

Proposed Residential Development on Portion 38 of Farm 136, Tergniet, Western Cape.

Terrestrial Animal Species Specialist Assessment:
Site Sensitivity Verification & Impact Assessment



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Date: December 2025

Version: V2 Updated with Preferred SDP



DECLARATION OF SPECIALIST INDEPENDENCE

- I consider myself bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP);
- At the time of conducting the study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done in an objective manner. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being members of the general public;
- I declare that there are no circumstances that may compromise my objectivity in performing this specialist investigation. I do not necessarily object to or endorse any proposed developments, but aim to present facts, findings and recommendations based on relevant professional experience and scientific data;
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- All the particulars furnished by me in this document are true and correct.

A handwritten signature in black ink, appearing to read 'Kim Daniels', with a large, stylized loop at the end.

Kim Daniels (MSc)

September 2025

SUMMARY OF EXPERIENCE AND ABRIDGED CV - KIM DANIELS

Core skills

Three years of work experience (research assistance and education) for projects aimed at investigating invertebrate diversity, plant diversity, insect ecology, disease ecology, invasive species, plant systematics, herpetology, and climate change impacts on a variety of taxa.

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My postgraduate studies have been focused on vegetation change in the fynbos and parasitic plants as thermal refugia for savanna birds.

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Visiting academic for the Organization of Tropical Studies' African Ecology and Conservation course

Internships in Entomology, Horticulture, and Plant Conservation

Research assistant at the Centre for Invasion Biology

Field assistant at Valuing Orchard and Integrated Crop Ecosystem Services Project

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ABBREVIATIONS AND ACRONYMS

CBA	Critical Biodiversity Area
CD:NGI	Chief Directorate: National Geo-spatial Information
DFFE	Department of Forestry, Fisheries, and the Environment
ESA	Ecological Support Area
EWT	Endangered Wildlife Trust
NEMA	National Environmental Management Act
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDP	Site Development Plan
SSVR	Site Sensitivity Verification Report
WCBSP	Western Cape Biodiversity Spatial Plan

1. INTRODUCTION

Confluent Environmental Pty (Ltd) was appointed by Digital Soils Africa to provide Terrestrial Animal Specialist inputs for the proposed residential development on Portion 38 of Farm 136 in Tergniet, Western Cape.

1.1 General Site Location

Portion 38 of Farm 136, Tergniet is ca. 6.19 ha and is divided in two by Robertson Avenue, south of the R102 road. The property is currently undeveloped, with indigenous vegetation and walking tracks. It is situated in a residential area with an undeveloped site to the west but mostly developed erven surrounding the property (Figure 1). The property falls within the larger Gouritz Cluster Biosphere Reserve. No protected areas are close to the site, and no watercourses or wetlands are mapped for the property.



Figure 1. Portion 38/136, Tergniet, Western Cape is not associated with any mapped watercourses or wetlands and is not in proximity to any protected areas.

1.2 Development Layout

The site is divided into a western and eastern section, with each side separated by Robertson Avenue. The western section covers a total area of ca. 2.83 ha, and the eastern section covers a total area of ca. 3.13 ha. The alternative SDPs (earlier versions of the SDP) are shown in Figure 2 (SDP Alternative 1) and Figure 3 (SDP Alternative 2) and Figure 4 (SDP Alternative 3). Alternative 1 was the first SDP presented with Alternative 2 showing the plan reconfigured

following assessment of the site's botanical sensitivity. Following a meeting with the Department of Forestry – the third SDP, Alternative 3 (Figure 4) was prepared (144 units) with the primary focus on protected trees: it indicates where protected trees will be removed or retained within the site layout. The latest preferred site development plan (SDP) from the environmental perspective for Portion 38 of Farm 136 is presented in Figure 5,



Figure 2. Alternative SDP 1 for Portion 38/136, Tergniet.

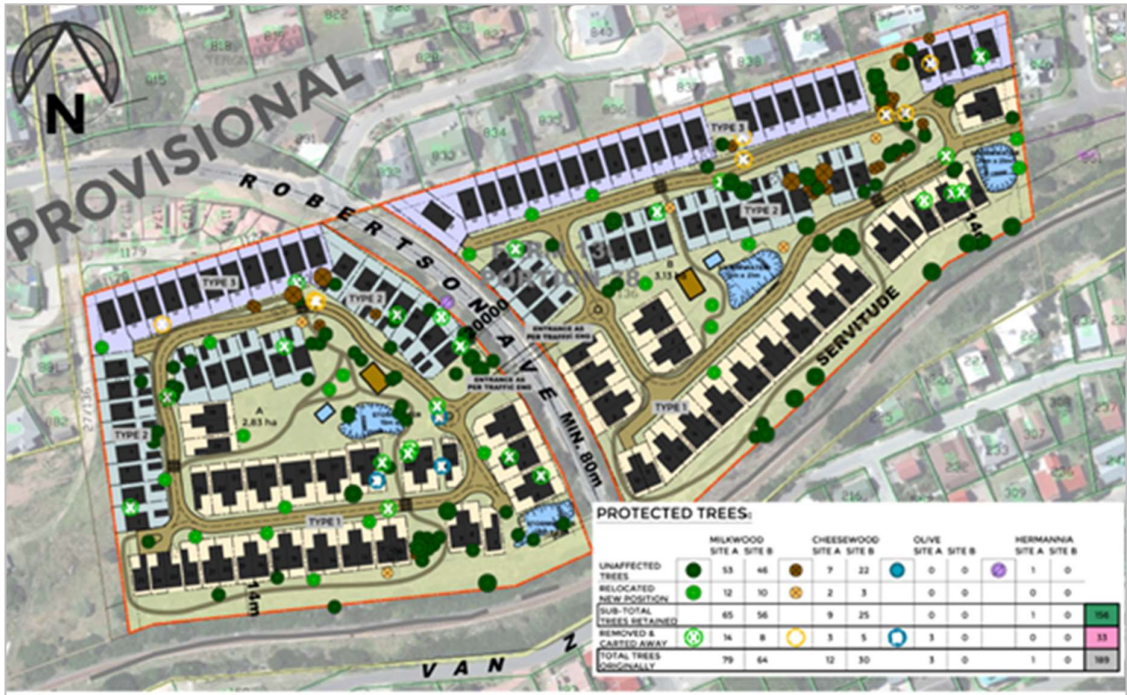


Figure 3. Alternative SDP 2 for Portion 38/136, Tergniet



Figure 4. Alternative SDP 3 for Portion 38/136, Tergniet

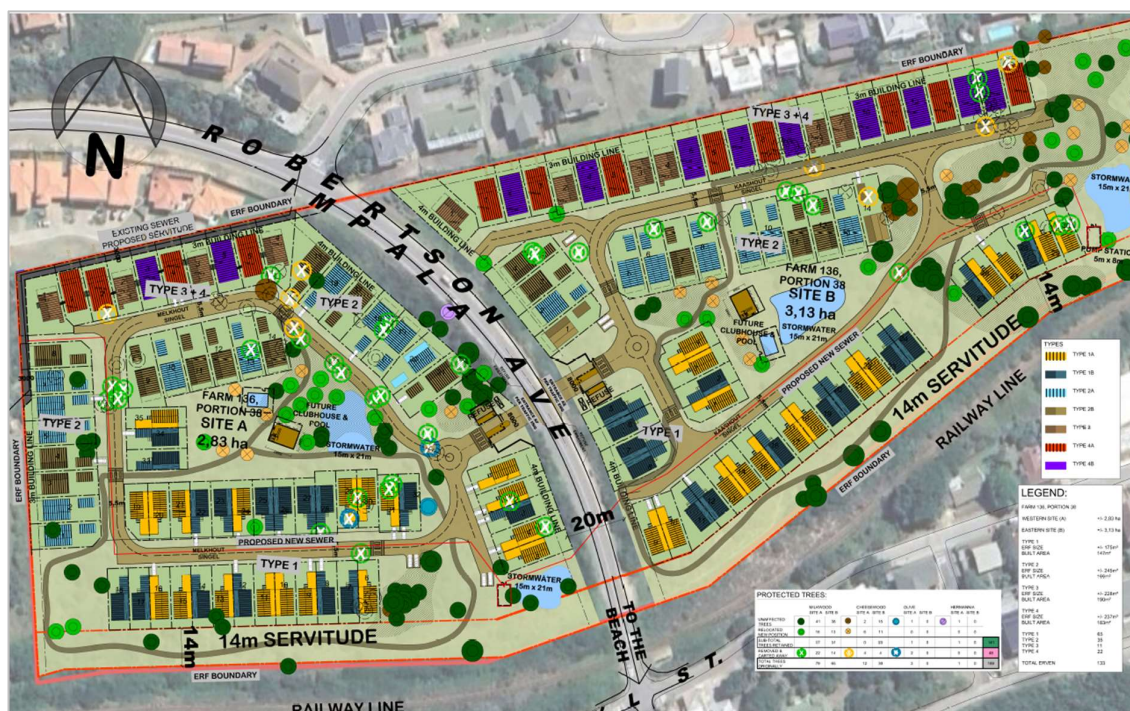


Figure 5. The preferred SDP for Portion 38/136, Tergniet which includes larger natural open space areas along the pipeline servitude.

The preferred layout (Figure 5) considers botanical concerns and aims to address the faunal sensitivities outlined in a previous iteration of this report. To this end, the 14m servitude is to serve as a corridor for wildlife as well as having walking paths for use by residents. Natural areas are included as “stepping stones” in parts to encourage the use of corridors for throughfare or as habitat (ca. 0.5ha in total). Barring this area, very little of the site is expected to remain natural, as formal open space planned for the development will be landscaped although some protected trees would be retained.

The Alternative SDPs cover the same total footprint of approximately 5.96 ha whilst the footprint is reduced by ca 0.5 ha in the preferred SDP of which ca. 0.234 ha is along the previously proposed faunal corridor along the servitude. Four types of units are being proposed on the site, with the preferred layout and the alternative layouts having differing erf sizes and number of erven. The preferred layout contains 11 fewer units to accommodate natural spaces along the boundary of the property.

2. TERMS OF REFERENCE

2.1 Online Screening Tool

The scope of work for this report is guided by the legislative requirements of the National Environmental Management Act (NEMA; Act 107 of 1998).

The Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool determined a **HIGH** sensitivity for the terrestrial animal species theme across most of Portion

38 of Farm 136, Tergniet (Figure 6), with several animal Species of Conservation Concern (SCC) potentially present (Table 1).

As per Published Government Notice No. 1150 of the Government Gazette 43855 (30 October 2020):

A **HIGH** sensitivity rating indicates:

1. Confirmed habitat for SCC.
2. SCC, listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered or Vulnerable, according to the IUCN Red List 3.1. Categories and Criteria and under the national category of Rare.

These areas are unsuitable for development due to a very likely impact on SCC.

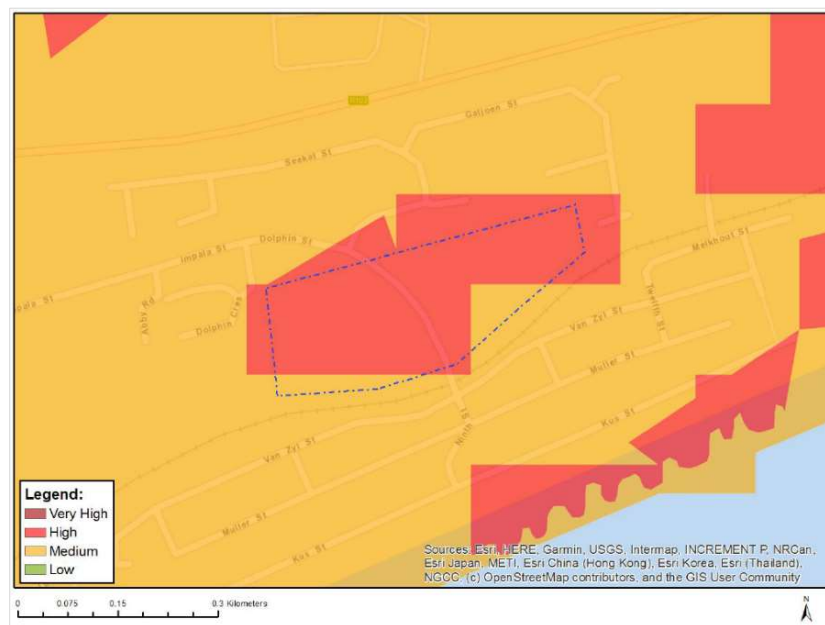


Figure 6. DFFE Online Screening Tool outcome for the terrestrial animal species theme on Portion 38 of Farm 135, Tergniet. The property boundary is indicated by the blue dashed line.

Table 1. Species of Conservation Concern highlighted by the DFFE Online Screening Tool for Portion 38 of Farm 135, Tergniet.

Sensitivity	Taxon	Scientific name	Common name	Red list status*
High	Avifauna	<i>Bradypterus sylvaticus</i>	Knysna Warbler	Vulnerable
High	Avifauna	<i>Circus ranivorus</i>	African Marsh Harrier (VU)	Endangered
Medium	Invertebrates	<i>Aloides thyra orientis</i>	Red Copper Butterfly	Endangered
Medium	Invertebrates	<i>Aneuryphymus montanus</i>	Yellow-winged Agile Grasshopper	Vulnerable
Medium	Invertebrates	<i>Lepidochrysops littoralis</i>	Nimble Coastal Blue Butterfly	Endangered
Medium	Mammal	-	Sensitive Species 8	Vulnerable

* Red list status as per SANBI's Red List of South African Species <http://speciesstatus.sanbi.org>, status as given in the BirdLife South Africa 2025 Red List in red.

2.2 Scope of work

The purpose of this report is to verify the site sensitivity of Portion 38/136 for the terrestrial animal species theme in accordance with the protocols specified in the Published Government Notice No. 1150, Government Gazette 43855 (30 October 2020).

The site sensitivity verification includes:

- A desktop assessment, to:
 - Characterize the vegetation, climate, general habitat features, and topography of the property.
 - Assess the property's location within the context of the Western Cape Biodiversity Spatial Plan (WCBSP).
 - Conduct a historical assessment of the property and immediate surroundings for any disturbances, development, and changes in land use or habitat characteristics over time.
 - Provide information on the habitat requirements for Species of Conservation concern highlighted by the DFFE online screening tool, in addition to other SCC indicated through online resources (e.g. Virtual Museum, iNaturalist) for the property and surrounding areas.
- On-site inspection(s) and field assessments to:
 - Verify the current land use and identify current impacts or disturbances on the property.
 - Characterize faunal habitats, determine the habitat suitability and the likelihood of SCC occurring on the property.
 - Conduct taxa-specific sampling for SCC in suitable habitats.
- Any other available and relevant information from
 - Discussions with landowners/neighbours.
 - Previous report findings for the property or surrounding areas.

Should the site sensitivity verification indicate a **LOW** sensitivity, then a Terrestrial Animal Species Compliance Statement will be issued.

Should the site sensitivity verification indicate a **HIGH** sensitivity, then a Terrestrial Animal Species Specialist Assessment will be compiled.

3. DESKTOP ASSESSMENT

3.1 Vegetation, Climate, and General Habitat

Portion 38 of Farm 136, Tergniet, Western Cape falls within the Albany Thicket biome (Mucina and Rutherford, 2006; Rebelo, *et al.* 2006). The mapped vegetation type at the site is Hartenbos Dune Thicket (AT40; Endangered), confirmed as present by the Botanical Specialist Report (B. Fouche, Confluent Environmental) despite the presence of alien plants and garden escapees. The report states that the vegetation was greatly disturbed in the past, but there has been no soil disturbance on the site for at least the past 35 years allowing for regeneration of this vegetation type. The site also has at least one plant Species of

Conservation Concern (SCC), has a high likelihood for occurrence of several other plant SCC, and has a high density of protected trees such as Milkwood (*Sideroxylon inerme*), and Cheeseewood (*Pittosporum viridiflorum*).

Portion 38 of Farm 136, Tergniet, Western Cape experiences a temperate climate year-round (Average temperatures range between 22°C and 12°C, with the hottest days experienced in February peaking around 27°C and the coldest days, experienced in July, not falling below 7°C. Rain occurs throughout the year in a bimodal pattern with the larger peak in November (Figure 7).

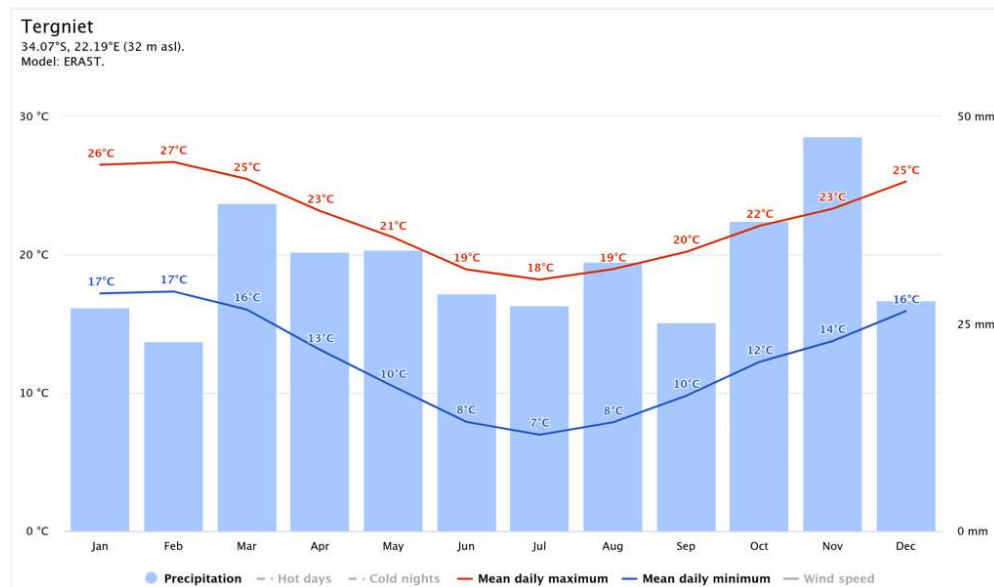


Figure 7. Summary of historical climate (modelled) for Portion 38 of Farm 136, Tergniet (www.meteoblue.com).

Satellite imagery from Google Earth and Cape Farm Mapper was used to assess general vegetation structure, topography, and water bodies within the project area (Figure 8). The site mainly comprises of dense bushy vegetation both west and east of the road, interspersed with grassed and sandy areas. Elevation is highest in the northwest of the erf but does not slope dramatically, with topography ranging from 42 masl (metres above sea level) to 23 masl (Figure 8). The National Wetland Map (V5) and Department of Water Affairs 1:50 000 flow paths were also applied to the site to assess for wetlands and watercourses, but this indicated no watercourses present on the property (Figure 1). This was subsequently verified by the aquatic specialist who confirmed that no watercourses are present on the property (F. de Ridder, Confluent Environmental).

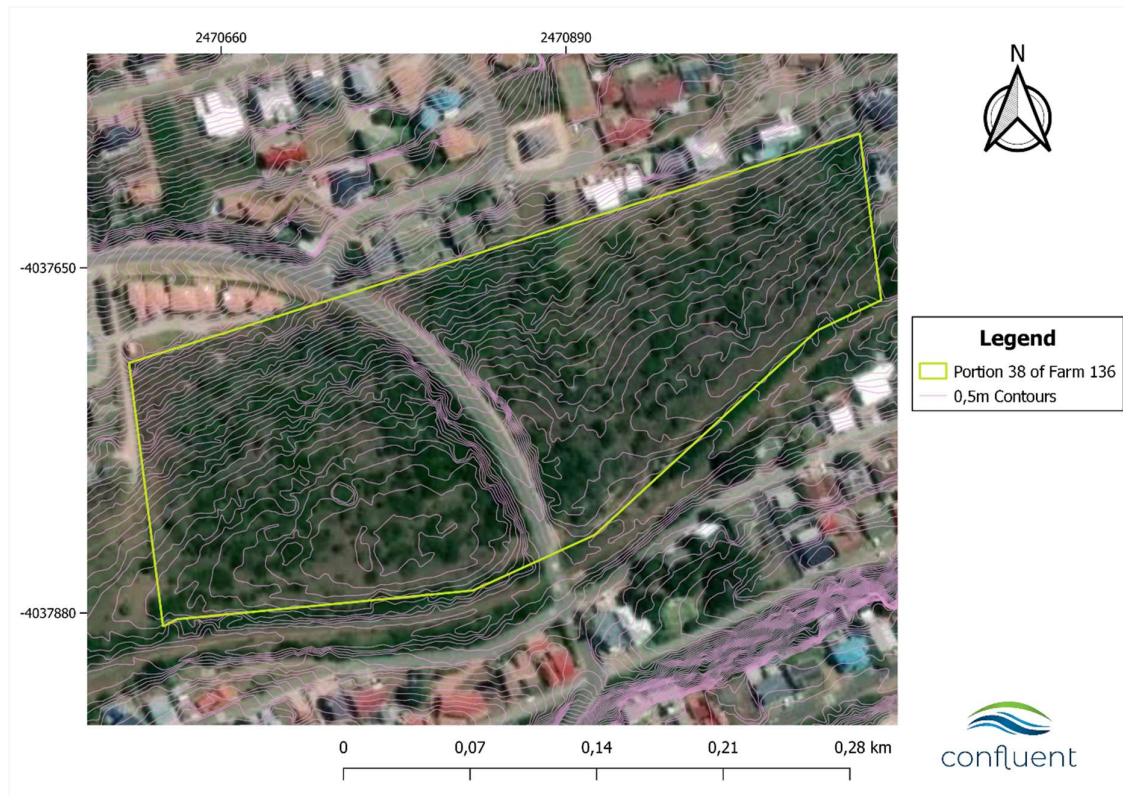


Figure 8. The proposed development site with 0.5m contour lines. No watercourses are mapped on, or close to the property.

3.2 Western Cape Biodiversity Spatial Plan

The Western Cape Biodiversity Act 6 of 2021 (WCBA) recognises the unique biodiversity in the Western Cape, the Republic's international obligations, the province's dependence on ecosystem services, the need for access and benefit sharing, and the need to ensure long-term ecological resilience.

Section 35 of the WCBA defines that the purpose of a Biodiversity Spatial Plan is to:

- Set biodiversity targets.
- Spatially identify one or more categories of biodiversity priority areas that will ensure the continued existence and functioning of biodiversity and ecosystems, including the delivery of ecosystem services.
- Provide guidelines that set out the desired management objectives for land and resource use in each category of biodiversity priority areas.
- Provide spatial planning and land-use decision-making guidelines to ensure environmentally sustainable development and resource use, as well as ecological and spatial resilience in the province.
- Ensure that the ecological infrastructure in the province is maintained, ecosystem fragmentation and loss are avoided, and the resilience of ecosystems and human communities to the impacts of climate change is strengthened.

To this end, additional mapping layers were applied to Portion 38 of Farm 136 to include the Western Cape Biodiversity Spatial Plan (Cape Nature 2023) with Critical Biodiversity Areas (CBAs) shown in Figure 9 and described in Table 2. The site falls within a CBA 1 zone with CBA 2 areas just outside of the site. The reasons for the biodiversity spatial plan layers CBA 1 and 2 assignments are listed below (grey entries either do not apply to the site or are outside of the scope of this report to provide comment on):

- Bontebok Extended Distribution Range: This theme addresses the ability of the site to support population/s of Vulnerable Bontebok (*Damaliscus pygargus pygargus*) as it forms part of the Extended Distribution Range of the species given in the Biodiversity Management Plan for Bontebok (Department of Environmental Affairs, Notice 887 of 2017). Suitable natural habitat for Bontebok is described as renosterveld patches, grassy micro-habitat patches in fynbos areas, and strandveld. None of these habitats are available at the site in sufficient amounts to support a population of Bontebok, even considering its connections to other areas in the landscape. Vegetation types outlined as suitable to support this species are given as Shale Renosterveld per the National Vegetation Map which does not characterize the present site. This theme is therefore not relevant to the site.
- Canca Limestone Fynbos (LT): Natural fynbos habitats are important for the conservation of fauna. This theme is, however, better addressed by the Botanical Specialist Report (B. Fouche — Confluent Environmental).
- Coastal resource protection- Eden: This theme is not addressed by this report.
- Foredune: This theme is not addressed by this report.
- Groot Brak Dune Strandveld (EN): This theme is not addressed by this report, see the Botanical Specialist Report for details (B. Fouche — Confluent Environmental).



Figure 9. Site map of Portion 38 of Farm 136 with layers for the Western Cape Biodiversity Spatial Plan's Critical Biodiversity Areas (CBA1).

Table 2 lists the definitions and management objectives associated with CBA1 areas. The definition of the site as a natural area required to meet biodiversity targets may be accurate given the near-natural state of the property. The two proposed SDPs proposed for development do not align with the management objective which calls for the area to be maintained in a natural or near-natural state, where only low-impact land used are appropriate.

Table 2. Definitions and objectives for conservation categories identified in the Western Cape Biodiversity Spatial Plan (CapeNature 2017).

WCBSBP Category	Definition	Management Objective
Critical Biodiversity Area 1 (CBA1)	Areas in a natural condition. Required to meet biodiversity targets for species, ecosystems or ecological processes and infrastructure.	Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.
Critical Biodiversity Area 2 (CBA2)	Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.	Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land-uses are appropriate.

3.3 Historical Assessment of Project Area

High resolution historical imagery (Figure 10) can be sourced upon request from the CD: NGI Geospatial portal, or from their offices in Mowbray, Cape Town. Google Earth is also a repository of more recent historical images.

1939 to 1974: The earliest imagery for the site was from 1939. By the end of 1939, the farm portion was cleared and used for agricultural purposes, probably dryland livestock grazing. It is difficult to tell if the site was irrigated at this time, however by 1957 the site had been more thoroughly transformed into an agricultural field. Some natural vegetation remained around the farm portion, and some houses had started to appear to the south between the site and the coastline. By 1963 the site was still fully transformed as an agricultural field, and no natural vegetation remained in the landscape surrounding Portion 38 of Farm 135. By 1974, the majority of natural woody vegetation had been entirely removed, and the Farm portion as well as the surrounding landscape was still an agricultural area. Portion 38 of Farm 135 was therefore transformed and kept clear of natural vegetation for 35 years between 1939 and 1974.

1989 to 2004: Another 15 years passed until 1989, and the property had been abandoned as an agricultural field at some point during that time. Woody vegetation was visible returning to the site in the 1989 imagery; however, it is not possible to know if this was predominantly indigenous or invasive woody plant species. Given the site assessment observations in 2024 by the Botanical Specialist's Report (B. Fouche—Confluent Environmental), it is assumed that the returning woody vegetation was a mixture of indigenous and invasive species. The woody vegetation on Portion 38 of Farm 135 densified for a period of time, as shown in the imagery from 1998 and 2004 in Figure 8. During this period, the agricultural fields in the surrounding landscape were also being abandoned and were slowly being replaced by low density residential houses (apart from the section south of the site which had become higher density residential).

2013 to present day: In October of 2013 there seems to have been some alien clearing activity that took place on Portion 38 of Farm 135, after which no clearing was seen again to the present day. The imagery from 2013 to the present day indicate that residential developments around the farm portion densified, and essentially the only open corridor remaining by 2019 was a piece of open land with one building along the western boundary of the site. Even though this piece of open land still exists today, the property further west is now also being developed (see the 2025 imagery in Figure 8), effectively removing the connectivity to a wider open space network and isolating Portion 38 of Farm 135.

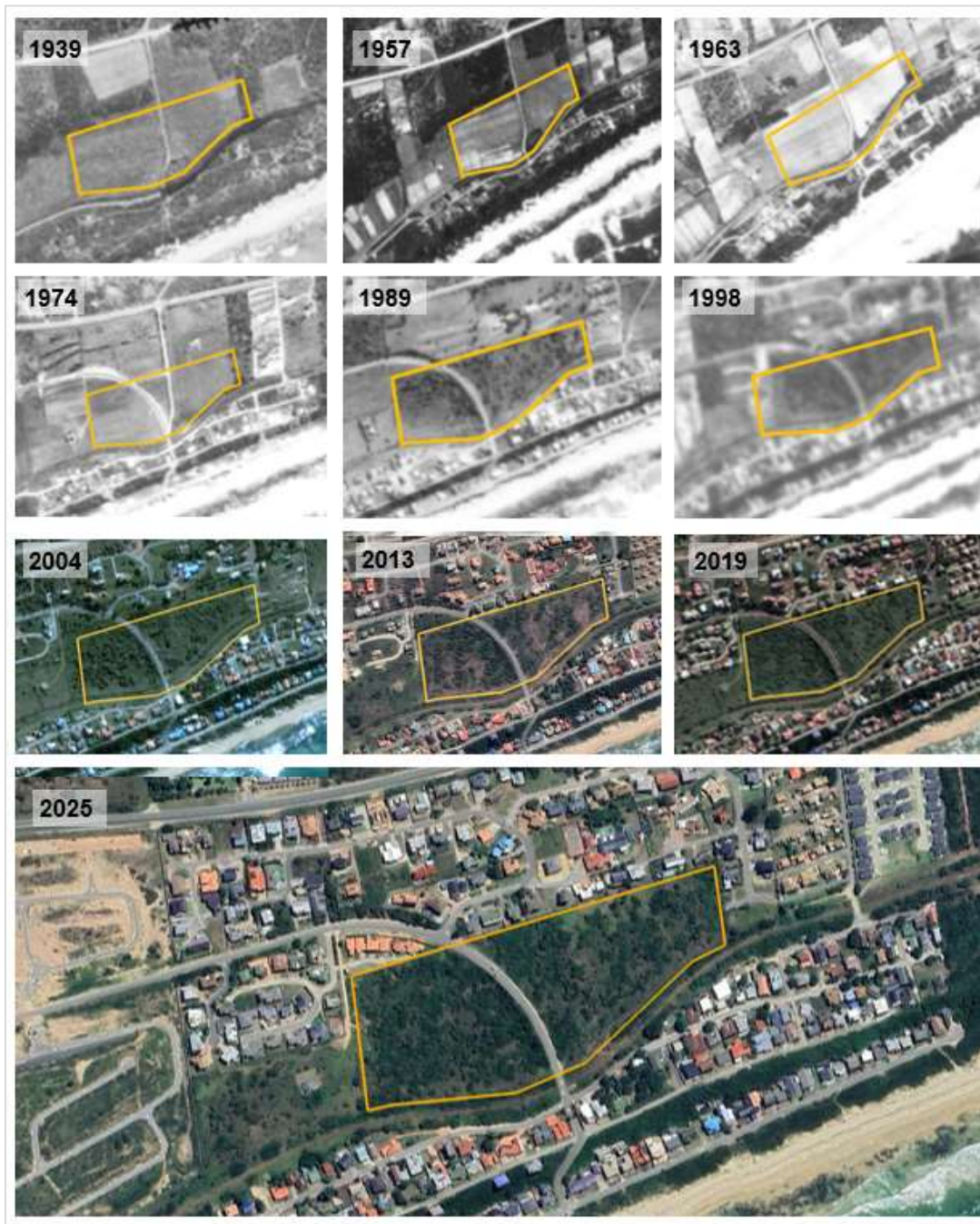


Figure 10. Historical imagery of Portion 38 of Farm 136, Tergniet sourced from the CD: NGI geospatial portal and Google Earth. The property boundary is indicated by the yellow line.

3.4 Species of Conservation Concern

In addition to the SCC highlighted by the DFFE screening tool (Table 1), the following public resources were consulted to provide additional SCC for Portion 38 of Farm 136 and its immediate surroundings:

- iNaturalist (all taxa) within 3 km of the project area.
- Virtual Museum for herpetofauna, mammals and invertebrate taxa within the Quarter Degree Squares (QDS) 3422AA: DungBeetleMAP, FrogMAP, LacewingMAP, LepiMAP, MammalMAP, OdonataMAP, ReptileMAP, ScorpionMAP, SpiderMAP (correct as of June 2024).
- South African Bird Atlas Project (SABAP2) for pentad 3400_2210.

Some SCC reported on the platforms were highly unlikely to occur at the site given either clearly unsuitable habitat or being deemed a vagrant/transient animal. For example, species that are fully adapted to marine environments would not occur at the site. For the purposes of this report these animals were excluded from further assessment (see also Section 4.2 and Appendix 1 for additional information).

The combined list of SCC (from DFFE Screening Tool and public resources) possibly occurring on the property, along with their habitat, breeding, and feeding requirements are listed in Table 3. The information for each SCC presented in Table 3 stems largely from the online [SANBI Red List of South African Species](#) in addition to a few key resources for each taxa:

- Avifauna:
 - o The [Regional Red Data Book of Birds of South Africa, Lesotho and Eswatini 2025](#) released by BirdLife South Africa in June 2025.
Since the new list was only released after field work and the desktop assessment had been conducted for this report, the foundational work for this assessment was completed using the 2023 BirdLife Red List. The status as given in both lists is included in this report, but the more recent listing is used for any determinations such as site ecological importance, for example.
 - o Roberts Birds of Southern Africa VII (Roberts, et al. 2005)
- Mammals:
 - o The Mammals of the Southern African Subregion (Skinner 2005)
 - o A Field Guide to Animal Tracks of Southern Africa (Liebenberg 2020)
- Invertebrates:
 - o Field Guide to the Insects of South Africa (Picker, Griffiths and Weaving 2019)
 - o Field guide to the Butterflies of South Africa (Woodhall 2005)

Any information presented from different sources is cited in the text.

Table 3. Summary of habitat, breeding, and feeding requirements for animal SCC potentially occurring on Portion 38 of Farm 136, Tergniet.

Species	Red List Status	Habitat	Breeding	Feeding
AVIFAUNA				
<i>Circus ranivorus</i> African Marsh Harrier	Vulnerable (2025 listing)	Considered a waterbird. Roosts on taller trees around wetland edges from where it has a good vantage point. Can adapt to novel wetland habitats such as wastewater treatment works.	Breeding occurs between September and December. Egg-laying is from August to November in South Africa. Nests are made of grass, reed stems, or sticks in reedbeds, short sedge areas, or in trees along the water's edge. The same nest is often reused by the same pair in following years.	Dietary assessment (Simmons et al., 1991) of pellets and prey deliveries to nests includes birds, frogs, fish, eggs, and small mammals (<i>Rhabdomys</i> , <i>Otomys</i> , and shrews). Hunts primarily in wetland habitats using various flight methods including soaring, hovering, and low flight over wetlands and along the water's edge. May hunt in open grasslands or pastures near wetland areas.
<i>Bradypterus sylvaticus</i> Knysna warbler	Near Threatened (2025 listing)	Inhabits dense understorey vegetation along riverbanks in fynbos forest patches, riverine woodland, and afro-montane forest and has even adapted to thickets of non-native brambles (e.g. <i>Rubus</i>). (BirdLife International, 2016). Is adapted to densely vegetated gardens.	Breeds from August and December coinciding with the greatest abundance of invertebrate species. (BirdLife International, 2016).	Forages mostly on the ground, creeping through dense, matted vegetation and scratching in humus. Eats mostly grasshoppers, insect larvae, spiders, slugs, and worms
TERRESTRIAL INVERTEBRATES				
<i>Aloeides thyra orientis</i> Red Copper Butterfly	Endangered	Restricted range taxon endemic to the Western Cape from Witsand to Gouritsmond in the west, to Brenton-on-Sea in the east. Declining because of alien plant encroachment and lack of regular burning of fynbos. Occurs in coastal fynbos on flat sandy ground (either naturally occurring or from anthropogenic disturbances such as footpaths or unsurfaced track) between 40 to 240masl (metres above sea level).	Adults are on wing from July to April with peaks in October and February. Several generations per year through the warmer months (Woodhall, 2005)	Larvae feed on <i>Aspalathus acuminata</i> , <i>A. laricifolia</i> and <i>A. cymbiformis</i> . The larvae are attended to by <i>Lepisiota capensis</i> ants (Woodhall, 2005).
<i>Aloeides trimeni southeyae</i> Trimen's Copper Butterfly	Endangered	Restricted range endemic to the southern coastal region in the Western Cape. Three widely separated (disjunct) populations between Albertinia in the west and	Two broods, September to December (peak in October) and January to April (peak in February).	Larval food includes <i>Aspalathus</i> spp., <i>Hermannia depressa</i> , and possibly other <i>Hermannia</i> species, such as <i>H. lavendulifolia</i> (pers. comm— D. Edge)

Species	Red List Status	Habitat	Breeding	Feeding
		Hartenbos in the east. The species occupies grassy fynbos near Mossel Bay. Gently north-facing slopes or flat lands, sparsely covered by low shrubs with bare ground in between.		
<i>Lepidochrysops littoralis</i> Nimble Coastal Blue	Endangered	Endemic to the Western Cape with severely fragmented and isolated populations existing between De Hoop Nature Reserve (near Bredasdorp) in the west to a few kilometres west of Mossel Bay in the east. Occurs in rocky limestone ridges or sand dunes in coastal fynbos. Usually found quite close to the shore, as at Still Bay. There may be suitable habitat between some of the known locations on rocky outcrops. Male has territories around clumps of shrubs, at dune peaks, and in clearings in dense vegetation. Classified as an extreme stenotope (Williams and Dobson, 2023)	Extended brood from late August to December.	No larval food is known. The host plant of this SCC are <i>Selago</i> spp (pers. comm.—D. Edge).
<i>Aneuryphymus montanus</i> Yellow-winged Agile Grasshopper	Vulnerable	Very low area of occupancy between 100 and 1000 km ² . Threatened by declining habitat due to invasion by aliens and habitat transformation. Strong association with sclerophyllous fynbos vegetation on the southern slopes of the Outeniqua mountains, post-fire. Threats to the species include habitat transformation and invasion by alien plants.	Not known	Not known
<i>Aloeides pallida littoralis</i> Knysna Pale Copper Butterfly	Near Threatened	Endemic taxon to the Western Cape Province. Relatively flat terrain near the coast, coastal Fynbos	Little is known, but <i>Lepisiota capensis</i> ants are hosts for subspecies <i>A. p. grandis</i> .	Little is known, but larval food for the subspecies <i>A. p. pallida</i> and <i>A. p. jonathani</i> feed on <i>Aspalathus</i> species. The larvae of subspecies <i>A. p. grandis</i> are fed by trophallaxis by <i>Lepisiota capensis</i> ants and later feed on these ants' eggs.

Species	Red List Status	Habitat	Breeding	Feeding
MAMMALS				
Sensitive Species 8	Vulnerable	Specialised habitat requirements within a home range of ca. 0.75 ha (Skinner & Chimimba, 2005). Strong preference for dense vegetation with good undergrowth providing cover in which to retreat. Forest, thicket, dense coastal bush, independent of water. Can inhabit forest edges and transitional zones. Requires diverse plant community with a variety of trees and shrubs. Can adapt to fragmented habitat given sufficient cover and food. Actively avoids open grasslands, and areas with human disturbance.	This species can breed throughout the year. Males establish territories and exhibit aggressive behaviours towards other males to attract females.	Highly selective feeders, often feeding on food below troops of monkeys or frugivorous birds which drop lots of material. Preference for fruit, but also fallen leaves, flowers, and insects. Seldom actively browse. Active in the early morning and late afternoon, foraging for around 8 hours a day within their territory.
<i>Amblysomus corriae</i> Fynbos Golden Mole"	Near Threatened	Sandy soils and soft loams in mountain fynbos, grassy fynbos and renosterveld of the south west Cape. Also afromontane forest and southern African moist savanna along the southern Cape coast. Favours richer and wetter soils (Broom, 1907) preferring forest fringes and associated fynbos. Thrives in gardens, cultivated lands, golf courses and livestock paddocks. Present also in exotic plantations at lower densities (Bronner, 2013).	Fynbos Golden Moles probably breed aseasonally because pregnant females have been captured in August, May, and December. Mean litter size is two; young are altricial and hairless at birth.	Feeds mainly on earthworms and insects (Skinner & Chimimba, 2005).
<i>Poecilogale albinucha</i> African Striped Weasel	Near Threatened	Rare in range and easily overlooked, predominantly nocturnal and well adapted to subterranean lifestyle. Most abundant in savanna and grasslands, particularly with rainfall > 600mm per year. But habitat tolerance is very broad, found in lowland rainforest, semi-desert grassland, fynbos (with dense grass) and pine plantations (Child et al., 2016).	Breeding season is during spring and summer months in southern Africa. Usually produces only one litter per season which comprises of 1-3 pups. Pups are fully grown at 20 weeks.	Small mammal specialist, up to own body weight in size, but occasionally takes birds also. Has a fast metabolism and requires an abundance of prey in territory (Child et al., 2016). Considered to have very close association with molerats, likely as a food source but also for habitat preference, especially in western, drier sections of its range (Child et al., 2016).

4. FIELD ASSESSMENT

4.1 Methods

Following the Species Environmental Assessment Guidelines (SANBI 2020) and Table 3, taxa-specific sampling techniques were conducted in habitats where SCC were likely to occur. Taxa-specific sampling was interspersed with a meander across the project area to collect additional opportunistic data for all fauna and inspect all habitat types (Table 4).

Table 4. Sampling techniques conducted for potential SCC occurring on the site.

Taxa	Field methods	Public platform where observations were reported
Avifauna	- Meander* across site for direct observations. 3 point counts (5 minute bird counts). - Audio device for recording calls (deployed for 4 hours)	Birdlasser (species lists), iNaturalist (photos)
Mammals	- Meander* across site for direct observations, tracks, scats, and signs. 2 camera traps (deployed for 1 week)	iNaturalist (photos)
Invertebrates	- Meander* across site for direct observations. - Active searching. - Sweep netting in sandier areas where not inhibited by dense shrubs.	iNaturalist (photos)

* Meandering involved slow walking across the site through various habitat types and key landscape features (Figure 12). Active observations took place for all fauna throughout this walk which was then supplemented by taxa specific sampling methods in habitats deemed most suitable for SCC.

4.2 Assumptions and Limitations

1. While the public platforms mentioned in Section 3.4 are excellent sources of additional information for animal species occurring within an area, these results require some expert interpretation to determine which of the SCC are relevant to include in the faunal assessment of the project area. For example, the coarse spatial scale of reporting within the Virtual Museum platforms (Quarter Degree Square level (27km x 27km) or SABAP2 pentad level (9km x 7 km)) can result in species records from habitats quite different to those present on site. Additionally, these platforms include sightings of vagrant or transient animals upon which an assessment cannot reasonably be based. Expert interpretation is therefore applied to the full list of SCC identified by the various public platforms (see Appendix 1: SCC identified from public platforms for the project area.) and some species are then excluded from further assessment due to the project area clearly lacking suitable habitat or the species clearly representing a vagrant or transient animal outside its normal range. The SCC assessed in this report therefore represent those which may reasonably occur on site. However, there is always the possibility that some SCC (although highly unlikely to occur on site) are overlooked in this process.
2. Two field visits took place to the site for the faunal assessment. The detectability of animal species increases with more visits. This assessment therefore only represents a “snap-shot” in time and it is possible that SCC occurring on site were not observed during the visit. These results should therefore be interpreted with this in mind and not

be treated as an exhaustive list of species occurring on site. To compensate for this, camera trap(s) were left on site for a week (13 to 20 June 2025) to enhance faunal observations.

3. Site visits took place during daylight hours so the likelihood of encountering nocturnal species was limited although no species of this description were highlighted as SCC.
4. The site visit coincided with late autumn. This may be of consequence for some species showing seasonal variation in breeding and activity patterns.
5. Evidence of animals in the form of tracks, scats, and signs always brings with it a level of uncertainty, but best efforts were made in this regard, and uncertainties are highlighted in the report.

4.3 Site Inspection Details

Two site visits took place on the property on 13 June and 20 June 2025, with the purpose of the second visit being to collect camera traps. The site visit was undertaken together with the aquatic specialist (Mr. F. de Ridder, Confluent Environmental). The weather was partly cloudy and warm with little wind: suitable conditions for catching invertebrates using sweep netting, albeit in mid-winter. Vegetation type mapped for the site according to the National Vegetation Map is Hartenbos Dune Thicket (AT40- Endangered). This classification is consistent with observations on the site as it consists of thicket, with some large trees, mainly protected trees such as Milkwood (*Sideroxylon inerme*) and Cheesewood (*Pittosporum viridiflorum*); interspersed with sandy and grassed areas, predominantly on or around paths or due to molerat activity (Figure 11; See Botanical Specialist's Report (B. Fouche — Confluent Environmental)). Road verges are also grassed with sandy patches. Some alien plant invasions are also present as well as typical garden plants. An effort was made to cover the project area with the meander and to conduct taxa specific sampling techniques across a range of suitable habitats for potential SCC (Figure 12).

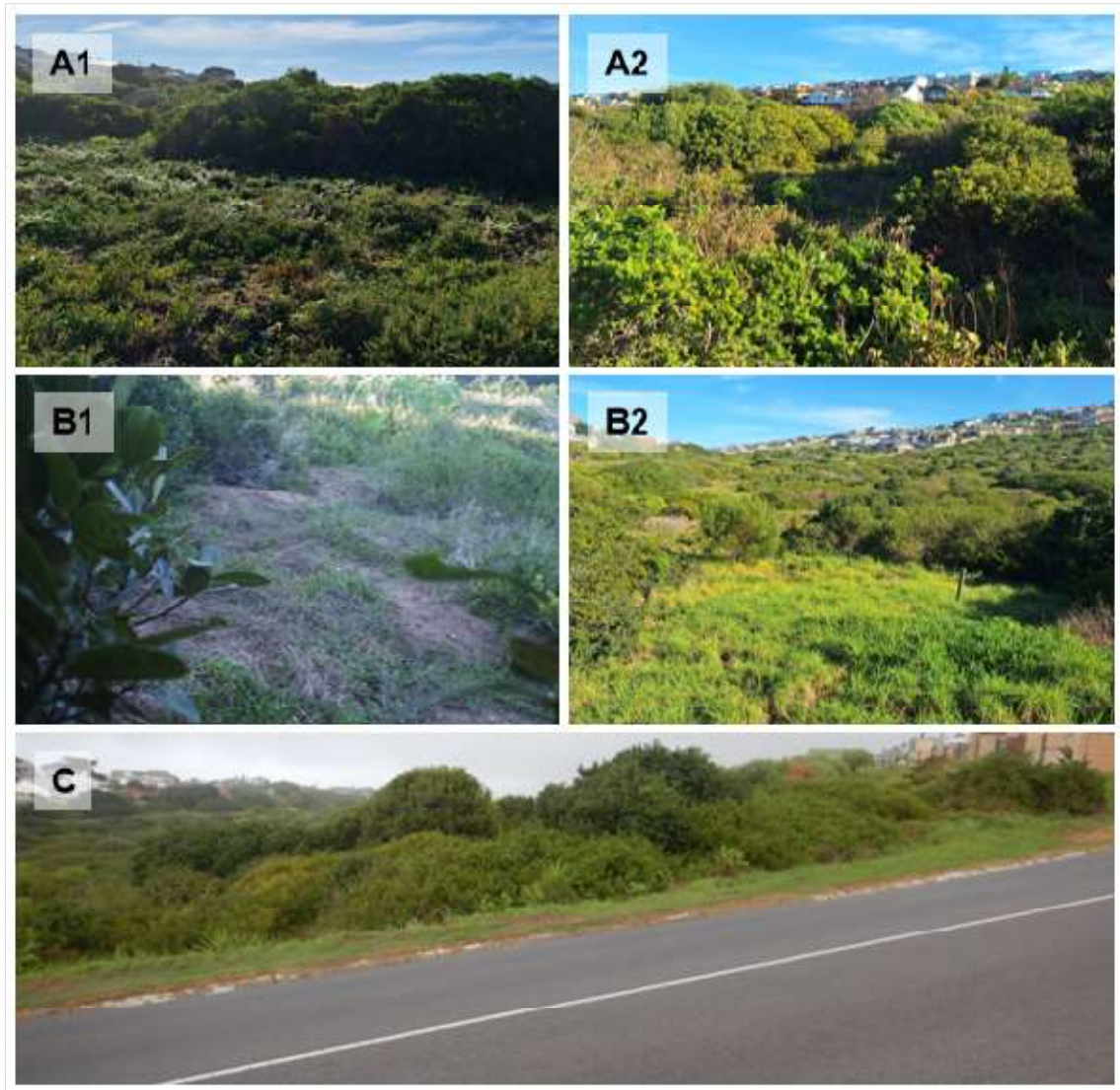


Figure 11. Habitat and Land Cover types identified on Portion 36 of Farm 136 namely: (A1.) Thicket vegetation with trees in the background, east of the road running through the property; (A2.) Dense thicket west of the road; (B1.) Sandy grassed area west of the road; (B2.) Grassed area west of the road with dense thicket in the background and; (C.) The road running through the property with the grassed road verge and thicket in the background.



Figure 12. Habitats and land cover found on Portion 38 /136, Tergniet. GPS track of the site visits and locations for the audio device, bird counts, and camera traps are included.

4.4 Results

4.4.1 Avifauna

No SCC was encountered during the site visit. Two 5-minute bird counts were conducted in the property, and one outside of the property. Opportunistic sightings were noted throughout the meander and nests/roosting sites were searched for in suspected habitat. A total of 21 bird species were identified during the site visit (See Appendix 2 for the full list of bird species; Species commonly observed are shown in Figure 11).



Figure 13. Common birds found at the site namely, (A.) Cape Spurfowl (*Pternis capensis*); (B.) Speckled mousebirds (*Colius striatus*); (C.) Ring-necked Dove (*Streptopelia capicola*) and; (D.) Karoo Prinia (*Prinia maculosa*).

4.4.2 Mammals

There was evidence of sub-surface tunnelling by golden moles (Chrysochloridae) found on site in the sandier areas of the site, east of the road (Figure. 12). These are most likely to be caused by Least Concern Cape Golden Mole (*Chrysochloris asiatica*) but may have been formed by Near Threatened Fynbos Golden Mole (*Amblysomus corriae*) since the species have a range overlap in this area and form similar tunnels. Per the precautionary principle, Fynbos Golden Mole is therefore assumed present. Vulnerable Duthie's Golden Mole (*Chlorotalpa duthieae*) is least likely to be the species of Golden Mole present due to unsuitable habitat (no forest) and the site representing the edge of the predicted range of this species.

Cape Dune Molerat (*Bathyergus suillus*) hills were found in greater abundance across the sandier areas of the site especially along the edges of the property, along the road, and along paths. A Cape Grysbok (*Raphicerus melanotis*) was seen on the site by residents and evidence of the species' use of the site was found (tracks and droppings) in the sandier areas of the site although this does not mean they are precluded from using the thicket areas; sand offers superior visibility for tracks and scat. Rodents (Muridae) and rodent paths were found

across the site especially in the grassed areas of the site. Scat identified as belonging to mongoose (Herpestidae) was observed.



Figure 14. Evidence of mammal species identified during site visits to Portion 38 of Farm 136, Tergniet namely (A.) Mongoose (*Herpestidae*) scat; (B.) Grysbok (*Raphicerus melanotis*) track; (C.) Small rodent (*Muridae*) path; (D.) Molerat hills suspected of being made by Cape Dune Molerat (*Batheyergus suillus*); and (E.) Golden mole (*Chrysochloridae*) foraging tunnel.

4.4.3 Terrestrial invertebrates

No SCC were found during the site inspections. Twelve species of invertebrates are recorded for the site through direct or indirect (signs and traces) observation with some captured in photographs (Figure 13). The most abundant evidence of invertebrate species was Dark Sheetwebber (*Euprosthenopsis pulchella*) webs which are quite distinctive. Other types of spider webs were found but no species level determination was possible. Grasshoppers (Orthoptera) suspected of being Lamenting Grasshoppers (*Eyprepocnemis plorans*) were present across the site later in the day. Distinctive Black cocktail ant (*Crematogaster peringueyi*) carton nests were found. Two snail species namely Zebra agate snails (*Cochlitoma zebra*) and Garden Snail (*Cornu aspersum*) were found as well as a single Cape Flatface Rhino Beetle (*Temnorhynchus retusus*).

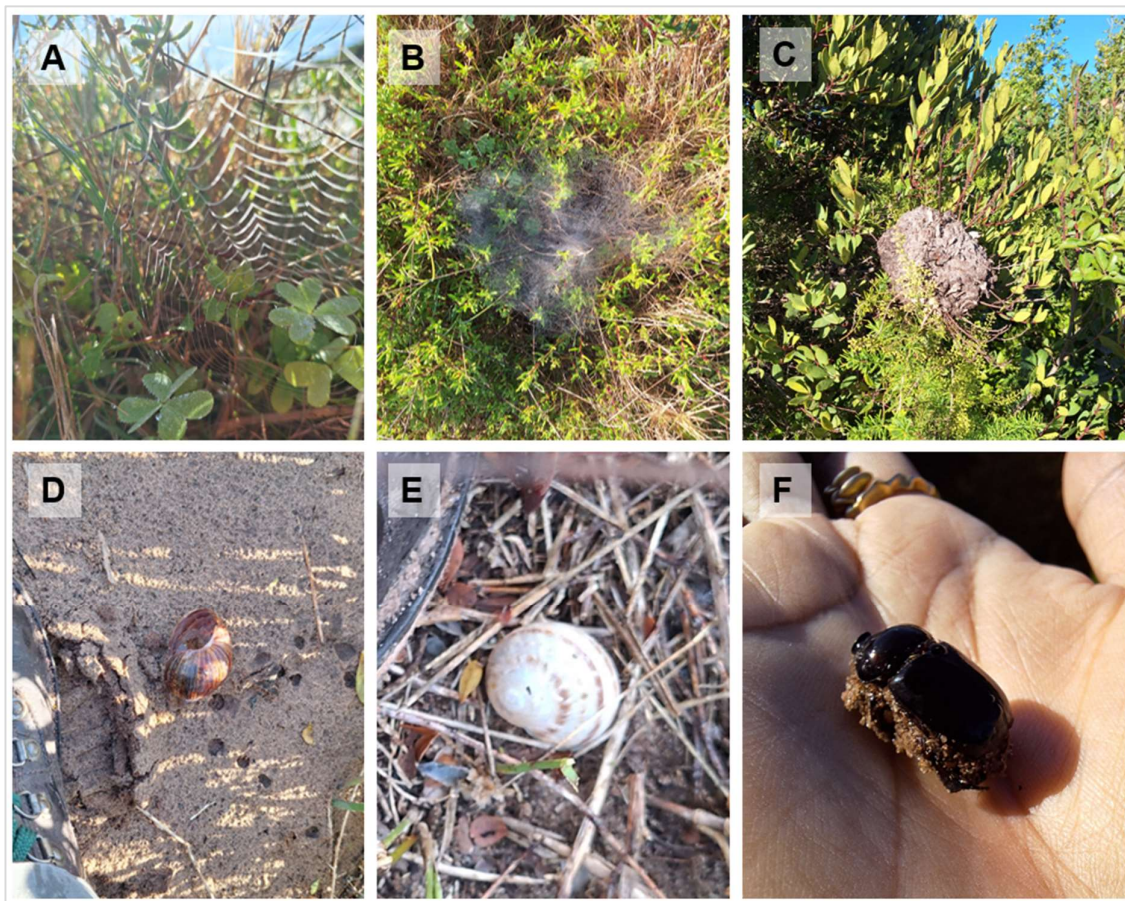


Figure 15. Some invertebrates and evidence of invertebrates found at the site namely (A.) Spider webs (*Araneaea*) that differ from those of (B.) Dark Sheetwebber (*Euprosthenopsis pulchella*); (C.) Nests of Black Cocktail Ants (*Crematogaster peringueyi*); (D.) Zebra Agate Snail (*Cochlitoma zebra*); (E.) Garden Snail (*Cornu aspersum*) and; (F.) Cape Flatface Rhino Beetle (*Temnorhynchus retusus*).

A variety of butterfly and moth (Lepidoptera) species were identified for the site (Figure 14), namely Painted Lady (*Vanessa cardui*), Pea Blue (*Lampides boeticus*), African Small White (*Dixeia charina charina*), Blue Pansy (*Junonia orithya*), and Barred Eggjarlet Moth (*Bombycomorpha bifascia*) caterpillars. Butterfly host plants and ant species were not found at the site. Although none of the butterfly SCC were directly observed on the site, first-hand observation of these species is challenging given the season, limited number of site visits, and sampling methods. The presence of suitable host plant species can therefore be used as an indicator of habitat suitability in the absence of direct observations. However, in this case the host plants of three butterfly species, namely *Aspalathus* spp. or *Selago* spp. were not present on the site, although the latter is given a high likelihood of occurrence in the Botanical Specialist's report (B. Fouche— Confluent Environmental). A widespread species, *Hermannia lavendulifolia*, was observed.

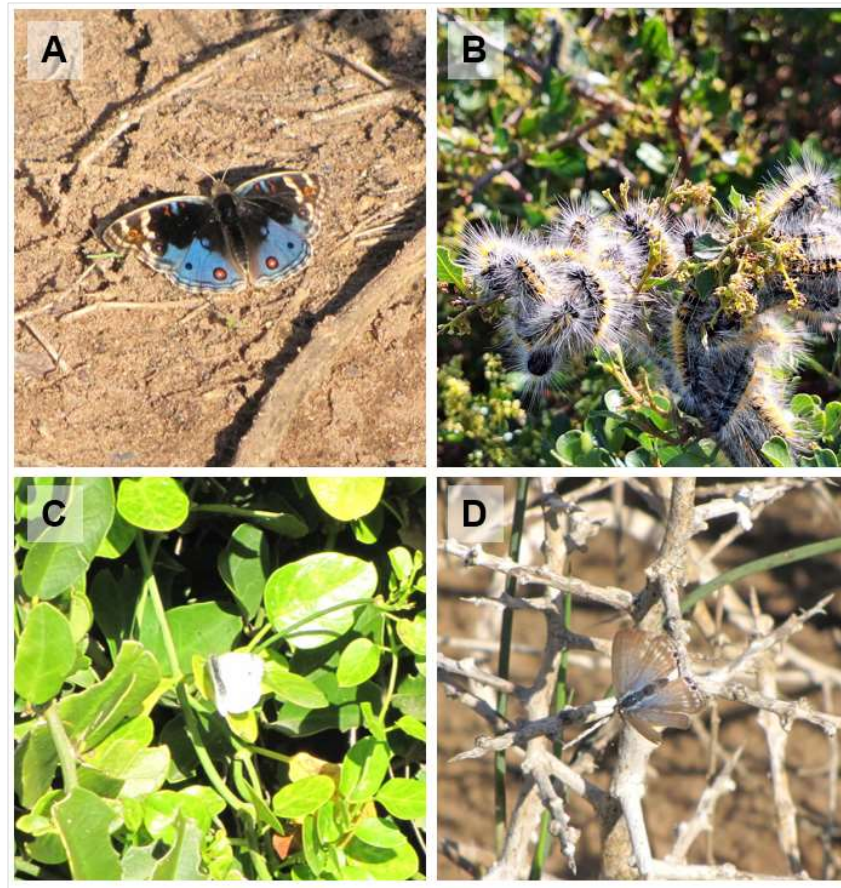


Figure 16. Some butterfly and moth species photographed on Portion 38 of Farm 136, Tergniet namely (A.) Blue Pansy (*Junonia orithya*); (B.) Barred Eggarlet Moth (*Bombycomorpha bifascia*); (C.) African Small White (*Dixeia charina charina*) and; (D.) Pea Blue Butterfly (*Lampides boeticus*).

4.4.4 Amphibians

No amphibians were highlighted for this site, so no targeted sampling took place for the taxon. Clicking Stream Frogs were heard, particularly west of the road running through the property. No other amphibians were seen or heard, which is not surprising given the lack of any waterbodies/ watercourses at site.

4.4.5 Reptiles

No reptile SCC were highlighted for this site by the DFFE Screening Tool or any of the public platforms. As such, no targeted sampling took place for this taxon. However, neighbours report that Puffadders (*Bitis arietans*) are found on the property.

4.4.6 Likelihood of Occurrence for SCC

Following the terrestrial fauna surveys and site inspection, the possible SCC occurring on Portion 38 of Farm 136, Tergniet were evaluated according to their likelihood of occurrence (Table 6). It is always possible that a species assessed as having a low probability of occurrence can still occur on the site, especially species which are listed as having a low likelihood of detection, and therefore this table should only be used as a guideline.

Table 5. Likelihood table for faunal SCC suspected to occur on Portion 38 of Farm 136, Tergniet.

Species	Red list status	Observed	Suitable habitat	Likelihood of occurrence	Reason
AVIFAUNA					
<i>Circus ranivorus</i> African Marsh Harrier	Vulnerable (2025 listing)	No	No	Low	Prey species are present but there are no suitable wetlands on the site or within close proximity of the site. Since this SCC can be considered a waterbird, it is therefore not likely to occur at this site.
<i>Bradypterus sylvaticus</i> Knysna warbler	Near Threatened (2025 listing)	No	Yes	Medium	The species requires dense vegetation which can be found at the site and forage is readily available in the form of various invertebrates.
TERRESTRIAL INVERTEBRATES					
<i>Aloeides thyra orientis</i> Red Copper Butterfly	Endangered	No	No	Low	The known distribution of this SCC is from Witsand to Gouritsmond in the west, to the Brenton Peninsula near Knysna in the east. Both extents of the distribution are not close to the site. The vegetation type at the site aligns with the preferences of this SCC, but host <i>Aspalathus</i> species are not present.
<i>Aloeides trimeni southeyae</i> Trimen's Copper Butterfly	Endangered	No	No	Low	The species is not found in Hartenbos Dune Thicket. <i>Hermannia lavandulifolia</i> is found at the site, confirmed as a potential host plant for this species (D. Edge pers comm). It is, however, noted that the westernmost extent of the distribution of this SCC is listed as Hartenbos, 8km away (as the crow flies) and the species has a low dispersal ability (1 to 2 km). The aspect of the preferred habitat (gentle north-facing slopes) of the SCC does not accord with what is found at the site.
<i>Lepidochrysops littoralis</i> Nimble Coastal Blue	Endangered	No	Yes	Low	The vegetation type at the site is known to support the SCC. Although no <i>Selago</i> species were found, the host species of this SCC (D. Edge pers comm) were found at the site, two SCCs belonging to the genus are flagged as having a high likelihood of occurrence in the botanical specialist's report (B. Fouche--Confluent Environmental). It is, however, noted that "rocky limestone ridges or sand dunes in coastal fynbos" does not accord with what is observed at the site. Additionally, the westernmost extent of its range is just west of Mossel Bay, over 9km away.
<i>Aneuryphymus montanus</i> Yellow-winged Agile Grasshopper	Vulnerable	No	No	Low	No suitable habitat is present to support the species, nor is the site close to the known range of the SCC.
<i>Aloeides pallida littoralis</i>	Near Threatened	No	No	Medium	The subpopulations currently included in this taxon have a range from Kogelberg in the west to Plettenberg Bay in the east. The species is found on relatively flat terrain

Species	Red list status	Observed	Suitable habitat	Likelihood of occurrence	Reason
Knysna Pale Copper Butterfly					close to the coast in Hartenbos Dune Thicket. No <i>Aspalathus</i> species are found at the site therefore the species is given a low likelihood of occurrence.
MAMMALS					
Sensitive Species 8	Vulnerable	No	Yes	Medium	The SCC is a forest specialist and is sensitive to land-use change and anthropogenically transformed landscapes, but has been found in coastal thicket areas before. The SCC can also adapt to fragmented habitats.
<i>Amblysomus corriae</i> Fynbos Golden Mole"	Near Threatened	Yes	Yes	Confirmed ¹	This SCC is confirmed present east of the road.
<i>Poecilogale albinucha</i> African Striped Weasel	Near Threatened	No	No	Low	Thicket vegetation or the characteristics thereof are not listed as a preferred habitat type for this SCC. The mole population of the site does not appear to be subject to much predation: This SCC has a high metabolic rate, which means its presence would make a sizable dent in the population size of its preferred prey species (i.e. small mammals especially mole-rats).

¹ Golden mole is confirmed present at the site, and is treated as the Fynbos Golden Mole as per the Precautionary Principle.

5. SITE SENSITIVITY VERIFICATION

After the site visit and fauna surveys, it is determined that the site sensitivity for the terrestrial animal theme of Portion 38 of Farm 136, Tergniet is **HIGH**. This accords with the **HIGH** sensitivity highlighted by the DFFE Screening tool for most of the property.

Based on the information in this report during the desktop and field assessment, the following reasons support this finding:

- The confirmed presence of Golden Moles (Chrysochloridae) at the site as evidenced by tunnels in the area. The most common species of Golden Mole in the area is Least Concern Cape Golden Mole (*Chrysochloris asiatica*), but there is a significant range overlap with Near Threatened Fynbos Golden Mole (*Amblysomus corriae*) in this area. Vulnerable Duthie's Golden Mole (*Chlorotalpa duthieae*) is least likely to be at the site due to unsuitable habitat and the site representing the edge of the predicted range of the species. The species is treated as Fynbos Golden Mole (*Amblysomus corriae*) per the precautionary principle, as this is the species with the highest Red List status that may reasonably occur given the habitat present and known, reliable, distribution records.
- The medium likelihood of occurrence of two species namely: Vulnerable Knysna warbler (*Bradypterus sylvaticus*) and Sensitive Species 8 due to the dense areas of thicket on the property.
- The medium likelihood of occurrence of Knysna Pale Copper Butterfly (*Aloeides pallida littoralis*) due to suitable habitat, vegetation type, and the site falling within the known range of the SCC. The absence of the potential host genus *Aspalathus* leads to an assignment of a medium likelihood of occurrence rather than a high likelihood.

As per the Published Government Notice No. 1150, Government Gazette 43855 (30 October 2020), sensitivity of the site requires a Terrestrial Animal Species Specialist Impact Assessment to be conducted.

6. SITE ECOLOGICAL IMPORTANCE

The Site Ecological Importance (SEI) is determined for habitats within the property, taking associated fauna SCC into account (Table. 7).

SEI is a function of biodiversity importance (BI) and receptor resilience (RR) such that: $SEI = BI + RR$. BI is further defined as a function of conservation importance (CI) and habitat functional integrity (FI), with $BI = CI + FI$, and is determined by means of a matrix. SEI can therefore be fully understood as $SEI = (CI + FI) + RR$, where:

Conservation Importance (CI): The importance of a site for supporting biodiversity features of conservation concern present.

Functional Integrity (FI): A measure of the ecological condition of the impact receptor (i.e., habitat type) as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts.

Receptor Resilience (RR): The intrinsic capacity of the receptor (i.e., habitat type or SCC) to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention.

The SEI is derived for each habitat type or SCC within a project site by making use of two matrixes: first to calculate the BI and then the SEI. These matrixes and further details can be found in Appendix 3.

Table 67 provides the SEI calculations for each habitat type and Figure 17 illustrates the SEI results for the property. It is important to note that the SEI reported here is specific to the proposed development and associated activities of this report and can only be used to compare multiple layouts and/or locations for the development.

Table 6. Site Ecological Importance assessment for Portion 38 of Farm 136, Tergniet. Conservation status for SCC is abbreviated to indicate Critically Rare/Endangered (CR), Endangered (EN), Vulnerable (VU) or Near Threatened (NT). When relevant, the extent of occurrence (EOO) and area of occupancy (AOO) are indicated as part of the justification for the conservation importance (CI) metric.

Habitat and associated SCC	Conservation Importance (CI)	Functional Integrity (FI)	Biodiversity Importance (BI)	Receptor Resilience (RR)	Site Ecological Importance (SEI)
Thicket <u>SCC:</u> <i>Bradypterus sylvaticus</i> (NT 2025 listing) <i>Amblysomus corriae</i> (NT) <i>Aloeides pallida littoralis</i> (NT) Sensitive Species 8 (VU)	HIGH Habitat is mapped as containing Hartenbos Dune Thicket (Endangered), and thicket vegetation is confirmed (Botanical Specialist's report; B. Fouche — Confluent Environmental). EOO for <i>B. sylvaticus</i> is 225 365.1 km ² although it is noted that this may be an overestimate as it uses the predicted range of <i>B. sylvaticus</i> . Nonetheless, the EOO is so significantly higher than 10 km ² that a HIGH CI would have been acceptable if the previous Red List Status of Vulnerable was used. In June 2025, however, the BirdLife South Africa Red Data Book assigns this SCC a Near Threatened status. EOO for <i>A. corriae</i> is more than 20 000 km ² but is only confirmed at 16 locations, this having an AOO of <500 km ² , qualifying for Endangered status according to Criterion B. The invertebrate SCC, <i>A. p. littoralis</i> , is Near Threatened (EOO is 12 232 km ²) with 13 known locations (listed under Criterion B).	MEDIUM There is ca. 2.07 ha. of intact Hartenbos Dune Thicket (Endangered) east of the road and ca. 2.48 ha. of Hartenbos Dune Thicket west of the road. This is less than 5 ha. combined. Despite this, the size of the habitat is adequate for all SCC outlined. The road through the property is fairly busy but could still be traversed by most faunal taxa as the area along the road is unfenced. There are minimal current negative ecological impacts (besides the presence of invasive alien plants, dog walking, and human presence). Burrowing SCC are unique in that they would not be able to traverse the road but were only present east of the road.	MEDIUM	MEDIUM Dense thicket will take a longer time to recover to the same dense state due to the extended length of time woody species take to grow. Historical imagery sees the return of woody vegetation to the site 15 years after agricultural use. This dense thicket is a habitat requirement for <i>B. sylvaticus</i> which is likely to return to the site after disturbance since there is evidence the species can adapt to suburban gardens with similar vegetation structure as its preferred habitats. Golden Moles are also found in gardens and have a moderate ability to recolonise the space: appropriate refuges are available to them in the form of adjacent properties. The latter is also true for Sensitive Species 8. It is worth noting that Golden Mole SCC has low escape potential and would not be able to flee as readily as the avifaunal SCC. Butterfly SCC may have a dispersal ability of more than 2km	MEDIUM BI: LOW RR: MEDIUM

Habitat and associated SCC	Conservation Importance (CI)	Functional Integrity (FI)	Biodiversity Importance (BI)	Receptor Resilience (RR)	Site Ecological Importance (SEI)
	These data would support a Medium CI, however, the estimated EOO for Sensitive species 8 is 269,584 km ² which pushes up this metric to HIGH.			and may also recolonize the site if present.	
Sandy and Grassy Areas <u>SCC:</u> <i>Amblysomus corriae</i> (NT) <i>Aloeides pallida littoralis</i> (NT)	MEDIUM EOO for <i>A. corriae</i> is more than 20 000 km ² but is only confirmed at 16 locations, this having an AOO of <500 km ² , qualifying for Endangered status according to Criterion B. It is, however, classified as Near Threatened. The invertebrate SCC, <i>A. p. littoralis</i> , is Near Threatened (EOO is 12 232 km ²).	LOW This habitat type covers a small area, ca 0.76 ha.	LOW	VERY HIGH Habitat is sandy due to walking by humans and wild mammals (as evidenced by scat and tracks). The major source of disturbance, however, appears to be an example of a top-down trophic cascade where predators are removed and lower trophic levels have increased population size. Molerats (Bathergidae) and potentially Golden Moles (Chrysochloridae) have dug many tunnels and molehills altering the habitat above ground. The major disturbance is likely to continue to occur despite development: these burrowing species are found in gardens and would recolonise, and grasses are pioneer species often first to colonise disturbed areas.	VERY LOW BI: LOW RR: VERY HIGH
Road <u>SCC:</u> None	VERY LOW No confirmed or highly likely populations of SCC No natural habitat remaining.	VERY LOW Roads may present an avenue for dispersal to some species that prefer to use paths (larger mammals) but the road presents	VERY LOW	VERY HIGH Habitat is not natural and is maintained, it would therefore remain the same regardless of disturbance.	VERY LOW BI: VERY LOW RR: VERY HIGH

Habitat and associated SCC	Conservation Importance (CI)	Functional Integrity (FI)	Biodiversity Importance (BI)	Receptor Resilience (RR)	Site Ecological Importance (SEI)
		a more negative impact due to road accident risk if it is used by fauna.			



Figure 17. Site Ecological Importance map with regards to fauna for Portion 38/136, Tergniet.

Most of the property has a **MEDIUM** SEI rating with regards to terrestrial fauna (Figure. 15, Table. 7). According to the guidelines for interpreting SEI ratings in terms of development (Table 78, (SANBI 2020)), a **MEDIUM** SEI calls for minimisation and restoration mitigation. Development activities of a medium impact are acceptable followed by appropriate restoration activities. This indicates that the development as currently proposed for the property in the SDPs provided, does not present a suitable land use for this property. The land use as proposed is high impact and only allows for suburban gardens to be present. Formal open spaces will be landscaped, therefore 100% of the property will be developed in the SDPs provided. It is noted however, that the SDPs as proposed are similar to other developments in the area and do not represent a novel land use in this landscape.

The avifaunal SCC highlighted as having a medium likelihood of occurrence at the site is highly mobile and may colonise new environments in this landscape. The latter also holds for golden mole SCC which is confirmed as present. Sensitive species 8 is not known to occur in residential areas and may permanently disperse to surrounding natural areas. For the butterfly SCC, development is an ongoing threat. It is imperative that mitigation measures are strictly adhered to reduce the footprint and minimize negative impacts on the faunal community and reduce the amount of natural habitat lost.

Table 7. Guidelines for interpreting Site Ecological Importance for proposed developments (SANBI 2020).

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.

7. PROJECT AREA OF INFLUENCE

The proposed development has a low potential to have large impacts outside of the development footprint. Noise may be increased at the site during the construction phase, but the geographical extent of this indirect disturbance is difficult to quantify. A radius of 50m is assigned to account for this as part of the secondary PAOI. Although the Species Environmental Assessment Guideline sets a precedent of 500m assigned for impacts of uncertain extent (Section 6.1 of the document), this is not reasonable given the setting of this project, that is, a built-up environment with existing noise impacts. Noise and habitat removal may lead to the displacement of fauna into surrounding natural areas, increasing the project area of influence west and east of the site, especially along the railway line, to areas beyond those mapped in Figure 18. This is also reflected in the PAOI given in the Botanical Specialist's report (B. Fouche—Confluent Environmental), although the present report considers the impact of fencing, which reduces the dispersal ability of at least one SCC (Sensitive species 8), and the coverage of the area by bushes which are used as refugia and habitat by species. It is worth noting that the anticipated PAOI extends to within 14m of the railway line south of the development. Given the increasing isolation and fragmentation of natural habitat that development of this site would cause for fauna, the railway line (which is infrequently in use) provides an important green corridor linking to other natural habitats. Therefore, the PAOI in this area should be minimised to provide an 'escape route' for wildlife should the development proceed.



Figure 18. Project Area of Influence (PAOI) for the proposed development on Portion 38 of Farm 136, Tergniet. Full PAOI indicated by dashed pink line with noise disturbance estimate shown with lime green shading.

8. IMPACT ASSESSMENT

This impact assessment is based on the SDPs available at the time of writing this report and will need to be reassessed if this changes in the future. The impact assessment considers the construction of residential units of three to four types (depending on the SDP), 2 clubhouses, 4 stormwater ponds, and 2 pools on Portion 38 of Farm 136, Tergniet.

The impacts and associated mitigation measures for each development phase are discussed in the following sections. For ease of reference, an Environmental Compliance Officer (ECO) checklist is provided in Appendix 4 to ensure that all mitigation measures are easily monitored during the various construction-related phases of development.

Impacts (pre- and post-mitigation) are evaluated for the SDP with the methods explained in Appendix 5.

8.1 Mitigation Hierarchy

The principles of the mitigation hierarchy (Ekstrom et al., 2015; Mitigation hierarchy guideline draft February 2023) are applied during an impact assessment. Potential impacts on biodiversity are preferentially managed through preventative, rather than remediative, measures (Figure 19). This is achieved by suggesting avoidance or minimization methods wherever possible. Successive steps in the hierarchy should only be considered once the previous step has been exhausted. Avoidance of negative impacts is a priority. If the impacts

of a development cannot be adequately managed through the preventative measures of avoidance and minimization, then restoration and, as a last resort, offsets or compensation are considered.

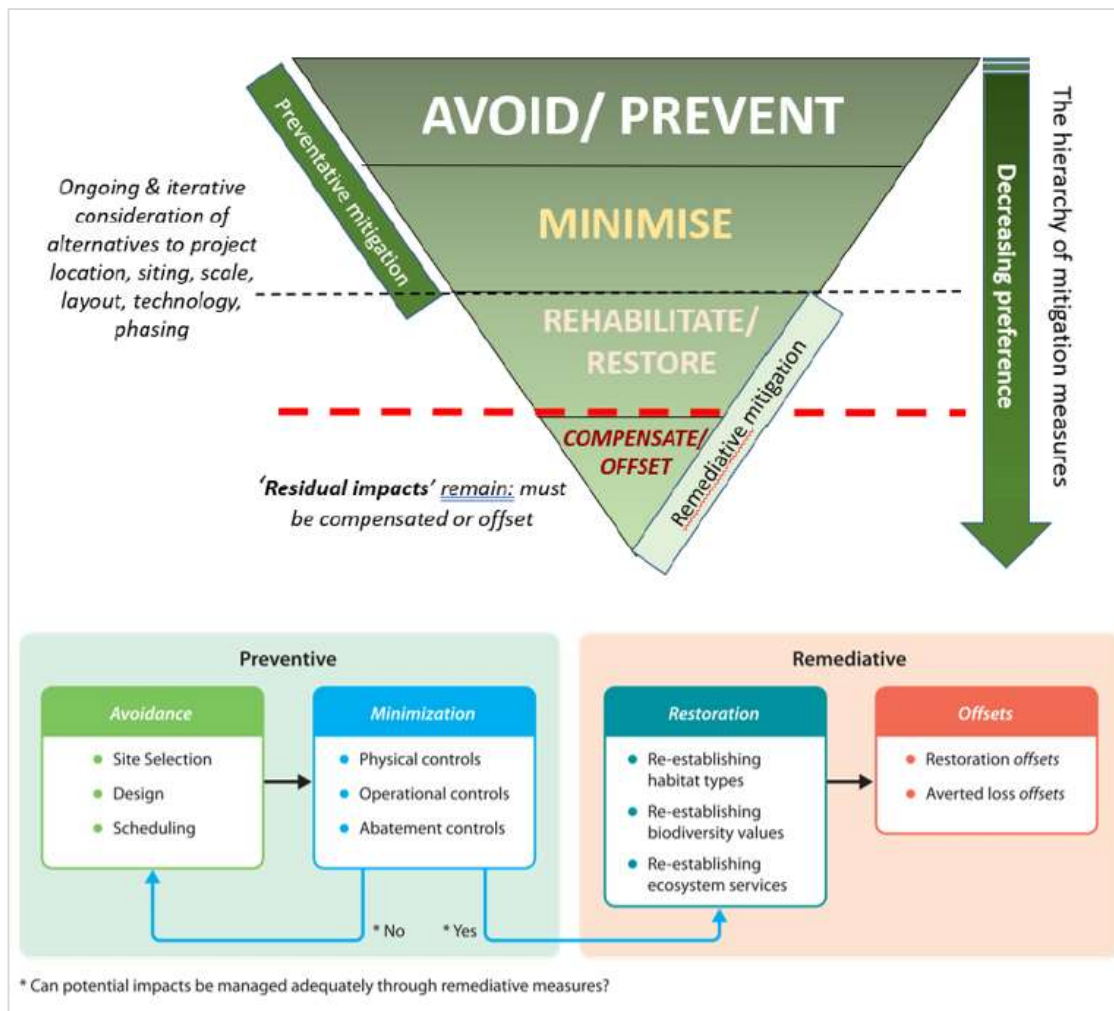


Figure 19. The iterative process of minimising predicted impacts on biodiversity and ecosystem services, as described in the mitigation hierarchy (Ekstrom et al., 2015; Mitigation hierarchy guideline draft, February 2023).

8.2 No-Go Development Option

Most of Portion 38 of Farm 136 has been subject to changes in vegetation, including use as grazing fields and alien clearing, promoting the return of more natural vegetation.

Description: Three major current impacts are present at this site in the No-Go development scenario namely:

- Impact of the existing road and vehicles;
- Low level alien plant infestations and exotic garden plants; and,
- Presence of outdoor pets and unregulated dog-walking at the site.

Consequences of impacts

- Fauna, especially SCC, being struck by cars.
- Alien and invasive plants reduce the amount of habitat available to native fauna, especially those with specialised requirements such as SCC.
- Pets causing death/harm to wildlife and vice versa.
- Intentional harm or death of problem or pest animals due to their negative effects on the people (or pets) using the property.

Impact Assessment:

	Without Mitigation	With Mitigation
Duration	Permanent	Permanent
Extent	Very limited	Very limited
Intensity	High	Moderate
Probability	Almost certain / Highly probable	Almost certain / Highly probable
Confidence	High	High
Reversibility	Medium	Medium
Irreplaceability	Medium	Medium
Significance	Moderate - negative	Minor - negative

Mitigation Measures:

1. It is advised that traffic calming measures such as signage showing that fauna use the road, and a speed limit of 30km/h be introduced to the road running between the two halves of the property.
2. It is recommended that an alien plant management plan be developed and implemented on the property (see the Botanical Specialist's Report: B. Fouche—Confluent Environmental).
3. Outdoor cats and dogs off leash on the site should be discouraged but this is impossible to enforce in an unoccupied, unfenced area such as this. Even should fencing be introduced, cats have the ability to traverse such barriers and it is therefore likely to be an ineffective mitigation measure.

8.3 Layout and Design Phase

With the consideration of the Alternative SDPs in the previous iteration of the present report, the 14m servitude cannot be guaranteed to always contain suitable vegetation for fauna, especially for use as a corridor for movement between other natural areas for Sensitive Species 8. It was therefore recommended that the development be pulled back from the servitude to create a total corridor width of 25m for mammals and birds on the site. This was to be maintained in a natural condition (not landscaped) and serve as a receiving site for any plants rescued from the site during the construction phase. However, this resulted in the loss of too many units from the developer's perspective.

A compromise was reached, and the current preferred SDP proposes the 14m servitude be maintained as is and natural areas be placed as 'pockets' along this linear area, presenting habitat stepping stones along the servitude (ca. 0.235 ha in total along the servitude excluding stormwater ponds with an additional ca. 0.245 comprising 'pockets') for fauna across the

landscape. This is achieved by a reduction in units from 144 to 133 and is an avoidance measure as per the Mitigation Hierarchy (Figure 19), the preferred method of reducing impacts on fauna. The preferred SDP is a supported alternative to an enlarged linear corridor running alongside the servitude, accommodating faunal movement across the servitude and use as habitat for small animals (invertebrates, birds and golden moles).

It is the preferred mitigation that all fencing within the servitude and in the natural areas be removed. This implies that instead of the perimeter fence running along the property boundary in this area, it should fence the development off from the corridor and natural area. This would have the benefit of minimising impacts due to pets and would allow more free movement through and use of this habitat for fauna along the railway corridor.

Alternatively, if the landowner is adamant that the fence should follow the property boundary, then an internal fence should be established along the corridor edge to prevent dogs from entering the area, as this should be conservation area of natural vegetation to support wildlife. It will be difficult to restrict cats unless a fence similar to ClearVu is built.

The external fence (if along the boundary) may be subject to additional mitigation measures such as needing to be fitted with gaps to allow for the throughfare of some wildlife (prevents fauna being funnelled towards Robertson Avenue potentially causing stress, injury, or death) in future iterations of the present report.

8.4 Pre-construction Phase

Natural “stepping stones” in the preferred SDP should be delineated as no-go areas and could serve as suitable receptor sites for rescued indigenous plants from disturbed area of the property, a mitigation measure outlined in the Botanical Specialist’s Report (B. Fouche—Confluent Environmental).

8.5 Construction Phase Impacts

The construction phase will have the highest impacts on fauna species due to increased moving vehicles, noise, and habitat destruction associated with these activities. It is imperative that an Environmental Control Officer (ECO) be appointed for the duration of the construction phase to rigorously monitor and report back on implementation of the mitigation measures. The ECO should be present on-site during commencement of the construction phase, and once a week thereafter during construction.

8.5.1 *Disturbance of Knysna Warbler SCC (Bradypterus sylvaticus) flagged as likely to occur at the site during breeding season.*

Description: Construction leads to a higher amount of noise at the site and its surrounds. A radius of 50m is estimated to be the extent of this disturbance. Adult individuals of the SCC are able to disperse and are likely to move to adjacent gardens or further off to other natural areas. Nests and eggs are at risk. Disturbance during the breeding season may have an effect on the local population of the SCC. The clearance of vegetation is also to be considered as vegetation outside of the corridor area is to be completely removed, reducing the amount of available natural habitat in which the SCC can breed in the future.

Consequences of impact:

- Construction related noise and clearance of vegetation can disturb breeding birds in the vicinity.
- Construction related noise can result in SCC abandoning nests, eggs, or chicks if breeding has already begun when construction commences.
- If deterred from the area (temporarily or permanently), the SCC may not be able to find suitable alternative breeding habitat and could skip a breeding season(s). This has negative consequence for the population growth and stability of this red listed species.

Impact Assessment:

	Preferred SDP		Alternative SDP	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Duration	Short term	Short term	Short term	Short term
Extent	Local	Local	Local	Local
Intensity	High	Low	High	Low
Probability	Certain / definite	Certain / definite	Certain / definite	Certain / definite
Confidence	Medium	Medium	Medium	Medium
Reversibility	High	High	High	High
Irreplaceability	Medium	Medium	Medium	Medium
Significance	Moderate - negative	Minor - negative	Moderate - negative	Minor - negative

Mitigation measures:

1. Construction is to be phased, with a dedicated search being conducted prior to commencement of each phase to locate Knysna Warbler nests during breeding season August to December.
2. Should any nests be found, construction is to be halted until the end of the breeding season (August- December).

8.5.2 *Loss of habitat for fauna, especially Knysna Pale Copper Butterfly ([Aloeides pallida littoralis](#)), within the footprint of the proposed development.*

Description: The proposed development will result in the complete loss of habitat on the property barring the corridor area. The removal of vegetation will displace fauna and may have effects on Knysna Pale Copper Butterfly which may not have refugia in the greater landscape due to the lack of suitable Hartenbos Dune Thicket within the typical flight radius of butterflies (up to 5km for some species). Caterpillars have even less dispersal ability and would be removed with vegetation, with the latter being true for eggs.

Consequences of impact:

- Loss of suitable habitat for fauna to live, forage and breed.
- Loss of species with which SCC have obligatory relationships.
- Loss of SCC due to removal of vital vegetation at larval and egg life stages.

Impact Assessment:

	Preferred SDP		Alternative SDP	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Duration	Permanent	Long term	Permanent	Long term
Extent	Limited	Limited	Limited	Limited
Intensity	High	High	High	High
Probability	Almost certain / Highly probable	Almost certain / Highly probable	Almost certain / Highly probable	Almost certain / Highly probable
Confidence	Medium	Medium	Medium	Medium
Reversibility	Low	Medium	Low	Medium
Irreplaceability	Medium	Medium	Medium	Medium
Significance	Moderate - negative	Minor - negative	Moderate - negative	Minor - negative

Mitigation measures:

1. A dedicated search is to be conducted by a butterfly expert to confirm the presence or absence of Knysna Pale Copper Butterflies in October, November, and/or December or according to the discretion of the expert. Should any butterflies be found, the recommendations and mitigation measures as laid out by the butterfly expert are to supersede what is laid out in this report as it pertains to the butterfly SCC
2. Prior to construction, the disturbance footprint of the development should be clearly defined and demarcated to prevent unnecessary additional damage to the surrounding environment:
 - a. Construction netting or fencing must be used to clearly indicate construction areas (see example in Figure 20). Access roads must be clearly marked so there is no confusion as to where the tracks are or how wide the road is.
 - b. Clear signs for “no-go” areas for vehicles and personnel should be placed strategically on the site and along access roads. No-go areas are anywhere outside of the direct area of influence of the construction phase such as the green spaces designated in the SDPs provided.



Figure 20. Example of construction fencing to be used to demarcate construction areas.

3. Where vegetation will be cleared to make way for construction, filled sandbags, silt socks or a silt fence must be used to reduce the intensity of water runoff and flow over the site and thereby reduce erosion potential (Figure 21). This should be placed around the perimeter of the downslope disturbance footprint and needs regular inspection and adaptive management to ensure the integrity of the system for reducing erosion.



Figure 21. Examples of silt socks (left) and a silt fence (right) placed perpendicular to the flow of water. These methods reduce the force of water flow, erosion and can prevent unwanted sedimentation at the site.

4. Protection and reuse of topsoil can be critical for the success of rehabilitation of the corridor area following construction processes as it contains valuable seedbank of indigenous plants that regenerate after the soil is replaced. Topsoil removed during construction should be treated with care for the proposed development on the property as per the recommendations of the Botanical Specialist's Report (B. Fouche — Confluent Environmental).
5. Where necessary, ensure soft landscaping is used as opposed to hard landscaping. Soft landscaping refers to natural spaces around constructed buildings that contain trees, shrubs, and herbaceous species that perform valuable ecosystem functions and services and are native to the environment. Soft landscapes support biodiversity if local

indigenous species are planted, or better yet, if the natural vegetation is left to recover and grow with minimal to no planting of man-made gardens.

6. It is recommended that indigenous plants, especially denser individuals of thicket species, are removed with care and used in the 11m area designated to be used as wildlife corridor.

8.5.3 *Habitat and fauna negatively affected by the management of the construction site (i.e., staff, stockpiles, and equipment).*

Description: The management of materials and staff on the site is also an important impact of development. If managed properly, many accidents and unanticipated negative impacts on fauna and the surrounding environment can be avoided.

Consequences:

- Loss of habitat or harm to fauna outside of designated construction areas.
- Litter and pollution of natural environment.
- Potential health and safety hazards (for staff and fauna) on the site and in the surrounding environment.

Impact Assessment:

	Preferred SDP		Alternative SDP	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Duration	Short term	Short term	Short term	Short term
Extent	Limited	Very limited	Limited	Very limited
Intensity	High	Low	High	Low
Probability	Almost certain / Highly probable	Unlikely	Almost certain / Highly probable	Unlikely
Confidence	High	High	High	High
Reversibility	Medium	High	Medium	High
Irreplaceability	Low	Low	Low	Low
Significance	Minor - negative	Negligible - negative	Minor - negative	Negligible - negative

Mitigation measures:

1. All new staff must be briefed about the layout of the construction site and must be made aware of the no-go areas as the surrounding environment is sensitive and must not be disturbed. Staff must be made aware what all SCC look like and to report all fauna occurring on site to the ECO. Weekly site meetings should be held, during which the ECO should remind all staff of these requirements, and any questions/concerns can be raised and addressed.
2. No littering, waste dumping, or burning is allowed on the site or in the surrounding environment. All waste is to be collected in designated bins with lids that can be secured or stored in a secure area when construction is not taking place (evenings, weekends, holidays, etc.) to prevent interference by animals. All waste is to be transported to a registered waste disposal facility off site.
3. Concrete, cement, plastering, and painting:

- a. Mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and plastic sheeting) to prevent any runoff and absorption into the surrounding soils.
 - b. The designated mixing areas should be limited to areas that will become future hard surfaces on the site. No concrete and cement mixing is allowed in areas outside of the proposed hardened surfaces.
 - c. Cleaning of cement, plastering & paint equipment must be done into a designated, bunded & lined slurry sump or container to avoid contaminating the environment.
4. Any small items or building materials which can be carried away by medium-large animals (i.e. mongoose) should be safely stored in containers or locked away in a designated area to prevent interference from animals, causing possible harm to them and preventing them from removing such items from site.
 5. Construction should take place during daylight hours so that the site can be adequately monitored for fauna during work hours, and also to prevent the use of artificial lighting at night which attracts many animal species (predominantly insects and associated predators) and subjects them to the risks of construction.

8.5.4 Harm/Death of fauna, particularly soil-dwelling mammal SCC, due to construction related activities such as earthworks.

Description: Fauna may occur on site and be killed or seriously harmed during construction related activities. Cryptic and ground-dwelling species, like the golden mole SCC, are difficult to detect and are limited in their mobility rendering them vulnerable to injury or death during earthmoving and construction activities. The golden mole SCC depends on the sandy and grassy habitat east of the road designated as Very Low SEI and could also depend on the thicket habitat (Low SEI) although no tunnels were observed. This SCC is highly adaptable to modified environments but impacts on individuals and the population must be kept to a minimum.

Consequences of impact:

- Loss of SCC individuals.
- General loss of biodiversity.

Impact Assessment:

	Preferred SDP		Alternative SDP	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Duration	Short term	Short term	Short term	Short term
Extent	Limited	Very limited	Limited	Very limited
Intensity	High	High	High	High
Probability	Almost certain / Highly probable	Rare / improbable	Almost certain / Highly probable	Rare / improbable
Confidence	Medium	Medium	Medium	Medium
Reversibility	Low	High	Low	High
Irreplaceability	Medium	Medium	Medium	Medium
Significance	Minor - negative	Negligible - negative	Minor - negative	Negligible - negative

Mitigation measures:

1. Construction should happen in phases, such that construction related activities are confined to one area at a time on the property and can be monitored for faunal impacts by the ECO.
2. Prior to construction of a new phase/area:
 - a. After the footprint of the development has been clearly demarcated, the ECO should do a walk-through to look for signs of fauna with limited mobility and escape potential (i.e. tortoise, chameleon, etc.) with particular attention given to the Golden Mole SCC.
 - b. Should signs of fauna with limited mobility or an SCC be found within the demarcated area, a search and rescue operation should be undertaken to relocate fauna to a suitable location with similar vegetation in the immediate area.
 - c. No construction may commence until the ECO is satisfied that all fauna with limited mobility and/or SCC have been successfully removed from the demarcated footprint area.
3. During construction:
 - a. Before construction commences at the start of new phase, an ECO should do a walk-through of the demarcated area and access roads that will be used to look fauna with limited mobility. These animals should be removed from the demarcated area to an adjacent location, and where appropriate a Fauna Specialist contacted for assistance or guidance. Construction for this new phase can commence thereafter.
 - b. At any point during the day (during construction), if an animal with limited mobility is observed on site, this should be reported to the ECO and construction temporarily halted. Procedures outlined in Box. 1 must be followed for all fauna encounters. Construction can commence once the ECO is satisfied that all such fauna are removed from the construction area.

Box 1: Best practice principles for ALL fauna encounters during construction or operational phases of projects

If any animals are seen on site, a photo or a video should be taken if possible (to assist in identification) and all fauna encountered on site should be reported to the ECO immediately. This is particularly important when:

- An animal is harmed or compromised in any way during construction.
- Ground-dwelling animals their nests or eggs are unearthed during earthworks (e.g. moles, tortoise eggs, terrapins/frogs estivating).
- Any animal with limited mobility is found on site (e.g. tortoises, moles, chameleons).
- Any potentially dangerous animal is encountered. This includes any potentially venomous animal (e.g. snakes, scorpions) or any medium-large animal that has become cornered in an enclosed area such that it cannot escape (e.g. porcupines, monkeys, baboons, antelope). It is critical in the case of snakes/scorpions to get pictures/videos to aid in identification and appropriate treatment of anyone needing medical assistance.
- Any animal that shows a reluctance to escape or move away from the construction site thereby increasing its exposure to harm or increasing the risk of injuring people on site.

The ECO should provide guidance or assistance to get all animals to safety, treating any injured animals, and issuing instructions on when to continue with construction (once they are satisfied that all animals have been removed from site) or put additional mitigation measures in place to protect animals on the site from harm.

For any injured animals or animals to be removed from site (domestic or wild):

A local SPCA or animal welfare society can collect and treat most animals and should be the first point of call for assistance. If they cannot directly assist, they will revert and notify the relevant authorities/vets.

For any assistance with snake removals/relocations, identifications, or bite treatment contact the African Snakebite Institute (mobile app downloadable using the QR code below). Also available are the following emergency contacts.

Snakebite Emergencies:

Poisons Information Helpline	+27 861 555 777
Dr Jenna Taylor	+27 83 631 4816
Dr Christoff Bell	+27 73 174 0199
Johan Marais	+27 82 494 2039
Jason Seale	+27 82 781 8498
Arno Naude	+27 83 739 9303
Dr PJC Buys	+26 481 127 5109 (Namibia)

Get the free app:



(Scan this code with your phone's camera.)

8.6 Conclusion of Construction Phase

The conclusion of any project is an essential but often overlooked aspect of projects. This relates primarily to the cleaning up of the site once construction has concluded to reduce residual impacts at the site.

- Construction sites must be cleared of all waste material, rubble, and debris associated with the construction phase at regular intervals during, and at the conclusion of the construction phase.
- Revegetation of bare soil following construction is an essential part of concluding the construction phase of the project. This should be done with indigenous plant species that occur naturally in the surrounding environment on the property.
- All drainage structures must be checked to ensure that there are no blockages or pollution that is blocking the free flow of water over the site; these checks will prevent erosion during and after the construction phase that could have potentially far-reaching implications beyond the footprint for the proposed development.

8.7 Operational Phase Impacts

8.7.1 Conservation conflict between wildlife and residential use of the property

Description: Some wild animals are attracted to human developments, usually due to the presence of a resource (most notably food) that has become available within the footprint of the development. If any animal becomes habituated or loses their fear of humans, they risk straying too close to developments making them subject to being attacked by pets. Keeping pets on the premises generally increases the potential for conflict as pets can fight or kill animals (i.e. cats are known to be devastating for indigenous wildlife, especially birds, small mammals and reptiles). Pets also run the risk of being harmed by wildlife (i.e. snake bites). Hunting by pets is a major threat to at least one of the SCCs highlighted in this report (Knysna Warbler) which is known to use gardens in residential areas as habitat.

Consequences of impact:

- Pets causing death/harm to indigenous wildlife and vice versa.
- Changes in natural foraging and movement patterns of fauna across habitats within the landscape due to the presence of a favourable resource (usually food) near the development.

Impact Assessment:

	Preferred SDP		Alternative SDP	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Duration	Long term	Long term	Long term	Long term
Extent	Limited	Limited	Limited	Limited
Intensity	High	High	High	High
Probability	Almost certain / Highly probable	Almost certain / Highly probable	Almost certain / Highly probable	Almost certain / Highly probable
Confidence	Medium	Medium	Medium	Medium
Reversibility	Medium	Medium	Medium	Medium
Irreplaceability	Low	Low	Low	Low
Significance	Minor - negative	Negligible - negative	Minor - negative	Negligible - negative

Mitigation measures:

1. No feeding of wildlife is permitted, and no disposal/discarding of any food waste (bones, scraps, fruit pips/cores) within the surrounding environment, especially the corridor, is allowed.
2. All food waste or general waste should be kept in a secure location which is not accessible to any wildlife.
3. All waste, particularly food waste, should be regularly removed from the property and disposed of appropriately to prevent the scent of old products increasing the attractiveness to the disposal area and surrounding development for wildlife.
4. Outdoor cats and dogs off leash outside of the home are highly discouraged, especially in the corridor/ "stepping stones" area which is to act as a refuge and throughfare for wildlife. Outdoor cats are known to actively hunt small animals and can have detrimental effects on the wildlife of an area (see Figure 22).



Figure 22. Animals killed by one house cat in one year. [Article](#) published in National Geographic

8.7.2 Harm/Death to wildlife due to collisions with vehicles.

Description: All fauna run the risk of being seriously harmed or killed due to collisions with vehicles on road infrastructure. The Endangered Wildlife Trust (EWT) has an entire [programme](#) aimed at tracking the impacts of roadkill and monitoring the effectiveness of various mitigation measures, illustrating the severity of this impact on fauna. Roadkill can be particularly detrimental to populations of threatened species within an area (i.e. putting them at risk of local extinction) and to animals with limited mobility which are at a higher risk of injury or death due to their limited ability to escape moving vehicles.

Consequences of impact:

- Death/Harm to any animal species (small insects to larger mammals) as a result of collisions with vehicles, particularly animals with limited mobility.
- Decline in population size of local fauna populations, particularly that of threatened species.

Impact Assessment:

	Preferred SDP		Alternative SDP	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Duration	Permanent	Permanent	Permanent	Permanent
Extent	Limited	Very limited	Limited	Very limited
Intensity	Very high	Low	Very high	Low
Probability	Probable	Probable	Probable	Probable
Confidence	Medium	High	Medium	High
Reversibility	Medium	Medium	Medium	Medium
Irreplaceability	Medium	Medium	Medium	Medium
Significance	Minor - negative	Minor - negative	Minor - negative	Minor - negative

Mitigation measures:

1. The strict enforcement of speed limits along all roads within the residential development. This speed limit should be reduced in areas where road-side visibility is reduced (i.e. due to dense vegetation). Speedbumps or other speed reducing techniques can be incorporated into the road design to assist in keeping speeds to a minimum.
2. The introduction of tunnels under roads and crawl space under fences to promote the free movement of wildlife away from roads is generally advised for developments of this kind apart from cases where they would affect security.

9. DISCUSSION AND CONCLUSION

Portion 38 of Farm 136, Tergniet has historically seen changes to the vegetation related to agriculture and alien invasive plant species. Despite this, a dense predominantly native flora has re-established at the site. A number of animal SCC were flagged for the site by the DFFE Screening tool and the site was given a high sensitivity. The WCBSP also shows that a CBA1 area is mapped for the whole property, for which the management objective is to maintain in a natural state and for no further loss of habitat to take place. Current impacts include the presence of invasive alien plant species on the property as well as dog walking which may pose a risk should dogs be let off leash. It is unlikely that either of these impacts could be significantly reduced under the no-go scenario, even though the clearance and management of alien invasive vegetation is a compulsory requirement for landowners.

The site is an important part of the ecosystem of the area, being one of very few open green spaces left for fauna. Additionally, three faunal SCC are likely to occur and could have all their life processes provided for, even in a less than 5ha area. Site sensitivity is therefore verified as HIGH. The site ecological importance (SEI) considering the size of the area, its connectivity to other such areas, and the distribution of the SCC and their ecology specifically, showed that for the thicket habitat at the site (the largest habitat type for the site), the SEI was Low. Sandy and grassy areas are given a Very Low SEI. As such, the proposed development of high impact residential units with associated gardens, open space, stormwater ponds and pools could be considered a suitable land use for the property from a terrestrial fauna perspective provided the mitigation measures outlined in this report are strictly adhered to (See Impact Assessment Section for details).

Two of the SCC highlighted are known to make use of gardens in suburban areas. It is therefore feasible that the SCC may recolonise after construction at the site and many refuges exist for these SCC. This would be all the more likely if the recommended extension of the habitat corridor along the southern boundary is implemented. The butterfly SCC, however, is not known to be a garden species and is not likely to recolonise the area. Its Near Threatened status, placement of the site within the known range of the species, and the vegetation at the site being suitable to host the species justifies a separate butterfly survey to be conducted by a butterfly expert to verify the presence or absence of Knysna Pale Copper. It is, however, noted that appropriate management (such as the introduction of fire) would be very challenging on so small a site so close to residential areas since the development as proposed is not novel in this landscape.

The current Alternative SDPs do not differ in terms of their footprint and habitat loss to a great degree but the Preferred SDP maintains “stepping stones” (ca. 0.235 ha) along the servitude for the movement of fauna, reducing the number of units by eleven.

It is highly recommended that if this development were approved, that owners are encouraged to make use of wildlife friendly soft landscaping rather than hard landscaping. Soft landscaping with rescued plants from the site, or better still, preservation of thicket patches in their natural condition within the development, is favourable to the SCC highlighted as it may provide habitat to Near threatened Knysna Warbler SCC and Fynbos Golden Mole SCC. It is recommended that the green space as shown on both SDPs are kept natural as far as possible to promote its use by these species. Protecting natural habitat is one of the best ways to

protect indigenous fauna, particularly those with a high conservation status (i.e. at greater risk of extinction).

It is the specialist's opinion that this development, provided that all mitigation measures are strictly adhered to, may proceed as two of the faunal SCC highlighted are known to occupy anthropogenic environments such as gardens. This is provided with the caveat that a butterfly specialist make a definitive assessment on whether Knysna Pale Copper (*Aloides pallida littoralis*) occur on the site. All recommendations and mitigation measures set forth in the butterfly specialist report supersede those highlighted in this report as it pertains to the butterfly SCC.

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APPENDIX 1: SCC IDENTIFIED FROM PUBLIC PLATFORMS FOR THE PROJECT AREA.

SCC were included or excluded from further analysis in this report based on expert interpretation for the presence/absence of key landscape and habitat features on site. Species in bold are not assessed in this report but are added as they are new additions (2025) to the BirdLife South Africa Red List. Species flagged in the 2024 list but given a new status have the new status highlighted in red. See Section 4.2 Assumptions and Limitations for more information.

Species	Common name	Regional; Global Assessment status	Source	Assessed in report
AVIFAUNA				
<i>Alcedo semitorquata</i>	Half-collared kingfisher (VU)	Near threatened, Least concern	SABAP2	No
<i>Circus maurus</i>	Black harrier (EN)	Endangered, Endangered	SABAP2	No
<i>Phalacrocorax capensis</i>	Cape cormorant (EN)	Endangered, Endangered	iNaturalist	No
<i>Polemaetus bellicosus</i>	Martial eagle (EN)	Endangered, Endangered	SABAP2	No
<i>Circus ranivorus</i>	African marsh harrier (VU)	Endangered, Least concern	Screening Tool	Yes
<i>Stercorarius antarcticus</i>	Brown skua (EN)	Endangered, Least concern	SABAP2	No
<i>Sterna dougallii</i>	Roseate tern (VU)	Endangered, Least concern	SABAP2	No
<i>Buteo trizonatus</i>	Forest buzzard (NT)	Least concern, Near threatened	SABAP2	No
<i>Calidris ferruginea</i>	Curlew sandpiper (VU)	Least concern, Near threatened	SABAP2	Yes
<i>Limosa lapponica</i>	Bar-tailed Godwit	Least concern, Near threatened	SABAP2	No
<i>Coracias garrulus</i>	European roller (NT)	Near threatened, Least concern	SABAP2	No
<i>Phoenicopterus roseus</i>	Greater flamingo (NT)	Near threatened, Least concern	SABAP2	No
<i>Phoeniconaias minor</i>	Lesser flamingo (VU)	Near threatened, Near threatened	SABAP2	No
<i>Campethera notata</i>	Knysna Woodpecker	Near threatened, Near threatened	SABAP2	No
<i>Numenius arquata</i>	Eurasian Curlew	Near threatened, Near threatened	SABAP2	Yes
<i>Certhilauda brevirostris</i>	Agulhas long-billed lark (NT)	Near threatened, NR	SABAP2	No
<i>Grus paradisea</i>	Blue crane (VU)	Near threatened, Vulnerable	SABAP2	No
<i>Morus capensis</i>	Cape gannet (VU)	Vulnerable, Endangered	SABAP2	No
<i>Sagittarius serpentarius</i>	Secretarybird (VU)	Vulnerable, Endangered	SABAP2	No
<i>Aquila verreauxii</i>	Verreauxs eagle (VU)	Vulnerable, Least concern	SABAP2	No
<i>Ciconia nigra</i>	Black stork (EN)	Vulnerable, Least concern	SABAP2	No

Species	Common name	Regional; Global Assessment status	Source	Assessed in report
<i>Falco biarmicus</i>	Lanner falcon (NT)	Vulnerable, Least concern	SABAP2	No
<i>Hydroprogne caspia</i>	Caspian tern (VU)	Vulnerable, Least concern	SABAP2	No
<i>Sarothrura affinis</i>	Striped flufftail (VU)	Vulnerable, Least concern	SABAP2	No
<i>Neotis denhami</i>	Denham's bustard (VU)	Vulnerable, Near threatened	SABAP2	No
<i>Bradypterus sylvaticus</i>	Knysna warbler (NT)	Vulnerable, Vulnerable	Screening Tool; SABAP2; iNaturalist	Yes
<i>Procellaria aequinoctialis</i>	White-chinned petrel (VU)	Vulnerable, Vulnerable	SABAP2	No
<i>Anas erythrorhyncha</i>	Red-billed teal (NT)	-	iNaturalist; SABAP2	No
<i>Anas undulata</i>	Yellow-billed duck (NT)	-	iNaturalist; SABAP2	No
<i>Anhinga rufa</i>	African darter (NT)	-	SABAP2	No
<i>Ardea alba</i>	Great Egret (NT)	-	SABAP2	No
<i>Calidris alba</i>	Sanderling (NT)	-	SABAP2	No
<i>Netta erythrophthalma</i>	Southern Pochard (NT)	-	SABAP2	No
<i>Nycticorax nycticorax</i>	Black-crowned night heron (NT)	-	SABAP2	No
<i>Pluvialis squatarola</i>	Grey plover (NT)	-	SABAP2	No
<i>Podiceps cristatus</i>	Great crested grebe (VU)	-	SABAP2	No
<i>Scopus umbretta</i>	Hamerkop (NT)	-	SABAP2	No
<i>Thalassornis leuconotus</i>	White-backed duck (NT)	-	SABAP2	No
TERRESTRIAL INVERTEBRATES				
<i>Aloeides pallida littoralis</i>	Knysna Pale Copper Butterfly	Near Threatened	Virtual Museum	Yes
<i>Aloeides trimeni southeyae</i>	Trimen's Copper Butterfly	Endangered	Virtual Museum	Yes
<i>Aloeides thyra orientis</i>	Red Copper Butterfly	Endangered	Screening Tool	Yes
<i>Aneuryphymus montanus</i>	Yellow-winged Agile Grasshopper	Vulnerable	Screening Tool	Yes
<i>Ceratogomphus triceraticus</i>	Common Hooktail	Near Threatened	Virtual Museum	No
<i>Circellium bacchus</i>	Flightless dung beetle	Near Threatened	Virtual Museum	No
<i>Lepidochrysops littoralis</i>	Nimble Coastal Blue Butterfly	Endangered	Screening Tool	Yes
MAMMALS				
<i>Damaliscus pygargus pygargus</i>	Bontebok	Vulnerable	Virtual Museum	No
<i>Hippotragus niger niger</i>	Southern Sable Antelope	Vulnerable	Virtual Museum; iNaturalist	No
<i>Kogia breviceps</i>	Pygmy Sperm Whale	Data Deficient	Virtual Museum	No
<i>Kogia sima</i>	Dwarf Sperm Whale	Data Deficient	Virtual Museum	No
-	Sensitive Species 8	Vulnerable	Screening Tool; iNaturalist; Virtual Museum	Yes
<i>Mesoplodon densirostris</i>	Blainville's Beaked Whale	Data Deficient	Virtual Museum	No
<i>Mesoplodon grayi</i>	Gray's Beaked Whale	Data Deficient	Virtual Museum	No
<i>Mesoplodon mirus</i>	True's Beaked Whale	Data Deficient	Virtual Museum	No

Species	Common name	Regional; Global Assessment status	Source	Assessed in report
<i>Mirounga leonina</i>	Southern Elephant Seal	Near Threatened	Virtual Museum; iNaturalist	No
<i>Panthera pardus</i>	Leopard	Vulnerable	Virtual Museum	No
<i>Poecilogale albinucha</i>	African Striped Weasel	Near Threatened	Virtual Museum	Yes

APPENDIX 2: AVIFAUNA SPECIES OBSERVED DURING SITE VISIT TO PORTION 38 OF FARM 136, TERGNIET

Common name	Scientific name
Speckled Mousebird	<i>Colius striatus</i>
Burchell's Coucal	<i>Centropus burchellii</i>
Southern Fiscal	<i>Lanius collaris</i>
Ring-necked Dove	<i>Streptopelia capicola</i>
Cape White-eye	<i>Zosterops virens</i>
Bokmakierie	<i>Telophorus zeylonus</i>
Amethyst Sunbird	<i>Chalcomitra amethystina</i>
Cape Sparrow	<i>Passer melanurus</i>
Cape Wagtail	<i>Motacilla capensis</i>
Cape Weaver	<i>Ploceus capensis</i>
Cape Sugarbird	<i>Promerops cafer</i>
Familiar Chat	<i>Oenanthe familiaris</i>
Greater Double-collared Sunbird	<i>Cinnyris afer</i>
Cape Robin-Chat	<i>Cossypha caffra</i>
Sombre Greenbul	<i>Andropadus importunus</i>
Grey-winged Francolin	<i>Scleroptila afra</i>
Barn Swallow	<i>Hirundo rustica</i>
Black-headed Heron	<i>Ardea melanocephala</i>
Cape Crow	<i>Corvus capensis</i>
Cape Spurfowl	<i>Pternis capensis</i>
Karoo Prinia	<i>Prinia maculosa</i>

APPENDIX 3: SITE ECOLOGICAL IMPORTANCE METHODS

The site ecological importance (SEI) is defined and calculated as highlighted as per the Species Environmental Assessment Guideline (SANBI 2020), where SEI is a function of biodiversity importance (BI) and receptor resilience (RR) such that: $SEI = BI + RR$.

BI is further defined as a function of conservation importance (CI) and habitat functional integrity (FI), with $BI = CI + FI$, and is determined by means of a matrix (Table 80).

SEI can therefore be fully understood as $SEI = (CI + FI) + RR$, where:

Conservation Importance (CI): The importance of a site for supporting biodiversity features of conservation concern present, e.g., populations of IUCN threatened and Near Threatened species (CR, EN, VU and NT), Rare species, range-restricted species, globally significant populations of congregatory species, and areas of threatened ecosystem types, through predominantly natural processes. *Most features included in CI are provided by the screening tool but are evaluated at a finer scale following field work at the site.

Functional Integrity (FI): A measure of the ecological condition of the impact receptor (i.e., habitat type) as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts.

Receptor Resilience (RR): The intrinsic capacity of the receptor (i.e., habitat type or SCC) to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention.

Table 8. Matrix to calculate the biodiversity importance (BI) of a given habitat type identified from desktop and field assessments.

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 SEI is derived for each habitat type or SCC within a project site by making use of two matrixes: first to calculate the BI (using Table 8) and then the SEI (Table 9).

SEI is therefore specific to the proposed development and can only be compared between alternative layouts for the same proposed development, but not between different developments.

Table 9. Matrix to calculate site ecological importance (SEI) of a given habitat type identified from desktop and field assessments.

Site Ecological Importance		Biodiversity Importance				
		Very High	High	Medium	Low	Very Low
Receptor Resilience	Very High	Very High	Very High	High	Medium	Low
	High	Very High	Very High	High	Medium	Very Low
	Medium	Very High	High	Medium	Low	Very Low
	Low	High	Medium	Low	Very Low	Very Low
	Very Low	Medium	Low	Very Low	Very Low	Very Low

APPENDIX 4: ENVIRONMENTAL COMPLIANCE OFFICER (ECO) CHECKLIST FOR FAUNA MITIGATION MEASURES DURING PRECONSTRUCTION, CONSTRUCTION AND THE CONCLUSION OF CONSTRUCTION PHASES OF DEVELOPMENT.

While this checklist is designed to assist ECOs in compliance monitoring, it is a summary only and it is imperative that the details of each mitigation measure are read, fully understood and implemented as described in the text of this report. The relevant impact and full details of methods to be followed for each mitigation measure are listed in the table below.

Mitigation measure	Details of methods	Checklist
After the footprint of the development has been clearly demarcated, an ECO should do a walk-through to look for signs of fauna with limited mobility and escape potential	See Section 8.5.4; Mitigation measure 1	
Before construction begins at the start of a new phase, an ECO must do a walk-through of the demarcated development footprint. No construction may commence until the ECO is satisfied that all fauna with limited mobility and/or SCC have been successfully removed from the demarcated footprint area.	See Section 8.5.4; Mitigation measure 2.	
A dedicated search is to be conducted in each phase August to December to locate Knysna Warbler nests. Should any nests be found, construction is to be halted until the end of the breeding season (August- December.	See Section 8.4.1; Mitigation measure 1 and 2.	
The footprint of the development should be clearly defined and demarcated by means of netting and/or fencing.	See Section 8.4.2; Mitigation measure 2a.	
Signage must be clearly visible on site to mark no-go areas (any area outside of the direct influence of the site) for vehicles and personnel.	See Section 8.4.2; Mitigation measure 2b.	
Construction to happen in phases, such that all activities are confined to one area at a time on the property. A plan should be developed and communicated to all staff as to which construction phase is currently underway, and which areas are therefore off-limits until further notice.	See Section 8.4.1; Mitigation measure 1. See Section 8.4.4; Mitigation measure 1.	
Where vegetation will be cleared to make way for construction, filled sandbags, silt socks or a silt fence must be used to reduce the intensity of water runoff and flow over the site and thereby reduce erosion potential.	See Section 8.4.2; Mitigation measure 3.	

Mitigation measure	Details of methods	Checklist
Topsoil removed during construction should be treated with care for the proposed developments on the property as per the recommendations of the Botanical Specialist's Report (B. Fouche — Confluent Environmental).	See Section 8.4.2; Mitigation measure 4.	
All new staff must be briefed about the layout of the construction site and must be made aware of the no-go areas as the surrounding environment is sensitive and must not be disturbed. Staff must be made aware what all SCC look like and to report all fauna occurring on site to the ECO. Weekly site meetings should be held, during which the ECO should remind all staff of these requirements, and any questions/concerns can be raised and addressed.	See Section 8.4.3; Mitigation measure 1.	
No littering, waste dumping or burning is allowed on the site or in the surrounding environment. All waste is to be collected in designated bins with lids that can be secured or stored in a secure area when construction is not taking place (evenings, weekends, holidays, etc.) to prevent interference by animals (i.e. baboons). All waste is to be transported to a registered waste disposal facility off site.	See Section 8.4.3; Mitigation measure 2.	
Concrete/ cement mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and thick plastic sheeting) to prevent any runoff and absorption into the surrounding soils. The designated mixing areas should be limited to areas that will become future hard surfaces on the site	See Section 8.4.3; Mitigation measure 3a and b.	
Cleaning of cement, plastering & paint equipment must be done into a designated, bunded & lined slurry sump or container to avoid contaminating the environment.	See Section 8.4.3; Mitigation measure 3c.	
Any small items or building materials which can be carried away by medium-large animals (i.e. baboons) should be safely stored in containers or locked away in a designated area	See Section 8.4.3; Mitigation measure 4.	
Construction should take place during daylight hours	See Section 8.4.3; Mitigation measure 5.	
Soft landscaping (natural spaces around constructed buildings that contain trees, shrubs, and herbaceous species	See Section 8.4.2; Mitigation measure 5.	

Mitigation measure	Details of methods	Checklist
that perform valuable ecosystem functions and services and are native to the environment) is to be used as opposed to hard landscaping.		
Conclusion of construction phase		
Site to be cleared of all waste material, rubble, and debris associated with the construction phase at regular intervals during, and at the conclusion of the construction phase.	See Section 8.5 Mitigation measure 1.	
Revegetate bare soil areas with indigenous plants.	See Section 8.5 Mitigation measure 2.	
Check all drainage structures and remove blockages or pollutants.	See Section 8.5 Mitigation measure 3.	

APPENDIX 5: IMPACT ASSESSMENT METHODS

Criteria are ascribed for each predicted impact. These include the intensity (size or degree scale), which also includes the type of impact, being either a positive or negative impact; the duration (temporal scale); and the extent (spatial scale), as well as the probability (likelihood). The methodology is quantitative, whereby professional judgement is used to identify a rating for each criterion based on a seven-point scale (Table 10) and the significance is auto-generated using a spreadsheet through application of the calculations.

For each predicted impact, certain criteria are applied to establish the likely **significance** of the impact, firstly in the case of no mitigation being applied and then with the most effective mitigation measure(s) in place.

These criteria include the **intensity** (size or degree scale), which also includes the **nature** of impact, being either a positive or negative impact; the **duration** (temporal scale); and the **extent** (spatial scale). These numerical ratings are used in an equation whereby the **consequence** of the impact can be calculated. Consequence is calculated as follows:

$$\text{Consequence} = \text{type} \times (\text{intensity} + \text{duration} + \text{extent})$$

To calculate the significance of an impact, the **probability** (or likelihood) of that impact occurring is applied to the consequence.

$$\text{Significance} = \text{consequence} \times \text{probability}$$

Depending on the numerical result, the impact would fall into a significance category as negligible, minor, moderate or major, and the type would be either positive or negative.

When assessing impacts, broader considerations are also considered. These include the level of confidence in the assessment rating; the reversibility of the impact; and the irreplaceability of the resource as set out in (

Table 11, Table 12, and Table 13), respectively.

Table 10. Assessment criteria for the evaluation of impacts

Criterion	Rating	Category	Description
Duration	1	Immediate	Impact will self-remedy immediately
	2	Brief	Impact will not last longer than 1 year
	3	Short term	Impact will last between 1 and 5 years
	4	Medium term	Impact will last between 5 and 10 years
	5	Long term	Impact will last between 10 and 15 years
	6	On-going	Impact will last between 15 and 20 years

Criterion	Rating	Category	Description
	7	Permanent	Impact may be permanent, or in excess of 20 years
Extent	1	Very limited	Limited to specific isolated parts of the site
	2	Limited	Limited to the site and its immediate surroundings
	3	Local	Extending across the site and to nearby settlements
	4	Municipal area	Impacts felt at a municipal level
	5	Regional	Impacts felt at a regional level
	6	National	Impacts felt at a national level
	7	International	Impacts felt at an international level
Intensity	1	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
	2	Very low	Natural and/ or social functions and/ or processes are slightly altered
	3	Low	Natural and/ or social functions and/ or processes are somewhat altered
	4	Moderate	Natural and/ or social functions and/ or processes are moderately altered
	5	High	Natural and/ or social functions and/ or processes are notably altered
	6	Very high	Natural and/ or social functions and/ or processes are majorly altered
	7	Extremely high	Natural and/ or social functions and/ or processes are severely altered
Probability	1	Highly unlikely / None	Expected never to happen
	2	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
	3	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur
	4	Probable	Has occurred here or elsewhere and could therefore occur
	5	Likely	The impact may occur
	6	Almost certain / Highly probable	It is most likely that the impact will occur
	7	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur

Table 11. Definition of confidence ratings.

Category	Description
Low	Judgement is based on intuition
Medium	Determination is based on common sense and general knowledge
High	Substantive supportive data exists to verify the assessment

Table 12. Definition of reversibility ratings.

Category	Description
Low	The affected environment will not be able to recover from the impact - permanently modified
Medium	The affected environment will only recover from the impact with significant intervention
High	The affected environmental will be able to recover from the impact

Table 13. Definition of irreplaceability ratings.

Category	Description
Low	The resource is not damaged irreparably or is not scarce
Medium	The resource is damaged irreparably but is represented elsewhere