Ecological Support Areas	The desired management objective for all ESAs is to maintain the land in a near-natural and ecologically functional state, even if some loss of ecosystem composition or structure takes place.		
ESA: Landscape and Local-scale Corridors	Maintain ecological functionality in support of biodiversity connectivity by retaining the existing natural vegetation cover in a healthy ecological state, and restore 'critical-linkages' where necessary.	A greater range of land uses over wider areas is appropriate, subject to an authorisation process that ensures the underlying biodiversity objectives are not compromised.	■ Certain activities covered under Listing Notice 3 trigger the EIA process in ESA corridors. ■ Restoration of corridors is important, particularly in terms of the Working for Water programs. ■ The impact of land-use proposals on the functionality of ecological corridors must be assessed by the relevant biodiversity specialist as part of the EIA/Scoping report. ■ Impenetrable fences that restrict animal movement should be discouraged.
ESA: Species Specific Sites	Maintain the prevailing ecological processes that support the specific species, and manage for no further habitat loss.	Although these areas may be located in production landscapes, and may be heavily modified in parts, a change in land use to anything other than conservation management should be discouraged as it would most likely result in a loss of the target species from the area.	■ The impact of any changes in land use on the population viability of listed species, such as blue cranes, should be assessed by a registered specialist. ■ Restoration of degraded areas and invasive alien plant control is recommended, particularly clearing the small wattle 'jungles' that large birds avoid.

ESA: Protected Area Buffers	To minimise the impacts of surrounding land-uses on the ecological integrity, character and tourism potential of protected areas.	When assessing the impacts of proposed land uses in protected area buffers, consideration needs to be given to both direct (e.g. plantation forestry blocking view-sheds and reducing water flows into a Protected Area) and indirect impacts (e.g. light and noise pollution).	■ Buffer distances vary according to the nature of the Protected Area, as follows:
			  ■ National Parks: 10 km buffer as indicated in Listing Notice 3.
			  ■ Nature Reserves: 5 km buffer as indicated in Listing Notice 3.
			  ■ Protected Environments: 1 km buffer as these may include production landscapes.
			■ Land-use change applications within the buffer zone may be referred to the protected area manager or ecologist for evaluation.
			■ A viewshed analysis of the potential visual impact of the proposed land-use on adjacent protected areas should be undertaken where necessary.

Other Natural Areas	The overall objective should be to ensure ecosystem functionality and minimise loss of natural habitat and species through strategic landscape planning.	■ These areas have the greatest flexibility in terms of management objectives and permissible land-uses. ■ Where possible, avoid modifying any remaining natural habitat by locating land-uses, including cultivation and plantations, in already-modified areas. ■ Authorisation may be required for high-impact land-uses (such as intensive industry or urban development) and standard application of EIA regulations and other planning procedures is required. Note: These areas may still contain species of conservation concern but either have not yet been surveyed, or the data were not available for incorporation into the MBSP. The presence or absence of important species should always be established through site visits before proceeding with a land-use change.
Heavily or Moderately Modified Areas	Manage land-use in a biodiversity-friendly manner, aiming to maximise ecological functionality. In old lands, stabilise ecosystems and manage them to restore ecological functionality, particularly soil carbon and water-related functionality, using indigenous plant cover. Old lands should be burnt and grazed appropriately.	■ Areas with no natural habitat remaining are preferred sites for higher-impact land-uses, and new projects should be located in these areas before modifying any remaining natural habitat. ■ Restoration and re-vegetation should be prioritised where heavily modified areas occur close to land of high biodiversity value, or are located such that they could potentially serve useful ecological connectivity functions (such as in ecological corridors). ■ For individual parcels of land identified as having specific actual or potential biodiversity values, develop incentives to restore lost biodiversity and connectivity. ■ When locating land-uses in these modified areas, consider the off-site impacts they may have on neighbouring areas of natural habitat, especially if these are of high biodiversity value. For example, controlling use of pesticides in modified areas, because of the impacts on neighbouring areas of natural habitat. ■ Encourage landowners and developers to use indigenous plants, especially trees, where aesthetic or functional options exist.

- Key Biodiversity Areas (KBAs) (SANBI, 2024) – KBAs are identified using the Global Standard for the Identification of KBAs, developed by the International Union for the Conservation of Nature (IUCN). The standard involves applying five criteria to gauge an area's importance for biodiversity. These criteria consider the presence of threatened species or ecosystems, species with limited global distributions, pristine wilderness, significant biological processes, or irreplaceable biodiversity. Each criterion has specific quantitative thresholds to determine if they are met. As of 2023, over 16,000 KBAs have been identified globally, covering more than 20 million square kilometres. South Africa completed its first comprehensive national assessment in 2023, evaluating over 9,900 species or ecosystem types and identifying 260+ individual KBAs.

Freshwater Ecology:

- South African Inventory of Inland Aquatic Ecosystems (SAIIAE) (Van Deventer *et al.,* 2018) – A SAIIAE was established during the NBA of 2018. It is a collection of data layers that represent the extent of river and inland wetland ecosystem types and pressures on these systems.

- National Freshwater Ecosystem Priority Area (NFEPA) (Nel *et al.,* 2011) – The NFEPA database provides strategic spatial priorities for conserving the country's freshwater ecosystems and associated biodiversity as well as supporting sustainable use of water resources.

- Strategic Water Source Areas (SWSAs) (Le Maitre *et al,* 2018) – SWSAs are defined as areas of land that supply a quantity of mean annual surface water runoff in relation to their size and therefore, contribute considerably to the overall water supply of the country. These are key ecological infrastructure assets and the effective protection of surface water SWSAs areas is vital for national security because a lack of water security will compromise national security and human wellbeing.

7.1.1.3 Fauna

The faunal desktop assessment involved the compilation of expected species lists and the identification of any protected and/or SCC fauna potentially occurring in the area. The GBIF database (www.gbif.org) (GBIF.org (28 October 2025) GBIF Occurrence Download https://doi.org/10.15468/dl.wf998m) was used to compile an expected species list for the area . South Africa's official site for Species Information and National Red Lists (SANBI, 2022) was used to provide the most current national Red List status of fauna.

The latest information regarding provincially, and nationally protected fauna was obtained from the following published legislative lists:

- Provincially Protected Animal Species (Mpumalanga Conservation Act No 10 of 1998); and

- Nationally Protected Wildlife species (The 2007 lists of Threatened or Protected Species (TOPS), published in terms of Section 56(1) of the National Environmental Management: Biodiversity Act, No. 10 of 2004).

7.1.1.4 Flora

The desktop flora assessment encompassed an assessment of all the vegetation units and habitat types within the PAOI, as well as the identification of expected plant species and any locally occurring flora SCC.

The Vegetation of South Africa, Lesotho, and Swaziland (Mucina & Rutherford, 2006) and the 2018 Terrestrial & Freshwater Assessment by SANBI (2018) was used to identify the vegetation types that would have occurred under natural or pre-anthropogenically altered conditions. The Plants of Southern Africa (POSA) database was used to compile the expected flora list. The Red List of South African Plants (Raimondo *et al.*, 2009; SANBI, 2020) was utilised to provide the most current national conservation status of flora species.

The latest information regarding provincially, and nationally protected flora was obtained from the following published legislative lists:

- Provincially Protected Plant Species (Mpumalanga Conservation Act No 10 of 1998); and
- Nationally Protected Plant species (The 2007 lists of TOPS, published in terms of Section 56(1) of the National Environmental Management: Biodiversity Act, No. 10 of 2004).

7.1.2 Flora Field Survey

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

Homogenous vegetation units were subjectively identified using satellite imagery and existing land cover maps. The floristic diversity and search for flora SCC were conducted through timed meanders within representative habitat units delineated during the scoping fieldwork. Emphasis was placed mostly on sensitive habitats overlapping with the proposed project areas.

The timed random meander method is highly efficient for conducting floristic analysis, specifically in detecting flora SCC and maximising floristic coverage. In addition, the method is time and cost effective and highly suited for compiling flora species lists and therefore gives a rapid indication of flora diversity. The timed meander search was performed based on the original technique described by Goff *et al.* (1982). Suitable habitat for SCC were identified according to Raimondo *et al.* (2009) and targeted as part of the timed meanders.

At each sample site notes were made regarding current impacts (e.g. livestock grazing, erosion etc.), subjective recording of dominant vegetation species and any sensitive features (e.g. wetlands, outcrops etc.). In addition, opportunistic observations were made while navigating through the study area.

Relevant field guides and texts consulted for identification purposes in the field during the survey included the following:

- Identification Guide to Southern African Grasses: An Identification Manual with Keys, Descriptions, and Distributions (Fish *et al,* 2015);
- iNaturalist (https://www.inaturalist.org);
- Flowering Plants of the Southern Kalahari (Van Rooyen and Van Rooyen, 2019);
- Problem Plants and Alien Weeds of South Africa (Bromilow, 2010);
- Field Guide to Succulents in Southern Africa (Smith *et al*, 2017);
- Guide to the Aloes of South Africa (Van Wyk & Smith, 2014);

- Medicinal Plants of South Africa (Van Wyk *et al.,* 2013).

7.1.3 Fauna Field Survey

The faunal assessment within this report pertains to herpetofauna (amphibians and reptiles) and mammals. A separate avifauna assessment was conducted. The faunal field survey comprised of the following techniques:

- Visual and auditory searches - This typically comprised of meandering and using binoculars to view species from a distance without them being disturbed; and listening to species calls;
- Active hand-searches - are used for species that shelter in or under particular micro-habitats (typically rocks, exfoliating rock outcrops, fallen trees, leaf litter, bark etc).
- Relevant field guides and texts consulted for identification purposes included the following:
- Field Guide to Snakes and other Reptiles of Southern Africa (Branch, 1998);
- A Complete Guide to the Snakes of Southern Africa (Marais, 2004);
- Atlas and Red List of the Reptiles of South Africa, Lesotho and Swaziland (Bates *et al*, 2014);
- A Complete Guide to the Frogs of Southern Africa (du Preez and Carruthers, 2009);
- The Mammals of the Southern African Subregion Skinner, J.D. & Chimimba, C.T. (2005).
- A Field Guide to the Tracks and Signs of Southern and East African Wildlife (Stuart and Stuart, 2000).

7.2 Appendix B: Expected Flora Species

Table 7-2 Expected Flora Species to occur in the area

Family	Species	Author1	Rank1	Sp2	IUCN	Ecology
Acanthaceae	*Thunbergia atriplicifolia*	E.Mey. ex Nees			LC	Indigenous
Acanthaceae	*Blepharis subvolubilis*	C.B.Clarke			LC	Indigenous
Acanthaceae	*Justicia anagalloides*	(Nees) T.Anderson			LC	Indigenous
Acanthaceae	*Barleria gueinzii*	Sond.			LC	Indigenous
Achariaceae	*Rawsonia lucida*	Harv. & Sond.			LC	Indigenous
Agavaceae	*Chlorophytum transvaalense*	(Baker) Kativu			LC	Indigenous
Agavaceae	*Chlorophytum cooperi*	(Baker) Nordal			LC	Indigenous
Aizoaceae	*Khadia alticola*	Chess. & H.E.K.Hartmann			LC	Indigenous; Endemic
Aizoaceae	*Delosperma sutherlandii*	(Hook.f.) N.E.Br.			LC	Indigenous; Endemic
Aizoaceae	*Delosperma deilanthoides*	S.A.Hammer			VU	Indigenous; Endemic
Aizoaceae	*Khadia beswickii*	(L.Bolus) N.E.Br.			VU	Indigenous; Endemic
Aizoaceae	*Delosperma sp.*					
Alliaceae	*Tulbaghia leucantha*	Baker			LC	Indigenous
Alliaceae	*Tulbaghia acutiloba*	Harv.			LC	Indigenous
Alliaceae	*Tulbaghia ludwigiana*	Harv.			LC	Indigenous
Amaranthaceae	*Cyathula cylindrica*	Moq.	var.	*cylindrica*	LC	Indigenous
Amaryllidaceae	*Scadoxus puniceus*	(L.) Friis & Nordal			LC	Indigenous
Amaryllidaceae	*Cyrtanthus contractus*	N.E.Br.			LC	Indigenous
Amaryllidaceae	*Nerine rehmannii*	(Baker) L.Bolus			LC	Indigenous
Amaryllidaceae	*Haemanthus humilis*	Jacq.	subsp.	*hirsutus*	LC	Indigenous
Amaryllidaceae	*Cyrtanthus breviflorus*	Harv.			LC	Indigenous
Anacampserotaceae	*Anacampseros subnuda*	Poelln.	subsp.	*subnuda*	LC	Indigenous
Anacardiaceae	*Searsia gerrardii*	(Harv. ex Engl.) Moffett			LC	Indigenous
Anacardiaceae	*Searsia tumulicola*	(S.Moore) Moffett	var.	*meeuseana*	NE	Indigenous; Endemic
Anacardiaceae	*Searsia zeyheri*	(Sond.) Moffett			LC	Indigenous; Endemic
Anacardiaceae	*Searsia wilmsii*	(Diels) Moffett			LC	Indigenous; Endemic
Anacardiaceae	*Searsia dentata*	(Thunb.) F.A.Barkley			LC	Indigenous
Anacardiaceae	*Searsia batophylla*	(Codd) Moffett			VU	Indigenous; Endemic
Anacardiaceae	*Searsia pyroides*	(Burch.) Moffett	var.	*pyroides*	LC	Indigenous
Anemiaceae	*Mohria nudiuscula*	J.P.Roux			LC	Indigenous
Anemiaceae	*Mohria vestita*	Baker			LC	Indigenous

Aneuraceae	*Aneura pinguis*	(L.) Dumort.				Indigenous
Apiaceae	*Pimpinella hydrophila*	H.Wolff			LC	Indigenous; Endemic
Apiaceae	*Annesorhiza wilmsii*	H.Wolff			LC	Indigenous
Apiaceae	*Afrosciadium magalismontanum*	(Sond.) P.J.D.Winter			LC	Indigenous
Apiaceae	*Alepidea setifera*	N.E.Br.			LC	Indigenous
Apiaceae	*Pimpinella transvaalensis*	H.Wolff			LC	Indigenous
Apiaceae	*Alepidea peduncularis*	Steud. ex A.Rich.			DD	Indigenous
Apiaceae	*Afrosciadium caffrum*	(Meisn.) P.J.D.Winter			LC	Indigenous
Apiaceae	*Bupleurum mundtii*	Cham. & Schltdl.			LC	Indigenous
Apiaceae	*Alepidea attenuata*	Weim.			NT	Indigenous
Apocynaceae	*Raphionacme hirsuta*	(E.Mey.) R.A.Dyer			LC	Indigenous
Apocynaceae	*Asclepias stellifera*	Schltr.			LC	Indigenous
Apocynaceae	*Asclepias albens*	(E.Mey.) Schltr.			LC	Indigenous
Apocynaceae	*Asclepias cucullata*	(Schltr.) Schltr.	subsp.	*cucullata*	LC	Indigenous
Apocynaceae	*Pachycarpus asperifolius*	Meisn.			LC	Indigenous
Apocynaceae	*Asclepias densiflora*	N.E.Br.			LC	Indigenous
Apocynaceae	*Ceropegia meyeri*	Decne.			LC	Indigenous
Apocynaceae	*Asclepias sp.*					
Apocynaceae	*Asclepias schlechteri*	(K.Schum.) N.E.Br.			EN	Indigenous
Apocynaceae	*Xysmalobium parviflorum*	Harv. ex Scott-Elliot			LC	Indigenous
Apocynaceae	*Pachycarpus concolor*	E.Mey.	subsp.	*transvaalensis*	LC	Indigenous
Apocynaceae	*Sisyranthus randii*	S.Moore			LC	Indigenous
Apocynaceae	*Miraglossum pulchellum*	(Schltr.) Kupicha			LC	Indigenous
Apocynaceae	*Asclepias adscendens*	(Schltr.) Schltr.			LC	Indigenous
Apocynaceae	*Pachycarpus macrochilus*	(Schltr.) N.E.Br.			LC	Indigenous
Apocynaceae	*Xysmalobium stockenstromense*	Scott-Elliot			LC	Indigenous
Apocynaceae	*Aspidoglossum interruptum*	(E.Mey.) Bullock			LC	Indigenous
Apocynaceae	*Asclepias dissona*	N.E.Br.			CR	Indigenous; Endemic
Apocynaceae	*Schizoglossum bidens*	E.Mey.	subsp.	*galpinii*	LC	Indigenous
Apocynaceae	*Raphionacme galpinii*	Schltr.			LC	Indigenous
Apocynaceae	*Asclepias aurea*	(Schltr.) Schltr.			LC	Indigenous
Apocynaceae	*Ceropegia coddii*	(R.A.Dyer) Bruyns				Indigenous
Apocynaceae	*Schizoglossum nitidum*	Schltr.			LC	Indigenous
Apocynaceae	*Xysmalobium pedifoetidum*	Bester & Nicholas			LC	Indigenous
Apocynaceae	*Ceropegia stellata*	(E.A.Bruce & R.A.Dyer) Bruyns				Indigenous; Endemic

Apocynaceae	*Xysmalobium sp.*					
Apocynaceae	*Ceropegia minor*	(E.A.Bruce) Bruyns				Indigenous; Endemic
Apocynaceae	*Gomphocarpus fruticosus*	(L.) W.T.Aiton				Indigenous
Apocynaceae	*Asclepias multicaulis*	(E.Mey.) Schltr.			LC	Indigenous
Apocynaceae	*Aspidoglossum glabrescens*	(Schltr.) Kupicha			LC	Indigenous; Endemic
Apocynaceae	*Raphionacme procumbens*	Schltr.			LC	Indigenous
Apocynaceae	*Anisotoma pedunculata*	N.E.Br.			LC	Indigenous
Apocynaceae	*Asclepias cultriformis*	(Harv. ex Schltr.) Schltr.			LC	Indigenous
Aquifoliaceae	*Ilex mitis*	(L.) Radlk.	var.	*mitis*	LC	Indigenous
Araceae	*Zantedeschia elliottiana*	(W.Watson) Engl.			DD	Indigenous; Endemic
Araceae	*Zantedeschia rehmannii*	Engl.			LC	Indigenous
Araceae	*Zantedeschia albomaculata*	(Hook.) Baill.	subsp.	*macrocarpa*	LC	Indigenous
Araliaceae	*Cussonia paniculata*	Eckl. & Zeyh.	subsp.	*sinuata*	LC	Indigenous
Asparagaceae	*Asparagus cooperi*	Baker			LC	Indigenous
Asparagaceae	*Asparagus asparagoides*	(L.) W.Wight			LC	Indigenous
Asphodelaceae	*Aloe cooperi*	Baker			LC	Indigenous
Asphodelaceae	*Trachyandra saltii*	(Baker) Oberm.	var.	*saltii*	LC	Indigenous
Asphodelaceae	*Kniphofia rigidifolia*	E.A.Bruce			LC	Indigenous; Endemic
Asphodelaceae	*Aloe castanea*	Schonland			LC	Indigenous
Asphodelaceae	*Aloe reitzii*	Reynolds	var.	*reitzii*	NT	Indigenous; Endemic
Asphodelaceae	*Aloe chortolirioides*	A.Berger	var.	*woolliana*	LC	Indigenous
Asphodelaceae	*Aloe arborescens*	Mill.			LC	Indigenous
Asphodelaceae	*Bulbine abyssinica*	A.Rich.			LC	Indigenous
Asphodelaceae	*Aloe ecklonis*	Salm-Dyck			LC	Indigenous
Asphodelaceae	*Aloe fosteri*	Pillans			LC	Indigenous
Asphodelaceae	*Kniphofia ensifolia*	Baker	subsp.	*ensifolia*	LC	Indigenous
Asphodelaceae	*Aloe wickensii*	Pole-Evans	var.	*lutea*		Indigenous; Endemic
Asphodelaceae	*Aloe sp.*					
Aspleniaceae	*Asplenium sp.*					
Aspleniaceae	*Asplenium schelpei*	A.F.Braithw.			LC	Indigenous
Asteraceae	*Geigeria filifolia*	Mattf.			LC	Indigenous
Asteraceae	*Helichrysum mixtum*	(Kuntze) Moeser	var.	*mixtum*	NE	Indigenous
Asteraceae	*Helichrysum oreophilum*	Klatt			LC	Indigenous
Asteraceae	*Euryops brevipapposus*	M.D.Hend.			LC	Indigenous
Asteraceae	*Pseudognaphalium luteoalbum*	(L.) Hilliard & B.L.Burtt			LC	Cryptogenic
Asteraceae	*Helichrysum reflexum*	N.E.Br.			LC	Indigenous
Asteraceae	*Helichrysum nudifolium*	(L.) Less.	var.	*nudifolium*	LC	Indigenous

Asteraceae	*Hypochaeris radicata*	L.				Not indigenous; Naturalised
Asteraceae	*Phymaspermum acerosum*	(DC.) Kallersjo			LC	Indigenous
Asteraceae	*Senecio subcoriaceus*	Schltr.			LC	Indigenous
Asteraceae	*Euryops discoideus*	Burtt Davy			DD	Indigenous; Endemic
Asteraceae	*Helichrysum auronitens*	Sch.Bip.			LC	Indigenous
Asteraceae	*Euryops transvaalensis*	Klatt	subsp.	*setilobus*	LC	Indigenous
Asteraceae	*Helichrysum nudifolium*	(L.) Less.				Indigenous
Asteraceae	*Senecio bupleuroides*	DC.			LC	Indigenous
Asteraceae	*Conyza scabrida*	DC.				Indigenous
Asteraceae	*Helichrysum mimetes*	S.Moore			LC	Indigenous
Asteraceae	*Helichrysum swynnertonii*	S.Moore			LC	Indigenous
Asteraceae	*Helichrysum polycladum*	Klatt			LC	Indigenous
Asteraceae	*Senecio inornatus*	DC.			LC	Indigenous
Asteraceae	*Senecio microglossus*	DC.			LC	Indigenous
Asteraceae	*Helichrysum subglomeratum*	Less.			LC	Indigenous
Asteraceae	*Senecio glaberrimus*	DC.			LC	Indigenous
Asteraceae	*Helichrysum spiralepis*	Hilliard & B.L.Burtt			LC	Indigenous
Asteraceae	*Senecio isatidioides*	E.Phillips & C.A.Sm.			LC	Indigenous
Asteraceae	*Helichrysum lepidissimum*	S.Moore			LC	Indigenous
Asteraceae	*Helichrysum callicomum*	Harv.			LC	Indigenous
Asteraceae	*Euryops transvaalensis*	Klatt	subsp.	*transvaalensis*	LC	Indigenous
Asteraceae	*Seriphium plumosum*	L.				Indigenous
Asteraceae	*Schistostephium crataegifolium*	(DC.) Fenzl ex Harv.			LC	Indigenous
Asteraceae	*Helichrysum truncatum*	Burtt Davy			LC	Indigenous
Asteraceae	*Tolpis capensis*	(L.) Sch.Bip.			LC	Indigenous
Asteraceae	*Senecio barbatus*	DC.			LC	Indigenous
Asteraceae	*Helichrysum aureum*	(Houtt.) Merr.	var.	*argenteum*	NE	Indigenous; Endemic
Asteraceae	*Helichrysum obductum*	Bolus			LC	Indigenous; Endemic
Asteraceae	*Gymnanthemum corymbosum*	(L.f.) H.Rob.			LC	Indigenous
Asteraceae	*Helichrysum aureum*	(Houtt.) Merr.	var.	*monocephalum*	NE	Indigenous
Asteraceae	*Helichrysum splendidum*	(Thunb.) Less.			LC	Indigenous
Asteraceae	*Gazania krebsiana*	Less.	subsp.	*serrulata*	LC	Indigenous
Asteraceae	*Helichrysum molestum*	Hilliard			LC	Indigenous
Asteraceae	*Helichrysum melanacme*	DC.			LC	Indigenous
Asteraceae	*Gerbera viridifolia*	(DC.) Sch.Bip.			LC	Indigenous
Asteraceae	*Helichrysum pallidum*	DC.			LC	Indigenous
Asteraceae	*Gerbera piloselloides*	(L.) Cass.			LC	Indigenous

Asteraceae	*Senecio speciosus*	Willd.			LC	Indigenous
Asteraceae	*Dimorphotheca jucunda*	E.Phillips			LC	Indigenous
Asteraceae	*Berkheya insignis*	(Harv.) Thell.			LC	Indigenous
Asteraceae	*Athrixia elata*	Sond.			LC	Indigenous
Asteraceae	*Helichrysum adenocarpum*	DC.	subsp.	*adenocarpum*	LC	Indigenous
Asteraceae	*Conyza pinnata*	(L.f.) Kuntze				Indigenous
Asteraceae	*Senecio serratuloides*	DC.			LC	Indigenous
Asteraceae	*Senecio gregatus*	Hilliard			LC	Indigenous
Asteraceae	*Othonna natalensis*	Sch.Bip.			LC	Indigenous
Asteraceae	*Senecio gerrardii*	Harv.			LC	Indigenous
Asteraceae	*Helichrysum interjacens*	Hilliard			LC	Indigenous
Asteraceae	*Oocephala staehelinoides*	(Harv.) H.Rob. & Skvarla				Indigenous; Endemic
Asteraceae	*Dicoma anomala*	Sond.	subsp.	*anomala*	LC	Indigenous
Asteraceae	*Helichrysum epapposum*	Bolus			LC	Indigenous
Asteraceae	*Afroaster lydenburgensis*	(W.Lippert) J.C.Manning & Goldblatt			LC	Indigenous; Endemic
Asteraceae	*Cotula hispida*	(DC.) Harv.			LC	Indigenous
Asteraceae	*Senecio coronatus*	(Thunb.) Harv.			LC	Indigenous
Asteraceae	*Berkheya echinacea*	(Harv.) O.Hoffm. ex Burtt Davy				Indigenous
Asteraceae	*Dicoma anomala*	Sond.				Indigenous
Asteraceae	*Lopholaena segmentata*	(Oliv.) S.Moore			LC	Indigenous
Asteraceae	*Helichrysum aureolum*	Hilliard			LC	Indigenous
Asteraceae	*Cineraria parvifolia*	Burtt Davy			LC	Indigenous; Endemic
Asteraceae	*Gerbera natalensis*	Sch.Bip.			LC	Indigenous
Asteraceae	*Senecio conrathii*	N.E.Br.			LC	Indigenous
Asteraceae	*Dimorphotheca caulescens*	Harv.			LC	Indigenous
Asteraceae	*Cineraria sp.*					
Asteraceae	*Helichrysum miconiifolium*	DC.			LC	Indigenous
Asteraceae	*Helichrysum opacum*	Klatt			LC	Indigenous
Asteraceae	*Berkheya speciosa*	(DC.) O.Hoffm.	subsp.	*lanceolata*	LC	Indigenous
Asteraceae	*Helichrysum difficile*	Hilliard			LC	Indigenous
Asteraceae	*Nidorella auriculata*	DC.			LC	Indigenous
Asteraceae	*Berkheya zeyheri*	Oliv. & Hiern	subsp.	*zeyheri*	LC	Indigenous
Asteraceae	*Felicia filifolia*	(Vent.) Burtt Davy	subsp.	*filifolia*	LC	Indigenous
Asteraceae	*Pseudopegolettia tenella*	(DC.) H.Rob., Skvarla & V.A.Funk				Indigenous

Asteraceae	*Schkuhria pinnata*	(Lam.) Kuntze ex Thell.				Not indigenous; Naturalised
Asteraceae	*Helichrysum platypterum*	DC.			LC	Indigenous
Asteraceae	*Helichrysum ephelos*	Hilliard			LC	Indigenous; Endemic
Asteraceae	*Helichrysum cephaloideum*	DC.			LC	Indigenous
Asteraceae	*Berkheya echinacea*	(Harv.) O.Hoffm. ex Burtt Davy	subsp.	*echinacea*	LC	Indigenous
Asteraceae	*Helichrysum thapsus*	(Kuntze) Moeser			LC	Indigenous
Asteraceae	*Helichrysum galpinii*	N.E.Br.			LC	Indigenous
Asteraceae	*Lopholaena disticha*	(N.E.Br.) S.Moore			LC	Indigenous
Asteraceae	*Helichrysum albilanatum*	Hilliard			LC	Indigenous; Endemic
Asteraceae	*Senecio macrocephalus*	DC.			LC	Indigenous
Asteraceae	*Felicia muricata*	(Thunb.) Nees	subsp.	*muricata*	LC	Indigenous
Asteraceae	*Berkheya setifera*	DC.			LC	Indigenous
Asteraceae	*Helichrysum nudifolium*	(L.) Less.	var.	*pilosellum*	LC	Indigenous
Asteraceae	*Helichrysum rugulosum*	Less.			LC	Indigenous
Asteraceae	*Pegolettia lanceolata*	Harv.			LC	Indigenous
Asteraceae	*Helichrysum acutatum*	DC.			LC	Indigenous
Asteraceae	*Helichrysum panduratum*	O.Hoffm.	var.	*transvaalense*	LC	Indigenous
Asteraceae	*Haplocarpha scaposa*	Harv.			LC	Indigenous
Athyriaceae	*Athyrium schimperi*	Moug. ex Fee			LC	Indigenous
Aytoniaceae	*Asterella bachmannii*	(Steph.) S.W.Arnell				Indigenous
Aytoniaceae	*Asterella wilmsii*	(Steph.) S.W.Arnell				Indigenous
Brachytheciaceae	*Palamocladium leskeoides*	(Hook.) E.Britton				Indigenous
Brassicaceae	*Heliophila sp.*					
Brassicaceae	*Heliophila rigidiuscula*	Sond.			LC	Indigenous
Bryaceae	*Anomobryum julaceum*	(Schrad. ex G.Gaertn., B.Mey. & Schreb.) Schimp.				Indigenous
Bryaceae	*Bryum argenteum*	Hedw.				Indigenous
Buxaceae	*Buxus macowanii*	Oliv.			LC	Indigenous; Endemic
Campanulaceae	*Wahlenbergia epacridea*	Sond.			LC	Indigenous
Campanulaceae	*Wahlenbergia squamifolia*	Brehmer			LC	Indigenous
Campanulaceae	*Wahlenbergia magaliesbergensis*	Lammers			LC	Indigenous; Endemic
Campanulaceae	*Wahlenbergia appressifolia*	Hilliard & B.L.Burtt			LC	Indigenous
Campanulaceae	*Wahlenbergia lycopodioides*	Schltr. & Brehmer			LC	Indigenous
Campanulaceae	*Wahlenbergia undulata*	(L.f.) A.DC.			LC	Indigenous

Campanulaceae	*Wahlenbergia sp.*					
Campanulaceae	*Craterocapsa tarsodes*	Hilliard & B.L.Burtt			LC	Indigenous
Campanulaceae	*Wahlenbergia androsacea*	A.DC.			LC	Indigenous
Campanulaceae	*Wahlenbergia capillacea*	(L.f.) A.DC.	subsp.	*capillacea*	LC	Indigenous
Caryophyllaceae	*Silene burchellii*	Otth ex DC.	subsp.	*pilosellifolia*		Indigenous
Caryophyllaceae	*Pollichia campestris*	Aiton			LC	Indigenous
Caryophyllaceae	*Dianthus basuticus*	Burtt Davy	subsp.	*basuticus*	NE	Indigenous
Caryophyllaceae	*Dianthus zeyheri*	Sond.	subsp.	*natalensis*	NE	Indigenous
Caryophyllaceae	*Dianthus basuticus*	Burtt Davy	subsp.	*fourcadei*	VU	Indigenous; Endemic
Celastraceae	*Gymnosporia buxifolia*	(L.) Szyszyl.			LC	Indigenous
Celastraceae	*Gymnosporia sp.*					
Cleomaceae	*Cleome monophylla*	L.			LC	Indigenous
Cleomaceae	*Cleome hirta*	(Klotzsch) Oliv.			LC	Indigenous
Cleomaceae	*Cleome maculata*	(Sond.) Szyszyl.			LC	Indigenous
Colchicaceae	*Colchicum melanthioides*	(Willd.) J.C.Manning & Vinn.	subsp.	*transvaalense*	LC	Indigenous
Commelinaceae	*Commelina africana*	L.	var.	*africana*	LC	Indigenous
Commelinaceae	*Cyanotis pachyrrhiza*	Oberm.			LC	Indigenous; Endemic
Commelinaceae	*Cyanotis speciosa*	(L.f.) Hassk.			LC	Indigenous
Convolvulaceae	*Ipomoea crassipes*	Hook.	var.	*crassipes*	LC	Indigenous
Convolvulaceae	*Convolvulus natalensis*	Bernh. ex Krauss			LC	Indigenous
Convolvulaceae	*Ipomoea oblongata*	E.Mey. ex Choisy			LC	Indigenous
Convolvulaceae	*Ipomoea ommanneyi*	Rendle			LC	Indigenous
Crassulaceae	*Crassula lanceolata*	(Eckl. & Zeyh.) Endl. ex Walp.	subsp.	*lanceolata*	LC	Indigenous
Crassulaceae	*Crassula pellucida*	L.	subsp.	*brachypetala*	LC	Indigenous
Crassulaceae	*Crassula setulosa*	Harv.	var.	*deminuta*	NE	Indigenous; Endemic
Crassulaceae	*Kalanchoe rotundifolia*	(Haw.) Haw.			LC	Indigenous
Crassulaceae	*Crassula vaginata*	Eckl. & Zeyh.	subsp.	*vaginata*	LC	Indigenous
Crassulaceae	*Cotyledon orbiculata*	L.	var.	*oblonga*	LC	Indigenous
Crassulaceae	*Crassula compacta*	Schonland			LC	Indigenous; Endemic
Crassulaceae	*Crassula lanceolata*	(Eckl. & Zeyh.) Endl. ex Walp.	subsp.	*transvaalensis*	LC	Indigenous
Crassulaceae	*Crassula alba*	Forssk.	var.	*alba*	NE	Indigenous
Crassulaceae	*Crassula setulosa*	Harv.	var.	*setulosa*	NE	Indigenous
Crassulaceae	*Crassula sarcocaulis*	Eckl. & Zeyh.	subsp.	*sarcocaulis*	LC	Indigenous

Crassulaceae	*Crassula vaginata*	Eckl. & Zeyh.				Indigenous
Crassulaceae	*Crassula alba*	Forssk.			LC	Indigenous
Crassulaceae	*Crassula sp.*					
Crassulaceae	*Crassula capitella*	Thunb.	subsp.	*nodulosa*	LC	Indigenous
Crassulaceae	*Crassula alba*	Forssk.	var.	*pallida*	NE	Indigenous
Cyperaceae	*Schoenoplectus muricinux*	(C.B.Clarke) J.Raynal			LC	Indigenous
Cyperaceae	*Ascolepis capensis*	(Kunth) Ridl.			LC	Indigenous
Cyperaceae	*Ficinia gracilis*	Schrad.			LC	Indigenous
Cyperaceae	*Pycreus nitidus*	(Lam.) J.Raynal			LC	Indigenous
Cyperaceae	*Cyperus esculentus*	L.	var.	*esculentus*	LC	Indigenous
Cyperaceae	*Cyperus congestus*	Vahl			LC	Indigenous
Cyperaceae	*Carpha capitellata*	(Nees) Boeckeler			LC	Indigenous
Cyperaceae	*Cyperus denudatus*	L.f.			LC	Indigenous
Cyperaceae	*Coleochloa setifera*	(Ridl.) Gilly			LC	Indigenous
Cyperaceae	*Cyperus parvinux*	C.B.Clarke			LC	Indigenous
Cyperaceae	*Isolepis inyangensis*	Muasya & Goetgh.			LC	Indigenous
Cyperaceae	*Kyllinga erecta*	Schumach.	var.	*erecta*	LC	Indigenous
Cyperaceae	*Cyperus schlechteri*	C.B.Clarke			LC	Indigenous
Cyperaceae	*Cyperus keniensis*	Kuk.			LC	Indigenous
Cyperaceae	*Cyperus rupestris*	Kunth	var.	*rupestris*	LC	Indigenous
Cyperaceae	*Isolepis costata*	Hochst. ex A.Rich.			LC	Indigenous
Cyperaceae	*Scleria dieterlenii*	Turrill			LC	Indigenous
Cyperaceae	*Isolepis fluitans*	(L.) R.Br.	var.	*fluitans*	LC	Indigenous
Cyperaceae	*Pycreus rehmannianus*	C.B.Clarke			LC	Indigenous
Cyperaceae	*Bulbostylis schoenoides*	(Kunth) C.B.Clarke			LC	Indigenous
Dipsacaceae	*Cephalaria pungens*	Szabo			LC	Indigenous
Dipsacaceae	*Cephalaria zeyheriana*	Szabo			LC	Indigenous
Droseraceae	*Drosera dielsiana*	Exell & J.R.Laundon			LC	Indigenous
Droseraceae	*Drosera collinsiae*	N.E.Br.			LC	Indigenous
Droseraceae	*Drosera burkeana*	Planch.			LC	Indigenous
Dryopteridaceae	*Elaphoglossum acrostichoides*	(Hook. & Grev.) Schelpe			LC	Indigenous
Ebenaceae	*Diospyros lycioides*	Desf.	subsp.	*nitens*	LC	Indigenous; Endemic
Ebenaceae	*Euclea crispa*	(Thunb.) Gurke	subsp.	*crispa*	LC	Indigenous
Ebenaceae	*Diospyros austroafricana*	De Winter	var.	*microphylla*	LC	Indigenous
Ebenaceae	*Diospyros lycioides*	Desf.	subsp.	*guerkei*	LC	Indigenous
Ebenaceae	*Euclea sp.*					

Ebenaceae	*Diospyros whyteana*	(Hiern) F.White			LC	Indigenous
Elatinaceae	*Bergia decumbens*	Planch. ex Harv.			LC	Indigenous
Ericaceae	*Erica caffrorum*	Bolus				Indigenous
Ericaceae	*Erica cerinthoides*	L.	var.	*cerinthoides*	NE	Indigenous
Ericaceae	*Erica caffrorum*	Bolus	var.	*caffrorum*	LC	Indigenous
Ericaceae	*Erica alopecurus*	Harv.	var.	*alopecurus*	LC	Indigenous
Ericaceae	*Erica woodii*	Bolus				Indigenous
Ericaceae	*Erica denticulata*	L.	var.	*denticulata*	LC	Indigenous; Endemic
Ericaceae	*Erica alopecurus*	Harv.				Indigenous
Ericaceae	*Erica revoluta*	(Bolus) L.E.Davidson			LC	Indigenous
Ericaceae	*Erica holtii*	Schweick.			LC	Indigenous
Ericaceae	*Erica drakensbergensis*	Guthrie & Bolus			LC	Indigenous
Eriocaulaceae	*Eriocaulon sonderianum*	Korn.			LC	Indigenous
Euphorbiaceae	*Euphorbia sp.*	Boiss.				
Euphorbiaceae	*Acalypha wilmsii*	Pax ex Prain & Hutch.			LC	Indigenous
Fabaceae	*Vachellia borleae*	(Burtt Davy) Kyal. & Boatwr.			LC	Indigenous
Fabaceae	*Leobordea carinata*	(E.Mey.) B.-E.van Wyk & Boatwr.			LC	Indigenous
Fabaceae	*Otholobium wilmsii*	(Harms) C.H.Stirt.			LC	Indigenous
Fabaceae	*Indigofera hilaris*	Eckl. & Zeyh.	var.	*hilaris*	LC	Indigenous
Fabaceae	*Argyrolobium tomentosum*	(Andrews) Druce			LC	Indigenous
Fabaceae	*Argyrolobium wilmsii*	Harms			LC	Indigenous
Fabaceae	*Indigofera sp.*					
Fabaceae	*Pearsonia sessilifolia*	(Harv.) Dummer	subsp.	*sessilifolia*	LC	Indigenous
Fabaceae	*Rhynchosia sordida*	(E.Mey.) Schinz			LC	Indigenous
Fabaceae	*Crotalaria lotoides*	Benth.			LC	Indigenous
Fabaceae	*Zornia capensis*	Pers.	subsp.	*capensis*	LC	Indigenous
Fabaceae	*Indigofera schinzii*	N.E.Br.			LC	Indigenous
Fabaceae	*Pearsonia grandifolia*	(Bolus) Polhill	subsp.	*latibracteola ta*	LC	Indigenous
Fabaceae	*Lessertia stricta*	L.Bolus			LC	Indigenous
Fabaceae	*Tephrosia burchellii*	Burtt Davy			LC	Indigenous
Fabaceae	*Crotalaria monophylla*	Germish.			VU	Indigenous; Endemic
Fabaceae	*Dichilus strictus*	E.Mey.			LC	Indigenous
Fabaceae	*Leobordea eriantha*	(Benth.) B.-E.van Wyk & Boatwr.			LC	Indigenous
Fabaceae	*Argyrolobium speciosum*	Eckl. & Zeyh.			LC	Indigenous
Fabaceae	*Rhynchosia adenodes*	Eckl. & Zeyh.			LC	Indigenous

Fabaceae	*Vachellia karroo*	(Hayne) Banfi & Galasso			LC	Indigenous
Fabaceae	*Pearsonia cajanifolia*	(Harv.) Polhill	subsp.	*cryptantha*	LC	Indigenous
Fabaceae	*Ormocarpum trichocarpum*	(Taub.) Engl.			LC	Indigenous
Fabaceae	*Indigofera egens*	N.E.Br.			LC	Indigenous; Endemic
Fabaceae	*Leobordea foliosa*	(Bolus) B.-E.van Wyk & Boatwr.			LC	Indigenous
Fabaceae	*Pearsonia hirsuta*	Germish.			VU	Indigenous; Endemic
Fabaceae	*Indigofera hedyantha*	Eckl. & Zeyh.			LC	Indigenous
Fabaceae	*Argyrolobium tuberosum*	Eckl. & Zeyh.			LC	Indigenous
Fabaceae	*Dichilus pilosus*	Conrath ex Schinz			LC	Indigenous; Endemic
Fabaceae	*Vigna vexillata*	(L.) A.Rich.	var.	*vexillata*	LC	Indigenous
Fabaceae	*Vachellia nilotica*	(L.) P.J.H.Hurter & Mabb.	subsp.	*kraussiana*	LC	Indigenous
Fabaceae	*Indigofera tristoides*	N.E.Br.			LC	Indigenous
Fabaceae	*Leobordea pulchra*	(Dummer) B.-E.van Wyk & Boatwr.			LC	Indigenous
Fabaceae	*Crotalaria monteiroi*	Taub. ex Baker f.	var.	*monteiroi*	LC	Indigenous
Fabaceae	*Schotia brachypetala*	Sond.			LC	Indigenous
Fabaceae	*Indigofera swaziensis*	Bolus	var.	*swaziensis*	LC	Indigenous
Fabaceae	*Dichilus lebeckioides*	DC.			LC	Indigenous
Fabaceae	*Indigofera sanguinea*	N.E.Br.			LC	Indigenous
Fabaceae	*Indigofera longibarbata*	Engl.			LC	Indigenous
Fabaceae	*Dolichos angustifolius*	Eckl. & Zeyh.			LC	Indigenous
Fabaceae	*Melolobium wilmsii*	Harms			LC	Indigenous; Endemic
Fabaceae	*Zornia milneana*	Mohlenbr.			LC	Indigenous
Fabaceae	*Leobordea mucronata*	(Conrath) B.-E.van Wyk & Boatwr.				Indigenous
Fabaceae	*Lablab purpureus*	(L.) Sweet	subsp.	*uncinatus*	LC	Indigenous
Funariaceae	*Funaria sp.*					
Gentianaceae	*Chironia palustris*	Burch.	subsp.	*transvaalensis*	LC	Indigenous
Gentianaceae	*Exochaenium grande*	(E.Mey.) Griseb.			LC	Indigenous
Gentianaceae	*Swertia welwitschii*	Engl.			LC	Indigenous
Gentianaceae	*Chironia krebsii*	Griseb.			LC	Indigenous
Gentianaceae	*Chironia palustris*	Burch.	subsp.	*palustris*	LC	Indigenous
Gentianaceae	*Sebaea longicaulis*	Schinz			LC	Indigenous
Gentianaceae	*Sebaea sedoides*	Gilg	var.	*confertiflora*	LC	Indigenous
Gentianaceae	*Sebaea bojeri*	Griseb.			LC	Indigenous
Geraniaceae	*Monsonia senegalensis*	Guill. & Perr.			LC	Indigenous

Geraniaceae	*Pelargonium luridum*	(Andrews) Sweet			LC	Indigenous
Geraniaceae	*Monsonia attenuata*	Harv.			LC	Indigenous
Geraniaceae	*Pelargonium multicaule*	Jacq.	subsp.	*subherbaceum*	LC	Indigenous; Endemic
Geraniaceae	*Monsonia glauca*	R.Knuth			LC	Indigenous
Geraniaceae	*Geranium wakkerstroomianum*	R.Knuth			LC	Indigenous
Geraniaceae	*Monsonia angustifolia*	E.Mey. ex A.Rich.			LC	Indigenous
Gesneriaceae	*Streptocarpus vandeleurii*	Baker f. & S.Moore			LC	Indigenous; Endemic
Gesneriaceae	*Streptocarpus sp.*					
Gesneriaceae	*Streptocarpus dunnii*	Hook.f.			LC	Indigenous
Gunneraceae	*Gunnera perpensa*	L.			LC	Indigenous
Hyacinthaceae	*Albuca virens*	(Ker Gawl.) J.C.Manning & Goldblatt	subsp.	*virens*	LC	Indigenous
Hyacinthaceae	*Ledebouria marginata*	(Baker) Jessop			LC	Indigenous
Hyacinthaceae	*Ledebouria lepida*	(N.E.Br.) S.Venter			LC	Indigenous; Endemic
Hyacinthaceae	*Dipcadi marlothii*	Engl.			LC	Indigenous
Hyacinthaceae	*Ledebouria sp.*					
Hyacinthaceae	*Dipcadi gracillimum*	Baker			LC	Indigenous
Hyacinthaceae	*Ledebouria sandersonii*	(Baker) S.Venter & T.J.Edwards			LC	Indigenous
Hyacinthaceae	*Eucomis autumnalis*	(Mill.) Chitt.	subsp.	*clavata*	NE	Indigenous
Hyacinthaceae	*Schizocarphus nervosus*	(Burch.) Van der Merwe			LC	Indigenous
Hyacinthaceae	*Ledebouria cooperi*	(Hook.f.) Jessop			LC	Indigenous
Hyacinthaceae	*Ledebouria atropurpurea*	(N.E.Br.) J.C.Manning & Goldblatt			LC	Indigenous; Endemic
Hyacinthaceae	*Eucomis vandermerwei*	I.Verd.			VU	Indigenous; Endemic
Hyacinthaceae	*Eucomis pallidiflora*	Baker				Indigenous
Hyacinthaceae	*Eucomis montana*	Compton			LC	Indigenous
Hypericaceae	*Hypericum aethiopicum*	Thunb.	subsp.	*sonderi*	LC	Indigenous
Hypoxidaceae	*Hypoxis filiformis*	Baker			LC	Indigenous
Hypoxidaceae	*Hypoxis galpinii*	Baker			LC	Indigenous
Hypoxidaceae	*Hypoxis argentea*	Harv. ex Baker	var.	*argentea*	LC	Indigenous
Hypoxidaceae	*Hypoxis sp.*					
Iridaceae	*Dierama pauciflorum*	N.E.Br.			LC	Indigenous
Iridaceae	*Moraea galpinii*	(Baker) N.E.Br.			LC	Indigenous
Iridaceae	*Aristea angolensis*	Baker	subsp.	*angolensis*	LC	Indigenous
Iridaceae	*Gladiolus densiflorus*	Baker			LC	Indigenous
Iridaceae	*Dierama nebrownii*	Hilliard			LC	Indigenous; Endemic

Iridaceae	*Moraea trifida*	R.C.Foster			LC	Indigenous
Iridaceae	*Babiana bainesii*	Baker			LC	Indigenous
Iridaceae	*Hesperantha schlechteri*	(Baker) R.C.Foster			LC	Indigenous; Endemic
Iridaceae	*Hesperantha coccinea*	(Backh. & Harv.) Goldblatt & J.C.Manning			LC	Indigenous
Iridaceae	*Crocosmia paniculata*	(Klatt) Goldblatt			LC	Indigenous
Iridaceae	*Gladiolus papilio*	Hook.f.			LC	Indigenous
Iridaceae	*Dierama mobile*	Hilliard			LC	Indigenous
Iridaceae	*Gladiolus ferrugineus*	Goldblatt & J.C.Manning			LC	Indigenous
Iridaceae	*Gladiolus sericeovillosus*	Hook.f.	subsp.	*calvatus*	LC	Indigenous
Iridaceae	*Moraea moggii*	N.E.Br.	subsp.	*moggii*	LC	Indigenous; Endemic
Iridaceae	*Gladiolus crassifolius*	Baker			LC	Indigenous
Iridaceae	*Dierama insigne*	N.E.Br.			LC	Indigenous
Iridaceae	*Gladiolus vinosomaculatus*	Kies			LC	Indigenous; Endemic
Iridaceae	*Moraea elliotii*	Baker			LC	Indigenous
Iridaceae	*Gladiolus calcaratus*	G.J.Lewis			LC	Indigenous; Endemic
Iridaceae	*Gladiolus rehmannii*	Baker			LC	Indigenous
Iridaceae	*Afrosolen sandersonii*	(Baker) Goldblatt & J.C.Manning				Indigenous
Juncaceae	*Juncus effusus*	L.			LC	Indigenous
Juncaceae	*Juncus oxycarpus*	E.Mey. ex Kunth			LC	Indigenous
Juncaceae	*Luzula africana*	Drege ex Steud.			LC	Indigenous
Lamiaceae	*Aeollanthus buchnerianus*	Briq.			LC	Indigenous
Lamiaceae	*Clerodendrum ternatum*	Schinz			LC	Indigenous
Lamiaceae	*Ocimum obovatum*	E.Mey. ex Benth.	subsp.	*obovatum*	NE	Indigenous
Lamiaceae	*Plectranthus laxiflorus*	Benth.			LC	Indigenous
Lamiaceae	*Rotheca louwalbertsii*	(P.P.J.Herman) P.P.J.Herman & Retief			LC	Indigenous
Lamiaceae	*Ocimum serratum*	(Schltr.) A.J.Paton			LC	Indigenous
Lamiaceae	*Rabdosiella calycina*	(Benth.) Codd			LC	Indigenous
Lamiaceae	*Syncolostemon albiflorus*	(N.E.Br.) D.F.Otieno			LC	Indigenous
Lamiaceae	*Stachys natalensis*	Hochst.	var.	*galpinii*	LC	Indigenous
Lamiaceae	*Syncolostemon concinnus*	N.E.Br.			LC	Indigenous
Lamiaceae	*Ajuga ophrydis*	Burch. ex Benth.			LC	Indigenous
Lamiaceae	*Leonotis ocymifolia*	(Burm.f.) Iwarsson			LC	Indigenous
Lamiaceae	*Syncolostemon parvifolius*	(Codd) D.F.Otieno			LC	Indigenous; Endemic

Lamiaceae	*Syncolostemon transvaalensis*	(Schltr.) D.F.Otieno			LC	Indigenous
Lamiaceae	*Tinnea galpinii*	Briq.			LC	Indigenous
Lamiaceae	*Leonotis leonurus*	(L.) R.Br.			LC	Indigenous
Lamiaceae	*Syncolostemon canescens*	(Gurke) D.F.Otieno			LC	Indigenous
Lentibulariaceae	*Utricularia livida*	E.Mey.			LC	Indigenous
Lentibulariaceae	*Utricularia prehensilis*	E.Mey.			LC	Indigenous
Leskeaceae	*Haplocladium angustifolium*	(Hampe & Mull.Hal.) Broth.				Indigenous
Leucobryaceae	*Campylopus robillardei*	Besch.				Indigenous
Leucobryaceae	*Campylopus introflexus*	(Hedw.) Brid.				Indigenous
Leucobryaceae	*Campylopus pilifer*	Brid.				Indigenous
Leucobryaceae	*Campylopus pilifer*	Brid.	var.	*pilifer*		Indigenous
Leucobryaceae	*Campylopus atroluteus*	(Mull.Hal.) Paris				Indigenous
Liliaceae	*Lilium formosanum*	Wallace				Not indigenous; Naturalised; Invasive
Limeaceae	*Limeum pauciflorum*	Moq.			LC	Indigenous; Endemic
Linaceae	*Linum thunbergii*	Eckl. & Zeyh.			LC	Indigenous
Linderniaceae	*Craterostigma wilmsii*	Engl. ex Diels			LC	Indigenous; Endemic
Linderniaceae	*Craterostigma sp.*					
Lobeliaceae	*Monopsis decipiens*	(Sond.) Thulin			LC	Indigenous
Lobeliaceae	*Lobelia erinus*	L.			LC	Indigenous
Lobeliaceae	*Cyphia elata*	Harv.			LC	Indigenous
Lobeliaceae	*Lobelia flaccida*	(C.Presl) A.DC.	subsp.	*flaccida*	LC	Indigenous
Lobeliaceae	*Monopsis kowynensis*	E.Wimm.			VU	Indigenous; Endemic
Lobeliaceae	*Cyphia stenopetala*	Diels			LC	Indigenous
Loranthaceae	*Agelanthus natalitius*	(Meisn.) Polhill & Wiens	subsp.	*zeyheri*	LC	Indigenous
Lycopodiaceae	*Lycopodium clavatum*	L.			LC	Indigenous
Lythraceae	*Ammannia sagittifolia*	(Sond.) S.A.Graham & Gandhi	var.	*sagittifolia*		Indigenous
Lythraceae	*Rotala sp.*					
Malpighiaceae	*Triaspis glaucophylla*	Engl.			LC	Indigenous; Endemic
Malvaceae	*Grewia occidentalis*	L.	var.	*occidentalis*	LC	Indigenous
Malvaceae	*Hermannia staurostemon*	K.Schum.			LC	Indigenous
Malvaceae	*Hermannia cristata*	Bolus			LC	Indigenous
Malvaceae	*Grewia vernicosa*	Schinz			LC	Indigenous; Endemic
Malvaceae	*Hermannia brachymalla*	K.Schum.			LC	Indigenous; Endemic
Malvaceae	*Hermannia transvaalensis*	Schinz			LC	Indigenous; Endemic
Malvaceae	*Hermannia antonii*	I.Verd.			LC	Indigenous; Endemic

Malvaceae	*Triumfetta obtusicornis*	Sprague & Hutch.			LC	Indigenous; Endemic
Malvaceae	*Hermannia lancifolia*	Szyszyl.			LC	Indigenous; Endemic
Malvaceae	*Triumfetta welwitschii*	Mast.	var.	*welwitschii*	LC	Indigenous
Malvaceae	*Sida rhombifolia*	L.				Indigenous
Menispermaceae	*Stephania abyssinica*	(Quart.-Dill. & A.Rich.) Walp.	var.	*tomentella*	LC	Indigenous
Mniaceae	*Pohlia baronii*	Wijk & Margad.				Indigenous
Mniaceae	*Pohlia cruda*	(Hedw.) Lindb.				Indigenous
Molluginaceae	*Psammotropha mucronata*	(Thunb.) Fenzl	var.	*mucronata*	LC	Indigenous
Molluginaceae	*Psammotropha myriantha*	Sond.			LC	Indigenous
Moraceae	*Ficus natalensis*	Hochst.	subsp.	*graniticola*	LC	Indigenous
Moraceae	*Ficus ingens*	(Miq.) Miq.	var.	*ingens*		Indigenous
Myrtaceae	*Syzygium cordatum*	Hochst. ex C.Krauss				Indigenous
Myrtaceae	*Eucalyptus cinerea*	F.Muell. ex Benth.				Not indigenous; Cultivated; Naturalised; Invasive
Ochnaceae	*Ochna serrulata*	(Hochst.) Walp.			LC	Indigenous
Ochnaceae	*Ochna inermis*	(Forssk.) Schweinf.			LC	Indigenous
Oleaceae	*Jasminum multipartitum*	Hochst.			LC	Indigenous
Oleaceae	*Jasminum quinatum*	Schinz			LC	Indigenous; Endemic
Oliniaceae	*Olinia emarginata*	Burtt Davy			LC	Indigenous
Oliniaceae	*Olinia huillensis*	Welw. ex A.Fern. & R.Fern.	subsp.	*burttdavii*	VU	Indigenous; Endemic
Onagraceae	*Oenothera jamesii*	Torr. & A.Gray				Not indigenous; Naturalised; Invasive
Onagraceae	*Oenothera rosea*	L'Her. ex Aiton				Not indigenous; Naturalised; Invasive
Orchidaceae	*Disa rhodantha*	Schltr.			LC	Indigenous
Orchidaceae	*Disa stachyoides*	Rchb.f.			LC	Indigenous
Orchidaceae	*Eulophia streptopetala*	Lindl.			LC	Indigenous
Orchidaceae	*Satyrium neglectum*	Schltr.	subsp.	*neglectum*	LC	Indigenous
Orchidaceae	*Orthochilus aculeatus*	(L.f.) Bytebier	subsp.	*aculeatus*	LC	Indigenous
Orchidaceae	*Neobolusia tysonii*	(Bolus) Schltr.			LC	Indigenous
Orchidaceae	*Disa cooperi*	Rchb.f.			LC	Indigenous
Orchidaceae	*Schizochilus cecilii*	Rolfe	subsp.	*transvaalensis*	LC	Indigenous; Endemic
Orchidaceae	*Eulophia hians*	Spreng.	var.	*nutans*	LC	Indigenous
Orchidaceae	*Disa alticola*	H.P.Linder			VU	Indigenous; Endemic
Orchidaceae	*Disa brevicornis*	(Lindl.) Bolus			LC	Indigenous
Orchidaceae	*Brachycorythis pubescens*	Harv.			LC	Indigenous
Orchidaceae	*Disperis tysonii*	Bolus			LC	Indigenous
Orchidaceae	*Satyrium hallackii*	Bolus	subsp.	*ocellatum*	LC	Indigenous

Orchidaceae	*Satyrium cristatum*	Sond.	var.	*cristatum*	LC	Indigenous
Orchidaceae	*Habenaria barbertoni*	Kraenzl. & Schltr.			NT	Indigenous; Endemic
Orchidaceae	*Orthochilus foliosus*	(Lindl.) Bytebier			LC	Indigenous
Orchidaceae	*Satyrium microrrhynchum*	Schltr.			LC	Indigenous
Orchidaceae	*Disa fragrans*	Schltr.	subsp.	*fragrans*	LC	Indigenous
Orchidaceae	*Habenaria dregeana*	Lindl.			LC	Indigenous
Orchidaceae	*Schizochilus zeyheri*	Sond.			LC	Indigenous
Orchidaceae	*Disa versicolor*	Rchb.f.			LC	Indigenous
Orchidaceae	*Disa maculomarronina*	McMurtry			NT	Indigenous; Endemic
Orchidaceae	*Disa zuluensis*	Rolfe			EN	Indigenous; Endemic
Orchidaceae	*Eulophia parvilabris*	Lindl.			LC	Indigenous
Orobanchaceae	*Cycnium racemosum*	Benth.			LC	Indigenous
Orobanchaceae	*Melasma scabrum*	P.J.Bergius	var.	*scabrum*	LC	Indigenous
Orobanchaceae	*Striga bilabiata*	(Thunb.) Kuntze	subsp.	*bilabiata*	LC	Indigenous
Orobanchaceae	*Alectra sessiliflora*	(Vahl) Kuntze			LC	Indigenous
Orobanchaceae	*Graderia subintegra*	Mast.			LC	Indigenous
Orobanchaceae	*Buchnera sp.*					
Orobanchaceae	*Buchnera simplex*	(Thunb.) Druce			LC	Indigenous
Orobanchaceae	*Buttonia sp.*					
Orobanchaceae	*Graderia linearifolia*	Codd			VU	Indigenous; Endemic
Oxalidaceae	*Oxalis semiloba*	Sond.	subsp.	*semiloba*	LC	Indigenous
Pallaviciniaceae	*Symphyogyna brasiliensis*	Nees & Mont.				Indigenous
Pedaliaceae	*Ceratotheca triloba*	(Bernh.) Hook.f.			LC	Indigenous
Peraceae	*Clutia monticola*	S.Moore	var.	*monticola*	LC	Indigenous
Phyllanthaceae	*Phyllanthus maderaspatensis*	L.			LC	Indigenous
Phyllanthaceae	*Phyllanthus glaucophyllus*	Sond.			LC	Indigenous
Phytolaccaceae	*Phytolacca octandra*	L.				Not indigenous; Naturalised; Invasive
Pittosporaceae	*Pittosporum viridiflorum*	Sims			LC	Indigenous
Plantaginaceae	*Plantago virginica*	L.				Not indigenous; Naturalised
Plantaginaceae	*Linaria vulgaris*	Mill.			NE	Not indigenous; Naturalised; Invasive
Poaceae	*Stiburus alopecuroides*	(Hack.) Stapf			LC	Indigenous
Poaceae	*Hyparrhenia collina*	(Pilg.) Stapf			LC	Indigenous
Poaceae	*Pentameris chippindalliae*	(H.P.Linder) Galley & H.P.Linder			LC	Indigenous
Poaceae	*Andropogon mannii*	Hook.f.			LC	Indigenous
Poaceae	*Elionurus muticus*	(Spreng.) Kunth			LC	Indigenous

Poaceae	*Panicum schinzii*	Hack.			LC	Indigenous
Poaceae	*Eragrostis sclerantha*	Nees	subsp.	*sclerantha*	LC	Indigenous
Poaceae	*Setaria sphacelata*	(Schumach.) Stapf & C.E.Hubb. ex M.B.Moss	var.	*torta*	LC	Indigenous
Poaceae	*Eragrostis planiculmis*	Nees			LC	Indigenous
Poaceae	*Eragrostis caesia*	Stapf			LC	Indigenous
Poaceae	*Melinis nerviglumis*	(Franch.) Zizka			LC	Indigenous
Poaceae	*Cenchrus sphacelatus*	(Nees) Morrone			LC	Indigenous
Poaceae	*Sporobolus stapfianus*	Gand.			LC	Indigenous
Poaceae	*Alloteropsis semialata*	(R.Br.) Hitchc.	subsp.	*eckloniana*	LC	Indigenous
Poaceae	*Andropogon schirensis*	Hochst. ex A.Rich.			LC	Indigenous
Poaceae	*Cymbopogon prolixus*	(Stapf) E.Phillips			LC	Indigenous
Poaceae	*Poa binata*	Nees			LC	Indigenous
Poaceae	*Festuca scabra*	Vahl			LC	Indigenous
Poaceae	*Aristida canescens*	Henrard	subsp.	*canescens*	LC	Indigenous
Poaceae	*Andropogon appendiculatus*	Nees			LC	Indigenous
Poaceae	*Agrostis eriantha*	Hack.	var.	*eriantha*	LC	Indigenous
Poaceae	*Festuca caprina*	Nees	var.	*macra*		Indigenous
Poaceae	*Sacciolepis typhura*	(Stapf) Stapf			LC	Indigenous
Poaceae	*Festuca costata*	Nees			LC	Indigenous
Poaceae	*Arundinella nepalensis*	Trin.			LC	Indigenous
Poaceae	*Panicum maximum*	Jacq.			LC	Indigenous
Poaceae	*Eulalia villosa*	(Thunb.) Nees			LC	Indigenous
Poaceae	*Eragrostis patentipilosa*	Hack.			LC	Indigenous
Poaceae	*Poa annua*	L.			NE	Not indigenous; Naturalised
Poaceae	*Melinis repens*	(Willd.) Zizka	subsp.	*repens*	LC	Indigenous
Poaceae	*Aristida aequiglumis*	Hack.			LC	Indigenous
Poaceae	*Harpochloa falx*	(L.f.) Kuntze			LC	Indigenous
Poaceae	*Heteropogon contortus*	(L.) Roem. & Schult.			LC	Indigenous
Poaceae	*Digitaria monodactyla*	(Nees) Stapf			LC	Indigenous
Poaceae	*Tristachya biseriata*	Stapf			LC	Indigenous; Endemic
Poaceae	*Eragrostis capensis*	(Thunb.) Trin.			LC	Indigenous
Poaceae	*Microchloa kunthii*	Desv.			LC	Indigenous
Poaceae	*Lolium multiflorum*	Lam.			NE	Not indigenous; Naturalised; Invasive
Poaceae	*Sporobolus centrifugus*	(Trin.) Nees			LC	Indigenous
Poaceae	*Aristida junciformis*	Trin. & Rupr.	subsp.	*junciformis*	LC	Indigenous
Poaceae	*Leersia hexandra*	Sw.			LC	Indigenous

Poaceae	*Dactylis glomerata*	L.			NE	Not indigenous; Naturalised; Invasive
Poaceae	*Setaria sphacelata*	(Schumach.) Stapf & C.E.Hubb. ex M.B.Moss	var.	*sphacelata*	LC	Indigenous
Poaceae	*Koeleria capensis*	(Steud.) Nees			LC	Indigenous
Poaceae	*Ctenium concinnum*	Nees			LC	Indigenous
Poaceae	*Styppeiochloa gynoglossa*	(Gooss.) De Winter			LC	Indigenous
Poaceae	*Agrostis lachnantha*	Nees	var.	*lachnantha*	LC	Indigenous
Poaceae	*Andropogon ravus*	J.G.Anderson			LC	Indigenous
Poaceae	*Festuca caprina*	Nees			LC	Indigenous
Poaceae	*Rendlia altera*	(Rendle) Chiov.			LC	Indigenous
Poaceae	*Urelytrum agropyroides*	(Hack.) Hack.			LC	Indigenous
Poaceae	*Eragrostis curvula*	(Schrad.) Nees			LC	Indigenous
Poaceae	*Pentameris natalensis*	(Stapf) Galley & H.P.Linder			LC	Indigenous
Poaceae	*Microchloa caffra*	Nees			LC	Indigenous
Poaceae	*Loudetia simplex*	(Nees) C.E.Hubb.			LC	Indigenous
Poaceae	*Eragrostis racemosa*	(Thunb.) Steud.			LC	Indigenous
Poaceae	*Merxmuellera macowanii*	(Stapf) Conert			LC	Indigenous
Poaceae	*Setaria nigrirostris*	(Nees) T.Durand & Schinz			LC	Indigenous
Poaceae	*Eragrostis gummiflua*	Nees			LC	Indigenous
Poaceae	*Hemarthria altissima*	(Poir.) Stapf & C.E.Hubb.			LC	Indigenous
Poaceae	*Schizachyrium sanguineum*	(Retz.) Alston			LC	Indigenous
Poaceae	*Andropogon lacunosus*	J.G.Anderson			LC	Indigenous
Poaceae	*Panicum natalense*	Hochst.			LC	Indigenous
Poaceae	*Stiburus conrathii*	Hack.			LC	Indigenous
Poaceae	*Trachypogon spicatus*	(L.f.) Kuntze			LC	Indigenous
Poaceae	*Diheteropogon filifolius*	(Nees) Clayton			LC	Indigenous
Poaceae	*Panicum ecklonii*	Nees			LC	Indigenous
Poaceae	*Bromus natalensis*	Stapf			LC	Indigenous
Polygalaceae	*Polygala houtboshiana*	Chodat			LC	Indigenous
Polygalaceae	*Polygala transvaalensis*	Chodat				Indigenous
Polygalaceae	*Polygala hottentotta*	C.Presl			LC	Indigenous
Polygonaceae	*Rumex dregeanus*	Meisn.	subsp.	*montanus*	LC	Indigenous
Polygonaceae	*Rumex acetosella*	L.	subsp.	*angiocarpus*		Not indigenous; Naturalised
Polygonaceae	*Persicaria meisneriana*	(Cham. & Schltdl.) M.Gomez			LC	Indigenous
Polygonaceae	*Rumex sagittatus*	Thunb.			LC	Indigenous

Polygonaceae	*Rumex crispus*	L.				Not indigenous; Naturalised; Invasive
Polytrichaceae	*Polytrichum commune*	Hedw.				Indigenous
Proteaceae	*Protea caffra*	Meisn.	subsp.	*caffra*	LC	Indigenous
Proteaceae	*Protea rubropilosa*	Beard			LC	Indigenous; Endemic
Proteaceae	*Protea gaguedi*	J.F.Gmel.			LC	Indigenous
Proteaceae	*Protea welwitschii*	Engl.			LC	Indigenous
Proteaceae	*Protea parvula*	Beard			NT	Indigenous
Proteaceae	*Protea roupelliae*	Meisn.	subsp.	*roupelliae*	LC	Indigenous
Pteridaceae	*Adiantum raddianum*	C.Presl				Not indigenous; Naturalised
Pteridaceae	*Cheilanthes hirta*	Sw.	var.	*hyaloglandulosa*	LC	Indigenous
Pteridaceae	*Cheilanthes multifida*	(Sw.) Sw.	subsp.	*lacerata*	LC	Indigenous
Ranunculaceae	*Anemone transvaalensis*	(Szyszyl.) Burtt Davy	var.	*transvaalensis*	LC	Indigenous
Rhamnaceae	*Ziziphus mucronata*	Willd.	subsp.	*mucronata*	LC	Indigenous
Rhamnaceae	*Rhamnus prinoides*	L'Her.			LC	Indigenous
Rhamnaceae	*Helinus integrifolius*	(Lam.) Kuntze			LC	Indigenous
Rosaceae	*Rubus ludwigii*	Eckl. & Zeyh.	subsp.	*ludwigii*	LC	Indigenous
Rosaceae	*Alchemilla cryptantha*	Steud. ex A.Rich.			LC	Indigenous
Rosaceae	*Alchemilla woodii*	Kuntze			LC	Indigenous
Rosaceae	*Alchemilla capensis*	Thunb.			LC	Indigenous; Endemic
Rubiaceae	*Vangueria pygmaea*	Schltr.			LC	Indigenous
Rubiaceae	*Oldenlandia herbacea*	(L.) Roxb.	var.	*herbacea*	LC	Indigenous
Rubiaceae	*Vangueria infausta*	Burch.	subsp.	*infausta*	LC	Indigenous
Rubiaceae	*Pentanisia prunelloides*	(Klotzsch ex Eckl. & Zeyh.) Walp.	subsp.	*latifolia*	LC	Indigenous
Rubiaceae	*Cephalanthus natalensis*	Oliv.			LC	Indigenous
Rubiaceae	*Pachystigma sp.*					
Rubiaceae	*Kohautia cynanchica*	DC.			LC	Indigenous
Rubiaceae	*Richardia scabra*	L.			NE	Not indigenous; Naturalised
Rubiaceae	*Psydrax obovata*	(Eckl. & Zeyh.) Bridson	subsp.	*obovata*	LC	Indigenous
Rubiaceae	*Pavetta schumanniana*	F.Hoffm. ex K.Schum.			LC	Indigenous
Rubiaceae	*Canthium suberosum*	Codd			LC	Indigenous
Ruscaceae	*Eriospermum porphyrium*	Archibald			LC	Indigenous
Ruscaceae	*Eriospermum ornithogaloides*	Baker			LC	Indigenous
Ruscaceae	*Eriospermum cooperi*	Baker	var.	*cooperi*	LC	Indigenous
Ruscaceae	*Eriospermum porphyrovalve*	Baker			LC	Indigenous
Ruscaceae	*Eriospermum abyssinicum*	Baker				Indigenous

Rutaceae	*Clausena anisata*	(Willd.) Hook.f. ex Benth.	var.	*anisata*	LC	Indigenous
Santalaceae	*Thesium sp.*					
Santalaceae	*Osyris lanceolata*	Hochst. & Steud.			LC	Indigenous
Santalaceae	*Thesium transvaalense*	Schltr.			LC	Indigenous; Endemic
Scrophulariaceae	*Buddleja auriculata*	Benth.			LC	Indigenous
Scrophulariaceae	*Jamesbrittenia aurantiaca*	(Burch.) Hilliard			LC	Indigenous
Scrophulariaceae	*Selago atherstonei*	Rolfe			LC	Indigenous; Endemic
Scrophulariaceae	*Hebenstretia angolensis*	Rolfe			LC	Indigenous
Scrophulariaceae	*Selago rehmannii*	Rolfe			LC	Indigenous; Endemic
Scrophulariaceae	*Manulea rhodantha*	Hilliard	subsp.	*aurantiaca*	LC	Indigenous; Endemic
Scrophulariaceae	*Selago galpinii*	Schltr.			LC	Indigenous
Scrophulariaceae	*Selago compacta*	Rolfe			LC	Indigenous
Scrophulariaceae	*Hebenstretia integrifolia*	L.			LC	Indigenous
Scrophulariaceae	*Tetraselago wilmsii*	(Rolfe) Hilliard & B.L.Burtt			LC	Indigenous; Endemic
Scrophulariaceae	*Verbascum thapsus*	L.				Not indigenous; Cultivated; Naturalised; Invasive
Scrophulariaceae	*Hebenstretia dura*	Choisy			LC	Indigenous
Scrophulariaceae	*Nemesia umbonata*	(Hiern) Hilliard & B.L.Burtt			LC	Indigenous
Scrophulariaceae	*Chaenostoma neglectum*	J.M.Wood & M.S.Evans			LC	Indigenous
Scrophulariaceae	*Melanospermum transvaalense*	(Hiern) Hilliard			LC	Indigenous; Endemic
Scrophulariaceae	*Zaluzianskya elongata*	Hilliard & B.L.Burtt			LC	Indigenous
Scrophulariaceae	*Jamesbrittenia macrantha*	(Codd) Hilliard			NT	Indigenous; Endemic
Scrophulariaceae	*Hebenstretia comosa*	Hochst.			LC	Indigenous
Scrophulariaceae	*Selago capitellata*	Schltr.			LC	Indigenous; Endemic
Scrophulariaceae	*Chaenostoma floribundum*	Benth.			LC	Indigenous
Scrophulariaceae	*Hebenstretia sp.*					
Scrophulariaceae	*Jamesbrittenia silenoides*	(Hilliard) Hilliard			LC	Indigenous; Endemic
Scrophulariaceae	*Tetraselago longituba*	(Rolfe) Hilliard & B.L.Burtt			LC	Indigenous
Scrophulariaceae	*Hebenstretia oatesii*	Rolfe	subsp.	*rhodesiana*	LC	Indigenous
Scrophulariaceae	*Phygelius aequalis*	Harv. ex Hiern			LC	Indigenous
Scrophulariaceae	*Selago lydenburgensis*	Rolfe			LC	Indigenous; Endemic
Scrophulariaceae	*Nemesia fruticans*	(Thunb.) Benth.			LC	Indigenous
Scrophulariaceae	*Teedia lucida*	(Sol.) Rudolphi			LC	Indigenous

Selaginellaceae	*Selaginella mittenii*	Baker	LC	Indigenous
Selaginellaceae	*Selaginella dregei*	(C.Presl) Hieron.	LC	Indigenous
Solanaceae	*Solanum lichtensteinii*	Willd.	LC	Indigenous
Solanaceae	*Solanum viarum*	Dunal		Not indigenous; Naturalised
Solanaceae	*Withania somnifera*	(L.) Dunal	LC	Indigenous
Solanaceae	*Solanum humile*	Lam.		Indigenous
Stilbaceae	*Halleria lucida*	L.	LC	Indigenous
Stilbaceae	*Bowkeria cymosa*	MacOwan	LC	Indigenous
Thelypteridaceae	*Amauropelta oppositiformis*	(C.Chr.) Holttum	LC	Indigenous
Thymelaeaceae	*Lasiosiphon capitatus*	(L.f.) Burtt Davy	LC	Indigenous
Thymelaeaceae	*Gnidia woodii*	C.H.Wright	LC	Indigenous
Thymelaeaceae	*Gnidia fastigiata*	Rendle	LC	Indigenous
Thymelaeaceae	*Gnidia variabilis*	(C.H.Wright) Engl.	VU	Indigenous; Endemic
Thymelaeaceae	*Lasiosiphon splendens*	(Meisn.) Endl.	LC	Indigenous
Thymelaeaceae	*Lasiosiphon caffer*	Meisn.	LC	Indigenous
Thymelaeaceae	*Lasiosiphon kraussianus*	(Meisn.) Meisn.		Indigenous
Velloziaceae	*Xerophyta humilis*	(Baker) T.Durand & Schinz	LC	Indigenous
Verbenaceae	*Verbena bonariensis*	L.		Not indigenous; Naturalised; Invasive
Verbenaceae	*Verbena rigida*	Spreng.		Not indigenous; Naturalised; Invasive
Vitaceae	*Cyphostemma spinosopilosum*	(Gilg & M.Brandt) Desc.	LC	Indigenous
Vitaceae	*Rhoicissus magalismontanus*	Oberm.		Indigenous; Endemic
Vitaceae	*Cyphostemma segmentatum*	(C.A.Sm.) J.J.M.van der Merwe	LC	Indigenous
Vitaceae	*Rhoicissus sekhukhuniensis*	Retief, S.J.Siebert & A.E.van Wyk	LC	Indigenous; Endemic

7.3 Appendix C: Expected Amphibian Species

Table 7-3 Expected amphibian species to occur in the area

Family	Species	Common Name	Conservation Status	
			Regional	Global
Arthroleptidae	*Leptopelis mossambicus*	Brownbacked Tree Frog	LC	LC
Brevicepitidae	*Breviceps adspersus*	Bushveld Rain Frog	LC	LC
Brevicepitidae	*Breviceps mossambicus*	Mozambique Rain Frog	LC	LC
Brevicepitidae	*Breviceps verrucosus*	Plaintive Rain Frog	LC	LC
Bufonidae	*Schismaderma carens*	Red Toad	LC	LC
Bufonidae	*Sclerophrys capensis*	Raucous Toad	LC	LC
Bufonidae	*Sclerophrys garmani*	Olive Toad	LC	LC
Bufonidae	*Sclerophrys gutturalis*	Guttural Toad	LC	LC
Bufonidae	*Sclerophrys pusilla*	Flatbacked Toad	LC	LC
Heleophrynidae	*Hadromophryne natalensis*	Natal Cascade Frog	LC	LC
Hemisotidae	*Hemisus marmoratus*	Mottled Shovel-nosed Frog	LC	LC
Hyperoliidae	*Hyperolius marmoratus*	Painted Reed Frog	LC	LC
Hyperoliidae	*Hyperolius marmoratus taeniatus*	Painted Reed Frog (subsp. taeniatus)	LC	LC
Hyperoliidae	*Hyperolius pusillus*	Water Lily Frog	LC	LC
Hyperoliidae	*Hyperolius semidiscus*	Yellowstriped Reed Frog	LC	LC
Hyperoliidae	*Hyperolius tuberilinguis*	Tinker Reed Frog	LC	LC
Hyperoliidae	*Kassina senegalensis*	Bubbling Kassina	LC	LC
Hyperoliidae	*Semnodactylus wealii*	Rattling Frog	LC	LC
Microhylidae	*Phrynomantis bifasciatus*	Banded Rubber Frog	LC	LC
Phrynobatrachidae	*Phrynobatrachus mababiensis*	Dwarf Puddle Frog	LC	LC
Phrynobatrachidae	*Phrynobatrachus natalensis*	Snoring Puddle Frog	LC	LC
Pipidae	*Xenopus laevis*	Common Platanna	LC	LC
Ptychadenidae	*Ptychadena anchietae*	Plain Grass Frog	LC	LC
Ptychadenidae	*Ptychadena oxyrhynchus*	Sharpnosed Grass Frog	LC	LC
Ptychadenidae	*Ptychadena porosissima*	Striped Grass Frog	LC	LC
Pyxicephalidae	*Amietia delalandii*	Delalande's River Frog	LC	Unlisted
Pyxicephalidae	*Amietia fuscigula*	Cape River Frog	LC	Unlisted
Pyxicephalidae	*Cacosternum boettgeri*	Common Caco	LC	LC
Pyxicephalidae	*Cacosternum nanum*	Bronze Caco	LC	LC
Pyxicephalidae	*Cacosternum parvum*	Mountain Caco	LC	LC
Pyxicephalidae	*Strongylopus fasciatus*	Striped Stream Frog	LC	LC
Pyxicephalidae	*Strongylopus grayii*	Clicking Stream Frog	LC	LC
Pyxicephalidae	*Tomopterna cryptotis*	Tremelo Sand Frog	LC	LC
Pyxicephalidae	*Tomopterna marmorata*	Russetbacked Sand Frog	LC	LC
Pyxicephalidae	*Tomopterna natalensis*	Natal Sand Frog	LC	LC

Pyxicephalidae	*Tomopterna tandyi*	Tandy's Sand Frog	LC	LC
Rhacophoridae	*Chiromantis xerampelina*	Southern Foam Nest Frog	LC	LC

7.4 Appendix D: Expected Reptile Species

Table 7-4 Expected reptile species to occur in the area

Family	Species	Common Name	Conservation Status	
			Regional	Global
Agamidae	*Acanthocercus atricollis*	Southern Tree Agama	LC	LC
Agamidae	*Agama aculeata distanti*	Distant's Ground Agama	LC	LC
Agamidae	*Agama atra*	Southern Rock Agama	LC	LC
Amphisbaenidae	*Zygaspis vandami*	Van Dam's Dwarf Worm Lizard	LC	Unlisted
Chamaeleonidae	*Bradypodion transvaalense*	Wolkberg Dwarf Chameleon	LC	LC
Chamaeleonidae	*Chamaeleo dilepis*	Common Flap-neck Chameleon	LC	LC
Colubridae	*Crotaphopeltis hotamboeia*	Red-lipped Snake	LC	Unlisted
Colubridae	*Dasypeltis inornata*	Southern Brown Egg-eater	LC	LC
Colubridae	*Dasypeltis scabra*	Rhombic Egg-eater	LC	LC
Colubridae	*Philothamnus hoplogaster*	South Eastern Green Snake	LC	Unlisted
Colubridae	*Philothamnus occidentalis*	Western Natal Green Snake	Unlisted	Unlisted
Colubridae	*Philothamnus semivariegatus*	Spotted Bush Snake	LC	Unlisted
Colubridae	*Telescopus semiannulatus semiannulatus*	Eastern Tiger Snake	LC	Unlisted
Colubridae	*Thelotornis capensis capensis*	Southern Twig Snake	LC	LC
Cordylidae	*Chamaesaura aenea*	Coppery Grass Lizard	NT	LC
Cordylidae	*Chamaesaura anguina anguina*	Cape Grass Lizard	LC	Unlisted
Cordylidae	*Chamaesaura macrolepis*	Large-scaled Grass Lizard	NT	LC
Cordylidae	*Cordylus jonesii*	Jones' Girdled Lizard	LC	Unlisted
Cordylidae	*Cordylus vittifer*	Common Girdled Lizard	LC	LC
Cordylidae	*Platysaurus intermedius wilhelmi*	Wilhelm's Flat Lizard	LC	LC
Cordylidae	*Platysaurus orientalis orientalis*	Sekhukhune Flat Lizard	LC	LC
Cordylidae	*Pseudocordylus melanotus melanotus*	Common Crag Lizard	LC	LC
Cordylidae	*Smaug barbertonensis*	Baberton Girdled Lizard	Unlisted	LC
Crocodylidae	*Crocodylus niloticus*	Nile Crocodile	VU	LC
Elapidae	*Dendroaspis polylepis*	Black Mamba	LC	LC
Elapidae	*Elapsoidea boulengeri*	Boulenger's Garter Snake	LC	LC
Elapidae	*Hemachatus haemachatus*	Rinkhals	LC	LC
Elapidae	*Naja annulifera*	Snouted Cobra	LC	Unlisted
Elapidae	*Naja mossambica*	Mozambique Spitting Cobra	LC	Unlisted
Gekkonidae	*Afroedura haackei*	Haacke's Flat Gecko	LC	LC
Gekkonidae	*Chondrodactylus turneri*	Turner's Gecko	LC	Unlisted
Gekkonidae	*Hemidactylus mabouia*	Common Tropical House Gecko	LC	Unlisted
Gekkonidae	*Homopholis wahlbergii*	Wahlberg's Velvet Gecko	LC	LC
Gekkonidae	*Lygodactylus capensis*	Common Dwarf Gecko	LC	Unlisted
Gekkonidae	*Lygodactylus nigropunctatus*	Black-spotted Dwarf Gecko	LC	LC

Gekkonidae	*Lygodactylus ocellatus*	Spotted Dwarf Gecko	LC	LC
Gekkonidae	*Pachydactylus affinis*	Transvaal Gecko	LC	LC
Gekkonidae	*Pachydactylus capensis*	Cape Gecko	LC	Unlisted
Gekkonidae	*Pachydactylus vansoni*	Van Son's Gecko	LC	LC
Gerrhosauridae	*Gerrhosaurus flavigularis*	Yellow-throated Plated Lizard	LC	Unlisted
Gerrhosauridae	*Gerrhosaurus intermedius*	Eastern Black-lined Plated Lizard	LC	Unlisted
Gerrhosauridae	*Matobosaurus validus*	Common Giant Plated Lizard	LC	Unlisted
Gerrhosauridae	*Tetradactylus breyeri*	Breyer's Long-tailed Seps	VU	NT
Lacertidae	*Meroles squamulosus*	Common Rough-scaled Lizard	LC	Unlisted
Lacertidae	*Nucras holubi*	Holub's Sandveld Lizard	LC	Unlisted
Lacertidae	*Nucras lalandii*	Delalande's Sandveld Lizard	LC	LC
Lacertidae	*Nucras ornata*	Ornate Sandveld Lizard	LC	Unlisted
Lacertidae	*Pedioplanis lineoocellata lineoocellata*	Spotted Sand Lizard	LC	Unlisted
Lamprophiidae	*Amblyodipsas concolor*	Natal Purple-glossed Snake	LC	LC
Lamprophiidae	*Amblyodipsas polylepis polylepis*	Common Purple-glossed Snake	Unlisted	Unlisted
Lamprophiidae	*Amplorhinus multimaculatus*	Many-spotted Snake	LC	LC
Lamprophiidae	*Aparallactus capensis*	Black-headed Centipede-eater	LC	LC
Lamprophiidae	*Atractaspis bibronii*	Bibron's Stiletto Snake	LC	Unlisted
Lamprophiidae	*Boaedon capensis*	Brown House Snake	LC	LC
Lamprophiidae	*Duberria lutrix lutrix*	South African Slug-eater	LC	LC
Lamprophiidae	*Gracililima nyassae*	Black File Snake	LC	LC
Lamprophiidae	*Homoroselaps dorsalis*	Striped Harlequin Snake	NT	LC
Lamprophiidae	*Homoroselaps lacteus*	Spotted Harlequin Snake	LC	LC
Lamprophiidae	*Inyoka swazicus*	Swazi Rock Snake	LC	LC
Lamprophiidae	*Lamprophis aurora*	Aurora House Snake	LC	LC
Lamprophiidae	*Lamprophis guttatus*	Spotted House Snake	LC	LC
Lamprophiidae	*Limaformosa capensis*	Common File Snake	LC	Unlisted
Lamprophiidae	*Lycodonomorphus inornatus*	Olive House Snake	LC	LC
Lamprophiidae	*Lycodonomorphus laevissimus*	Dusky-bellied Water Snake	LC	LC
Lamprophiidae	*Lycodonomorphus rufulus*	Brown Water Snake	LC	Unlisted
Lamprophiidae	*Lycophidion capense capense*	Cape Wolf Snake	LC	Unlisted
Lamprophiidae	*Lycophidion variegatum*	Variegated Wolf Snake	LC	Unlisted
Lamprophiidae	*Prosymna stuhlmannii*	East African Shovel-snout	LC	LC
Lamprophiidae	*Psammophis brevirostris*	Short-snouted Grass Snake	LC	Unlisted
Lamprophiidae	*Psammophis crucifer*	Cross-marked Grass Snake	LC	LC
Lamprophiidae	*Psammophis mossambicus*	Olive Grass Snake	LC	Unlisted
Lamprophiidae	*Psammophylax rhombeatus*	Spotted Grass Snake	LC	Unlisted
Lamprophiidae	*Psammophylax tritaeniatus*	Striped Grass Snake	LC	LC
Lamprophiidae	*Pseudaspis cana*	Mole Snake	LC	Unlisted

Leptotyphlopidae	*Leptotyphlops incognitus*	Incognito Thread Snake	LC	Unlisted
Leptotyphlopidae	*Leptotyphlops jacobseni*	Jacobsen's Thread Snake	LC	LC
Leptotyphlopidae	*Myriopholis longicauda*	Long-tailed Thread Snake	LC	Unlisted
Pelomedusidae	*Pelomedusa galeata*	South African Marsh Terrapin	Not evaluated	Unlisted
Pythonidae	*Python natalensis*	Southern African Python	LC	Unlisted
Scincidae	*Acontias gracilicauda*	Thin-tailed Legless Skink	LC	LC
Scincidae	*Acontias plumbeus*	Giant Legless Skink	LC	LC
Scincidae	*Mochlus sundevallii*	Sundevall's Writhing Skink	LC	LC
Scincidae	*Panaspis wahlbergii*	Wahlberg's Snake-eyed Skink	LC	Unlisted
Scincidae	*Scelotes mirus*	Montane Dwarf Burrowing Skink	LC	LC
Scincidae	*Scelotes mossambicus*	Mozambique Dwarf Burrowing Skink	LC	LC
Scincidae	*Trachylepis capensis*	Cape Skink	LC	Unlisted
Scincidae	*Trachylepis margaritifera*	Rainbow Skink	LC	LC
Scincidae	*Trachylepis punctatissima*	Speckled Rock Skink	LC	LC
Scincidae	*Trachylepis striata*	Striped Skink	LC	Unlisted
Scincidae	*Trachylepis varia sensu lato*	Common Variable Skink Complex	LC	LC
Testudinidae	*Kinixys spekii*	Speke's Hinged Tortoise	LC	Unlisted
Testudinidae	*Stigmochelys pardalis*	Leopard Tortoise	LC	LC
Typhlopidae	*Afrotyphlops bibronii*	Bibron's Blind Snake	LC	LC
Typhlopidae	*Afrotyphlops schlegelii*	Schlegel's Beaked Blind Snake	LC	Unlisted
Typhlopidae	*Rhinotyphlops lalandei*	Delalande's Beaked Blind Snake	LC	Unlisted
Varanidae	*Varanus albigularis albigularis*	Rock Monitor	LC	Unlisted
Varanidae	*Varanus niloticus*	Water Monitor	LC	Unlisted
Viperidae	*Bitis arietans arietans*	Puff Adder	LC	Unlisted
Viperidae	*Causus defilippii*	Snouted Night Adder	LC	Unlisted
Viperidae	*Causus rhombeatus*	Rhombic Night Adder	LC	LC

7.5 Appendix E: Expected Mammal Species

Table 7-5 Expected mammal species to occur in the area

Family	Species	Common Name	Conservation Status	
			Regional	Global
Bathyergidae	*Cryptomys hottentotus*	Southern African Mole-rat	LC	LC
Bathyergidae	*Georychus capensis*	Cape Mole-rat	LC	LC
Bovidae	*Aepyceros melampus*	Impala	LC	LC
Bovidae	*Alcelaphus buselaphus caama*	Red Hartebeest	LC	LC
Bovidae	*Antidorcas marsupialis*	Springbok	LC	LC
Bovidae	*Cephalophus natalensis*	Red Duiker	NT	LC
Bovidae	*Connochaetes gnou*	Black Wildebeest	LC	LC
Bovidae	*Connochaetes taurinus*	Blue Wildebeest	LC	LC
Bovidae	*Damaliscus pygargus phillipsi*	Blesbok	LC	LC
Bovidae	*Hippotragus niger*	Sable Antelope	VU	LC
Bovidae	*Kobus ellipsiprymnus*	Waterbuck	LC	LC
Bovidae	*Oreotragus oreotragus*	Klipspringer	LC	LC
Bovidae	*Oryx gazella*	Gemsbok	LC	LC
Bovidae	*Ourebia ourebi*	Oribi	EN	LC
Bovidae	*Pelea capreolus*	Vaal Rhebok	NT	NT
Bovidae	*Raphicerus campestris*	Steenbok	LC	LC
Bovidae	*Redunca arundinum*	Southern Reedbuck	LC	LC
Bovidae	*Redunca fulvorufula*	Mountain Reedbuck	EN	EN
Bovidae	*Sylvicapra grimmia*	Common Duiker	LC	LC
Bovidae	*Taurotragus oryx*	Common Eland	LC	LC
Bovidae	*Tragelaphus angasii*	Nyala	LC	LC
Bovidae	*Tragelaphus scriptus*	Bushbuck	LC	LC
Bovidae	*Tragelaphus strepsiceros*	Greater Kudu	LC	LC
Canidae	*Canis adustus*	Side-striped Jackal	LC	LC
Canidae	*Canis mesomelas*	Black-backed Jackal	LC	LC
Canidae	*Lycaon pictus*	African wild dog	EN	EN
Canidae	*Vulpes chama*	Cape Fox	LC	LC
Cercopithecidae	*Cercopithecus albogularis*	Samango Monkey	NT	NT
Cercopithecidae	*Cercopithecus albogularis erythrarchus*	Samango Monkey (subsp. erythrarchus)	NT	NT
Cercopithecidae	*Chlorocebus pygerythrus*	Vervet Monkey	LC	LC
Cercopithecidae	*Papio ursinus*	Chacma Baboon	LC	LC
Chrysochloridae	*Amblysomus robustus*	Robust Golden Mole	VU	VU
Chrysochloridae	*Chrysospalax villosus*	Rough-haired Golden Mole	VU	Unlisted

Emballonuridae	*Taphozous (Taphozous) mauritianus*	Mauritian Tomb Bat	VU	DD
Equidae	*Equus quagga*	Plains Zebra	LC	NT
Erinaceidae	*Atelerix frontalis*	Southern African Hedgehog	NT	LC
Felidae	*Acinonyx jubatus*	Cheetah	VU	VU
Felidae	*Caracal caracal*	Caracal	LC	LC
Felidae	*Felis silvestris*	Wildcat	LC	LC
Felidae	*Leptailurus serval*	Serval	NT	LC
Felidae	*Panthera leo*	Lion	LC	VU
Felidae	*Panthera pardus*	Leopard	VU	VU
Galagidae	*Otolemur crassicaudatus*	Brown Greater Galago	LC	LC
Giraffidae	*Giraffa giraffa giraffa*	South African Giraffe	LC	VU
Gliridae	*Graphiurus (Graphiurus) murinus*	Forest African Dormouse	LC	LC
Herpestidae	*Atilax paludinosus*	Marsh Mongoose	LC	LC
Herpestidae	*Cynictis penicillata*	Yellow Mongoose	LC	LC
Herpestidae	*Helogale parvula*	Common Dwarf Mongoose	LC	LC
Herpestidae	*Herpestes sanguineus*	Slender Mongoose	LC	LC
Herpestidae	*Ichneumia albicauda*	White-tailed Mongoose	LC	LC
Herpestidae	*Mungos mungo*	Banded Mongoose	LC	LC
Herpestidae	*Rhynchogale melleri*	Meller's Mongoose	LC	LC
Herpestidae	*Suricata suricatta*	Meerkat	LC	LC
Hippopotamidae	*Hippopotamus amphibius*	Common Hippopotamus	LC	VU
Hipposideridae	*Cloeotis percivali*	Percival's Short-eared Trident Bat	EN	LC
Hipposideridae	*Hipposideros caffer*	Sundevall's Leaf-nosed Bat	LC	LC
Hyaenidae	*Crocuta crocuta*	Spotted Hyaena	NT	LC
Hyaenidae	*Hyaena brunnea*	Brown Hyena	NT	NT
Hyaenidae	*Proteles cristata*	Aardwolf	LC	LC
Hystricidae	*Hystrix africaeaustralis*	Cape Porcupine	LC	LC
Leporidae	*Lepus capensis*	Cape Hare	LC	LC
Leporidae	*Lepus saxatilis*	Scrub Hare	LC	LC
Leporidae	*Pronolagus rupestris*	Smith's Red Rock Hare	LC	LC
Macroscelididae	*Elephantulus myurus*	Eastern Rock Elephant Shrew	LC	LC
Molossidae	*Chaerephon pumilus*	Little Free-tailed Bat	LC	LC
Molossidae	*Mops (Mops) condylurus*	Angolan Free-tailed Bat	LC	Unlisted
Molossidae	*Mops (Mops) midas*	Midas' Free-tailed Bat	LC	Unlisted
Molossidae	*Tadarida aegyptiaca*	Egyptian Free-tailed Bat	LC	LC
Muridae	*Aethomys ineptus*	Tete Veld Aethomys	LC	LC
Muridae	*Aethomys namaquensis*	Namaqua Rock Mouse	LC	LC
Muridae	*Dasymys incomtus*	African Marsh Rat	NT	LC

Muridae	*Gerbilliscus brantsii*	Highveld Gerbil	LC	LC
Muridae	*Gerbilliscus leucogaster*	Bushveld Gerbil	LC	LC
Muridae	*Grammomys cometes*	Mozambique Grammomys	LC	LC
Muridae	*Grammomys dolichurus*	Common Grammomys	LC	LC
Muridae	*Lemniscomys rosalia*	Single-Striped Lemniscomys	LC	LC
Muridae	*Mastomys coucha*	Southern African Mastomys	LC	LC
Muridae	*Mastomys natalensis*	Natal Mastomys	LC	LC
Muridae	*Mus (Nannomys) minutoides*	Southern African Pygmy Mouse	LC	LC
Muridae	*Otomys angoniensis*	Angoni Vlei Rat	LC	LC
Muridae	*Otomys auratus*	Southern African Vlei Rat (Grassland type)	NT	NT
Muridae	*Otomys laminatus*	KwaZulu Vlei Rat	NT	NT
Muridae	*Rattus rattus*	Roof Rat	Exotic (Not listed)	LC
Muridae	*Rhabdomys bechuanae*	Striped Mouse	LC	Unlisted
Muridae	*Rhabdomys pumilio*	Xeric Four-striped Grass Rat	LC	LC
Muridae	*Thallomys paedulcus*	Acacia Thallomys	LC	LC
Mustelidae	*Aonyx capensis*	African Clawless Otter	NT	NT
Mustelidae	*Hydrictis maculicollis*	Spotted-necked Otter	VU	NT
Mustelidae	*Ictonyx striatus*	Striped Polecat	LC	LC
Mustelidae	*Mellivora capensis*	Honey Badger	LC	LC
Mustelidae	*Poecilogale albinucha*	African Striped Weasel	NT	LC
Nesomyidae	*Dendromus melanotis*	Gray African Climbing Mouse	LC	LC
Nesomyidae	*Dendromus mesomelas*	Brants's African Climbing Mouse	LC	LC
Nesomyidae	*Dendromus mystacalis*	Chestnut African Climbing Mouse	LC	LC
Nesomyidae	*Saccostomus campestris*	Southern African Pouched Mouse	LC	LC
Nycteridae	*Nycteris thebaica*	Egyptian Slit-faced Bat	LC	LC
Orycteropodidae	*Orycteropus afer*	Aardvark	LC	LC
Pedetidae	*Pedetes capensis*	South African Spring Hare	LC	LC
Procaviidae	*Procavia capensis*	Cape Rock Hyrax	LC	LC
Pteropodidae	*Epomophorus crypturus*	Epomophorus crypturus	LC	LC
Pteropodidae	*Epomophorus wahlbergi*	Wahlberg's Epauletted Fruit Bat	LC	LC
Pteropodidae	*Rousettus (Rousettus) aegyptiacus*	Egyptian Rousette	LC	LC
Rhinolophidae	*Rhinolophus blasii*	Blasius's Horseshoe Bat	NT	LC
Rhinolophidae	*Rhinolophus clivosus*	Geoffroy's Horseshoe Bat	LC	LC
Rhinolophidae	*Rhinolophus cohenae*	Cohen's Horseshoe Bat	VU	VU
Rhinolophidae	*Rhinolophus darlingi*	Darling's Horseshoe Bat	LC	LC
Rhinolophidae	*Rhinolophus hildebrandtii*	Hildebrandt's Horseshoe Bat	LC	LC
Rhinolophidae	*Rhinolophus simulator*	Bushveld Horseshoe Bat	LC	LC
Rhinolophidae	*Rhinolophus swinnyi*	Swinny's Horseshoe Bat	VU	LC
Soricidae	*Crocidura cyanea*	Reddish-gray Musk Shrew	LC	LC

Soricidae	*Crocidura flavescens*	Greater Red Musk Shrew	LC	LC
Soricidae	*Crocidura hirta*	Lesser Red Musk Shrew	LC	LC
Soricidae	*Crocidura maquassiensis*	Makwassie Musk Shrew	VU	LC
Soricidae	*Crocidura mariquensis*	Swamp Musk Shrew	NT	LC
Soricidae	*Crocidura silacea*	Lesser Gray-brown Musk Shrew	LC	LC
Soricidae	*Myosorex cafer*	Dark-footed Mouse Shrew	VU	LC
Soricidae	*Myosorex varius*	Forest Shrew	LC	LC
Soricidae	*Suncus infinitesimus*	Least Dwarf Shrew	LC	LC
Soricidae	*Suncus varilla*	Lesser Dwarf Shrew	LC	LC
Suidae	*Phacochoerus africanus*	Common Warthog	LC	LC
Suidae	*Potamochoerus larvatus*	Bush-pig	LC	LC
Suidae	*Potamochoerus larvatus koiropotamus*	Bush-pig (subspecies koiropotamus)	LC	LC
Thryonomyidae	*Thryonomys swinderianus*	Greater Cane Rat	LC	LC
Vespertilionidae	*Eptesicus (Eptesicus) hottentotus*	Long-tailed Serotine	LC	LC
Vespertilionidae	*Kerivoula lanosa*	Lesser Woolly Bat	LC	LC
Vespertilionidae	*Miniopterus fraterculus*	Lesser Long-fingered Bat	LC	Unlisted
Vespertilionidae	*Miniopterus natalensis*	Natal Long-fingered Bat	LC	Unlisted
Vespertilionidae	*Miniopterus schreibersii*	Schreibers's Long-fingered Bat	LC	Unlisted
Vespertilionidae	*Myotis tricolor*	Temminck's Myotis	LC	LC
Vespertilionidae	*Myotis welwitschii*	Welwitsch's Myotis	LC	LC
Vespertilionidae	*Neoromicia capensis*	Cape Serotine	LC	LC
Vespertilionidae	*Neoromicia nana*	Banana Pipistrelle	LC	LC
Vespertilionidae	*Scotophilus dinganii*	Yellow-bellied House Bat	LC	LC
Viveridae	*Genetta maculata*	Common Large-spotted Genet	LC	LC
Viverridae	*Civettictis civetta*	African Civet	LC	LC
Viverridae	*Genetta genetta*	Common Genet	LC	LC
Viverridae	*Genetta maculata*	Rusty-spotted Genet (Common Large-spotted Genet)	LC	LC

7.6 Appendix F: Terrestrial Site Ecological Importance

The different habitat types within the study area were delineated and identified based on observations during the field assessment, and available satellite imagery. These habitat types were assigned Ecological Importance (EI) categories based on their ecological integrity, conservation value, the presence of species of conservation concern and their ecosystem processes.

Site Ecological Importance (SEI) is a function of the Biodiversity Importance (BI) of the receptor (e.g., SCC, the vegetation/fauna community or habitat type present on the site) and Receptor Resilience (RR) (its resilience to impacts) as follows.

BI is a function of Conservation Importance (CI) and the Functional Integrity (FI) of the receptor as follows. The criteria for the CI and FI ratings are provided in Table 7-6 and Table 7-7, respectively.

Table 7-6 Summary of Conservation Importance (CI) criteria

Conservation Importance	Fulfilling Criteria
Very High	Confirmed or highly likely occurrence of Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Extremely Rare or CR species that have a global extent of occurrence (EOO) of < 10 km^2. Any area of natural habitat of a CR ecosystem type or large area (> 0.1% of the total ecosystem type extent) of natural habitat of an EN ecosystem type. Globally significant populations of congregatory species (> 10% of global population).
High	Confirmed or highly likely occurrence of CR, EN, VU species that have a global EOO of > 10 km^2. IUCN threatened species (CR, EN, VU) must be listed under any criterion other than A. If listed as threatened only under Criterion A, include if there are less than 10 locations or < 10 000 mature individuals remaining. Small area (> 0.01% but < 0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type or large area (> 0.1%) of natural habitat of VU ecosystem type. Presence of Rare species. Globally significant populations of congregatory species (> 1% but < 10% of global population).
Medium	Confirmed or highly likely occurrence of populations of Near Threatened (NT) species, threatened species (CR, EN, VU) listed under Criterion A only and which have more than 10 locations or more than 10 000 mature individuals. Any area of natural habitat of threatened ecosystem type with status of VU. Presence of range-restricted species. > 50% of receptor contains natural habitat with potential to support SCC.
Low	No confirmed or highly likely populations of SCC. No confirmed or highly likely populations of range-restricted species. < 50% of receptor contains natural habitat with limited potential to support SCC.
Very low	No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.

Table 7-7 Summary of Functional Integrity (FI) criteria

Functional Integrity	Fulfilling Criteria
Very High	Very large (> 100 ha) intact area for any conservation status of ecosystem type or > 5 ha for CR ecosystem types. High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches. No or minimal current negative ecological impacts, with no signs of major past disturbance.
High	Large (> 20 ha but < 100 ha) intact area for any conservation status of ecosystem type or > 10 ha for EN ecosystem types. Good habitat connectivity, with potentially functional ecological corridors and a regularly used road network between intact habitat patches.

	Only minor current negative ecological impacts, with no signs of major past disturbance and good rehabilitation potential.
Medium	Medium (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type or > 20 ha for VU ecosystem types. Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches. Mostly minor current negative ecological impacts, with some major impacts and a few signs of minor past disturbance. Moderate rehabilitation potential.
Low	Small (> 1 ha but < 5 ha) area. Almost no habitat connectivity but migrations still possible across some modified or degraded natural habitat and a very busy used road network surrounds the area. Low rehabilitation potential. Several minor and major current negative ecological impacts.
Very low	Very small (< 1 ha) area. No habitat connectivity except for flying species or flora with wind-dispersed seeds. Several major current negative ecological impacts.

BI can be derived from a simple matrix of CI and FI as provided in Table 7-8.

Table 7-8 Matrix used to derive Biodiversity Importance (BI) from Functional Integrity (FI) and Conservation Importance (CI)

Biodiversity Importance (BI)		Conservation Importance (CI)				
		Very high	High	Medium	Low	Very low
Functional Integrity (FI)	**Very high**	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

The fulfilling criteria to evaluate Receptor Resilience (RR) are based on the estimated recovery time required to restore an appreciable portion of functionality to the receptor, as summarised in Table 7-9.

Table 7-9 Summary of Receptor Resilience criteria

Resilience	Fulfilling Criteria
Very High	Habitat that can recover rapidly (~ less than 5 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
High	Habitat that can recover relatively quickly (~ 5–10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
Medium	Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
Very low	Habitat that is unable to recover from major impacts, or species that are unlikely to: (i) remain at a site even when a disturbance or impact is occurring, or (ii) return to a site once the disturbance or impact has been removed.

Subsequent to the determination of the BI and RR, the SEI can be ascertained using the matrix as provided in Table 7-10.

Table 7-10 Matrix used to derive Site Ecological Importance (SEI) from Receptor Resilience (RR) and Biodiversity Importance (BI)

Site Ecological Importance (SEI)		Biodiversity Importance (BI)				
		Very high	High	Medium	Low	Very low
Receptor Resilience (RR)	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	Very high	High	Medium	Very low
	Medium	Very high	High	Medium	Low	Very low
	High	High	Medium	Low	Very low	Very low
	Very High	Medium	Low	Very low	Very low	Very low

Interpretation of the SEI in the context of the proposed project is provided in Table 7-11.

Table 7-11 Guidelines for interpreting Site Ecological Importance (SEI) in the context of the proposed development activities

Site Ecological Importance (SEI)	Interpretation in relation to proposed development activities
Very High	Avoidance mitigation – no destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e., last remaining populations of species, last remaining good condition patches of ecosystems/unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to limit the amount of habitat impacted, limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

The SEI evaluated for each taxon can be combined into a single multi-taxon evaluation of SEI for the assessment area. Either a combination of the maximum SEI for each receptor should be applied, or the SEI may be evaluated only once per receptor but for all necessary taxa simultaneously. For the latter, justification of the SEI for each receptor is based on the criteria that conforms to the highest CI and FI, and the lowest RR across all taxa.

7.7 Appendix G: Impact Rating

7.7.1 Methodology for Assessing Impacts

The impacts of the proposed project will be assessed and rated according to the methodology described below and which was developed to align with the requirements of Appendix 3 of the Environmental Impact Assessment Regulations, 2014. The assessment process will follow a structured approach comprising four key activities:

- Identification and assessment of potential impacts likely to result from the project activities.
- Prediction of the nature, magnitude, extent, and duration of these impacts, with specific focus on those that may be significant.
- Identification of appropriate mitigation measures to reduce, avoid, or manage the severity or significance of the potential impacts.
- Evaluation of residual impacts to determine the significance of the impact after implementation of mitigation measures.

The assessment of significance was guided by a set of criteria, including:

- Cumulative impacts in the broader environmental and social context.
- Nature of the impact, i.e., whether it is positive, negative, direct, or indirect.
- Extent of the impact, ranging from localised to regional or national scale.
- Probability of occurrence of the impact.
- Reversibility of the impact, i.e., whether it can be restored to pre-impact conditions.
- Irreplaceability of affected resources, considering whether resources lost can be substituted or recovered.
- Potential for mitigation, i.e., the extent to which the impact can be avoided, minimised, or offset.

The evaluation of significance followed a consequence–probability approach:

Consequence = (Duration + Extent + Irreplaceability of resource) × Severity

The overall significance of an impact was then determined using the formula:

Significance = Consequence × Probability

A summary of the criteria used to assess the significance of impacts is provided in Table 7-12, with detailed explanations presented in Table 7-13.

Table 7-12 Criteria and Rating Scales to be used in the Assessment of the Potential Impacts

Criteria	Rating Scales	Notes
Nature	Positive (+)	An evaluation of the effect of the impact related to the proposed development.
	Negative (-)	
Duration	Temporary (1)	The duration of the activity associated with the impact will last 0 - 6 months.
	Short-term (2)	The duration of the activity associated with the impact will last 6-18 months.

	Medium-term (3)	The duration of the activity associated with the impact will last 18 months - 5 years.
	Long term (4)	The duration of the activity associated with the impact will last more than 5 years.
Extent	Footprint (1)	The impact only affects the area in which the proposed activity will occur.
	Site (2)	The impact will affect only the development area.
	Local (3)	The impact affects the development area and adjacent properties.
	Regional (4)	The effect of the impact extends beyond municipal boundaries.
	National (5)	The effect of the impact extends beyond more than 2 regional/ provincial boundaries.
	International (6)	The effect of the impact extends beyond country borders.
Severity	Low (1)	Where the impact affects the environment in such a way that natural, cultural, and social functions and processes are minimally affected.
	Moderate (2)	Where the affected environment is altered but natural, cultural, and social functions and processes continue albeit, in a modified way, and valued, important, sensitive, or vulnerable systems or communities are negatively affected.
	High (3)	Where natural, cultural, or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease, and valued, important, sensitive, or vulnerable systems or communities are substantially affected.
Potential for impact on irreplaceable resources	No (0)	No irreplaceable resources will be impacted.
	Yes (1)	Irreplaceable resources will be impacted.
Consequence	Extremely detrimental (-25 to -33)	A combination of extent, duration, intensity, and the potential for impact on irreplaceable resources.
	Highly detrimental (-19 to -24)	
	Moderately detrimental (-13 to -18)	
	Slightly detrimental (-7 to -12)	
	Negligible (-6 to 0)	
	Slightly beneficial (0 to 6)	
	Moderately beneficial (13 to 18)	
	Highly beneficial (19 to 24)	
	Extremely beneficial (25 to 33)	
Probability (the likelihood of the impact occurring)	Improbable (0)	It is highly unlikely or less than 50% likely that an impact will occur.
	Probable (1)	It is between 50 and 70% certain that the impact will occur.
	Definite (2)	It is more than 75% certain that the impact will occur or the impact will occur.
Significance	Very high – negative (-49 to -66)	A function of Consequence and Probability.
	High – negative (-37 to -48)	
	Moderate – negative (-25 to -36)	
	Low – negative (-13 to -24)	
	Neutral - Very low (0 to -12)	
	Low positive (0 to 12)	
	Moderate–positive (13 to 24)	
	High–positive (37 to 48)	
	Very high – positive (49 to 66)	

Table 7-13 Explanation of Assessment Criteria

Criteria	Explanation
Nature	This is an evaluation of the type of effect the construction, operation, and management of the proposed development would have on the affected environment. Will the impact of change on the environment be positive, negative, or neutral?
Extent or Scale	This refers to the spatial scale at which the impact will occur. The extent of the impact is described as footprint (affecting only the footprint of the development), site (limited to the site), and regional (limited to the immediate surroundings and closest towns to the site). The extent of scale refers to the actual physical footprint of the impact, not to the spatial significance. It is acknowledged that some impacts, even though they may be of

	a small extent, are of very high importance, e.g., impacts on species of very restricted range. To avoid "double counting," specialists have been requested to indicate spatial significance under "intensity" or "impact on irreplaceable resources" but not under "extent" as well.
Duration	The lifespan of the impact is indicated as temporary, short, medium, and long term.
Severity	This is a relative evaluation within the context of all the activities and the other impacts within the framework of the project. Does the activity destroy the impacted environment, alter its functioning, or render it slightly altered?
Impact on irreplaceable resources	This refers to the potential for an environmental resource to be replaced should it be impacted. A resource could be replaced by natural processes (e.g., by natural colonisation from surrounding areas), through artificial means (e.g., by reseeding disturbed areas or replanting rescued species) or by providing a substitute resource, in certain cases. In natural systems, providing substitute resources is usually not possible, but in social systems, substitutes are often possible (e.g., by constructing new social facilities for those who are lost). Should it not be possible to replace a resource, the resource is essentially irreplaceable, e.g., red data species that are restricted to a particular site or habitat to a very limited extent.
Consequence	The consequence of the potential impacts is a summation of the above criteria, namely the extent, duration, intensity, and impact on irreplaceable resources.
Probability of occurrence	The probability of the impact occurring is based on the professional experience of the specialist with environments of a similar nature to the site and/or with similar projects. It is important to distinguish between the probability of the impact occurring and the probability that the activity causing a potential impact will occur. Probability is defined as the probability of the impact occurring, not as the probability of the activities that may result in the impact.
Significance	Impact significance is defined to be a combination of the consequence (as described below) and the probability of the impact occurring. The relationship between consequence and probability highlights that the impact (or impact significance) must be evaluated in terms of the seriousness (consequence) of the impact, weighted by the probability of the impact occurring. In simple terms, if the consequence and probability of an impact are high, then the impact will have a high significance. The significance defines the level to which the impact will influence the proposed development and/or environment. It determines whether mitigation measures need to be identified and implemented and whether the impact is important for decision making.
Degree of confidence in predictions	Specialists and the environmental team were required to indicate the degree of confidence (low, medium, or high) that there is in the predictions made for each impact based on the available information and their level of knowledge and expertise. The degree of confidence is not considered in the determination of consequence or probability.
Mitigation measures	Mitigation measures are designed to reduce the consequence or probability of an impact or to reduce both consequence and probability. The significance of impacts has been assessed both with mitigation and without mitigation.

7.7.2 Cumulative Assessment Methodology

"Cumulative impact, in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities."

The cumulative impact assessment will be undertaken using a structured, qualitative methodology, supported by quantitative indicators where feasible. The assessment will evaluate the contribution of the proposed project in combination with existing developments and reasonably foreseeable future activities occurring within the surrounding landscape.

Cumulative impacts will be clearly defined and, where practicable, quantified, including but not limited to:

- Cumulative land transformation (expressed in hectares).
- Loss and fragmentation of natural and semi-natural habitats.

- Reduction in ecological connectivity.
- Cumulative pressure on aquatic systems and wetlands.
- Cumulative visual and landscape character change.
- Additive disturbance to biodiversity and ecosystem processes.

The identified cumulative impacts will be assessed and rated using the same significance rating methodology applied to project-specific impacts.

7.7.2.1 Cumulative Spatial Context

A transparent and traceable cumulative assessment process will be followed. Each specialist will be required to demonstrate:

- How surrounding developments were identified and spatially mapped.
- How cumulative interaction pathways were evaluated.
- How existing baseline degradation and development pressure were considered.
- How mitigation measures and findings from similar developments in the area informed the assessment.
- How proposed mitigation measures contribute to reducing cumulative effects.

This process will be clearly documented within the individual specialist reports.

7.7.2.2 Use of Cumulative Impact Findings

A clear cumulative impact environmental statement will be provided, indicating whether the proposed project should proceed in the context of existing and reasonably foreseeable developments within the surrounding area.

7.8 Appendix I: Specialist Declaration of Independence

DECLARATION

I, Andine de Villiers, 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.



Andine de Villiers

Ecologist

The Biodiversity Company

April 2026

7.9 Appendix J: Specialist CVs



Andine DE VILLIERS

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PROFILE SUMMARY

Environmental and ecological specialist with more than two years of consulting experience within South Africa and internationally. Specialist expertise as a terrestrial ecologist and project manager in various sectors including mining, engineering, renewable energy, and private sector developments. Experienced in delivering field surveys, technical reports and specialist guidance for compliance with in-country legislative requirements and international lender standards. Registered Pr Sci Nat with the South African Council for Natural Scientific Professions.

PERSONAL INFO

Nationality: South African

Date of birth: 8 April 1995

EXPERIENCE

Environmental Impact Assessments (EIA)

Environmental Management Programmes (EMP)

Project Management

Mammal Assessments

SKILLS

- ✓ Terrestrial Biodiversity, Fauna and Flora (Ecology) Assessments
- ✓ GIS
- ✓ Golden Mole and Riverine Rabbit Assessment
- ✓ Rehabilitation
- ✓ Monitoring & Management Plans

LANGUAGES

English – Proficient

Afrikaans – Proficient



Signed: Andine de Villiers

ACADEMIC QUALIFICATIONS

University of Pretoria (2020): MAGISTER SCIENTIAE (MSc) – Zoology *with distinction*:
Thesis title: *Playing with rats: The effect of a social companion, environmental enrichment and human interactions on the plasma oxytocin and faecal corticosterone metabolite concentration of Sprague Dawley rats.*

University of Pretoria (2018): BACCALAREUS SCIENTIAE CUM HONORIBUS (BSc Hons) – Zoology:
Research project title: Research project: Locomotor activity of individual Damaraland mole-rats (*Fukomys damarensis*) in intact colonies.

University of Pretoria (2017): BACCALAREUS SCIENTIAE (BSc) – Zoology:
Majors: Zoology

PROFESSIONAL EXPERIENCE

June 2023 – Present	**The Biodiversity Company** Terrestrial Ecologist

INTERNATIONAL EXPERIENCE

South Africa, Mauritius, Zambia