



## **Site Sensitivity Verification Report Terrestrial Biodiversity Theme**

### **Midas Battery Energy Storage System**

15 July 2024

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

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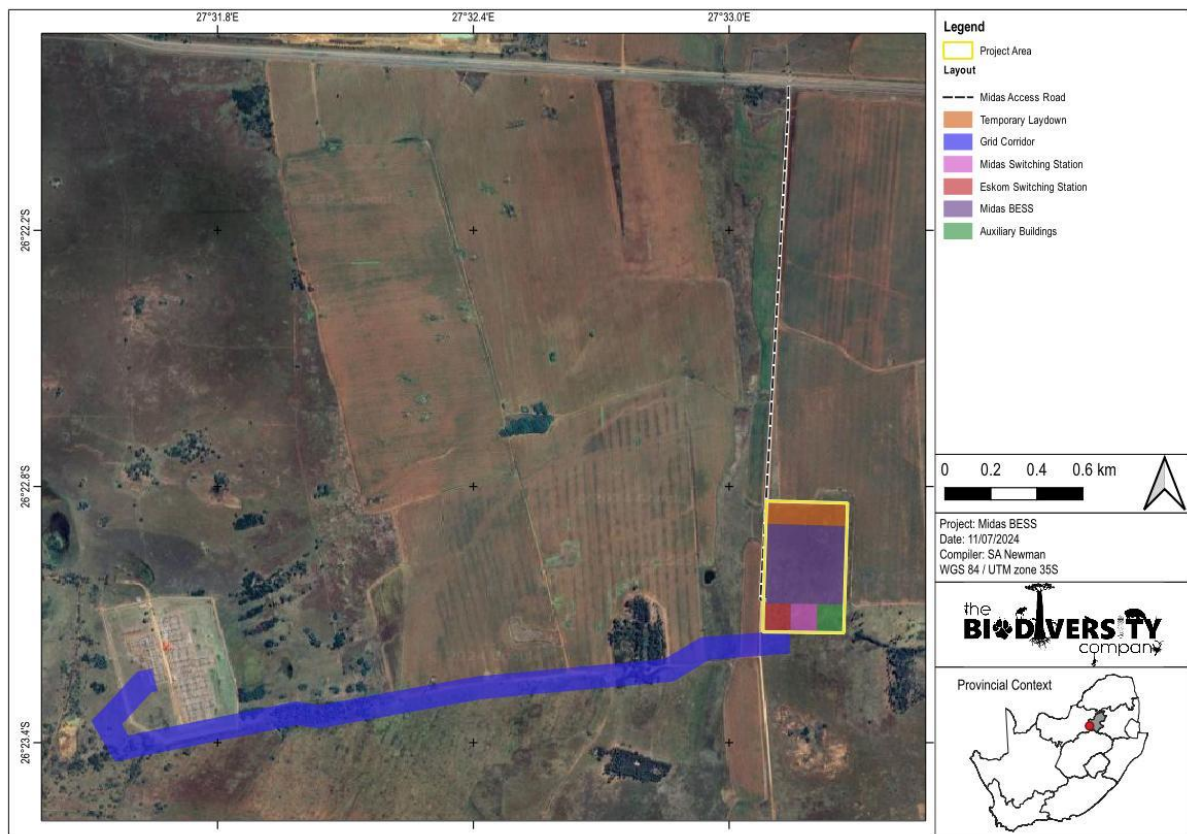
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# 1 Introduction

The Biodiversity Company was appointed to conduct a Site Sensitivity Verification (SSV) for the proposed Midas Battery Energy Storage System (BESS) Project. The project site is located approximately 18 km east of the town of Carletonville and approximately 13 km northeast of the town of Fochville. The Project Area is located in the Gauteng Province within the Rand West City Local Municipality and in the West Rand District Municipality. The proposed BESS and associated infrastructure are collectively referred to as the Project Area for reporting purposes (Figure 1-1).

The approach was informed by the Environmental Impact Assessment Regulations, 2014 (GNR 326, 7 April 2017) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The approach has taken cognisance of the recently published Government Notices 320 (20 March 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).

This report, after considering the findings and recommendations provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities at a scoping level, enabling informed decision making.



**Figure 1-1** Map illustrating the project layout and Project Area

## 1.1 Legal Framework

This report is compiled in consideration of the exclusion Norm Gazetted on 27 March 2024 (no. 4557). The adoption of the Norm is for the exclusion of identified activities associated with the development and expansion of battery storage facilities in areas of low or medium environmental sensitivity from the requirement to obtain an Environmental Authorization (EA).

This Norm, entitled "Norm for the Exclusion of Identified Activities Associated with the Development and Expansion of Battery Storage Facilities in Areas of Low or Medium Environmental Sensitivity", has been prepared to provide rules under which activities associated with the development and expansion of battery storage facilities identified in terms of section 24(2)(a) and (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and contained in the Environmental Impact Assessment Regulations Listing Notice 1, 2 or 3 of 2014, promulgated under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), are excluded from the requirement to obtain an environmental authorisation prior to commencement, while meeting the objectives of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

The site sensitivity verification must be undertaken:

- For the footprint on which the proposed activities are proposed to take place and the corridor;
- By specialists, registered in the field for which they are undertaking the site sensitivity verification and where relevant, with demonstrated experience in the taxonomic group of the species being considered;
- Within the season which would be most relevant to identify the specific species or vegetation of interest; and
- For a period of time as necessitated by the sensitivity of the proposed site and size of the proposed facility

## 1.2 Project Description

Midas BESS (Pty) Ltd ('the Applicant') is proposing the construction of the Midas Battery Energy Storage (BESS) Facility, located on Portion 10 of the Farm Uitval No. 280, approximately 18 km east of Carletonville in the Gauteng Province. The Applicant is also proposing to utilise the existing public road on Portion 8 and Portion 10 of the Farm Uitval No. 280 to access the site.

The Midas BESS facility will have a total development footprint of up to approximately 15 ha and will have a maximum export capacity of 77 MW. The development area is situated within the Merafong City Local Municipality and the Rand West City Local Municipality. The site is accessible via existing gravel roads from the R501 and N12.

The proposed Midas BESS will cover approximately 15 ha and will include the following infrastructure:

- Solid State Battery Energy Storage System (BESS) (up to 10 ha);
- Inverters and transformers;
- Site and internal access roads (up to 8m wide);
- Operation and Maintenance buildings including a gate house and security building, control centre, offices, warehouses and workshops for storage and maintenance (up to 1 ha);
- Laydown areas (3 ha temporary and 1 ha permanent);

- A 132 kV facility substation (up to 1 ha); and
- 33 kV cabling between the project components and the facility substation.

### 1.3 Scope of Work

In accordance with the 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 NEMA, 1998, when applying for environmental authorisation the current use of the land and the environmental sensitivity of the site under consideration as identified by the national web-based environmental screening tool, must be confirmed by undertaking a site sensitivity verification.

The outcome of this site sensitivity verification is to:

- Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool; and
- Motivate and provide evidence of either the verified or different use of the land and environmental sensitivity of the site.

### 1.4 Assumptions and Limitations

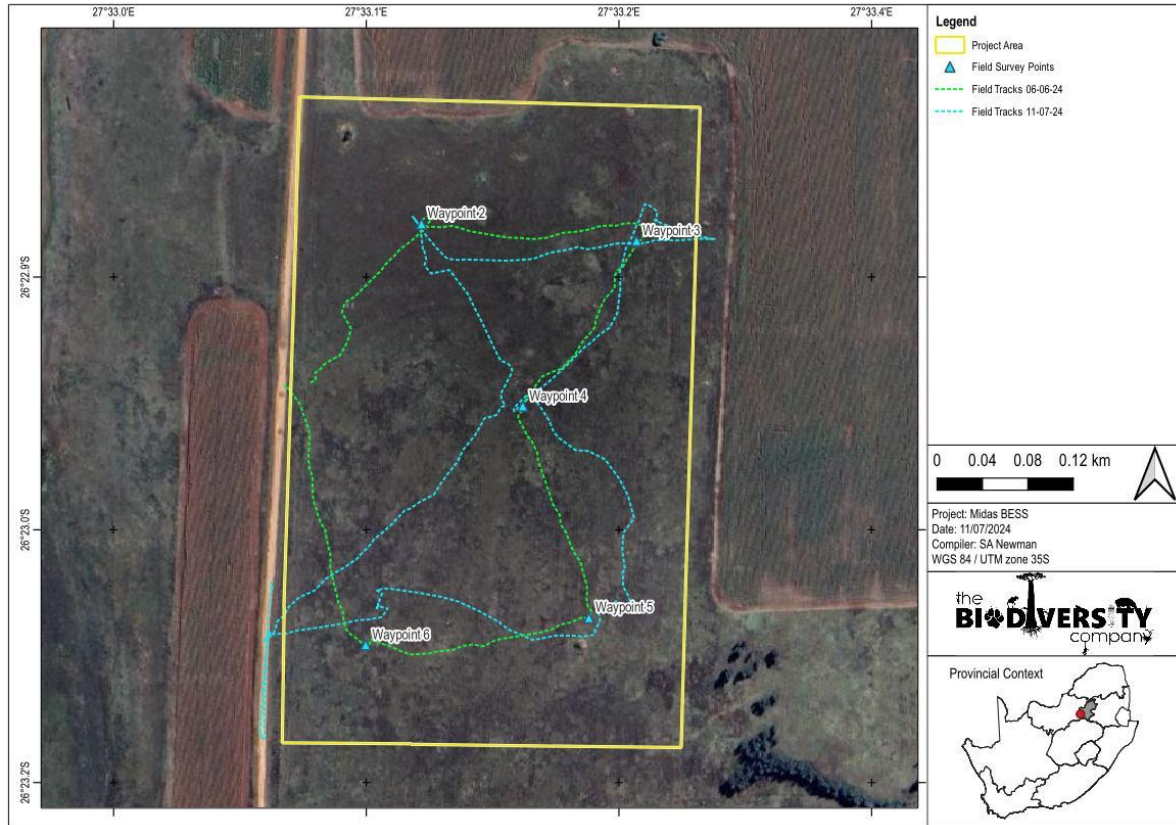
The following limitations should be noted for the assessment:

- The assessment area was based on the area provided by the client, and any alterations to the route and/or missing GIS information pertaining to the assessment area would have affected the area surveyed;
- The area was only surveyed during two site visits, therefore, this assessment does not consider temporal trends but is considered sufficient to derive a meaningful baseline;
- Only a single season survey was conducted on the 6<sup>th</sup> of June 2024 and the 11<sup>th</sup> of July 2024, which constitutes a dry season (winter) survey with its limitations. The larger project area was also surveyed in February 2024;
- While every effort is made to cover as much of the site as possible, representative sampling is completed, and by its nature, it is likely that some plant and animal species that are present on site were not recorded during the field investigations; and
- The GPS used in the assessment has an accuracy of 5 m, and consequently, any spatial features may be offset by 5 m.

## 2 Approach

A field survey for the area was undertaken on the 6<sup>th</sup> of June 2024 and 10<sup>th</sup> of July 2024 (winter), which constitutes a dry-season surveys, to determine the presence of flora and fauna of the Project Area, and their likelihood of occurrence where not observed, as well as habitats within the Project Area. The field survey tracks and survey points can be seen presented in Figure 2-1.

A CV and specialist declaration are provided in the appendices. A verification report has been prepared in accordance with the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity (Government Notice 320, dated 20 March 2020).



**Figure 2-1** Map illustrating the field survey tracks and sample points

### 3 Results & Discussion

#### 3.1 Desktop Ecological Sensitivity

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

- Terrestrial Biodiversity Theme sensitivity is Low for the Project (Figure 3-1);
- Plant Species Theme sensitivity is Low for the Project Area (Figure 3-2); and
- Animal Species Theme sensitivity is Medium for the Project Area due to the possible presence of four medium sensitivity species (Figure 3-3).

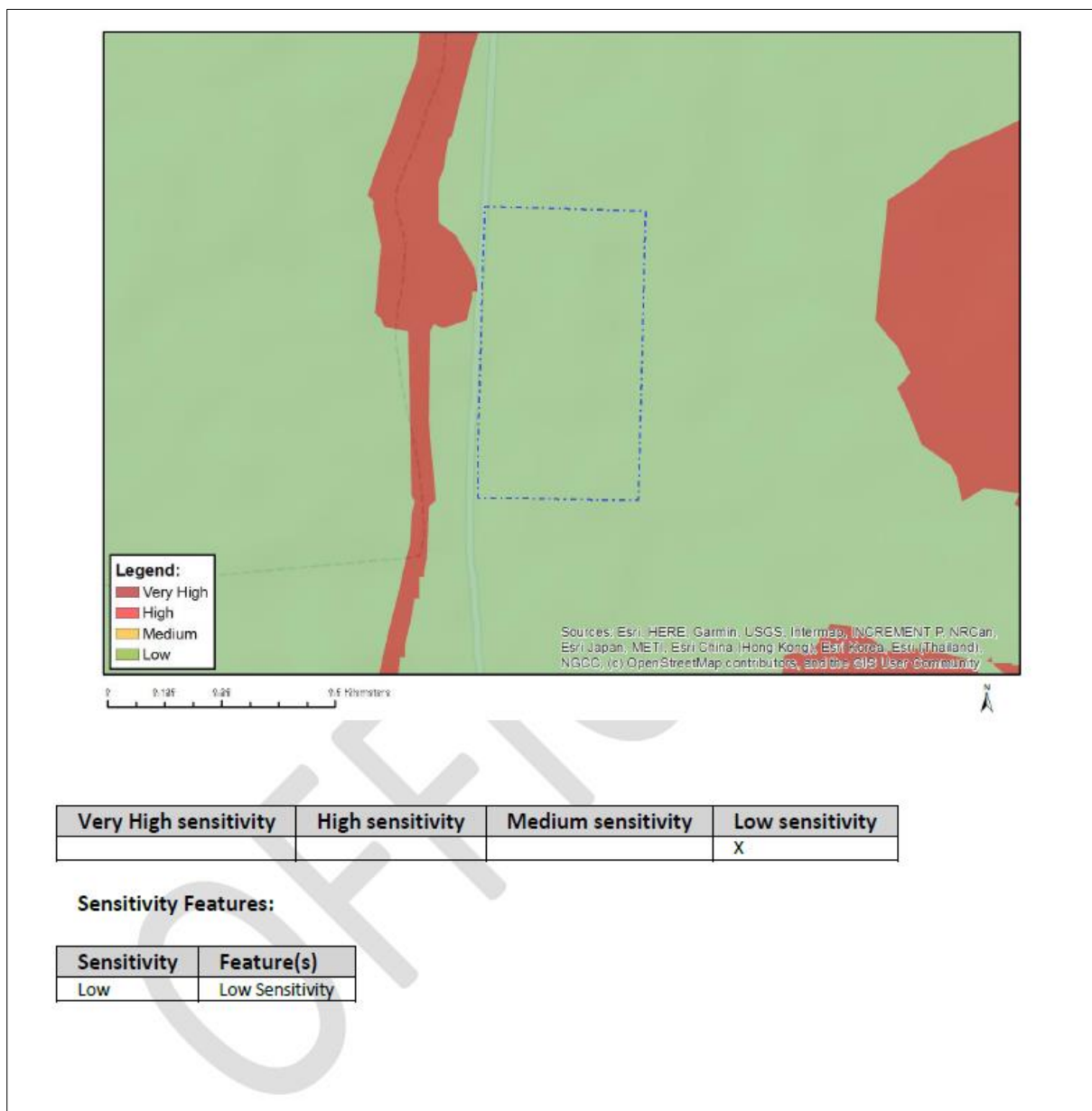
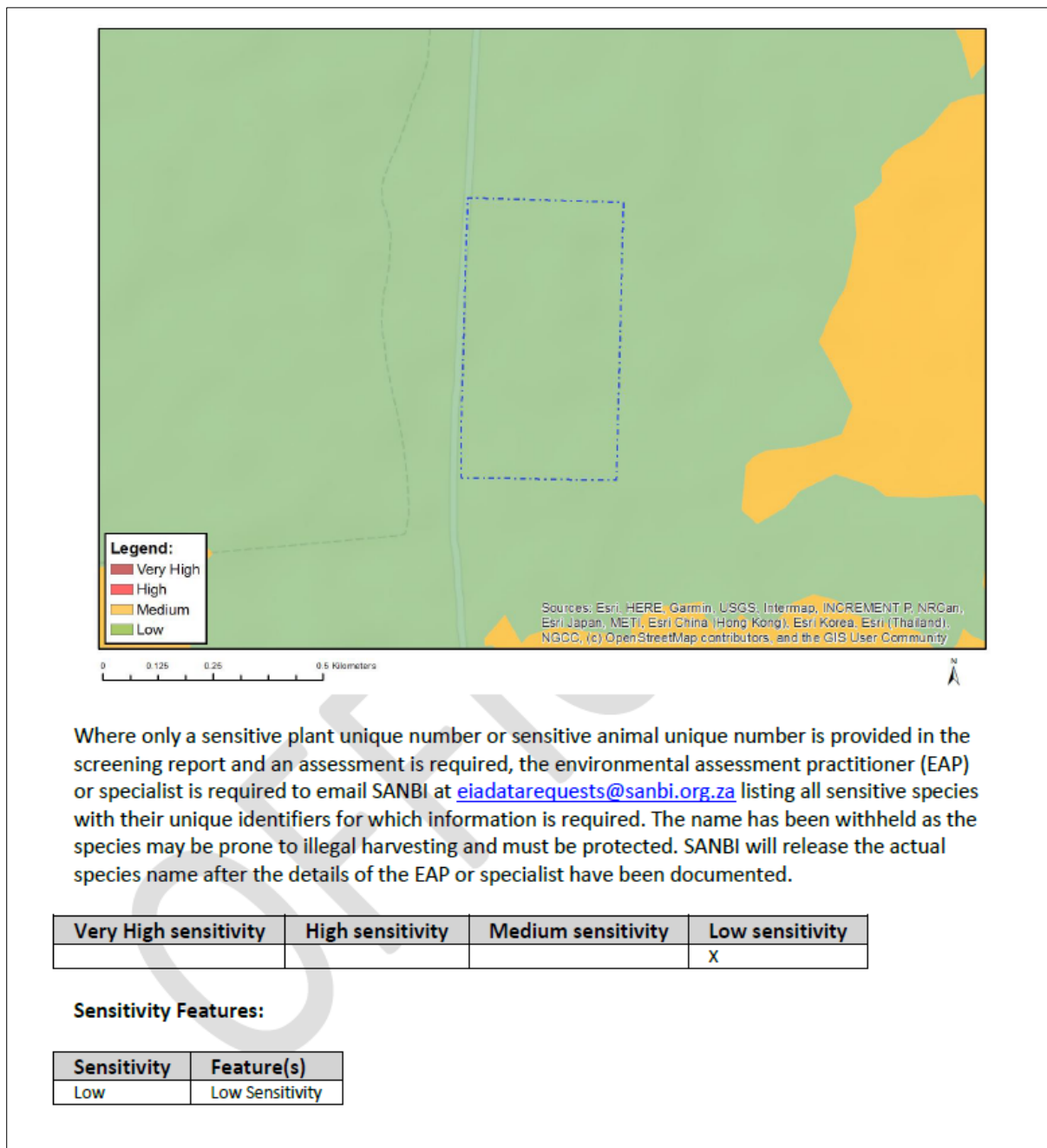
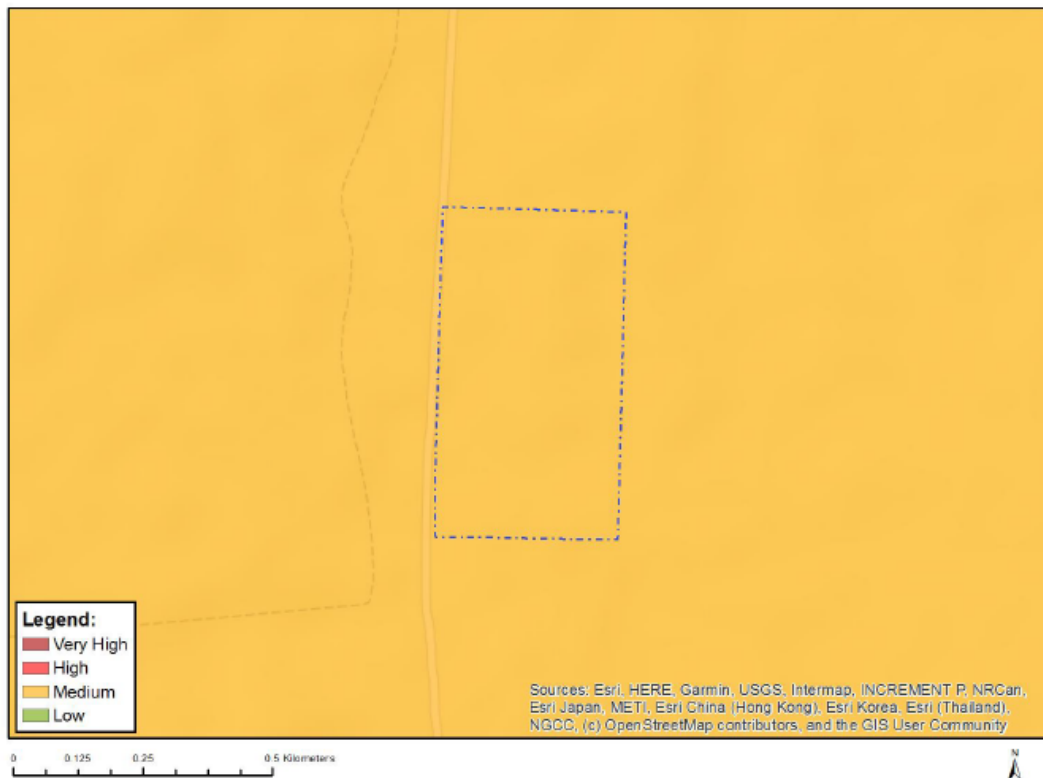


Figure 3-1 Relative Terrestrial Biodiversity Theme Sensitivity



**Figure 3-2** 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](mailto: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:**

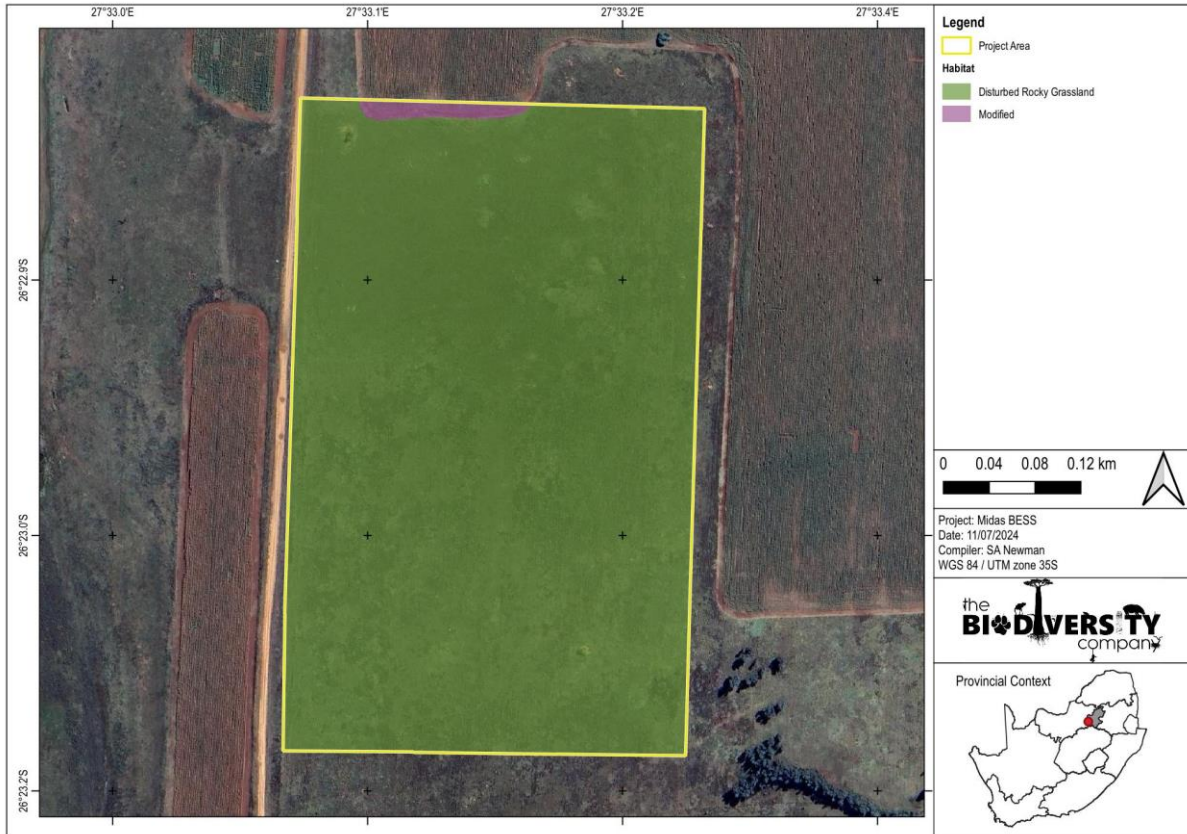
Sensitivity	Feature(s)
Medium	Insecta-Lepidochrysops praeterita
Medium	Mammalia-Crocidura maquassiensis
Medium	Mammalia-Hydriectis maculicollis
Medium	Invertebrate-Clonia uvarovi

**Figure 3-3** Relative Animal Species Theme Sensitivity

### 3.2 Field Survey Results

The following sections discuss the results from the field survey that was conducted for the proposed project. The field survey method can be seen in Appendix A: Methods. Each sample point is described in Table 3-1.

Two (2) different terrestrial habitat types were delineated within the Project Area. These habitats include: Disturbed Rocky Grassland and Modified, and can be seen depicted in Figure 3-4.



**Figure 3-4** Map illustrating the habitats identified for the Project Area

**Table 3-1** *Table presenting the field survey points and their descriptions*

Survey Point	Habitat	Photograph
<p>Site GPS Reference: Waypoint 2 Date: 06/06/2024 GPS Coordinates: 26°22'53.69"S 27°33'8.78"E</p>	<p><b>Disturbed Grassland</b> Carletonville Dolomite Grassland habitat that has experienced some anthropogenic disturbance attributed to the edge effects associated with the adjacent agricultural activities. No flora or fauna SCC were recorded, and none are expected.</p>	
<p>Site GPS Reference: Waypoint 3 Date: 06/06/2024 GPS Coordinates: 26°22'54.24"S 27°33'15.08"E</p>	<p><b>Disturbed Grassland</b> Carletonville Dolomite Grassland habitat that has experienced some anthropogenic disturbance attributed to the edge effects associated with the adjacent agricultural activities. No flora or fauna SCC were recorded, and none are expected.</p>	
<p>Site GPS Reference: Waypoint 4 Date: 06/06/2024 GPS Coordinates: 26°22'58.88"S 27°33'11.66"E</p>	<p><b>Disturbed Grassland</b> Carletonville Dolomite Grassland habitat that has experienced some anthropogenic disturbance attributed to the edge effects associated with the adjacent agricultural activities. No flora or fauna SCC were recorded, and none are expected.</p>	

Survey Point	Habitat	Photograph
<p>Site GPS Reference: Waypoint 5 Date: 06/06/2024 GPS Coordinates: 26°23'4.92"S 27°33'13.55"E</p>	<p><b>Disturbed Grassland</b> Carletonville Dolomite Grassland habitat that has experienced some anthropogenic disturbance attributed to the edge effects associated with the adjacent agricultural activities. No flora or fauna SCC were recorded, and none are expected.</p>	
<p>Site GPS Reference: Waypoint 6 Date: 06/06/2024 GPS Coordinates: 26°23'5.69"S 27°33'7.19"E</p>	<p><b>Disturbed Grassland</b> Carletonville Dolomite Grassland habitat that has experienced some anthropogenic disturbance attributed to the edge effects associated with the adjacent agricultural activities. No flora or fauna SCC were recorded, and none are expected.</p>	

### 3.3 Site Ecological Importance

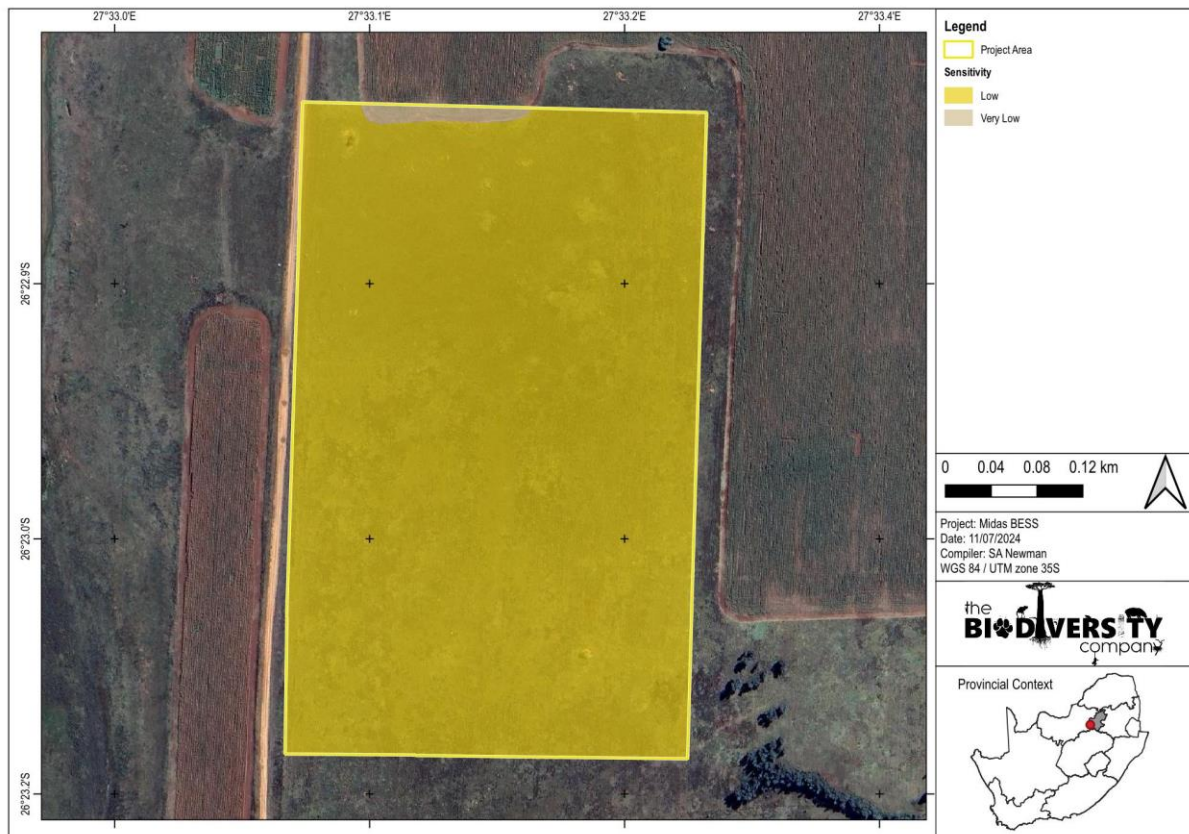
The different habitat types within the Project Area were delineated and identified based on observations during the field assessment and available satellite imagery. These habitat types were assigned Site Ecological Importance (SEI) categories based on their ecological integrity, conservation value,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

Two (2) habitat types were delineated within the Project Area: Disturbed Grassland and Modified. Their respective SEI and the corresponding mitigation guidelines are summarised in Table 3-2 and the SEI is illustrated in Figure 3-5.

It is important to note that these maps do not replace any local, provincial, or national government legislation relating to these areas or the land use capabilities or sensitivities of these environments.

**Table 3-2 Summary of habitat types delineated within field assessment area**

Habitat Type	Conservation Importance	Functional Integrity	Biodiversity Importance	Receptor Resilience	Site Ecological Importance Guidelines
<b>Disturbed Grassland</b>	Low	Medium	<b>Low</b>	Medium	<b>Low</b>
	No confirmed or highly likely populations of SCC	Medium (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type		Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality	
<b>Modified</b>	Very Low	Low	<b>Very Low</b>	High	<b>Very Low</b>
	No natural habitat remaining.	Several minor and major current negative ecological impacts.		Habitat that can recover relatively quickly (~ 5–10 years) to restore > 75% of the original species composition and functionality of the receptor functionality	



**Figure 3-5** Map illustrating the Site Ecological Importance (SEI) for the Project Area

### 3.4 Screening Tool Comparison

The allocated sensitivities for each of the relevant themes are either disputed or validated for the assessed areas in Table 3-3 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. The sensitivities delineated for the Project Area are illustrated in Figure 3-5.

**Table 3-3 Summary of the screening tool vs specialist assigned sensitivities**

Screening Tool Theme	Screening Tool	Habitat	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Animal Theme	Medium	-	Low	Disputed – Due to the Project Area’s proximity to agricultural fields and roads, no SCC are likely to occur here.
Plant Theme	Low	-	Low	Validated – Although the habitat forms a functional component of the Carletonville Dolomite Grassland, flora SCC are unlikely to occur here.
Terrestrial Theme	Low	Grassland	Low	Validated – Habitat forms a functional component of the Carletonville Dolomite Grassland but no sensitive features were identified on site. No fauna or flora SCC were recorded and are unlikely to occur.
		Modified	Very Low	Validated – Habitat modified in nature, made up of an agricultural field. Fauna and flora SCC unlikely to occur.

## 4 Impact Assessment

### 4.1 Impact Management

The assessment of impact significance considers pre-mitigation as well as implemented post-mitigation scenarios. Two phases were considered for the impact assessment, with the infrastructure assumed to be permanent (> 20 years) and no decommissioning phase required:

- Construction Phase; and
- Operational Phase.

The purpose of the management measures is to inform on the mitigations required to lower the risk of the impacts associated with the proposed activity, provide measures for improving the conservation value of the property and to be able to be inserted into the Environmental Management Programme (EMPr). The mitigation actions required to reduce the significance of the impacts associated with the development are provided in the tables below (Table 4-1 and

Table 4-2).

**Table 4-1** *The project management measures for the terrestrial biodiversity during the construction phase*

Environmental Theme: Vegetation and Habitats (Fauna)						
Impact Management Outcome: Protection of the vegetation and habitat to ensure adequate ecological functioning						
Phase: Construction						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Areas to be developed/disturbed be specifically demarcated so that during the construction/activity phase, only the authorised areas be impacted upon. Areas of indigenous vegetation outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. The construction area must be fenced off and no ingress into other areas allowed.	Contractor/ Environmental Officer	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	Avoided features
Areas that have been disturbed during construction, but will not undergo development, must be revegetated with indigenous vegetation dominant in the area.	Contractor/ Environmental Officer	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Rehabilitation implemented

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Make use of existing access routes as much as possible, before new routes are considered. Any selected "new" route must be authorised, minimising disturbances to undisturbed areas.	Contractor	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	All routes authorised
Minimise unnecessary clearing of vegetation beyond the development footprints	Contractor/ Environmental Officer	Visibly demarcate authorised working areas	Construction Phase	Environmental Officer	Throughout phase	Clearance is minimised
The use of herbicides is not recommended (opt for mechanical removal).	Contractor/ Environmental Officer	Demarcate buffer area	Construction Phase	Environmental Officer	Throughout phase	Avoided buffer area
Make sure all excess consumables are removed from site and deposited at an appropriate waste facility	Contractor/ Environmental Officer	Restrict to designated working/storage /service areas	Construction Phase	Environmental Officer	Throughout phase	Restricted to demarcated area
Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g. concrete) in such a way as to prevent them leaking	Contractor/ Environmental Officer	Restrict to designated working/storage /service areas	Construction Phase	Environmental Officer	Throughout phase	Restricted to demarcated area
Provide appropriate sanitation facilities for workers during construction and service them regularly	Contractor	Provide service ablation for contractors/labour	Construction Phase	Environmental Officer	Throughout phase	Ablution facilities provided and serviced
The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected must be disposed of at a licensed disposal facility	Contractor	Implement waste management plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
No trapping, killing, or poisoning of any wildlife is to be allowed and signs must be put up to enforce this. Monitoring must take place in this regard.	Environmental Officer	Monitoring and signage	Life of Operation	Environmental Officer	Ongoing	Signage
Clearing and disturbance activities must be conducted in a progressive linear manner, always outwards and away from	Contractor/ Environmental Officer	Progressive disturbance	Construction Phase	Contractor/ Environmental Officer	Throughout phase	Progressive clearing

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the centre of the Project Area and over several days, so as to provide an easy escape route for all small mammals and herpetofauna.

The Contractor must be in possession of an emergency spill kit that must always be complete and available on site

Contractor

Implement spill response plan

Construction Phase

Environmental Officer

Throughout phase

Spill kits are available

**Impact Management Outcome: Avoiding Alien Invasive plant infestation**  
**Phase: Construction**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas thereby causing further encroachment of invasive species.	Contractor/ Environmental Officer	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	Avoided features
An Alien Invasive Plant (AIP) Management Plan must be compiled and implemented. This should regularly be updated to reflect the annual changed in AIP composition	Contractor/ Environmental Officer	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	Avoided features
Areas that have been disturbed during construction, but will not undergo development, must be revegetated with indigenous vegetation dominant in the area.	Contractor/ Environmental Officer	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Rehabilitation implemented

**Table 4-2 The project management measures for the terrestrial biodiversity during the operational phase**

**Environmental Theme: Vegetation and Habitats (Fauna)**

**Impact Management Outcome: Protection of the vegetation and habitat to ensure adequate ecological functioning**  
**Phase: Operation**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

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Make use of existing access routes as much as possible, before new routes are considered. Any selected "new" route must be authorized, minimizing disturbances to undisturbed areas.	Contractor	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	All routes authorised
Minimise unnecessary clearing of vegetation beyond the development footprints	Contractor/ Environmental Officer	Visibly demarcate authorised working areas	Construction Phase	Environmental Officer	Throughout phase	Clearance is minimised
The use of herbicides is not recommended (opt for mechanical removal).	Contractor/ Environmental Officer	Demarcate buffer area	Construction Phase	Environmental Officer	Throughout phase	Avoided buffer area

**Impact Management Outcome: Avoiding Alien Invasive plant infestation**

**Phase: Operation**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
An AIP Management Plan must be compiled and implemented. This should regularly be updated to reflect the annual changed in AIP composition	Contractor/ Environmental Officer	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	Avoided features

**4.2 Cumulative Impacts**

The quantitative impact of the proposed project in isolation on terrestrial biodiversity is anticipated to be "Low" due to the absence of high sensitivity areas. The cumulative impact of the proposed project on plants and animals is anticipated to also be "Low" (Table 4-3).

After implementation of the mitigation measures as stipulated above the integrity and functionality of the natural habitat is not expected to deteriorate further as a result of the proposed development and no irreplaceable loss of terrestrial biodiversity is anticipated.

**Table 4-3 Cumulative Impacts associated with the proposed project**

Status	Duration	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance
Impact in isolation	4	2	3	2	2	Low
Cumulative Impact	3	3	2	2	3	Low

## 5 Conclusion

The Disturbed Grassland habitat within the Project Area is assigned a 'Low' sensitivity, validating the screening tool designation. The small portion of Modified habitat within the Project Area is assigned a 'Very Low' sensitivity.

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 rehabilitation and preservation of these systems is the most important aspect to consider for the proposed project.

It is the specialist's opinion that the proposed developability of the Project Area is favourable, and the following is applicable:

- Minimisation and restoration mitigation (Low SEI Areas): Development activities of medium to high impact acceptable followed by appropriate restoration activities; and
- Minimisation and restoration mitigation (Very Low SEI Areas): Any development activities of medium-high impact acceptable and restoration activities may not be required.

## 6 Appendix Items

### 6.1 Appendix A: Methods

#### 6.1.1 Field Assessment

##### 6.1.1.1 Flora 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. 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 Area. 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 Project Area.

##### 6.1.1.2 Fauna Survey

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; and
- 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.).

#### 6.1.2 Terrestrial Site Ecological Importance

The different habitat types within the Project Area were delineated and identified based on observations made during the field survey, and information from available satellite imagery. These habitat types were assigned Ecological Importance (EI) categories based on their ecological integrity, conservation value, the presence of SCC 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 in the Project Area) and Receptor Resilience (RR) (its resilience to impacts).

BI is a function of Conservation Importance (CI) and the Functional Integrity (FI) of the receptor. The criteria for the CI and FI ratings are provided in Table 6-1 and Table 6-2 respectively.

**Table 6-1 Summary of Conservation Importance (CI) criteria**

Conservation Importance	Fulfilling Criteria
<b>Very High</b>	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 <sup>2</sup> . 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).
<b>High</b>	Confirmed or highly likely occurrence of CR, EN, VU species that have a global EOO of > 10 km <sup>2</sup> . 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).
<b>Medium</b>	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.
<b>Low</b>	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.
<b>Very Low</b>	No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.

**Table 6-2 Summary of Functional Integrity (FI) criteria**

Functional Integrity	Fulfilling Criteria
<b>Very High</b>	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.
<b>High</b>	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.
<b>Medium</b>	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.
<b>Low</b>	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.
<b>Very Low</b>	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 6-3.

**Table 6-3** *Matrix used to derive Biodiversity Importance (BI) from Functional Integrity (FI) and Conservation Importance (CI)*

Biodiversity Importance		Conservation Importance				
		Very High	High	Medium	Low	Very Low
Functional Integrity	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 RR are based on the estimated recovery time required to restore an appreciable portion of functionality to the receptor, as summarised in Table 6-4.

**Table 6-4** *Summary of Receptor Resilience (RR) 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.

After the determination of BI and RR, the SEI can be ascertained using the matrix as provided in Table 6-5.

**Table 6-5** *Matrix used to derive Site Ecological Importance from Receptor Resilience (RR) and Biodiversity Importance (BI)*

Site Ecological Importance		Biodiversity Importance				
		Very High	High	Medium	Low	Very Low
Receptor Resilience	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 6-6.

**Table 6-6** *Guideline for interpreting Site Ecological Importance in the context of proposed activities*

Site Ecological Importance	Interpretation in relation to proposed development activities
<b>Very High</b>	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.
<b>High</b>	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.
<b>Medium</b>	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
<b>Low</b>	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
<b>Very Low</b>	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.

## 6.2 Appendix B – Specialist Declaration of Independence

I, Sarah Newman, 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 NEMA requirements.



Sarah Newman

Terrestrial Ecologist

The Biodiversity Company

July 2024

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**Declaration**

I, Carami Burger, 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 NEMA requirements.



Carami Burger

Terrestrial Ecologist

The Biodiversity Company

July 2024

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**Declaration**

I, Andrew Husted, 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 NEMA requirements.



Andrew Husted

Ecologist

The Biodiversity Company

July 2024

## 6.3 Appendix C – Specialist CV

# Sarah Newman

## M.Sc. Entomology

Cell: +27 73 391 6933

Email: sarah@thebiodiversitycompany.com

Identity Number: 9312170034086

Date of birth: 17 December 1993



### Profile Summary

Work experience in South Africa, Lesotho and Costa Rica.

Extensive experience working in the Sani Pass region of southern Africa investigating the patterns and drivers of ant diversity across an elevation gradient.

Experience with sea turtle monitoring and conservation in Costa Rica.

### Areas of Interest

Entomology, Zoology, Biodiversity, Conservation and Community Ecology.

### Key Experience

- Terrestrial Ecological Assessments
- Rehabilitation plans and monitoring
- Field work and research
- Taxonomic classification of insects

### Country Experience

South Africa  
Lesotho  
Angola  
Mauritius  
Costa Rica

### Nationality

South African

### Languages

English – Proficient  
Afrikaans – Conversational  
Spanish – Conversational

### Qualifications

- MSc Entomology (*Distinction*), University of Pretoria
- BSc (Hons) Zoology, University of Pretoria
- BSc Zoology, University of Pretoria
- Cand Nat Sci (158474)

Signed:

Sarah Newman

CURRICULUM VITAE: Sarah Newman

# Carami Burger

B.Sc. Honours – Ecological Interactions and Ecosystem Resilience (Cum Laude)

(Pr Sci Nat)

Cell: +27 83 630 9077

Email: [Carami@thebiodiversitycompany.com](mailto:Carami@thebiodiversitycompany.com)

Identity Number: 9606250185084

Date of birth: 25 June 1996



## Profile Summary

Working experience in South Africa and Mozambique.

Specialist experience with infrastructure development, road development, renewable energy, mining and prospecting.

Specialist expertise include terrestrial ecology, wetland resources, rehabilitation and management plans, environmental compliance and monitoring.

## Areas of Interest

Renewable Energy & Bulk Services Infrastructure Development, Mining, Farming, Sustainability and Conservation.

## Key Experience

- Environmental Impact Assessments (EIA)
- Basic Assessments
- Terrestrial Ecological Assessments
- Wetland Delineation and Ecological Assessments
- Environmental Management Programmes (EMPr)
- Rehabilitation Plans
- Invasive Species Plans
- Search and Rescue Plans
- Environmental Compliance Audits
- Water Use License Applications
- Dust Fallout Monitoring
- Water Quality Monitoring

## Countries worked in

South Africa  
Mozambique  
Zambia  
Angola  
Sierra Leone

## Nationality

South African

## Languages

English – Proficient

Afrikaans – Proficient

## Qualifications

- BSc Hons Ecological Interactions and Ecosystem Resilience.
- BSc Botany and Zoology.
- Pr Sci Nat (121757)

# Andrew Husted

M.Sc Aquatic Health (*Pr Sci Nat*)

Cell: +27 81 319 1225

Email: [andrew@thebiodiversitycompany.com](mailto:andrew@thebiodiversitycompany.com)

Identity Number: 7904195054081

Date of birth: 19 April 1979



## Profile Summary

Working experience throughout South Africa, West and Central Africa and also Armenia & Serbia.

Specialist experience in exploration, mining, engineering, hydropower, private sector and renewable energy.

Experience with project management for national and international multi-disciplinary projects.

Specialist guidance, support and facilitation for the compliance with legislative processes, for in-country requirements, and international lenders.

Specialist expertise include Instream Flow and Ecological Water Requirements, Freshwater Ecology, Terrestrial Ecology and also Ecosystem Services.

## Areas of Interest

Sustainability and Conservation.

Instream Flow and Ecological Water Requirements.

Publication of scientific journals and articles.

## Key Experience

- World Bank, Equator Principles and the International Finance Corporation requirements
- Environmental, Social and Health Impact Assessments (ESHIA)
- Environmental Management Programmes (EMP)
- Ecological Water Requirement determination experience
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Fish population structure assessments
- The use of macroinvertebrates to determine water quality.
- Aquatic Ecological Assessments
- Aquaculture

## Country Experience

Angola, Botswana, Cameroon  
Democratic Republic of Congo  
Ghana, Ivory Coast, Lesotho  
Liberia, Mali, Mauritius, Mozambique  
Nigeria, Republic of Armenia,  
Senegal, Serbia, Sierra Leone, South Africa  
Tanzania

## Nationality

South African

## Languages

English – Proficient

Afrikaans – Conversational

German - Basic

## Qualifications

- MSc (University of Johannesburg) – Aquatic Health.
- BSc Honours (Rand Afrikaans University) – Aquatic Health
- BSc Natural Science
- Pr Sci Nat (400213/11)
- Certificate of Competence: Mondi Wetland Assessments
- Certificate of Competence: Wetland WET-Management
- SASS 5 (Expired) – Department of Water Affairs and Forestry for the River Health Programme
- EcoStatus application for rivers and streams

Signed:

Andrew Husted

CURRICULUM VITAE: Andrew Husted