Wildlife Conservation Decision Support

Terrestrial Animal Site Sensitivity Verification Report and Species Specialist Assessment Report

Proposed development of Residential Erf 1486, Vermont, Hermanus

Prepared for: LORNAY ENVIRONMENTAL CONSULTING

August 2024

Prepared by: Jan A Venter

Terrestrial Animal Site Sensitivity Verification Report and Species Specialist Assessment Report - Proposed development of Residential Erf 1486, Vermont, Hermanus

Prepared for: Me Michelle Naylor
LORNAY ENVIRONMENTAL CONSULTING
Hemel & Aarde Wine Village – Unit 3A
PO Box 1990, Hermanus, 7200, South Africa

Date: August 2024

Prepared by: **Prof Jan A Venter**
Wildlife Conservation Decision Support
Professional Natural Scientist SACNASP Reg nr 400111/14
JanVenter@mandela.ac.za
Cell: +27 82 4161 096
8 Steve Landman Crescent, Loeriepark, George, 6529, Western Cape, ZA.
Wildlife Conservation Ecologist with >27 years' experience in the sector (CV provided in Appendix 2)

Assisted by: Natasha Venter

Recommended citation:
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.

Photos by: © Jan A Venter

Copyright text: © Jan A Venter

Declaration of independence

- I consider myself bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP);
- At the time of conducting the study and compiling this report, I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done 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;
- I declare that no circumstances may compromise my objectivity in performing this specialist investigation. I do not necessarily object to or endorse any proposed developments but aim to present facts, findings and recommendations based on relevant professional experience and scientific data;
- I do not have any influence over decisions made by the governing authorities;
- I 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;
- I 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.

_____ 25 August 2024

Signature Date

Contents

Introduction

This is a Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement for the proposed residential development of Erf 1486, Vermont, Hermanus (Figure 1). The Department of Forestry, Fisheries and the Environment (DFFE) screening report (performed in April 2023) identified the site as having a 'High' Animal Species Theme sensitivity Naylor (2024)(Figure 2). A high sensitivity requires 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 Statement or Report, as per the protocol set out by the DFFE (2020) reports on a site visit to the area that will potentially be impacted by the development. During the site visit the presence or possible presence of the Species of Conservation Concern (SCC) as identified by the screening tool was determined. Animal species of concern (*n=8*) that was identified by the screening tool are listed in Table 1.

Figure 1: The cadastral boundary of the property (outlined in green) investigated during the site visit.

Table 1: Animal species of concern identified by the screening report (Naylor 2024).

Sensitivity	Species name	Common name	Order	Red List Status
High	*Circus maurus*	Black Harrier	Avis	EN
High	*Circus ranivorus*	African marsh harrier	Avis	EN
High	*Polemaetus bellicosus*	Martial Eagle	Avis	EN
High	*Neotis denhami*	Denham's Bustard	Avis	VU
High	*Turnix hottentottus*	Hottentot Buttonquail	Avis	EN
Medium	*Sarothrura affinis*	Striped Flufftail	Avis	VU
Medium	*Bitis armata*	Southern Adder	Reptile	VU
Medium	*Aneuryphymus montanus*	Yellow winged agile grasshopper	Invertebrate	VU

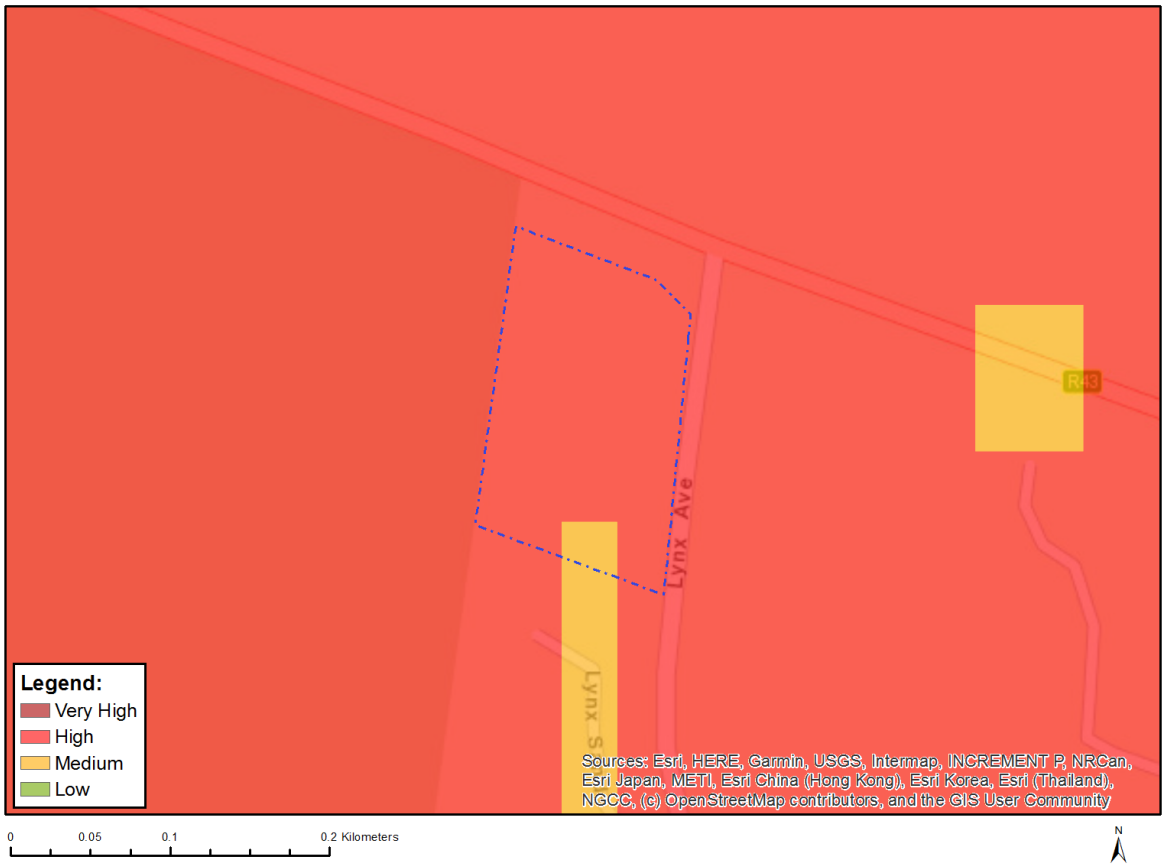


Figure 2: Map of the relative animal species theme sensitivity as per (Naylor 2024)

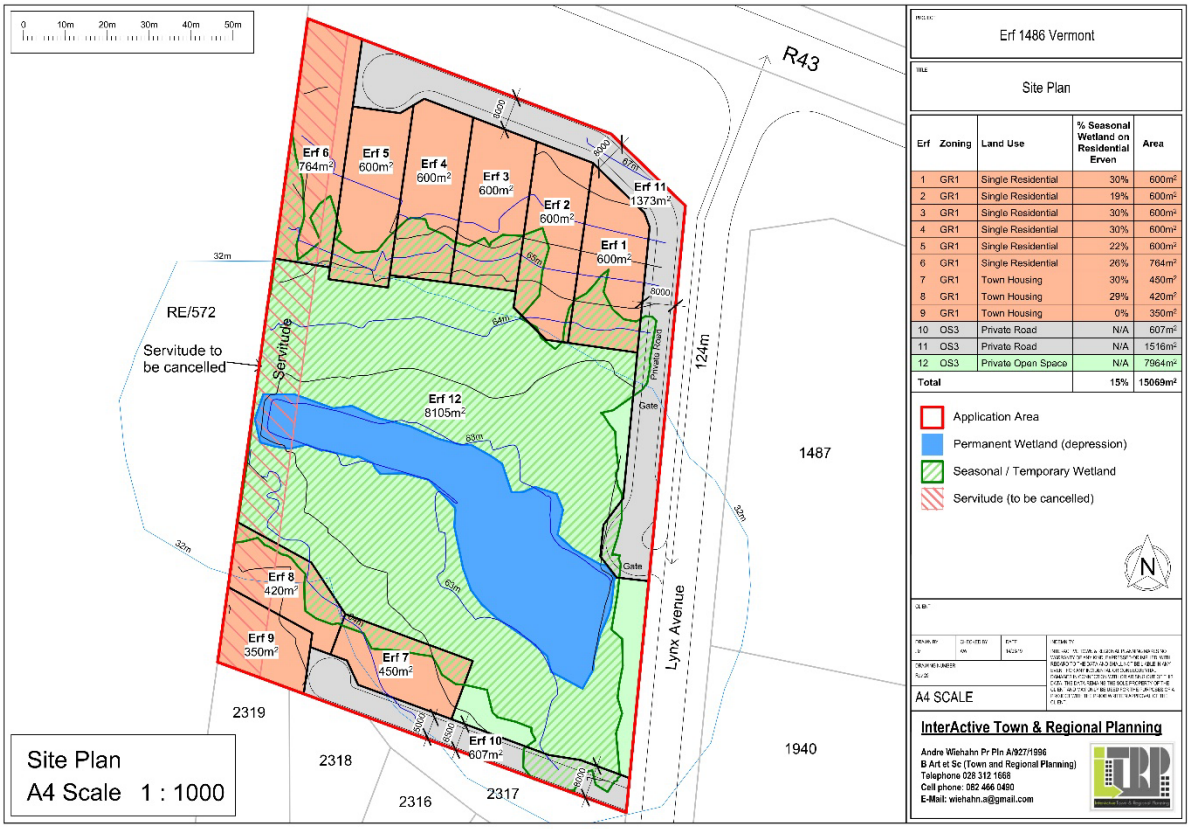
This report follows the legislative requirements set out by sections 25(5)(a) and (h) and 44 of the National Environmental Management Act 107 of 1998 and specifically the regulations listed in the Government Gazette Notice No. 1150, Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial animal species, October 2020 as amended in Gazette Notice No. 3717, July 2023.

Study Area

Erf 1486, is situated at the corner of the R43 and Lynx Road, Vermont ±9 km west of the centre of Hermanus, in the Western Cape Province (E 19°08'52"; S 34°24'24")(Figure 1). The proposed subdivision of the property intents to create approximately 9 single residential erven, transport zones and open space, within the built-up urban area of Vermont, Hermanus. The main activities expected during the construction phase include: i) Clearance of vegetation within the proposed development areas; ii) Permanent wetland zone will remain as no go area during the construction phase; and iii) infilling of the seasonal/temporal areas for development of housing (Figure 3). The proposed development plan emerged after a series of iterations considering ecological constraints, particularly sensitive aquatic and terrestrial biodiversity onsite, see (Helme 2023, Van Zyl et al. 2023)(Appendix 1). Adjustments to the layout were made to steer clear of encroaching on the wetland, a highly ecologically sensitive area. These changes, informed by input from the botanical specialist, led to the adoption of

Alternative 4, which aim is to minimize environmental impact compared to previous alternatives (Appendix 1).

The study area is bordered to the west by the Hoek van der Berg Private Nature Reserve, to the south-east by a wetland system (on the other side of Lynx Road) eventually flowing to the Vermont salt pan (700 m away).



Erf	Zoning	Land Use	% Seasonal Wetland on Residential Erven	Area
1	GR1	Single Residential	30%	600m²
2	GR1	Single Residential	19%	600m²
3	GR1	Single Residential	30%	600m²
4	GR1	Single Residential	30%	600m²
5	GR1	Single Residential	22%	600m²
6	GR1	Single Residential	26%	764m²
7	GR1	Town Housing	30%	450m²
8	GR1	Town Housing	29%	420m²
9	GR1	Town Housing	0%	350m²
10	OS3	Private Road	N/A	607m²
11	OS3	Private Road	N/A	1516m²
12	OS3	Private Open Space	N/A	7964m²
Total			15%	15069m²

Figure 3: The current development footprint for the proposed subdivision of the property intents to create approximately 9 single residential erven, transport zones and open space, within the built-up urban area of Vermont, Hermanus.

Methods

The Government Gazette Notice 320 (Government Gazette 43110, 20 March 2020), and amended in Government Gazette Notice 3717 (Government Gazette 49028, 28 July 2023) provides a prescribed protocol for conducting a Terrestrial Animal Site Sensitivity Verification and Specialist Assessment report. We followed the SANBI (2020) species environmental assessment guidelines during the assessment.

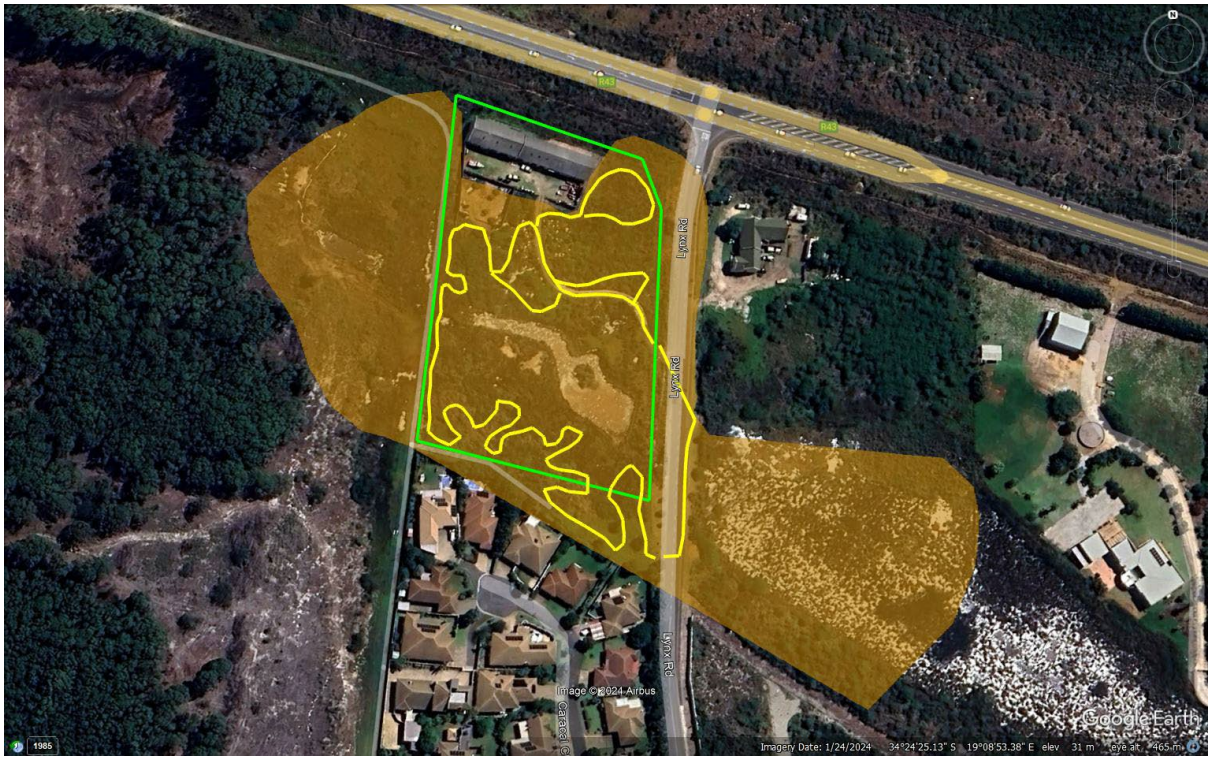


Figure 4: A map indicating the areas within the property visited during the site visit. Yellow lines indicate routes walked and the orange polygon the area which were visible to the observer and were exposed to call ups.

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
- The field site visit that took place on the 10th of August 2024 from 8h00 to 13h00.

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 visual and acoustic surveys performed at and between the various proposed development sites. As it is a small property, we covered most of it during our search (Figure 4). We used territorial call playbacks to determine the presence of striped flufftail. 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 vegetation (indigenous and planted) 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 visit. The morning, we surveyed it was cold and windy which was not conducive for bird and reptile detection.

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 2020):

$$SEI = BI + RR$$

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 2020)(Tabe 2): *"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."*

Table 2: Conservation importance (CI) criteria (SANBI 2020)

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.

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 2020)(Table 3): *"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: Functional Integrity (FI) criteria (SANBI 2020)

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 2020)(Table 4): *"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 4: Resilience criteria (SANBI 2020)

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.

Table 4 continued.	
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 2020)(Table 5).

Table 5: Interpreting SEI in the context of the proposed development activities (SANBI 2020)

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

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

A site visit was performed on the 10th of August 2024, between 8h00 and 12h00. Conditions were cold with a strong breeze. These conditions are in general limiting for observation of birds, mammals, and reptiles.

Project area of influence (PAOI)

The development property is small (±150 x 100 m). The PAOI was set at 100 m from the actual development footprints within the property based on recommended buffers for herpetofauna SCC (SANBI 2020)(Figure 5). We choose a herpetofauna buffer size due to the presence and most prominent localized impact being on a dwarf chameleon species. Buildings and main

roads were excluded from this buffer is we thought it serves as a major barrier for animal movement.

Figure 5: The project area of influence was set at a buffer of 100 m (orange line) from the development footprint. Buildings and main roads were excluded from the buffers.

Habitat description

After screening the development site using Google Earth images and on-site verification, we were able to do intensive searches that covered most of the development area excluding the building and the deep-water areas of the wetland.

Habitat characteristics

A natural unchanneled valley-bottom wetland originates in the property (Figure 6) and feeds a wetland system and Vermont pan (Figure 7) which is situated to the south-east (Van Zyl et al. 2023). At the time of the survey there was a significant amount of water flowing from the Hoek van der Berg Private Nature Reserve indicating wetland connectivity between the reserve and Vermont salt pan (Figure 8).

Figure 6: The natural unchanneled valley-bottom wetland originates in the property.

The original natural vegetation in the study area is the 'Critically Endangered' Hangklip Sand Fynbos as confirmed by Helme (2023). The vegetation is considered senescent as it seemed not to have been exposed to fire for a decent amount of time (Helme 2023). The previously disturbed areas are the building area; the northeastern edge of the main wetland; and the southern boundary (Helme 2023).

Figure 7: The wetland system that leads to the Vermont salt pan that is situated to the south-east of the property. The wetland in the property is connected with pipes underneath Lynx road to this wetland system.

Figure 8: At the time of the survey there was a significant amount of water flowing from the Hoek van der Berg Private Nature Reserve indicating wetland connectivity between the reserve and wetlands leading to the Vermont salt pan.

A large proportion of the disturbed areas are dominated by alien invasive kikuyu grass (*Cenchrus clandestinus*) (Figure 9). The southwestern edge of the erf has been gardened (Figure 9). Alien invasive plants are present on site, but occur at a low density (Helme 2023).

Figure 9: A large proportion of the disturbed areas are dominated by alien invasive kikuyu grass (Cenchrus clandestinus).

We observed (visually, acoustic, tracks and signs) the following animal species at this location during the site visit (Table 6).

Table 6: Animal species observed at Erf. 1486, Vermont during the site visit

Group	Species	Notes	Status
Birds:	Cape spurfowl, *Pternistis capenis*	In short grass next to fence, nature reserve	Least Concern
	Yellow billed duck, *Anas undulata*	In wetland	Least Concern
	Egyptian goose, *Alopchen aegyptiaca*	Flying	Least Concern
	Hadeda ibis, *Bostrychia hagedash*	Flying	Least Concern
	Cape turtle dove, *Streptopelia capicola*	On site	Least Concern
	Cape weaver, *Ploceus capensis*	On site (birds & nests observed)	Least Concern
Amphibians:	Southern caco, *Cacosternum australis*	Calling on site	Least Concern
	Clicking stream frog, Strongylopus grayii	Calling on site	Least Concern
	Cape river frog, *Amietia fuscigula*	Observed	Least Concern
Mammals:	Four Striped field mouse *Rhabdomys pumilio*	Observed	Least concern
	Bush vlei rat, *Otomys, unisulcatus*	Nests and latrine observed	Least Concern
	Cape porcupine, *Hystrix africaeastralis*	Scat observed	Least concern
	Cape genet, *Genetta tigrina*	Scat observed	Least concern
	Cape dune mole-rat, *Bathyergus suillus*	Fossorial activity	Least concern

The desktop study produced a few other notable species that have been observed on site or nearby (Table 7).

Table 7: Other notable animal species likely to occur at or near Erf. 1486, Vermont based on the desktop survey.

Group	Species	Notes	Status
Birds:	Black Harrier, *Circus maurus*	iNaturalist, GBIF	**Endangered**
	African marsh harrier, *Circus ranivorus*	iNaturalist, GBIF	**Endangered**
	Martial eagle, *Polemaetus bellicosus*	iNaturalsit, GBIF	**Endangered**
Reptiles:	Cape dwarf chameleon, *Bradypodion pumilum*	iNaturalist, GBIF immediate area	**Near threatened**

Animal species of concern

A total of eight animal species of concern was identified by the screening tool (Naylor 2024)(Table 2). One additional SCC was identified during the desk top study. The following section deals with the site's potential importance for these species, the probability of them being present in habitats in the development area, and the risk the proposed development will introduce to the species.

Connectivity for animal species

The conservation planning map of the Western Cape Biodiversity Plan (Pool-Stanvliet et al. 2017) indicates the presence of a ESA2 (Ecological Support Area), linking the Hoek van de Berg Private Nature Reserve to the west with the Vermont Salt Pan to the east, and is part of the primary water source for that pan, see (Helme 2023) and (Van Zyl et al. 2023)(Figure 9).

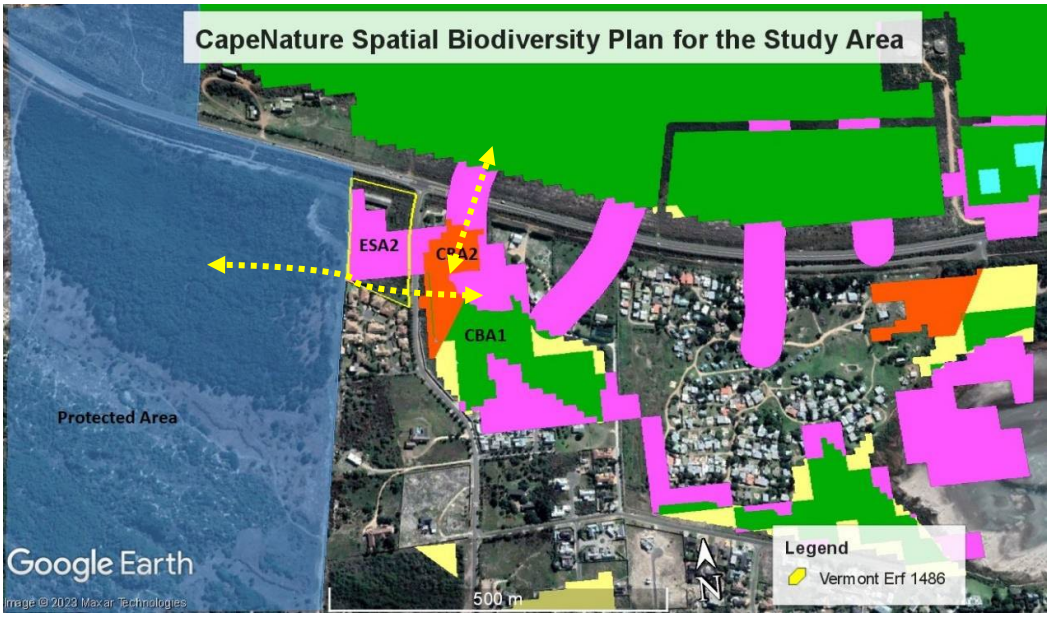


Figure 10: The conservation planning map of the Western Cape Biodiversity Plan (Pool-Stanvliet et al. 2017) indicates the presence of a ESA2 (Ecological Support Area)(yellow dotted arrows), linking the Hoek van de Berg Private Nature Reserve to the west with the Vermont Salt Pan to the east.

From a faunal connectivity perspective, the presence of an ecological corridor facilitating movement of ground-dwelling species between the nature reserves and wetlands is important and essential. The provision of the 'private open space' in the current development plan is therefore desirable (Figure 3). The development footprint does still infringe on the ESA2 corridor by a slight infringement or the footprint of the residential erven as well a slightly more prominent infringement of the access road (although infringements are significantly less than per original design, see Appendix 1). From a faunal connectivity perspective, we therefore consider the proposed development risk as **'medium'** (Table 8).

Table 8: Evaluation of site ecological importance (SEI) in terms of connectivity (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). 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.

Black harrier *Circus maurus*

Black Harrier *Circus maurus* is a rare endangered, southern African endemic that may have lost more than 50% of its breeding habitat as a result of extensive land transformation by agriculture, invasive alien vegetation and urbanization in the Fynbos biome (Curtis et al. 2004, Taylor 2015a). The species' typical breeding habitat is Fynbos, particularly Strandveld and Mountain Fynbos. In fragmented Renosterveld habitat it is only found in high-quality, larger sized patches (Curtis et al. 2004). Foraging habitat includes montane areas, lower altitude Karoo scrub, semi-desert, floodplains and croplands (Curtis et al. 2004). Small mammals and birds (especially quail) are their main diet preference (Curtis et al. 2004). Both GBIF and iNaturalist data sets indicates sufficient records of this species in the general region of the property. There is therefore a reasonable likelihood that the species would frequent the property for foraging purposes. We did not observe the species during our field visit. The small footprint of the proposed development and provision of 'private open space' does facilitate adequate forage habitat for black harriers. The species range widely, and the minor loss of forage habitat would therefore not have a significant influence on the species. The development site also does not significantly influence potential breeding sites or their prey species. The Black harrier *Circus maurus,* will therefore not likely be significantly impacted by the proposed development and potential impact are therefore classified as **'low'** (Table 9).

Table 9: Evaluation of site ecological importance (SEI) in terms of Black harrier Circus maurus forage habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). 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*

This species occurs along large water bodies and adjacent open vegetation (Simmons 2005). The species is classified as Endangered in South Africa (Taylor 2015b), with habitat loss and degradation being the most significant threat to the continued survival of this species. Both GBIF and iNaturalist data sets sufficient records of this species close to and in the general region of the property. There is therefore a reasonable likelihood that the species would frequent the property for foraging purposes. We did not observe the species during our field visit. The small footprint of the proposed development and provision of 'private open space' does facilitate adequate forage habitat for marsh harriers. The species range widely, and the minor loss of forage habitat would therefore not have a significant influence on the species. The development site also does not significantly influence potential breeding sites or their prey species. The African marsh harrier *Circus ranivorus,* will therefore not likely be significantly impacted by the proposed development and potential impact are therefore classified as **'low'** (Table 10).

Table 10: Evaluation of site ecological importance (SEI) in terms of African marsh harrier Circus ranivorus forage habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). 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.

Martial eagle *Polemaetus bellicosus*

The Martial Eagle is found throughout sub-Saharan Africa (Amar and Cloete 2018). The species is an African endemic which is thought to be declining and was recently uplisted to globally Vulnerable, although data on population trends are almost entirely lacking (Amar and Cloete 2018). In South Africa the species is listed as 'Endangered'(Taylor 2015d). Their prey consist out of small mammals such as hares, mongoose, genet and ground squirrels (Boshoff et al. 1990). These birds will occupy most habitats provided there are adequate tall trees or pylons for nesting and perching (Machange et al. 2005). There are a few iNaturalsit and GBIF records for the species in the general area. We did not observe the species during our field visit. We do not think that the property provides good habitat for the martial eagle's preferred prey species. The species range widely, and the minor loss of marginal forage habitat would therefore not have a significant influence on the species. The development site also does not influence potential breeding sites or their prey species. The Martial eagle *Polemaetus bellicosus,* will therefore not likely be significantly impacted by the proposed development and potential impact are therefore classified as **'low'** (Table 11).

Table 11: Evaluation of site ecological importance (SEI) in terms of Martial eagle Polemaetus bellicosus forage habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). 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.

Denham's bustard *Neotis denhami*

Denham's bustard occurs in natural vegetation (fynbos and grasslands), pastures and agricultural fields (Allan 2005). The species is classified as 'Vulnerable'(Taylor 2015c), mainly due to powerline collisions (Shaw et al. 2010), habitat conversion to intensive monoculture fields, and overgrazing of grassland habitats. Most iNaturalist and GBIF records indicates several records to the east of the property but more in the open plain areas of the Overberg where they frequent the more open agricultural fields. We did not observe the species during our field visit. The habitat in the development site is not suitable for the species. The impact of the development on Denham's bustard, *Neotis denhami*, by the proposed development is therefore considered to be **'very low'**.

Hottentot Buttonquail *Turnix hottentottus*

The Hottentot Buttonquail *Turnix hottentotus* is an endangered terrestrial turnicid which is endemic to the Fynbos biome (Lee et al. 2018). Inappropriate burning frequencies and rapid urban development and agricultural expansion in lowland areas are the main threats to this species (Peacock 2015). This species avoids older vegetation (age since fire) and dense grass (or other vegetation) cover (Lee et al. 2018). The species preference for sparse drier vegetation

has also been recorded by Lee (2013). There are iNaturalist and GBIF records in the vicinity but not in similar habitat types comparable to the development site. We did not observe the species during our field visit. The dense wetland vegetation that are found in the development site constitutes unsuitable habitat for this species. The likelihood that this species would occur at the site is therefore considered low. The impact of the development on Hottentot Buttonquail *Turnix hottentotus*, by the proposed development will therefore likely be **'very low'**.

Stiped flufftail *Sarothrura affinis*

The South African population of Striped Flufftail *Sarothrura affinis* is suspected to be undergoing a decline as a result of habitat loss (Peacock et al. 2015). More than 10% of the regional population may have been lost because throughout its fragmented range, suitable grassland habitat is under severe threat from unsuitable burning regimes, heavy grazing, agriculture and afforestation (Peacock et al. 2015). In the Western Cape this species is often found in dense *Psoralea-Osmitopsis* Fynbos next to streams or near moist depressions (Graham and Ryan 1984, Kakebeeke 1993). There are a couple of records for this species on both the iNaturalist and GBIF databases with most of these are towards Kleinmond and Grabouw area about 20 km away. One GBIF record is closer to the property (within a 15 km radius) on the mountain slopes near the Klein river to the east. Stripe flufftails did not respond to our play-backs at the development site. High winds however could have hampered the effectiveness of call-ups during the site visit. We consider the habitat at this site to be marginally suitable for this species but also cannot rule out its occurrence with confidence. If they are present, it is likely that some of their habitat will be lost and the disturbance during construction phase will make them vacate the area temporarily. This would be possible because of the adjacent nature reserve and wetland system. The potential impact on Stiped flufftail *Sarothrura affinis* is classified as **'low'** (Tabe 12).

Table 12: Evaluation of site ecological importance (SEI) in terms of Stiped flufftail Sarothrura affinis habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). 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*

The Southern Adder *Bitis armata* is classified as 'Vulnerable' because of its severely fragmented distribution due to the reduction in the extent and quality of its habitat (Maritz and Turner 2023). This species has a small distribution in the southwest coastal margin of the Western Cape with three disjunct subpopulations, one from West Coast National park to just north of Cape Town, the second near Hermanus and the third near De Hoop Nature reserve (Maritz and Turner 2023). The species occurs mainly in coastal lowland Fynbos on sandy and rocky substrates (Phelps 2010). It is known to shelter under rock slabs between dense shrubs on coastal plains (Phelps 2010). iNaturalist and GBIF records for this species is concentrated between Stanford and Struisbaai to the 20 km to the east of this property. We did not observe the species during our field visit. The dense wetland vegetation and associated strata that are found in the development site constitutes unsuitable habitat for this species. The likelihood that this species would occur at the site is therefore considered very low. The impact of the development on Southern Adder *Bitis armata*, by the proposed development will therefore likely be **'very low'**.

Cape dwarf chameleon, *Bradypodion pumilum*

Although the Cape dwarf chameleon, *Bradypodion pumilum* are not listed as an SCC in the screening report we include it here because it is confirmed present in the immediate vicinity of the development site. The Cape dwarf chameleon is listed as 'Near threatened' due to its moderate sized distribution and the continued decline of quality and extent of habitat in their distribution range (Tolley 2023). The subpopulations in urban areas are fragmented and in decline (Tolley 2023). The species distribution range from the south-western pats of Cape Town to the Agulas plain (Tolley and Burger 2004). The species occurs in a variety of vegetation types including Fynbos, Forested Riparian Vegetation and some exotic and indigenous trees and shows some tolerance to peri-urban gardens and greenbelts (Tolley 2023). Several iNaturalist and GBIF records indicates the presence of the species directly adjacent and therefore likely within the development site. We did not observe the species during our field visit. We do consider the habitat (breeding and foraging) at this site to be highly suitable for this species. It is likely that some of their habitat will be lost permanently and the disturbance during construction phase will have a negative impact. The adjacent nature reserve and

wetland system do however provide adequate space for this species to escape and persist. This species would be a candidate for a search and rescue operation before construction work begins. The potential impact on Cape dwarf chameleon, *Bradypodion pumilum* is classified as **'medium'**(Table 13).

Table 13: Evaluation of site ecological importance (SEI) in terms of Cape dwarf chameleon, Bradypodion pumilum habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). 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.

Yellow-winged Agile Grasshopper *Aneuryphymus montanus*

This endemic grasshopper species occurs on Western and Eastern Cape mountains. It is listed as 'Vulnerable'. It has been recorded from near Clanwilliam eastwards towards East London, associated with different fynbos types occurring on south-facing, cool slopes (Brown 1960). Brown (1960) mentions the species being collected "amongst partly burnt stands of evergreen sclerophyll in rocky foothills". Sites where the species have been documented include Graafwater, close to Lambert's Bay, De Rust, Suurbraak, Bot River, Kogelberg and Joubertinia. The species seems to show preference for rocky, mountainous areas. Its estimated extent of occurrence is ca. 170 000 square kilometres. No specimens were seen during a field visit. The proposed development is classified as **'very low'** impact on *A. montanus*, due to an absence of species data from this area, no suitable habitat, no direct evidence of occurrence, the

limited size of the development relative to the surrounding vegetation and the species' regional occurrence, and the wide extent of occupancy of *A. montanus*.

Overall SEI for the PAOI

The overall SEI for the PAOI is considered '**Medium'** (Table 14):

Table 14: Evaluation of SEI of faunal habitats/processes in the PAOI for the proposed development. BI = biodiversity importance, RR = receptor resilience.

Habitat/Process	Conservation Importance	Functional Integrity	Receptor resilience	Site ecological importance
Connectivity for animal species (suitable safe habitat allowing free animal movement)	**Medium** ESA2 linking the Hoek van de Berg Private Nature Reserve to the west with the Vermont Salt Pan to the east	**Medium** Although the area is small the wetland connection is still functional and important	**Low** Decrease in ecological corridor size/width with potential impact on free animal movement	**Medium** BI=Medium RR=Low
Black harrier *Circus maurus* forage habitat	**Low** No breeding habitat present. Foraging habitat suitable but small	**Low** Small and fairly insignificant proportion of species larger foraging range	**Medium** Decrease in forage habitat size but low impact in terms of broader forage range	**Low** BI=Low RR=Medium
African marsh harrier *Circus ranivorus* forage habitat	**Low** No breeding habitat present. Foraging habitat suitable but small	**Low** Small and fairly insignificant proportion of species larger foraging range	**Medium** Decrease in forage habitat size but low impact in terms of broader forage range	**Low** BI=Low RR=Medium
Martial eagle *Polemaetus bellicosus* forage habitat	**Low** No breeding habitat present. Foraging habitat marginally suitable but small	**Low** Small and fairly insignificant proportion of species larger foraging range	**Medium** Decrease in forage habitat size but low impact in terms of broader forage range	**Low** BI=Low RR=Medium
Denham's bustard *Neotis denhami* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Stiped flufftail *Sarothrura affinis* habitat	**Low** Habitat marginally suitable and small. Likelihood of species presence low. Precautionary principle remains	**Medium** Small proportion of species larger foraging range.	**Medium** Decrease in forage habitat size but low impact in terms of broader forage range	**Low** BI=Low RR=Medium
Southern Adder *Bitis armata* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Cape dwarf chameleon, *Bradypodion pumilum* habitat	**Medium** Suitable habitat present for breeding and foraging. Species NT and large intact habitat in neighbouring PNR	**Medium** Small proportion of larger range. Property serves as ecological corridor for species	**Low** Decrease in ecological corridor size/width with potential impact on free animal movement	**Medium** BI=Medium RR=Low
Yellow-winged Agile Grasshopper *Aneuryphymus montanus* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**

Evaluation of development plan

The development plan for the property has gone through several iterations based on specialist input up to date, see (Appendix 1). Here follows an evaluation in terms of potential animal species impact considering Alternative 2 and preferred alternative 3 after botanical and wetland specialist input)(Table 15).

Table 15: Based on input from the botanical and wetland specialist the development footprint has significantly evolved to make provision for a 'private open space' facilitating a more functional corridor. Our evaluation of its improved functionality (compared to earlier versions of the development plan) in terms of connectivity for animal species is summarized below.

Potential impact and risk:	**Development plan: Alternative 2**	**Development plan: Preferred Alternative 3 (Final preferred)**
Nature of impact:	1) Infringement on ESA2 corridor which will influence connectivity facilitating animal movement. 2) Cape dwarf chameleon, *Bradypodion pumilum* habitat loss and movement impediment	
Extent and duration of impact:	Local and long term	Local and long term
Consequence of impact or risk:	High	Medium
Probability of occurrence:	High	High
Degree to which the impact may cause irreplaceable loss of resources:	High	Medium
Degree to which the impact can be reversed:	Irreversible	Irreversible
Indirect impacts:	N/A	N/A
Cumulative impact prior to mitigation:	High	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High	Medium
Degree to which the impact can be avoided:	Low	Medium
Degree to which the impact can be managed:	Low	Medium
Degree to which the impact can be mitigated:	Low	High
Residual impacts:	High	Medium
Cumulative impact post mitigation:	High	Medium
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High	Medium

Recommended mitigation measures

The following animal impact related mitigation measures are recommended for this development.

a) During the construction phase the construction area should be clearly demarcated and blocked off from the 'private open space' area to avoid damage and pollution.
b) Pre and post construction site preparation should include rehabilitation of the 'private open space' by removing current building rubble and litter from this area.
c) Long term maintenance of ecological integrity of the 'private open space' is critical. Therefore, measures should be put in place for constant removal of alien vegetation, cleanup of litter and prevention of illegal dumping. Clear legal responsibility for the maintenance of the space should be entrenched to be the responsibility of the homeowners association.
d) The fence traversing the ecological corridor should always be permeable to allow for movement of small sized animals e.g. small antelope, genets, mongoose between the nature reserve and wetland system.
e) Search and Rescue of chameleons and other slow-moving animals is feasible due to the presence of the adjacent nature reserve where they can be released. A search and rescue effort should be implemented before and during construction where animals that are found are released in the adjacent nature reserve. The necessary permission and permits should be attained before this is done.
f) Pets (especially domestic cats) should not be allowed to free-roam the 'private open space'.

Reference list

Bazelet, C.S., & Naskrecki, P. (2014). *Conocephalus peringueyi.* The IUCN Red List of Threatened Species.

Boshoff, A. F., and D. G. Allan. 1997. Secretarybird *Sagittarius serpentarius*. Pages 152-153 in J. A. Harrison, D. G. Allan, L. G. Underhill, M. Herremans, A. J. Tree, V. Parker, and C. J. Brown, editors. Birds of Southern Africa. Birdlife South Africa, Johannesburg.

Brown, H. D. (1960). New Grasshoppers (Acridoidea) from the Great Karroo and the South Eastern Cape Province. Journal of the Entomological Society of South Africa, 23, 126–143.

Channing, A., Measey, G., De Villiers, A.L., Turner, A.A., Tolley, K.A. 2017. *Capensibufo magistratus.* Red List of South African Species. South African Biodiversity Instit https://speciesstatus.sanbi.org/assessment/last-assessment/1567/ Downloaded on 14/07/2024Allan, D. G. 2005. Denham's Bustard, *Neotis denhami.in* P. Hockey, W. Dean, and P. Ryan, editors. Roberts - Birds of southern Africa. The Trustees of the John Voelcker Bird Book Fund, Cape Town.

Amar, A., and D. Cloete. 2018. Quantifying the decline of the Martial Eagle Polemaetus bellicosus in South Africa. Bird Conservation International **28**:363-374.

Boshoff, A., N. Palmer, and G. Avery. 1990. Regional variation in the diet of martial eagles in the Cape Province, South Africa. South African Journal of Wildlife Research-24-month delayed open access **20**:57-68.

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.

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.

Graham, J., and P. G. Ryan. 1984. Striped Flufftail. Promerops **162**.

Helme, N. A. 2023. Terrestrial biodiversity assessment of proposed subdivision of Erf 1486, Vermont, Western Cape. Nick Helme Botanical Surveys, Scarborough.

Kakebeeke, B. 1993. Striped Flufftail found breeding in Somerset West. Birding in Southern Africa **45**:9-11.

Lee, A. 2013. Fynbos enigma–Hottentot Buttonquail in the Kouga Mountains. African Birdlife **1**:20-22.

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.

Machange, R., A. Jenkins, and R. Navarro. 2005. Eagles as indicators of ecosystem health: Is the distribution of Martial Eagle nests in the Karoo, South Africa, influenced by variations in land-use and rangeland quality? Journal of Arid Environments **63**:223-243.

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.

Naylor, M. 2024. SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY - PROPOSED RESIDENTIAL DEVELOPMENT: ERF 1486 VERMONT. Lornay Environmental Consulting, Hermanus.

Peacock, F. 2015. Hottentot Buttonquail *Turnix hottentottus*. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. Birdlife South Africa, Johannesburg.

Peacock, F., M. R. Taylor, and B. P. Taylor. 2015. *Sarothrura affinis* Smith A, 1828.*in* M. Taylor, F. Peacock, and R. Wanless, editors. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. Birdlife South Africa, Johannesburg.

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

Pool-Stanvliet, R., A. Duffell-Canham, G. Pence, and R. Smart. 2017. The Western Cape Biodiversity Spatial Plan Handbook. CapeNature, Stellenbosch.

SANBI. 2020. Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in 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.

Simmons, R. E. 2005. Marsh Harrier, *Circus ranivorus*.*in* P. Hockey, W. Dean, and P. Ryan, editors. Roberts birds of southern Africa. The Trustees of the John Voelcker Bird Book Fund, Cape Town.

Taylor, M. R. 2015a. *Circus maurus* Temminck, 1828.*in* M. R. Taylor, F. Peacock, and R. W. Wanless, editors. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. BirdLife South Africa, Johannesburg.

Taylor, M. R. 2015b. *Circus ranivorus*.*in* M. R. Taylor, F. Peacock, and R. W. Wanless, editors. The Eskom red data book of Birds of South Africa, Lesotho and Swaziland. Birdlife Soouth Africa, Johannesburg.

Taylor, M. R. 2015c. Denham's Bustard *Neotis denhami*.*in* M. R. Taylor, F. Peacock, and R. W. Wanless, editors. The Eskom red data book of Birds of South Africa, Lesotho and Swaziland. Birdlife South Africa, Johannesburg.

Taylor, M. R. 2015d. Martial Eagle *Polemaetus bellicosus* The Eskom red data book of Birds of South Africa, Lesotho and Swaziland. Birdlife SA, Johannesburg.

Tolley, K. A. 2023. *Bradypodion pumilum* (Gmelin, 1789). Pages 415-416 *in* K. A. Tolley, W. Conradie, D. W. Pietersen, J. Weeber, M. Burger, and G. J. Alexander, editors. Conservation status of the reptiles of South Africa, Eswatini and Lesotho. South African National Biodiversity Intitute, Pretoria.

Tolley, K. A., and M. Burger. 2004. Distribution of Bradypodion taeniabronchum (Smith 1831) and other dwarf chameleons in the eastern Cape Floristic Region of South Africa. African Journal of Herpetology **53**:123-133.

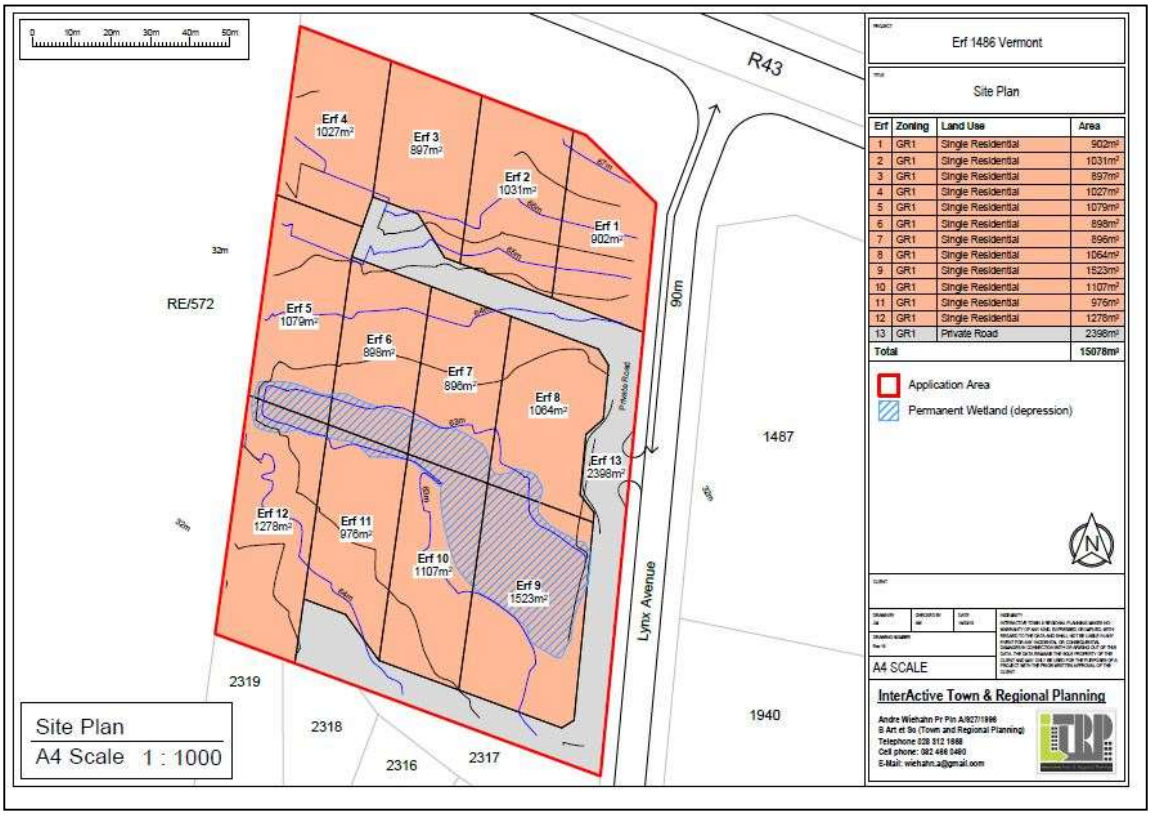
Van Zyl, K., R. Morton, and J. Gericke. 2023. Aquatic Biodiversity Impact Assessment Erf 1486 Vermont V2.0., Delta Ecology, RSA.

Appendix 1

The property development plan has gone through several iterations based on specialist input up to date.

ALTERNATIVE 1

Another design alternative explored involves the development of 13 plots on the subject property. This layout proposes the creation of erf that encroach upon the mapped wetland and other highly ecologically sensitive areas onsite. Unlike other alternatives, there is no provision for open space to facilitate ecological corridors. While the plots are larger in size, this amplifies the loss of all-natural vegetation and ecological sensitivity onsite, including the wetland.



Erf	Zoning	Land Use	Area
1	GR1	Single Residential	902m²
2	GR1	Single Residential	1031m²
3	GR1	Single Residential	897m²
4	GR1	Single Residential	1027m²
5	GR1	Single Residential	1079m²
6	GR1	Single Residential	898m²
7	GR1	Single Residential	896m²
8	GR1	Single Residential	1064m²
9	GR1	Single Residential	1523m²
10	GR1	Single Residential	1107m²
11	GR1	Single Residential	976m²
12	GR1	Single Residential	1278m²
13	GR1	Private Road	2398m²
Total			15078m²

Figure 11: Alternative 1 layout

ALTERNATIVE 2:

Initially, this layout was the primary preferred option that went through the first round of public participation. It was guided by the delineation of the wetland by the employed freshwater specialist, who identified both seasonal and permanent wetland edges. The site plan integrates 17 erven on the property. However, a critical issue emerged during evaluation of this alternative layout: the inclusion of this layout would maintain an unacceptable loss of ecologically sensitive areas, resulting in a high to medium level of significance. Notably, the site plan also features a road that encroaches upon the wetland. The terrestrial biodiversity impact assessment proposed that the following erven should be removed from any authorised layout: 1, 2, 7, 8, 10, 11, 12 and 13. The proposed access road (erf 14) should also be largely removed so that it does not cross the wetland and ecological corridor and can instead access erf 9 along the southern boundary.

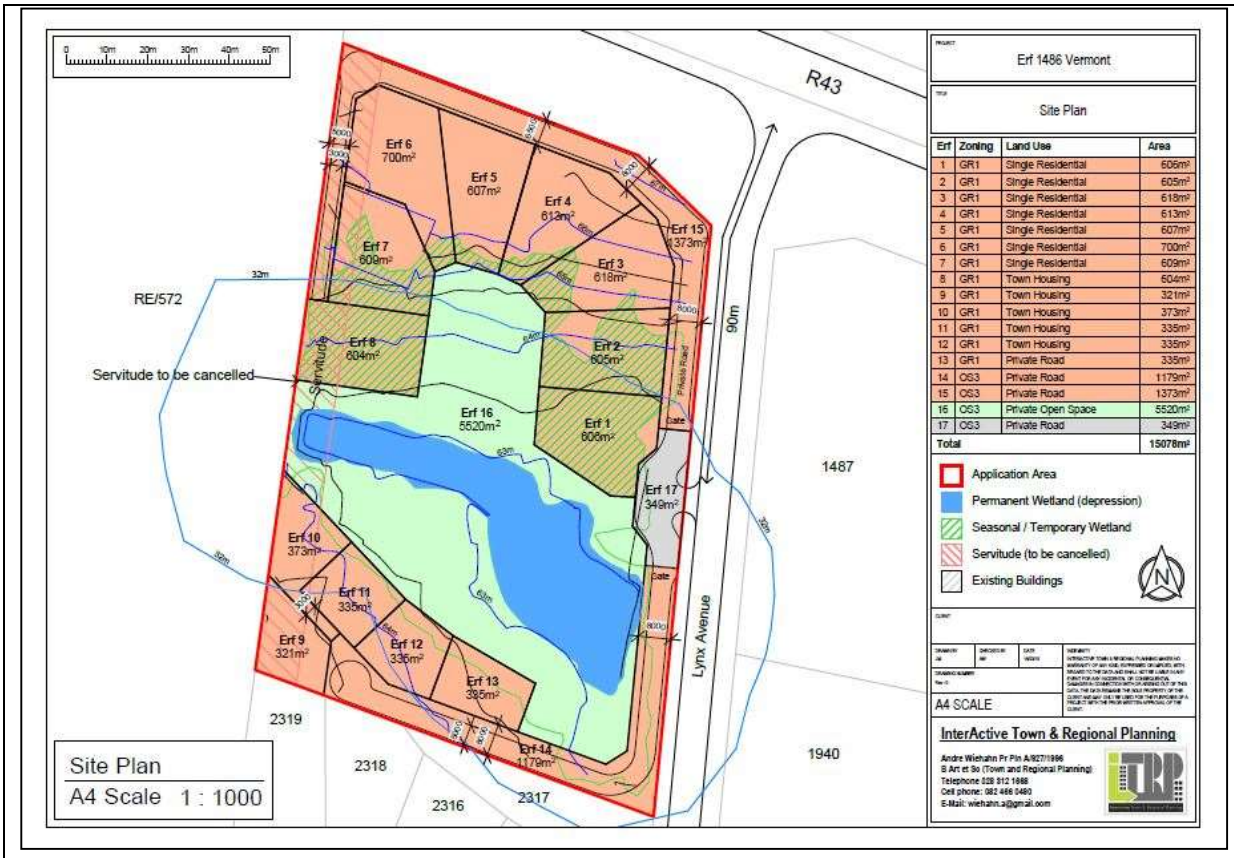


Figure 12: Alternative 2 Layout

ALTERNATIVE (NO GO)

This option entails maintaining the status quo with no development. The current state remains unchanged, and no new development initiatives are pursued.

ALTERNATIVE 3 (FINAL PREFERRED)

The preferred alternative design for the proposed development in Vermont involves the creation of 9 residential erven, 2 road erven, and an open space erf. This selection emerged after a series of iterations considering ecological constraints, particularly sensitive aquatic and terrestrial biodiversity onsite. Adjustments to the layout were made to steer clear of encroaching on the wetland, a highly ecologically sensitive area. These changes, informed by input from botanical specialists, led to the adoption of Alternative 4, which significantly minimizes ecological impact compared to previous alternatives evaluated in the May 2023 report.

The new residential erven are strategically positioned to avoid most high-sensitivity areas, aligning with the initial mitigation goals. Only a minimal portion of high-sensitivity habitat, approximately 500m^2, will be affected. Furthermore, the layout now includes two access roads instead of one, eliminating the need for the private road to traverse the wetland, as mandated by the mitigation requirements. As a result, approximately 58% of the total area will be designated as conservation space (Private Open Space), a notable increase from around 36%. This shift in design reduces the ecological significance of the development phase from an initially deemed "unacceptable High negative" in Alternative 2 to an "acceptable Medium negative" in Alternative 4.

Appendix 2

CV and SACNASP Certificate of Prof JA Venter

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:	51		
Gender:	Male		
Nationality:	South African	**E-mail:**	JanVenter@mandela.ac.za
Driver's license:	Code EB	**Cell number:**	+27 (0) 82 41 61096
Language:	Afrikaans (1st), English (2nd)	**Telephone nr:**	+27 (0) 44 801 5042
twitter **@JanBuffel**		**Conservation@Mandela**	**Jan Adriaan Venter**
Web page: Wildlife Ecology Lab			
Scopus Scopus		Google Scholar	

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	*Associate Professor* *Head of Department: Conservation Management* *Program Coordinator: Nature Conservation and Game Ranch Management* *Senior Lecturer* *Lecturer*	1 January 2021 – 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	18 (h-index)
Scopus	12 (h-index)

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., 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
2) 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 (In Press).
3) 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
4) 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
5) 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
6)	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
7)	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
8)	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
9)	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
10)	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 (In press)
11)	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 (In press)
12)	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
13)	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
14)	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
15)	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
16)	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
17)	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
18)	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
19)	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
20)	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
21)	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
22)	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
23)	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
24)	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
25)	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

26) 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

27) 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

28) 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

29) 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

30) 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

31) 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

32) 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/S003060532100034X

33) 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

34) 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

35) 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

36) 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

37) 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

38) 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

39) 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

40) 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

41) 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

42) 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

43) 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

44) 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
45)	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
46)	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
47)	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
48)	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
49)	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
50)	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
51)	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
52)	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
53)	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
54)	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/
55)	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
56)	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
57)	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.
58)	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
59)	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
60)	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
61)	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
62)	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
63)	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
64)	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

65)	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#
66)	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
67)	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/
68)	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
69)	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
70)	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
71)	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
72)	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.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.
2)	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
3)	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.
4)	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.
5)	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.
6)	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.
7)	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.
8)	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., 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.
2)	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.
3)	VENTER, J.A., FOUCHE, P.S.O, VLOK, W., MOYO, N.A.G., GROBLER, P., THERON, S. 2010. A guide to te development of conservation plans for southern African fish species. WRC Report No. 1677/1/10. Water Research Commission, Pretoria South Africa.
Presentations at conferences and symposia	

1)	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
2)	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
3)	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 North West Provincial Annual Biodiversity Research Symposium, Rustenburg, South Africa.
4)	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.
5)	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.
6)	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.
7)	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.
8)	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.
9)	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.
10)	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
11)	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.
12)	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.
13)	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.
14)	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.
15)	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.
16)	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.
17)	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.
18)	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.
19)	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

1) 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)
2) 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.
3) 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

VENTER, J.A., SOMERS, M.J. & FRITZ, H. (2022 – In progress) A Game of Thrones: Rivals, territories and resources. What are the intrinsic costs to African lions contained in small fenced parks?
Position: Principal Investigator *Project funder:* National Research Foundation *Project funding:* R771 500

CONRADIE, W. & VENTER, J.A., (2020 – In progress) Herpetofaunal diversity and affiliations of the unexplored south-eastern Angola
Position: PhD Supervisor Project funder: Bill Branch Memorial Grant Project funding: R50 000

VENTER, J.A. & FRITZ, H. (2020-In progress) Ecological community response following a prescribed holistic management strategy at Shangani-Ranch, central Zimbabwe
Position: Principal investigator Project funder: N. Oppenheimer Project funding: R250 000

VENTER, J.A. (2019-2020) Large carnivores in fenced protected areas

Position: Principal investigator	*Project funder*: Oppenheimer Trust	*Project funding*: R90 000
	Ernest and Ethel Eriksen Trust	R20 000
	Copenhagen Zoo	R201 000

VENTER, J.A. & Fritz, H. (2018 – In progress) African elephant conservation ecology.

Position: Principal investigator	*Project funder*: Shangani Ranch	*Project funding*: R300 000
	Amarula Elephant Fund	R50 000
	The Elephant Managers Association	$1 000

VENTER, J.A., BROOKE, C. & MEREAN, C. (2018 -In progress) Large mammals of the Palaeo-Aghulas Plain

Position: Principal investigator	*Project funder*: ACCP	*Project funding*: R580 000
	The Palaeontological Scientific Trust	R28 550

VENTER, J.A. (2018-2020) The drivers of small ungulate ecology in nutrient-poor Fynbos systems: Implications for fragmented landscapes

Position: Principal investigator	*Project funder:* Fynbos Trust	*Project funding:* R300 000
	Grootbos Foundation	R30 000

VENTER, J.A., SCHOEMAN, Z. & FRITZ, H. (2018 – 2022). The impact of fisheries and other management aspects on Cape gannets and African Penguins

Position: PhD Supervisor	*Project funder:*	*Project funding:*
	Nelson Mandela University (2018; 2019)	R60 000
	National Research Foundation (2018)	R50 000
	Fairfield Fund	R7 000
	University of Kwazulu-Natal	R20 000
	Ernest and Ethel Eriksen Trust	R60 000
	Nelson Mandela University (2020)	R70 000
	Dormehl Cunningham Scholarship Funding: 2020 Awards	R20 000
	Society for Conservation Biology (2021)	$1 000
	Dormehl Cunningham Scholarship Funding: 2021 Awards	R20 000

FISHER, E.C. (PI), CAWTRA, H., PARGETER, J., ESTEBAN, I., BAMFORD, M., COPELAND, S., DE VYNCK, J., HERRIES, A., JACOBS, Z., JERARDINO, A., LE ROUX, P., LOFTUS, E., ZOHAR, I., BADENHORST, S., VENTER, J.A, (2018- in progress) Human occupation and adaptation in a persistent coastal environment during the LGM and Early Holocene
Position: Collaborating researcher *Project funder:* National Science Foundation (US) *Project funding:* $299 890

VENTER, J.A., SLOTOW, R., SOMERS, M., PACKER, C., DOWNS, C., WILLOWS-MUNRO, S., SWANEPOEL, L., PEEL, M., BOMBACI, S.P. *et. al.* (2018-In progress) SnapshotSafari

Position: Principal Investigator	*Project funder:*	*Project funding:*
	National Research Foundation	R6 300 000
	Nelson Mandela University (Post Doc)	R200 000

National Geographic Society (PI -S Bombaci)		$96 255
VENTER, J.A., MATTHEE, W. (2017-In progress) Forest birds and habitat fragmentation: evolutionary adaptations and environmental change *Position:* PhD Supervisor *Project funder: Forestry CETA* *Project funding:* R270 000		
VENTER, J.A., MARTENS, F., PHEIFFER, M., & DOWNS, C.T., (2015 –2021). The behavior and ecology of Cape Vultures (*Gyps coprotheres*) in relation to wind energy development. *Position:* Principal Investigator	*Project funder*:	*Project funding*:
	Eastern Cape Department of Economic Development, Environment and Tourism	R365 000
	Birdlife SA	R10 000
	Rufford Foundation (2016)	£5 000
	Nelson Mandela University (2016)	R30 000
	National Research Foundation (2017)	R90 000
	Rufford Foundation (2018)	£10 000
	National Research Foundation (2018)	R75 000
	French Embassy (2019)	€7 000
	National Research Foundation (2019)	R75 000
FISHER, E., CAWTHRA, H., PARGETER, J. & VENTER, J.A. (2011-2015). The Pondoland Paleoenvironment, Paleoclimate, Paleoecology, and Paleoanthropology Project (P5) *Position:* Co-researcher	*Project funders:*	*Project funding:*
	Templeton Foundation	$50 000
	National Geographic Society / Waitt Grants Program	$15 000
	US National Science Foundation (2011)	$50 000
	US National Science Foundation (2015) BCS-1501914	$34 269
VERMEULEN, M, VENTER, J.A. & KRAAIJ, T. (2016-2017) Towards restoration of ecosystem processes for conservation management in arid systems: Exploring habitat utilisation and feeding ecology of native ungulates. *Position:* Co-supervisor *Project funder:* Oppenheimer Trust *Project funding:* R170 000		
VENTER, J.A., FOUCHÉ, P.S.O, VLOK, W., MOYO, N.A.G., GROBLER, P. & THERON, S. (2006-2008). A guide to the development of a conservation plan for threatened southern African fish species. WRC Report No. 1677/1/10, Water Research Commission, Pretoria. *Position:* Principal Investigator *Project funder*: South African Water Research Commission *Project funding*: R1 100 000		
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	2012-2014 (supervisory panel)

	provisional ecological classification of these systems.		
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, Supervisor	Herpetological biodiversity in areas adjacent to the Wilderness section of the Garden Route National Park	Completed (2016)
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	The activity patterns of species exposed to	Completed (2018)

	Conservation), NMU, Supervisor	large predators in the Mountain Zebra National Park	
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	Factors influencing Chondrichthyan egg	Completed (2023)

	Resource Management), NMU, Co-supervisor	case hatching success in Mossel Bay, South Africa	*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, Supervisor	On the population ecology of an island leopard from a protected landscape	Completed (2023)
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)
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 Conservation), NMU,	Examining the influence of extrinsic factors on herbivore assemblage composition and	Completed (2017-2018)

	Supervisor	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, Supervisor	Investigating the effects of pulse-driven resource availability on mammal communities in the Kalahari, South Africa	Completed (2021-2022)

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	In progress (2022)
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	In progress (2021-2022)
30) Miss Cleo Ferreira	MSc (Nature Conservation), NMU, Supervisor	Evaluating the impact of dehorning on the behavioural ecology of white rhinoceros (*Ceratotherium simum*)	In progress (2023-2024)
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	In progress (2018-2022)
4) Mrs FR. Brooke	PhD (Nature Conservation), NMU, Supervisor	Cape Vultures and their increasing threats: 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.	In progress (2020-2022)
10) Dr C. Helm	PhD (Geoscience), NMU, Co-supervisor	Pleistocene fossil tracks and traces on the Cape coast of South Africa	Completed (2020-2022)

11) Mrs Z. Strydom	PhD (Nature Conservation), NMU, Supervisor	Assessing the effects of fish stock management on endangered seabird populations in South Africa	Completed (2020-2022)
12) Mrs W.L. Zeller Zigaitis	PhD (Geography), Pennsylvania State University	Protected Area Process and Design: Using Geospatial Data to Mitigate Poaching in Protected Areas	Completed (2020-2024)
13) Miss T. Honiball	PhD (Nature Conservation), NMU, Supervisor	Fission fusion dynamics of spotted hyaena (*Crocuta crocuta*) in fenced protected areas: Implications for conservation management of a socially intelligent species	In progress (2021-2024)
14) Miss A. Jansen van Vuuren	PhD (Nature Conservation), NMU, Supervisor	The role of spotted and brown hyaena activity hotspots on interspecific interactions	In progress (2021-2024)
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.	In progress (2022-2024)
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) 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)
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 (2022-2023)
6) Dr Chad Keates	Genetic study on herpetological samples from Angola in association with Werner Conradie, PE Museum.		NMU Post-Doctoral Research Fellow (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?		FBIP-NRF Post-Doctoral Researcher (2023-2024)

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-Current date
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
REHABS International Research Laboratory, CNRS-Université Lyon 1-Nelson Mandela University, George Campus	Research Associate	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;	Statistical Techniques in Ecology, Snake ID & Snakebite Treatment; Advanced Snake Handling; Conservation Planning;

Marine VHF Radio Operator; NAUI Open Water 1 SCUBA Diver	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
Herbert.Prins@wur.nl
Cell: +31653128968

Prof. Rob Slotow
School of Life Sciences
University of Kwazulu-Natal
Slotow@ukzn.ac.za
Tel: +27(31) 2602798
Cell: +27(83) 6817136

Prof. Michael Somers
Professor
Mammal Research Institute, University of Pretoria
Michael.Somers@up.ac.za
Cell: +27(72) 1007022

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Jan Adriaan Venter

Registration Number: 400111/14

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Ecological Science (Professional Natural Scientist)

Effective **12 March 2014** Expires **31 March 2025**

Chairperson

Chief Executive Officer

To verify this certificate scan this code