Wildlife Conservation Decision Support

Terrestrial Animal Site Sensitivity Verification Report and Species Specialist Assessment Report Ver2

Proposed development of Residential Erf 1486, Vermont, Hermanus

Prepared for: LORNAY ENVIRONMENTAL CONSULTING

August 2025

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Terrestrial Animal Site Sensitivity Verification Report and Species Specialist Assessment Report - Proposed development of Residential Erf 1486, Vermont, Hermanus Ver2

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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;
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- 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.

_____ 27 August 2025

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

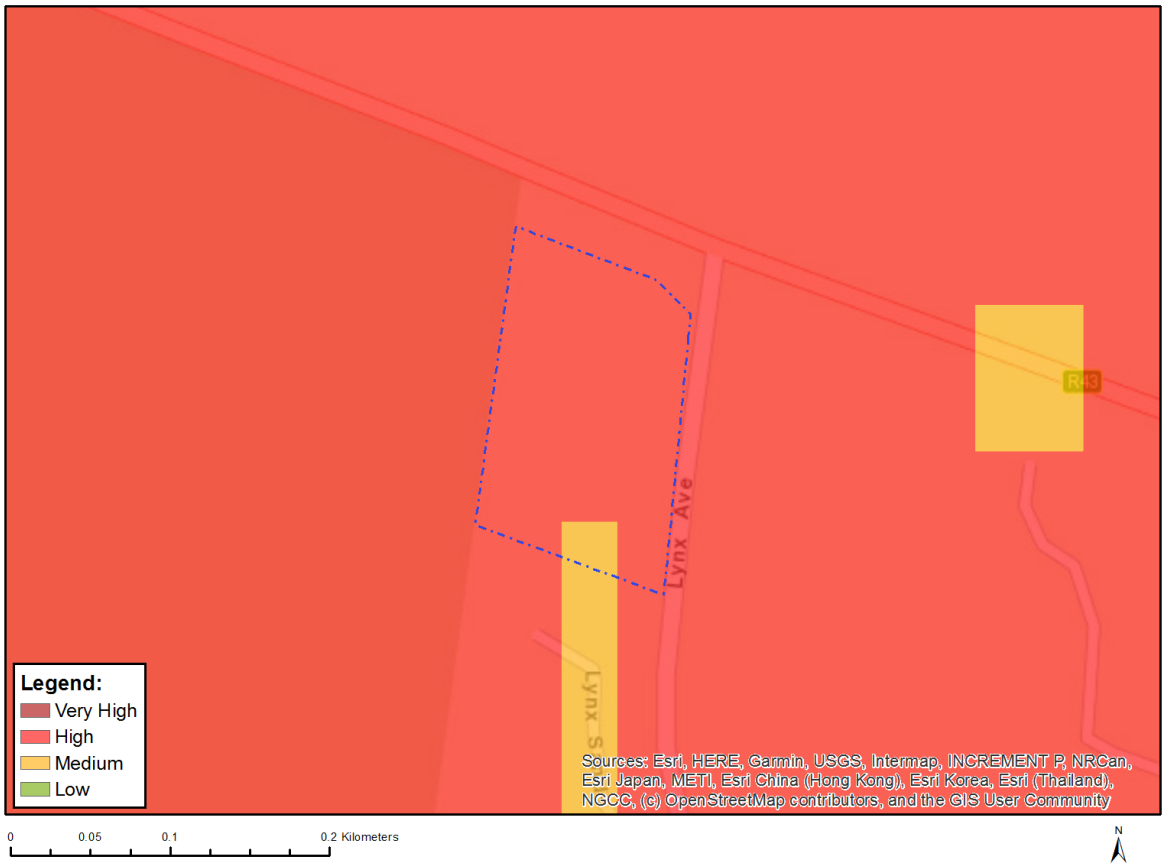


Figure 2: Map of the relative animal species theme sensitivity as per (Naylor 2024)

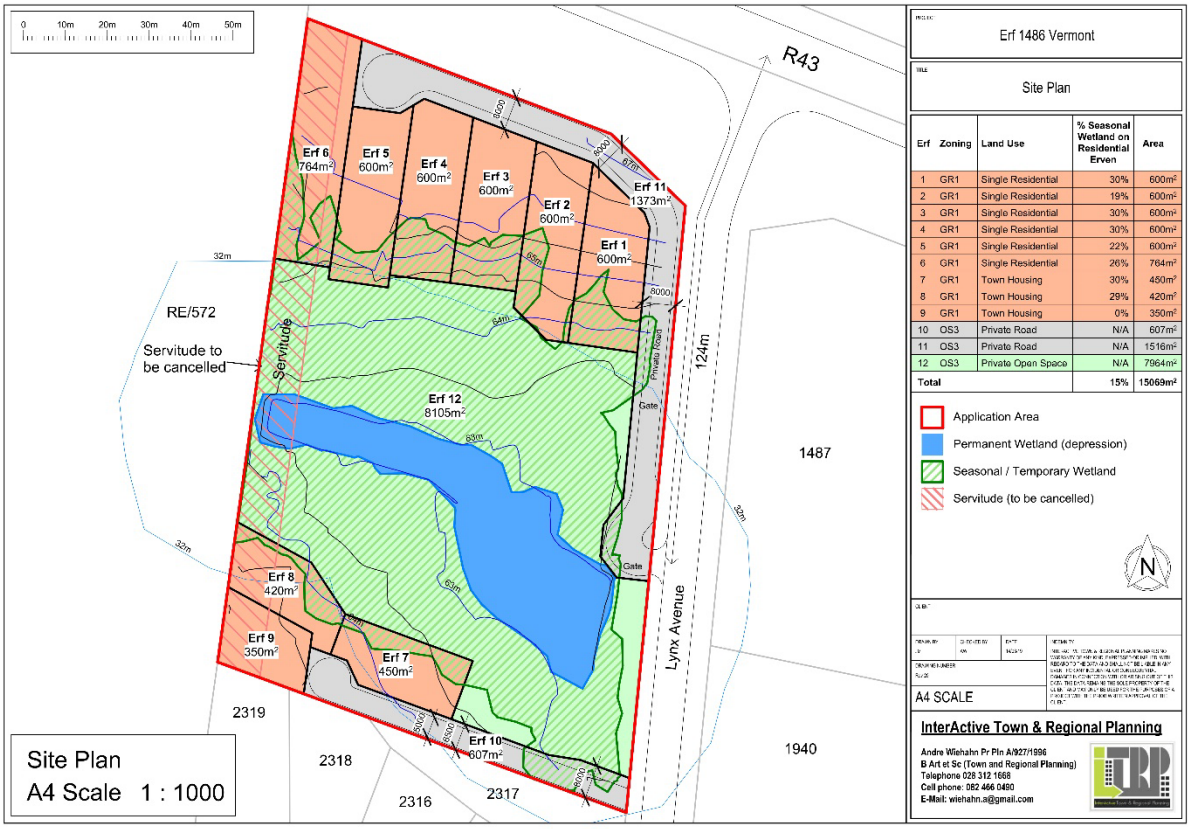
This report follows the legislative requirements set out by sections 25(5)(a) and (h) and 44 of the National Environmental Management Act 107 of 1998 and specifically the regulations listed in the Government Gazette Notice No. 1150, Protocol for the specialist assessment and minimum report content requirements 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 3 (preferred), 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.

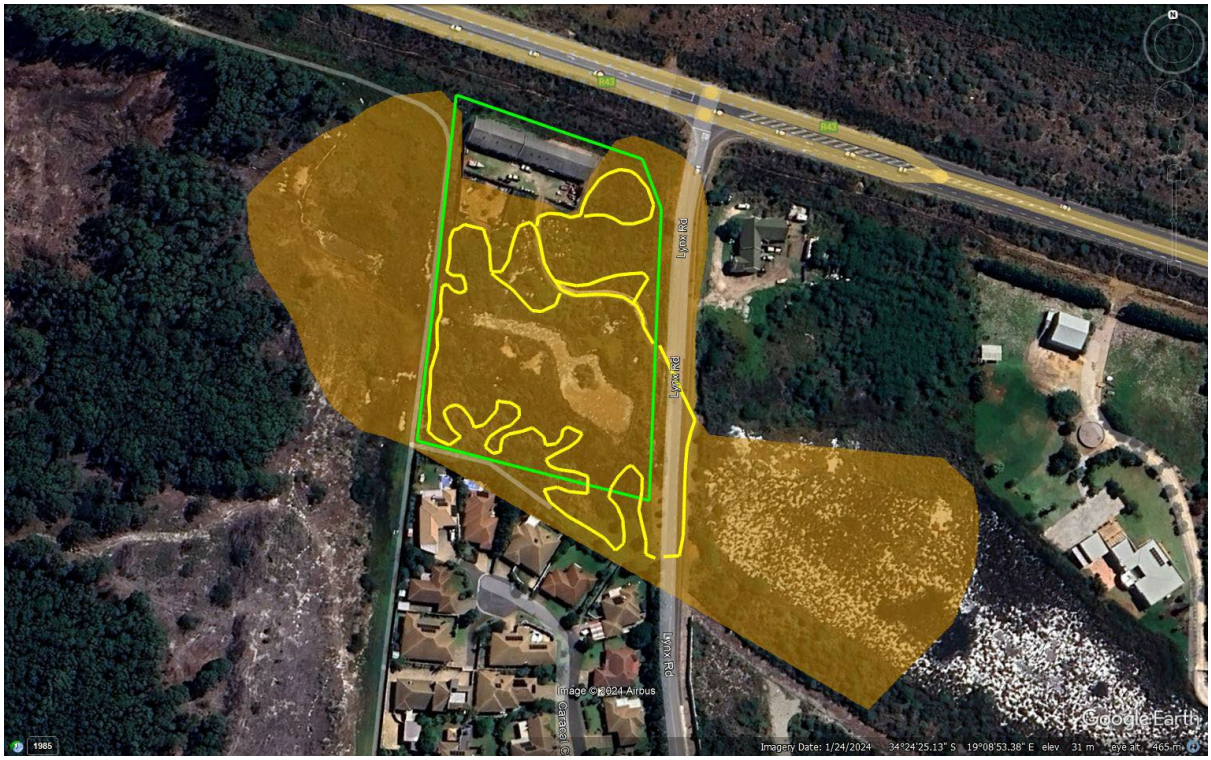


Figure 4: A map indicating the areas within the property visited during the site visit. Yellow lines indicate routes walked and the orange polygon the area which were visible to the observer and were exposed to call ups.

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).

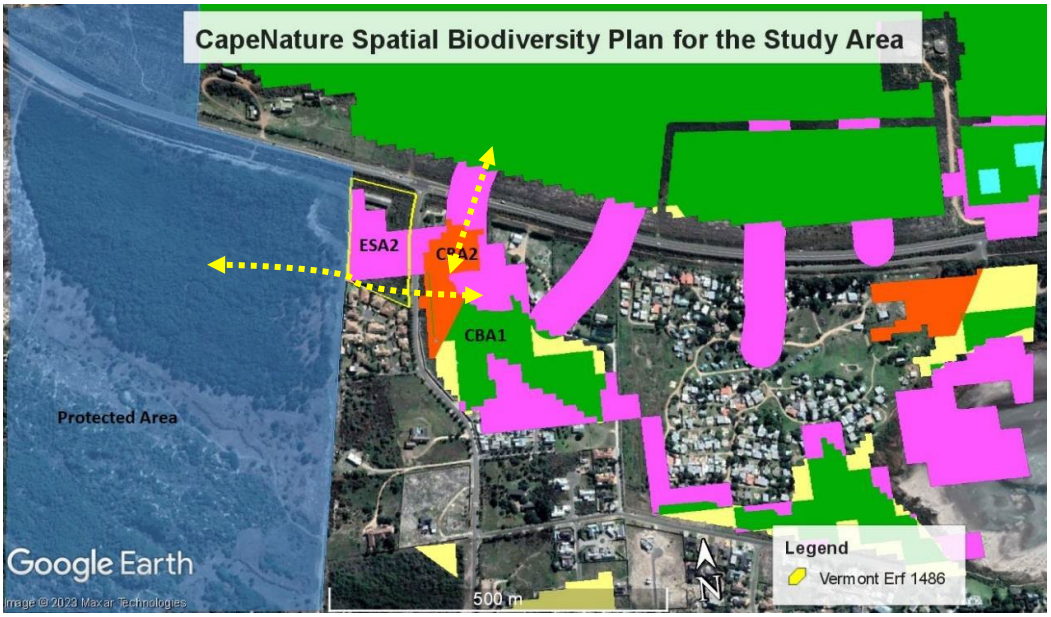


Figure 10: The conservation planning map of the Western Cape Biodiversity Plan (Pool-Stanvliet et al. 2017) indicates the presence of a ESA2 (Ecological Support Area)(yellow dotted arrows), linking the Hoek van de Berg Private Nature Reserve to the west with the Vermont Salt Pan to the east.

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.

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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.
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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	**Low** Small proportion of larger range. Property serves as ecological corridor for species	**Medium** Decrease in ecological corridor size/width with potential impact on free animal movement	**Low** BI=Low RR=Medium
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 Alternative 3 (preferred) (after botanical and wetland specialist input)(Table 15 & 16). In this version I have split the two receptors in order to highlight a lower impact on the Cape dwarf chameleon due to its lower protection status of Near Threatened.

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 (preferred)**
Nature of impact:	1) Infringement on ESA2 corridor which will influence connectivity facilitating animal movement.	
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

Table 16: 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 Cape dwarf chameleon habitat is summarized below.

Potential impact and risk:	**Development plan: Alternative 2**	**Development plan: Preferred Alternative 3 (preferred)**
Nature of impact:	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	Low
Probability of occurrence:	High	High
Degree to which the impact may cause irreplaceable loss of resources:	High	Low-Medium
Degree to which the impact can be reversed:	Irreversible	Irreversible
Indirect impacts:	N/A	N/A
Cumulative impact prior to mitigation:	High	Low
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High	Low
Degree to which the impact can be avoided:	Low	Medium
Degree to which the impact can be managed:	Low	High
Degree to which the impact can be mitigated:	Low	High
Residual impacts:	High	Low-Medium
Cumulative impact post mitigation:	High	Low-Medium
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High	Low-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'.

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Appendix 1

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

Appendix 2

CV and SACNASP Certificate of Prof JA Venter