



The Terrestrial Ecology Compliance Statement for the proposed development on Erf 1058, Whites Road, Hoekwil

Eden District Municipality, Western Cape Province, South Africa

September 2023

CLIENT



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Reference	Erf 1058	
Submitted to		
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Declaration	<p>The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.</p>	

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1 Introduction

1.1 Background

The Biodiversity Company (TBC) was appointed to undertake a Terrestrial Ecology (fauna and flora) Baseline Assessment for the proposed development on Erf 1058, Whites Road, Hoekwil, Eden District Municipality, Western Cape Province. This is henceforth referred to as the 'Project Area' in this report. The regional location of the Project Area is provided in Figure 1-1, and a lower-scale map of the Project Area is provided in Figure 1-2.

To determine the baseline ecological state of the Project Area and to present a detailed description of the receiving environment, both a desktop assessment as well as a field survey were conducted during July 2023. The desktop assessment and field survey both involved the detection, identification and description of any locally relevant sensitive receptors and habitats, and the manner in which these sensitive features may be affected by the proposed development was also investigated.

This assessment was conducted in accordance with the amendments to the Environmental Impact Assessment Regulations, 2014 (No. 326, 7 April 2017) of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998). The approach has taken cognisance of the recently published Government Notice 320 in terms of NEMA dated 20 March 2020 as well as the Government Notice 1150 in terms of NEMA dated 30 October 2020: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation". The National Web based Environmental Screening Tool has characterised the terrestrial biodiversity theme for the area as 'Very High' sensitivity (National Environmental Screening Tool, 2023).

The purpose of conducting the specialist assessment is to provide relevant input into the Environmental Authorisation application process, with a focus on the proposed activities and their impacts associated with the project. This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Registered Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making as to the ecological viability of the proposed project.

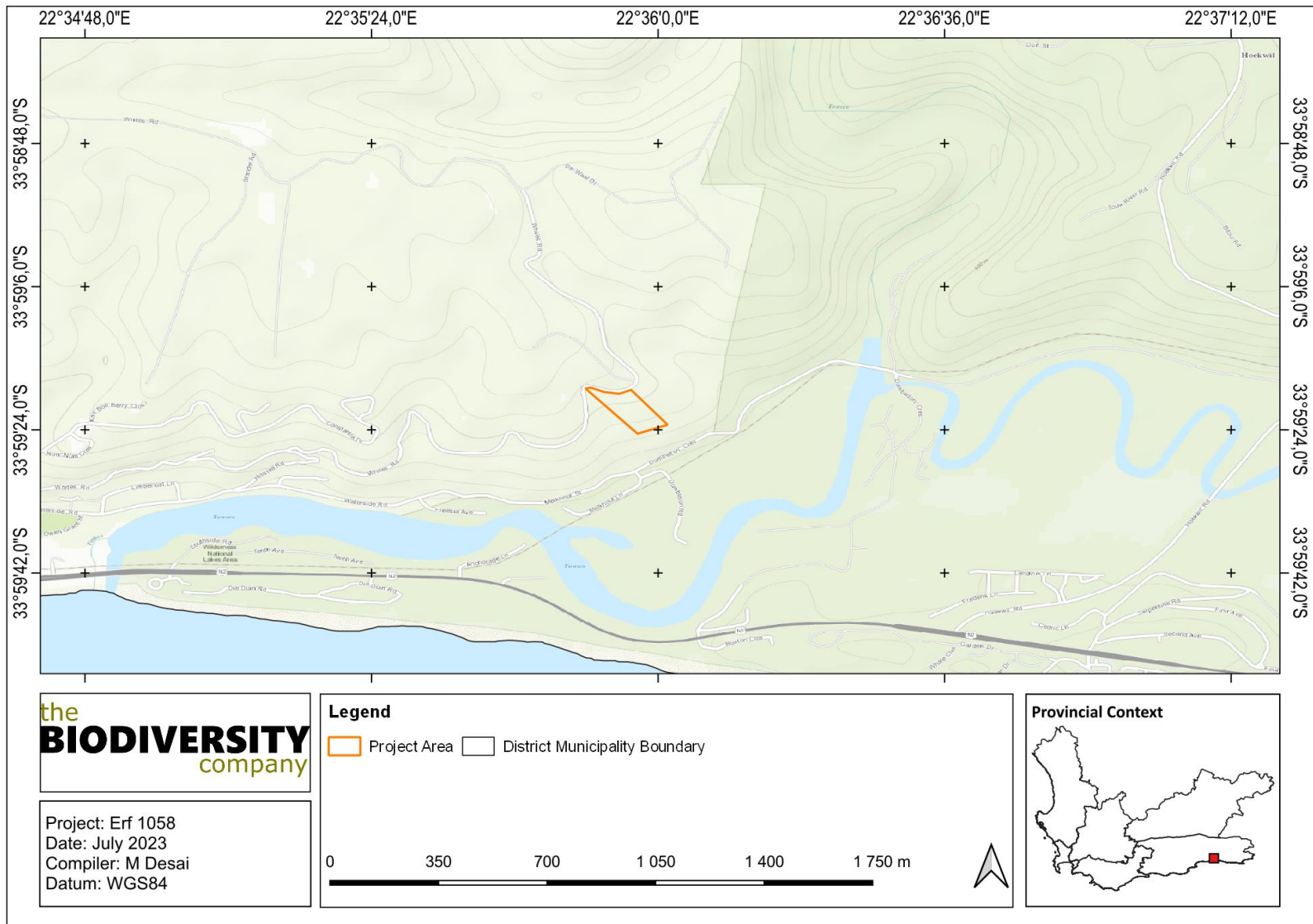


Figure 1-1 Map illustrating regional location of the Erf 1058 Project Area

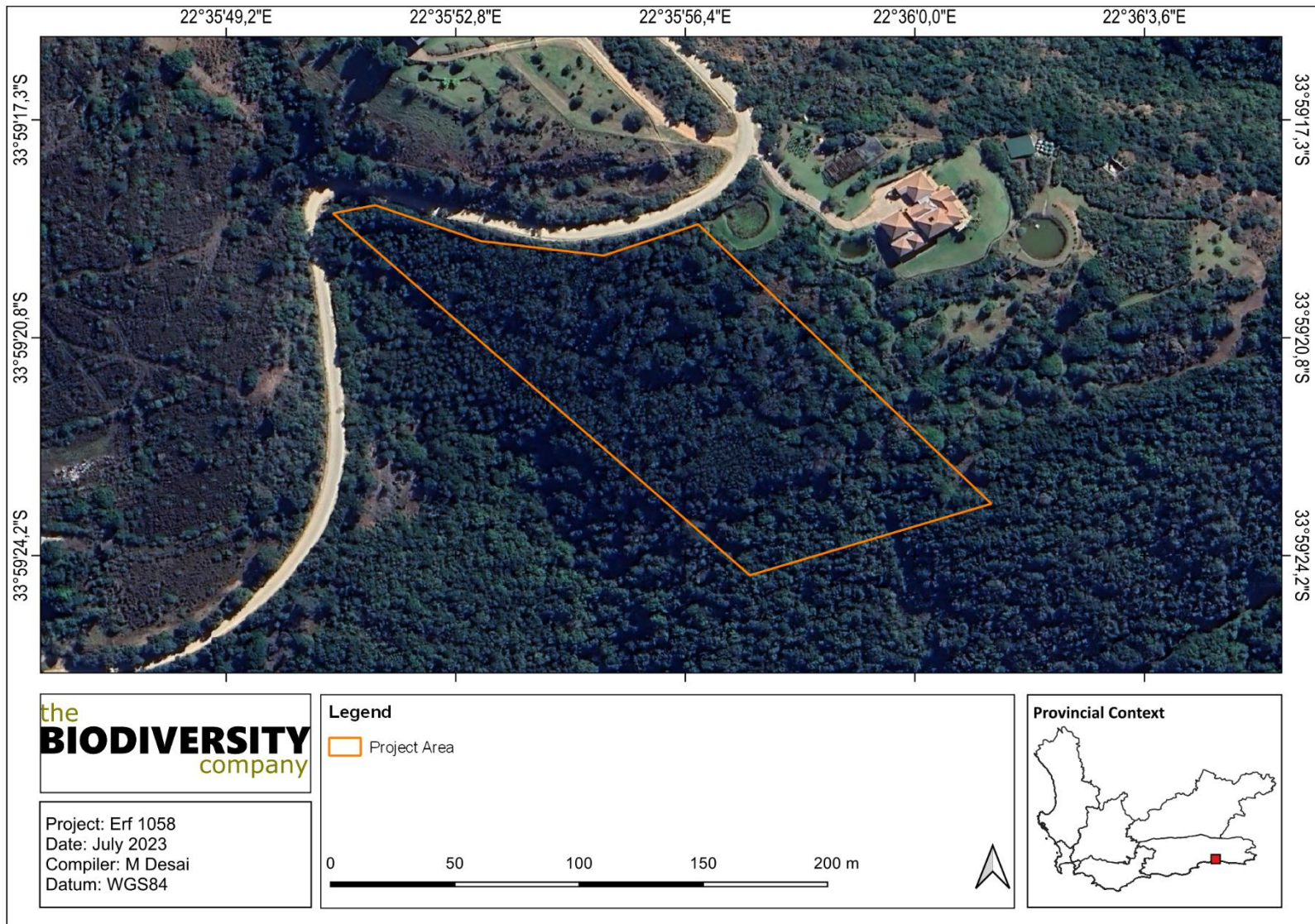


Figure 1-2 Map illustrating regional location of the Erf 1058 Project Area

1.2 Report Legislative Framework

In line with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity, as per Government Notice 320 published in terms of NEMA, dated 20 March 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” – section 3, subsection 1:

- An applicant intending to undertake an activity identified in the scope of the protocol, on a site identified on the screening tool as being of 'Very High' sensitivity for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment; however
- Where the information gathered from the site sensitivity verification differs from the designation of 'Very High' terrestrial biodiversity sensitivity on the screening tool and it is found to be of a 'Low' sensitivity, then a Terrestrial Biodiversity Compliance Statement must be submitted.

The information obtained from a site sensitivity verification, which involved both a desktop assessment as well as a field survey, confirmed that the proposed footprint area is of a 'Low' sensitivity. Therefore, this report constitutes a Terrestrial Biodiversity Compliance Statement.

As per sections 2 and 3 of the protocol discussed above, a Terrestrial Biodiversity Compliance Statement must contain the information as presented in Table 1-1 below.

Table 1-1 *Terrestrial Biodiversity Compliance Statement information requirements as per the relevant protocol, including the location of the information within this report*

Information to be Included (as per GN 320, 20 March 2020)	Report Section
Methodology used to undertake the site assessment and survey, and prepare the compliance statement, including relevant equipment and modelling used	2
Description of the assumptions and any uncertainties or gaps in knowledge or data	1.3
A baseline profile description of biodiversity and ecosystems of the site	3.1.1
Site sensitivity verification: Desktop Analysis using satellite imagery and available information	3.1.1
A statement on the duration, date and season of the site inspection	2.2
Site sensitivity verification: Onsite inspection, include a description of current land use and vegetation found on-site	3.2
Site sensitivity verification: Photographs/evidence of environmental sensitivity	3.2
Screening tool confirmation/dispute: The assessment must verify the “low” sensitivity of the site, in terms of plant, animal, and terrestrial biodiversity themes	3.2.2
Proposed impact management outcomes or monitoring requirements for inclusion in the EMPr	4
Indicate whether or not the proposed development will have any impact on the terrestrial environment, animals and/or plants	5
A signed statement of independence by the specialist	7.1
Specialist details, including a CV	7.2

A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

1.3 Assumptions and Limitations

The following assumptions and limitations are applicable for this assessment:

- It is assumed that all information received from the client and landowner is accurate;
- All datasets accessed and utilised for this assessment are considered to be representative of the most recent and suitable data for the intended purposes;
- The Project Area was based on the footprint areas as provided by the client, and any alterations to the area and/or missing GIS information pertaining to the assessment area would have affected the area surveyed and hence the results of this assessment;
- The area was surveyed during a single site visit and therefore this assessment does not consider temporal trends (note that the data collected is considered sufficient to derive a meaningful baseline); and
- The GPS used in the assessment has an accuracy of 5 m and consequently any spatial features may be offset by up to 5 m.

2 Methods

2.1 Desktop Assessments

The desktop assessment was principally undertaken using a Geographic Information System (GIS) to access the latest available spatial datasets to determine if any are applicable to the site. These datasets and their respective dates of publishing are provided below.

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

- Western Cape Biodiversity Spatial Plan (Cape Nature, 2017);
- 2021 Red List of Terrestrial Ecosystems (Skowno & Monyeki, 2021);
- Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2018);
- South Africa Protected and Conservation Areas Databases, 2022 (DFFE, 2022);
- National Protected Areas Expansion Strategy, 2016 (DFFE, 2021);
- Important Bird and Biodiversity Areas, 2015 (Marnewick *et al.*, 2015);
- South African Inventory of Inland Aquatic Ecosystems (SAIIAE), NBA 2018 Rivers and Wetlands (Awuah, 2018 & Van Deventer *et al.*, 2019);
- National Freshwater Priority Areas, Rivers and Wetlands, 2011 (Nel, 2011); and
- Strategic Water Source Areas, 2021 (Lötter & Le Maitre, 2021).

2.2 Biodiversity Field Survey

A single season field survey was undertaken on the 4th of July 2023. Note the region experiences a bimodal rainfall season and therefore, the timing of the survey was within the wet season. The Project Area was traversed to determine the presence of any local SCC and to achieve the delineation of local habitat types and their associated sensitivities. Effort was made to cover the different habitat types within the Project Area, within the limits of time and access. This site visit was considered sufficient for the project.

2.3 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 2-1 and Table 2-2 respectively.

Table 2-1 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 2-2 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 2-3.

Table 2-3 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 2-4.

Table 2-4 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 2-5.

Table 2-5 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 2-6.

Table 2-6 *Guideline for interpreting Site Ecological Importance in the context of proposed activities*

Site Ecological Importance	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.

3 Results & Discussion

3.1 Desktop Assessment

3.1.1 Ecologically Important Landscape Features

Table 3-1 below has been produced as a result of the spatial data collected and analysed (as provided by various sources such as the national and provincial environmental authorities and SANBI). It presents a summative breakdown of the ecological boundaries considered and the associated relevance that each has to the region or Project Area. Where a feature is regarded as relevant it is considered an ecologically important landscape feature and discussed further as part of the sub-sections that follow.

Table 3-1 Summary of the spatial relevance of the Project Area to ecologically important landscape features

Desktop Information Considered	Relevance	Reasoning
Western Cape Biodiversity Spatial Plan	Relevant	Project Area marginally overlaps a CBA 1.
Ecosystem Threat Status	Relevant	Project Area located in a 'Critically Endangered' ecosystem.
Ecosystem Protection Level	Relevant	Project Area located in a 'Not Protected' ecosystem.
Protected and Conservation Areas (SAPAD & SACAD)	Relevant	Located within the Garden Route Biosphere Reserve. The nearest protected area is Wilderness National Lake Area situated ~27 m south of the Project Area at its closest point.
National Protected Areas Expansion Strategy (NPAES)	Irrelevant	Does not overlap a NPAES Focus Area.
Important Bird and Biodiversity Areas (IBA)	Relevant	Overlaps the Wilderness - Sedgefield Lakes Complex IBA.
Strategic Water Source Areas	Relevant	The Project Area is located within the Outeniqua SWSA.
National Freshwater Ecosystem Priority Areas	Irrelevant	Does not overlap any features.
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	Irrelevant	Does not overlap any features.

3.2 Site Sensitivity Verification

3.2.1 Site Ecological Importance (SEI)

Based on the outcomes of the desktop assessment and the observations made during the field survey, each habitat type within the Project Area was assigned an SEI category as derived from the method described in section 2.3 above. The results are summarised in Table 3-2 and the habitats delineated are illustrated in Figure 3-1 and photographs illustrating habitat physiognomy are provided in Figure 3-2. Furthermore, the SEI delineated are visually represented in Figure 3-3.

Table 3-2 Summary of Site Ecological Importance (SEI) for the Project Area

Habitat Unit	Conservation Importance (CI)	Functional Integrity (FI)	Biodiversity Importance (BI)	Receptor Resilience (RR)	Site Ecological Importance (SEI) Guidelines for interpreting SEI in the context of the proposed development activities
<p><u>Secondary Thicket</u></p> <p>Secondary thicket was regenerative pioneer vegetation in areas where historical forestry had been cleared. Dominant flora species included <i>Scutia myrtina</i>, <i>Putterlickia pyracantha</i>, <i>Diospyros dicrophylla</i> and <i>Agathosma ovata</i>.</p>	<p><u>Low</u></p> <p>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.</p>	<p><u>Low</u></p> <p>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. Several minor and major current negative ecological impacts.</p>	<p>Low</p>	<p><u>Very High</u></p> <p>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</p>	<p>Very Low</p> <p>Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.</p>
<p><u>Forestry</u></p> <p>Plantation comprising of <i>Acacia meamsii</i>.</p>	<p><u>Very Low</u></p> <p>No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.</p>	<p><u>Very Low</u></p> <p>No habitat connectivity except for flying species or flora with wind-dispersed seeds. Several major current negative ecological impacts.</p>	<p>Very Low</p>	<p><u>Very High</u></p> <p>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</p>	<p>Very Low</p> <p>Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.</p>

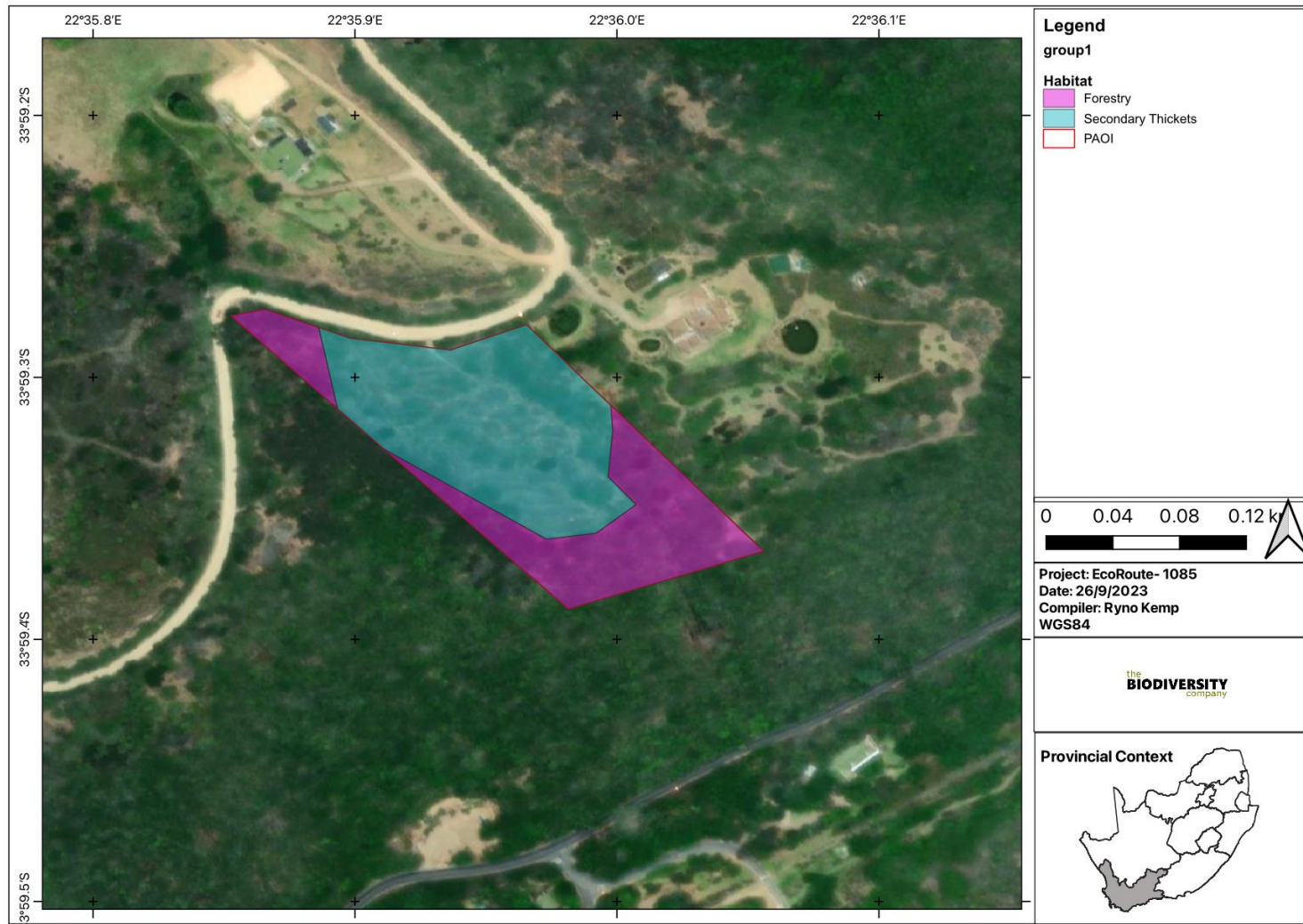


Figure 3-1 Map illustrating the Habitats for the PAOI



Figure 3-2 *Photographs illustrating overall habitat physiognomy within the Project Area*



Figure 3-3 Map illustrating the Site Ecological Importance (SEI) for the PAOI

3.2.2 Screening Tool Comparison

This section provides the results that were obtained from the National Web-based Environmental Screening Tool Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, (as amended), and compares them to the SEI determined for the Project Area.

The results of the screening tool are as follows:

- Combined Terrestrial Biodiversity Theme – Very High due to overlap with CBA1, ESA2, SWSA and Critically Endangered ecosystem (Figure 3-4).
- Relative Plant Species Theme – Medium due to the possible presence of several Species of Conservation Concern (Figure 3-5).
- Relative Animal Species Theme - High due to the possible presence of several Species of Conservation Concern (Figure 3-6).

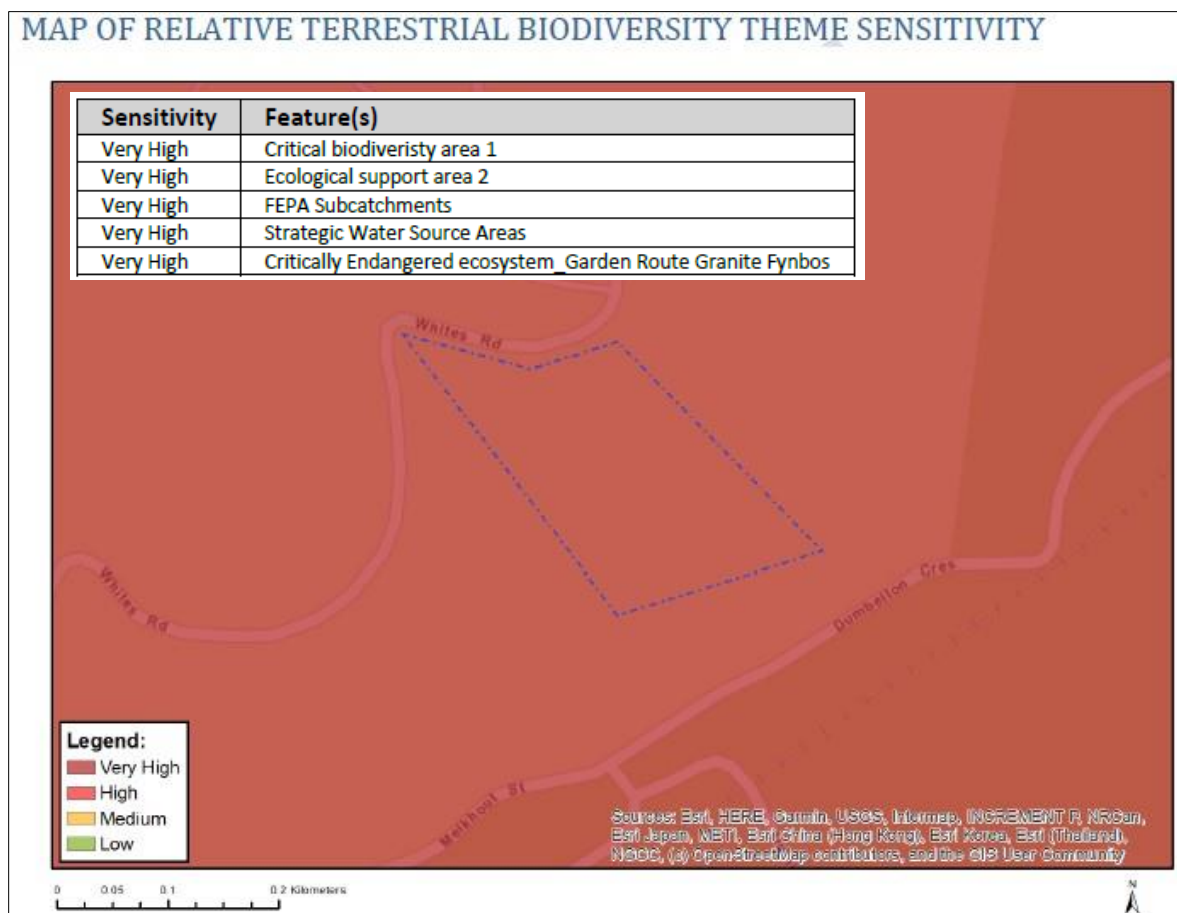


Figure 3-4 Terrestrial Biodiversity Theme Sensitivity for the Project Area (National Environmental Screening Tool, 2023)

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY

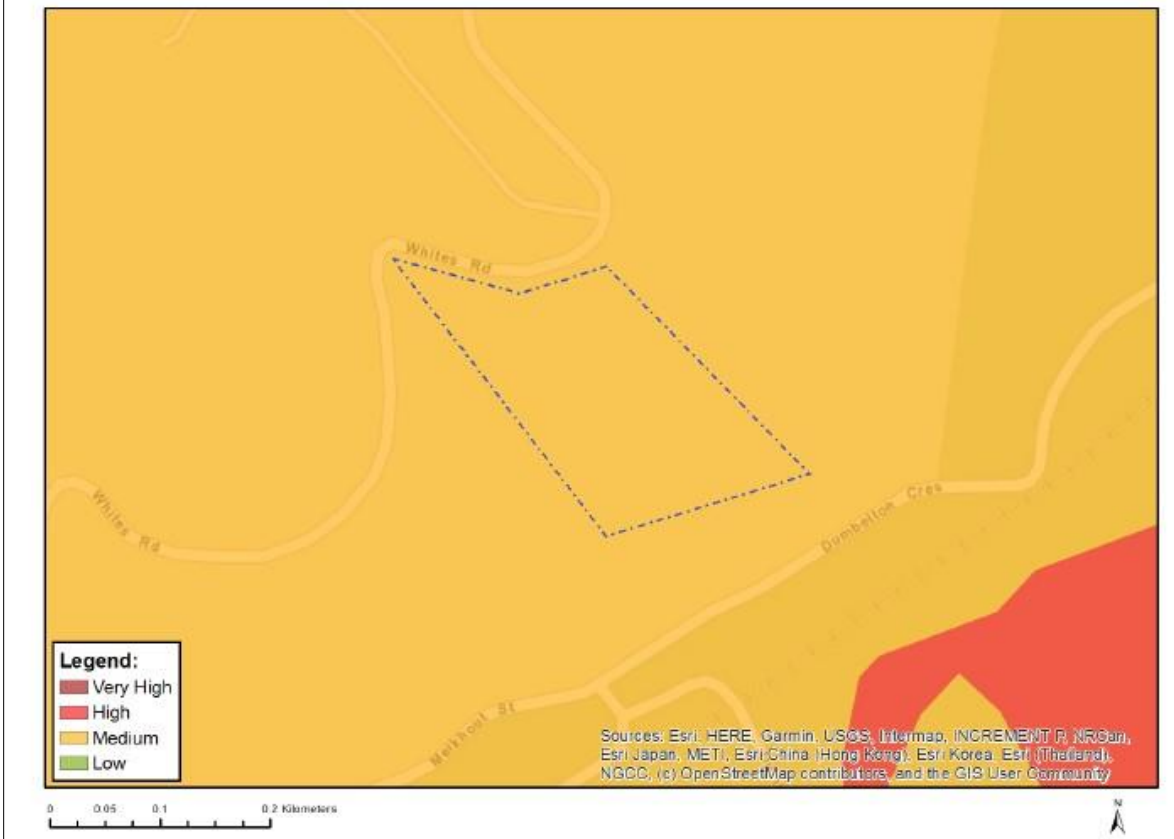


Figure 3-5 Relative Plant Species Theme Sensitivity for the Project Area (National Environmental Screening Tool, 2023)

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

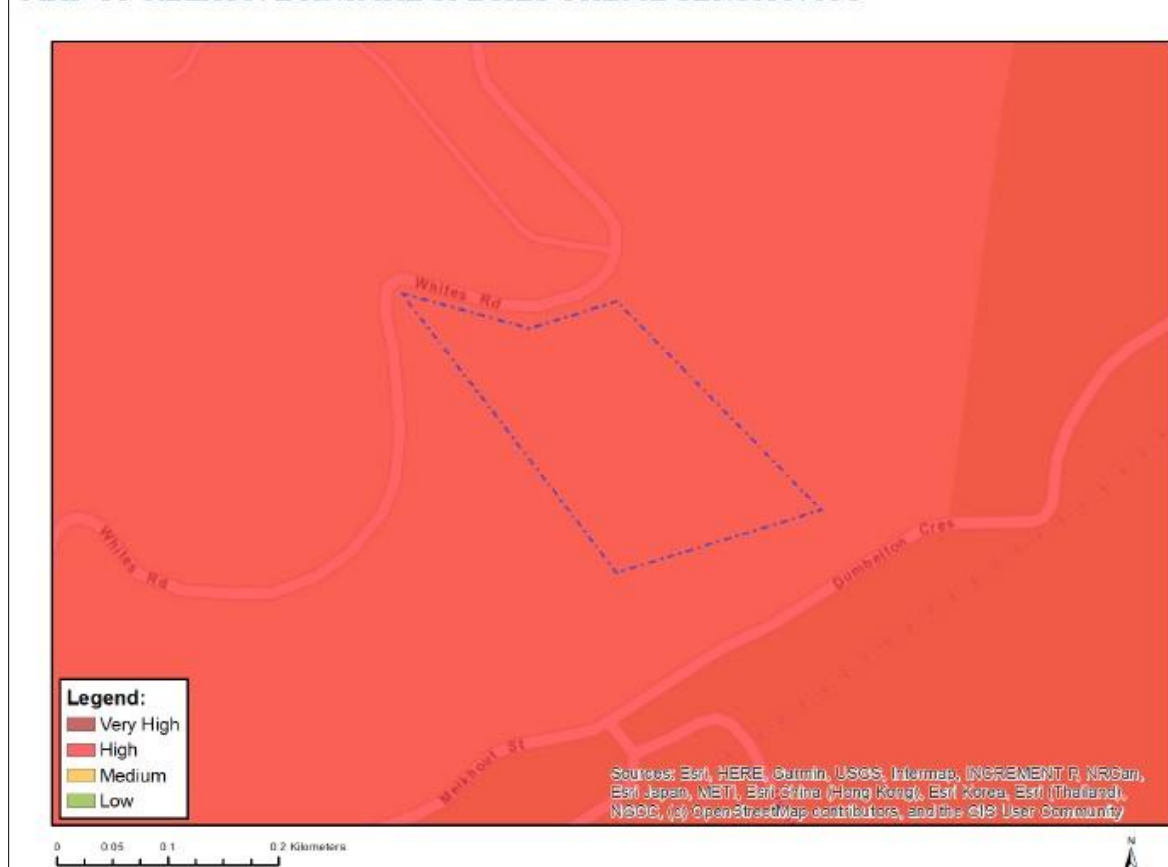


Figure 3-6 Relative Animal Species Theme Sensitivity for the Project Area (National Environmental Screening Tool, 2023)

The allocated sensitivities for each of the relevant themes are disputed for the overall Project Area (Table 3-3). 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.

Table 3-3 Summary of the Environmental Screening Tool results versus specialist assigned Site Ecological Importance (SEI)

Screening Tool Theme	Screening Tool	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Animal Theme	High	Low	Disputed – Habitat is heavily degraded and modified with high anthropogenic activity in close proximity to the majority of the Project Area. No SCC were recorded, nor expected.
Plant Theme	Medium	Low	Disputed – Habitat is heavily degraded and modified with high anthropogenic activity in close proximity to the majority of the Project Area. No SCC were recorded, nor expected.
Terrestrial Theme	Very High	Low	Disputed – Habitat is heavily degraded and modified with high anthropogenic activity in close proximity to the majority of the Project Area. Habitat is highly resilient to change from activities.

4 Impact Management and Mitigation Plan

The aim of the management outcomes is to present mitigation actions in such a way that they can be incorporated into the Environmental Management Programme (EMPr), and possible biodiversity management programme, for the project, which should in turn allow for a more successful implementation and auditing of the mitigations and monitoring guidelines. Table 4-1 presents the recommended mitigation measures and the respective time frames, targets, and performance indicators relative to local and regional biodiversity.

The focus of mitigation measures is to reduce the significance of the likely impacts associated with the development, and thereby:

- Prevent the further loss and fragmentation of vegetation communities within the vicinity of the Project Area and surrounding landscape;
- Reduce the negative fragmentation effects of the development and enable the safe movement of fauna species; and
- Adequately follow the guidelines for interpreting the Site Ecological Importance ratings assigned to the Project Area (see Table 2-6).

Table 4-1 Project specific mitigation measures including requirements for timeframes, roles and responsibilities

Management outcome: Vegetation and Habitats				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Laydown and construction preparation activities (such as cement mixing, temporary toilets, etc.) must be limited to already modified areas and should take up the smallest footprint possible.	Construction Phase	Property Owner Foreman	Development footprint	Ongoing
It is recommended that areas to be developed/disturbed be specifically demarcated so that during the construction/activity phase, only the demarcated areas be impacted upon.	Construction Phase	Foreman	Development footprint	Ongoing
Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should not be fragmented or disturbed further.	Construction Phase	Property Owner Foreman	Development footprint	Ongoing
Any materials may not be stored for extended periods of time and must be removed from the Project Area once the construction phase has been concluded.	Construction and Operational Phase	Property Owner Foreman	Laydown areas	Ongoing

<p>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.</p> <ul style="list-style-type: none"> • Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. • 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. • Construction activities and vehicles could cause spillages of lubricants, fuels and waste material negatively affecting the functioning of the ecosystem. • All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas. 	<p>Construction</p>	<p>Property Owner Foreman</p>	<p>Spill events, Vehicles dripping.</p>	<p>Ongoing</p>
<p>A Fire Management Plan needs to be implemented to restrict the impact any potential fires would have on the surrounding areas.</p>	<p>Construction</p>	<p>Foreman</p>	<p>Fire Management</p>	<p>Ongoing</p>
<p>All construction waste must be removed from site and disposed off in a legal manner.</p>	<p>Construction</p>	<p>Property Owner Foreman</p>	<p>Construction waste</p>	<p>Ongoing</p>
<p>Precautions must be taken against erosion damage that would be caused by rainfall over cleared areas. Temporary measures include the use of bunds, silt fences/sediment traps and geo-textiles.</p>	<p>Construction</p>	<p>Property Owner Foreman</p>	<p>Erosion Management</p>	<p>Ongoing</p>
<p>All landscaping must comprise of flora species indigenous to the region. The sole use of exotics and the planting of NEMBA listed Alien Invasive Plants is prohibited.</p>	<p>Operational</p>	<p>Property Owner Landscape Architect</p>	<p>Landscaping</p>	<p>Ongoing</p>

Management outcome: Fauna				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
In situations fauna species are located at the site and need to be removed, the relevant specialists must be contacted to advise on how the species can be relocated.	Construction	Property Owner Foreman	Presence of any fauna	Ongoing
The areas to be disturbed must be specifically demarcated to prevent the movement of staff or any individual into the surrounding environments, barrier tape must be put up to enforce this.	Construction	Property Owner Foreman	Infringement into surrounding areas	Ongoing
Noise must be kept to an absolute minimum during the evenings and at night to minimise all possible disturbances to nocturnal species which are more dependent on auditory signals for life processes.	Construction	Property Owner Foreman	Noise levels	Ongoing
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.	Construction	Property Owner Foreman	Evidence of trapping and/or poisons	Ongoing
Outside lighting should be designed and limited to minimise impacts on fauna. All outside lighting should be directed away from any sensitive areas. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (green/red) lights should be used wherever possible.	Operational	Property Owner Foreman Designer	Light pollution and period of light	Ongoing
Any holes/deep excavations must be dug in a progressive manner and shouldn't be left open overnight. Should any holes remain open overnight they must be properly covered temporarily to ensure that no small fauna species fall in. Holes must be subsequently inspected for fauna prior to backfilling.	Construction	Property Owner Foreman	Presence of trapped animals and open holes	Ongoing

Management outcome: Alien species				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Alien Invasive Plants must be controlled within the Project Area .	Operational	Property Owner	Manage and assess presence and encroachment of alien vegetation	Ongoing

Management outcome: Waste Management				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Waste management must be a priority and all waste must be collected and stored effectively and responsibly. Refuse bins will be responsibly emptied and secured. Temporary storage of domestic waste shall be in covered and secured waste skips. Dangerous waste such as metal wires and glass must be safely stored before being moved off site as soon as possible. Under no circumstances may domestic waste be burned on site or buried on open pits.	Construction	Property Owner Foreman	Waste Removal	Weekly
Litter, spills, fuels, chemical and human waste in and around the Project Area must be minimised and controlled.	Construction	Foreman	Presence of Waste	Daily
Cement mixing may not be performed on the ground. It is recommended that only closed side drum or pan type concrete mixers be utilised. Any spills must be immediately contained and isolated from the natural environment, before being removed from site.	Construction	Foreman	Cement mixing and spills	Every occurrence
Toilets at the recommended Health and Safety standards must be provided. Portable toilets must be emptied regularly to prevent overflow. Once no longer required, they must be pumped dry to prevent leakage into the surrounding environment and removed from site.	Construction	Property Owner Foreman	Number of toilets per staff member. Waste levels	Daily
Where a registered disposal facility is not available close to the Project Area, the Contractor shall provide a method statement with regards to waste management.	Construction	Property Owner Foreman	Collection/handling of the waste	Ongoing

Management outcome: Environmental Awareness training				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
All personnel and contractors are to undergo Environmental Awareness Training. Discussions are required on sensitive environmental receptors surrounding the Project Area to inform contractors and site staff of the presence of avoidance areas.	Construction	Foreman	Compliance to the training	Ongoing

Management outcome: Erosion				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
A sustainable stormwater design must be implemented to prevent excessive run-off that will lead to erosion of the surrounding landscape.	Life of operation	Property Owner Architect Engineer	Stormwater	Ongoing
All landscaping must comprise of flora species indigenous to the region. The sole use of exotics and the planting of NEMBA listed Alien Invasive Plants is prohibited.	Operational	Property Owner Landscape Architect	Landscaping	Ongoing

5 Conclusion and Impact Statement

5.1 Conclusion

The Project Area presently comprises modified and severely degraded habitat types, as illustrated in the report. This habitat unit is characterised by high levels of disturbance classified as Secondary thickets or Forestry owing to its proximity to historical land use, anthropogenic activities, and main roads. Therefore, the entire site has been classified as a very low SEI and needs to align with the current database (NVM2018_AEA_V22) classified as Garden Route Granite Fynbos (Figure 5-1). Accordingly, the land cover is incompatible with the expected natural vegetation and has low biodiversity value. As illustrated in Figure 5-2, the Project Area has been cleared for agricultural purposes and consequently does not possess natural primary vegetation.



Figure 5-1 Vegetation type - Garden Route Granite Fynbos.

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7 Appendix Items

7.1 Appendix A: Specialist Declarations

DECLARATION

I, Mahomed Desai, 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.



Mahomed Desai

Biodiversity Specialist

The Biodiversity Company

July 2023

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 Regulation 71 and is punishable in terms of Section 24F of the Act.



Sarah Newman

Environmental Consultant

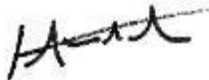
The Biodiversity Company

July 2023

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 Regulation 71 and is punishable in terms of Section 24F of the Act.



Andrew Husted

Terrestrial Ecologist

The Biodiversity Company

July 2023

7.2 Appendix B: Specialist CVs

Mahomed Desai (*Pr. Nat. Sci.*)

PhD Ecological Sciences

Cell: +27 78 595 2962

Email: mahomed@thebiodiversitycompany.com

Identity Number: 8303095065082

Date of birth: 09 March 1983



Profile Summary

Experience with the renewable energy, industrial, agricultural, mining and civil engineering sector in South Africa, providing specialist input into Basic Assessments and Environmental Impact Assessments.

Providing terrestrial and aquatic ecological expertise for the assessment and management of ecosystems via mitigation and/or offsetting actions.

The implementation of routine biomonitoring programmes in accordance with licensing.

Areas of Interest

Ecosystem processes

Functional diversity of ecosystems

Rehabilitation of degraded and/or transformed landscapes

Phytoremediation of wastewater

Key Experience

- Terrestrial and Aquatic Ecological Assessments
- Invertebrate Assessments
- Herpetofauna Assessments
- Ichthyofauna Assessments
- Species Rescue and Relocation Programmes
- Monitoring Programmes

Countries worked in

- Mozambique
- South Africa
- Lesotho
- Sudan
- Zimbabwe
- Nigeria
- Democratic Republic of Congo
- Namibia
- Zambia
- Eswatini
- Botswana
- The Gambia

Nationality

South African

Languages

- English – Proficient
- Afrikaans – Conversational
- Zulu – Basic

Qualifications

- PhD (University of KwaZulu-Natal) – Ecological Sciences
- MSc (University of KwaZulu-Natal) – Environmental Engineering
- BSc Honours (University of KwaZulu-Natal) – Estuarine Ecology
- SASS 5 Accredited – Department of Water Affairs and Forestry for the River Health Programme
- SACNASP Registered (Registration Number 134678)

OVERVIEW

An overview of the specialist technical expertise includes the following:

- Ecological Assessments to identify critical habitats for fauna pertaining to International Finance Corporation (IFC) financed projects;
- Ecological Impact Assessments;
- Biodiversity Offset Plans;
- Plant Rescue Management Plans;
- Alien Invasive Plant Management Plans;
- Rehabilitation and Monitoring; and
- GIS spatial analysis and digital cartography.

TRAINING

Some of the training undergone include the following:

- South African Scoring System Version 5.
- River Ecstatus Monitoring Programme.
- Bioaccumulation assessment of fish communities.
- Stable Isotope analysis.
- Micro-PIXE analysis.
- Microplastics sample collection from fish guts.

EMPLOYMENT EXPERIENCE

CURRENT EMPLOYMENT: The Biodiversity Company (September 2019 – Present)

Ecological Consultant at The Biodiversity Company and have undertaken specialist assessments wherein practical offset and/or mitigation strategies for the management of biodiversity, taking into account all the relevant stakeholders. Moreover, relevant and measurable methods to impede the risk of negative impacts to the environment. I have been with numerous sectors, such as mining, agriculture, construction and renewable energy developments.

EMPLOYMENT: GroundTruth Consulting (April 2013 – November 2015 & February 2019 - August 2019)

Ecological consultant undertaking specialist terrestrial and aquatic ecological assessments. Further duties include GIS and database management.

EMPLOYMENT: Aquatic Ecosystem Research Programme (December 2015 – January 2019)

Senior researcher focussing on evaluating the dynamics of ichthyofauna communities on a species and functional group level in relation to environmental influences. In addition, was the leader for the ecosystem biomonitoring and fisheries theme within the programme.

EMPLOYMENT: DeTect Inc. (September 2008 – April 2009)

Ornithological Consultant to evaluate flight dynamics, spatially and temporally, of the *Hirundo rustica* (Barn Swallow) population in close proximity to the King Shaka International Airport (KISA), Durban, South Africa. This project utilised cinematographic and radar techniques to assess the dynamics of the swallow's diel flight paths to inform on aircraft flight paths and chronology.

ADDITIONAL EXPERIENCE

Locum Teacher	January 2010 – December 2010 Duties included teaching Natural Science to pupils from grades 7 – 9 (a total of 7 classes).
Member	Custodian of Rare and Endangered Wildflowers (CREW)

	Zoological Society of Southern Africa
Committee Member	Botanical Society of South Africa (BotSoc)
Volunteer	Islamic Relief

ACADEMIC QUALIFICATIONS

University of KwaZulu-Natal, Pietermaritzburg, South Africa (2019): PHILOSOPHIAE DOCTOR (PhD) – Ecological Sciences:

Title: Evaluating the influence of environmental drivers of ichthyofauna communities within select east-draining rivers in southern Africa.

University of KwaZulu-Natal, Durban (Howard College), South Africa (2015): MAGISTER SCIENTIAE (MSc) – Environmental Engineering:

Title: The efficacy of *Chlorella* sp, in treating hazardous landfill leachate

University of KwaZulu-Natal, Durban (Howard College) South Africa (2005): BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Estuarine Ecology

Title: The macrobenthos community of Lake St. Lucia during the 2005 drought

CONFERENCES

Southern African Society of Aquatic Sciences Congress 2016. Kruger National Park, South Africa. Environmental Water Requirements to Maintain the Wellbeing of Key Social and Ecological Endpoints in the Dinder River, Blue Nile Basin.

Nile Basin Development Forum. 2017. Nile Basin Ecological Flows Framework.

39th Zoological Society of Southern Africa 2019. Kruger National Park, South Africa. The response of the ichthyofauna community to multiple stressors within the river systems of the St. Lucia Basin.

PUBLICATIONS

Desai, M., Husted, A., Fry, C., Downs, C. T., & O'Brien, G. C. 2019. Spatial shifts and habitat partitioning of ichthyofauna within the middle–lower region of the Pungwe Basin, Mozambique. *Journal of Freshwater Ecology*, 34(1), 685–702. doi: 10.1080/02705060.2019.1673221

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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
- Monitoring programmes
- Field work and research
- Taxonomic classification of insects

Country Experience

South Africa

Lesotho

Costa Rica

Nationality

South African

Languages

English – Proficient

Afrikaans – Conversational

Spanish – Basic

Qualifications

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

CURRICULUM VITAE: Sarah Newman

CURRICULUM VITAE: Sarah Newman

OVERVIEW

An overview of the specialist technical expertise include the following:

- Terrestrial Ecological Assessments
- Faunal surveys which include mammals, birds, amphibians and reptiles
- Management plan compilation (Fire Management Plan)

EMPLOYMENT EXPERIENCE

Environmental Consultant at The Biodiversity Company (November 2022 - Present)

Terrestrial biodiversity surveys and assessments.

Research Technician (Contract) for the University of Pretoria (February 2022 – July 2022)

Taxonomic identification of invertebrates.

Sea Turtle Research Assistant for Ecology Project International at Pacuare Reserve, Costa Rica (February 2021 – November 2021)

Conducted sea turtle monitoring, conservation activities and data management, along with overseeing jaguar camera trapping surveys and performing teaching activities with visiting student groups and tourists.

Compliance and Regulatory Officer for Cell Path Services (Pty) Ltd (June 2019 – November 2020)

Ensured the company adhered to all regulatory requirements outlined by the relevant regulatory bodies.

ACADEMIC QUALIFICATIONS

University of Pretoria, Pretoria (2018): Master of Science (MSc) in Entomology with *Distinction*

Title: Taxonomic and Functional Diversity of Ants Across Environmental Gradients

University of Pretoria, Pretoria (2016): Bachelor of Science Honours (BSc (Hons)) in Zoology

Title: Rolling versus tunnelling: An evolutionary history of dung relocation and burial behaviour in African dung beetles (Coleoptera: Scarabaeidae: Scarabaeinae)

University of Pretoria, Pretoria (2015): Bachelor of Science (BSc) in Zoology

CURRICULUM VITAE: Sarah Newman