Wildlife Conservation Decision Support

Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report

Proposed development of an eco-estate/beach resort on Portion 36 of Farm Franche Kraal 708, Overberg

Prepared for: LORNAY ENVIRONMENTAL CONSULTING

September 2024

Prepared by: Jan A Venter & Rudi Swart

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Declaration of independence

- We consider ourselves bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP);
- At the time of conducting the study and compiling this report, we did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done objectively. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being members of the general public;
- We declare that no circumstances may compromise my objectivity in performing this specialist investigation. We do not necessarily object to or endorse any proposed developments but aim to present facts, findings and recommendations based on relevant professional experience and scientific data;
- We do not have any influence over decisions made by the governing authorities;
- We undertake to disclose all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken concerning the application by a competent authority to such a relevant authority and the applicant;
- We have the necessary qualifications and guidance from professional experts in conducting specialist reports relevant to this application, including knowledge of the applicable Act, regulations and any guidelines that have relevance to the proposed activity;
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- All the particulars we furnished in this document are true and correct.

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Introduction

The proposed development of an eco-estate/beach resort on Portion 36 of Farm Franche Kraal 708, Overberg (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 (Unknown Author 2023)(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 be impacted by the development (the study area), during which the presence or possible presence of the Species of Conservation Concern (SCC) identified by the screening tool was determined. Animal species of concern (*n=11*) that was identified by the screening tool are listed in Table 1.

Figure 1: The cadastral boundary of the Portion 36 of Farm Franche Kraal 708, Overberg (outlined in green) intended for the development of an eco estate/resort. The Franskraal village is seen south-west and the Uilkraals Estuary to the south.

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.

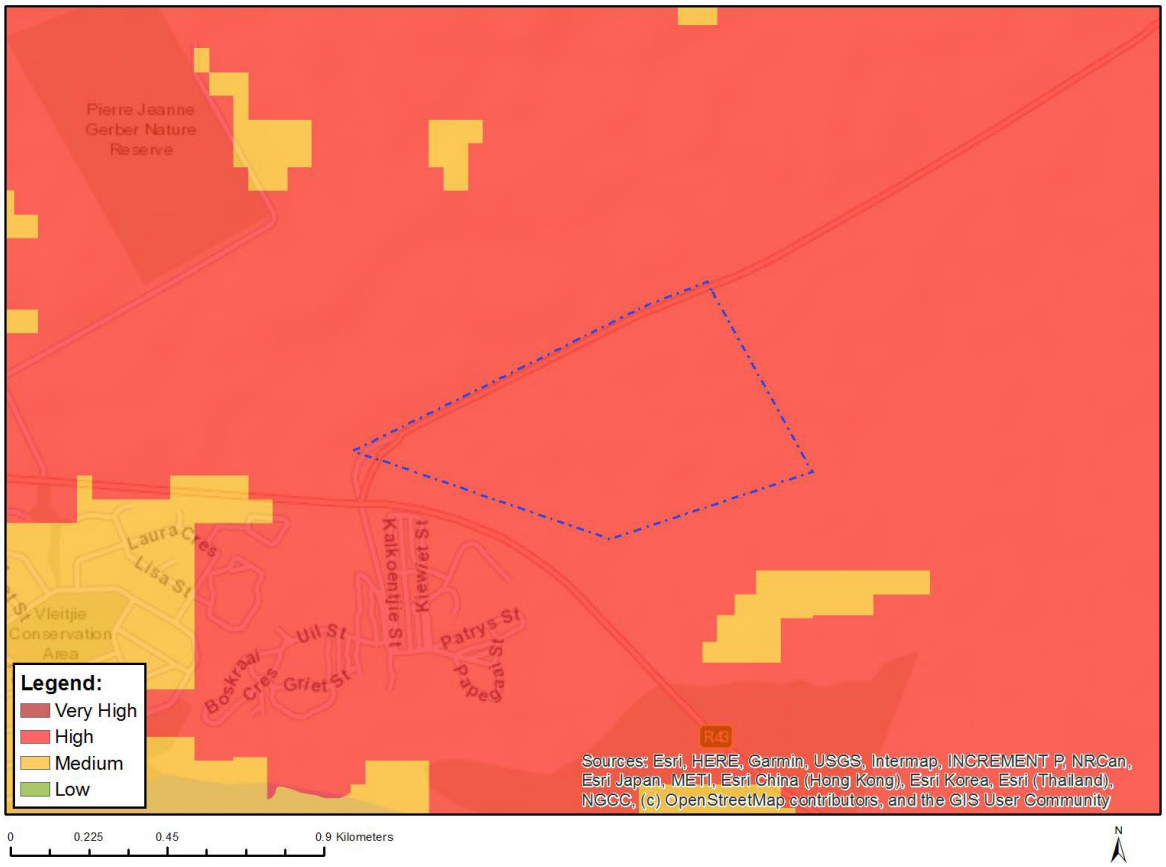

Figure 2: Map of the relative animal species theme sensitivity as per (Unknown Author 2023) indicating 'high' sensitivity for the whole property

Table 1: Animal species of concern identified by the screening report(Unknown Author 2023).

Sensitivity	Species name	Common name	Taxonomic group	Red List Status
High	*Circus maurus*	Black Harrier	Avis	EN
High	*Circus ranivorus*	African Marsh Harrier	Avis	EN
High	*Hydroprogne caspia*	Caspian Tern	Avis	VU
High	*Pelecanus onocrotalus*	Great White Pelican	Avis	VU
Medium	*Afrotis afra*	Southern Black Korhaan	Avis	VU
Medium	*Neotis denhami*	Denham's Bustard	Avis	VU
Medium	*Turnix hottentottus*	Hottentot Buttonquail	Avis	EN
Medium	*Sarothrura affinis*	Striped Flufftail	Avis	VU
Medium	*Brinckiella aptera*	Mute Winter Katydid	Invertebrate	VU
Medium	*Aneuryphymus montanus*	Yellow winged agile grasshopper	Invertebrate	VU
Medium	*Bitis armata*	Southern Adder	Reptile	VU

Study Area

Portion 36 of Farm Franche Kraal 708 is situated just east of the village Franskraal, Overberg District in the Western Cape Province (E 19°24'54"; S 34°35'56") (Figure 1). The proposed development includes the construction of an entrance gate area, a network of roads, 52 residential units, a clubhouse, boma, a network of hiking trails and a jetty (Figure 3).

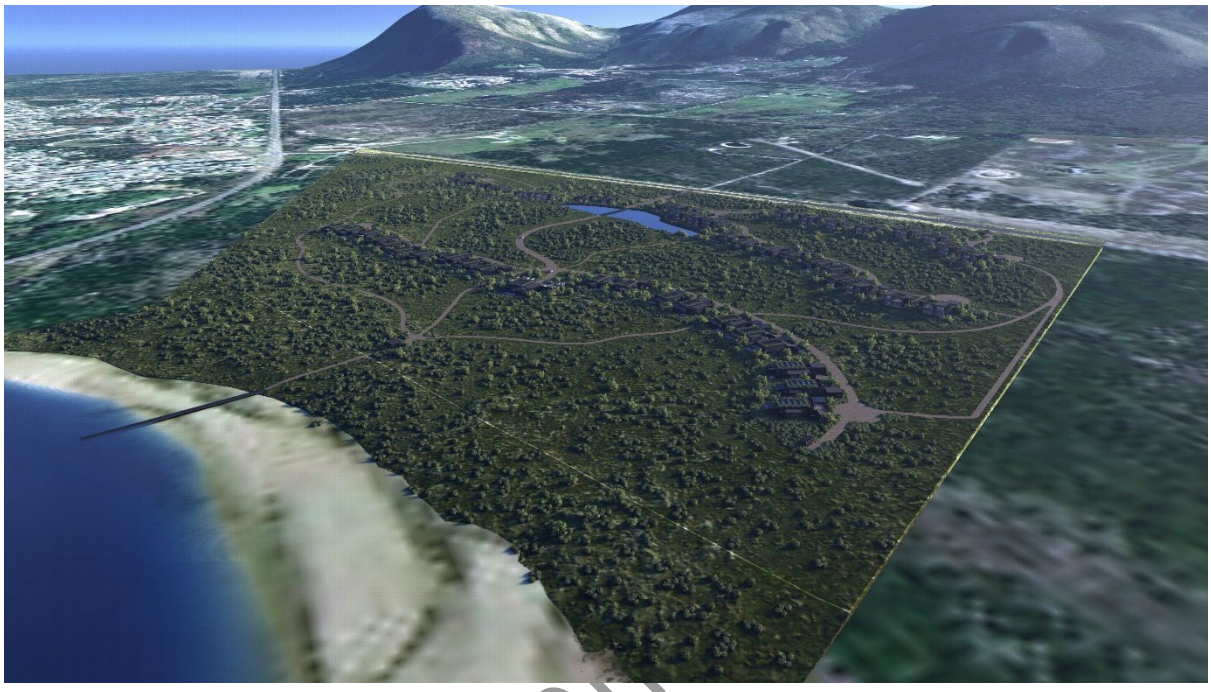

Figure 3: The development footprint includes the construction of an entrance gate area, a network of roads, 52 residential units, a clubhouse, boma, stormwater retention pond, a network of hiking trails and a jetty.

Methods

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

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
- Three field site visits.

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, acoustic surveys and point surveys performed at and between the various proposed development sites. Although the dense stands of Port Jackson (*Acacia saligna*) made some areas very difficult to access we covered a large proportion of the property on foot (Figure 4 and Table 2). We used territorial call playbacks to determine the presence of striped flufftail. We also conducted a point bird survey from the bridge overlooking the Uilenkraals estuary which is situated adjacent to the property. 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 visits.

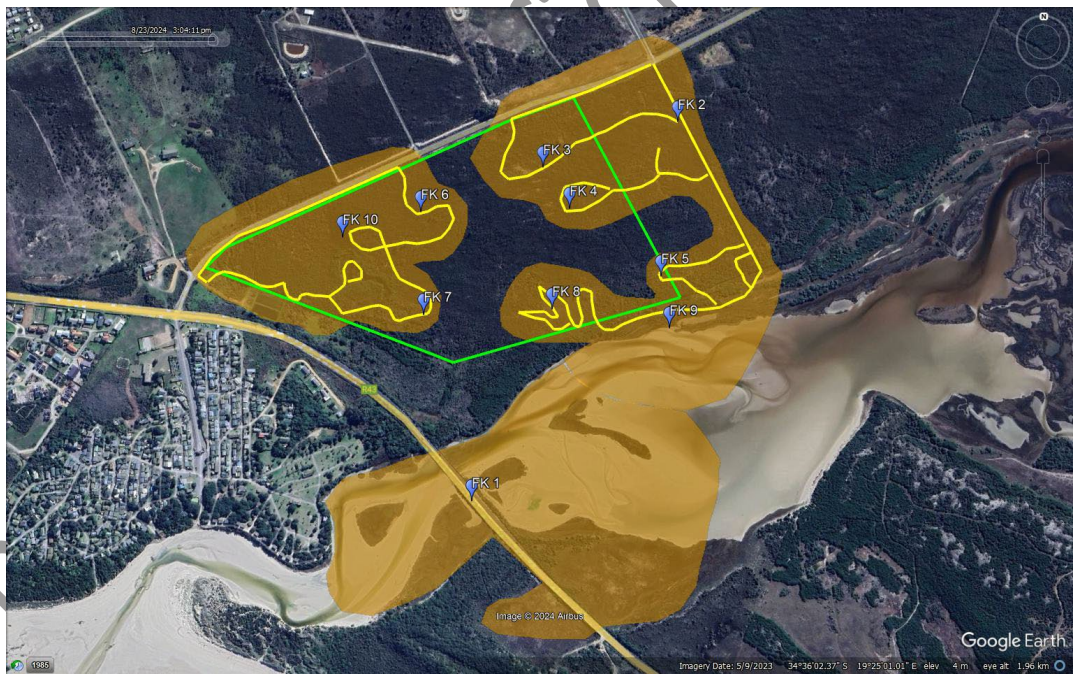

Figure 4: A map indicating the areas within the property visited during the site visit. Yellow lines indicate routes walked and the orange polygon the area which were visible to the observer and/or exposed to call ups.

Table 2: Site coordinates

Site	Coordinates
FK1	34°36'13.38"S; 19°24'55.88"E
FK2	34°35'46.69"S; 19°25'12.09"E
FK3	34°35'50.25"S; 19°25'0.77"E
FK4	34°35'53.09"S; 19°25'3.13"E
FK5	34°35'57.62"S; 19°25'10.99"E
FK6	34°35'53.71"S; 19°24'50.61"E
FK7	34°36'0.88"S; 19°24'51.25"E
FK8	34°36'0.17"S; 19°25'1.94"E
FK9	34°36'1.18"S; 19°25'11.80"E
FK10	34°35'55.67"S; 19°24'44.14"E

Setting the project area of influence (PAOI)

The development property is fairly small (±25 ha). The PAOI was set considering main SCC we think are present on or close to the development footprint. This was based on recommended buffers for SCC (SANBI 2020) and WCDS expert knowledge.

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 3): *"The importance of a site for supporting biodiversity features of conservation concern present, e.g. populations of IUCN threatened and Near Threatened species (CR, EN, VU and NT), Rare species, range-restricted species, globally significant populations of congregatory species, and areas of threatened ecosystem types, through predominantly natural processes."*

Table 3: 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 4): *"A measure of the ecological condition of the impact receptor as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts."*

Table 4: 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 5): *"The intrinsic capacity of the receptor to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention."* The fulfilling criteria to evaluate RR are based on the estimated recovery time required to restore an appreciable portion of functionality to the receptor.

Table 5: Resilience criteria (SANBI 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.
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 6).

Table 6: 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 9th of August 2024, (between 16h00 and 18h00), 11th August 2024 (between 7h00 and 11h00) and again the 23rd of August (between 14h00 and 17h00). During the 9th and 11th conditions were cold, wet and windy. These conditions are in general limiting for observation of birds, mammals, and reptiles. During the 23rd conditions were warm with little wind which were much better conditions for faunal surveys.

Project area of influence (PAOI)

The development property is fairly small (±25 ha). The PAOI covers the majority of the property as well as a reasonably large proportion of the Uilenskraal estuary (Figure 4 and Table 7).

Table 7: The PAOI was set considering main SCC we think are present on or close to the development footprint.

Species/Group	PAOI Buffer size	Notes
Raptors and Birds general	300 m	Foraging and resting areas
Waterbirds (includes jetty)	300 m	Foraging and resting areas
Nocturnal insects	250 m	Influence of artificial light
Diurnal insects and herpetofauna	100 m	Foraging and breeding habitat

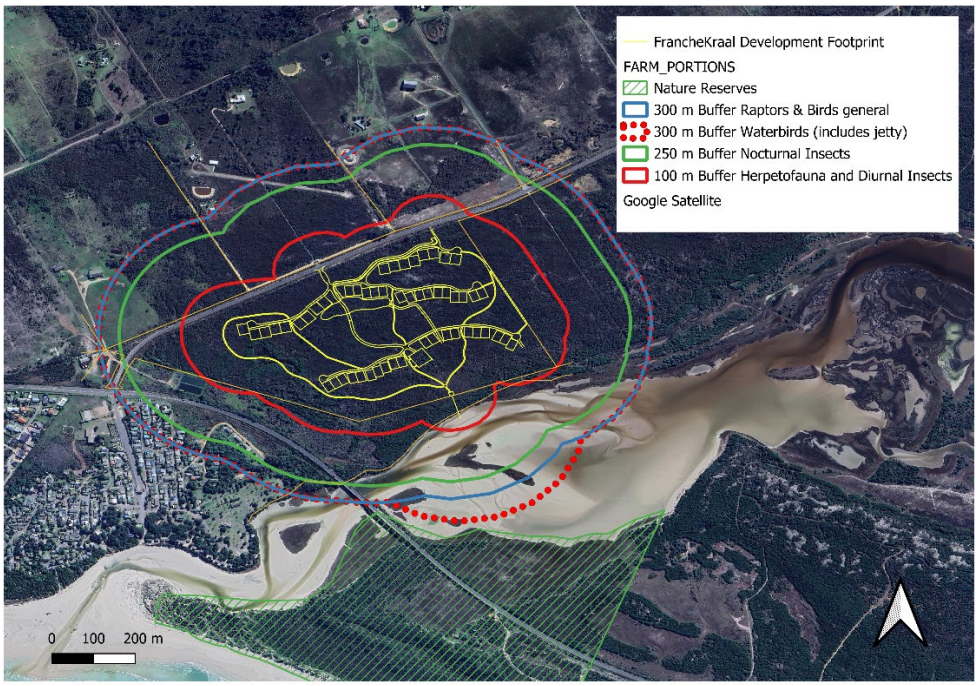

Figure 5: The PAOI was set considering main SCC we think are present on or close to the development footprint.

Habitat descriptions.

After screening the development site using Google Earth images and on-site verification, we did intensive searches in the PAOI of the proposed development site and additional sites of interest of specific representative or seemingly important locations (Figure 4) within the development area.

Site FK1 & FK9 – Uilenkraals Estuary

The Uilenkraals estuary is a large, temporarily closed estuary (van Niekerk et al. 2019) to the south of the property (Figure 6 & 7). The South African National Biodiversity Assessment (van Niekerk et al. 2019) classified the cumulative pressure on the estuary as 'high', the estuary biodiversity importance as 'important' on both a national and provincial level, and its biodiversity priority level 'high' and importance as fish nursery is 'medium' (van Niekerk et al. 2019).

Figure 6: The Uilenkraals estuary during high tide.

Figure 7: The Uilenkraals estuary during high tide.

Dominant habitats within the PAOI area of the estuary includes sand and mud banks, salt marsh conditions on the edges, islands and open water areas. Large numbers of marine birds congregated on the sand banks and islands both times we visited this location (Table 8). The vegetation on the northern banks, directly adjacent to the property, provides forage areas and habitat for a number of mammal species (Table 7 and Figure 8).

Table 8: Animal species observed at Site FK1 and FK9

Group	Species	Notes	Status
Birds:	Eurasian Whimbrel *Numenius phaeopus*	Foraging on islands and sand banks	Least Concern
	African Oystercatcher *Haematopus moquini*	Foraging on islands and sand banks	Least Concern
	Grey-headed Gull *Chroicocephalus cirrocephalus*	Resting on sand banks	Least Concern
	Kelp gull *Larus dominicanus*		
	Egyptian Goose *Alopochen aegyptiaca*	Foraging on islands	Least Concern
	Pied Kingfisher *Ceryle rudis*	Hunting on edges	Least Concern
	Greater Crested Tern *Thalasseus bergii*	Resting on sand banks	Least Concern
	White-breasted Cormorant *Phalacrocorax lucidus*	Resting on sand banks	Least Concern
	Cape cormorant *Phalacrocorax capensis*	Resting on islands	Least Concern
	Reed cormorant *Phalacrocorax africanus*	Foraging in open water	Least concern
	Yellow-billed Duck *Anas undulata*	Swimming in open water	Least Concern
	Little egret *Egretta garzetta*	Foraging in salt marsh	Least concern

	Malachite sunbird *Nectarina famosa*		
Mammals	Porcupine *Hystrix africaeaustralis*	Dung/scat observed	Least concern
	Cape grysbok *Raphicerus melanotis*	among sedges on edge of estuary	Least concern
	Cape dune molerat *Bathyergus suillus*	Fossorial activity	Least concern
Invertebrates:	*Xerocystis capensis*	Observed in sedges on banks of estuary	NA

Figure 8: The vegetation on the northern banks, directly adjacent to the property, provides forage areas and habitat for a number of mammal species

Site FK2;3;4;5;6 and 7 – Port Jackson *Acacia saligna* thickets

Most of the property is covered by dense stands of Port Jackson (Figures 9, 10 and 11), also confirmed by (Privett 2024). Serious invasions of this species has devastating impacts on natural Fynbos plant diversity and structure (Holmes and Cowling 1997) and subsequently also animal diversity, distribution and density. Only a few birds and some mammal activity were observed at these sites (Table 9).

Figure 9: The dense stands of alien plants as seen at site FK2

Figure 10: The dense stands of alien plants as seen at site FK6. Some Fynbos remnants are still present in the system.

There are some indigenous plant remnants still present in pockets in between the dense stand of alien plants.

Figure 11: The dense stands of alien plants as seen at site FK7. Wetland conditions and standing pools provided habitat for tadpoles of Cape river frog tadpoles.

Table 9: Animal species observed at sites FK2;3;4;5;6;7 and 10

Group	Species	Notes	Status
Birds:	Southern Boubou	Site FK2	Least Concern
	Cape bulbul	Site FK2,3,6	Least Concern
	Forked tailed drongo	Site FK7	
	Greater Double-collared Sunbird *Cinnyris afer*	FK2, 4	Least Concern
	Hadeda ibis, *Bostrychia hagedash*	Flying, FK5	Least Concern
	Cape turtle dove, *Streptopelia capicola*	FK4 (vocalized)	Least Concern
	Karoo Prinia *Prinia maculosa*	FK 7 and 10	Least Concern
	Streaky-headed Seedeater *Crithagra gularis*	FK 7 and 10	Least Concern
	Southern Double-collared Sunbird *Cinnyris chalybeus*	FK 2,4, 7	Least Concern
	Malachite Sunbird *Nectarinia famosa*	FK10	Least Concern
	Bokmakierie *Telophorus zeylonus*	FK7	Least Concern
Amphibians:	Southern caco, *Cacosternum australis*	Calling on site FK2,7	Least Concern
	Clicking stream frog, Strongylopus grayii	Calling on site	Least Concern
	Cape river frog, *Amietia fuscigula*	Observed (tadpoles)	Least Concern
Mammals:	Cape porcupine, *Hystrix africaeastralis*	Scat observed	Least concern
	Cape dune mole-rat, *Bathyergus suillus*	Fossorial activity	Least concern

A seep wetland, as identified by van Zyl and Morton (2023), is present at sites FK7 and FK10 but most of the other sites were also covered with ±5 cm of water during our first field visit (due to a very wet rainy season).

Site FK8 – Dry and open Agulhas sand fynbos

This site was more open, better drained, and dominated by *Leucadendron coniferum* and *Erica imbricata* (Privett 2024). It was one of the rare sites with only moderate infestation of *Acacia saligna* (Figure 12).

Figure 12: Site FK8 was better drained and more open with the presence of natural Fynbos.

Table 10: Animal species observed at site FK8

Group	Species	Notes	Status
Birds:	Southern Boubou *Laniarius ferrugineus*	On site	Least Concern
	Cape bulbul *Pycnonotus capensis*	On site	Least Concern
	Karoo Prinia *Prinia maculosa*	On site	Least Concern
	Greater Double-collared Sunbird *Cinnyris afer*	On site	Least Concern
	Bokmakierie *Telophorus zeylonus*	On site	Least Concern
Insects:	Chrysomelinae sp.	In natural Agulhas Sand Fynbos – sweep netting	NA
	Thericlesiella meridionalis	In natural Agulhas Sand Fynbos – sweep netting	Least Concern
	Sphaerocoris testudogrisea	In natural Agulhas Sand Fynbos – sweep netting	Least Concern
	Sphenoptera sp.	In natural Agulhas Sand Fynbos – sweep netting	NA

Animal species of concern

A total of 11 animal species of concern was identified by the screening tool (Naylor 2023)(Table 2). Two additional SCC was identified through the desktop survey (Table 11). The following section deals with the site's potential importance for these species and the probability of them being present in habitats in the development area.

Table 11: Other notable animal species likely to occur at the property identified by the desktop survey.

Group	Species	Notes		Status
Amphibians:	Western leopard toad *Sclerophrys pantherina*	iNaturalsit, immediate area	GBIF	**Endangered**
Reptiles:	Cape dwarf chameleon, *Bradypodion pumilum*	iNaturalist, immediate area	GBIF	**Near threatened**

The transformed state of the property, this assessment, and risk/impact implications for animals

The property in its current state is highly transformed due to heavy infestation of alien plants (mainly *A. saligna*)(Privett 2024). This has negative implications for animal occurrence, diversity, and density. If the property is left in its current state this status quo will remain in place e.g. there is no incentive for anyone to restore the system to a more natural state. In this case, if the development is done in a responsible manner (which includes post development restoration and system maintenance) it has the potential to improve the system with positive spin-offs for animal occurrence, diversity, and density. We considered this in our assessment when impact on and risk to animals was assessed.

Connectivity for animal species

The conservation planning map of the Western Cape Biodiversity Plan (Pool-Stanvliet et al. 2017) indicates the presence of a ESA1 and ESA2 (Ecological Support Area) and CBA 1 (Critical Biodiversity Area) (Figure 13). The ESA's and CBA is critically important for animal landscape connectivity perspective for wetland, estuarine and terrestrial species.

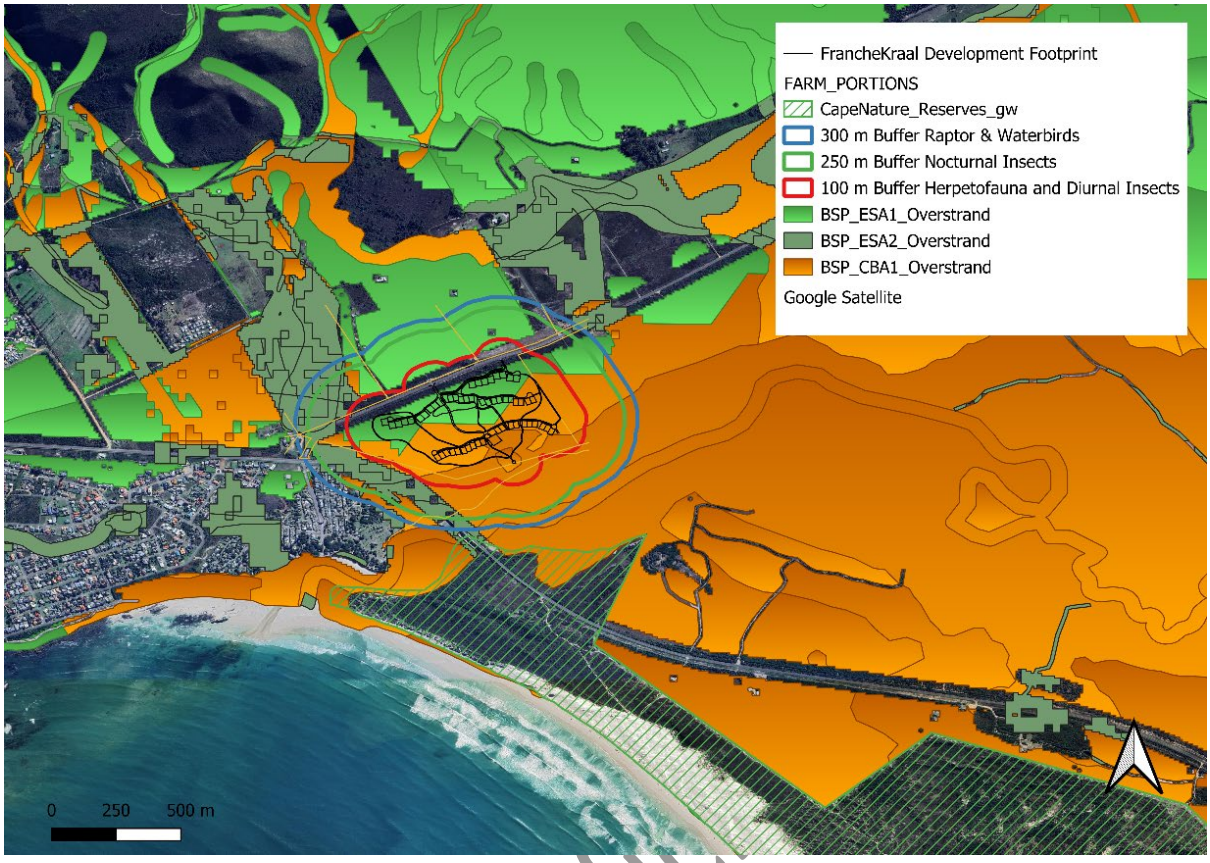

Figure 13: The conservation planning map of the Western Cape Biodiversity Plan (Pool-Stanvliet et al. 2017) indicates the presence of ESA 1, ESA2 (Ecological Support Area) and CBA 1 (Critical Biodiversity Area).

From a faunal connectivity perspective, the presence of an ecological corridor facilitating movement of ground-dwelling species between the Uilkraalmond Nature Reserve, the Uilenkraal estuary, the Boesmansriver and Dynefontein Mountains is important and essential. The provision of the open spaces between the building footprints in the current development plan is therefore desirable (Figure 3). The development footprint does still infringe on the ESA1 and CBA 1 areas in the PAOI. From a faunal connectivity perspective, we therefore consider the proposed development risk as **'medium'** (Table 12) provided the necessary mitigation measures is in place to facilitate animal movement (see section on mitigation measures).

Table 12: 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 'low'.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

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

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

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 reasonably small footprint of the proposed development and provision and rehabilitation of 'private open space' would facilitate adequate forage habitat for black harriers. The species range widely, and the minor loss of forage habitat could be tolerated. Rehabilitation (alien plant removal) of the open space areas and the return of natural Fynbos will benefit the species habitat and prey species. The development site does not significantly influence potential breeding sites. 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 13).

Table 13: 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 'low'.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

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

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

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 relatively small footprint of the proposed development and provision and rehabilitation of the 'private open space' would facilitate adequate forage habitat for marsh harriers. The species range widely, and the minor loss of forage habitat could be tolerated. Rehabilitation (alien plant removal) of the open space areas and the return of natural Fynbos will benefit the species habitat and prey species. The development site does not significantly influence potential breeding sites. 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 14).

Table 14: 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 'low'.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

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

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

Caspian tern *Hydroprogne caspia*

The Caspian Tern *Hydroprogne caspia* is classified as 'Vulnerable' with an estimated ~1 000 mature individuals left (Ortmann et al. 2015). The species has a restricted number of breeding locations (28) leaving it prone to the effects of human activities or stochastic events within a short time period (Cooper et al. 1992, Ortmann et al. 2015). The closest known breeding locality is De Hoop Vlei about 90 km east of the property. Caspian terns regularly use estuaries as feeding and resting habitats (Cooper et al. 1992). The property falls within the species distribution range and has been observed in the Uilenkraal estuary based on iNaturalist records from December 2020. There is therefore a reasonable likelihood that the species would frequent the Uilenkraal estuary adjacent to the property for foraging and resting purposes. We did not observe the species during our field visit. We don't consider the building footprints which is situated further away from the estuary (Figure 5) as a major concern. However, the placement of a jetty and presence of humans and their pets on the edge of the estuary would cause disturbance to animals using the sandbanks and mud flats for feeding and resting. The Caspian Tern, *Hydroprogne caspia*, could be negatively impacted by the presence of humans and their pets accessing the edge of the estuary and proposed jetty and potential impact are therefore classified as '**low**' (Table 15).

Table 15: Evaluation of site ecological importance (SEI) in terms of Caspian Tern Hydroprogne caspia forage and resting 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.

Great white pelican *Pelecanus onocrotalus*

Great White Pelicans *Pelecanus onocrotalus* are classified as 'vulnerable'. With ~2 500 pairs, restricted to less than 5 breeding locations the species is vulnerable to short-term human activities and stochastic events (Bowker 2014). They are ground-nesting birds that form large breeding colonies (Bowker and Downs 2008). They favour islands for nesting sites, but will nest on the mainland if the area is inaccessible to land predators (Bowker and Downs 2008). There are no observational records for this species for the Uilenkraals estuary and it seems that the estuary is not of major importance for the species. The species was not observed during the field visit. The impact of the development on Great White Pelicans *Pelecanus onocrotalus* by the proposed development is therefore considered to be **'very low'**.

Southern black korhaan *Afrotis afra*

Southern Black Korhaan *Afrotis afra* is classified as 'Vulnerable' and is a South African endemic (Evans 2023). The species distribution range is restricted to the western area of the Northern Cape Province and to the area south of the Great Escarpment in the Western Cape, and the western section of the Eastern Cape Province (Evans 2023). Most iNaturalist and GBIF records

indicates several records in the open plain Renosterveld areas of the Overberg >50 km east of the property. We did not observe the species during our field visit. The habitat in the development site is not suitable for the species as it is too dense. The impact of the development on Southern Black Korhaan *Afrotis afra* by the proposed development is therefore considered to be **'very low'**.

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 no iNaturalist and GBIF records in the vicinity with the closest being a sighting >40 km towards Napier in the north-east. 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 100 km away. Stripe flufftails did not respond to our playbacks at the development site. The likelihood that this species would occur at the site is therefore considered low. The potential impact on Stiped flufftail *Sarothrura affinis* is classified as **'very low'**.

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 with the closest 12 km away to the north-east of this property. We did not observe the species during our field visit. We consider the drier areas in the property as marginally suitable. There is a moderate likelihood that this species would occur at the site. The impact of the development on Southern Adder *Bitis armata*, by the proposed development will therefore likely be **'low'** (Table 16).

Table 16: Evaluation of site ecological importance (SEI) in terms of Southern Adder Bitis armata habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). SEI is classified as 'low'.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

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

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

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 suitable for this species. If the site is restored habitat will be highly suitable. It is likely that some of their habitat will be lost permanently and the disturbance during construction phase will have a negative impact. The open spaces provisioned in the site and adjacent properties to the east and west do however provide adequate space for this species to escape and persist. The potential impact on Cape dwarf chameleon, *Bradypodion pumilum* is classified as **'low'** (Table 17).

Table 17: 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 'low'.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

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

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

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

Western leopard toad *Sclerophrys pantherine*

The Western leopard toad *Sclerophrys pantherine* is listed as 'Endangered' because of its extent of occurrence of 3,824 km^2, its area of occupancy is 405 km^2 (IUCN SSC Amphibian Specialist Group and South African Frog Re-assessment Group 2016). The species are not listed as an SCC for this site but due to the close proximity of observation data we include it in this assessment. The population and its habitat is considered to be severely fragmented and in decline due to urbanisation and agricultural expansion throughout its range (IUCN SSC Amphibian Specialist Group and South African Frog Re-assessment Group 2016). Western leopard toads require a standing body of water that which is at least 30-50 cm deep, with large open water areas (Burger 2020). The water should not dry up for the period of late July to well into November and even December, so as to allow sufficient time for the development of different batches of tadpoles (Burger 2020). One of the population strongholds for this species is located at the farm Uilenkraal approximately 5 km to the west of the property (Doucette-Riise 2012, Casola 2017). This is confirmed from iNaturalist and GBIF records. The wetland area at site FK7 and FK10 could be a potential breeding site but it is considered marginal. It is likely that the site is suitable as terrestrial forage habitat for the species. We did not observe the species during the field visits. Rehabilitation of the property will likely have a positive effect. It is likely that some of their habitat will be lost permanently and the disturbance during construction phase will have a negative impact. The open spaces provisioned in the site and adjacent properties to the east and west do however provide adequate space for this species to escape and persist. The potential impact on Western leopard toad *Sclerophrys pantherine* is classified as **'medium'** (Table 17).

Table 18: Evaluation of site ecological importance (SEI) in terms of Western leopard toad Sclerophrys pantherine 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*

The Yellow-winged Agile Grasshopper is an endemic grasshopper species occurring on Western and Eastern Cape mountains. It is listed as vulnerable on the IUCN Red List Category. It has been recorded from near Clanwilliam, and from there eastwards towards East London, associated with different fynbos types occurring on south-facing, cool slopes (Brown 1960, Kinvig 2005). 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, the largest of the two insect SCC flagged for the proposed development. Although the host plant/s of *A. montanus* is not yet determined, we noted dense stands of *Acacia longifolia* across most of the site. Extensive sweep netting was performed in natural remnants of Agulhas Sand Fynbos amidst the dense invasion, where *Osteospermum moniliferum*, *Metalasia muricata*, *Babiana* sp., *Searsia laevigata*, *Restio* spp., *Muraltia* sp., *Haemanthus sanguineus*, *Erica* sp., *Osyris compressa* and some *Sideroxylon inerme* individuals were found. No specimens of *A. montanus* were seen during a field visit. The site does not occur in close proximity to mountains, bordering an estuary, with the centre of the site being ca. 1km from the ocean. The substrate was not rocky.

The proposed developments are classified as '**very low'** impact on *A. montanus*, due to 1) low elevation, 2) an absence of species data from this area, 3) no host plant records being available to link present vegetation to possible insect species occurrence, 4) no direct evidence of occurrence, and 5) the high invasiveness (*A. longifolia, A. cyclops*) of large areas of the site that will not support *A. montanus*.

Mute Winter Katydid *Brinckiella aptera*

The Mute Winter Katydid occurs in the fynbos biome of the Western Cape. It is listed as vulnerable on the IUCN Red List Category (Naskrecki & Bazelet 2009). The species is unique in the genus, with the males being apterous. It has been found at four locations only, including Bredasdorp, Pearly Beach and Tulbagh. It can expectantly be found across the Western Cape province in succulent Karoo (re: into southern Namaqualand) and fynbos habitats, although declining due to habitat loss (Naskrecki & Bazelet 2009). The estimated extent of occurrence is ca. 12 500 square kilometres (Naskrecki and Bazelet 2009). Its host plant data is absent, but predictably feeds on flowers and leaves of a narrow range of host plants (re: are thus quite host specific), occurring on low-growing, herbaceous shrubs (Naskrecki and Bazelet 2009). They are a nocturnal species, and thus sensitive to light disturbance,

such as artificial lights associated with development. Their peak emergence time is from August to October. Although the host plant/s of *B. aptera* is not yet determined, we noted dense stands of *Acacia longifolia* across most of the site. Extensive sweep netting was performed in natural remnants of Agulhas Sand Fynbos on site, amidst dense invasion, where *Osteospermum moniliferum*, *Metalasia muricata*, *Babiana* sp., *Searsia laevigata*, *Restio* spp., *Muraltia* sp., *Haemanthus sanguineus*, *Erica* sp., *Osyris compressa* and some *Sideroxylon inerme* individuals were found, among other low-growing plant species. The natural vegetation height was relatively low, at ca. 1.0m, with scattered clumps of larger shrubs. No specimens of *B. aptera* were found. The proposed development lies in close proximity to where *B. aptera* has previously been observed, namely Pearly Beach (ca. 9km away) and Bredasdorp (ca. 60km away). Agulhas Sand Fynbos occurs from the proposed development site, towards Pearly Beach and reaches Bredasdorp. Thus, if the site is rehabilitated to its historic vegetation, it could host this species in the future. At present, its presence is unlikely.

The proposed developments are classified as **low impact** on *B. aptera*, due to 1) no host plant records being available to link present vegetation to possible insect species occurrence, 2) no direct evidence of occurrence after extensive sweep netting, and 3) the high invasiveness (*A. longifolia, A. cyclops*) of the majority of the site that will not support *B. aptera* (Table 19). Because it is a nocturnal species, and the historic vegetation of the site could have supported it, or rehabilitation efforts could see it return in the future.

Table 19: Evaluation of site ecological importance (SEI) in terms of Mute Winter Katydid Brinckiella aptera forage habitat (the receptor) for animal species of conservation concern for the proposed development, see evaluation criteria (SANBI 2020). SEI is classified as 'low'.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

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

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

Overall SEI for the PAOI

The overall SEI for the PAOI is considered '**Medium'** (Table 20):

Table 20: 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** ESA 1, ESA2 linking the Uilkraalmond Nature Reserve, estuary and Dynefontein mountains	**Medium** Although the area is small the wetland and terrestrial connection is still functional and important	**Medium** Decrease in habitat with potential impact on free animal movement	**Medium** BI=Medium RR=Medium
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
Caspian Tern *Hydroprogne caspia*	**Medium** No breeding habitat present in eastuary. Foraging habitat marginally suitable but small	**High** Suitable forage and resting habitat species sensitive to disturbance	**High** Decrease in forage habitat size but low impact in terms of broader forage range	**Low** BI=Low RR=High
Great White Pelicans *Pelecanus onocrotalus* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Southern black korhaan *Afrotis afra* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Denham's bustard *Neotis denhami* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Hottentot Buttonquail *Turnix hottentotus* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Striped Flufftail *Sarothrura affinis* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Southern Adder *Bitis armata*	**Low** Habitat marginally suitable. Likelihood of species presence medium. Precautionary principle remains	**Medium** Small proportion of property is suitable.	**Medium** Decrease in forage habitat size but low impact in terms of broader forage range. Recovery potential marginal	**Low** BI=Low RR=Medium

Cape dwarf chameleon, *Bradypodion pumilum* habitat	**Medium** Suitable habitat present for breeding and foraging. Species NT	**Low** Small proportion of larger range. Property serves as foraging and breeding habitat	**Medium** Decrease in habitatr size/width with potential impact on free animal movement.	**Low** BI=Low RR=Medium
Western leopard toad *Sclerophrys pantherine*	**Medium** Suitable habitat present for breeding and foraging. Species EN and large intact habitat in neighbouring PNR	**Medium** Property serves as foraging and breeding habitat. Impact fairly minor to turn positive with rehabilitation	**Medium** Habitat recovery likely but will take time.	**Medium** BI=Medium RR=Medium
Yellow-winged Agile Grasshopper *Aneuryphymus montanus* (species not present)	**Very low**	**Very low**	**Very low**	**Very low**
Mute Winter Katydid *Brinckiella aptera*	**Low** Potential habitat if site is rehabilitated	**Low** Property could serves as foraging and breeding habitat. Impact fairly minor to turn positive with rehabilitation	**Medium** Potential for reasonable habitat connectivity with potentially functional ecological corridors	**Low** BI=Low RR=Medium

Recommended mitigation measures

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

a) An alien plant eradication and rehabilitation plan needs to be developed and implemented to deal with the rehabilitation of the property. This plan and implementation need to be entrenched formally in the future maintenance of the properties open spaces.
b) I fire management plan needs to be developed and legally incorporated into the property's future management protocols so that fire is not removed as an ecological process due to perceived risk by future owners.
c) Only native plants should be allowed in household gardens.
d) During the construction phase the construction area should be clearly demarcated and blocked off from the 'private open spaces' area to avoid damage and pollution.
e) Pre and post construction site preparation should include rehabilitation of the 'private open space' by removing current building rubble and litter from this area.
f) The fence should always remain semi-permeable to allow for movement of small sized animals e.g. small antelope, genets, mongoose between the nature reserve and wetland system.
g) Search and Rescue of slow-moving animals should take place on building sites. Animals should however not be moved off-site but rather released in the open space areas.
h) Dogs should not be allowed to free-roam the 'private open space'. Cats should not be allowed due to their devastating effect on small animals.
i) Rodent control should make use of environmentally friendly methods such as instillation of owl boxes and raptor perches that attract natural predator control.

j) Human and their pet use of the walkway and jetty should be controlled to avoid disturbance to birds on the sandbanks, mudflats and salt marches.
k) Lights and insects:
    a. Switch lights off when not needed
    b. Add timers / sensors to lights
    c. Make lights activated by movement
    d. Add shields to lights
    e. Make lights shine downward, or direct only to where needed
    f. Use long wavelength red or amber lights / filtered amber LED, with no blue / minimal green light for outdoor lighted areas
    g. A lighting plan should be developed to ensure that the impact of night lights is kept to an absolute minimum
    h. Clearing of indigenous fynbos vegetation should be kept to an absolute minimum
    i. Avoid trampling of natural fynbos vegetation surrounding developments

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Appendix 1

CV and SACNASP Certificate of Prof JA Venter

CV and SACNASP Certificate of Dr Rudi Swart