

Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report

Proposed Residential Development on Erf 3495, Paapekuilfontein, Struisbaai, Version 3.

Prepared for: LORNAY ENVIRONMENTAL CONSULTING

November 2026

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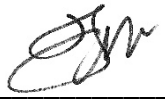
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Declaration of independence

- We consider ourselves 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, we 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 objectively. 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;
- We declare that no circumstances may compromise my objectivity in performing this specialist investigation. We 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;
- We do not have any influence over decisions made by the governing authorities;
- We undertake to disclose all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken concerning the application by a competent authority to such a relevant authority and the applicant;
- We have the necessary qualifications and guidance from professional experts in conducting specialist reports relevant to this application, including knowledge of the applicable Act, regulations and any guidelines that have relevance to the proposed activity;
- This document and all information contained herein is and will remain our intellectual property. This document, in its entirety or any portion thereof, may not be altered in any manner or form for any purpose without the specific and written consent of the specialist investigators.
- All the particulars we furnished in this document are true and correct.



_____ 1 November 2026

Signature Date

Executive Summary

This Terrestrial Animal Species Specialist Assessment was undertaken for the proposed residential development on Erf 3495, Paapekuilfontein, Struisbaai. The Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool identified the site as having High sensitivity for the Animal Species Theme. The assessment considered the presence and potential occurrence of Species of Conservation Concern (SCC), faunal habitat condition, Site Ecological Importance (SEI), landscape connectivity and the potential direct, indirect and cumulative impacts associated with the proposed development.

Erf 3495 is approximately 12 ha in extent and is situated within Agulhas Limestone Fynbos, a Critically Endangered vegetation type of the Agulhas Plain. The site has been affected by existing pipeline infrastructure, tracks and invasive alien vegetation, particularly *Acacia cyclops* and, to a lesser extent, *Acacia saligna*. Substantial areas of natural and semi-natural limestone fynbos remain. The wider Paapekuilfontein property, including Erf 3495, is mapped as Critical Biodiversity Area 1 (CBA1) under the current Western Cape Biodiversity Spatial Plan (CapeNature 2023). The ecological importance of the site is therefore influenced by both the remaining habitat within Erf 3495 and its position within a larger connected natural landscape.

Eight animal SCC were identified by the DFFE Screening Tool for consideration. These include Black Harrier (*Circus maurus*), Denham's Bustard (*Neotis denhami*), Southern Black Korhaan (*Afrotis afra*), African Marsh Harrier (*Circus ranivorus*), Fynbos Buttonquail (*Turnix hottentottus*), Southern Adder (*Bitis armata*), Scarce Mountain Copper (*Trimenia malagrida maryae*) and Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*). The assessment identified particularly important habitat considerations for Black Harrier, Southern Adder, Scarce Mountain Copper and landscape connectivity, while several other SCC may use the site depending on vegetation condition, fire history and surrounding habitat. The overall Site Ecological Importance of the faunal habitats and ecological processes within the Project Area of Influence is assessed as High.

Two development alternatives were assessed. Alternative 2 is the final preferred layout and provides for 71 single residential erven with associated private roads, services and private open space. The northern 3.96 ha, representing 32.7% of the layout area, is retained as Erf 80 and designated as a Nature Conservation Area: Private Open Space. Alternative 1 has a substantially larger development footprint and retains less natural habitat, resulting in greater habitat loss, fragmentation and reduction in faunal ecological function.

The principal faunal impacts were assessed according to four common ecological pathways: permanent loss and transformation of faunal habitat; habitat fragmentation and reduced landscape connectivity; construction-related disturbance, displacement and direct mortality; and operational disturbance and degradation of retained faunal habitat. Under Alternative 2, these impacts are generally assessed as Medium–High Negative before mitigation and Medium Negative after mitigation. Alternative 1 retains High Negative residual impacts because of its larger footprint and substantially greater loss and fragmentation of natural habitat.

The No Development alternative avoids direct clearing, construction disturbance and new residential edge effects. Existing ecological pressures would continue to require management. Invasive alien vegetation is already degrading portions of the property and inappropriate fire regimes could further reduce the condition and ecological function of Agulhas Limestone Fynbos. Active alien vegetation control and ecologically appropriate fire management would therefore remain necessary under the No Development alternative.

Since the original Erf 3495 assessment, a broader faunal investigation has been undertaken across the Paapekuilfontein property (Venter 2026). This work confirmed the importance of habitat connectivity and conservation planning at a scale extending beyond the individual development site. A Conservation Master Plan has subsequently been developed for the wider property, identifying substantial areas for conservation and seeking to retain a connected network of natural habitat while concentrating development within defined portions of the landholding.

The broader conservation framework forms an important landscape-scale component of the mitigation associated with Alternative 2. Erf 80 provides the local connection between the development and this wider conservation network. Its ecological value depends on long-term management, removal and control of invasive alien vegetation, ecological restoration, appropriate fire management and continued connectivity with adjoining natural habitat. The broader framework provides an opportunity to address cumulative fragmentation and connectivity effects at a scale that cannot be achieved within Erf 3495 alone. Permanent habitat loss within the development footprint remains a residual impact and the broader framework does not change the site-level SEI classifications or impact ratings.

The proposed development will operate as an access-controlled private residential estate and perimeter security fencing therefore requires consideration. From a faunal perspective, the preferred configuration is for the security perimeter to enclose the residential component while allowing Erf 80 to remain connected to the broader conservation landscape. This configuration retains movement opportunities for terrestrial fauna and has a Low Negative residual fencing-related impact. Enclosing Erf 80 within the estate perimeter would reduce landscape permeability. Fauna-permeable fencing and appropriately located movement openings can reduce this effect, although the residual fencing-related impact would remain Medium Negative.

Detailed mitigation is required during construction and operation. Key measures include strict protection of Erf 80 from construction disturbance; pre-clearance faunal inspections; protection of reptiles, tortoises, active bird nests and important invertebrate habitat; progressive vegetation clearing; management of trenches and other entrapment hazards; low vehicle speeds; appropriate security-fence design; alien vegetation control; ecologically appropriate fire management; control of artificial lighting, domestic animals, pesticides and rodenticides; appropriate stormwater management; rehabilitation of temporary disturbance; and long-term ecological monitoring and adaptive management. These requirements should be incorporated into the Environmental Management Programme, construction specifications and applicable estate and Homeowners' Association management rules.

From a faunal perspective, Alternative 2 is the preferred development alternative. Its acceptability depends on effective implementation and long-term enforcement of the mitigation measures identified in this report, permanent conservation and appropriate ecological management of Erf 80, maintenance of functional connectivity with the wider conservation landscape, and implementation of the broader Paapekuilfontein conservation framework. Alternative 1 is substantially less favourable because of its greater habitat loss and fragmentation. The competent authority, informed by the relevant conservation authorities, should determine whether any additional conservation mechanism is required through the environmental authorisation process.

Contents

Declaration of independence 3
Executive Summary 4
Introduction 10
Study Area 12
Methods 15
Setting the project area of influence (PAOI) 16
Evaluation of Site Ecological Importance (SEI) 16
Impact Assessment Methodology for Faunal Receptors 19
Conditions, limitations, and assumptions 19
Results 20
Field survey conditions 20
Project area of influence (PAOI) 20
Habitat descriptions. 21
Bottomland habitat (Locations 1 and 2) 21
Sloped habitat (Locations 2,3 and 4) 21
Flatland habitat 26
Faunal species recorded during the site visit 26
Animal species of concern 27
Potential Impacts on Faunal Landscape Connectivity 28
Black Harrier (Circus maurus) 30
Conservation Status 30
Habitat and Ecology 30
Key Threats 30
Likelihood of Occurrence in Struisbaai 31
Denham's Bustard (Neotis denhami) 32
Conservation Status 32
Habitat and Ecology 32
Key Threats 32
Likelihood of Occurrence in Struisbaai 32
Southern Black Korhaan (Afrotis afra) 33
Conservation Status 33
Habitat and Ecology 34
Key Threats 34
Likelihood of Occurrence in Struisbaai 34
African Marsh Harrier (Circus ranivorus) 35

Conservation Status 35
Habitat and Ecology 35
Key Threats 36
Likelihood of Occurrence in Struisbaai 36
Fynbos Buttonquail (Turnix hottentottus) 37
Conservation Status 37
Habitat and Ecology 37
Key Threats 37
Likelihood of Occurrence in Struisbaai 37
Southern Adder (Bitis armata) 38
Conservation Status 38
Distribution and Population 39
Habitat and Ecology 39
Threats 39
Likelihood of Occurrence Erf 3495 39
Scarce Mountain Copper (Trimenia malagrida maryae) 40
Conservation Status 40
Distribution and Population 40
Habitat and Ecology 40
Threats 41
Likelihood of Occurrence on Erf 3495, Struisbaai 41
Agile Grasshopper (Aneuryphymus montanus) 42
Conservation Status 42
Distribution and Population 42
Habitat and Ecology 42
Threats 43
Likelihood of Occurrence on Erf 3495, Struisbaai 43
Overall SEI for the PAOI 44
Impact assessment and impact rating tables 45
Integrated Conservation and Development Planning on Paapekuilfontein 45
Impact Assessment 47
Mitigation Measures 57
Protection and management of Erf 80 57
Broader Paapekuilfontein conservation framework 58
Pre-construction faunal inspection 58
Vegetation clearing and construction footprint 59

Southern Adder and other reptiles 59
Threatened and ground-nesting birds 60
Scarce Mountain Copper and other invertebrate habitat 60
Cape Golden Mole and soil disturbance 60
Landscape connectivity and security fencing 61
Roads and vehicle movement 62
Trenches, excavations and entrapment risks 62
Alien vegetation management 62
Fire management 63
Artificial lighting 63
Domestic animals 64
Stormwater and erosion 64
Landscaping and gardens 64
Pesticides and rodenticides 65
Waste and pollution 65
Rehabilitation of temporary disturbance 65
Environmental induction and compliance 66
Long-term management and monitoring 66
No Development alternative 67
Residual impacts after mitigation 67
Conclusion 67
Reference list 69
Appendix 1 72

Introduction

This Terrestrial Animal Species Specialist Assessment Report has been prepared for the proposed residential development on Erf 3495, Paapekuilfontein, Struisbaai (Figure 1). The purpose of the assessment is to determine the faunal sensitivity of the proposed development area, evaluate the likelihood of occurrence of Species of Conservation Concern (SCC), assess the ecological importance of the habitats present, and identify the potential impacts of the proposed development and associated infrastructure on terrestrial fauna and faunal ecological processes.

A screening report conducted by the Department of Forestry, Fisheries and the Environment (DFFE) in November 2024 identified the site as having High sensitivity for the Animal Species Theme (Lornay Environmental Consulting 2023)(Figure 2). Areas designated with High sensitivity require a Site Sensitivity Verification and, depending on the outcome, either a Terrestrial Animal Species Compliance Statement or a Terrestrial Animal Species Specialist Assessment Report. This assessment was undertaken in accordance with the applicable protocol established by the DFFE (2026).

The assessment considered both SCC identified by the DFFE Screening Tool and any additional faunal receptors or ecological processes considered relevant based on site conditions, available biodiversity information and specialist judgement. The assessment specifically considers the presence or likely occurrence of SCC within the proposed development area and surrounding Project Area of Influence (PAOI), habitat suitability and condition, landscape connectivity, potential direct and indirect impacts, appropriate mitigation measures, and the significance of residual impacts remaining after mitigation.

The DFFE Screening Tool identified eight animal SCC requiring consideration in this assessment. These are listed in Table 1.

This assessment has been undertaken within the framework of the National Environmental Management Act, 1998 (Act No. 107 of 1998; NEMA) and the Environmental Impact Assessment Regulations promulgated under NEMA. The assessment is further guided by the applicable national protocol for the assessment and minimum report content requirements for environmental impacts on terrestrial animal species, as initially published in 2020 and subsequently amended.

The assessment also follows the principles and procedures contained in the SANBI Species Environmental Assessment Guideline (SANBI 2026), including the evaluation of Site Ecological Importance (SEI), habitat suitability, receptor sensitivity and the application of the mitigation hierarchy.



Figure 1: The location of the property investigated during the site visit.

Table 1: Animal species of concern identified by the screening report (Lornay Environmental Consulting 2023).

Sensitivity	Species name	Common name	Taxon	Regional Red List Status
High	*Circus maurus*	Black harrier	Avis	EN
High	*Neotis denhami*	Denhams bustard	Avis	VU
High	*Afrotis afra*	Southern black korhaan	Avis	VU
High	*Circus ranivorus*	Marsh harrier	Avis	VU
Medium	*Turnix hottentottus*	Fynbos buttonquail	Avis	VU
Medium	*Bitis armata*	Southern adder	Reptile	VU
Medium	*Trimenia malagrida maryae*	Scarce Mountain Copper	Insect	EN
Medium	*Aneuryphymus montanus*	Yellow-winged Agile Grasshopper	Insect	VU

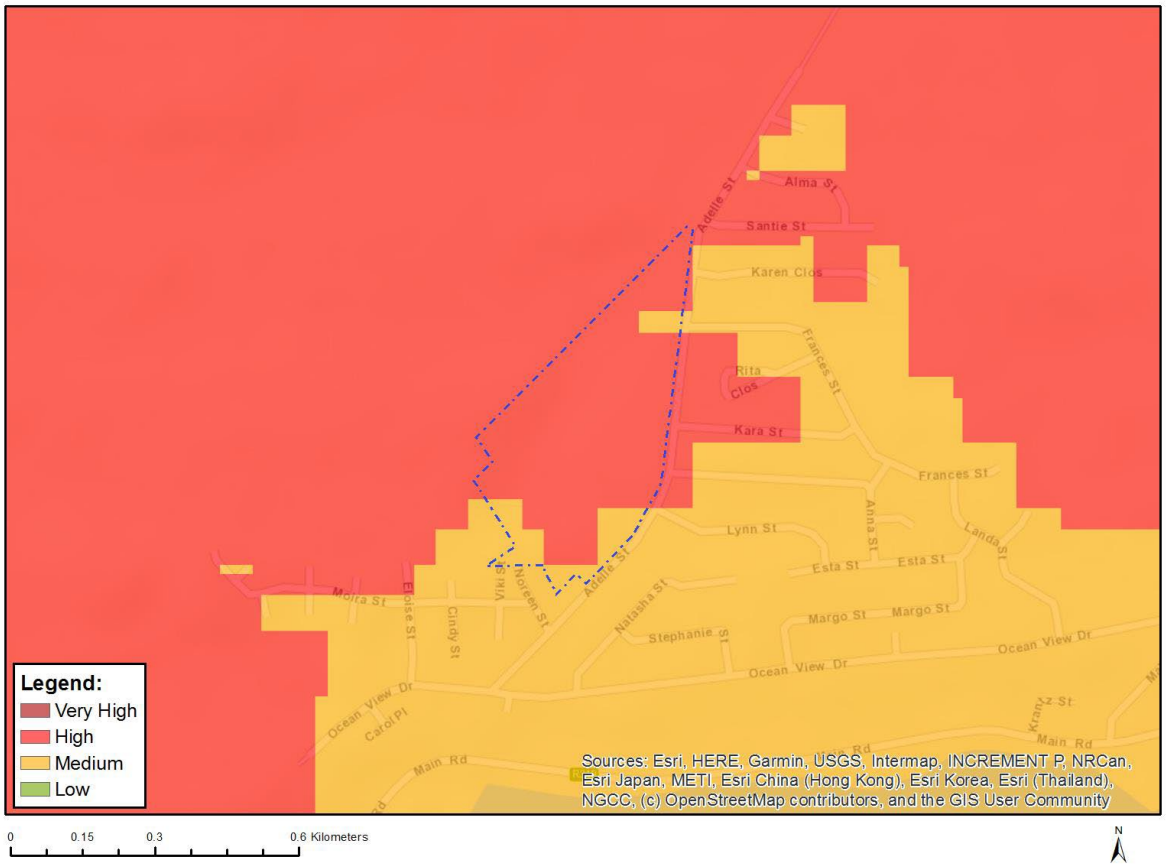


Figure 2: Map of the relative animal species theme sensitivity, indicated as 'High' as per Lornay Environmental Consulting (2023)

Study Area

Erf 3495, Paapekuilfontein, Struisbaai is situated immediately north-west of the town of Struisbaai in the Western Cape Province (approximately E 20°02'02"; S 34°48'30") and is approximately 12 ha in extent (Figure 1). The property is situated within Agulhas Limestone Fynbos, a Critically Endangered vegetation type occurring on calcareous soils of the Agulhas Plain (Mucina and Rutherford 2006, McDonald 2024).

The site is moderately transformed in places by existing pipeline infrastructure, jeep tracks and invasive alien vegetation. Alien vegetation is dominated by *Acacia cyclops* (rooikrans), with *Acacia saligna* (Port Jackson Willow) occurring to a lesser extent, consistent with the findings of McDonald (2024). Despite these disturbances, substantial areas of natural and semi-natural limestone fynbos remain.

The proposed development comprises 71 single residential erven with associated private roads, services and private open space. Two development alternatives were assessed in this report: the preferred Alternative 2 (Figure 3) and the non-preferred Alternative 1 (Figure 4). Alternative 2 is the final preferred layout for the proposed development. The development is proposed as an access-controlled private residential estate and will include perimeter security fencing.

The preferred Alternative 2 provides for 71 single residential erven. According to the final layout plan dated 18 October 2026, approximately 51.6% of the property is allocated to residential erven, 10.6% to private streets, 5.1% to private open space, and 32.7% to a Nature Conservation Area: Private Open Space (Erf 80). The latter represents approximately 3.96 ha. These land-use categories are treated separately in this assessment, and the smaller private open-space areas within the residential development are not regarded as equivalent to the retained natural habitat within Erf 80.

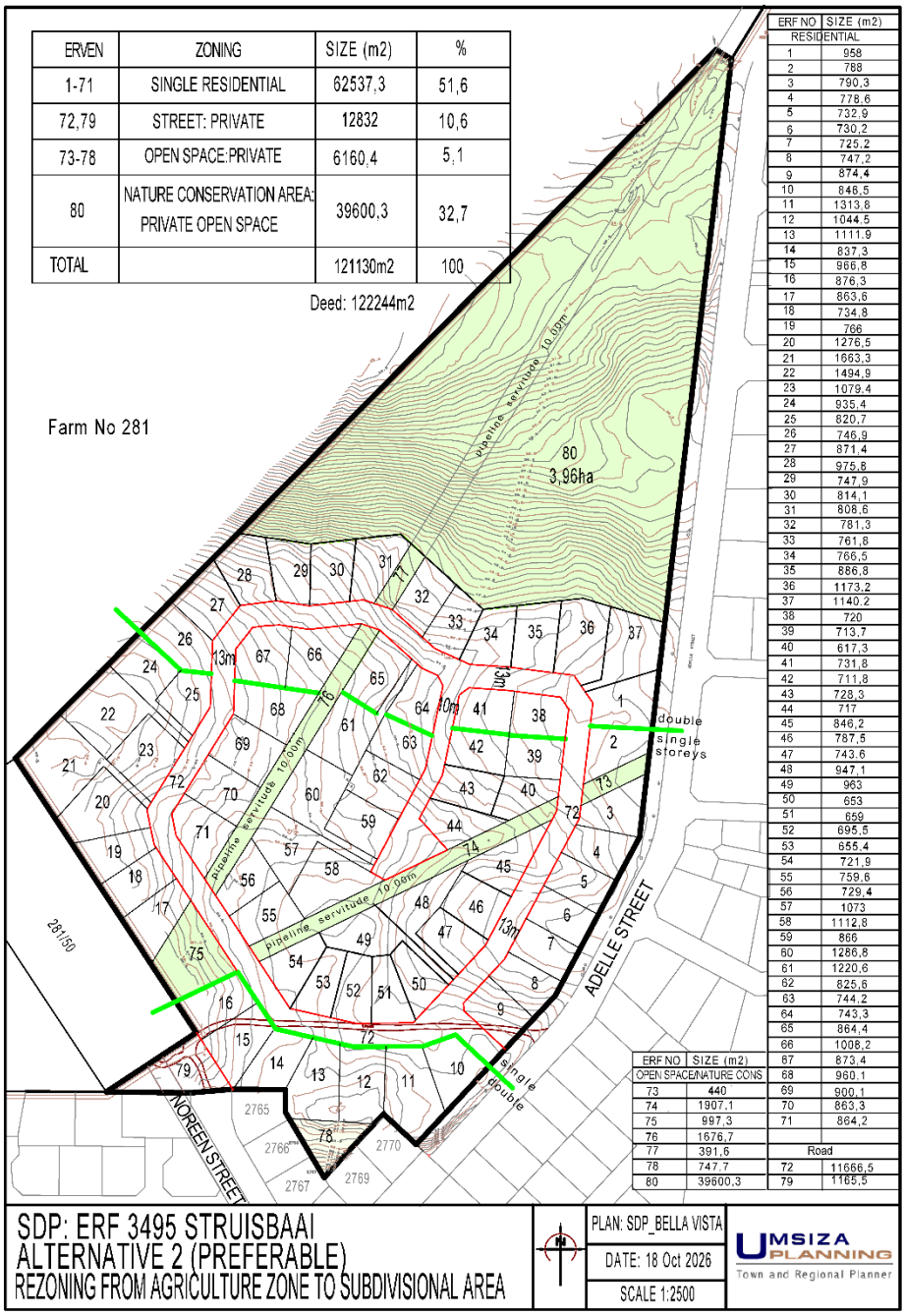


Figure 3: Final preferred Alternative 2 layout for Erf 3495, showing the residential erven, private roads and open spaces, and the 3.96 ha Nature Conservation Area (Erf 80).

The non-preferred Alternative 1 provides for a substantially greater development footprint and lower retention of natural habitat. It remains the less favourable alternative from a faunal conservation perspective.

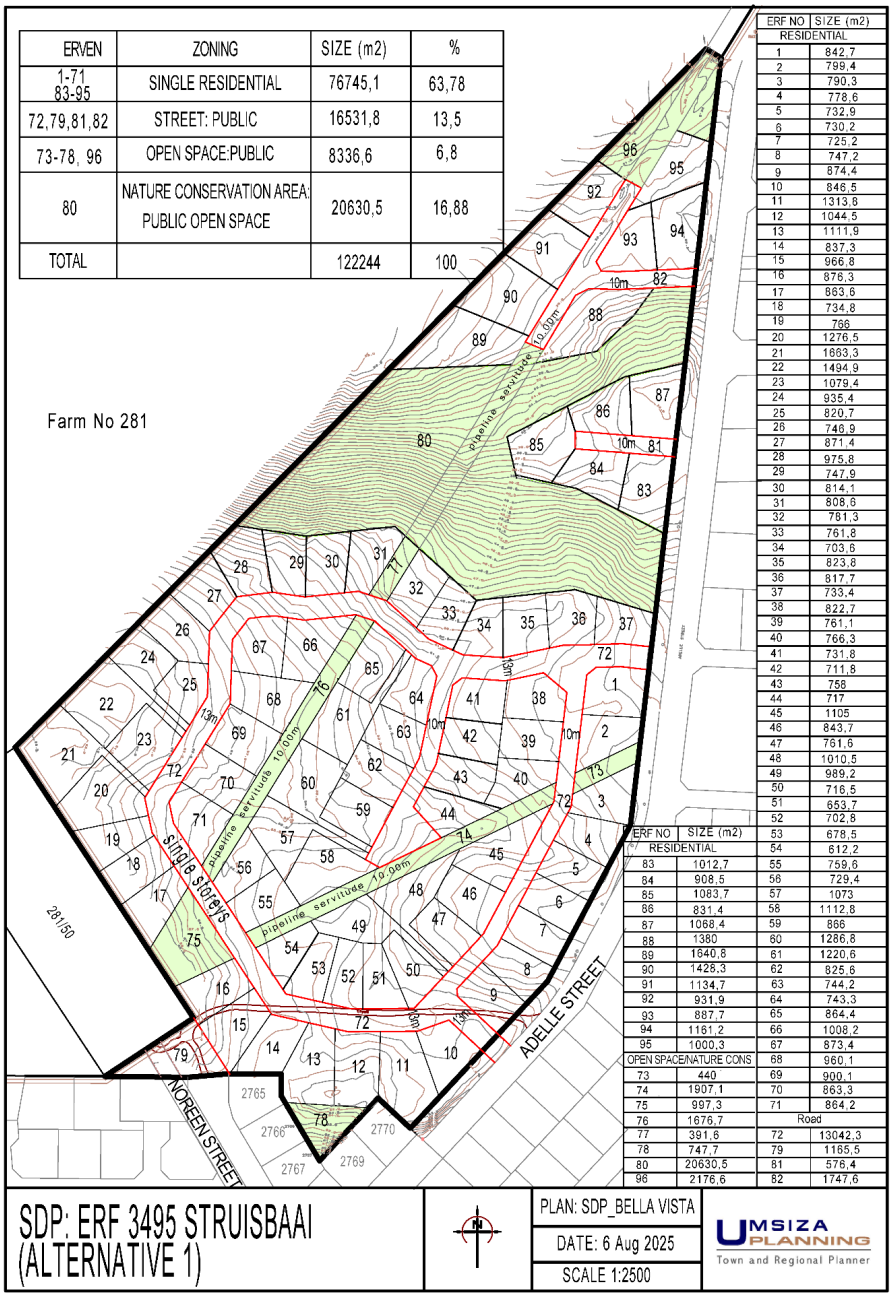


Figure 4: The non-preferred layout (Alternative 1) of the proposed residential erven in Erf 3495.

Since completion of the original Erf 3495 field assessment, a broader faunal investigation and conservation planning process has been undertaken across the wider Paapekuilfontein property (Venter 2026). This included additional field surveys and a property-wide assessment of faunal habitat sensitivity, ecological processes and landscape connectivity. The broader investigation provides the landscape-scale context for considering the cumulative effects of

development on Erf 3495 and the conservation of connected areas of Agulhas Limestone Fynbos.

A Conservation Master Plan has subsequently been developed for the wider property. The plan identifies substantial areas for conservation and seeks to retain a connected network of natural habitat while concentrating development within defined portions of the landholding. Erf 80, the 3.96 ha Nature Conservation Area retained under Alternative 2, forms an important local component of this wider conservation framework.

The broader conservation framework is considered in this assessment as an additional landscape-scale mitigation measure for habitat loss, fragmentation and reduced faunal connectivity associated with development of Erf 3495. Its implementation does not change the site-level SEI classifications or impact ratings presented in this report. The regulatory treatment of the broader conservation measures, including whether any additional conservation mechanism is required, remains a matter for consideration through the environmental authorisation process.

Methods

We followed the prescribed protocol for performing a Terrestrial Animal Site Sensitivity Verification Report according to the Government Gazette Notice 320 (Government Gazette 43110, 20 March 2020) and amended in Government Gazette Notice 3717 (Government Gazette 49028, 28 July 2023). Our approach was guided by the SANBI (2020) species environmental assessment guidelines.

This report's findings are based on:

- A desktop study to determine the presence of animal species of concern (as listed in Table 1) and other species at the study area; and
- 1 x Field site visit.

The desktop study included the use of iNaturalist and Global Biodiversity Information Framework (GBIF) records as well as reports, field guides and scientific literature. These records were used to determine the species recorded in the area and the presence of potential SCC, with particular emphasis on the SCC listed by the screening tool.

During the site survey, species and signs of presence (sounds, tracks, scats etc), observed were recorded. Surveys consisted of meandering search effort on foot by 4 skilled observers, combined with point surveys (10 min search effort) performed by two of these observers within the development site and surrounds (Figure 5).

The main purpose of the site visit was to confirm whether:

- any of the listed SCC were present in the proposed development area;
- the proposed site for the development would act as a corridor for any of the SCC highlighted by the screening tool;
- whether the habitats at the proposed development site likely supports undetected individuals or populations of the SCC highlighted by the screening tool; and
- there are any SCC present at the site that were not highlighted by the initial screening.

To aid in record-keeping of the site and species observed, photographs were taken during the site visits (Table 2).

Setting the project area of influence (PAOI)

The property intended for development is 12 ha in size. The PAOI was set considering main SCC we think are present on or close to the development footprint. This was based on recommended buffers for SCC (SANBI 2026) and WCDS expert knowledge.

Table 2: Field survey photo site coordinates

Site	Coordinates
Location 1	S34° 48’ 20”, E20° 02’ 05”
Location 2	S34° 48’ 24”, E20° 02’ 03”
Location 3	S34° 48’ 26”, E20° 02’ 04”
Location 4	S34° 48’ 26”, E20° 01’ 59”
Location 5	S34° 48’ 28”, E20° 01’ 56”
Location 6	S34° 48’ 30”, E20° 01’ 53”
Location 7	S34° 48’ 35”, E20° 02’ 02”

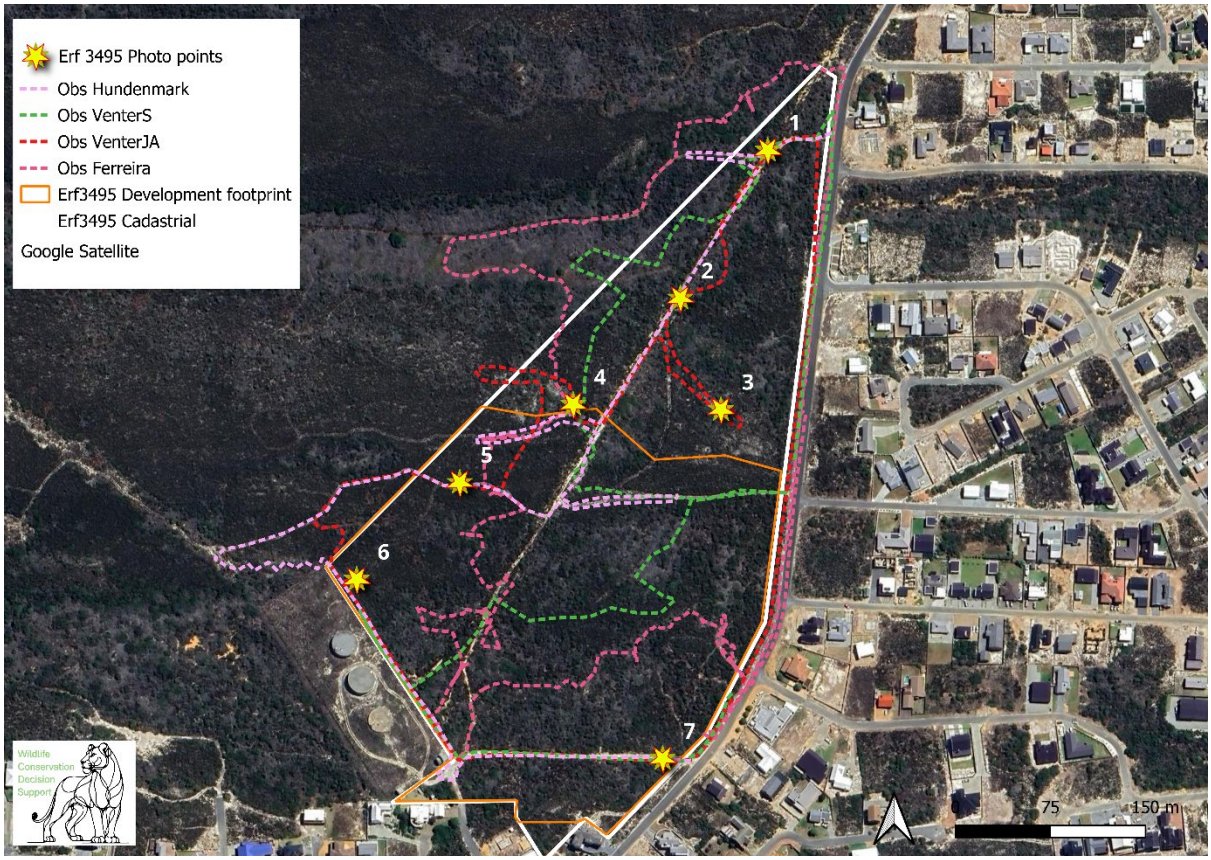


Figure 5: A map indicating the areas within the property investigated during the site visit.

Evaluation of Site Ecological Importance (SEI)

In order to spatially assess the different areas of importance for a species for the proposed development site we used the SEI approach, see SANBI (2020) for identifying the site-based ecological importance for species, in relation to the proposed PAOI. The SEI is a function of

the biodiversity importance (BI) of the receptor (e.g. species of conservation concern, the vegetation/fauna community, habitat type or ecological process present on the site) and its resilience to impacts (receptor resilience [RR]) and is calculated as follows (SANBI 2026):

$$SEI = BI + RR$$

BI in turn is a function of conservation importance (CI) and the functional integrity (FI) of the receptor is calculated as follows:

$$BI = CI + FI$$

Conservation importance (*CI*) is evaluated in accordance with recognised established internationally acceptable principles and criteria for the determination of biodiversity-related value. Conservation importance is defined here as (SANBI 2026)(Table 3): *"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."*

Functional integrity (*FI*) of the receptor (e.g. the vegetation/fauna community or habitat type) is defined here as the receptors' current ability to maintain the structure and functions that define it, compared to its known or predicted state under ideal conditions. Simply stated, FI is (SANBI 2026)(Table 4): *"A measure of the ecological condition of the impact receptor as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts."*

Table 3: Conservation importance (CI) criteria (SANBI 2026)

Conservation importance	Fulfilling criteria
Very High	Confirmed or highly likely occurrence of CR, EN, VU or Extremely Rare23 or Critically Rare24 species that have a global EOO of < 10 km2. Any area of natural habitat25 of a CR ecosystem type or large area (> 0.1% of the total ecosystem type extent26) of natural habitat of EN ecosystem type. Globally significant populations of congregatory species (> 10% of global population).
High	Confirmed or highly likely occurrence of CR, EN, VU species that have a global EOO of > 10 km2. IUCN threatened species (CR, EN, VU) must be listed under any criterion other than A. If listed as threatened only under Criterion A, include if there are less than 10 locations or < 10 000 mature individuals remaining. Small area (> 0.01% but < 0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type or large area (> 0.1%) of natural habitat of VU ecosystem type. Presence of Rare species. Globally significant populations of congregatory species (> 1% but < 10% of global population).
Medium	Confirmed or highly likely occurrence of populations of NT species, threatened species (CR, EN, VU) listed under Criterion A only and which have more than 10 locations or more than 10 000 mature individuals. Any area of natural habitat of threatened ecosystem type with status of VU. Presence of range-restricted species. > 50% of receptor contains natural habitat with potential to support SCC.
Low	No confirmed or highly likely populations of SCC. No confirmed or highly likely populations of range-restricted species. < 50% of receptor contains natural habitat with limited potential to support SCC.
Very low	No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.

Table 4: Functional Integrity (FI) criteria (SANBI 2026)

Functional integrity	Fulfilling criteria

Very High	Very large (> 100 ha) intact area for any conservation status of ecosystem type or > 5 ha for CR ecosystem types. High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches. No or minimal current negative ecological impacts with no signs of major past disturbance (e.g. ploughing).
High	Large (> 20 ha but < 100 ha) intact area for any conservation status of ecosystem type or > 10 ha for EN ecosystem types. Good habitat connectivity with potentially functional ecological corridors and a regularly used road network between intact habitat patches. Only minor current negative ecological impacts (e.g. few livestock utilising area) with no signs of major past disturbance (e.g. ploughing) and good rehabilitation potential.
Medium	Medium (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type or > 20 ha for VU ecosystem types. Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches. Mostly minor current negative ecological impacts with some major impacts (e.g. established population of alien and invasive flora) and a few signs of minor past disturbance. Moderate rehabilitation potential.
Low	Small (> 1 ha but < 5 ha) area. Almost no habitat connectivity but migrations still possible across some modified or degraded natural habitat and a very busy used road network surrounds the area. Low rehabilitation potential. Several minor and major current negative ecological impacts.
Very Low	Very small (< 1 ha) area. No habitat connectivity except for flying species or flora with wind-dispersed seeds. Several major current negative ecological impacts.

Receptor resilience (RR) is defined here as (SANBI 2026)(Table 5): *"The intrinsic capacity of the receptor to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention."* The fulfilling criteria to evaluate RR are based on the estimated recovery time required to restore an appreciable portion of functionality to the receptor.

Table 5: Resilience criteria (SANBI 2026)

Resilience	Fulfilling criteria
Very High	Habitat that can recover rapidly (~ less than 5 years) to restore > 75%28 of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a very high likelihood of returning to a site once the disturbance or impact has been removed.
High	Habitat that can recover relatively quickly (~ 5–10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a high likelihood of returning to a site once the disturbance or impact has been removed.
Medium	Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a moderate likelihood of returning to a site once the disturbance or impact has been removed.
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a low likelihood of returning to a site once the disturbance or impact has been removed.
Very Low	Habitat that is unable to recover from major impacts, or species that are unlikely to remain at a site even when a disturbance or impact is occurring, or species that are unlikely to return to a site once the disturbance or impact has been removed.

Evaluation of the SEI in the context of the proposed development activities are then categorised in a final risk category (SANBI 2026)(Table 6).

Table 6: Interpreting SEI in the context of the proposed development activities (SANBI 2026)

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.

Impact Assessment Methodology for Faunal Receptors

To evaluate the potential faunal impacts of the proposed development, a structured impact assessment framework was applied, consistent with the guidelines provided by SANBI (2020) and the national protocol for specialist assessments under the National Environmental Management Act (NEMA). Potential impacts were identified for each species of conservation concern (SCC) listed in the DFFE screening tool, supplemented by site-specific observations during field surveys. For each identified receptor, impacts were assessed across three alternative scenarios: (1) development without mitigation, (2) development with the full suite of proposed mitigation measures implemented, and (3) no development. Each impact was evaluated in terms of its nature, duration, spatial extent, probability of occurrence, and overall significance, with careful consideration of the receptor's ecological role, conservation status, habitat requirements, and sensitivity to disturbance. This comparative approach allows for a transparent and evidence-based understanding of the ecological trade-offs associated with development and supports sound environmental decision-making.

Since completion of the original Erf 3495 field assessment, the faunal investigation has been expanded to the broader Paapekuilfontein property through additional field surveys and a property-wide assessment of faunal habitat sensitivity and landscape connectivity (Venter 2026). This broader investigation provides additional landscape-scale context for interpreting connectivity, cumulative effects and conservation planning associated with Erf 3495.

The subsequent change to an access-controlled private estate also required consideration of the potential effect of perimeter security fencing on faunal movement. This was assessed as an additional component of the existing landscape-connectivity impact. The site-level SEI classifications and species-specific impact ratings presented in this report remain unchanged.

Conditions, limitations, and assumptions

The findings and recommendations of this report are based on WCDS best scientific and professional knowledge, literature and other data sources. WCDS reserve the right to modify aspects of the report, including the recommendations and conclusions, if additional relevant information becomes available.

The conditions, e.g. weather and otherwise, during the assessment period could have a significant influence determining whether animal species will be found on site or not. An animal species absence during field assessments does not necessarily mean it is not present

at assessment locations. At WCDS we use an evidence-based approach to provide the best possible assessment of species presence and potential impacts.

Results

Field survey conditions

Site visits were performed on the 2nd of August 2025. During the visit conditions were mild and good for detecting target SCC's.

Project area of influence (PAOI)

The PAOI covers the whole of the property and beyond (Figure 6 & 7 and Table 7).

Table 7: The PAOI was set considering main SCC likely to be present on or close to the development footprint.

Species/Group	PAOI Buffer size	Notes
General birds including raptors	300 m	Foraging and breeding habitat
Small mammals, herpetofauna and insects	100 m	Foraging and breeding habitat

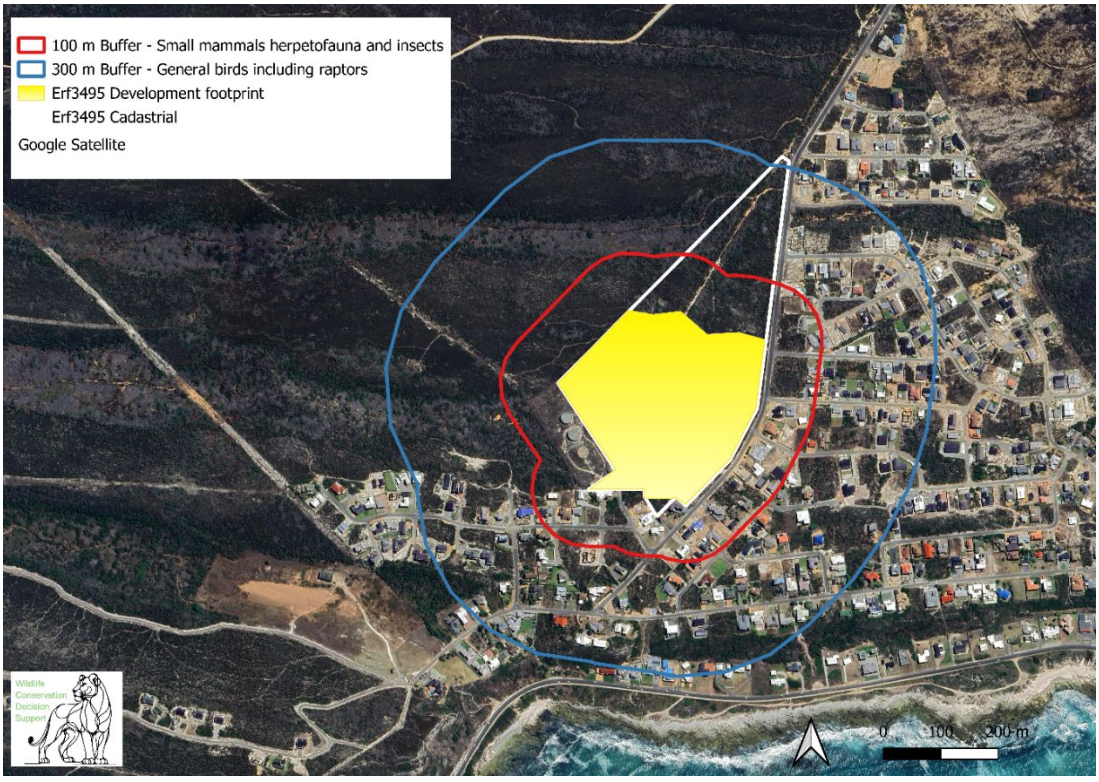


Figure 6: The PAOI for the preferred alternative (Alternative 2) was set considering main SCC likely to be present on or close to the development footprint (see Table 7 for buffer distances).

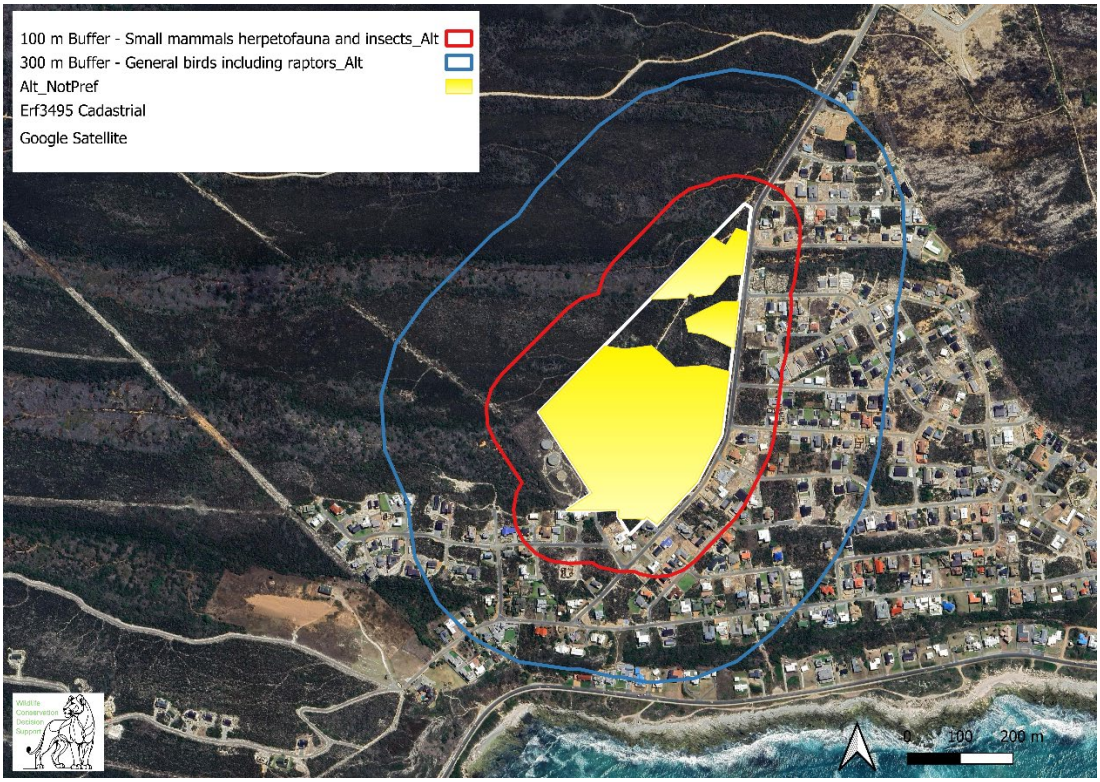


Figure 7: The PAOI for the alternative not preferred (Alternative 1) was set considering main SCC likely to be present on or close to the development footprint (see Table 7 for buffer distances).

Habitat descriptions.

The vegetation at Erf 3495 is 'Agulhas Limestone Fynbos', a Critically Endangered vegetation type that occurs on the Agulhas Plain on calcareous soils (Mucina and Rutherford 2006, McDonald 2024). Alien vegetation (mostly *Acacia cyclops* (rooikrans) to a lesser degree *Acacia saligna* (Port Jackson Willow) are present throughout the site but denser and taller in the northern sections.

After screening the development site using Google Earth images and on-site verification, we broadly mapped faunal habitats in the study area into three categories e.g. bottomlands, sloped and flatland habitats (Figure 8).

Bottomland habitat (Locations 1 and 2)

This habitat covers a section of the northern part of the property. Soils are sandy and deeper and the terrain has less rock slabs compared to the other two habitat types (Figure 8, 10, 11 & 12). Tall dense stands of *Acacia cyclops* dominate the area.

Sloped habitat (Locations 2,3 and 4)

This habitat is sloped and rocky and dominated by a mix of Restios, Leucadendron and less dense alien vegetation (Figure 8, 11, 12 & 13). Patches of *Acacia cyclops* are present in this habitat.

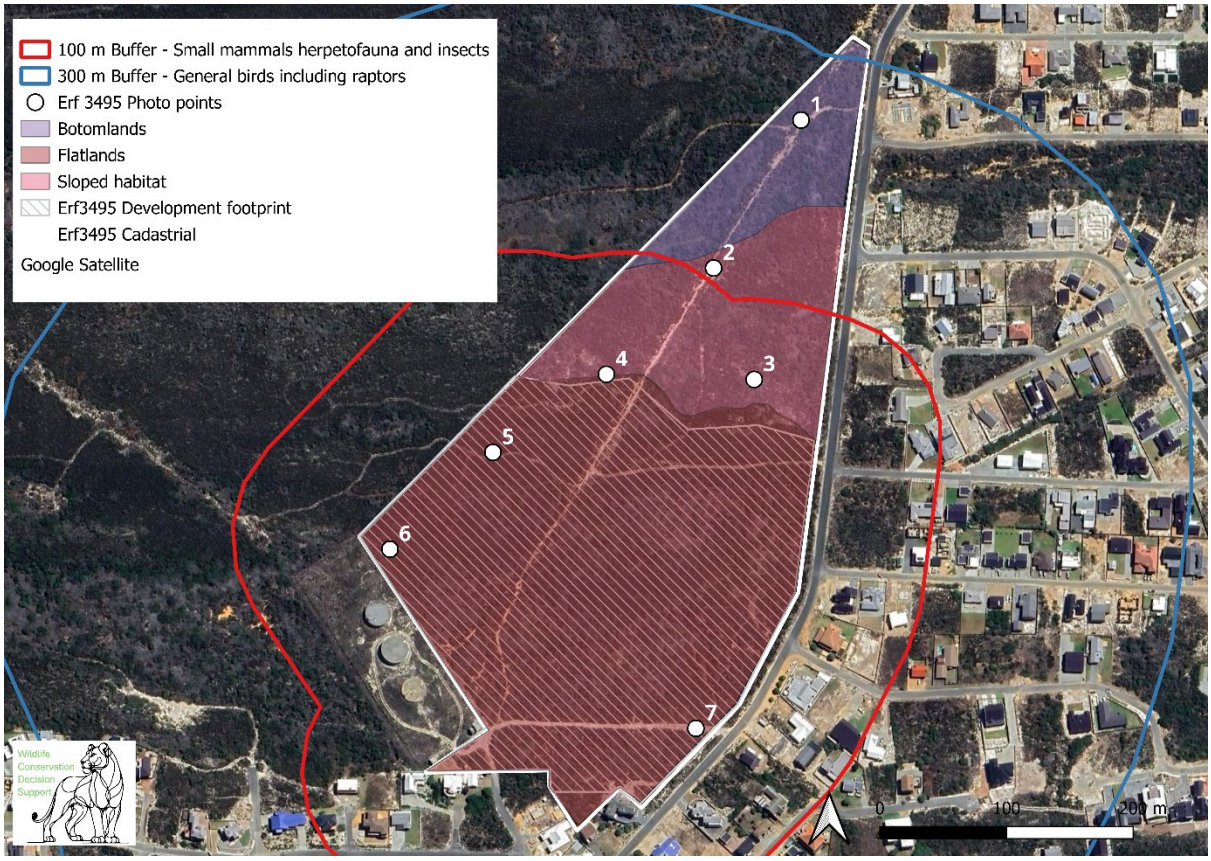


Figure 8: The broad faunal habitats in the study area



Figure 9: The typical vegetation in the bottomlands habitat.

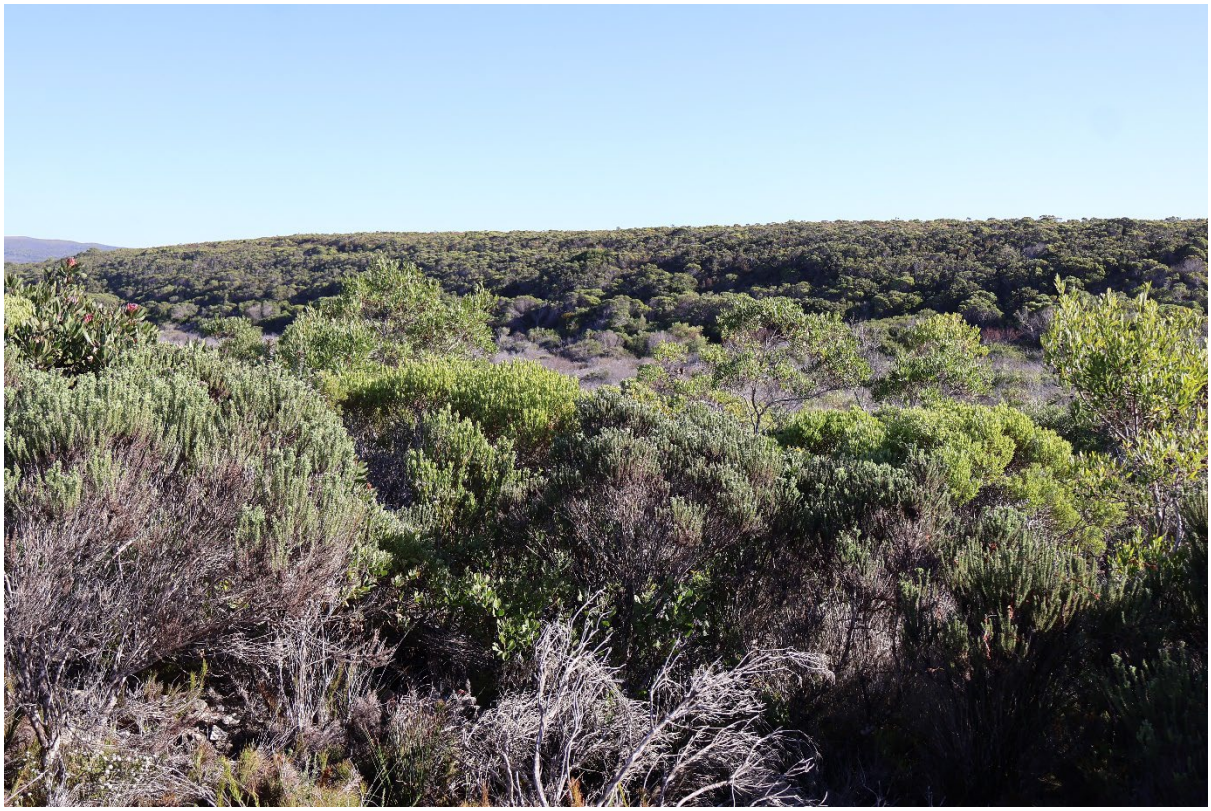


Figure 10: The typical vegetation in the bottomlands habitat



Figure 11: The typical vegetation in the bottomlands habitat in the foreground and sloped habitat in the background



Figure 12: The sloped habitat is rocky and dominated by a mix of Restios, Leucadendron and less dense alien vegetation

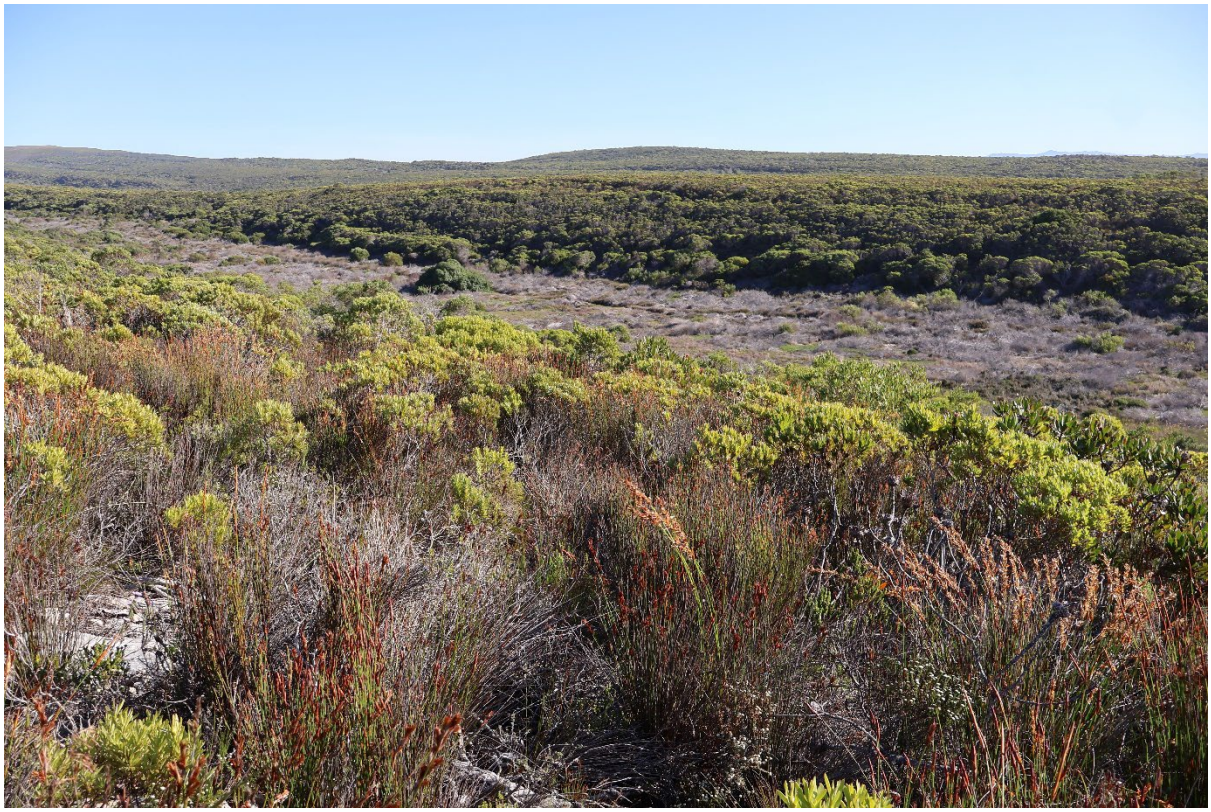


Figure 13: The sloped habitat in the foreground is rocky and dominated by a mix of Restios and Leucadendron. The bottomland habitat is visible in the background.



Figure 14: The flatland habitat is dominated by rock slabs and a mix of Restios, Protea and Leucadendron



Figure 15: The flatland habitat is dominated by rock slabs and a mix of Restios, Protea and Leucadendron



Figure 16: The flatland habitat is dominated by rock slabs and a mix of Restios, Protea and Leucadendron

Flatland habitat

The flatland habitat is dominated by rock slabs and a mix of Restios, Protea and Leucadendron (Figure 8, 15 and 16). Alien vegetation is present, and the area is traversed by a couple of jeep tracks.

Faunal species recorded during the site visit

We recorded several animal species during the site visit in the different habitats (Table 8).

Table 8: Animal species recorded during the site visit to the Erf 3495 study area.

Group	Comon name	Species	Bottom	Slope	Flat
Mammals	Cape grysbok	*Raphicerus melanotis*	X		
	Cape Golden Mole	*Chrysochloris asiatica*	X		
Reptiles	Angulate Tortoise	*Chersina angulata*			X
	Ocellated Gecko	*Pachydactylus geitjie*	X	X	X
	Marbled Leaf-toed Gecko	*Afrogecko porphyreus*	X	X	X
Aves	Bar-throated Apalis	*Apalis thoracica*	X	X	
	Cape Bulbul	*Pycnonotus capensis*	X	X	X
	Cape Spurfowl	*Pternistis capensis*	X		X
	Cape Sugarbird	*Promerops cafer*	X	X	X
	Cape Weaver	*Ploceus capensis*	X		
	Cape White-eye	*Zosterops virens*	X	X	
	Cape Robin-Chat	*Cossypha caffra*	X		X
	Fiscal Flycatcher	*Melaenornis silens*		X	
	Greater Double-collared Sunbird	*Cinnyris afer*		X	X
	Karoo Prinia	*Prinia maculosa*			X
	Large-billed Lark	*Galerida magnirostris*			X
	Laughing Dove	*Spilopelia senegalensis*			X
	Orange-breasted Sunbird	*Anthobaphes violacea*	X	X	X
	Ring-necked Dove	*Streptopelia capicola*		X	
	Red-faced Mousebird	*Urocolius indicus*	X		
	Southern Double-collared Sunbird	*Cinnyris chalybeus*	X	X	X
	White-throated Canary	*Crithagra albogularis*			X
	Yellow Bishop	*Euplectes capensis*			X
	Yellow Canary	*Serinus flaviventris*			X
	Common Starling	*Sturnus vulgaris*			X
	Fiery-necked Nightjar*	*Caprimulgus pectoralis*			
Invertebrates	Fynbos protea Scarlet*	*Capys alphaeus alphaeus*			
	Pine emperor	*Nudaurelia cytherea*		X	
	Equine Maiden	*Thyretes hippotes*	X		
	Small pugnacious ant	*Anoplolepis steingroeveri*		X	
	Suger ant	*Camponotus sp.*		X	
	Tenspot Ground Beetle	*Anthia decemguttata*			X
	Cape Zebra Cockroach	*Temnopteryx phalerata*	X		
	Rûens Velvet worm	*Peripatopsis lawrencei*	X		
	Rainspider	*Palystes superciliosus*		X	
	Striped Lesser Thicktail Scorpion	*Uroplectes lineatus*	X		
	Drab thicktail scorpion	*Parabuthus planicauda*	X	X	X

* From (McDonald 2024)

Animal species of concern

A total of eight animal species of concern was identified by the screening tool (Lornay Environmental Consulting 2023)(Table 2). No other animal species of potential concern was

identified likely to be present in the area. The following section deals with the site's potential importance for these species and the probability of them being present in habitats in the development area.

Potential Impacts on Faunal Landscape Connectivity

Erf 3495 is situated within the Cape Floristic Region in an ecologically important landscape extending westwards towards the Agulhas National Park. The site supports Agulhas Limestone Fynbos, a Critically Endangered vegetation type occurring on calcareous soils of the Agulhas Plain (McDonald 2024). Under the current Western Cape Biodiversity Spatial Plan, the broader Paapekuilfontein property, including Erf 3495, is mapped as Critical Biodiversity Area 1 (CBA1) (CapeNature 2023)(Figure 17). Maintaining ecological function and landscape connectivity within this area is therefore an important consideration in assessing development impacts.

A broader faunal investigation undertaken across the Paapekuilfontein property confirmed that connectivity is an important ecological function at the scale of the wider landholding (Venter 2026). Connected natural habitat facilitates movement, dispersal and access to resources for mobile fauna, while continuity between suitable habitat patches is important for smaller and less mobile species through dispersal, recolonisation and maintenance of local populations.

The preferred Alternative 2 retains approximately 3.96 ha of the northern portion of Erf 3495 as a Nature Conservation Area. This area is intended to form part of the broader Paapekuilfontein conservation network and provides an opportunity to maintain connectivity between retained habitat on Erf 3495 and larger natural areas within the wider property.

The proposed access-controlled estate will include perimeter security fencing. The alignment of this fencing is relevant to faunal movement. From a faunal perspective, the preferred configuration is for the security perimeter to enclose the residential development while leaving Erf 80 connected to the broader conservation landscape. The residual fencing-related impact under this configuration is considered Low Negative. If Erf 80 is enclosed within the estate perimeter, fauna-permeable fencing and appropriately located movement openings would be required. These measures would reduce movement restrictions for some fauna, although some constraint on terrestrial movement would remain, and the residual fencing-related impact is considered Medium Negative.

The broader Conservation Master Plan identifies substantial areas of the adjoining property for conservation and seeks to maintain a connected network of natural habitat across the landholding. These landscape-scale conservation and connectivity measures provide additional mitigation for habitat loss and fragmentation associated with development of Erf 3495. They do not alter the High Site Ecological Importance assigned to faunal landscape connectivity.

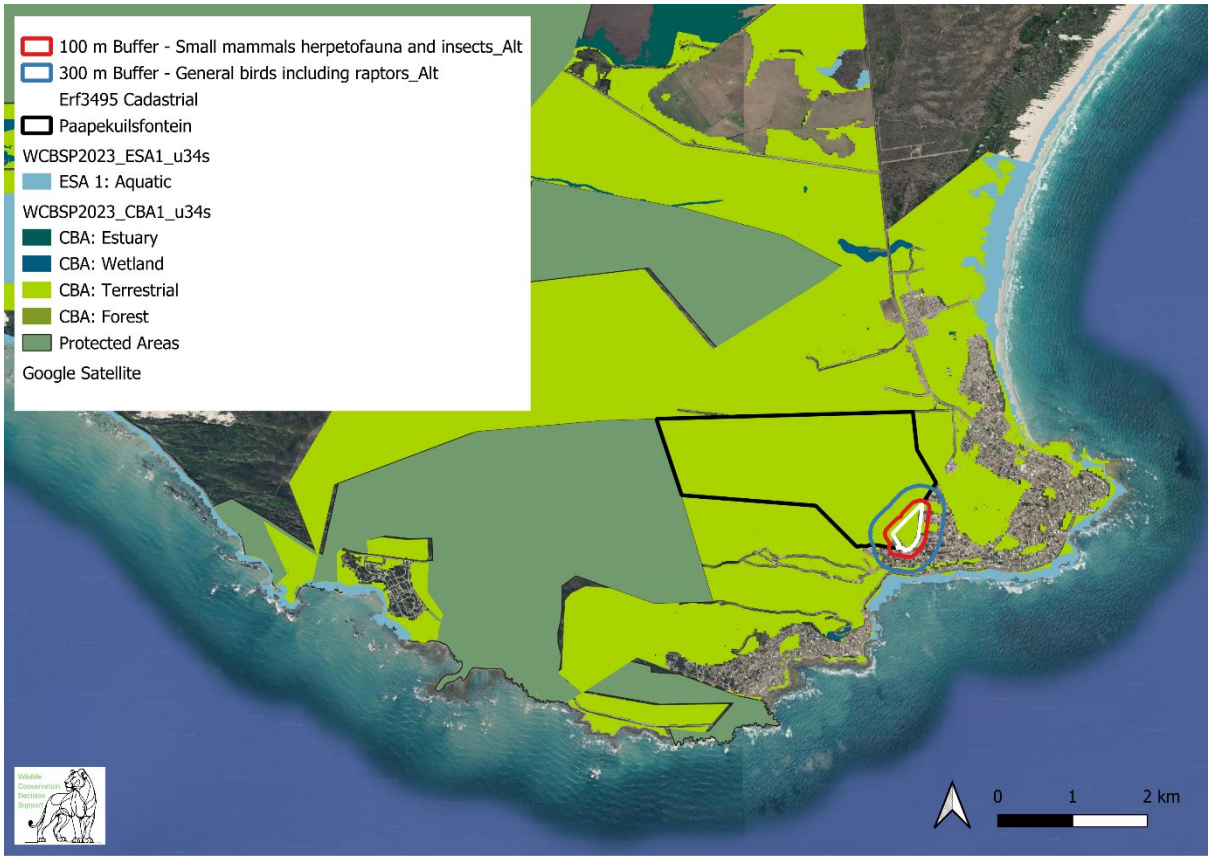


Figure 17: Erf 3495 and the broader Paapekuilfontein property in relation to the current Western Cape Biodiversity Spatial Plan (CapeNature 2023).

Table 9: Evaluation of site ecological importance (SEI) in terms of connectivity (the receptor) for faunal landscape connectivity for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'High'.

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

Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low

Site ecological importance (SEI)	Interpretation in relation to proposed development activities
Very high	Avoidance mitigation – no destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e. last remaining populations of species, last remaining good condition patches of ecosystems/unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to

	limit the amount of habitat impacted; limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

Black Harrier (Circus maurus)

Conservation Status

The Black Harrier is a southern African endemic raptor and one of the rarest harrier species globally. The global population is estimated at fewer than 1,000 breeding adults, with very low genetic diversity and a fragmented distribution. The species is listed as Endangered in South Africa, Namibia, and Lesotho, and is globally considered Endangered by BirdLife International (Simmons and Curtis-Scott 2025). Historical losses of more than 50% of core breeding habitat in the Fynbos and Renosterveld biomes, primarily due to agriculture, urbanization, and invasive alien vegetation, have contributed significantly to its decline (Curtis et al. 2004).

Habitat and Ecology

Black Harriers are ground-nesting raptors strongly associated with intact natural vegetation. They breed in Fynbos, Renosterveld, Dune Thicket, and occasionally Succulent Karoo, typically selecting knee- to shoulder-high vegetation, often in damp sites near wetlands (Curtis et al. 2004). Breeding occurs mainly from July to November, with peak egg-laying in August–September. Clutch sizes average 3–4 eggs, but breeding success is limited by predation and disturbance (Curtis et al. 2004). Diet studies confirm that the species is a specialist predator of small mammals, particularly the striped field mouse (*Rhabdomys pumilio*), which makes up the majority of prey biomass (Garcia-Heras et al. 2017). Birds and reptiles are taken as secondary prey, especially in inland habitats (Garcia-Heras et al. 2017). Tracking studies reveal that Black Harriers undertake unusual west–east intra-African migrations between breeding and non-breeding areas, travelling 500–1,200 km between the Western Cape breeding grounds and non-breeding settlement areas in the Free State, Lesotho Highlands, and Eastern Cape grasslands (Garcia-Heras et al. 2019). Individuals may skip breeding in some years, and survival during migration is a key limiting factor.

Key Threats

Major threats include:

- **Habitat loss and fragmentation**: Conversion of Fynbos and Renosterveld to cereal agriculture, viticulture, and pastures has eliminated much of the species' preferred lowland habitat (Curtis et al. 2004).
- **Disturbance and nest predation**: Ground nests are vulnerable to predation and disturbance by livestock, agricultural machinery, and human activity.
- **Wind energy development**: Harriers frequently fly at blade-swept height during foraging, display, and migration flights, creating a collision risk. Wind farms in the Overberg and Eastern Cape overlap with important breeding and migratory corridors .

- **Agrochemicals and secondary poisoning**: Exposure to pesticides and rodenticides may further threaten populations.
- **Small population size and genetic bottlenecks**, which make the species particularly vulnerable to stochastic events and environmental change.

Likelihood of Occurrence in Struisbaai

The Struisbaai–Agulhas Plain area lies within the broader Overberg coastal region, which is recognized as an important breeding and post-breeding foraging area for Black Harriers (Simmons et al. 2020). Historical and recent surveys show that the species breeds successfully in the Agulhas Plain, particularly in South Coast Renosterveld and Limestone Fynbos remnants, often near wetlands or damp sites (Curtis et al. 2004). SABAP2 reporting rates confirm regular occurrence in the Agulhas region. Although the Struisbaai area is heavily transformed by agriculture, patches of Limestone Fynbos, Renosterveld fragments, and wetland habitats remain and may provide foraging and potential nesting opportunities. Given its regular use of the Agulhas Plain during both breeding and non-breeding seasons, the likelihood of Black Harrier occurrence in the Struisbaai area is high, particularly during the breeding season (July–November) and post-breeding dispersal period (December–February). Erf 3495 is suitable as highly suitable forage habitat and suitable as breeding habitat. We did not observe the species during the site visit. Several recent research-grade iNaturalist records confirm current presence in the general area.

Table 10: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Black Harrier (*Circus maurus*) for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'High'.

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



Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

	by appropriate restoration activities.
Very low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

Denham's Bustard (Neotis denhami)

Conservation Status

Denham's Bustard is a large, ground-dwelling bird with a wide but fragmented distribution across Africa. In South Africa, the endemic subspecies *N. d. stanleyi* (locally known as Stanley's Bustard) occurs mainly in the Eastern and Western Cape, KwaZulu-Natal, and the southern Free State. It is listed as Vulnerable at national level, with an estimated South African population of 3,000–6,000 birds, and as Near Threatened globally (Ehlers Smith 2025). Populations are declining primarily due to habitat transformation and anthropogenic threats.

Habitat and Ecology

Denham's Bustards inhabit open grasslands, coastal fynbos, renosterveld, and cultivated pastures. They are often associated with mosaic landscapes where natural vegetation is interspersed with agricultural land. In the southern Cape coastal plain, they favour cultivated pastures in winter, harvested cereal stubble fields in summer, and natural vegetation during the breeding season (Allan 2003). Breeding takes place mainly between August and January, with males displaying conspicuously in September and October. Nests are simple ground scrapes, and clutch sizes are typically 1–2 eggs. During breeding, birds are often solitary, while in winter they form larger groups of up to 20–30 individuals (Allan 2003). As omnivores, they feed on a variety of food including insects, small vertebrates, bulbs, and green plant material, with seasonal variation linked to habitat use.

Key Threats

Major threats include:

- **Habitat loss and fragmentation**: Conversion of coastal fynbos and renosterveld to agriculture has greatly reduced available habitat.
- **Agricultural practices**: Mechanised cropping and ploughing can destroy nests and chicks.
- **Collisions with powerlines**: Denham's Bustards are among the most frequently killed species in the Overberg wheatbelt, with significant mortality recorded in systematic surveys (Shaw et al. 2010).
- **Hunting and persecution**: Although illegal, occasional hunting continues in some areas.
- **Disturbance and predation**: Ground-nesting habits make them vulnerable to predators and human disturbance during breeding.

Likelihood of Occurrence in Struisbaai

The Struisbaai–Agulhas Plain falls within the known range of Denham's Bustards. The area is part of the Overberg wheatbelt, which is considered an Important Bird Area due to its populations of large terrestrial birds (Shaw et al. 2010). Road count surveys in the southern Cape have shown that Denham's Bustards are relatively common in this region, particularly in winter when they aggregate in pastures and stubble fields (Allan 2003). Although suitable

habitat persists around Struisbaai, much of the surrounding natural vegetation has not burned for an extended period, reducing its attractiveness to the species. Current habitat quality is therefore moderately unsuitable, as bustards generally prefer more open, recently burned veld where food is more accessible. However, following fire events, when vegetation is younger and more open, the habitat would become highly suitable, offering favourable foraging and potential breeding opportunities.

Table 11: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Denham's Bustard for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'Medium'.

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



Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

Southern Black Korhaan (Afrotis afra)

Conservation Status

The Southern Black Korhaan is a South African endemic restricted to the Western, Northern, and Eastern Cape Provinces. It is currently listed as **Vulnerable** both regionally (2025) and globally (2024) under IUCN criteria A4bc (Evans 2025). This reflects a population decline of more than 30% over the past three generations, mainly as a result of extensive habitat loss and fragmentation (Evans 2023). Atlas data comparisons between SABAP1 and SABAP2 indicate a significant reduction in reporting rates, particularly in the Overberg and Swartland wheatbelt where large tracts of renosterveld and fynbos have been converted to agriculture

(Evans 2023). The total extent of suitable habitat is estimated to have contracted from over 30,000 km² historically to around 20,000 km² by 2020 (Evans 2023, Evans 2025).

Habitat and Ecology

The species typically inhabits lowland shrublands and grasslands on flat terrain with slopes of less than four degrees (Evans 2023). It shows a strong preference for renosterveld and fynbos in the Western Cape, but also occurs in patches of Succulent Karoo, southern Nama Karoo, and Albany Thicket within its range (Evans 2025). Korhaans are omnivorous, feeding largely on arthropods such as termites, beetles, grasshoppers, and ants, and supplementing their diet with seeds, bulbs, and other plant matter (Evans 2025). Breeding takes place from August to January, with 1–2 eggs laid in shallow ground scrapes (Evans 2023). The species has been observed in agricultural landscapes such as stubble fields, fallow lands, and pastures, although these are likely ecological sinks as breeding success in transformed habitats is low (Evans 2023). Fire plays an important role in habitat dynamics, with korhaans favouring recently burned or lightly disturbed shrublands where vegetation is shorter and more open (Evans 2023, Evans 2025).

Key Threats

- **Habitat loss and fragmentation** through conversion of lowland fynbos and renosterveld to wheat and canola cultivation (Evans 2023, Evans 2025).
- **Loss of connectivity between patches**, reducing dispersal success and increasing edge effects that lower survival and reproductive success (Evans 2023).
- **Agricultural disturbance**, as mechanised ploughing and harvesting destroy nests and chicks, and heavy grazing diminishes cover and food resources (Evans 2025).
- **Predation and human disturbance**, especially by corvids which prey on eggs and chicks, compounded by disturbance in farmlands (Evans 2023).
- **Climate change**, with projected hotter, drier conditions in the Western Cape reducing prey availability and vegetation cover, increasing predation risk (Evans 2023).
- **Inadequate protection**, as much of the remaining renosterveld and fynbos habitat lies outside protected areas and continues to be threatened (Evans 2025).

Likelihood of Occurrence in Struisbaai

The Struisbaai–Agulhas Plain forms part of the Overberg wheatbelt Important Bird and Biodiversity Area, which supports populations of Southern Black Korhaan alongside Denham's Bustard and Blue Crane (Evans 2025). The species is still regularly recorded in the region through SABAP2 and road count surveys, although numbers are declining (Evans 2023). Much of the natural vegetation in the vicinity of Erf 3495 area has not burned for some time, resulting in tall, dense shrubland that is presently moderately unsuitable for the species. However, after fire, when vegetation regenerates into younger, more open shrubland, conditions become more suitable for foraging. Consequently, while current habitat quality is suboptimal, the likelihood of occurrence of Southern Black Korhaan in the Struisbaai area remains moderate-to-high, with use influenced by fire regimes, vegetation age, and the surrounding agricultural mosaic.

Table 11: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Southern Black Korhaan for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'Medium'.

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



Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

African Marsh Harrier (Circus ranivorus)

Conservation Status

The African Marsh Harrier is classified as Vulnerable regionally in South Africa (2025), under criteria A2c+3c; C1, based on an estimated 3,500–5,800 mature individuals and a projected 42% decline in area of occupancy over three generations (Shaw 2025). Globally, it is assessed as Least Concern, due to its wider distribution and larger overall population (Shaw 2025).

Habitat and Ecology

This species is strongly tied to wetland environments, occurring almost exclusively in coastal and inland marshes, reedbeds, and vleis. It also occasionally forages across adjacent grasslands and croplands (Shaw 2025). Breeding harrier pairs require approximately 100 ha of intact marshland per territory, comparable to Black Harrier habitat requirements (Shaw 2025). The African Marsh Harrier is monogamous, highly territorial, and either nests solitarily or semi-colonially in marsh vegetation, often 0.5–2.5 m above water. Clutch size ranges from 3 to 4 eggs, laid between August and November, with incubation lasting about 30–34 days and fledging at 38–41 days (Shaw 2025). Their diet is dominated by small mammals (~74%), but

also includes passerines, waterbirds (~23%), frogs (2%), and fish (1%). They may predate eggs and chicks in heron, egret, and weaver colonies (Shaw 2025).

Key Threats

- **Loss and degradation of wetland habitat** via drainage, burning, and over-grazing (Shaw 2025).
- Conversion of wetlands to residential and agricultural land has led to the loss of nearly **50% of South Africa's wetlands** (Shaw 2025).
- Encroachment by **alien vegetation** further compromises habitat quality .
- **Contaminants**, including organochlorine residues found in unhatched eggs, may impair reproductive success, although adults remain less affected.

Likelihood of Occurrence in Struisbaai

The African Marsh Harrier is a wetland-dependent species, requiring extensive marshes, vleis, or reedbeds for both breeding and foraging. As Erf 3495 does not support significant wetland habitat, conditions at the site are unsuitable for this species. While individuals may occasionally pass through the wider region during dispersal, the absence of wetlands means the probability of regular occurrence or breeding in the immediate development area is very low.

Table 13: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Marsh Harrier for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'Very low'.

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

Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low

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

	may not be required.

Fynbos Buttonquail (Turnix hottentottus)

Conservation Status

The Fynbos Buttonquail is a South African endemic restricted to the Fynbos Biome. It is currently listed as Near Threatened regionally (2025), under criteria B2ab(ii,iii); A2bc+3c, and Least Concern globally (2024) (Lee et al. 2019, Lee 2025). This is a downlisting from its previous Endangered status in 2015, largely due to improved survey and modelling data showing the population to be more widespread and numerous than previously assumed. Using biome-wide flush surveys and habitat models, the regional population is estimated at ≈15,878 mature individuals (6,272–31,334) across approximately 27,800 km² of suitable habitat (Lee et al. 2018). Nevertheless, the population remains fragmented, with a continuing decline in habitat quality, justifying its current Near Threatened status.

Habitat and Ecology

The Fynbos Buttonquail is a secretive, ground-dwelling bird restricted to the fire-driven shrublands of the Cape Floristic Region. It shows strong associations with early to mid-successional fynbos, typically 2–5 years post-fire, where vegetation is open and patchy (Lee et al. 2018). It is absent from both recently burned (<1 year) areas and from dense, senescent fynbos older than 10–15 years (Lee et al. 2018). Probability of encounter decreases with time since fire and with increasing cover of grasses, restios, and dense shrubs, confirming its preference for open post-fire habitats. The species is usually solitary or found in pairs, with breeding reported between September and December. Its movements are poorly understood; while considered resident, it may show local nomadism in response to fire history and rainfall patterns. Importantly, the species has not been recorded in transformed or alien-invaded landscapes, underlining its dependence on intact natural vegetation (Lee et al. 2018).

Key Threats

- **Habitat loss and fragmentation** from agriculture, vineyards, and urban expansion, which continue to erode lowland fynbos.
- **Invasive alien vegetation**, particularly woody aliens (e.g., Acacia, Pinus, Eucalyptus), which alter vegetation structure and fire regimes.
- **Inappropriate fire regimes**, with both fire suppression and overly frequent/intense fires reducing the availability of suitable early successional habitat.
- **Urban expansion and predation**, with increasing pressure from cats and meso-predators near towns and settlements leading to local disappearances, even in seemingly suitable vegetation.
- **Climate change**, with projected decreases in winter rainfall and higher temperatures likely to exacerbate fire regime shifts, vegetation change, and habitat degradation.
- **Detection challenges**, as the species' cryptic nature complicates monitoring and makes population trends difficult to measure accurately.

Likelihood of Occurrence in Struisbaai

The Struisbaai–Agulhas Plain falls within the broad distribution of the Fynbos Buttonquail. Suitable habitat exists in the form of limestone fynbos and renosterveld patches, provided

these are in the right post-fire successional stage. However, much of the natural vegetation in the Struisbaai area has not burned in recent years, leaving tall and dense shrubland that is currently moderately unsuitable. If fire occurs and vegetation regenerates into the 2–5 year post-fire window, conditions would become highly suitable, significantly raising the probability of occurrence. At present, the likelihood of Fynbos Buttonquail being recorded in the Struisbaai area is therefore low to moderate, but it could become high following appropriate fire-driven habitat turnover.

Table 14: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Fynbos Buttonquail for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'Medium'.

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



Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

Southern Adder (Bitis armata)

Conservation Status

The Southern Adder (*Bitis armata*) is nationally assessed as Vulnerable (VU) B1ab(i,iii,iv,v)(Maritz and Turner 2023). This classification reflects its severely fragmented distribution, small range, and ongoing declines in extent of occurrence (EOO), area of occupancy (AOO), habitat quality, and subpopulation numbers (Maritz and Turner 2023). The species is considered extinct in the Cape Town area due to urban expansion.

- Extent of Occurrence (EOO)**:** 17 770 km²
- Area of Occupancy (AOO): 2 140 km²

Distribution and Population

This species has a small, patchy distribution on the south-west coastal margin of the Western Cape (Maritz and Turner 2023). It occurs as three disjunct subpopulations:

1. Northern – from West Coast National Park to approximately 20 km north of Cape Town.
2. Southeastern – Hermanus to De Hoop Nature Reserve.
3. A third historical subpopulation in the Cape Town area is locally extinct. The population is suspected to be in ongoing decline and is severely fragmented.

Habitat and Ecology

B. armata inhabits coastal lowland Fynbos on sandy and rocky substrates, sometimes climbing into vegetation (Maritz and Turner 2023). It shelters under rock slabs between dense shrubs on coastal plains and is absent from mountainous terrain (Phelps 2010, Maritz and Turner 2023). Altitudinal range extends from sea level up to 300 m a.s.l. (Maritz and Turner 2023). This small-bodied, cryptic viper is an ambush predator, likely preying on small vertebrates such as lizards and amphibians (Maritz and Turner 2023).

Threats

- **Habitat loss and degradation** from urbanisation, coastal infrastructure, and agriculture.
- **Invasive alien trees**, which alter vegetation structure and reduce suitable habitat.
- **Off-road vehicle disturbance** in coastal habitats.
- **Persecution** due to negative perceptions of snakes.
- **Pet trade**: the species is recorded in the trade, with some evidence of illegal collection. The proportion sourced from wild versus captive-bred populations is unknown.

Likelihood of Occurrence Erf 3495

The species' known southeastern subpopulation lies within the broader Struisbaai region. Photographic records confirm its presence in Struisbaai (e.g., image captioned *"Bitis armata, Struisbaai, Western Cape province"* in *(Tolley et al. 2023)*). In addition, multiple research grade iNaturalist records exist for the Struisbaai area, providing contemporary, geo-referenced evidence of its occurrence. Suitable habitat, coastal lowland Fynbos on sandy or rocky substrate, occurs in the Struisbaai area, and at Erf 3495 supporting the likelihood of local presence to be high.

Table 15: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Southern Adder (*Bitis armata*) for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'High'.

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

Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

Scarce Mountain Copper (Trimenia malagrida maryae)

Conservation Status

The Scarce Mountain Copper (*Trimenia malagrida maryae*) is listed as Endangered under the SANBI Regional Red List Assessment (Morton 2018). Its estimated Extent of Occurrence (EOO) is relatively small (~1 369 km²), and its AOO much smaller (Morton 2018). It was last seen in ca. 2013, where less than ten individuals were seen at Vermaaklikheid (Morton 2018).

Distribution and Population

It has been recorded from three locations, namely Struisbaai, De Hoop and Vermaaklikheid. It has not been recorded at Struisbaai or De Hoop for at least 10-15 years (Morton 2018). Despite this evidential rarity, there are large areas between Struisbaai and Vermaaklikhied with suitable habitat. The number of individuals were noted to be declining in 2018, possibly due to alien invasive plant species transforming their habitat (Morton 2018). The species is extremely rare. The genus, *Trimenia*, is called the Silver-spotted Coppers, restricted to southern Africa and contains five species. In the species *Trimenia malagrida*, there are 4 subspecies, all in the Western Cape, namely *T. m. malagrida*, *T. m. cedrusmontana*, *T. m. paarlensis* and *T. m. maryae*. *T. m. maryae* differs from the other subspecies in its much larger size, more extensive orange-red ground colour on the upperside of the wings, and the more prominent silvery markings on the hindwing underside (Pringle 1994).

Habitat and Ecology

T. m. maryae prefers rocky, limestone ridges, with short fynbos vegetation at fairly low altitudes. Previous authors have noted them to be common between January and March. Larvae of *T. m. maryae* have been found during excavations 5cm below bedrock, with no vegetation within a metre of where they were found (Heath and Brinkman 1995). Larvae and pupa seem to be attended to by the pugnacious ant, *Anoplolepis custodiens*. Heath & Brinkman (1996) suggests an association between *T. m. maryae*, and the plant genera *Diosma*,

Agathosma and *Euchaetis* (re: Buchu), all in the Rutaceae family, plants that are aromatic and having oil-producing glands. This association is probably through the activities of pugnacious ants, who disperses Buchu seeds by taking them into their nests. They further suspect that one or more years can be skipped in the larval or pupal state of the butterfly during unsuitable conditions; larvae remained alive within the egg for at least eight months (Heath & Brinkman 1996). The authors note that butterflies thrive in short vegetation, and that occasional veld fires, which benefits Buchu and ants, could be beneficial for its survival.

Threats

Key threats to *T. m. maryae* include:

- **Habitat transformation** due to agriculture, development and urban expansion;
- **Alteration of fire regimes**, which can either eliminate necessary early-successional stages or create overly frequent burns that degrade recovery;
- **Invasive alien vegetation**, which alters vegetation structure and reduces habitat quality;
- **Fragmentation**, which increases the likelihood of local extinction due to isolation and limits recolonisation potential

Likelihood of Occurrence on Erf 3495, Struisbaai

T. m. maryae prefers limestone ridges at low altitudes; this makes Erf 3495 a potential habitat for this species. All three Buchu genera (*Diosma*, *Agathosma* and *Euchaetis*) mentioned by Heath & Brinkman (1996) have been observed on the property (McDonald 2024), and two species of *Anoplolepis* ants have been observed in close vicinity of the property, according to iNaturalist records. There is therefore a possibility that *T. m. maryae* does occur on the property, despite no direct observations made by us during a visit in August 2025. For confirmation, it is advised that the property is visited again during the months January to March, when the adults are active, to increase chances of spotting the adults.

Table 16: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Scarce Mountain Copper (Trimenia malagrida maryae) for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'High'.

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



Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

Agile Grasshopper (Aneuryphymus montanus)

Conservation Status

The Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*) is listed as Vulnerable under the IUCN Red List criteria, reflecting a combination of restricted and fragmented distribution, habitat specialisation, and ongoing environmental pressures (IUCN SSC Grasshopper Specialist Group, 2016). Although its estimated Extent of Occurrence (EOO) is relatively large (~170,000 km²), its Area of Occupancy (AOO) is much smaller due to its highly patchy and montane distribution pattern (Kinvig 2005). South Africa is home to the only known populations of the species; thus it is considered a South African endemic.

Distribution and Population

A. montanus is recorded primarily from Western and Eastern Cape mountain ranges, including sites near Clanwilliam, Graafwater, Lambert's Bay, De Rust, Bot River, Suurbraak, Kogelberg, and Joubertinia (Brown 1960, Kinvig 2005). These records are generally associated with elevated, rocky slopes in montane fynbos habitats.

In a national conservation assessment of grasshoppers, Kinvig (2005) confirmed that *A. montanus* has a strongly disjunct and localised distribution pattern. While its EOO spans a broad area, this is misleading in conservation terms because the species only occurs in specific microhabitat conditions within a narrow elevational and ecological band. Populations are likely to be small, isolated, and vulnerable to local extirpation.

Habitat and Ecology

A. montanus is strongly tied to rocky, montane fynbos habitats, particularly on south-facing, cool slopes with dense, sclerophyllous shrub cover and patches of exposed rock. Brown (1960) described the species as occurring "amongst partly burnt stands of evergreen sclerophyll in rocky foothills," suggesting an affinity for early-successional fynbos following fire. These areas typically have a mix of open ground for movement and complex vegetation for cover and feeding.

The species is terrestrial and strong-jumping, rather than a capable flier, and likely exhibits limited dispersal ability. Kinvig (2005) noted that individuals were not readily collected, even in seemingly suitable areas, indicating that the species may be inherently rare or cryptic. Its

dependence on post-fire vegetation dynamics, cooler microclimates, and geological substrates contributes to its vulnerability to habitat alteration.

Threats

Key threats to *A. montanus* include:

- **Habitat transformation** due to agriculture, urban expansion, and plantation forestry;
- **Alteration of fire regimes**, which can either eliminate necessary early-successional stages or create overly frequent burns that degrade recovery;
- **Invasive alien vegetation**, which alters vegetation structure and reduces habitat quality;
- **Climate change**, which threatens montane fynbos by shifting biome boundaries upward and reducing habitat availability;
- **Fragmentation**, which increases the likelihood of local extinction due to isolation and limits recolonisation potential (Kinvig, 2005).

Because the species does not occur in all available fynbos areas, it is considered a microhabitat specialist, and unsuitable areas may act as barriers to movement even within continuous vegetation zones.

Likelihood of Occurrence on Erf 3495, Struisbaai

The species *A. montanus* prefers montane, rocky fynbos, with dense shrub cover, patches of exposed rock and south-facing, cool slopes. Erf 3495 does not occur in close proximity to mountains, and is less than 500m from the ocean. The proposed developments are classified as 'very low' impact on *A. montanus* due to 1) low elevation, 2) an absence of species data from this area, 3) no host plant records being available to link present vegetation to possible insect species occurrence, 4) the undulating, sandy dune system which slopes gently northwards for most of the property, and 5) no direct evidence of occurrence.

Table 17: Evaluation of site ecological importance (SEI) in terms of impact on the habitat (the receptor) for Yellow-winged Agile Grasshopper (Aneuryphymus montanus) for the proposed development, see evaluation criteria (SANBI 2026). SEI is classified as 'Very Low'.

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



Site ecological importance (SEI)		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	High	Medium	Medium	Low	Low	Very low
	Very high	Medium	Low	Very low	Very low	Very low



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

Overall SEI for the PAOI

The overall SEI for the PAOI is considered '**High'** (Table 18):

Table 18: Evaluation of SEI of faunal habitats/processes in the PAOI for the proposed development. BI = biodiversity importance, RR = receptor resilience.

Habitat/Process Receptors	Conservation Importance	Functional Integrity	Receptor resilience	Site ecological importance
Faunal Landscape Connectivity	**Very High** The erf lies within Critically Endangered Agulhas Limestone Fynbos and adjacent Endangered Overberg Dune Strandveld, both key to regional ecological networks. Maintaining connectivity in such vegetation types is a national conservation priority.	**High** Within Erf 3495 and the surrounding landscape, substantial areas of natural habitat remain connected to larger natural areas across Paapekuilfontein and towards the Agulhas National Park. Existing development, roads, alien vegetation and other infrastructure create local constraints, but the broader landscape retains important faunal movement opportunities. The retention and management of connected natural habitat, including Erf 80, is therefore important for maintaining this function.	**Medium** Some faunal groups (e.g., raptors, bustards, korhaans) are able to cross fragmented farmland mosaics, but small, ground-restricted endemics (e.g., Fynbos Buttonquail, Southern Adder, Scarce Mountain Copper) are less resilient to fragmentation. Overall resilience depends strongly on the protection and management of natural vegetation corridors, especially post-fire successional habitats.	**High** **CI=Very high** **RR=Medium**
***Circus maurus* (Black Harrier) habitat**	**Very High –** Endangered regionally and globally; rare, range-restricted endemic.	**High** Site supports foraging and potential breeding habitat, which would be highly suitable	**Medium** Sensitive to disturbance and requires intact habitat, but can recover if natural fire	High CI=Very High RR=Medium

		under appropriate fire regimes maintaining open fynbos structure.	cycles maintain suitable vegetation mosaics.	
Neotis denhami **(Denham's Bustard) habitat**	**Medium** Vulnerable regionally, Near Threatened globally; important in the Overberg.	**High** Agricultural mosaics and natural patches provide important seasonal habitat; potential suitability remains high under fire-driven vegetation turnover.	**Medium** Moderately resilient due to capacity to exploit mosaics, but strongly reliant on fire-maintained open habitats for breeding and display.	**Medium** **CI=Medium** **RR=Medium**
Afrotis afra **(Southern Black Korhaan) habitat**	**High** Vulnerable regionally and globally; South African endemic.	**High** Renosterveld and fynbos remnants remain key for long-term persistence; habitat would be very suitable under appropriate fire regimes.	**Medium** Can utilise mosaics of farmland and natural vegetation, but long-term survival depends on the maintenance of post-fire shrubland.	**Medium** **CI=High** **RR=Medium**
Circus ranivorus (African Marsh Harrier) habitat	**Very low**	**Very low**	**N/A**	**Very low** **Presence unlikely**
Turnix hottentottus (Fynbos Buttonquail) habitat	**Medium** Near Threatened regionally, Least Concern globally; restricted to the Fynbos Biome.	**High** Coastal fynbos on site retains importance, as habitat would be optimal in the 2–5 years post-fire window.	**Low** Cryptic and poor disperser, with populations tightly linked to appropriate fire cycles; resilience limited outside such conditions.	Medium CI=Medium RR=Low
Bitis armata **(Southern Adder) habitat**	**High** Vulnerable, range-restricted endemic.	**High** Coastal limestone fynbos habitat suitable though partially degraded by alien vegetation.	**Low** Low dispersal species but persists if microhabitats (rocks, shrubs) remain; moderately resilient under intact natural cover.	**High** **CI=High** **RR=Low**
Trimenia malagrida maryae **(Scarce Mountain Copper) habitat**	**Very High** Endangered subspecies with extremely limited range (Struisbaai–De Hoop–Vermaaklikheid).	**High** Host plant and ant associations make the site critical for persistence; retains importance even in fragmented habitat.	**Low** Very restricted and specialised; extremely sensitive to habitat alteration despite host plant persistence.	**High** **CI=Very high** **RR=Low**
Aneuryphymus montanus **(Yellow-winged Agile Grasshopper) habitat**	**Very Low**	**Very low**	**N/A**	**Very Low** **Not present**

Impact assessment and impact rating tables

Integrated Conservation and Development Planning on Paapekuilfontein

Erf 3495 occurs within a landscape of high conservation importance. The property supports Critically Endangered Agulhas Limestone Fynbos and habitat suitable for several threatened and range-restricted faunal Species of Conservation Concern, including Black Harrier,

Denham's Bustard, Southern Black Korhaan, Fynbos Buttonquail, Southern Adder and Scarce Mountain Copper. The current Western Cape Biodiversity Spatial Plan identifies the wider Paapekuilfontein property, including Erf 3495, as CBA1 (CapeNature 2023).

The original assessment of Erf 3495 identified the importance of considering development within the context of the wider Paapekuilfontein property because faunal movement, habitat connectivity and cumulative habitat loss operate beyond the boundaries of the individual development site.

A property-wide faunal investigation was subsequently undertaken across the broader Paapekuilfontein property (Venter 2026). This investigation incorporated additional field surveys and assessed faunal habitats, Species of Conservation Concern, habitat sensitivity and landscape connectivity across the wider landholding. The results provide an ecological basis for considering future development and conservation at a property-wide scale.

A broader Conservation Master Plan has subsequently been developed for Paapekuilfontein (Figure 18). The plan identifies substantial areas of the wider property for conservation and seeks to retain a connected network of natural habitat while concentrating development within defined portions of the landholding. Within Erf 3495, the preferred Alternative 2 retains the northern 3.96 ha as Erf 80, designated as a Nature Conservation Area: Private Open Space. This represents 32.7% of the Alternative 2 layout area.

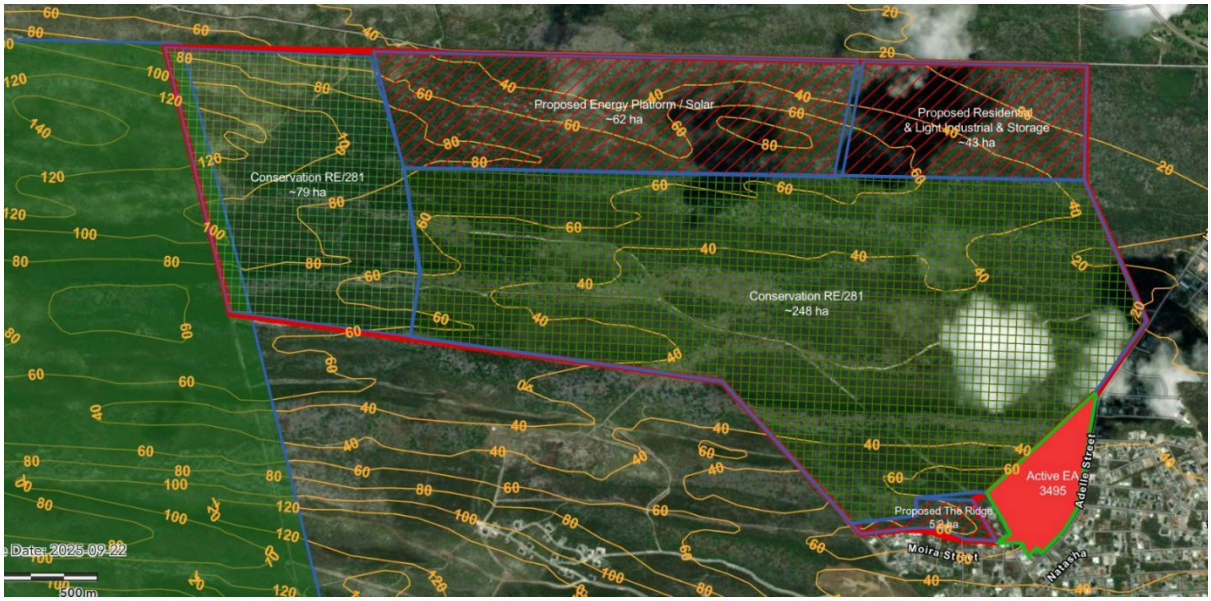


Figure 18: Conservation Master Plan proposed by the developer for the broader Paapekuilfontein property, showing the proposed conservation and development areas in relation to Erf 3495.

The landowner has indicated that Erf 80 will be managed as natural habitat and incorporated into the wider conservation network. Proposed management includes clearing invasive alien vegetation and ecological restoration using indigenous vegetation. Its longer-term ecological value will depend on appropriate management and continued connection with natural habitat on the adjoining property.

The configuration of the estate security perimeter should support this connectivity objective. From a faunal perspective, the preferred configuration is for the residential component to be enclosed while Erf 80 remains connected to the wider conservation landscape. Where fencing crosses faunal movement routes, suitable permeability measures should be incorporated.

The broader conservation framework provides an additional landscape-scale mitigation measure for the faunal impacts associated with development of Erf 3495. Its principal ecological benefits include retention and management of natural habitat, maintenance of landscape connectivity, coordinated alien vegetation control and restoration, and conservation planning at a scale relevant to mobile and habitat-dependent fauna.

These measures strengthen the mitigation package associated with Alternative 2. They do not alter the Site Ecological Importance classifications or the site-level impact ratings presented in this assessment. The long-term conservation benefit of the framework will depend on the identified conservation areas being appropriately managed and secured for their intended ecological function. The regulatory treatment of the broader conservation measures, including whether any additional conservation mechanism is required, should be determined through the environmental authorisation process by the competent authority, informed by the relevant conservation authorities.

Impact Assessment

Erf 3495 occurs within Agulhas Limestone Fynbos, a Critically Endangered vegetation type of the Agulhas Plain. Remaining areas of this vegetation type have been substantially reduced, transformed and fragmented, and surviving natural remnants therefore have increasing importance for maintaining biodiversity and ecological processes. Within this landscape, further loss of natural habitat contributes incrementally to an already fragmented ecological system and reduces the extent and continuity of habitat available to fauna. The ecological significance of development on Erf 3495 consequently extends beyond the boundaries of the individual property and needs to be considered within the cumulative pattern of habitat loss and fragmentation across the wider landscape. The site itself still retains substantial areas of natural and semi-natural limestone fynbos despite existing disturbance and alien plant invasion.

Agulhas Limestone Fynbos provides habitat for a range of threatened, endemic and range-restricted fauna. The DFFE Screening Tool identified eight animal Species of Conservation Concern requiring consideration in this assessment. The assessment of these species, together with the broader faunal community and landscape-connectivity function of the site, resulted in a High overall Site Ecological Importance for the faunal receptors and ecological processes considered.

The principal ecological concern associated with the proposed development is therefore the permanent loss and fragmentation of natural habitat and the associated reduction in the capacity of the site to support faunal populations and ecological processes. Additional impacts arise during construction through disturbance, displacement and direct mortality, and during operation through edge effects, lighting, traffic, domestic animals, invasive alien vegetation and changes in habitat management. The proposed security fencing is considered as part of

the landscape-connectivity impact because its ecological effect depends on whether movement between retained habitat on Erf 3495 and the surrounding natural landscape is maintained.

The individual faunal receptors identified in the preceding sections are affected through these common ecological impact pathways. To avoid repeating substantially similar assessments for each Species of Conservation Concern, the impacts are therefore assessed below according to four principal mechanisms: (1) permanent loss and transformation of faunal habitat; (2) habitat fragmentation and reduced landscape connectivity; (3) construction-related disturbance, displacement and direct mortality; and (4) operational disturbance and degradation of retained faunal habitat. Species-specific sensitivities and ecological requirements established in the preceding sections inform the interpretation of these broader impact pathways (Tables 19-22).

The No Development alternative in this assessment represents continuation of the site without the proposed development and should not be interpreted as an active conservation scenario. Existing alien vegetation and the need for appropriate fire management mean that ecological management would still be required to maintain habitat condition.

Table 19: Permanent loss and transformation of faunal habitat

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Potential impact / risk	Permanent clearing and transformation of Agulhas Limestone Fynbos within the approved development footprint, reducing habitat available to SCC and other fauna. The 3.96 ha Erf 80 Nature Conservation Area is retained.	A substantially larger development footprint results in extensive loss and transformation of natural habitat, with considerably less natural habitat retained.	No direct development-related clearing occurs. Habitat condition may progressively deteriorate through continued alien plant invasion and inappropriate or absent fire management.
Principal faunal receptors	Black Harrier, Denham's Bustard, Southern Black Korhaan, Fynbos Buttonquail, Southern Adder, Scarce Mountain Copper and other fauna associated with Agulhas Limestone Fynbos.	Same receptors, exposed to greater habitat loss and substantially reduced opportunities for persistence within the site.	Existing SCC habitat and other faunal habitat remain present, although habitat quality may decline without active ecological management.
Nature of impact	Negative, direct and permanent.	Negative, direct and permanent.	Negative, indirect and chronic under unmanaged conditions.
Extent	Primarily local, with wider ecological relevance because the development occurs within Critically Endangered Agulhas Limestone Fynbos and a CBA1 landscape.	Local to landscape scale because of the greater extent of habitat loss and reduced retained habitat.	Local, with potential wider consequences if habitat degradation contributes cumulatively to declining habitat condition across the landscape.
Duration	Long-term to permanent.	Permanent.	Long-term while ecological degradation remains unmanaged.
Magnitude	Medium–High. Substantial habitat loss occurs, although Erf 80 and other retained habitat remain.	High. Extensive habitat loss substantially reduces habitat availability and ecological function.	Medium under unmanaged conditions because habitat extent remains but ecological condition may deteriorate progressively.
Probability	Definite where clearing occurs.	Definite.	Probable if alien vegetation and fire regimes remain unmanaged.
Reversibility	Low. Cleared habitat cannot readily be restored to its original ecological condition.	Very low. Extensive habitat transformation would be difficult to reverse.	Moderate to high if ecological management is implemented before major degradation occurs.
Cumulative context	Adds to existing loss and fragmentation of Critically Endangered lowland fynbos within the broader Struisbaai landscape. The broader	Makes a substantially larger contribution to cumulative habitat loss and fragmentation.	No additional development footprint, although unmanaged degradation may still contribute cumulatively to habitat decline.

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
	Paapekuilfontein conservation framework provides landscape-scale mitigation.		
Significance before mitigation	**Medium–High Negative**	**High Negative**	**Medium Negative**
Key mitigation	Restrict clearing to the approved Alternative 2 footprint; secure and manage Erf 80; prevent unnecessary disturbance to retained habitat; protect important refugia and microhabitats; control invasive alien vegetation; maintain ecologically appropriate fire regimes; rehabilitate temporarily disturbed areas; implement the broader Paapekuilfontein conservation framework.	Protect and manage all remaining natural habitat; minimise unnecessary clearing; retain the largest possible continuous natural areas. The larger footprint substantially limits the effectiveness of mitigation.	Implement systematic alien vegetation clearing and follow-up control; maintain an ecologically appropriate fire regime; monitor habitat condition and prevent further degradation.
Residual impact	Habitat extent remains reduced and local faunal populations or habitat use may decline. Erf 80 and the broader conservation framework retain meaningful habitat and ecological function.	Extensive habitat loss remains and the ecological function of the site is substantially reduced.	Habitat extent remains intact and habitat quality can be maintained or improved with appropriate ecological management.
Significance after mitigation	**Medium Negative**	**High Negative**	**Low Negative**

Table 10: Habitat fragmentation and faunal landscape connectivity

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Potential impact / risk	Development divides existing natural habitat and reduces terrestrial movement opportunities. Erf 80	The larger development footprint causes substantially greater fragmentation, leaving	No additional development-related fragmentation occurs. Existing

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
	retains an important potential connection to the broader Paapekuilfontein conservation landscape. Perimeter security fencing creates an additional localised constraint on terrestrial movement.	limited and poorly configured habitat connections and isolated remnants.	connectivity remains, although alien vegetation expansion and inappropriate fire regimes may progressively reduce habitat quality and landscape permeability.
Principal faunal receptors / processes	Terrestrial faunal movement, dispersal, recolonisation and access to resources; particularly relevant to small mammals, reptiles, tortoises and other ground-dwelling fauna.	Same ecological processes, with substantially greater loss of functional connectivity.	Existing movement routes remain available, provided habitat condition is maintained.
Nature of impact	Negative, direct and indirect.	Negative, direct and persistent.	Negative, indirect and chronic under unmanaged conditions.
Extent	Local to landscape scale.	Local to landscape scale.	Local to landscape scale.
Duration	Long-term.	Long-term to permanent.	Long-term if ecological degradation continues.
Magnitude	Medium–High because development reduces habitat continuity within an ecologically important landscape.	High because most functional connections across the site are substantially compromised.	Low to Medium under unmanaged conditions. Physical connectivity remains, although ecological permeability may decline.
Probability	Definite for development-related fragmentation; fencing effects depend on the final perimeter configuration.	Definite.	Probable habitat-quality decline without management.
Reversibility	Low to moderate. Some movement function can be retained through layout and management, but the development footprint remains.	Low. Extensive fragmentation would be difficult to reverse.	High if alien vegetation and fire management are addressed.
Cumulative context	Relevant to the wider conservation network because Erf 3495 occurs within a CBA1 landscape and contributes to connectivity across Paapekuilfontein.	Strong contribution to cumulative fragmentation within the broader landscape.	No additional built fragmentation, although progressive habitat degradation may weaken existing ecological connections.
Significance before mitigation	**Medium–High Negative**	**High Negative**	**Low Negative**

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Key mitigation	Maintain Erf 80 as part of the wider connected conservation landscape; retain the widest possible natural-habitat connections; implement the broader Conservation Master Plan; manage alien vegetation and disturbance along movement interfaces. From a faunal perspective, the preferred security-perimeter configuration encloses the residential development while leaving Erf 80 connected to adjoining natural habitat. Where fencing must cross a movement interface, suitable fauna-permeability measures should be incorporated and maintained.	Protect and manage all remaining natural habitat and movement routes. Retain the widest available connections and minimise additional barriers. The configuration of the remaining habitat substantially limits mitigation effectiveness.	Maintain landscape permeability through alien vegetation control, appropriate fire management and protection of natural habitat.
Fencing consideration	The preferred configuration, with the residential area fenced and Erf 80 remaining connected to the wider conservation landscape, has a **Low Negative residual fencing-related impact**. If the security perimeter encloses Erf 80, fauna-permeable design measures can reduce the effect, but movement constraints remain and the residual fencing-related impact is **Medium Negative**.	Fencing is secondary to the larger fragmentation caused by the development footprint itself.	No estate security fence is introduced.
Residual impact	Habitat remains fragmented and movement opportunities are reduced. Erf 80 can retain an important connectivity function if it remains physically connected to adjoining natural habitat and is actively managed.	Substantial fragmentation and loss of functional connectivity remain.	Existing connectivity remains largely intact if habitat condition is actively managed.
Significance after mitigation	**Medium Negative**	**High Negative**	**Low Negative**

Table 21: Construction-related disturbance, displacement and direct mortality

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Potential impact / risk	Vegetation clearing, earthworks, machinery, vehicles, trenches and construction activity may cause direct mortality, displacement, destruction of refugia and temporary barriers to fauna movement.	The same impacts occur across a substantially larger development footprint and affect a greater area of natural habitat.	No construction-related clearing, machinery disturbance or direct construction mortality occurs. Existing habitat remains exposed to alien invasion and ecological-management deficiencies.
Principal faunal receptors	Reptiles, tortoises, small mammals, invertebrates and ground-nesting or ground-foraging birds. Cryptic and slow-moving fauna are particularly vulnerable during clearing.	Same receptors over a greater area.	N/A
Nature of impact	Negative and mainly direct.	Negative and direct.	N/A
Extent	Primarily local and concentrated within the construction footprint.	Local across a substantially larger area.	N/A
Duration	Mainly short- to medium-term during construction, although mortality and destruction of some microhabitats are permanent.	Short- to medium-term disturbance combined with greater permanent habitat effects.	N/A
Magnitude	Medium–High before mitigation because clearing affects natural habitat and cryptic fauna may be difficult to detect.	High because a substantially larger area is disturbed.	N/A
Probability	Probable to definite without mitigation.	Probable to definite.	N/A
Reversibility	Moderate for disturbance and displacement; low for direct mortality and destruction of some microhabitats.	Moderate for temporary disturbance; low for habitat and mortality impacts.	N/A
Cumulative context	Construction adds short-term disturbance to a landscape already affected by urban development, roads and habitat transformation.	Greater cumulative disturbance because of the larger footprint.	N/A
Significance before mitigation	**Medium–High Negative**	**High Negative**	**N/A**

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Key mitigation	Clearly demarcate the approved construction footprint; prohibit clearing outside it; conduct pre-clearance inspection of suitable refugia and microhabitats; allow fauna to move away from clearing areas; relocate animals encountered where appropriate and legally permissible; prohibit unnecessary killing or persecution; enforce low vehicle speeds; provide escape opportunities from trenches and excavations; minimise night-time construction; rehabilitate temporarily disturbed areas.	Apply the same construction controls, although the substantially larger footprint limits their ability to reduce the overall ecological impact.	N/A
Residual impact	Direct mortality and displacement risks are substantially reduced by good construction management, although some fauna will still be displaced through permanent habitat loss.	Significant disturbance and displacement remain because of the greater area affected.	N/A
Significance after mitigation	**Medium Negative**	**High Negative**	N/A

Table 22: Operational disturbance and degradation of retained faunal habitat

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Potential impact / risk	Residential occupation introduces artificial lighting, noise, traffic, human activity, domestic animals, alien plant spread and other edge effects that may reduce the quality and use of retained habitat, including Erf 80.	Similar operational pressures affect substantially smaller and more isolated remnants, increasing their vulnerability to degradation and reducing their ecological function.	No new residential lighting, traffic, pets or other estate-related disturbance is introduced. Existing habitat may nevertheless deteriorate through alien plant invasion and inappropriate fire management if left unmanaged.

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
Principal faunal receptors	SCC and other fauna using retained habitat, especially ground-dwelling species, nocturnal fauna, reptiles, invertebrates and disturbance-sensitive birds.	Same receptors within smaller and less functional habitat remnants.	Existing fauna remain, but habitat suitability may decline as vegetation condition deteriorates.
Nature of impact	Negative, indirect and chronic.	Negative, indirect and chronic.	Negative, indirect and chronic under unmanaged conditions.
Extent	Local, extending from the developed footprint into retained natural habitat through edge effects.	Local, with proportionally greater effects because less natural habitat remains.	Local.
Duration	Long-term for the operational life of the development.	Long-term to permanent.	Long-term if ecological degradation continues.
Magnitude	Medium–High before mitigation.	High because operational pressures act on limited and fragmented remnants.	Medium under unmanaged conditions.
Probability	Highly probable.	Highly probable.	Probable without active management.
Reversibility	Moderate. Many operational effects can be reduced through management, although some edge effects remain.	Low to moderate because small isolated remnants are less resilient.	Moderate to high if alien vegetation and fire regimes are actively managed.
Cumulative context	Adds to existing urban-edge disturbance around Struisbaai. Effective management of Erf 80 and the broader conservation network can reduce cumulative effects.	Greater cumulative effect because remaining habitat is limited and more isolated.	No additional urban operational pressure, although unmanaged habitat degradation remains a cumulative ecological pressure.
Significance before mitigation	**Medium–High Negative**	**High Negative**	**Medium Negative**
Key mitigation	Manage Erf 80 specifically for conservation; control invasive alien vegetation; use locally indigenous vegetation in rehabilitation and landscaping adjacent to natural habitat; minimise unnecessary lighting; use appropriately directed, low-spill lighting; control noise and unnecessary access to conservation areas; implement appropriate controls on domestic animals; enforce low vehicle speeds; manage ecologically appropriate fire	Apply equivalent controls to all retained habitat. The limited extent and isolation of remnants substantially reduce the effectiveness of mitigation.	Active alien plant clearing and follow-up control; appropriate ecological fire management; ongoing monitoring of habitat condition.

Assessment criterion	Alternative 2 – Preferred	Alternative 1 – Non-preferred	No Development
	regimes where feasible; monitor habitat condition and faunal responses and apply adaptive management.		
Residual impact	Retained habitat remains subject to edge effects and ongoing disturbance, although active management can maintain meaningful ecological function within Erf 80 and the wider conservation network.	Small and isolated remnants remain exposed to chronic disturbance and retain substantially reduced ecological function.	Habitat condition can be maintained or improved if appropriate ecological management is implemented.
Significance after mitigation	**Medium Negative**	**High Negative**	**Low Negative**

Mitigation Measures

Mitigation for the proposed development should follow the mitigation hierarchy, with avoidance of unnecessary habitat loss as the first priority, followed by minimisation of impacts within the authorised development footprint, rehabilitation of temporarily disturbed areas and long-term ecological management of retained natural habitat. This is particularly important on Erf 3495 because the site supports Critically Endangered Agulhas Limestone Fynbos within a landscape where remaining natural habitat is already transformed and fragmented, and because the site provides actual or potentially suitable habitat for several threatened and range-restricted faunal Species of Conservation Concern.

Alternative 2 incorporates an important avoidance measure through retention of the northern 3.96 ha of Erf 3495 as Erf 80, designated as a Nature Conservation Area: Private Open Space. The ecological value of Erf 80 will depend on its long-term management, restoration of currently degraded areas and continued ecological connection with adjoining natural habitat.

The site-level measures described below should be implemented together with the broader Paapekuilfontein Conservation Master Plan. The broader conservation framework provides the spatial scale required to address cumulative habitat fragmentation and landscape connectivity beyond the boundaries of Erf 3495. It therefore forms an important component of the overall mitigation package for Alternative 2.

The measures below should be incorporated into the Environmental Management Programme (EMPr), relevant construction specifications and, where applicable, the estate management rules, architectural guidelines and Homeowners' Association requirements.

Protection and management of Erf 80

Erf 80 must be retained and managed primarily for conservation of natural Agulhas Limestone Fynbos and associated faunal habitat.

The boundary between Erf 80 and the residential development must be surveyed and clearly demarcated before site establishment and vegetation clearing commence.

Erf 80 must be treated as a construction no-go area, apart from approved conservation-management activities such as invasive alien plant clearing, rehabilitation, ecological monitoring, fire management and authorised access.

No construction camps, contractor lay-down areas, spoil areas, material stockpiles, concrete mixing, temporary vehicle parking, waste-storage areas or construction access routes may be established within Erf 80.

Permanent services and infrastructure should remain within the approved development footprint. Infrastructure requiring subsequent disturbance within Erf 80 should be avoided where a technically feasible alternative exists.

Private gardens, structures, storage areas, informal tracks or recreational facilities may not progressively encroach into Erf 80.

The area should retain the character and ecological function of natural Agulhas Limestone Fynbos and should not progressively be converted into a landscaped recreational park.

Broader Paapekuilfontein conservation framework

The broader Paapekuilfontein Conservation Master Plan should be implemented as a landscape-scale component of the mitigation associated with Erf 3495.

Its principal ecological role is to retain and manage substantially larger areas of connected natural habitat than can be secured within Erf 3495 alone. This is particularly important for maintaining faunal movement, dispersal, access to resources, recolonisation and ecological processes across a landscape affected by habitat transformation and fragmentation.

Erf 80 should function as part of this broader network. Management of the area should therefore be coordinated with conservation management elsewhere on Paapekuilfontein, particularly in relation to alien vegetation control, rehabilitation, fire management and maintenance of ecological connectivity.

Conservation areas and ecological corridors identified through the broader framework should be clearly delineated and incorporated into appropriate long-term land-management arrangements.

Future development within the wider Paapekuilfontein property should be planned in relation to this conservation network so that ecological connections are not progressively narrowed or lost through successive development proposals.

The broader conservation framework provides additional mitigation for cumulative fragmentation and loss of landscape connectivity. Permanent loss of natural habitat within the authorised Erf 3495 development footprint remains a residual impact. The regulatory treatment of the broader conservation measures, including whether any additional conservation mechanism is required, should be determined through the environmental authorisation process by the competent authority, informed by the relevant conservation authorities.

Pre-construction faunal inspection

A pre-construction faunal inspection should be undertaken immediately before vegetation clearing commences within each portion of the development footprint.

The inspection should be undertaken by a suitably experienced faunal specialist or by the Environmental Control Officer (ECO) following appropriate briefing by the faunal specialist.

Searches should concentrate on habitat features likely to shelter terrestrial fauna, including rock slabs, loose rocks, dense shrubs, woody debris, sandy soil and other natural refugia.

Particular attention should be given to reptiles, tortoises and other slow-moving or cryptic fauna. Southern Adder (*Bitis armata*) has a high likelihood of occurrence within suitable habitat on Erf 3495, while Angulate Tortoise (*Chersina angulata*) was recorded during the field assessment.

Animals encountered within areas scheduled for immediate clearing should be allowed to move away from the disturbance where possible. Slow-moving fauna that cannot safely leave the construction area may be moved a short distance into suitable adjoining natural habitat, subject to applicable legal requirements.

If a Southern Adder or another reptile is encountered, work in the immediate area must stop until the animal has moved away or has been safely removed by a competent person. Snakes may not be killed.

If an unconfirmed Species of Conservation Concern is encountered within the construction footprint, work in the immediate area should stop and the faunal specialist should be contacted to determine whether additional mitigation or permitting is required.

Search-and-rescue must remain a precautionary construction measure and may not be used to justify avoidable clearing of sensitive habitat.

Vegetation clearing and construction footprint

Vegetation clearing must remain strictly within the authorised Alternative 2 development footprint.

Clearing should proceed progressively and should not extend substantially ahead of construction.

Where practicable, vegetation clearing should progress in a manner that allows mobile fauna to move towards retained natural habitat.

Natural vegetation, rock slabs, refugia and soil surfaces outside the approved footprint may not be disturbed for construction convenience.

Machinery operators must be instructed to stop work when tortoises, snakes or other fauna are observed in the immediate working area.

No indigenous fauna may be deliberately killed, collected or removed from the property by contractors or construction personnel.

Temporary construction disturbance should be minimised and affected areas rehabilitated as soon as they are no longer required.

Southern Adder and other reptiles

Southern Adder is a threatened and range-restricted reptile associated with coastal lowland fynbos and suitable sandy and rocky microhabitats. Suitable habitat occurs within Erf 3495 and the likelihood of occurrence was assessed as high.

Rock slabs, loose rocks, dense shrub refugia and other suitable microhabitats within areas scheduled for clearing should be inspected immediately before disturbance.

Natural rocky refugia within Erf 80 must remain undisturbed except where disturbance is specifically required for approved conservation management.

Rocks may not be removed from Erf 80 for landscaping, retaining walls or private gardens.

Construction personnel must be informed that snakes/reptiles may not be killed. The EMPr should include a procedure for safe snake removal and contact details for a competent snake handler.

Tortoises and other slow-moving reptiles encountered within active construction areas should be moved out of immediate danger into suitable adjoining habitat.

Threatened and ground-nesting birds

Several bird SCC assessed for Erf 3495 are associated with lowland fynbos, open natural vegetation or ground-nesting habitats, including Black Harrier, Denham's Bustard, Southern Black Korhaan and Fynbos Buttonquail.

Natural vegetation scheduled for clearing should be checked immediately beforehand for active nests or obvious breeding activity.

If an active indigenous bird nest is located within or immediately adjacent to the clearing area, disturbance around the nest should stop and an appropriate exclusion area should be maintained until breeding has been completed.

The size of the exclusion area should be determined according to the species, nest location and nature of the surrounding disturbance.

Active nests may not be deliberately destroyed.

Construction personnel may not deliberately disturb, capture or interfere with birds using the development footprint or retained natural areas.

Avoid active breeding season

Scarce Mountain Copper and other invertebrate habitat

The Scarce Mountain Copper is a highly range-restricted threatened butterfly dependent on suitable vegetation and associated ecological interactions. Avoidance of unnecessary habitat clearing therefore remains the primary mitigation measure for this receptor.

Known or subsequently identified important host-plant or associated microhabitat patches within retained natural habitat must be protected.

Alien clearing and restoration within Erf 80 should retain indigenous vegetation structure and minimise unnecessary disturbance of soil and intact microhabitats.

Routine broad-spectrum insecticide application may not take place within Erf 80.

Fire management should retain the natural vegetation dynamics and post-fire habitat mosaics required by fynbos-associated invertebrates.

Cape Golden Mole and soil disturbance

Cape Golden Mole (*Chrysochloris asiatica*) was recorded during the field assessment. Its relevance to mitigation arises primarily from excavation, soil disturbance and compaction within the development footprint.

Unnecessary grading, excavation, soil compaction and vehicle movement outside the authorised development footprint must be prohibited.

Where active subterranean fauna are encountered during excavation, work in the immediate area should pause sufficiently to allow the animal to move away or for appropriate specialist advice to be obtained.

Soil disturbance within Erf 80 should be restricted to activities required for approved ecological restoration and management.

Landscape connectivity and security fencing

Erf 3495 forms part of a wider connected natural landscape and Erf 80 is intended to contribute to this landscape-scale conservation network.

Cape Grysbok was recorded on the property, and Angulate Tortoise, reptiles and other terrestrial fauna also depend on the ability to move between suitable habitat patches. Maintenance of landscape permeability is therefore relevant both to larger terrestrial animals and to smaller ground-dwelling fauna.

The development is proposed as an access-controlled private residential estate and security fencing will form part of the development.

From a faunal perspective, the preferred configuration is for the security perimeter to enclose the residential development and associated private infrastructure while leaving Erf 80 connected to adjoining natural habitat within the broader Paapekuilfontein conservation landscape.

This configuration should be incorporated into the final fencing design where practicable. It retains a direct ecological connection between Erf 80 and the wider conservation network and avoids turning the conservation area into an isolated habitat patch within the estate.

If security fencing must cross an ecological connection between Erf 80 and adjoining natural habitat, appropriate fauna-permeability measures should be incorporated. The dimensions, spacing and location of fauna passages should respond to the terrestrial fauna likely to use the interface.

Fauna-permeability measures should accommodate smaller terrestrial species and, where feasible, larger animals such as Cape Grysbok.

Fauna passages must remain functional throughout the operational phase and may not subsequently be blocked by landscaping, security modifications or estate management practices.

Any electrification must be designed so that designated fauna passages do not create mortality risks.

Solid walls should be avoided along conservation interfaces where a permeable security treatment can provide the required security function.

The final fence layout should also consider the potential movement connection towards municipal open-space areas to the north-east of Erf 3495.

Where the full Erf 3495 boundary, including Erf 80, is enclosed within the security perimeter, fauna-permeable design can reduce the impact but will not fully reproduce the ecological permeability of a direct unfenced connection. This configuration therefore remains less favourable from a faunal perspective.

Roads and vehicle movement

Construction vehicles must remain on approved routes and within the authorised construction area.

Internal estate roads adjoining Erf 80 and other retained natural habitat should operate at low speeds. A maximum speed of 30 km/h is recommended for these areas.

Traffic-calming measures should be incorporated where required to achieve low operating speeds.

Construction personnel and future residents should be made aware of the possible presence of tortoises, snakes and other slow-moving fauna on internal roads.

Animals encountered on roads should be allowed to cross safely where this can be done without creating a safety risk.

Off-road driving within Erf 80 must be prohibited except where required for approved conservation management.

Trenches, excavations and entrapment risks

Open trenches, service excavations and other steep-sided excavations can trap reptiles, small mammals and other terrestrial fauna.

Excavations should be closed or backfilled as soon as practicable.

Where excavations remain open overnight, suitable escape opportunities should be provided using sloped soil ramps, boards or another effective means of egress.

Open excavations should be inspected before work begins each morning and before backfilling.

Animals found trapped in excavations must be safely removed before construction continues.

Pipes and other hollow construction materials stored on site should be capped or inspected before use.

Alien vegetation management

Alien vegetation is already an important source of habitat degradation on Erf 3495, particularly *Acacia cyclops* and, to a lesser extent, *Acacia saligna*.

A coordinated alien vegetation management programme should be implemented within Erf 80 and other retained natural habitat.

Initial clearing must be followed by systematic follow-up control. One-off clearing will not provide an adequate ecological outcome.

Alien clearing should minimise unnecessary disturbance to indigenous vegetation, natural soil surfaces and faunal refugia.

Dense alien stands may be cleared progressively where this assists fauna displacement and limits abrupt removal of all cover.

Herbicide application, where required, should be targeted and should avoid unnecessary impacts on surrounding indigenous vegetation.

Alien seedlings and invasive ornamental species spreading from residential gardens must be controlled before they become established within Erf 80.

Garden refuse may not be dumped within the conservation area.

Alien vegetation management within Erf 80 should be coordinated with management across the broader Paapekuilfontein conservation landscape.

Fire management

Agulhas Limestone Fynbos is a fire-dependent ecosystem and appropriate fire regimes are important for maintaining vegetation structure, ecological succession and habitat suitable for several faunal receptors assessed in this report.

Erf 80 should be incorporated into a broader ecological fire-management approach for the Paapekuilfontein conservation landscape.

Long-term exclusion of fire should be avoided where this results in ecologically inappropriate vegetation senescence and declining habitat quality.

Burning should be planned according to vegetation condition, fuel age and ecological requirements, while complying with applicable fire legislation and safety requirements.

Individual residents may not undertake burning within Erf 80.

Firebreaks and other fire-management infrastructure should be positioned to minimise unnecessary additional loss of natural vegetation.

Post-fire recruitment of *Acacia* and other alien vegetation must be actively controlled.

Vegetation recovery following fire should be monitored to ensure that the conservation area returns to indigenous fynbos and is not progressively replaced by invasive vegetation.

Artificial lighting

Artificial lighting can affect nocturnal fauna, insects and birds and should be carefully controlled along the interface between the residential estate and retained natural habitat.

External lighting should be limited to that required for safety and security.

Lighting adjacent to Erf 80 should be downward-directed and shielded to minimise spill into natural habitat.

High-intensity floodlighting of the conservation-area interface should be avoided.

Security lighting should use the lowest intensity capable of achieving the required security function.

Warm-spectrum lighting should be used where practicable.

Motion-activated lighting should be used where continuous illumination is unnecessary.

Domestic animals

Domestic animals represent a long-term operational risk to reptiles, small mammals and ground-dwelling birds.

Free-ranging dogs must not be permitted within Erf 80.

Dogs outside private residential erven should be effectively controlled and should be leashed where they have access to areas adjoining the conservation area.

Free-roaming domestic cats should be prohibited or tightly controlled through estate rules because of their potential to prey on birds, reptiles, small mammals and invertebrates.

Residents may not deliberately encourage domestic animals into Erf 80.

Estate management rules should provide a clear mechanism for dealing with repeated non-compliance involving domestic animals and conservation areas.

Stormwater and erosion

Stormwater from roads and residential areas must be managed so that concentrated runoff does not cause erosion, sedimentation or habitat degradation within Erf 80.

Clean stormwater should be dispersed in a manner that maintains natural drainage patterns as far as practicable.

Contaminated runoff from roads, construction areas, concrete works or other potentially polluted surfaces may not be discharged directly into retained natural habitat.

Stormwater structures should avoid creating permanent traps for terrestrial fauna.

Erosion developing along the development–conservation interface must be repaired promptly and affected areas rehabilitated.

Landscaping and gardens

Landscaping within the residential estate should support the ecological objectives of the development and reduce the risk of secondary degradation of Erf 80.

Locally indigenous species should be strongly favoured, particularly in private open spaces and gardens adjoining natural habitat.

Invasive or potentially invasive plant species may not be planted.

Garden refuse, soil, lawn clippings and other landscaping material may not be dumped within Erf 80.

Residents may not remove indigenous vegetation, rocks or other natural material from Erf 80 for landscaping purposes.

Irrigation and fertiliser use adjacent to Erf 80 should be managed so that nutrient-rich runoff does not enter the conservation area.

Pesticides and rodenticides

Pest control within the estate should follow an integrated pest-management approach.

Routine broad-spectrum pesticide application should be avoided adjacent to Erf 80 and may not be undertaken within the conservation area.

Second-generation anticoagulant rodenticides should be avoided because poisoned rodents may create secondary poisoning risks for raptors and other predators.

Where rodent control is necessary, methods that minimise secondary poisoning and risks to non-target fauna should be used.

Herbicide use within Erf 80 should be limited to targeted invasive alien vegetation management.

Waste and pollution

No spoil, rubble, household waste, garden waste or construction material may be deposited within Erf 80.

Construction waste must be collected and removed to an authorised disposal facility.

Food waste should be stored securely to avoid attracting scavenging fauna.

Concrete wash-water, fuels, oils and other pollutants may not be discharged onto natural soil or vegetation.

Fuel and hazardous substances must be appropriately contained and stored away from retained natural habitat.

Any spill must be contained and cleaned immediately.

Rehabilitation of temporary disturbance

Areas disturbed temporarily during construction must be rehabilitated as soon as they are no longer required.

Topsoil from temporarily disturbed natural areas should be retained separately where practicable and reused during rehabilitation.

Rehabilitation should use locally appropriate indigenous vegetation characteristic of Agulhas Limestone Fynbos.

No invasive species may be used for rehabilitation.

Natural recolonisation should be encouraged where surrounding indigenous vegetation provides an adequate seed source.

Compacted soil should be loosened where necessary before rehabilitation.

Rehabilitated areas should be monitored for erosion, poor vegetation establishment and invasive alien plant recruitment and should receive follow-up treatment where required.

Environmental induction and compliance

All construction personnel must receive environmental induction before commencing work.

Induction should cover the ecological sensitivity of Agulhas Limestone Fynbos, the status of Erf 80 as a conservation/no-go area, the potential occurrence of threatened fauna, procedures for animals encountered during construction, prohibition on killing snakes and other fauna and restrictions on access to retained natural habitat.

The ECO should maintain records of significant fauna encountered during construction, rescue or relocation events, faunal mortality and unauthorised disturbance of Erf 80.

Deliberate killing of indigenous fauna or repeated unauthorised disturbance of the conservation area must be treated as environmental non-compliance.

The faunal specialist should be contacted where unexpected ecological issues arise that cannot be adequately addressed through the approved EMPr.

Long-term management and monitoring

Retention of Erf 80 on the development layout will only provide a meaningful conservation outcome if the area is actively managed over the long term.

Responsibility for implementation should be clearly assigned to the estate management body or another designated land-management entity.

Long-term management should address invasive alien vegetation, rehabilitation, fire, access control, fencing and fauna permeability, erosion, domestic animals, waste and general habitat condition.

Management of Erf 80 should be coordinated with conservation management on the broader Paapekuilfontein property.

Operational monitoring should include:

- alien vegetation condition and follow-up control;
- rehabilitation success;
- erosion and stormwater impacts;
- encroachment from adjoining residential areas;
- functionality of fauna passages associated with perimeter fencing;
- evidence of faunal mortality associated with roads or fencing;
- effects of domestic animals;
- excessive light spill into natural habitat;
- dumping or unauthorised access; and
- emerging ecological issues requiring corrective management.

Where monitoring identifies impacts greater than anticipated, management should be adapted. Corrective measures may include modification of fencing or fauna passages,

additional alien clearing, rehabilitation, changes to lighting, improved erosion control or stricter management of access and domestic animals.

No Development alternative

The No Development alternative avoids the direct habitat loss, construction disturbance, built fragmentation and residential operational impacts associated with the proposed development.

Ecological management would still be necessary. Existing invasive alien vegetation is already degrading the property, while inappropriate fire regimes could further reduce the condition and functionality of Agulhas Limestone Fynbos.

If the No Development alternative is followed, ongoing alien vegetation control, appropriate ecological fire management and protection from further degradation would therefore still be required to maintain the site's faunal habitat value.

Residual impacts after mitigation

Implementation of the measures above can substantially reduce direct faunal mortality, construction disturbance, operational degradation and impacts on landscape connectivity associated with Alternative 2.

Retention and active management of Erf 80 provide important site-level mitigation. Integration of Erf 80 with the broader Paapekuilfontein conservation network extends this mitigation to the landscape scale and provides a means of addressing cumulative fragmentation and connectivity effects that cannot be adequately managed within Erf 3495 alone.

Permanent loss of Agulhas Limestone Fynbos within the authorised development footprint remains after mitigation. The reduced extent of faunal habitat and increased edge effects associated with residential development also remain as residual impacts.

Alternative 2 remains the preferred development alternative from a faunal perspective because it retains a substantial conservation area and provides the greatest opportunity to maintain ecological function and connectivity within the broader landscape. Its ecological performance will depend on effective implementation and long-term enforcement of the mitigation measures set out above.

Conclusion

Erf 3495 forms part of an ecologically important and increasingly fragmented lowland fynbos landscape. The property supports Critically Endangered Agulhas Limestone Fynbos, falls within a CBA1 landscape and provides actual or potentially suitable habitat for several threatened and range-restricted faunal Species of Conservation Concern. The overall Site Ecological Importance of the faunal habitats and ecological processes assessed is High. Maintaining natural habitat and ecological connectivity is therefore an important consideration in determining an appropriate development and mitigation response.

Residential development of Erf 3495 will result in permanent loss of natural habitat and increased fragmentation. Construction will create additional risks of disturbance, displacement and direct mortality, while the operational estate will introduce longer-term edge effects associated with lighting, traffic, people, domestic animals and other disturbance. These effects can be substantially reduced through appropriate design, construction controls and long-term ecological management, but permanent habitat loss within the development footprint remains.

Alternative 2 provides the most favourable development configuration from a faunal perspective. The retention of the northern 3.96 ha as Erf 80 provides a meaningful conservation component within the site and creates an opportunity to retain ecological connectivity with natural habitat across the broader Paapekuilfontein property. The residual impacts associated with the principal impact pathways under Alternative 2 remain Medium Negative after mitigation. Alternative 1 results in substantially greater habitat loss and fragmentation and retains High Negative residual impacts. It is therefore not preferred from a faunal conservation perspective.

The ecological contribution of Erf 80 depends on active and sustained management. Alien vegetation control, ecological restoration, appropriate fire management, prevention of residential encroachment and maintenance of connectivity must form part of the long-term management of the area. The proposed security perimeter should enclose the residential component while retaining the ecological connection between Erf 80 and the broader conservation landscape. Where fencing across movement interfaces is unavoidable, appropriate fauna-permeability measures will be required.

The broader Paapekuilfontein Conservation Master Plan substantially improves the landscape context within which mitigation for Erf 3495 can be implemented. It provides an opportunity to retain and manage larger connected areas of natural habitat, coordinate alien vegetation and fire management and maintain faunal movement across the wider property. This landscape-scale framework is particularly important because cumulative habitat fragmentation cannot be effectively addressed within the approximately 12 ha Erf 3495 property alone. The framework complements the site-level mitigation measures and strengthens the conservation value of Erf 80 as part of a wider connected network.

The No Development alternative avoids the direct impacts associated with residential development. Continued ecological management would still be required because alien vegetation invasion and inappropriate fire regimes can progressively degrade the remaining Agulhas Limestone Fynbos and its faunal habitat.

From a faunal perspective, development in accordance with Alternative 2 can be considered subject to strict implementation of the mitigation measures contained in this report, incorporation of these requirements into the EMPr and relevant estate-management mechanisms, long-term conservation and ecological management of Erf 80, maintenance of its functional connection with the wider natural landscape, and implementation of the broader Paapekuilfontein conservation framework. Permanent habitat loss and associated residual impacts remain and should be recognised in the environmental authorisation decision. The competent authority, informed by the relevant conservation authorities, should determine whether any additional conservation mechanism is required.

Reference list

Allan, D. G. 2003. Abundance, sex ratio, group size, breeding and habitat of Stanley s Bustard Neotis denhami stanleyi (Gruiformes: Otididae) in western South Africa. Durban Museum Novitates **28**:1–10.

Brown, H. D. 1960. New grasshoppers (Acridoidea) from the Great Karroo and the South Eastern Cape Province. Journal of the entomological Society of Southern Africa **23**:126–143.

CapeNature. 2023. 2023 Western Cape Biodiversity Spatial Plan and Guidelines. CapeNature, Cape Town.

Curtis, O., R. E. Simmons, and A. R. Jenkins. 2004. Black Harrier Circus maurus of the Fynbos biome, South Africa: a threatened specialist or an adaptable survivor? Bird Conservation International **14**:233–245.

Ehlers Smith, D. A. 2025. Denham's Bustard.*in* A. Lee, S. Rose, S. Banda, S. Bezeng, M. Maphalala, D. Maphisa, and H. Smit-Robinson, editors. The 2025 Red Data Book of Birds of South Africa, Lesotho and Eswatini. Birdlife SA, Johannesburg.

Evans, S. 2025. Southern Black Korhaan *Afrotis afra*.*in* A. Lee, S. Rose, S. Banda, S. Bezeng, M. Maphalala, D. Maphisa, and H. Smit-Robinson, editors. The 2025 Red Data Book of Birds of South Africa, Lesotho and Eswatini. BirdLife South Africa, Johannesburg.

Evans, S. W. 2023. The effects of habitat loss and fragmentation on the relative abundance and conservation of Southern Black Korhaan Afrotis afra, a South African endemic. Bird Conservation International **33**:e71.

Garcia-Heras, M.-S., B. Arroyo, F. Mougeot, K. Bildstein, J.-F. Therrien, and R. E. Simmons. 2019. Migratory patterns and settlement areas revealed by remote sensing in an endangered intra-African migrant, the Black Harrier (Circus maurus). PLoS One **14**:e0210756.

Garcia-Heras, M.-S., F. Mougeot, B. Arroyo, G. Avery, M. Avery, and R. E. Simmons. 2017. Is the Black Harrier Circus maurus a specialist predator? Assessing the diet of a threatened raptor species endemic to southern Africa. Ostrich **88**:1–8.

Heath, A., and A. Brinkman. 1995. Notes on the early stages of Argyrocupha malagrida maryae (Wallengren)(Lepidoptera: Lycaenidae). LEPIDOPTERISTS'SOCIETY OF SOUTHERN AFRICA:167.

Kinvig, R. G. 2005. Biotic indicators of grassland condition in Kwazulu-Natal, with management recommendations. University of Kwazulu-Natal, Pietermaritzburg.

Lee, A. 2025. Fynbos buttonquail.*in* A. Lee, S. Rose, S. Banda, S. Bezeng, M. Maphalala, D. Maphisa, and H. Smit-Robinson, editors. The 2025 Red Data Book of Birds of South Africa, Lesotho and Eswatini. Birdlife SA, South Africa.

Lee, A. T., B. Reeves, and D. R. Wright. 2019. Hottentot Buttonquail Turnix hottentottus: Endangered or just overlooked? Bird Conservation International **29**:136–143.

Lee, A. T., D. R. Wright, and B. Reeves. 2018. Habitat variables associated with encounters of Hottentot Buttonquail Turnix hottentottus during flush surveys across the Fynbos biome. Ostrich **89**:13–18.

Lornay Environmental Consulting. 2023. Screening report for an environmental authorization as required by the 2014 EIA regulations - Proposed site environmental sensitivity: residential development Erf 3495 Paapenkuilsfontein, Struisbaai. Lornay Environmental Consulting, Hermanus.

Maritz, B., and A. Turner. 2023. *Bitis armata* (Smith, 1826). Pages 466–467 *in* k. A. Tolley, W. Conradie, D. W. Pietersen, J. Weeber, M. Burger, and G. J. Alexander, editors. Conservation status of the reptiles of Southern Africa, Eswatini and Lesotho. South African National Biodiversity Institute, Pretoria.

McDonald, D. J. 2024. Botanical Assessment Erf 3495, Bredasdorp, at Struisbaai, Agulas Municipality, Western Cape Province. Bergwind Botanical Surveys & Tours, Claremont.

Morton, A. 2018. *Trimenia malagrida maryae*.*in* S. Mercenero, J. Ball, D. Edge, M. Hamer, G. Henning, M. Kruger, E. Pringle, R. F. Terblanche, and M. Williams, editors. Conservation assessment of butterflies of South Africa, Lesothos and Swaziland: Red List and atlas. Saftronics (Pty) Ltd., Johannesburg & Animal Demography Unit, Cape Town.

Mucina, L., and M. C. Rutherford. 2006. The vegetation of South Africa, Lesotho and Swaziland. South African National Biodiversity Institute,, Pretoria.

Phelps, T. 2010. Old World Vipers. A natural history of the Azemiopinae and Viperinae. Chimaira, Frankfurt.

Pringle, E. L. 1994. Pennington's butterflies of southern Africa. 2nd Edition edition. Struik, Cape Town.

SANBI. 2026. Species Environmental Assessment Guideline. Guidelines for the implementation of the Fauna and Flora Species Protocols for environmental impact assessments in South Africa Version 4.1 South Africa. South African National Biodiversity Institute, Pretoria.

Shaw, J. M., A. R. Jenkins, P. G. Ryan, and J. J. Smallie. 2010. A preliminary survey of avian mortality on power lines in the Overberg, South Africa. Ostrich **81**:109–113.

Shaw, K. 2025. African Marsh Harrier.*in* A. Lee, S. Rose, S. Banda, S. Bezeng, M. Maphalala, D. Maphisa, and H. Smit-Robinson, editors. The 2025 Red Data Book of Birds of South Africa, Lesotho and Eswatini. Birdlife SA, Johannesburg.

Simmons, R. E., and O. E. Curtis-Scott. 2025. Black Harrier.*in* A. Lee, S. Rose, S. Banda, S. Bezeng, M. Maphalala, D. Maphisa, and H. Smit-Robinson, editors. The 2025 Red Data Book of Birds of South Africa, Lesotho and Eswatini. Birdlife SA, Johannesburg.

Simmons, R. E., S. Ralston-Paton, R. Colyn, and M.-S. Garcia-Heras. 2020. Black harriers and Wind energy: Guidelines for impact assessment, monitoring and mitigation. Birdlife SA, Johannesburg.

Tolley, K. A., W. Conradi, D. W. Pietersen, J. Weeber, M. Burger, and G. J. Alexander. 2023. Conservation status of the reptiles of South Africa, Eswatini and Lesotho. SANBI, Pretoria.

Venter, J. A. 2026. Strategic Faunal Baseline and Conservation Development Framework - Full Property Assessment - Paapekuilfontein, Struisbaai. Wildlife Conservation Decision Support, George.

Appendix 1

CV and SACNASP Certificate of Prof JA Venter

CV and SACNASP Certificate of Dr R Swart



Curriculum Vitae

Jan Adriaan Venter

1. Personal information

Full name:	Jan Adriaan Venter	**Home address:**	8 Steve Landman Crescent, Loeriepark, George, 6529, South Africa
Age:	53		
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Nationality:	South African	**E-mail:**	NMU: JanVenter@mandela.ac.za WildCDS: janventer@wildcds.earth
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Web page: Wildlife Conservation Decision Support		Web page: Wildlife Ecology Lab	
Scopus Scopus		Google Scholar Google	

2. Tertiary qualifications

Degree	Institution	Research theme or modules	Time period
Doctor of Philosophy: Biology	University of Kwazulu-Natal	Intrinsic and extrinsic influences on African large herbivore assemblages and implications for their conservation.	2009 – 2014
Master of Technology: Nature Conservation	Nelson Mandela Metropolitan University	The feeding ecology of buffalo (*Syncerus caffer*) on Doornkloof Nature Reserve, Northern Cape, South Africa	2002-2006
Baccalaureus of Technology: Nature Conservation	Technikon Port Elizabeth	Plant studies IV; Research methodology; Fresh water management IV; Conservation management I; Principles of management I; Resource management IV	1998-1999
National Diploma: Nature Conservation	Technikon South Africa	Plant studies I, II and III; Animal studies I, II and III; Conservation Ecology I, II and III; Resource Management I, II and III; Conservation Communication I and II	1993-1996

3. Work experience

Institution	Institution details	Job description	Time period
Full time positions:			
NELSON MANDELA UNIVERSITY	Department of Conservation Management, Faculty of Science, Nelson Mandela University, George Campus, Madiba Drive, George, 6530	*Full Professor* *Associate Professor* *Director – African Centre for Coastal Palaeoscience* *Head of Department: Conservation Management* *Program Coordinator: Nature Conservation and Game Ranch Management* *Senior Lecturer* *Lecturer*	1 January 2026 – current date 1 January 2021 – 31 December 2025 1 November 2024 to current date 1 January 2021 – 31 December 2023 1 June 2017- 31 December 2020 1 January 2018 – 31 December 2020 1 June 2015- 31 December 2017
ADVENTURE PROVINCE Eastern Cape PARKS & TOURISM AGENCY	Scientific Section, 6 St Marks Street, Southernwood, East London, South Africa, 5201. Tel: 043 7054400	*Specialist Ecologist* *Area of responsibility:* Eastern Cape Provincial Protected areas as well as National Marine Protected Areas *Responsible for:* Research, monitoring and specialist decision support on biodiversity conservation, protected area expansion and wildlife management. Manager of the Marine Scientific Unit (1 x Marine ecologist and 1 x Marine Technician) *Ecologist* *Area of responsibility*: Wild Coast (Mkambati, Silaka, Hluleka & Dwesa-Cwebe, East London Coast Nature Reserves; Pondoland, Hluleka & Dwesa-Cwebe Marine Protected Areas) also Baviaanskloof Mega Reserve *Responsible for*: Facilitating and conducting research, biological monitoring as well as decision support to conservation management	1 November 2011 – 31 May 2015 1st March 2006 – 31 October 2011
UNIVERSITY OF LIMPOPO	School of Agricultural and Environmental Sciences, University of Limpopo, Private Bag X1106, Sovenga, 0727.	*Senior Technician* *Area of responsibility:* Aquaculture Research Unit *Responsible for:* Technical and research support for the research unit	1st May 2004 – 28th February 2006

Department: Environmental Affairs and Nature Conservation	Doornkloof Nature Reserve, PO Box 94, Colesberg, 9795	*Protected Area Manager* *Area of responsibility:* Doornkloof Nature Reserve *Responsible for:* General, conservation and wildlife management of the nature reserve	1st September 1998 – 28th April 2004
	Namakwa District Office, Private Bag X6, Calvinia, 8190	*District Nature Conservation Officer* *Area of responsibility:* Namakwa-Hantam District *Responsible for:* Law enforcement, environmental education, conservation advice and community liaison	6th January 1997 – 30th August 1998
Part-time/Contract positions: University of Pretoria	Centre for Wildlife Management, University of Pretoria, Pretoria, 0002	*Technician* *Area of responsibility:* Centre for Wildlife Management *Responsible for:* Technical and research support for the research unit	19th June 1996 – 31st December 1996
North-West Parks Board	Pilanesberg National Park, PO Box 1201, Mogwase, 0302	*Volunteer* *Area of responsibility:* Pilanesberg National Park *Responsible for:* Assisted field ecologist with data collection and field work	15th May 1996 – 17th June 1996
Cape Nature Conservation	Outeniqua Nature Reserve, Private Bag X6517, George, 6530	*Student Nature Conservator* *Area of responsibility:* Outeniqua Nature Reserve *Responsible for:* Assisted reserve manager with conservation management and field work	15th May 1995 – 6th May 1996

4. Ratings & Impacts

Agency	Rating
South African National Research Foundation	C3 (Rating)
Google Scholar h-index	22
Google Scholar i10-index	43
Scopus h-index	15

5. Scientific output

Peer reviewed Journal Publications (shading indicates publications by postgraduate students and post-doctoral researchers under my supervision)
1) VISAGIE, M., DAVIS, R., KENNEDY-OVERTON, E., VENTER, J.A., 2026 Estimating large carnivore populations in an arid fenced reserve using spatial capture–recapture modelling. Wildlife Biology 2026: e01630. doi: 10.1002/wlb3.01630 https://doi.org/10.1002/wlb3.01630
2) VAN ROOYEN, N., THEL, L., VENTER, J.A., PRUGNOLE, F., ROUGERON, V. 2026. No Evidence of Reactive Avoidance of Baboons (*Papio ursinus* and *Papio anubis*) to the Presence of Predators. Ecology and Evolution. 16:e73609. https://doi.org/10.1002/ece3.73609
3) PRINS, H.H.T, PEEL, M.J.S, GRANT, C.C., SWART, J.M., BURGER, A., VENTER, J.A. SLOTOW, R. 2025 Antelopes for prosperity of local people: savanna recovery at Welgevonden Game Reserve, South Africa. GNUSLETTER 42(2).
4) MIELGO, C., VENTER, S., BOSCH, A., HUGUET, R., VENTER, J.A. (2025) Feeding on giants: Neotaphonomic evidence of hyena exploitation of megafaunal skulls and its implications for Pleistocene archaeology. Journal of Archaeological Science 186: 106458., https://doi.org/10.1016/j.jas.2025.106458
5) JANSEN VAN VUUREN, A., CURVEIRA_SANTOS, G., SWANEPOEL, L., VALEIX, M., FRITZ, H. & VENTER, JA. (2025) Hyaena-

	Mediated Landscapes of Fear: the Influence of Active Spotted Hyaena (*Crocuta crocuta*) Den Sites on the Detection Probability and Occupancy Probability of a Mammal Community. African Journal of Wildlife Research. 44: 55(1) https://doi.org/10.3957/056.055.0443
6)	DZINGWENA, L., THEL, L., CHOISY, M., GARBETT, R., WILKINSON, A., VENTER, J.A., FRITZ, H., HUCHARD, E., PRUGNOLLE, F., & ROUGERON, V. 2025 Climate and predation drive variation of diel activity patterns in chacma baboons (*Papio ursinus*) across Southern Africa. Scientific Reports https://doi.org/10.1038/s41598-025-23151-3
7)	DAVIS, RS., GOPALAWAMY, AM., ELIIOT, NB., VENTER, JA. (2025) Using spatial capture-recapture models to inform lion (*Panthera leo*) management in fenced protected areas. The Journal of Wildlife Management https://doi.org/10.1002/jwmg.70085
8)	VAN BERGEN, G., COETZEE, A., VENTER, J.A., ROETS, F, SWART, RC. (2025) Small forest patches support greater diversity of dung and carrion beetles compared to large continuous forest in South Africa, during Winter months. African Zoology 60(3) https://doi.org/10.1080/15627020.2025.2543237
9)	DAVIS, RS, SALOOJEE, K, VENTER, JA. 2025. Using a recently developed camera trapping method to improve monitoring efforts for African small carnivore species. Ecological Solutions and Evidence. 6:e70091. https://doi.org/10.1002/2688-8319.70091
10)	THEL, L, STOLS, D, ORTH, S, LAGENDIJK, DDG, SLOTOW, R, VENTER, JA, FRITZ, H. 2025. Long-term effects of an elephant-dominated browser community on the architecture of trees in a fenced reserve. Biotropica. 57:e70078 https://doi.org/10.1111/btp.70078
11)	MALULEKE, A., MARNEWICK, K, DRUCE, D, VENTER, JA. (2025) Spotted hyaena (*Crocuta crocuta*) recolonisation: Documenting a naturally recolonised spotted hyaena population in Welgevonden Game Reserve. African Journal of Wildlife Research. 44:421-424. https://doi.org/10.3957/056.055.0421
12)	DESTERCKE, A., JANSEN VAN VUUREN, A., VENTER, JA., 2025 Dominance at the Dinner Table: Interspecific Competition Between Hyaenas and Jackals at Scavenging Sites. African Journal of Ecology, 63:e70080 https://doi.org/10.1111/aje.70080
13)	WARRER, C.H., RIEDNER, D.C., BRIEFER, E.F., VENTER, J.A., DAVIS, R.S. 2025. Identifying areas of high snaring risk in Kruger National Park: A novel citizen science approach for carnivore conservation. Biological Conservation 310: 11353. https://doi.org/10.1016/j.biocon.2025.111353
14)	DEVARAJAN, K. et al (multiple authors) 2025. When the wild things are: Defining mammalian diel activity and plasticity. Science Advances. 11, eado3843. https://www.science.org/doi/full/10.1126/sciadv.ado3843
15)	OVERTON, E.K., DAVIS, R.S., PRUGNOLLE, F., ROUGERON, V., HONNIBAL, T, SIEVERT, O., VENTER, J.A. 2025 Carrion in Bomas: Multiple Observations of Cheetah(*Acinonyx jubatus*) Scavenging Events and Potential Causes in Managed Populations. Ecology and Evolution. https://doi.org/10.1002/ece3.70776
16)	FORTIN, D., BROOKE, C.F., FRITZ, H. & VENTER, J.A. 2024. The temporal scale of energy maximization explains allometric variations in movement decisions of large herbivores. Ecosphere. 15:e70101. https://doi.org/10.1002/ecs2.70101
17)	ZELLER ZIGAITIS, W.L, ROBINSON, A.C., VENTER, J.A., SPURIGO, L.T. & HOOG, A., 2024. Protected areas and disparate data: understanding geospatial data synthesis in poaching mitigation, Papers in Applied Geography. https://doi.org/10.1080/23754931.2024.2406470
18)	BERNARD, A., GUERBOIS, C., MOOLMAN, L., DE MORNEY, M.A., VENTER, J.A., FRITZ, H. 2024. Combining local ecological knowledge with camera traps to assess the link between African mammal life-history traits and their occurrence in anthropogenic landscapes. Journal of Applied Ecology. 2024;00: 1–13. https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.14742
19)	VISAGIE, M., DAVIS, R., VENTER, J.A., HONNIBALL, T. (2024) Using spatial capture-recapture models to estimate spotted hyaena (*Crocuta crocuta*) population density and assess the influence of sex-specific covariates on space use and detection probability. Conservation Science and Practise. 2024;e13214. https://doi.org/10.1111/csp2.13214
20)	HELM, C., CARR, A., CAWTHRA, H., DE VYNCK, J., LOCKLEY, M., DIXON, M., RUST, R., STEAR, W., THESEN, G., VAN BERKEL, F., VENTER, J., 2024. Pleistocene ichnological heritage in national parks on the cape coast: attributes, challenges, and solutions. Koedoe 66(2), a1786. https://doi.org/10.4102/koedoe.v66i2.1786
21)	HONIBALL, T., DAVIS, R., NTLOKWANA, L. & VENTER, J.A. (2024) Lion lords and sharing hyaenas: Carnivore guild dynamics around elephant carcasses. Ecology and Evolution 14:e11373. https://doi.org/10.1002/ece3.11373
22)	VERMEULEN, M.M., FRITZ, H., STRAUSS, W.M., HETEM, R.S., VENTER, J.A. (2024) Seasonal activity patterns of a Kalahari mammal community: trade-offs between environmental heat load and predation pressure. Ecology and Evolution 14:e11304. https://doi.org/10.1002/ece3.11304
23)	BERNARD, A., GUERBOIS, C., VENTER, J.A., FRITZ, H. (2024) Comparing local ecological knowledge with camera trap data to study mammal occurrence in anthropogenic landscapes of the Garden Route Biosphere Reserve. Conservation Science and Practice. https://doi.org/10.1111/csp2.13101
24)	HONIBALL, T.-L. & VENTER, J.A. (2024). A record of thanatological type behaviour in spotted hyaenas, *Crocuta crocuta* (Erxleben, 1777). Tropical Zoology, 37(1-2). https://doi.org/10.4081/tz.2024.136

25) BERNARD, A., FRITZ, H., DUFOUR, A., VENTER, J.A., GUERBOIS, C. (2024) A local ecological knowledge-based assessment of anthropodependence for large mammals in anthropogenic landscapes. Biological Conservation 290:110450 https://doi.org/10.1016/j.biocon.2024.110450

26) DAVIS, R., OVERTON, E., PRUGNOLLE, F., ROUGERON, V., HONIBALL, T., SIEVERT, O. & VENTER, J.A. (2024) Baboons (*Papio spp.*) as a potentially underreported source of food loss and kleptoparasitism of cheetah (*Acinonyx jubatus)* kills. Food Webs 38. https://doi.org/10.1016/j.fooweb.2023.e00331

27) CLEMENTS, H. et al (multiple authors) (2024) The bii4africa dataset of faunal and floral population intactness estimates across Africa's major land uses. Scientific Data 11:191 https://doi.org/10.1038/s41597-023-02832-6

28) NICVERT, L., DONNET, S., KEITH, M., PEEL, M., SOMERS, M.J., SWANEPOEL, L.H., VENTER, J.A., FRITZ, H., DRAY, S. (2024) Using the multivariate Hawkes process to study interactions between multiple species from camera trap data. Ecology https://doi.org/10.1002/ecy.4237

29) DAYA, J., FRITZ, H., VENTER, J.A. (2024) Diet preference of black rhinoceros (*Diceros bicornis*) at Welgevonden Game Reserve across different seasons. African Journal of Range and Forage Science. https://doi.org/10.2989/10220119.2023.2276840

30) HELM, CW, BATEMAN, MD., CARR, AS., CAWTHRA, HC., DE VYNCK, JC., DIXON, MG., LOCKLEY, MG., STEAR, W. & VENTER, JA. (2023) Pleistocene fossil snake traces on South Africa's Cape south coast, Ichnos, 30(2): 98-114. https://doi.org/10.1080/10420940.2023.2250062

31) STRYDOM, Z., GREMILLET, D., FRITZ, H., VENTER, J.A., COLLET, J., KATO, A., PICHEGRU, L. (2023). Age and sex-specific foraging movements and energetics in an endangered monomorphic seabird. Marine Biology 138 https://link.springer.com/article/10.1007/s00227-023-04288-z

32) SMITH, K., VENTER, J. A., PEEL, M., KEITH, M., & SOMERS, M. J. (2023). Temporal partitioning and the potential for avoidance behaviour within South African carnivore communities. Ecology and Evolution, 13, e10380. https://doi.org/10.1002/ece3.10380

33) BROOKE, C.F., MAREAN, C., WREN, S.B., FAHEY, P., VENTER, J.A. (2023) Drivers of large mammal distribution: an overview and modelling approach for palaeoecological reconstructions of extinct ecosystems. Biological Journal of the Linnean Society. https://doi.org/10.1093/biolinnean/blad100

34) BALL, I.A., MARNEWECK, D.G., ELLIOT, N.B., GOPALASWAMY, A.M., FRITZ, H., VENTER, J.A. (2023) Considerations on effort, precision and accuracy for long term monitoring of African lions (*Panthera leo*), when using Bayesian spatial explicit capture-recapture models, in fenced protected areas. Ecology & Evolution 13, e10291. https://doi.org/10.1002/ece3.10291

35) MARNEWICK, K., SOMERS, M.J., VENTER, J.A., KERLEY, G.I.H. (2023) Are we sinking African cheetahs in India? S Afr J Sci. 2023;119(7/8), Art. #15617. https://doi.org/10.17159/sajs.2023/15617

36) BERNARD, A., MOOLMAN, L., DE MORNEY, M.A., GUERBOIS, C., VENTER, J.A., FRITZ, H. (2023) Height related detection biases in camera trap surveys: Insights for combining data from various sources. Koedoe. 65(1), a1734. https://doi.org/10.4102/koedoe.v65i1.1734

37) HELM, C.W., CARR, S.C., CAWTHRA, H.C., DE VYNCK, J.C., DIXON, M.G., GRĀBE, P., THESEN, H.H. VENTER, J.A. (2023) Tracking the extinct giant Cape Zebra on the south Coast of South Africa. Quaternary Research 1-13. https://doi.org/10.1017/qua.2023.1

38) REEVES, B., BROOKE, C.F., VENTER, J.A., CONRADIE, W. (2022) The reptiles and amphibians of the Mpofu-Fort Fordyce Nature Reserve complex in the Winterberg Mountains, Eastern Cape Province, South Africa. African Journal of Wildlife Research 52: 134–145 https://doi.org/10.3957/056.052.0134

39) HELM, C.W., CARR, S.C., CAWTHRA, H.C., DE VYNCK, J.C., DIXON, M.G., LOCKLEY, M.G., STEAR, W., VENTER, J.A. (2022) Large Pleistocene tortoise tracks on the Cape south coast of South Africa. Quaternary Research, 1-18. https://doi.org/10.1017/qua.2022.50

40) STRYDOM, Z., WALLER, L.J., BROWN, M., FRITZ, H., VENTER, J.A. (2022) The influence of nest location and the effect of predator removal on Cape Gannet egg predation by Kelp Gulls. Ostrich 93(2): 120-128. https://doi.org/10.2989/00306525.2022.2110535

41) PARDO, L.E., SWANEPOEL, L., CURVEIRA-SANTOS, G., FRITZ, H., VENTER, J.A. (2022) Habitat structure, not the anthropogenic context or large predators shapes occupancy of a generalist mesopredator across protected areas in South Africa. Mammal Research 67: 265–278. https://doi.org/10.1007/s13364-022-00636-4

42) STRYDOM, Z., WALLER, L.J., BROWN, M., FRITZ, H., VENTER, J.A. (2022) Factors that influence Cape fur seal predation on Cape gannets at Lambert's Bay, South Africa. PeerJ 10:e13416 http://doi.org/10.7717/peerj.13416

43) JANSEN VAN VUUREN, A., FRITZ, H. & VENTER, J.A. (2022) Five small antelope species diets indicate different levels of anthrodependence in the Overberg Renosterveld, South Africa. African Journal of Ecology (Online) https://doi.org/10.1111/aje.13030

44) BROOKE, C.F., MAREAN, C.W., WREN, C.D., FRITZ, H., VENTER, J.A. (2022). Using functional groups to predict the spatial distribution of large herbivores on the Paleo-Agulhas Plain, South Africa during the Last Glacial Maximum. Journal of

	Quaternary Science, 1-13. http://doi.org/10.1002/jqs.3430
45)	KANE, A., MONADJEM, A., BILDSTEIN, K., BOTHA, A., BRACEBRIDGE, C., BUECHLEY, E.R., BUIJ, R., DAVIES, J.P., DIEKMANN, M., DOWNS, C., FARWIG, N., GALLIGAN, T., KALTENECKER, G., KELLY, C., KEMP, R., KOLBERG, H., MACKENZIE, M., MENDELSOHN, J., MGUMBA, M., NATHAN, R., NICHOLAS, A., OGADA, D., PFEIFFER, M.B., PHIPPS, W.L., PRETORIUS, M., RÖSNER, S., SCHABO, D.G., SPIEGEL, O., THOMPSON, L.J., VENTER, J.A., VIRANI, M., WOLTER, K., KENDALL, C. (2022). Continent-wide variation in vulture ranging behavior to assess feasibility of Vulture Safe Zones in Africa: Challenges and possibilities. Biological Conservation 268:109516 https://doi.org/10.1016/j.biocon.2022.109516
46)	EVERS, E.M., PRETORIUS, M.E., VENTER, J.A., HONIBALL, T., KEITH, M., MGQATSA, N., SOMERS, M.J. (2022). Varying degrees of spatio-temporal partitioning between large carnivores in a fenced reserve, South Africa. Wildlife Research https://doi.org/10.1071/WR21045
47)	HELM, C.W., CARR, A.S., CAWTRA, H.C., DE VYNCK, J.C., DIXON, M., STEAR, W., STUART, MC., STUART, M., VENTER, J.A. (2022). Possible Pleistocene Pinniped Ichnofossils on South Africa's Cape South Coast. Journal of Coastal Research 38(4): 735-749 https://doi.org/10.2112/JCOASTRES-D-21-00131.1
48)	LOCKLEY, M.G., HELM, C.W., CAWTRA, H.C., DE VYNCK, J.C., DIXON, M., VENTER, J.A. (2022) Small mammal and arthropod trackways from the Pleistocene of the Cape south coast of South Africa. Quaternary Research, 107: 178–192. https://doi.org/10.1017/qua.2021.77
49)	HONIBALL, T., SOMERS, M.J., FRITZ, H., VENTER, J.A. (2021) Feeding ecology of the large carnivore guild in Madikwe Game Reserve, South Africa. African Journal of Wildlife Research 51: 153-165. https://hdl.handle.net/10520/ejc-wild2-v51-n1-a16
50)	FAURE, J.P.B., SWANEPOEL, L.H., CILLIERS, D., VENTER, J.A., HILL, R.A. (2021) Estimates of carnivore densities in a human-dominated agricultural matrix in South Africa. Oryx. pp. 1-8. DOI: https://doi.org/10.1017/S0030605321000034X
51)	BULLOCK, K., WOOD, A., DAMES, V.A., VENTER, J.A., GREEFF, J. 2021. A decade of surf-zone linefish monitoring in the Dwesa-Cwebe Marine Protected Area, with a preliminary assessment of the effects of rezoning and resource use. African Journal of Marine Science. 43(3):1-15. https://doi.org/10.2989/1814232X.2021.1951353
52)	ALEXANDER, GJ, TOLLEY, KA, MARITZ, B, MCKECHNIE, A, MANGER, P, THOMSON, RL, et al. (2021) Excessive red tape is strangling biodiversity research in South Africa. S Afr J Sci. 2021;117(9/10), Art. #10787. https://doi.org/10.17159/sajs.2021/10787
53)	HELM, C.W., CAWTRA, H.C., COWLING, R.M., DE VYNCK, J.C., LOCKLEY, M.G., MAREAN, C.W., DIXON, M.G., HELM, C.J.Z., STEAR, W., THESEN, G.H.H., VENTER, J.A. (2021). Protecting and preserving South African aeolianite surfaces from graffiti. Koedoe 63(1), a1656.https://doi.org/10.4102/koedoe.v63i1.1656
54)	BROOKE, C.F., MAREAN, C.W., WREN, C.D., FRITZ, H. & VENTER, J.A. (2021). Retrodicting large herbivore biomass for the last glacial maximum on the Palaeo-Agulhas Plain (South Africa) using modern ecological knowledge of African herbivore assemblages and rainfall. Quaternary Research. :1-15 https://doi.org/10.1017/qua.2021.23
55)	BURT, C., FRITZ, H., KEITH, M., GUERBOIS, C. & VENTER, J.A. (2021). Assessing different methods for measuring mammal diversity in two southern African arid ecosystems. Mammal Research 66: 313-326. https://link.springer.com/article/10.1007/s13364-021-00562-x
56)	PARDO, L.E., BOMBACI, S., HUEBNER, S.E., SOMERS, M.J., FRITZ, H., DOWNS, C., GUTHMANN, A., HETEM, R.S., KEITH, M., LE ROUX, A., MGQATSA, N., PACKER, C., PALMER, M.S., PARKER, D.M., PEEL, M., SLOTOW, R., STRAUSS, W.M., SWANEPOEL, L., TAMBLING, C., TSIE, N., VERMEULEN, M., WILLI, M., JACHOWSKI, D., VENTER, J.A. (2021) Snapshot Safari: A large-scale collaborative to monitor Africa's remarkable biodiversity. South African Journal of Science 117(1/2), Art. #8134. https://doi.org/10.17159/sajs.2021/8134
57)	YOUNG, C., FRITZ, H., SMITHWICK, E. & VENTER, J.A. (2020) Patch-scale selection patterns of grazing herbivores in the central basalt plains of Kruger National Park. African Journal of Range and Forage Science 37(3): 199-213. https://doi.org/10.2989/10220119.2020.1733084
58)	HODGKINS, J., MAREAN, C.W., VENTER J.A., RICHARDSON, L., ROBERTS, P., ZECH, J., DIFFORD, M., COPELAND, S.R., ORR, C.M., KELLER, H.M., FAHEY, B.P., LEE-THORP, J. (2020) An isotopic test of the seasonal migration hypothesis for large grazing ungulates inhabiting the Palaeo-Agulhas Plain. Quaternary Science Reviews 235. https://doi.org/10.1016/j.quascirev.2020.106221
59)	SOMERS, M.J., WALTERS, M., MEASEY, J., STRAUSS, W.M., TURNER, A.A., VENTER, J.A., NEL, L., KERLEY, G.I.H., TAYLOR, W.A., MOODLEY, Y. (2020) The implications of the reclassification of South African wildlife species as farm animals. South African Journal of Science. 116(1/2), Art. #7724, 2 pages. https://doi.org/10.17159/sajs.2020/7724
60)	WINTERTON, D, VAN WILGEN N.J., VENTER, J.A. (2020) Investigating the effects of management practice on mammalian co-occurrence along the West Coast of South Africa. PeerJ http://doi.org/10.7717/peerj.8184
61)	MARTENS, F.R., PFEIFFER, M.B., DOWNS, C.T. & VENTER, J.A. (2020) Roost site selection of the endangered Cape Vulture (*Gyps coprotheres*). Ostrich 91(1). https://doi.org/10.2989/00306525.2019.1651417
62)	BROOKE, C.F., FORTIN, D., KRAAIJ, T., FRITZ, H., KALULE-SABITI, M.J., VENTER, J.A. (2020) Poaching impedes the selection of optimal post-fire forage in three large grazing herbivores. Biological Conservation 241(108393). https://doi.org/10.1016/j.biocon.2019.108393
63)	VENTER, J.A., BROOKE, C.F., MAREAN, C.W., FRITZ, H., & HELM, C.W. (2020) Large mammals of the Palaeo-Agulhas Plain

	showed resilience to extreme climate change but vulnerability to modern human impacts. Quaternary Science Reviews 235. https://doi.org/10.1016/j.quascirev.2019.106050
64)	WREN, C.D., BOTHA, S., DE VYNCK, J., JANSSEN, M., HILL, K., SHOOK, E., HARRIS, J.A., WOOD, B.M., VENTER, J.A., COWLING, R., FRANKLIN, J., FISHER, E.C., MAREAN, C.W. (2020) The foraging potential of the Holocene Cape south coast of South Africa without the Palaeo-Agulhas Plain. Quaternary Science Reviews 235. https://doi.org/10.1016/j.quascirev.2019.06.012
65)	HELM, C.W., CAWTRA, H.C., COWLING, R.M., DE VYNCK, J.C., LOCKLEY, M.G., MAREAN, C.W., THESEN, G.H.H., VENTER, J.A. (2020) Pleistocene vertebrate tracksites on the Cape south coast of South Africa and their potential palaeoecological implications. Quaternary Science Reviews 235. https://doi.org/10.1016/j.quascirev.2019.07.039
66)	YOUNG, C., FRITZ, H., SMITHWICK, E. & VENTER, J.A. (2020) The landscape-scale drivers of herbivore assemblage distribution on the central basalt plains of Kruger National Park. Journal of Tropical Ecology. 36(1):13-28. https://www.cambridge.org/core/journals/journal-of-tropical-ecology/article/landscapescale-drivers-of-herbivore-assemblage-distribution-on-the-central-basalt-plains-of-kruger-national-park/54C8E4AB88E733F191700FD61FE6D011
67)	VOGEL, J., SOMERS, M.J. & VENTER, J.A. (2019) Niche overlap and dietary resource partitioning in an African large carnivore guild. Journal of Zoology 309(3):212-223 https://doi.org/10.1111/jzo.12706
68)	VENTER, J.A., MARTENS, F. & WOLTER, K. (2019) Conservation buffer sizes derived from movement data of breeding adult Cape Vultures (*Gyps coprotheres*) in South Africa. African Zoology 54(2):115-118. https://www.tandfonline.com/doi/abs/10.1080/15627020.2019.1600428
69)	HELM, C.W., CAWTHRA, H., DE VYNCK, J., LOCKLEY, M.J., MCCREA, R.T., VENTER, J.A. (2019) A tale of two rocks – The Pleistocene fauna of the Cape south coast revealed through ichnology. South African Journal of Science Vol.115 No. 1/2, https://www.sajs.co.za/article/view/5135
70)	VOGEL, J., SOMERS, M.J. & VENTER, J.A. (2018) The foraging ecology of reintroduced African wild dog in small protected areas, Wildlife Biology. http://www.bioone.org/doi/abs/10.2981/wlb.00424
71)	MARTENS, F.R., PFEIFFER, M.B., DOWNS, C.T. & VENTER, J.A. (2018) Post-fledging movement and spatial ecology of the endangered Cape Vulture (*Gyps coprotheres*), Journal of Ornithology, 159(4): 913-922. https://doi.org/10.1007/s10336-018-1564-x
72)	BROOKE, C.F.; KRAAIJ, T & VENTER, J.A. (2018) Characterizing a poacher-driven fire regime in low-nutrient coastal grasslands of Pondoland, South Africa. Fire Ecology, 14(1):1-16 http://fireecologyjournal.org/
73)	VENTER, J.A., PRINS, H.H.T., MASHANOVA, A., & SLOTOW, R., (2017) Ungulates rely less on visual cues, but more on adapting movement behaviour, when searching for forage. PeerJ https://peerj.com/articles/3178/?utm_source=TrendMD&utm_campaign=PeerJ_TrendMD_0&utm_medium=TrendMD
74)	PFEIFFER, M., VENTER, J.A. & DOWNS, C. (2017) Observations of microtrash ingestion in Cape Vultures in the Eastern Cape, South Africa, African Zoology, 52(1): 65–67. http://www.tandfonline.com/doi/abs/10.1080/15627020.2016.1270172
75)	CONRADIE, W., REEVES, B., BROWN, N. & VENTER, J.A. (2016) Herpetofauna of the Oviston, Commando Drift and Tsolwana nature reserves in the arid interior of the Eastern Cape Province, South Africa, Indago 32.
76)	PFEIFFER, M., VENTER, J.A. & DOWNS, C. (2016) Cliff characteristics, neighbour requirements and breeding success of the colonial Cape Vulture *Gyps coprotheres,* Ibis 159:26-37. http://onlinelibrary.wiley.com/doi/10.1111/ibi.12428/full
77)	VENTER, J.A. & KALULE-SABITI, M.J. (2016) Diet composition of the large herbivores in Mkambati Nature Reserve, Eastern Cape, South Africa. African Journal of Wildlife Research (46)1: 49-56. http://www.bioone.org/doi/abs/10.3957/056.046.0049
78)	VENTER, J.A. & CONRADIE, W., (2015) A checklist of the reptiles and amphibians found in protected areas along the South African Wild Coast, with notes on conservation implications. Koedoe (57)1. http://www.koedoe.co.za/index.php/koedoe/article/view/1247
79)	VENTER, J.A., PRINS, H.H.T., MASHANOVA, A., DE BOER, W.F. & SLOTOW, R., (2015) Intrinsic and extrinsic factors influencing large African herbivore movements. Ecological Informatics 30: 257-262 http://www.sciencedirect.com/science/article/pii/S1574954115000849
80)	WEEL, S., WATSON, L., WEEL, J., VENTER, J.A., & REEVES, B., (2015) Cape mountain zebra in the Baviaanskloof Nature Reserve, South Africa: resource use reveals limitations to zebra performance in a dystrophic mountainous ecosystem. African Journal of Ecology 53(4): 428-438. http://onlinelibrary.wiley.com/doi/10.1111/aje.12215/full
81)	PFEIFFER, M.B., VENTER, J.A., & DOWNS, C.T., (2015) Foraging range and habitat use by Cape Vulture *Gyps coprotheres* from the Msikaba colony, Eastern Cape Province, South Africa. Koedoe.57(1). Art.#1240, 11 pages. http://dx.doi.org/10.4102/koedoe. v57i1.1240
82)	PFEIFFER, M.B., VENTER, J.A., & DOWNS, C.T., (2015) Identifying human generated threats to Cape Vultures (*Gyps coprotheres*) using community perceptions in communal farmland, Eastern Cape Province, South Africa. Bird Conservation International. 25(3): 353-365. http://journals.cambridge.org/abstract_S0959270914000148
83)	VENTER, J.A., NABE-NIELSEN, J., PRINS, H.H.T., SLOTOW, R., (2014) Forage patch use by grazing herbivores in a South African grazing ecosystem. Acta Theriologica , 59: 457-466. http://link.springer.com/article/10.1007/s13364-014-0184-y#

84)	VENTER, J.A., PRINS, H.H.T., BALFOUR, D.A., SLOTOW, R., 2014. Reconstructing grazer assemblages for protected area restoration. PLOS ONE 9(3): e90900. http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0090900#pone-0090900-g003
85)	FISHER, E.C., ALBERT, R., BOTHA, G., CAWTHRA, H.C., ESTEBAN, J.H., JACOBS, Z., JERARDINO, A., MAREAN, C.W., NEUMANN, F.H., PARGETER, J. & VENTER, J., (2013) Archaeological reconnaissance for Middle Stone Age Sites along the Pondoland Coast, South Africa, PaleoAnthropology 2013: 104-137. http://www.paleoanthro.org/journal/2013/
86)	VENTER, J.A. & MANN, B.Q., (2012) Preliminary assessment of surf-zone and estuarine line-fish species of the Dwesa-Cwebe Marine Protected Area, Eastern Cape, South Africa, Koedoe 54(1): 1-10. http://www.koedoe.co.za/index.php/koedoe/article/view/1059
87)	FOUCHE, P.S.O & VENTER, J.A., (2011) The breeding biology of the southern barred minnow *Opsaridium peringueyi* (Gilchrist and Thompson 1913) in the Incomati and Luvuvhu river systems, South Africa. African Journal of Aquatic Science 36(2): 129-137 http://www.nisc.co.za/products/abstracts/10350/the-breeding-biology-of-the-southern-barred-minnow-opsaridium-peringueyi-gilchrist-and-thompson-1913-in-the-incomati-and-luvuvhu-river-systems-south
88)	VENTER, J.A., FOUCHE, P. & VLOK, W., (2010) The current distribution of *Opsaridium peringuyei* in South Africa: Is there reason for concern? African Zoology 45(2): 244-253. http://reference.sabinet.co.za/sa_epublication_article/afzoo_v45_n2_a9
89)	VENTER, J.A. & WATSON, L.H. (2008) Feeding and habitat use of buffalo (*Syncerus caffer caffer*) in Nama-Karoo, South Africa. South African Journal of Wildlife Research 38(1): 42-51. http://www.bioone.org/doi/abs/10.3957/0379-4369-38.1.42
90)	VENTER, J.A., 2004. Notes on the introduction of Cape buffalo to Doornkloof Nature Reserve, Northern Cape Province, South Africa. South African Journal of Wildlife Research 34(1): 95-99. http://reference.sabinet.co.za/sa_epublication_article/wild_v34_n1_a10
Book sections/chapters	
1)	Venter J, Ehlers Smith Y & da Silva JM. 2025. A conservation assessment of *Dendrohyrax arboreus*. In Patel T, Smith C, Roxburgh L, da Silva JM & Raimondo D, editors. The Red List of Mammals of South Africa, Eswatini and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
2)	Venter JA & da Silva JM. 2025. A conservation assessment of *Civettictis civetta*. In Patel T, Smith C, Roxburgh L, da Silva JM & Raimondo D, editors. The Red List of Mammals of South Africa, Eswatini and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
3)	Venter J, Russo IM & da Silva JM. 2025. A conservation assessment of *Syncerus caffer caffer*. In Patel T, Smith C, Roxburgh L, da Silva JM & Raimondo D, editors. The Red List of Mammals of South Africa, Eswatini and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
4)	Venter J & da Silva JM. 2025. A conservation assessment of *Tragelaphus oryx*. In Patel T, Smith C, Roxburgh L, da Silva JM & Raimondo D, editors. The Red List of Mammals of South Africa, Eswatini and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
5)	Venter JA & da Silva JM. 2025. A conservation assessment of *Alcelaphus buselaphus caama*. In Patel T, Smith C, Roxburgh L, da Silva JM & Raimondo D, editors. The Red List of Mammals of South Africa, Eswatini and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
6)	VENTER, J.A., VERMEULEN, M. & BROOKE, C. (2019) Feeding ecology of large browsing and grazing herbivores, Eds: Gordon I & Prins HHT, The Ecology of Browsing and Grazing II, Springer Ecological Studies Series.
7)	VENTER J, CHILD MF. 2016. A conservation assessment of *Alcelaphus buselaphus caama*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa
8)	VENTER J, SEYDACK A, EHLHERS_SMITH Y, UYS R, CHILD MF. 2016. A conservation assessment of *Philantomba monticola*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
9)	VENTER J, EHLERS-SMITH Y, SEYDACK A. 2016. A conservation assessment of *Potamochoerus larvatus*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
10)	GAYLARD A, VENTER J, EHLERS-SMITH Y, CHILD MF. 2016. A conservation assessment of *Dendrohyrax arboreus*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
11)	TAMBLING C, VENTER J, DU TOIT JT, CHILD MF. 2016. A conservation assessment of *Syncerus caffer caffer*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
12)	BURGER, M. & VENTER, J.A. 2013. Reptiles and Amphibians of Mkambati Nature Reserve In: Mkambati and the Wild Coast: South Africa and Pondoland's Unique Heritage, Second edition, by Div De Villiers and John Costello.

13)	DE VILLIERS, D. & VENTER, J.A. 2013. Mammal Species of the Pondoland Wild Coast. In: Mkambati and the Wild Coast: South Africa and Pondoland's Unique Heritage, Second edition, by Div De Villiers and John Costello.
Technical Reports	
1)	VENTER, J.A. 2026. Faunal Specialist Assessment for the Faunal Specialist Assessment for the Proposed Tourism Development on Portion 1 of Farm 722, Woest Arabie, Stanford. Technical Report prepared for Lornay Environmental Consulting, Wildlife Conservation Decision Support, George, Western Cape, ZA.
2)	VENTER, J.A., SWART, R., VENTER, S. 2026. Terrestrial Biodiversity, Botanical and Faunal Impact Assessment: Proposed upgrading of the Wilderness East and Kleinkrantz Sewage Pumpstations with associated pipelines, Wilderness, Western Cape. Technical Report prepared for GreenfireEnviro (Pty) Ltd, Wildlife Conservation Decision Support, George, Western Cape, ZA.
3)	VENTER, J.A., 2026. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed Upgrading of Wilderness Bulk Water Supply and Associated Supporting infrastructure. Technical Report prepared for Greenfire Enviro (Pry) Ltd, Wildlife Conservation Decision Support, George, Western Cape, ZA.
4)	VENTER, J.A. 2026. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report: Proposed vegetation clearing on the remainder of Farm Schalkenbosch 229, Tulbagh, Western Cape. Technical Report prepared for Enviro EAP (Pty) Ltd, L'Agulhas by Wildlife Conservation Decision Support, Western Cape, ZA.
5)	VENTER, J.A. 2026. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment - Proposed residential development of RE281, Paapekuilfontein, Struisbaai Technical Report prepared for Lornay Environmental Consulting, Wildlife Conservation Decision Support, George, Western Cape, ZA.
6)	VENTER, J.A. 2026. Preliminary Faunal Scoping Assessment and Sensitivity Analysis: Proposed Residential Development on Portion 6 of the Farm 407, Caledon, Western Cape. Technical Report prepared for Lornay Environmental Consulting, Hermanus, Western Cape, ZA.
7)	VENTER, J.A. 2026. Western Leopard Toad SCC Offset Determination: Addendum to the Wetland Offset Rehabilitation and Management Plan, Erf 438, Stanford. Technical Report prepared for Lornay Environmental Consulting, Wildlife Conservation Decision Support, George, Western Cape, ZA.
8)	VENTER, J., TZITZIKA, I., WATERMEYER, J., RYEN, R., GROOM, R., GOPALASWAMY, A., CURRY, H., MORRIS, J., JONES, C., ELLIOT, N 2026. A Spatially Explicit Assessment of Lion Abundance and Density in the Savé Valley Conservancy, Zimbabwe: A Technical Report for a survey done in 2024-2025. Nelson Mandela University and African Wildlife conservation Fund, George, South Africa.
9)	VENTER, J.A, RYAN, R., GOPALASWAMY, A., DAVIS, R., CURRY, H., MORRIS, J., JONES, C., ELLIOT, N. 2026 A Spatially Explicit Assessment of Lion Abundance and Density in the Marula Region of Kruger National Park: A Technical Report for a survey done in 2024. Technical Report to the Lion Recovery Fund, Department of Conservation Management, Nelson Mandela University, George Campus, George, South Africa.
10)	VENTER, J.A. 2026. Strategic Faunal Baseline and Conservation Development Framework, Full Property Assessment - Paapekuilfontein, Struisbaai. Technical Report prepared for Helemika Number 1 (Pty) Ltd, Produced by Wildlife Conservation Decision Support, George, Western Cape, ZA.
11)	VENTER, J.A. & SWART, R., 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed development of the Stanford Green Eco Estate residential area on Erf 438, Stanford, Version2 – with offset considered. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
12)	VENTER, J.A. & SWART, R. 2025. Section 24G Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement: Development of an unlawful dam within a watercourse on No. 232, Portion 17 of the Farm Redford, The Crags, Bitou Municipal Area. Technical Report prepared for Bokamoso Environmental Consultants, George, Western Cape, ZA.
13)	VENTER, J.A. 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed Residential Development on Portion 4 of the Farm 643, Stanford. Technical Report prepared for Lornay Environmental Consulting, Hermanus, Western Cape, ZA.
14)	VENTER, J.A., SWART, R. 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed Residential Development on Erf 3495, Paapekuilfontein, Struisbaai. Technical Report prepared for Lornay Environmental Consulting, Hermanus, Western Cape, ZA.
15)	VENTER, J.A. 2025. Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement - Proposed residential development of RE281, Paapekuilfontein, Struisbaai. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
16)	VENTER, J.A., PEEL, M.J.S., MARTINDALE, G., HECHTER, F.S. 2025. Maputo National Park Wildlife Offtakes Operational Plan. Mozambique. Technical Report, Mozambique National Administration of Conservation Areas (ANAC) & Peace Parks Foundation, Maputo, Mozambique.
17)	VENTER, J.A., 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed Residential Dwelling on Erf 1071 Hoekwil in Wilderness. Technical Report prepared for Greenfire Enviro (Pry) Ltd, George, Western Cape, ZA.
18)	VENTER, J.A., 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed Dam

and Aircraft Landing Strip on Farm Antjiesfontein RE/14, Prince Albert. Technical Report prepared for Greenfire Enviro (Pry) Ltd, George, Western Cape, ZA.
19) VENTER, J.A. & SWART, R., 2024. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed infrastructure upgrade and expansion of the tourist accommodation facilities on Rusty Gate Mountain Retreat, Farms 824, Rem. Farm 826 and Farm 887, in the Caledon District. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
20) VENTER, J.A. & SWART, R., 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed development of the Stanford Green Eco Estate residential area on Erf 438, Stanford. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
21) VENTER, J.A. & SWART, R., 2025. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report Ver. 2- Proposed development of an eco-estate/beach resort on Portion 36 of Farm Franche Kraal 708, Overberg. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
22) VENTER, J.A. & PEEL, M.J.S. 2024. Limpopo National Park Water Supplementation Policy Review and Recommendations. Mozambique. Unpublished report, Peace Parks Foundation, Maputo, Mozambique.
23) VENTER, J.A. & SWART, R., 2024. Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement - Proposed expansion of the Aqunion (Pty) Ltd Abalone Farm, Romansbaai Farm Portion 2 of Klipfontein Farm no 711, Gansbaai. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
24) VENTER, J.A. & SWART, R., 2024. Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report - Proposed development of the Khoisan Bay Residential Development on Portion 2 of Farm Strandfontein No. 712, Gansbaai. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
25) VENTER, J.A., 2024. Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement - 80MWac Solar PV+130MWh BESS, Portions 11 & 89 of Farm 183 Eastbrook, Karatara. Technical Report prepared for Celior (Pty) Ltd, George, Western Cape, ZA.
26) VENTER, J.A. & SWART, R., 2024. Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement - Proposed infrastructure upgrade and expansion of the tourist accommodation facilities on Rusty Gate Mountain Retreat, Farms 824, Rem. Farm 826 and Farm 887, in the Caledon District. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
27) VENTER, J.A., PEEL, M.J.S., & WOLFAARD, G.C.M. 2023. An ecological assessment of potential sanctuaries for White Rhino (*Ceratotherium simum*) in Limpopo National Park, Mozambique. Unpublished report, Peace Parks Foundation, Maputo, Mozambique.
28) VENTER, J.A. 2024. Terrestrial Animal Site Sensitivity Verification Report and Species Specialist Assessment Report - Proposed development of Residential Erf 1486, Vermont, Hermanus. Technical Report prepared for Lornay Environmental Consulting, George, Western Cape, ZA.
29) VENTER, J.A., PEEL, M.J.S., & WOLFAARD, G.C.M. 2023. An ecological assessment of potential sanctuaries for White Rhino (*Ceratotherium simum*) in Maputo National Park, Mozambique. Unpublished report, Peace Parks Foundation, Maputo, Mozambique.
30) VENTER, J.A. 2023. Terrestrial Animal Compliance Statement Duthie's Golden Mole - *Chlorotalpa duthieae*, Eden Palms Residential, Property: Portion 21/438, Ladywood Estate, Plettenberg Bay.
31) VENTER, J.A., PFEIFFER, M. & DOWNS, C.T. 2015 The flight and ranging behaviour of Cape Vultures (*Gyps coprotheres*): implications for wind turbine placement in the Eastern Cape Province, South Africa. A study commissioned by Eastern Cape Department of Economic Development, Environmental Affairs and Tourism, Eastern Cape Parks and Tourism Agency, East London, South Africa.
32) VENTER, J.A., CONRADIE, W., PFEIFFER, M. & GREEFF, J. 2013 The reptiles, frogs, birds, mammals and dragonflies of Manubi Forest and expansion areas: A report on a rapid biodiversity survey, Eastern Cape Parks and Tourism Agency, East London, South Africa
33) VENTER, J.A. 2013. Scientific recommendations on the spatial aspects of the proposed change in zonation of the Dwesa-Cwebe Marine Protected Area. Eastern Cape Parks and Tourism Agency, East London, South Africa.
34) VENTER, J.A. & CONRADIE, W. 2012. The amphibians and reptiles of Hluleka Nature Reserve: A report on a rapid biodiversity survey conducted in October 2011. Eastern Cape Parks and Tourism Agency, East London, South Africa
35) VENTER, J.A. & CONRADIE, W. 2012 The amphibians and reptiles of Dwesa Nature Reserve: A report on a rapid biodiversity surveyconducted in February 2012. Eastern Cape Parks and Tourism Agency, East London, South Africa
36) VENTER, J.A. & CONRADIE, W. 2012 The amphibians and reptiles of Cape Morgan and Double-Mouth Nature Reserves. Eastern Cape Parks and Tourism Agency, East London, South Africa
37) VENTER, J.A. & CONRADIE, W. 2011 The herpetological fauna of Mkambati Nature Reserve: A report on the herpetological surveyconducted in February 2011. Eastern Cape Parks and Tourism Agency, East London, South Africa
38) PEINKE, D., PEINKE, S. & VENTER, J.A. 2010 Game Census Report 2010, Eastern Cape Parks and Tourism Agency, East London, South Africa

39)	VENTER, J.A. 2010 A report on the catchment aerial survey to assess the possible impacts on the estuaries in the Mbashe, Msikaba and Mtentu rivers. Wild Coast Project, Eastern Cape Parks and Tourism Agency, East London, South Africa
40)	VENTER, J.A., ELOFF, L. & PEINKE, D. 2010 Cape mountain zebra subsidiary management plan for the Baviaanskloof, Commandodrift and Tsolwana Nature Reserves, Eastern Cape Parks and Tourism Agency, East London, South Africa
41)	VENTER, J.A., FOUCHE, P.S.O, VLOK, W., MOYO, N.A.G., GROBLER, P., THERON, S. 2010. A guide to the development of conservation plans for southern African fish species. WRC Report No. 1677/1/10. Water Research Commission, Pretoria South Africa.
42)	VAN WILGEN, B., FORSYTH, G. & VENTER, J.A. 2011 Hluleka Nature Reserve Integrated Fire Management Plan Version 2. CSIR & Eastern Cape Parks and Tourism Agency, East London, South Africa
43)	VAN WILGEN, B., FORSYTH, G. & VENTER, J.A. 2011 Silaka Nature Reserve Integrated Fire Management Plan Version 2. CSIR & Eastern Cape Parks and Tourism Agency, East London, South Africa
44)	VAN WILGEN, B., FORSYTH, G. & VENTER, J.A. 2010 Mkhambathi Nature Reserve Integrated Fire Management Plan Version 2. CSIR & Eastern Cape Parks and Tourism Agency, East London, South Africa
45)	VAN WILGEN, B., FORSYTH, G. & VENTER, J.A. 2010 Dwesa-Cwebe Nature Reserve Integrated Fire Management Plan Version 2. CSIR & Eastern Cape Parks and Tourism Agency, East London, South Africa
46)	VENTER, J.A., PEINKE, D. & PEINKE S. 2008. Annual ECPTA Game Census Report, Eastern Cape Parks and Tourism Agency, East London, South Africa
47)	VENTER, J.A. 2008 Baviaanskloof Nature Reserve: Integrated fire management plan, Eastern Cape Parks and Tourism Agency, East London, South Africa
48)	VENTER, J.A. 2008 Commandodrift Nature Reserve: Integrated fire management plan, Eastern Cape Parks and Tourism Agency, East London, South Africa
49)	VENTER, J.A. 2008 Island Nature Reserve: Integrated fire management plan, Eastern Cape Parks and Tourism Agency, East London, South Africa
50)	VENTER, J.A. 2007 The large herbivore population trends and carrying capacity on Mkambati Nature Reserve: 1979 to2007, Eastern Cape Parks and Tourism Agency, East London, South Africa
51)	PEINKE, D., VENTER, J.A. & FANAYO, L. 2007. Annual ECPTA Game Census Report, Eastern Cape Parks and Tourism Agency, East London, South Africa
52)	VENTER, J.A., HARLEY, V. & MALATJI, M.B. 2004 Results of Aerial Game Counts on Doornkloof, Rolfontein, Witsand and Goegap Nature Reserves for Audit Purposes. Northern Cape Department of Environmental Affairs and Nature Conservation, Kimberley South Africa
Presentations at conferences and symposia (International conferences are shaded)	
1)	VENTER, JA, DAVIS, R., RYAN, R., BALL, I., ELLIOT, N., GOPALASWAMY, A., GROOM, R., WATERMEYER, J., TZITZIKA, I. 2025 Landscapes, and Evidence: A Multi-Site Evaluation of Robust Monitoring for African Carnivore Conservation. International Wildlife Congress, 1-4 September 2025, Lillehammer, Norway.
2)	HONIBALL, T., VALEIX, M., FRITZ, H., SWANEPOEL, L. & VENTER, J.A. 2025. Rather the enemy you know: Territorial behaviour of spotted hyaenas in fenced protected areas. IX European Congress of Mammalogy (ECM 9), 31 March - 4 April 2025, Patras, Greece.
3)	VENTER, J.A., PARDO, L, OSNER, N.R., HUEBNER, S., NICVERT, L., SWANEPOEL, L., PEEL, M., SOMERS, M., KEITH, M., FRITZ, H. 2023 Running a large-scale, long-term camera trap monitoring project for conservation in Africa, the SnapshotSafari experience. 13th International Mammalogical Congress, Anchorage, Alaska, USA
4)	HONIBALL, T., VALEIX, M., FRITZ, H., SWANEPOEL, L. & VENTER, J.A. 2023 The Human-Wildlife Landscape: Effects of Fences as a Conservation Management Tool, 13th International Mammalogical Congress, Anchorage, Alaska, USA
5)	VENTER, J.A. & BETTINGS, I. (2022) Using a spatially explicit capture-recapture model to investigate the demography and spatial dynamics of lion prides in Pilanesberg National Park. 2nd Northwest Provincial Annual Biodiversity Research Symposium, Rustenburg, South Africa.
6)	VENTER, J.A. & SWARTZ, Y. (2019) Insights into past and present behaviour and impacts of a fast-growing elephant population in Madikwe Game Reserve. 1st North West Provincial Annual Biodiversity Research Symposium, Cookes Lake, Mahikeng, South Africa.
7)	VENTER, JA, BROOKE, C., MAREAN, C., FRITZ, H. & HELM, C. 2019. Conceptual reconstruction of Late Pleistocene large mammal assemblages of the Palaeo-Agulhas Plain reveals resilience to climate change but vulnerability to modern humans. 8th European Congress of Mammalogy, Warsaw, Poland.
8)	VENTER, JA, BROOKE, C., MAREAN, C., FRITZ, H. & HELM, C. 2019. Conceptual reconstruction of large mammal assemblages of the Palaeo-Agulhas Plain reveals resilience to climate change but vulnerability to modern humans. 29th International Congress for Conservation Biology (ICCB 2019), Kuala Lumpur, Malaysia.
9)	VENTER, JA, BROOKE, C., MAREAN, C., FRITZ, H. & HELM, C. 2019. Conceptual reconstruction of large mammal communities on the Palaeo-Aghulas Plain. Annual Meeting & Centennial celebration of the American Society of Mammalogists, Hyatt Regency Washington on Capitol Hill, Washington DC.

10) VENTER, JA., VERMEULEN, MM., PACKER, C., SLOTOW, R., DOWNS, D., SOMERS, MJ., PEEL, M., SWANEPOEL, L., MGQATSA, N.,FRITZ, H., WILLOWS-MUNRO, S., KEITH, M., PARKER, D., LE ROUX, A. 2018. Snapshot Safari – South Africa: Contemporary applications of camera traps to monitor mammal communities in South African protected areas. Joint SANBI Biodiversity Information Management & Foundational Biodiversity Information Programme Forum, Cape St Francis, Eastern Cape, South Africa.
11) VENTER, J.A., PRINS, H.H.T., MASHANOVA, A., & SLOTOW, R., 2017. Ungulates rely less on visual cues, but more on adapting movement behaviour, when searching for forage, 12th International Mammalogical Congress, Perth, Western Australia.
12) VENTER, J.A., MARTENS, F.R., PFEIFFER, M.B., DOWNS, C.T. 2017. Cape vultures and wind turbines: Between a rock and a hard place. Southern African Wildlife Management Association Symposium: Wildlife management in the face of global change, Goudini, Western Cape Province, South Africa
13) VENTER, J.A., PRINS, H.H.T., MASHANOVA, A., DE BOER, W.F., & SLOTOW, R., 2014. Intrinsic and extrinsic factors influencing large African herbivore movements. Southern African Wildlife Management Association Symposium: Reconciling the contradictions of wildlife management in southern Africa. Pine Lodge Resort, Port Elizabeth, Eastern Cape, South Africa.
14) VENTER, J.A., PRINS, H.H.T., MASHANOVA, A., DE BOER, W.F., & SLOTOW, R., 2014. Intrinsic and extrinsic factors influencing large African herbivore movements. Spatial Ecology & Conservation 2, University of Birmingham, Birmingham, United Kingdom.
15) VENTER, J.A., PRINS, H.H.T., BALFOUR, D.A., SLOTOW, R. 2013. Reconstructing grazer assemblages for protected area restoration in South Africa. 11th International Mammalogical Congress, Queens University of Belfast, Belfast, Northern–Ireland.
16) VENTER, J.A., NABE-NIELSEN, J., PRINS, H.H.T., SLOTOW, R. 2012. Fire-patch foraging by red hartebeest and zebra in nutrient limited grassland under variable predation risk. Southern African Wildlife Management Association Symposium: Responsible Biodiversity Research and Wildlife Management, Klein Kariba, Limpopo Province, South Africa.
17) VENTER, J.A., FOUCHE, P. & VLOK, W. 2010. The development of a conservation framework for threatened southern African fish. 24th International Congress for Conservation Biology, Edmonton, Canada.
18) HAMER, M., SLOTOW, R. & VENTER, J.A. 2008. Patterns of invertebrate species richness and endemism in a protected area on the Pondoland Coast, South Africa. Southern African Wildlife Management Association Symposium: Wildlife Management – Biodiversity Conservation: The science-management interface. Impekweni Resort, Port Alfred, Eastern Cape, South Africa.
19) VENTER, J.A., 2005. The feeding ecology of Cape buffalo on Doornkloof Nature Reserve, Northern Cape Province. Southern African Wildlife Management Association Symposium: Wildlife Management – A conservation or economic Incentive, Magoebaskloof, Limpopo Province South Africa.
20) VENTER, J.A., HARLEY, V. & MALATJI, M.B. 2004. Game counts on Northern Cape Provincial Nature Reserves: Recommendations for future management. Southern African Wildlife Management Association Symposium: Innovations in Managing Wildlife Resources. Kathu, Northern Cape, South Africa.
21) VENTER, J.A., 2001. The Karoo habitat of the Blue Crane (*Anthropoides paradiseus*). The 13th South African Crane Working Group Workshop and the Southern African Strategy Meeting, South African Crane Working Group. Howick, Kwazulu-Natal, South Africa.
Poster presentations (International conferences are shaded)
1) VENTER, J.A., MARTENS-BROOKE, F.R., BESSA-GOMES, C., DURIES, O., SARRAZIN, F., MIHOUB, J, PFEIFFER, M.B., DOWNS, CT. TZITZIKA, I. 2025. Population viability assessment of the Cape Vulture considering the emerging wind energy infrastructure development in South Africa. 8th Conference on Wind energy and Wildlife impacts, Coexistence in a Changing World: Sharing Existing Knowledge, Challenges and Emerging Solutions, September 8-12, 2025, Corum, Convention center of Montpellier
2) VENTER, J.A. 2011. The value of science to improve conservation management effectiveness in marine protected areas. World Marine Biodiversity Conference 2011, Aberdeen, Scotland. (Digital object presentation)
3) VENTER, J.A., FOUCHE, P. & VLOK, W. 2010. The current distribution of *Opsaridium peringuyei* in South Africa: Is there reason for concern? 8th Annual Science Networking Meeting, Kruger National Park, Skukuza, Mpumalanga, South Africa.
4) VENTER, J.A., MOYO, N., VLOK, W., FOUCHE, P. & GROBLER, J.P. 2005. The ecology and distribution of the Southern Barred Minnow (*Opsaridium peringueyi*) in some southern African river systems. Southern African Wildlife Management Association Symposium: Wildlife Management – A conservation or economic Incentive, Magoebaskloof, Limpopo, South Africa.

Grant funding	
National Research Foundation Bill Branch Memorial Grant Oppenheimer Trust	Society for Conservation Biology National Geographic Society Forestry CETA

Ernest and Ethel Eriksen Trust Copenhagen Zoo Shangani Ranch Amarula Elephant Fund The Elephant Managers Association The Palaeontological Scientific Trust Fynbos Trust Grootbos Foundation Fairfield Fund Dormehl Cunningham Scholarship Funding Cape Leopard Trust	Rufford Foundation Templeton Foundation Waitt Grants Program US National Science Foundation South African Water Research Commission Harry and Anette Swartz Foundation Lion Recovery Fund Tswalu Foundation Madikwe Wildlife Trust Panthera

Review of journal manuscripts

African Journal of Wildlife Research, African Journal of Marine Research, African Zoology, African Ecology, International Journal of Marine Science, Environmental Monitoring and Assessment, Ecological Applications, Acta Theriologica, Ecological Research, International Journal of Biodiversity and Conservation, PeerJ, Ecological Informatics, Mammal Research, Urban Forestry & Urban Greening, Journal of Arid Environments, Biodiversity and Conservation, Journal of Ornithology, Transportation Research Part D: Transport and Environment, Remote Sensing in Ecology and Conservation, Mammalia, Ecological Monographs, Kudu, Global Ecology and Conservation

Research reviews or supervisory panels

National Research Foundation	NRF Researcher Rating Review	2020 (Reviewer)
National Research Foundation	Postdoctoral, Travel, General and International Research Grants Virtual Peer Review Panel	2020 (Review Panel)
National Research Foundation	Postgraduate Bursaries/ Travel Grants Virtual Peer Review Panel	2019 (Review Panel)
National Research Foundation	Physiological plasticity of water-dependent antelope	2019 (Reviewer)
National Research Foundation	Mechanisms of resource selection and space use in a recovering rare antelope population	2018 (Reviewer)
Water Research Commission	WRC Project K5/2337 - Assessing the effect of global climate change on indigenous and alien fish in the Cape Floristic Region	2014-2017 (supervisory panel)
Water Research Commission	WRC Project K5/2039 - To understand the unintended spread and impact of alien and invasive fish species in order to develop mitigation and prevention guidelines.	2012-2014 (supervisory panel)
Water Research Commission	WRC Project K5/2187 – The resilience of South Africa's estuaries to future water resource development based on a provisional ecological classification of these systems.	2012-2014 (supervisory panel)
Water Research Commission	WRC Project K5/2261 - Evaluating fish and macro-invertebrate recovery rates in the Rondegat river, Western Cape, after river rehabilitation by alien fish removal using rotenone.	2013-2016 (supervisory panel)

Student supervision

BSc Hon/BTech

1) M. Mbiko	Honours degree (Zoology), Walter Sisulu University, Co-supervisor	The study of dietary niche separation for ungulates in Mkambati Nature Reserve, using the stable carbon isotopes	Completed (2014)
2) E. Jones	BTech (Nature Conservation), NMU, Supervisor	Amphibians and Vegetation as indicators of Conservation Value of Wetlands in an Anthropogenically Impacted Landscape	Completed (2016) *Cum Laude*
3) K. Green	BTech (Nature Conservation), NMU, Supervisor	Variables affecting mammal species rate of capture as evaluated by camera traps on Tswalu Kalahari Reserve	Completed (2016)
4) B White	BTech (Nature Conservation), NMU, Supervisor	Water Bird Counts Along the Klein Brak River: A Study on the Precision of Citizen Science Counts	Completed (2016)
5) P Rossouw	BTech (Nature Conservation), NMU,	Herpetological biodiversity in areas adjacent to the Wilderness section of the	Completed (2016)

	Supervisor	Garden Route National Park	
6) S. Schimmel	BTech (Nature Conservation), NMU, Supervisor	Mammal diversity and density in transformed and natural landscapes of a conservation corridor adjacent to the Garden Route National Park, Western Cape	Completed (2016)
7) S. Atkinson	BTech (Nature Conservation), NMU, Supervisor	The precision of waterfowl numbers through Co-ordinated Waterbird Counts on the Great Brak Estuary	Completed (2016)
8) A. Robinson	BTech (Nature Conservation), NMU, Supervisor	Does distance from water influence herbivore assemblages in Kruger National Park?	Completed (2017)
9) D. van Aswegen	BTech (Nature Conservation), NMU, Supervisor	The effect of forest fragmentation on forest bird diversity and movement in a plantation dominated landscape	Completed (2017)
10) KL Midlane	BTech (Nature Conservation), NMU, Supervisor	Amphibian and reptile biodiversity patterns in commercial plantations of the Southern Cape	Completed (2017)
11) M. Gouws	BTech (Nature Conservation), NMU, Supervisor	Do different herbivores influence soil nitrogen levels in Satara, Kruger National Park?	Completed (2017)
12) O. Rynders	BTech (Nature Conservation), NMU, Supervisor	Forest fragmentation and its effects on invertebrate diversity and abundance	Completed (2017) *Cum Laude*
13) Z. Schoeman	BTech (Nature Conservation), NMU, Supervisor	The effect of anthropogenic disturbance on marine shorebird population size and habitat use in the Garden Route	Completed (2017)
14) D. de Villiers	BTech (Nature Conservation), NMU, Supervisor	The herpetological diversity in the Karoo National Park in South Africa	Completed (2018)
15) C. Esmeraldo	BTech (Nature Conservation), NMU, Supervisor	The influence of vegetation and water on ungulate distribution in the Karoo National Park	Completed (2018)
16) A. Laas	BTech (Nature Conservation), NMU, Supervisor	The activity patterns of herbivores exposed to predators in the Karoo National Park, South Africa	Completed (2018)
17) J. Dicker	BTech (Nature Conservation), NMU, Supervisor	The activity patterns of species exposed to large predators in the Mountain Zebra National Park	Completed (2018)
18) S. Truter	BSc Hons (Wildlife Management), UP, Co-Supervisor	Effects of medium to large carnivores on small carnivores in space and time in the Telperion Nature Reserve	Completed (2018)
19) N. Nkosi	BTech (Nature Conservation), NMU, Supervisor	Ungulates response to old agricultural fields in Gondwana Game reserve	Completed (2019)
20) I. Bettings	BTech (Nature Conservation), NMU, Supervisor	Habitat variations influencing the frequency of bird strikes in high air traffic areas within the George Airport	Completed (2019)
21) D. Ball	BTech (Nature Conservation), NMU, Supervisor	Large tree utilisation of the African Elephant (*Loxodonta africana*) in the Savanna biome	Completed (2019)
22) G. Reynolds	BTech (Nature Conservation), NMU, Supervisor	Assessing impacts of African elephant (*Loxodonta africana*) on the vegetation of Gondwana Private Game Reserve	Completed (2019)
23) K. Smith	BSc Hons (Wildlife Management), UP, Co-Supervisor	Testing the spatial and temporal avoidance hypothesis in a semi-arid landscape: Do subordinate carnivores of the Karoo change behaviour in response to dominant predators?	Completed (2019) *Cum Laude*

24) G. Sambula	BSc Hons (Zoology), UNIVEN, Co-Supervisor	Carnivore Richness In Private And State Protected Areas	Completed (2019)
25) T. Baird	BSc Hons (Wildlife Management), UP, Co-Supervisor	Spatial and temporal avoidance between large and meso-carnivores	Completed (2020)
26) A. Gervais	BSc Hons (Wildlife Management), UP, Co-Supervisor	Investigating the impact of large carnivores on mesocarnivores' temporal dynamics	Completed (2020)
27) Miss E.E.M. Evers	BSc Hons (Wildlife Management), UP, Co-Supervisor	Spatial and temporal organization of leopards (*Panthera pardus*) and spotted hyaena (*Crocuta crocuta*) on Madikwe Game Reserve	Completed (2020)
28) Mr R. Pienaar	BSc Hons (Animal, Plant & Environmental Science), WITS, Co-Supervisor	Do lions with long, dark manes behaviourally compensate for potentially high heat loads?	Completed (2020)
29) Mr I Kayiza	BSc Hons (Wildlife Management), UP, Co-Supervisor	Edge effect and its impacts on the abundance of mammal species in selected protected areas in South Africa	Completed (2020)
30) Mr N.K. Shah	BSc Hons (Wildlife Management), UP, Co-Supervisor	Do herbivores change their behaviour in the absence of lions in arid areas of SA?	Completed (2021) *Cum Laude*
31) Miss M. Thomson	BSc Hons (Wildlife Management), UP, Co-Supervisor	Herbivore space use in Atherstone Nature Reserve, Limpopo Province, South Africa.	Completed (2021) *Cum Laude*
32) Miss T. Tiribeni	BSc Hons (Wildlife Management), UP, Co-Supervisor	The effect of lion pride structure on home ranges	Completed (2022)
33) Miss K. Mieny	BSc Hons (Wildlife Management), UP, Co-Supervisor	A Preliminary Assessment of the Seasonal Difference and Influence of Megaherbivores on the Diets of Large Herbivores in Sanbona Wildlife Reserve	Completed (2022)
34) Mr A. van Niekerk	BSc Hons (Wildlife Management), UP, Co-Supervisor	Leopard tortoise occupancy in arid reserves in South Africa: assessment using camera traps.	Completed (2022)
35) Miss H. Basson	BSc Hons (Natural Resource Management), NMU, Co-supervisor	Factors influencing Chondrichthyan egg case hatching success in Mossel Bay, South Africa	Completed (2023) *Cum Laude*
36) Miss Y. Markides	BSc Hons (Natural Resource Management), NMU, Supervisor	The Development of a Condition Scoring System for White Rhinoceros (*Ceratotherium simum*), using expert knowledge	Completed (2023)
37) Mrs Rebecka Ryan	BSc Hons (Natural Resource Management), NMU, Supervisor	Opportunistic utilisation of resource pulses by a mesopredator in Welgevonden Game Reserve, South Africa	Completed (2023) *Cum Laude*
38) Mr D Stols	BSc Hons (Natural Resource Management), NMU, Co-supervisor	Elephants reduce vegetation diversity and affect tree structure in Madikwe Game Reserve	Completed (2023) *Cum Laude*
39) Mr T. Fifford	BSc Hons (Natural Resource Management), NMU, Supervisor	An assessment of a decade of surf-zone linefish monitoring in the Goukamma Marine Protected Area: Is the current resource use zonation effective?	Completed (2023) *Cum Laude*
40) Mr D.J.S. Samarasinghe	BSc Hons (Natural Resource Management), NMU,	On the population ecology of an island leopard from a protected landscape	Completed (2023)

	Supervisor		
41) Miss S Rich	BSc Hons (Wildlife Management), UP, Co-Supervisor	The effect of vehicles on black-backed jackal (*Lupulella mesomelas*) and leopard (*Panthera pardus*) activity	Completed (2023)
42) Miss M. Venter	BSc Hons (Wildlife Management), UP, Co-Supervisor	Drivers of free-roaming African wild dog land use in the Waterberg, South Africa	Completed (2023)
43) Miss C Meyer	BSc Hons (Wildlife Management), UP, Co-Supervisor	Assessing the Indirect Effect of Elephants on Bird & Bat Assemblages	Completed (2024)
44) Mr K. Saloojee	BSc Hons (Natural Resource Management), NMU, Co-Supervisor	Testing a Novel Camera Trapping Method to Survey African Small Carnivore Populations	Completed (2024)
45) Miss A Watson	BSc Hons (Natural Resource Management), NMU, Supervisor	Balancing Fear and Forage: How zebra Equus quagga navigate risk and resources in the Makgadikgadi Pans, Botswana	Completed (2025) *Cum Laude*
46) Miss D Ferreira	BSc Hons (Natural Resource Management), NMU, Supervisor	Golden Moles of the Southern Cape: Insights into Their Distribution and Habitat Selection	Completed (2025) *Cum Laude*
47) Miss H Loubser	BSc Hons (Natural Resource Management), NMU, Supervisor	Environmental factors that influence lion pride spatial use in Kruger National Park	Completed (2025) *Cum Laude*
48) Miss J Morris	BSc Hons (Natural Resource Management), NMU, Supervisor	Temporal Shifts and Behavioral Convergence in Elephant Resource Selection Reveal Emerging Stress in a Fenced Reserve	Completed (2025) *Cum Laude*
Masters			
1) Mr E. Mmonoa	MSc (Zoology), University of Limpopo, Co-supervisor	Breeding habitat of Blue crane (*Anthropoides paradiseus*) in Mpumalanga	Completed (2010)
2) Miss M. Pfeiffer	Msc (Zoology), University of Kwazulu-Natal, Co-supervisor	Understanding the association between Cape Vultures (*Gyps coprotheres*) and communal farmland.	Upgraded to PhD (2013)
3) Mrs M. Vermeulen	MSc (Nature Conservation), NMU, Co-supervisor	Exploring feeding ecology and population growth rate responses of ungulates in southern African arid biomes	Completed (2016-2017)
4) Mr C. Brooke	MSc (Nature Conservation), NMU, Supervisor	Energy maximisation strategies of different African herbivores in a fire dominated and nutrient poor grassland ecosystem	Completed (2016-2017) *Cum Laude*
5) Miss F. Martens	MSc (Nature Conservation), NMU, Supervisor	The spatial ecology and roost site selection of fledging Cape Vultures (*Gyps coprotheres*) in the Eastern Cape, South Africa.	Completed (2016-2017) *Cum Laude*
6) Mrs T. Meintjes	MSc (Nature Conservation – Part time), NMU, Supervisor	Using citizen science data to evaluate waterbird populations in the Garden Route	Deregistered (2016-2020) Not completed
7) Miss D. Winterton	MSc (Nature Conservation), NMU, Supervisor	Land use and ecosystem regulation: Exploring the influence of management practise on mesopredator and herbivore interactions	Completed (2017-2018)
8) Mr J. Vogel	MSc (Nature Conservation), NMU, Supervisor	Predicting reintroduction outcomes: Assessing the feasibility of reintroducing African wild dog to a small protected area.	Completed (2017-2018) *Cum Laude*
9) Miss C. Young	MSc (Nature	Examining the influence of extrinsic factors	Completed (2017-2018)

	Conservation), NMU, Supervisor	on herbivore assemblage composition and resultant nutrient feedbacks in Kruger National Park	
10) Miss A. Robinson	MSc (Nature Conservation), NMU, Supervisor	The influence of water dependency on the spatial ecology of large mammalian herbivores on the paleo-Agulhus plain	Deregistered (2018-2022) Not completed
11) Miss Z. Schoeman	MSc (Nature Conservation), NMU, Supervisor	The spatiotemporal aspects of predation on the Cape gannet *Morus capensis* population at Bird Island, Lambert's Bay, Western Cape, South Africa	Completed (2018-2019)
12) Mr P. Faure	MSc (Nature Conservation), NMU, Supervisor	The influence of anthropogenic and environmental covariates on the habitat use and density of sympatric carnivores, Limpopo Province, South Africa	Completed (2018-2019)
13) Miss YRP. Swartz	MSc (Nature Conservation), NMU, Supervisor	Elephants in Madikwe Game Reserve: Measuring past and future impacts	Deregistered (2018-2021) Not completed
14) Miss C. Burt	MSc (Nature Conservation), NMU, Supervisor	An assessment of different methods for measuring mammal diversity in two Southern African arid ecosystems	Completed (2018-2020)
15) Miss A. Jansen-van Vuuren	MSc (Nature Conservation), NMU, Supervisor	The feeding ecology and habitat selection of small antelopes in the Overberg Renosterveld, Western Cape	Completed (2019-2020)
16) Mr H. Swanepoel	MSc (Nature Conservation), NMU, Supervisor	The implications of landscape scale habitat fragmentation and ecological corridors on the spatial ecology of five specialist browser species in a lowland Fynbos and Renosterveld ecosystem.	Completed (2019-2020)
17) Miss T. Honiball	MSc (Nature Conservation), NMU, Supervisor	Estimating the population size of three large carnivore species and the diet of six large carnivore species, in Madikwe Game Reserve	Completed (2019-2020)
18) Miss N. Tsie	MSc (Wildlife Management), UP, Co-supervisor	The interaction between burrowing mammal occurrence and large carnivore presence in South Africa	Deregistered, Not completed (2019-2022)
19) Mrs C. Shutte	MSc (Nature Conservation), NMU, Supervisor	Understanding what factors determine the birth-sex ratio of Chacma baboons (*Papio ursinus*) on the Cape Peninsula	Deregistered, Not completed (2020-2023)
20) Miss I. Bettings	MSc (Nature Conservation), NMU, Supervisor	Using spatial explicit capture-recapture model to investigate the demography and spatial dynamics of lion prides in Pilanesberg National Park	Completed (2020-2021)
21) Mr Kyle Smith	MSc (Wildlife Management), UP, Co-supervisor	Testing the spatial and temporal avoidance hypotheses: Do subordinate carnivores change behaviour in response to dominant carnivores?	Completed (2020-2022)
22) Mr D. Ball	MSc (Nature Conservation), NMU, Supervisor	Do African elephants (*Loxodonta africana*) use artificial water points as central forage stations in the Madikwe Game Reserve?	Deregistered (2020-2021) Not completed
23) Miss J. Daya	MSc (Nature Conservation), NMU, Supervisor	Feeding ecology and habitat preference of black rhino (*Diceros bicornis*) in Welgevonden Game Reserve, Limpopo Province.	Completed (2020-2021)
24) Mr TD Baird	MSc (Wildlife Management), UP, Co-supervisor	Implications of camera trap survey design and analytical methods for large carnivore estimates	Completed (2021)
25) Miss J. Harris	MSc (Nature Conservation), NMU,	Investigating the effects of pulse-driven resource availability on mammal	Completed (2021-2022)

	Supervisor	communities in the Kalahari, South Africa	
26) Mr Markus Woesner	MSc (Conservation and Management of Fish and Wildlife), Swedish University of Agricultural Science, Co-supervisor	Does the response to hot temperatures differ among species in a large herbivore community in the southern Kalahari? A landscape of risk versus heat	Completed (2022-2023)
27) Mr Samuel Ralph Davidson-Phillips	MSc (Nature Conservation), NMU, Supervisor	Estimation of a generalist meso-carnivore (Black-backed Jackal) population from a fenced protected area	Completed (2022-2023) *Cum Laude*
28) Mr Moraswi Masehle	Magister Science Wildlife Health, Ecology and Management, University of Pretoria, Co-supervisor	The Activity Patterns of the Specialized Browsing Species and their Behavioral Adjustments in Response to Predation	Deregistered (2022), Not completed
29) Mr Jaco Geldenhuys	Master of Scientiae (MSc) in Environmental Management, University of Pretoria, Co-supervisor	Occupancy of black-backed jackal (*Canis mesomelas* Schreber, 1775) across South Africa	Deregistered (2021-2022), Not completed
30) Miss Cleo Ferreira	MSc (Nature Conservation), NMU, Supervisor	Evaluating the impact of dehorning on the behavioural ecology of white rhinoceros (*Ceratotherium simum*)	Completed (2023-2025) *Cum Laude*
31) Mrs Rebecca Ryan	MSc (Nature Conservation), NMU, Supervisor	Estimating population density and assessing territoriality of African lions (Panthera leo) in Kruger National Park, South Africa	Completed (2024-2025) *Cum Laude*
32) Miss Yasmin Markides	MSc (Nature Conservation), NMU, Supervisor	Assessing landscape permeability and dispersal corridors for threatened carnivores across a multi-use landscape	Completed (2024-2025) *Cum Laude*
33) Miss Hannah Basson	MSc (Nature Conservation), NMU, Supervisor	A landscape-level evaluation of black-footed cat (*Felis nigripes*) distribution in the south-eastern Karoo	Completed (2024-2025) *Cum Laude*
34) Mr Dietre Stolz	MSc (Nature Conservation), NMU, Co-Supervisor	Giants of the Savannah: Unravelling the Impact of Elephant Preferences on Woody Vegetation in Madikwe and Timbavati Game Reserves.	Completed (2024-2025) *Cum Laude*
35) Miss M Venter	MSc (Wildlife Management), UP, Co-supervisor	Diet and movement patterns of two free-roaming packs of African wild dogs (Lycaon pictus) in the Waterberg, South Africa	In progress (2024-2025)
36) Miss R Mooney	MSc (Nature Conservation), NMU, Supervisor	Ranging behaviors of endangered, free-roaming African wild dogs (Lycaon pictus) outside of formally protected areas in the Waterberg, South Africa	Completed (2024-2025) *Cum Laude*
37) Miss Marna Visagie	MSc (Nature Conservation), NMU, Supervisor	An integrated study of large carnivore ecology and behaviour in the Tswalu Kalahari Reserve	Completed (2024-2025) *Cum Laude*
38) Miss Carina Meyer	MSc (Nature Conservation), NMU, Supervisor	The influence of complex social structures with fission-fusion properties on foraging efficiency and spatial dynamics of buffalo herds in the APNR	In progress (2025-2026)
39) Miss Alexis Watson	MSc (Nature Conservation), NMU, Supervisor	Who watches and where? Testing demographic risk buffering and environmental drivers of vigilance behaviour in Cape buffalo (Syncerus caffer)	In progress (2026-2027)
40) Miss Hanna Loubser	MSc (Nature Conservation), NMU, Supervisor	Spatial Ecology of Spotted Hyenas (Crocuta crocuta) in Kruger National Park: A spatially explicit capture recapture and GPS	In progress (2026-2027)

		Telemetry Study.	
41) Miss Deoni Ferreira	MSc (Nature Conservation), NMU, Supervisor	Fine-scale habitat drivers shaping the distributions of Cape, Duthie's and Fynbos Golden Moles.	In progress (2026-2027)
42) Miss Julia Morris	MSc (Nature Conservation), NMU, Supervisor	Energy Landscape drivers of Cape Vulture collision risk: using pre-construction IdentiFlight data to inform wind turbine placement and shutdown strategies	In progress (2026-2027)
43) Mr Xeviour Madzinga	MSc (Nature Conservation), NMU, Supervisor	The Demography and Spatial Ecology of Lions (Panthera leo) in Gonarezhou National Park, Zimbabwe	In progress (2026-2027)
44) Miss Charline Beukes	MSc (Nature Conservation), NMU, Supervisor	Territorial competition among African lion prides in fenced reserves and an open system: A comparison of spatial overlap	In progress (2026-2027)
Doctoral			
1) Miss M. Pfeiffer	PhD (Zoology), University of Kwazulu-Natal, Co-supervisor	Ecology and conservation of the Cape Vulture in the Eastern Cape, South Africa	Completed 2016
2) Mr W. Matthee	PhD (Nature Conservation – Part time), NMU, Supervisor	Forest birds and habitat fragmentation: evolutionary adaptations to environmental change	Deregistered, Not completed (2016-2022)
3) Mrs MM. Vermeulen	PhD (Nature Conservation), NMU, Supervisor	Variation in abundance and structure of mammal communities and the consequences for species diversity	Completed (2018-2025)
4) Mrs FR. Brooke	PhD (Nature Conservation), NMU, Supervisor	Cape Vultures (*Gyps coprotheres*) and the threat of wind farms: a race to extinction?	Completed (2018-2021)
5) Mr CF. Brooke	PhD (Nature Conservation), NMU, Supervisor	Large mammalian fauna of the Palaeo-Agulhas Plain: Predicting habitat use and range distribution	Completed (2018-2020)
6) Mr P. Mkumba	PhD (Nature Conservation), NMU, Co-Supervisor	Migration patterns of male elephants (*Loxodonta africana*) in the Hwange-Shangani corridor: Consequences on Human Elephant Conflict	In progress (2019-2022)
7) Mr W. Conradie	PhD (Nature Conservation), NMU, Supervisor	Herpetofaunal diversity and affiliations of the Okavango River Basin, with specific focus on the Angolan headwaters.	Completed (2020-2023)
8) Miss A. Bernard	PhD (Zoology) REHABS International Research Laboratory, CNRS-Université Lyon 1-Nelson Mandela University, Co-Supervisor	Trophic guild distortion in anthropogenic landscapes – Testing anthropodependence and reconciliation ecology principles of mammals in the Greater Cape Floristic Kingdom.	Completed (2020-2022)
9) Mr GS. Botha	PhD (Nature Conservation), NMU, Supervisor	The effects of fences and other infrastructure on the mammal community structure and distribution in protected areas across South Africa.	Completed (2020-2025)
10) Dr C. Helm	PhD (Geoscience), NMU, Co-supervisor	Pleistocene fossil tracks and traces on the Cape coast of South Africa	Completed (2020-2023)
11) Mrs Z. Strydom	PhD (Nature Conservation), NMU, Supervisor	Assessing the effects of fish stock management on endangered seabird populations in South Africa	Completed (2020-2023)
12) Mrs W.L. Zeller Zigaitis	PhD (Geography), Pennsylvania State University, Co-supervisor	Protected Area Process and Design: Using Geospatial Data to Mitigate Poaching in Protected Areas	Completed (2020-2024)
13) Miss T. Honiball	PhD (Nature	Social dynamics of spotted hyaenas	Completed (2021-2024)

	Conservation), NMU, Supervisor	(*Crocuta crocuta*) in fenced protected areas: Implications for conservation management of a socially intelligent species.	
14) Miss A. Jansen van Vuuren	PhD (Nature Conservation), NMU, Supervisor	The role of spotted and brown hyaena activity hotspots on interspecific interactions	Completed (2021-2025)
15) Mr H. Swanepoel	PhD (Nature Conservation), NMU, Supervisor	The effects of climate on the phenology of African ungulates in arid and semi-arid regions of South Africa.	Completed (2022-2025)
16) Miss J Daya	PhD (Nature Conservation), NMU, Supervisor	Managing Lions in Pilanesberg National Park: Finding a Balance between Economic and Ecological Realities in Fenced Parks	In progress (2023-2025)
17) Miss J Harris	PhD (Nature Conservation), NMU, Supervisor	A Game of Thrones: Rivals, territories and resources. What are the intrinsic costs to African lions contained in small, fenced parks?	Deregistered (2023-2023) Not completed.
18) Mr S Tokota	PhD (Nature Conservation), NMU, Supervisor	A regional assessment of leopard (Panthera pardus) population status, threats, distribution, and habitat connectivity in the Eastern Cape, South Africa	In progress (2023-2025)
19) Miss E Overton	PhD (Nature Conservation), NMU, Supervisor	The ecological role of cheetah (*Acinonyx jubatus)* and their impact on prey populations on Tswalu Kalahari Reserve	In progress (2023-2026)
20) Miss M Rodriguez	PhD Biodiversity (U. of Barcelona), Supervisor	Enhancing Coexistence: Understanding Large Carnivore Mobility in Different Wildlife-Based Land Use Patterns in South Africa	In progress (2024-2026)
21) Miss M. Visagie	PhD (Nature Conservation), NMU, Supervisor	Investigating the coexistence mechanisms of lion and spotted hyaena in southern Kruger national Park	In progress (2026-2028)
Post-Doctoral Researchers & Research fellows			
1) Dr L. Pardo-Vargas	Snapshot Safari South Africa – A country wide assessment of mammal biodiversity		FBIP-NRF Post-Doctoral Researcher (2019-2020) NRF Innovation Postdoctoral Fellowship (2021-2022)
2) Dr C. Guerbois	Social-Ecological Systems		NMU Research Fellow (2019-2023)
3) Dr D. Marneweck	Snapshot Safari South Africa – A country wide assessment of mammal biodiversity		NMU Post-Doctoral Research Fellow (2020-2021)
4) Dr C. Brooke	Late Pleistocene herbivore use on the Palaeo-Agulhas Plain: the facilitation role of megaherbivores and the implications for the modern rewilding of landscapes		NRF Innovation Postdoctoral Fellowship (2021-2022)
5) Dr R. Davies	Assessing the density, distribution and spatiotemporal dynamics of small carnivores across African conservation landscapes		NMU Post-Doctoral Research Fellow (2022-2025)
6) Dr Chad Keates	Genetic study on herpetological samples from Angola in association with Werner Conradie, PE Museum.		NMU Post-Doctoral Researcher (2022)
7) Dr L Thel	A Game of Thrones: Rivals, territories and resources. What are the intrinsic costs to African lions contained in small, fenced parks?		NRF Post-Doctoral Researcher (2023-2024) NMU Post-Doctoral Research Fellow (2025-2026)
8) Dr Hennie Niemann	GOLDMAP – Genetic and Occurrence-Level Data Mapping for All South African Golden Moles project		FBIP-NRF Post-Doctoral Researcher (2026-2028)

6. Experience in Teaching & Learning

Teaching experience		
Time period	Institution	Module or Course Information

2015-current	Nelson Mandela University	I teach Animal Studies I/Game Health I & Animal Studies III/Game Science III to undergraduates (Diploma in Nature Conservation and Diploma in Game Ranch Management), Conservation Management and Plant Studies IV (BTech Nature Conservation), Game Science IV/Animal Studies IV (Advanced Diploma in Game Ranch Management & Advanced Diploma Nature Conservation), Conservation Management (BSc Hons Natural Resource Management).	
2022 (April-May)	Swedish University of Agricultural Sciences	Visiting lecturer at the Department Wildlife, Fish and Environmental Studies, Umea. Course work Masters degree, International Wildlife Management Module. Sweden-South Africa Erasmus ICM exchange program on wildlife ecology and management	
2010-2018	Pennsylvania State University/University of Cape Town	Assisted in setting up and hosting a study abroad program called People and Parks South Africa (http://aeseda.psu.edu/programs/parks-and-people-south-africa/). The students spend 10 weeks in South Africa (January-March) on an annual basis. I was one of the South African field lecturers for the program and presented practical biodiversity surveys (where we physically conducted biodiversity inventory surveys on various protected areas) and since 2013 an introductory course to conservation in South Africa. This course (2 weeks) introduced students to South African ecological and biodiversity features as well as various protected area management models while traveling from Cape Town to their base (Wild Coast, Eastern Cape).	
2005	University of Limpopo	Taught GIS to 1st and 2nd year students for one semester as substitute lecturer at the Department of Geography	
Curriculum Development & Review			
2019	Nelson Mandela University	Development of the new Advanced Diploma: Nature Conservation	Team leader of course development team
2018-2019	Nelson Mandela University	Development of the new BSc Honours: Natural Resource Management	Team member of the course development team
2020	University of South Africa	Review of the Postgraduate Diploma: Nature Conservation	Chairman of the external review committee
2020	Southern African Wildlife College	Review of a new Diploma: Applied Natural Resource Management	External reviewer

7. Professional membership and service

Association	Details	Time period
South African Wildlife Management Association	Ordinary member (Council member 2008-2010; 2018-2023)	1998-Current date
Zoological Society of Southern Africa	Ordinary member	2009-2023
IUCN Crocodile Specialist Group	Ordinary member	2013-2025
Mammal Research Institute, University of Pretoria	Research Associate	2013-Current date
Centre for Coastal Palaeo Science, NMU	Honorary Researcher	2016-Current date
South African Council for Natural Scientific Professions	Professional Natural Scientist – Ecological Sciences: Registration Number. 400111/14	2014-Current date
Associated Private Nature Reserves Ecological Advisory Committee	Committee member	2022 – Current date
Welgevonden Game Reserve Scientific Advisory Committee	Committee member	2018-Current date
BirdLife South Africa and Endangered Wildlife Trust - Birds and Renewable Energy Specialist Group	Specialist advisor	2019-2021
SEA REDZs Vulture Working Group	Specialist	2024-Current date
REHABS International Research Laboratory, CNRS-Université Lyon 1-Nelson Mandela University, George Campus	Deputy Director	2019-Current date
Society for Conservation Biology	Professional Member	2020-Current date

Centre for African Conservation Ecology, Nelson Mandela University	Member	2022-Current date

8. Other courses and qualifications

List of qualifications obtained	List of courses completed
Professional Hunter; Category C Skippers License; Marine VHF Radio Operator; NAUI Open Water 1 SCUBA Diver	Statistical Techniques in Ecology, Snake ID & Snakebite Treatment; Advanced Snake Handling; Conservation Planning; Practical Remote Sensing for Conservation Biologists; Ecological Niche Modelling; Landscape genetic approaches for Conservation Biologists; Resource evaluation and game ranch management for sustainable game production and conservation; Disease Risk Assessment; Game counting techniques; Wildlife handling and welfare; Maintenance of outboard motors and handling of boats on inland waters; Various ArcView, ArcGIS courses; Quantum GIS Various Windows Software courses; Financial management systems; Peace officer; Problem animal control.

9. Referees

Prof. Herbert Prins
Full Professor & Former Chairman of the Graduate School Production Ecology
Resource Ecology Group, Wageningen University
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Prof. Rob Slotow
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Prof. Michael Somers
Professor
Mammal Research Institute, University of Pretoria
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RUDI CRISPIN SWART

Forest Programme Manager, NVT
Research Associate, Nelson Mandela University

(+27) 84 945 2085 swartrudolph90@gmail.com

Surname	Swart
Full names	Rudi Crispin
Gender	Male
Date of birth	12/02/1991
Nationality	South African
Driver's license	Yes
Criminal Record	No
Current Location (City)	Plettenberg Bay
Willing to Relocate	Yes

EDUCATION

- **Stellenbosch University** — Completed 2020
  PhD in Conservation Ecology: **Interactions between indigenous southern Afrotemperate forest trees and arthropod diversity**
- **Stellenbosch University** — Completed 2016
  MSc (cum laude) in Conservation Ecology: **The effect of commercial forestry plantations and roads on southern Afrotemperate forest arthropod diversity**
- **Stellenbosch University** — Completed 2013
  BSc Conservation Ecology & Entomology

EXPERIENCE

Forest Programme Manager — April 2025 - present
NVT, Nature's Valley

- Ecological research, environmental data collection, management and analyses, invasive species management and monitoring, indigenous vegetation monitoring, ecological rehabilitation, funding acquisition, public engagement, stakeholder engagement, private nature reserve management, nursery management

Postdoctoral Research Fellow — April 2021 – March 2025
Department of Natural Resource Management, Faculty of Science, Nelson Mandela University

Research focus: Afromontane forest tree pollination; landscape ecology and insect seed predation

- Research
- Academic writing and publication
- Grant acquisition
- Organising and conducting fieldwork / laboratory work
- Managing research funds
- Student supervision – 3 honours (2024); 2 masters students (2025)
- Part-time lecturing – first year Animal Studies, honours and advanced diploma indigenous forest electives
- Student training in entomology, curation, taxonomy, field work and ethics

Lecturer Jan 2022 – Dec 2022; Jan 2024 – Jul 2024
Department of Natural Resource Management, Nelson Mandela University

- Animals studies I (invertebrate ecology) and II (vertebrate ecology)

Educator, Cambridge Curriculum Jan 2021 – April 2021
McKinlay Reid International School, George

- Teaching position in Biology (AS-level) and Environmental Management (IG-level)

Consolidoc (6-month research funding) Jun 2020 – Nov 2020
Department of Conservation Ecology and Entomology, Stellenbosch University

- Full-time researcher
- Published 3 scientific articles

Rehabilitation Ecologist – flexitime during PhD Jan 2016 – Dec 2018
Oude Bethlehem Farm, Banhoek Valley

- Developed a rehabilitation strategy and implemented a plan for degraded fynbos and Afromontane forests on a large, >300 ha farm
- Engaged with multiple stakeholders

FUNDING APPLICATIONS

Rufford Small Grants – awarded after applying for funding for landscape rehabilitation work and nursery development (2026-2027). *R175 000.*

Erasmus+ Mobility – awarded after applying for a 7-week lecturing mobility programme between Nelson Mandela University and the Swedish University of Agricultural Sciences (SLU) wherein knowledge exchange between South African and Swedish forest ecology was facilitated via field excursions, lectures and seminars at SLU, Umeå campus (2024). *R160 000.*

National Research Foundation – Innovation Postdoctoral Scholarship (2023-2025). Reference number: PSTD220324610. *R255 000.*

Rufford Small Grants – awarded after applying for funding for postdoc research costs (2021-2023).

R120 000.

Nelson Mandela University Postdoctoral Award – awarded after submitting a research proposal (2021-2023). *R204 000.*

Stellenbosch University Research Consolidoc – awarded after PhD to assist high-research output scholars to write scientific papers full-time (2020). *R60 000.*

Stellenbosch University Merit Bursary – awarded after receiving a Master of Science *cum laude*. (2016-2017). *R20 000.*

National Research Foundation – Scarce skills Doctorate Scholarship (2016-2018). Reference number: SFH150723130214. *R360 000.*

National Research Foundation – Innovation Masters Scholarship (2015). Reference number: SFH13090332614. *R80 000.*

National Research Foundation – Scarce skills Masters Scholarship (2014). Reference number: SFH150723130214. *R 70 000.*

Isaac Greenberg - Prospective first-year students with an exceptionally high level of scholastic achievement (2010-2012).

PUBLICATIONS

Geldenhuys, C. J., Moll, E. & **Swart, R. C.** (2026). Evergreen forests in South Africa – their composition, biogeography, ecological dynamics and sustainable use management. *South African Journal of Botany*. https://doi.org/10.1016/j.sajb.2025.11.018

Van Bergen, G., Coetzee, A., Venter, J. A., Roets, F. & **Swart, R. C.** (2025). Dung and carrion beetle diversity in small forest patches versus large continuous forest in the southern Cape, South Africa. *African Zoology*. https://doi.org/10.1080/15627020.2025.2543237

Swart, R. C., Bradley, S., & Staude, H. (2024). A first ecological description of the lichen-clad larva of *Eublemmistis chlorozonea* Hampson, 1902 (Lepidoptera: Erebidae) from a southern Afrotemperate forest. *Metamorphosis.*

Swart, R. C., New, T. R., Kotze, J., & Samways, M. J. (2024) (*book chapter*). Insect conservation in boreal and temperate forests. *Routledge Handbook of Insect Conservation.* https://doi.org/10.4324/9781003285793

Swart, R. C., Geerts, S., Pryke, J. P., & Coetzee, A. (2024). Generalist southern African temperate forest canopy tree species have distinct pollinator communities partially predicted by floral traits. *Austral Ecology.* https://doi.org/10.1111/aec.13523

Swart, R. C., Geerts, S., Geldenhuys, C. J., Pauw, J. & Coetzee, A. (2023). Weak latitudinal trends in reproductive traits of Afromontane forest trees. *Annals of Botany, mcad080.*

Swart, R. C., Samways, M. J., & Roets, F. (2022). Interspecific green leaf-litter selection by ground detritivore arthropods indicates generalist over specialist detritivore communities. *Applied Soil Ecology, 174.*

Swart, R. C., Samways, M. J., & Roets, F. (2021). Latitude, paleo-history and forest size matter for Afromontane canopy beetle diversity in a world context. *Biodiversity and Conservation, 30, 659-*

672.

Swart, R. C., Samways, M. J., & Roets, F. (2020). Tree canopy arthropods have idiosyncratic responses to plant ecophysiological traits in a warm, temperate forest complex. *Scientific Reports, 10, 19905.*

Swart, R. C., Samways, M. J., Pryke, J. S., & Roets, F. (2020). Overhead tree canopy species has limited effect on leaf litter decomposition and decomposer communities in a floristically diverse, southern temperate rainforest. *Applied Soil Ecology, 156.*

Swart, R. C., Samways, M. J., Pryke, J. S., & Roets, F. (2020). Individual tree context and contrast dictate tree physiological features and arthropod biodiversity patterns across multiple trophic levels. *Ecological Entomology,* 45, 333-344.

Swart, R. C., Pryke, J. S., & Roets, F. (2019). The intermediate disturbance hypothesis explains arthropod beta-diversity responses to roads that cut through natural forests. *Biological Conservation, 236,* 243-251.

Steed, A., **Swart, R. C.**, Pauw, M. J., & Roets, F. (2018). Response of arthropod communities to plant-community rehabilitation efforts after strip mining on the semi-arid west coast of South Africa. *African Journal of Range & Forage Science, 35,* 375-385.

Swart, R. C., Pryke, J. S., & Roets, F. (2018). Arthropod assemblages deep in natural forests show different responses to surrounding land use. *Biodiversity and Conservation, 27,* 583-606.

Swart, R. C., Pryke, J. S., & Roets, F. (2017). Optimising the sampling of foliage arthropods from scrubland vegetation for biodiversity studies. *African Entomology, 25,* 164-174.

REPORTS / MODULES WRITTEN

Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement – Development of an unlawful dam within a watercourse on No. 232, Portion 17 of the Farm Redford, The Crags, Bitou Municipal Area. October 2025.

Forest Ecology and Entomology. Module written as a Learning Course through NVT and Nelson Mandela University. October 2025.

Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report – Proposed residential development on Erf 3495, Paapekuilfontein, Struisbaai. August 2025.

Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report – Proposed development of the Khoisan Bay Residential Development on Portion 2 of Farm Strandfontein 712, Gansbaai. October 2024.

Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report – Proposed development of an eco-estate / beach resort on Portion 36 of Farm Franche Kraal 708, Overberg. September 2024.

Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement – Proposed infrastructure upgrade and expansion of the tourist accommodation facilities on Rusty Gate Mountain Retreat, Farms 824, Rem Farm 826 and Farm 887, in die Caledon District. July 2024.

Implementation plan to rehabilitate the edge on Idille Farm (Erf 387). Detailed implementation strategy to restore a transformed indigenous forest edge back to a natural state on a farm along the seven passes road, Wilderness. April 2023.

Portland Rehabilitation Strategy. Detailed implementation strategy to rehabilitate 600 hectares of alien invaded farmland back to fynbos and forest, including the design and costs of an indigenous nursery, the benefit of indigenous vegetation on macadamia seed set and the novel design of an indigenous windbreak for macadamia orchards. August 2022.

Eland Ecology and Management. Report written for farm owners of Oude Bethlehem to give advice and management strategies for dealing with unchecked eland numbers. May 2018.

Oude Bethlehem Rehabilitation Implementation Plan. Detailed implementation strategy with dates, costs and man hours to eradicate alien invasive species on farm including regular monitoring strategies. March 2017.

Veld Rehabilitation Plan for Oude Bethlehem farm. Detailed report written for farm owners including information about vegetation history of farm, current state of invasion and alien management strategies to be implemented for Afromontane forest and fynbos rehabilitation. January 2017.

Edge effects in the Knysna Forest. Short description of my research on edge effects written for the South African National Survey of Arachnida newsletter. October 2015.

STUDENT SUPERVISION

Rachel Cox (BSc honours) 2026-present: "A first mapping and pollination study of the rare, endemic tree *Strelitzia alba*"

Sarah Steele (BSc honours) 2026-present: "Effect of conspecific plant density on the abundance of a seed feeding moth". Status: ongoing.

Graham van Bergen (MSc) 2024-present: "Impact of flora, season and adjacent biome on anthophilous insects within the southern Cape fynbos". Status: ongoing.

Anneke Elliott (MSc) 2022-2024: "Investigation of the sudden dieback of *Gymnosphaera capensis* (forest tree fern) in southern Afrotemperate forests". Status: completed, *cum laude*.

Lizo Yezani (BSc honours) 2024: "Crown zone influence of veteran, emergent trees (*Afrocarpus falcatus*) on southern Afrotemperate forest tree communities". Status: completed.

Claude Lionel Schippers (BSc honours) 2023: "The effect of forest patch size and isolation on pollinator insect diversity". Status: completed.

Graham van Bergen (BSc honours) 2023: "Dung and carrion beetle diversity in relation to forest size and isolation". Status: completed.

LECTURING EXPERIENCE

Forest Ecology and Conservation Biology (subject), Swedish University of Agricultural Sciences – presented a lecture titled "South African forest types, conservation and management".

October 2025.

Forest Ecology and Conservation Biology (subject), Swedish University of Agricultural Sciences – presented a lecture on southern Afrotemperate forest biodiversity and landscape context. September 2025.

Forest Restoration Research Group, Swedish University of Agricultural Sciences – presented a lecture on insect seed predation of indigenous forest trees in South Africa. October 2024.

Forest Ecology and Conservation Biology (subject), Swedish University of Agricultural Sciences – presented a lecture to third year students covering indigenous forest conservation in South Africa. September 2024.

Department of Wildlife, Fish and Environmental Studies, Swedish University of Agricultural Sciences – presented a four-day, four lecture seminar series "Southern Afrotemperate forest ecology" for the department as a visiting lecturer funded by Erasmus+ on the topics of indigenous tree pollination, insect diversity and distribution in the southern Cape forests, landscape ecology and fire effects on forest distribution and a history of forest utilisation and current management. September - October 2024.

Animal Studies (subject), Nelson Mandela University – lecturing invertebrate and vertebrate ecology for first year students at the Department of Natural Resource Management, including slide preparation, setting up assignments and tests, organising practicals and field excursions, planning semester activities and marking assignments and exams. January – December 2022; January – June 2024.

Conservation and Marine Sciences, Cape Peninsula University of Technology – presented a self-written module "Afrotemperate forest ecology and management" for 4th year resource management students over a whole day, including designing and marking an assignment on forest and fynbos rehabilitation. January 2024.

Seminar Series for Biological Sciences, University of Cape Town – presented the talk "Generalist forest canopy tree species have distinct pollinator communities partially predicted by floral traits" during a seminar series. October 2023.

School of Natural Resource Management, Nelson Mandela University – presented a self-written elective titled "Indigenous Forest Rehabilitation" at George Campus for honours level nature conservation students, including the design and marking of an assignment. August 2023.

School of Natural Resource Management, Nelson Mandela University – presented a lecture titled "Identifying Afrotemperate forest trees" at George Campus for second year nature conservation students. May 2023.

Conservation and Marine Sciences, Cape Peninsula University of Technology – presented a self-written module "Afrotemperate forest ecology and management" for 4th year resource management students, including designing and marking an assignment on forest and fynbos rehabilitation. January 2022.

School of Natural Resource Management, Nelson Mandela University – presented a lecture titled "Insect Diversity Conservation" as an online lecture for 4th year nature conservation students. June 2021.

School of Natural Resource Management, Nelson Mandela University – presented a self-written lecture titled "Indigenous Forest Ecology" at George Campus for 4th year nature conservation students. May 2021.

Institute for Plant Science and Microbiology, Hamburg University – presented the talk "A glimpse into southern Afrotemperate forest canopies" at the Department of Biology, Hamburg University. July 2018.

Biogeography and Landscape Ecology Research Group, Hamburg University – presented the talk "Driving factors behind tree-arthropod interactions" at the Department of Geography, Hamburg University. July 2018.

CONFERENCE PRESENTATIONS

Garden Route Interface and Networking Meeting (GRIN) – presented a talk "Southern Cape forest fragments might need a natural fynbos matrix to uphold its pollinator diversity" at Villa Castolini, Knysna. October 2025.

Thirty Eighth meeting of the Scandinavian Association for Pollination Ecology – presented the talk "Insect pollinator diversity in relation to vertical strata and species of tree in southern African temperate forests" at Lofthus, Norway. October 2024.

Eighth Frugivore and Seed Dispersal Symposium – presented the talk "Insect pre-dispersal seed predation in a southern African temperate forest" at Ilhéus, Brazil. August 2024.

Twelfth International Pollination Symposium – presented the talk "Generalist forest canopy tree species have distinct pollinator communities partially predicted by floral traits" at Kirstenbosch Botanical Gardens. October 2023. Won best presentation award.

Entomological Society of Southern Africa – presented the talk "Generalist forest canopy tree species have distinct pollinator communities partially predicted by floral traits" at Stellenbosch University. July 2023.

Garden Route Interface and Networking Meeting (GRIN) – presented a talk "Pollinator corridors across the southern Cape" at Lake Pine Marina, Sedgefield. October 2022.

Fynbos Forum – presented the talk "Beetle diversity in southern Afrotemperate forest canopies – a global perspective" at the 43rd annual Fynbos Forum, held online. August 2021.

Fynbos Forum - presented the talk "Southern Afrotemperate forest canopies: a new frontier" at the 41st annual Fynbos Forum, Baardskeerdersbos. August 2019.

Entomological Society of Southern Africa – presented the talk "The effects of commercial forestry plantations and roads on southern Afrotemperate forest arthropod diversity" at Rhodes University. July 2015.

PUBLIC / OUTREACH TALKS

Kurland arbour week – planted indigenous trees working with school children to green the village. September 2025.

Chris Nissen Primary – presented a talk to the learners during arbour week highlighting the importance of planting indigenous trees for biodiversity conservation, followed by tree planting. September 2023.

Pacaltsdorp Primêre Skool – presented a talk to the learners during arbour week highlighting the

importance of planting indigenous trees for biodiversity conservation, followed by tree planting. September 2023.

Outeniqua Naturalist Club – presented a talk "Pollinator diversity in Knysna Forest tree canopies" at Belvidere Manor. July 2023.

Wildlife and Environment Society of South Africa (WESSA) – presented a talk "Pollinator diversity in Knysna Forest tree canopies" at the George Botanical Gardens. April 2023.

Constantia Kloof Conservancy – presented a talk "Pollinator corridors across the southern Cape" at St Aidan's Chapel, Wilderness. March 2023.

Postgraduate Student Meeting – presented a talk "Day and night-time visitors to Afrotemperate forest trees and why it is important" at Gourikwa Nature Reserve. January 2023.

Touw River Conservancy – presented a talk "Creating pollinator corridors across the southern Cape through multiple stakeholder input" at Fairy Knowe Hotel, Wilderness. September 2022.

Dendrological Society of South Africa – presented a talk "Southern Afrotemperate Forest Tree Pollination" at the George Botanical Gardens. July 2022.

Postgraduate Research Day – presented the talk "Novel frontiers in southern Afrotemperate forest canopies" online hosted by the Nelson Mandela University, George Campus. May 2021.

Scientific Services, SANParks – presented the talk "Southern Afrotemperate forest canopies: a new frontier" at the Garden Route Scientific Services, Knysna. January 2019.

Conservation Ecology Research Day – presented the talk "Southern Afrotemperate forest canopies: a new frontier" at Stellenbosch University. May 2019. Won best presentation award.

Oude Bethlehem Farm, Banhoek Valley - biodiversity information session presented to farm workers and owners giving feedback and progress on rehabilitation efforts. December 2018.

Brackenfell Nature Reserve – presented a talk "Planting indigenous trees helps conserve local insect diversity" to the friends of Brackenfell Nature Reserve, using my research to show the value of planting indigenous trees to conserve local insect diversity. May 2018.

Kirstenbosch Career Day – represented the Department of Conservation Ecology and Entomology, Stellenbosch University, by presenting my research to school pupils. February 2018.

Oude Bethlehem Farm, Banhoek Valley - biodiversity information session presented to farm workers concerning environmental education and –rehabilitation techniques. October 2017.

SCIENTIFIC PAPER REVIEWS

- For African Entomology, Entomological Society of Southern Africa, April 2024.
- For the journal Biodiversity, Taylor & Francis, January 2024.
- For the Journal of Biogeography, Wiley Online, January 2024.
- For the journal Acta Oecologia, Elsevier, October 2023.
- For the South African Journal of Botany, Elsevier, July 2022.
- For the journal Biodiversity, Taylor & Francis, April 2022.

- For the journal Scientific Reports, Nature, January 2022.
- For the journal Scientific Reports, Nature, December 2021.
- For the journal Agricultural and Forest Entomology, Wiley Online, May 2021.
- For the journal Agricultural and Forest Entomology, Wiley Online, January 2021.
- For the journal Biodiversity, Taylor & Francis, May 2020.
- For Biodiversitas Journal of Biological Diversity, January 2020.
- For the journal Biodiversity, Taylor & Francis, November 2019.
- For the journal Biodiversity, Taylor & Francis, August 2019.

SOCIETIES AND MEMBERSHIPS

- Registered Professional Scientist with the South African Council for Natural Scientific Professions (SACNASP 137513)
- Member of the Dendrological Society of South Africa (Outeniqua branch)
- Member of George Municipality Tree Planting Advisory Committee
- Member of the Entomological Society of Southern Africa

COMPUTER SKILLS

- R (Advanced – LMs, GLMs, GLMMs, Bipartite, Boral, model selection, multivariate analyses)
- Excel (Advanced)
- PRIMER
- QGIS

REFERENCES

- Prof. F Roets – Professor in Ecology – University of Stellenbosch — fr@sun.ac.za
- Prof. MJ Samways – Distinguished Professor in Entomology and Ecology - University of Stellenbosch — samways@sun.ac.za
- Dr. A Coetzee – Lecturer – Nelson Mandela University — anina.coetzee@mandela.ac.za
- Dr. CJ Geldenhuys – Extraordinary Professor in Plant Science - University of Pretoria — cgelden@mweb.co.za