TERRESTRIAL ANIMAL SPECIES COMPLIANCE STATEMENT

For the proposed water reservoirs on Remainder 325 West, Pacaltsdorp, George, Western Cape

Prepared by

Mr Willem Matthee

(Nelson Mandela University George Campus)

And

Prof. Jan A. Venter

(Nelson Mandela University George Campus)

Prepared for:

Cape EAPrac (Pty) Ltd

P.O. Box 2070

George

Western Cape

6530

DECLARATION OF SPECIALIST INDEPENDENCE

We, Mr Willem Matthee and Prof Jan A. Venter, hereby declare that:

- we are acting as independent specialists regarding this application;
- we do not have any interest, hidden or otherwise, in the outcome of this application, apart from financial compensation for the work done to survey the proposed development area and compile this report;
- surveying the site for this faunal compliance statement was done objectively, and that this report and the facts therein contained (regardless of its impact on the application approval process) will not be affected by any outside factors;
- we have the required expertise to perform surveys and produce compliance statements as it pertains to the faunal aspect of this proposed development
- we will comply with the relevant Acts, regulations and legislation;
- we have not, and will not, engage in conflicting interests while performing our duties for this activity, and have no influence over the decision-making authorities regarding their accepting or rejecting of this proposed development;
- we undertake to disclose to the applicant and competent authority all material and information within my possession that may influence the decision-making process regarding the proposed development;
- all particulars furnished by us in this form are true and correct, and that it is an offense to present a false declaration, and that such a false declaration is punishable in terms of Section 24F of the Act; and that
- this document is to be viewed as a whole, and not misquoted out of context.

Date: 5 July 2023

Date: 5 July 2023

DATE	REVISION	STATUS	PREPARED BY	CHECKED AND APPROVED BY
5 July 2023	1		Willem Matthee	Prof. Jan A. Venter (SACNASP Registration Number 400111/14)
				

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1. INTRODUCTION

The construction of two water reservoirs (each 14.5 Ml in volume), two towers (one 1.75 Ml tower, and one 1.25 Ml tower) and an associated pump station have been proposed for a section of Remainder 325 West, Pacaltsdorp, George (S34º0'51.24"; E22º26'46.78"). Three potential sites for the development have been identified: within the sports stadium boundary fence (Area A); to the south of the sports fields (Area B); and to the west of the sports fields (Area C). See Figure 1 for the location of the three areas relative to the sports fields. The Department of Forestry, Fisheries and the Environment (DFFE) screening tool (performed on 5 April 2023) identified the entire site as having a **Medium sensitivity** in terms of the terrestrial animal species theme. This sensitivity was confirmed through the completion and submission of a site sensitivity verification report by Matthee and Venter (2023). A medium sensitivity requires the submission of a terrestrial animal species compliance statement. This compliance statement, 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 (henceforth called the study site), during which the presence or likely presence of the species of conservation concern (SCC) identified by the screening tool was determined.

For this proposed development, the following seven SCC were identified by the screening tool as being possibly impacted by the development:

- Knysna leaf-folding frog, *Afrixalus knysnae* (Amphibia)
- African marsh-harrier, *Circus ranivorus* (Aves)
- Denham's bustard, *Neotis denhami* (Aves)
- Knysna warbler, *Bradypterus sylvaticus* (Aves)
- Duthie's golden mole, *Chlorotalpa duthieae* (Mammalia)
- Sensitive Species 8 (which cannot be disclosed)
- Yellow-winged agile grasshopper, *Aneuryphymus montanus* (Insecta)

All seven species have a medium sensitivity to the proposed development.

This report's scope follows the legislative requirements set out by the National Environmental Management Act 107 of 1998, as per the latest government gazetted notice (No. 1150, Protocol For The Specialist Assessment And Minimum Report Content Requirements For Environmental Impacts On Terrestrial Animal Species, October 2020).

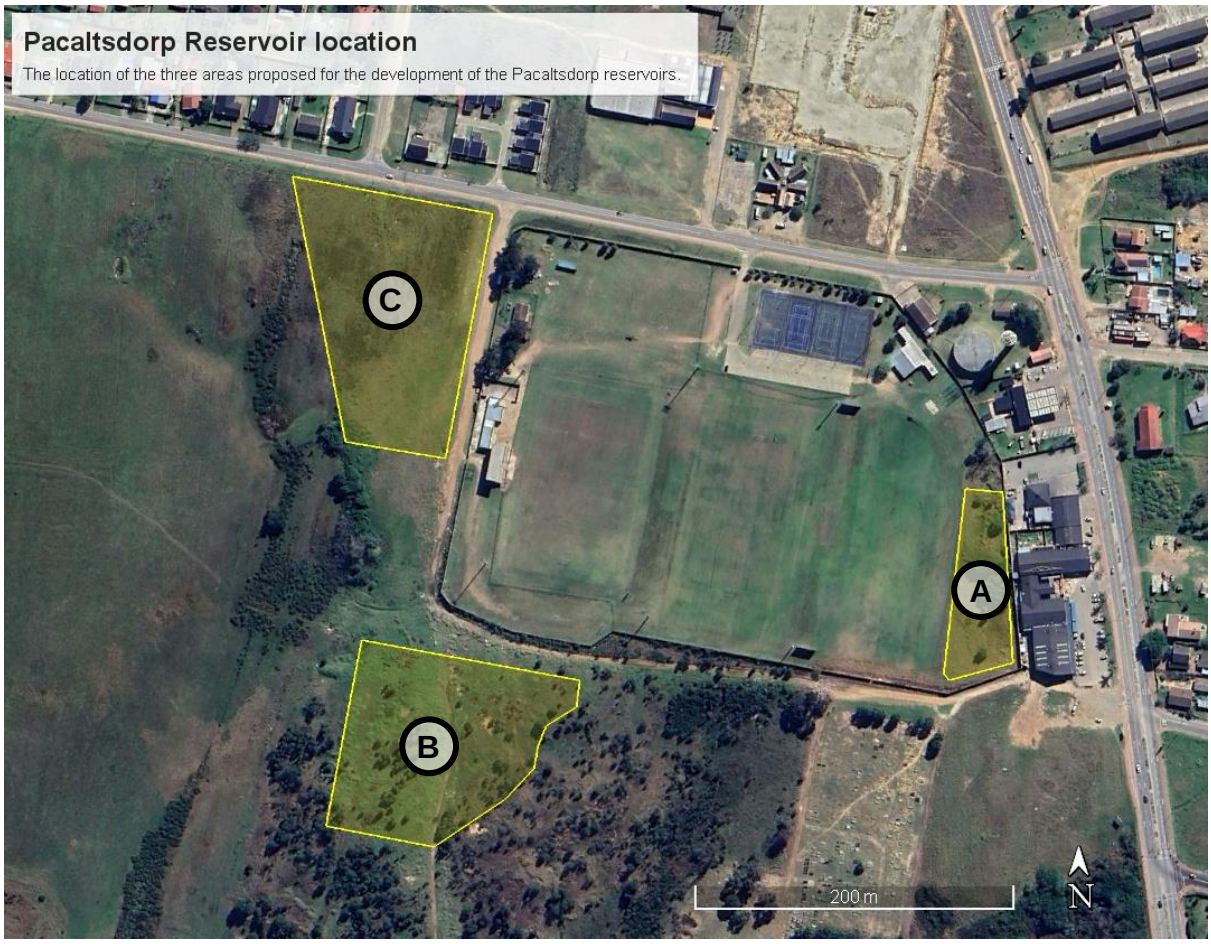

Fig. 1: The three proposed sites of the water reservoir construction. Each of the three areas were surveyed during the site visit on 16 May 2023.

2. DETAILS OF THE SPECIALISTS

Both specialists that compiled this document have experience in faunal species identification, and the identification of suitable habitats for various species, from invertebrates to large mammalian species. Their details are in the table below.

Table 1. The details and experience of the specialists involved with this report.

Specialist and contact details	**Qualifications**	**SACNASP Registration**	**Experience**
Jan A Venter **Email:** JanVenter@mandela.ac.za **Mobile:** 0824161096	PhD (Biology) UKZN	400111/14	25 Years' experience in faunal ecology and conservation in both the government and tertiary education sector. Current position: Associate Professor in the Department of Conservation Management at Nelson Mandela University
Willem Matthee **Email:** WillemM@mandela.ac.za **Mobile:** 084 620 4246	M.Sc. (Nature Conservation)	Registration in process	Willem has four years' experience in surveying amphibian populations, and an additional five years of bird surveys. He has also been involved in animal diversity surveys on an on-off basis for the past four years. He has completed his MSc in Nature Conservation in 2014. He currently lectures as a lecturer in Conservation Ecology at the Nelson Mandela University George Campus.

3. METHODS

This report's findings are based on:

1) a desktop study to determine the presence of SCC and other species at the study area; and
2) a study visit to determine species presence and habitat suitability for the SCC.

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

A site visit was performed on 16 May 2023, between 09:00 and 13:00. During the site visit, the species (plants and animals, including tracks and dung) observed, were recorded. The site visit consisted of visual and acoustic surveys performed along pathways present, and within vegetation (both indigenous and exotic). The main purposes of the site visit were to determine whether:

1) any SCC were present in the proposed redevelopment area, or in adjacent vegetation;
2) the proposed site for the development acts as a corridor for any of the SCC highlighted by the screening tool;
3) 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
4) 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.

4. RESULTS

The desktop study (which included the use of iNaturalist records as well as the Global Biodiversity Information Facility - GBIF) indicated that there are the following likelihoods of the SCC occurring at the site, or being impacted by the development:

- A very low likelihood of *C. ranivorus*, *N. denhami*, Sensitive Species 8 and *A. montanus*;
- A low likelihood of *B. sylvaticus* and *C. duthieae*; and
- A medium likelihood of *A. knysnae* occurring at the site.

The site visit confirmed these likelihoods of the SCC occurring at the site, and that the site has a **Medium sensitivity**.

4.1. Desktop Study

For the desktop study, the following were recorded (where obtainable) for each of the seven SCC identified by the screening tool:

- Preferred habitat;
- Presence of the preferred habitat at the study site; and
- Historical records of the species

*4.1.1. Knysna leaf-folding frog (*Afrixalus knysnae*)*

This species, which is classified as Endangered, prefers wetland ecosystems (both permanent and temporary, though they may have a preference for temporary wetlands) between George and Tsitsikamma (Minter et al., 2004). The closest known population of this species, is at the Garden Route Botanical Gardens (GRBG). However, it is likely that this species is under-recorded, and may occur in suitable wetlands outside their known distribution range. At the study site, two potentially suitable habitats occur: a stream (located to the west of Area C), and a temporary wetland (located to the southeast of Area B). With the correct plant species (particularly the presence of *Persicaria decipiens*, which are used by *A. knysnae* in nest construction - Matthee, unpubl. data), there is a possibility that these wetland ecosystems could provide suitable habitat for this species, and there is therefore a medium likelihood that it occurs at the study site.

*4.1.2. African marsh-harrier (*Circus ranivorus*)*

This species occurs along large water bodies, including large wetland systems and estuarine environments (Simmons, 2005). There are a number of records on the GBIF database of this species in the George area, but most of these are from large water bodies. It is therefore unlikely that this species makes use of the small wetland that is present adjacent to Area B. Additionally, the study site is near human habitation, and it is therefore likely that the high disturbance level present in the area will prevent this species from occurring in the area.

*4.1.3. Denham's bustard (*Neotis denhami*)*

Similar to *C. ranivorus*, *N. denhami* is normally absent from areas with high human disturbance (Allan, 1993; Allan, 2005). This big bird species usually occurs in open vegetation, and may make use of cultivated fields and other human-created habitats. There are a number of records of this species on the GBIF database: however, these are either from agricultural fields to the west of Blanco, or records from the Southern African Bird Atlas Project 2 (SABAP2). Records submitted for SABAP2 do not reflect true coordinates of the sightings, and it is likely that these records are also from surrounding farmland further away from the residential areas.

*4.1.4. Knysna warbler (*Bradypterus sylvaticus*)*

This species is a specialist of dense vegetation, especially dense scrub in forest environments, or along river courses. Although there is a stream present to the west of Area C, as well as a small thicket to the south of Area C, the degree to which these habitats are isolated from suitable habitat reduces the likelihood of this species occurring at the study site. Similar to *N. denhami*, there are a few records of this species on the GBIF database, with all originating from SABAP2 records with indeterminable coordinates. It is therefore likely that these records were from more suitable vegetation, likely along the coast to the south of the study site. There are many records of this species to the north of George, where habitat is more suitable. This development, however, will not affect that population.

*4.1.5. Duthie's golden mole (*Chlorotalpa duthieae*)*

The only records of this species in the George municipal area, are from Victoria Heights and the GRBG. In both cases, specimens were collected in garden areas adjacent to forested areas. This habitat type does not appear to be present at the study site, and it is unlikely that this species will be impacted by the proposed development.

4.1.6. Sensitive Species 8 (which cannot be disclosed)

This species occurs in forest and thicket environments (Venter et al., 2016). Due to the potential susceptibility of this species to overexploitation by humans, the identity thereof cannot be disclosed. The study site has no suitable habitat nearby, and the high degree of human disturbance associated with this area makes it highly unlikely that this species occurs in the area.

*4.1.7. Yellow-winged agile grasshopper (*Aneuryphymus montanus*)*

Known from rocky areas with sclerophyllous (hard-leaved) vegetation in relatively arid environments, conditions do not appear suitable for this species to occur in the area. The closest record of this species is from the Swartberg Pass north of Oudtshoorn, approximately 90 km from the study site), and it is unlikely that this proposed development will have an impact on this species.

4.2. Site visit

The site visit indicated that one area (Area A) is located in an area that consists of a homogenous area of unmowed lawn grasses, where the habitat does not support a wide range of animal species. Area B is located adjacent to a temporary wetland with sedges and other water-dependent plants present. The majority of this area is located far enough from the wetland for the proposed development not to have major impacts thereon. Area C is located adjacent to a stream, with dense water-dependent vegetation present. Similar to Area B, the majority of this area is far enough away from the aquatic ecosystem to not have a major, long-lasting impact thereon. The area has varying degrees of human disturbance present: Area A is a completely transformed area; Area B has a footpath dissecting it (with the associated foot traffic and rubbish dumping); Area C also has a footpath going through it, but it appears less transformed than Area B. The vegetation in Area A consists of tall lawn grasses; in Area B it is dominated by tall grasses and a few scattered shrubs. Area C has mostly natural vegetation present, with a large cluster of *Watsonia* also present towards the southern edge of this area. The removal of invasive Australian blackwood trees, *Acacia melanoxylon*, has occurred in Area B; however, there are still some saplings of Black wattle, *Acacia mearnsii*, and Pampas grass, *Cortaderia selloana*, present in Area C.

A number of animal species were recorded during the site visit (Appendix 1), but no specimens of the SCC identified by the screening tool were recorded at the site, nor any specimens of other SCC.

*4.2.1. Knysna leaf-folding frog (*Afrixalus knysnae*)*

The wetland and stream adjacent to Area B and Area C, respectively, may be suitable habitats for this species. These frogs require temporary or permanent water, with an abundance of vegetation at water level that can be used by males as calling sites during the breeding season. Additionally, the presence of plants that can be used in nest construction is also required: these plants typically have leaves that are approximately 1 cm in width, and 5 cm in length. A species that is commonly used in nest construction is Slender knotweed (*Persicaria decipiens*). This species was observed in the stream adjacent to Area C, but no suitable vegetation was recorded in the wetland adjacent to Area B during the site visit. It is possible that this frog occurs at the study site, and that vegetation adjacent to the stream and wetland may be

valuable overwintering habitat for individuals of this species. These areas should therefore not be disturbed or impacted by the development.

*4.2.2. African marsh-harrier (*Circus ranivorus*)*

The study site had an absence of suitable large wetland ecosystems for this species to inhabit, and the high level of human disturbance likely also prevents individuals of this species moving into or through the area. It is therefore unlikely that the proposed development will have an impact on the continued survival of this species.

*4.2.3. Denham's bustard (*Neotis denhami*)*

This species inhabits open vegetation, including agricultural fields and other similar human-created landscapes. They are, however, sensitive to disturbance and hunting (especially involving dogs) associated with human habitation. During the site visit, it was evident that the footpaths through Areas B and C are used regularly, and a number of dog footprints were also observed. Due to the proximity of the study site to human habitation, it is highly unlikely that this species occurs at the site, and the proposed development will likely have no impact on the continued survival of this species.

*4.2.4. Knysna warbler (*Bradypterus sylvaticus*)*

This species occurs in forested areas (the species epithet *sylvaticus* means "inhabitant of the woods"), especially where a dense scrub layer (with overhanging trees) occur along streams. Though a potentially suitable stream is present adjacent to Area C, the vegetation is not tall enough to support this species. During the site visit, calls of this bird were used to illicit a response from any individuals in the area. However, no response was received, and it is highly unlikely that this species occurs in the area. The small thicket to the south of Area C, though potentially suitable, is very small, and isolated from other suitable habitats. It is therefore unlikely that this species occurs at the site, and the proposed development has a low likelihood of impacting the survival of this species.

*4.2.5. Duthie's golden mole (*Chlorotalpa duthieae*)*

This species is usually recorded in forested environments and surrounding gardens (Bronner, 2014). The vegetation in the majority of the study site is too sparse to support this species. No subterranean tunnels were observed along the thicket (to the south of Area C), and it is unlikely that this species occurs at the site. The proposed development therefore has a low likelihood of impacting the survival of this species.

4.2.6. Sensitive Species 8 (which cannot be disclosed)

The vegetation at the study site is very highly unlikely to support this species, as it requires relatively large extents of well-wooded vegetation. Additionally, it is sensitive to human disturbance, especially hunting, and it is very unlikely that this species occurs at the study site. The proposed development will therefore not have an impact on the continued survival of this species.

*4.2.7. Yellow-winged agile grasshopper (*Aneuryphymus montanus*)*

The vegetation at the study site is not the typical sclerophyllous that this species is known from (Brown, 1960). Additionally, the climate in area is different from the low rainfall areas where it occurs, and the rocky substrate used by this grasshopper for breeding is also absent from the site. It is very unlikely that this species occurs at the study site, and the proposed development will therefore not have an impact on the continued survival of this species.

Fig. 2: The typical, homogenous, tall lawn grass vegetation present at Area A of the study site.

Fig. 3: The typical grass-dominated vegetation present through the majority of Area B at the study site.

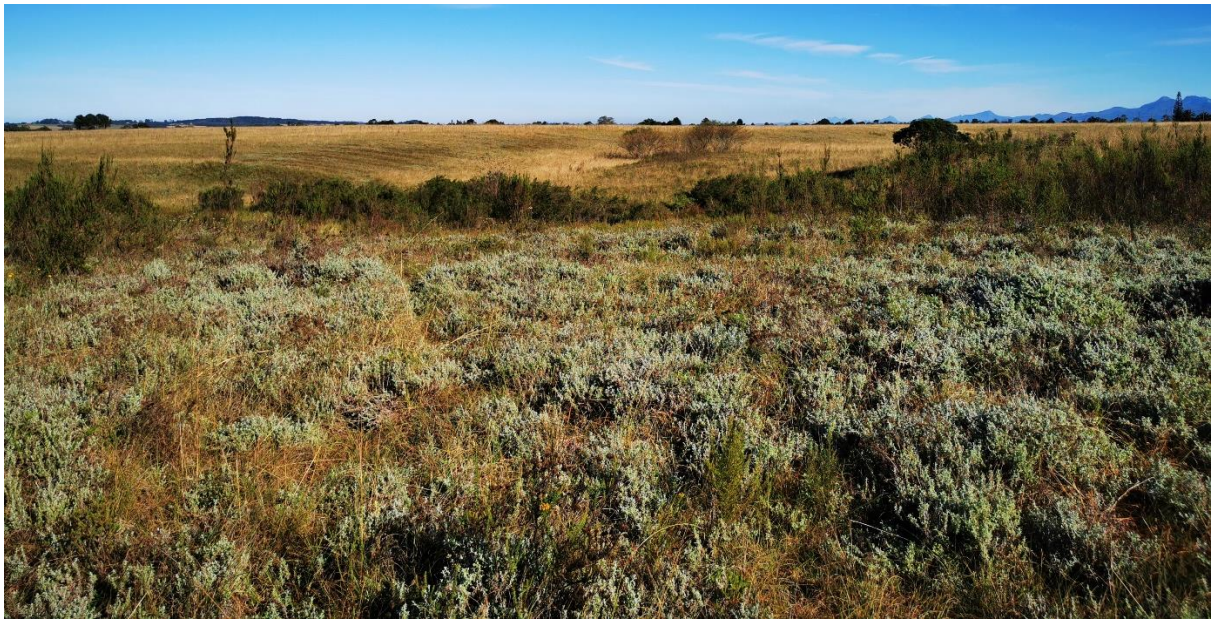

Fig. 4: The typical, short fynbos shrubland present at Area C of the study site. Note the denser vegetation at the bottom of the slope, where the stream is present.

Fig. 5: The water-loving vegetation present along the stream adjacent to Area C of the study site.

Fig. 6: This thicket (dominated by exotic species) is too small for the forest-specialist SCC to occur in, and is located outside Area C.

Fig. 7: A large patch of *Watsonia*, which provide food for nectarivorous animals during the flowering season.

Fig. 8: The temporary wetland present to the southeast of Area C. A Cape longclaw was feeding along the banks of this wetland during the site visit.

Fig. 9: Denser vegetation (dominated by sedges) within the seasonal wetland. This denser vegetation may be suitable habitat for the Knysna leaf-folding frog, *Afrixalus knysnae*.

4.3. Notable observations

A total of 19 animal species were recorded during the site visit (Appendix 1). Notable observations included an Olive bush-shrike (*Chlorophoneus olivaceus*) calling from the exotic thicket (Fig. 6) during the site visit. This species is more mobile than the Knysna warbler, and are able to colonise small thicket fragments more easily than the Knysna warbler (which is a species of conservation concern). Another noteworthy observation was of a Cape longclaw (*Macronyx capensis*) feeding alongside the bank of the seasonal wetland at Area B (Fig. 8).

5. TERRESTRIAL ANIMAL SPECIES COMPLIANCE STATEMENT

Based on the results of the desktop study and the site visit, the sensitivity of the study site (Remainder 325 West, Pacaltsdorp, George) in terms of the terrestrial animal species can be regarded as **MEDIUM**. This is based on the following:

- The absence of georeferenced records of any of the seven SCC at or near the study site;
- The lack of suitable habitat for all SCC apart from *A. knysnae*;
- The high levels of human disturbance present in the area, making it unlikely that many of the SCC are likely to occur at the study site;
- The presence of two wetland areas, which may be suitable for *A. knysnae*. The stream adjacent to Area C is potentially more suitable for this species than the wetland at Area B; and
- The lack of observations of the seven SCC highlighted by the DFFE screening tool, or any other SCC, during the site visit.

6. RECOMMENDATIONS

The clump of *Watsonia* in Area C is likely an important feeding site for pollinators in the area, and should be kept intact. Additionally, the wetland habitats and adjacent vegetation should not be disturbed or impacted by the proposed development.

REFERENCES

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Simmons, R.E. 2005. African Marsh Harrier, *Circus ranivorus*. *In* P.A.R. Hockey, W.R.J. Dean & P.G. Ryan (Eds) *Roberts - Birds of southern Africa* 7th ed. The Trustees of the John Voelcker Bird Book Fund: Cape Town.

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APPENDIX 1: THE TERRESTRIAL ANIMAL SPECIES RECORDED IN THE AREA OF REMAINDER 325 WEST, SURVEYED DURING THE SITE VISIT ON 16 MAY 2023.

Common name	Scientific name
Arachnids	
Spider, Sheetweb	*Euprosthenopsis* sp.
Birds	
Apalis, Bar-throated	*Apalis thoracica*
Bishop, Yellow	*Euplectes capensis*
Dove, Red-eyed	*Streptopelia semitorquata*
Egret, Cattle	*Bubulcus ibis*
Fiscal, Southern	*Lanius collaris*
Kite, Black-shouldered	*Elanus caeruleus*
Lapwing, Blacksmith	*Vanellus armatus*
Longclaw, Cape	*Macronyx capensis*
Shrike, Olive bush-	*Chlorophoneus olivaceus*
Starling, Common	*Sturnus vulgaris*
Waxbill, Common	*Estrilda astrild*
Amphibians	
Frog, Clicking stream	*Strongylopus grayii*
Frog, Striped stream	*Strongylopus fasciatus*
Insects: Blattodea	
Termite, Blackmound	*Amitermes hastatus*
Insects: Hymenoptera	
Bee, Cape honey	*Apis mellifera capensis*
Insects: Lepidoptera	
Pansy, Dark blue	*Junonia oenone*
Insects: Orthoptera	
Grasshopper, Elegant	*Zonocerus elegans*
Katydid, Spotted meadow	*Conocephalus maculatus*

TERRESTRIAL ANIMAL SPECIES SITE SENSITIVITY VERIFICATION REPORT FOR THE PROPOSED WATER RESERVOIRS ON REMAINDER 325 WEST, PACALTSDORP, GEORGE, WESTERN CAPE

Prepared by

Mr Willem Matthee

(Nelson Mandela University George Campus)

And

Prof. Jan A. Venter

(Nelson Mandela University George Campus)

Prepared for:

Cape EAPrac (Pty) Ltd

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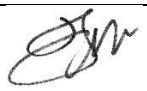
DECLARATION OF SPECIALIST INDEPENDENCE

We, Mr Willem Matthee and Prof. Jan A. Venter, hereby declare that:

- we are acting as independent specialists regarding this application;
- we do not have any interest, hidden or otherwise, in the outcome of this application, apart from financial compensation for the work done to survey the proposed development area and compile this report;
- surveying the site for this faunal compliance statement was done objectively, and that this report and the facts therein contained (regardless of its impact on the application approval process) will not be affected by any outside factors;
- we have the required expertise to perform surveys and produce compliance statements as it pertains to the faunal aspect of this proposed development
- we will comply with the relevant Acts, regulations and legislation;
- we have not, and will not, engage in conflicting interests while performing our duties for this activity, and have no influence over the decision-making authorities regarding their accepting or rejecting of this proposed development;
- we undertake to disclose to the applicant and competent authority all material and information within my possession that may influence the decision-making process regarding the proposed development;
- all particulars furnished by us in this form are true and correct, and that it is an offense to present a false declaration, and that such a false declaration is punishable in terms of Section 24F of the Act; and that
- this document is to be viewed as a whole, and not misquoted out of context.

Date: 5 July 2023

Date: 5 July 2023

DATE	REVISION	STATUS	PREPARED BY	CHECKED AND APPROVED BY
30 May 2023	1	Approved for submission	Willem Matthee	Dr Jan A. Venter (SACNASP Registration Nr. 400111/14)
				

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1. INTRODUCTION

Cape EAPrac (Pty) Ltd was appointed to facilitate the aspects regarding the environmental impact of the proposed Pacaltsdorp reservoirs, on Remainder 325 West, George, Western Cape (S34º0'51.24"; E22º26'46.78"). Three sites have been identified as potential suitable locations for the development, and in this document are called:

-Area A (directly to the east of the sports field, within the perimeter of the sports field);
-Area B (to the south of the sports field, across a foot path)
-Area C (to the west of the sports field, between the sports field and a stream).

As per the "Protocols for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes" (hereafter called "the Protocols"), as promulgated in Government Gazette Notice 320 (Government Gazette 43110, 20 March 2020), the Protocols must be adhered to for all new applications for Environmental Authorisation.

As per the Protocols, a site sensitivity verification report must:

a) confirm the current land use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, change in vegetation cover or status, etc.;
b) contain a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
c) be submitted together with the relevant assessment report prepared in accordance with the requirements for the Environmental Impact Assessment Regulations.

The site sensitivity verification report is performed in order to determine the specialist inputs required for the themes included in the Protocols.

The Department of Forestry, Fisheries and the Environment (DFFE) screening tool (performed on 5 April 2023) identified the site as having a **Medium** sensitivity in terms of the terrestrial animal species theme (Fig. 1). This site sensitivity verification report focuses on that theme, and aims to:

a) determine whether the terrestrial animal species identified by the DFFE screening tool occur, or are likely to occur, at the site of the proposed development;
b) determine whether the sensitivity recorded for the property is correct; and
c) recommend whether a terrestrial animal species compliance statement (if the site sensitivity is low or medium) or specialist report (if the site sensitivity is high rather than medium) is required.

This site sensitivity verification report consists of (as per the Protocols) a desktop study (using Cape Farm Mapper, Google Earth, iNaturalist, BGIS and GBIF), as well as a site visit (conducted on 16 May 2023).

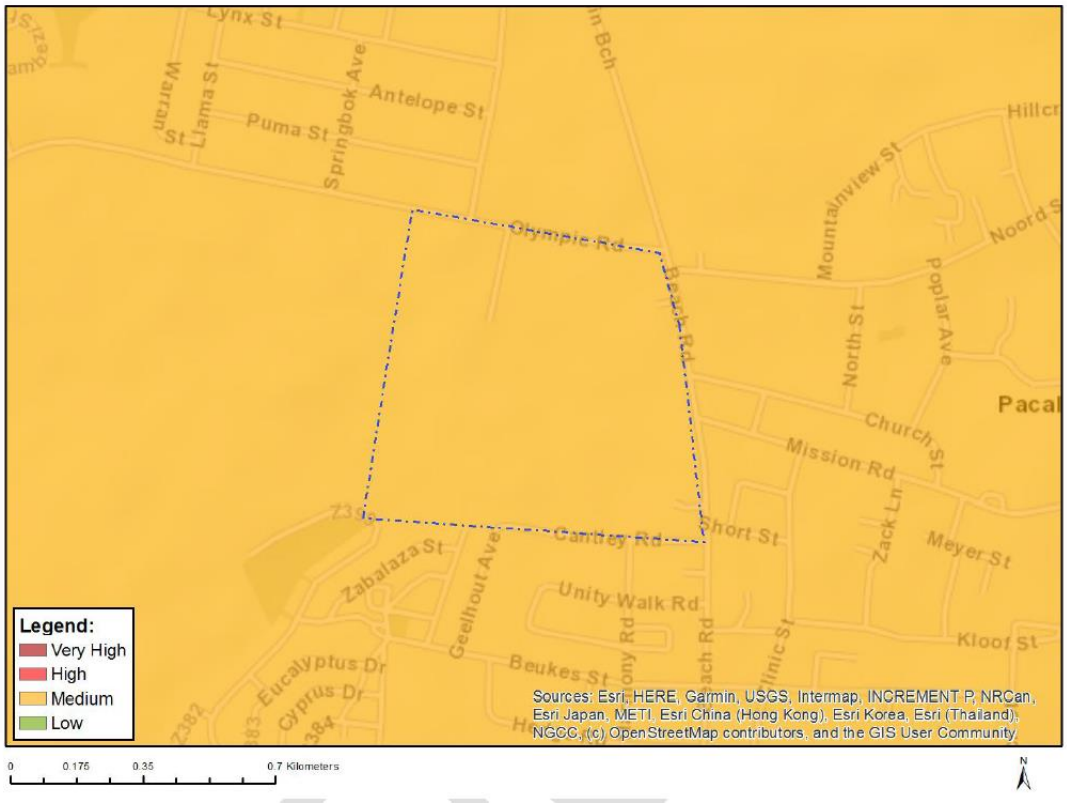

Fig. 1: The site sensitivity of the terrestrial animal species theme, as per the DFFE screening tool (performed 5 April 2023).

2. DETAILS OF THE SPECIALISTS

Both specialists that compiled this document have experience in faunal species identification, and the identification of suitable habitats for various species, from invertebrates to large mammalian species. Their details are in the table below.

Table 1. The details and experience of the specialists involved with this report.

Specialist and contact details	**Qualifications**	**SACNASP Registration**	**Experience**
Jan A Venter **Email:** JanVenter@mandela.ac.za **Mobile:** 0824161096	PhD (Biology) UKZN	400111/14	25 Years' experience in faunal ecology and conservation in both the government and tertiary education sector. Current position: Associate Professor in the Department of Conservation Management at Nelson Mandela University
Willem Matthee **Email:** WillemM@mandela.ac.za **Mobile:** 084 620 4246	M.Sc. (Nature Conservation) NMU	Not registered	Willem has three years' experience in surveying amphibian populations, and an additional five years of bird surveys. He has also been involved in animal diversity surveys on an on-off basis for the past four years. He has completed his MSc in Nature Conservation in 2014, and is in the process of completing his PhD in Nature Conservation. He currently lectures as a lecturer in Conservation Ecology at the Nelson Mandela University George Campus.

3. SITE DESCRIPTION

3.1. Desktop Study

3.1.1. Location and vegetation

The site of the proposed reservoir construction is a section of Remainder 325 West, centred around the sports field adjacent to the Delville Park and Pacaltsdorp suburbs, George, Western Cape (S34º0'51.24"; E22º26'46.78"). Of the three potential sites identified for the reservoir construction (Fig. 2), one (Area A; 3 800 m^2) is located within the sports fields' perimeter wall, one (Area B; 13 500 m^2) to the south of the sports fields, and one (Area C; 14 850 m^2) to the west of the sports fields.

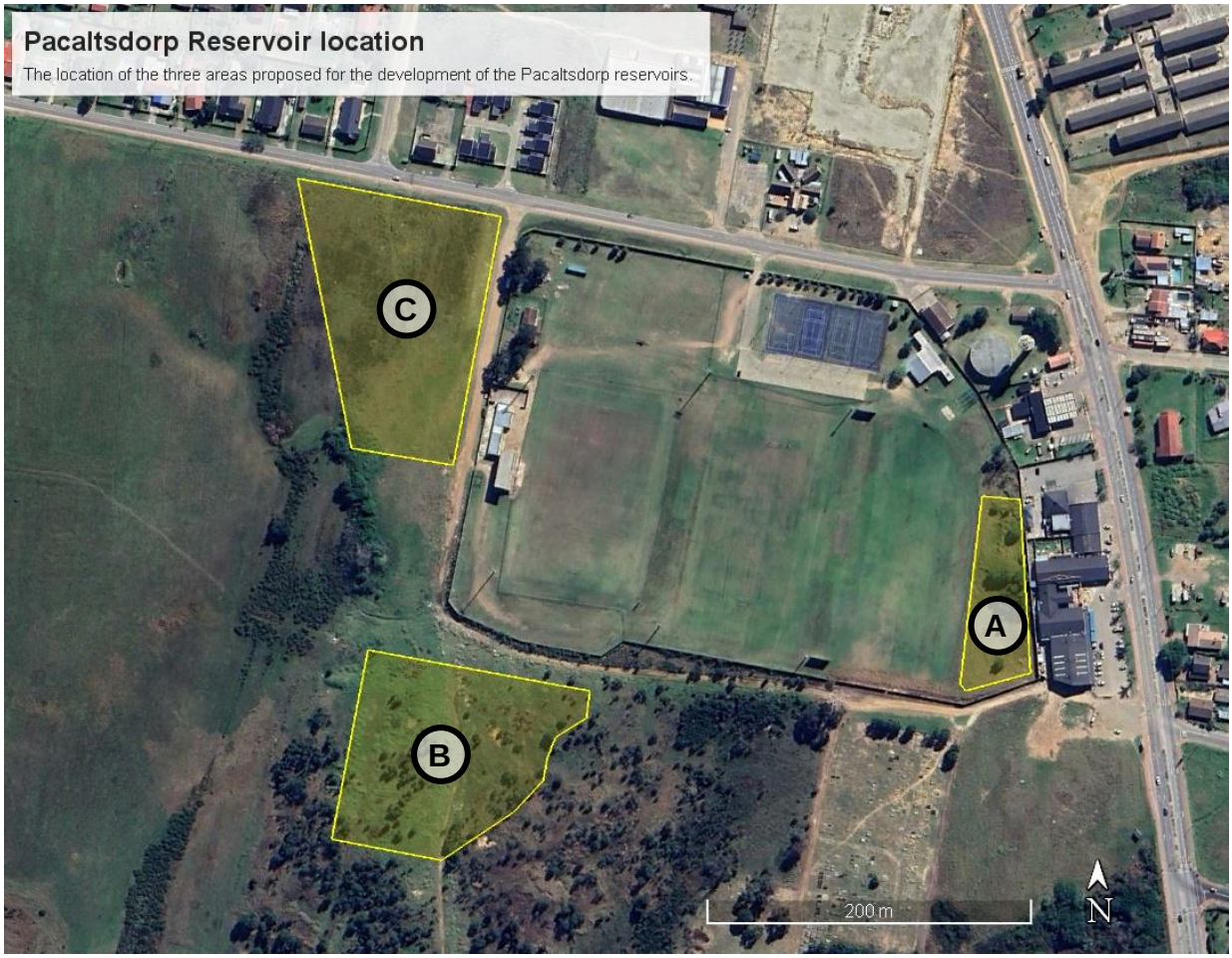

Fig. 2: The three potential sites proposed for this development, located (A) within the sports fields perimeter, (B) to the south of the sports fields, and (C) to the west of the sports fields. Map adapted from Google Earth (2022).

The natural vegetation at the site is classified as Garden Route granite fynbos (FFg5; Mucina & Rutherford, 2006), which is classified as endangered. Based on the location (area A), and proximity to developed areas (areas B and C), the vegetation is likely to be disturbed and transformed. The proposed development will consist of two 14.5 Ml reservoirs, two towers (one 1.25 Ml tower, and one 1.75 Ml tower), a pump station, and access road to the site.

3.1.2. Terrestrial animal species sensitivity

The DFFE screening tool identified seven species of conservation concern (SCC). These species (and their associated sensitivities) were:

- Knysna leaf-folding frog, *Afrixalus knysnae* (Amphibia) - Medium sensitivity
- African marsh-harrier, *Circus ranivorus* (Aves) - Medium sensitivity
- Denham's bustard, *Neotis denhami* (Aves) - Medium sensitivity
- Knysna warbler, *Bradypterus sylvaticus* (Aves) - Medium sensitivity
- Duthie's golden mole, *Chlorotalpa duthieae* (Mammalia) - Medium sensitivity
- Sensitive Species 8 (which cannot be disclosed) - Medium sensitivity
- Yellow-winged agile grasshopper, *Aneuryphymus montanus* (Insecta) - Medium sensitivity

Based on the desktop study (which included the use of iNaturalist and the Global Biodiversity Information Facility - GBIF), there are the following likelihoods of the SCC occurring at the site of the proposed development, or being impacted by the development:

- A very low likelihood of *C. ranivorus*, *N. denhami*, Sensitive Species 8, and *A. montanus*;
- A low likelihood of *B. sylvaticus* and *C. duthieae*; and
- A medium likelihood of *A. knysnae* occurring at the site.

Afrixalus knysnae was previously known only from Covie in the east up to Groenvlei in the west. However, a population of this species exists at the NMU George Campus, and this species has also been discovered at the Garden Route Botanical Gardens. Previously, it had been known from only eight wetland systems (Minter et al., 2004), but it is likely that previously undiscovered populations exist. This species prefers temporary wetlands, especially where open vegetation (usually with water lilies) occurs within denser, sedge-dominated vegetation (Matthee, unpubl. data). The presence of two wetland ecosystems in the area could indicate the potential presence of this species in the area: however, they are only present at breeding sites during spring and early summer, and are most likely in dense vegetation away from the water at the time of year that the site visit was performed.

Circus ranivorus occurs along large water bodies such as estuaries and large inland wetland systems, and in the adjacent open vegetation (Simmons, 2005). Although there is a small wetland system to the southeast of Area B (and a stream to the west of Area C), as well as potentially suitable open vegetation in the area, it is highly unlikely that this species will occur in this area. This is mainly due to the small size of these wetland ecosystems, and the high disturbance regime present in the area. Although there are a few records of this species around the George area, these are most likely along the larger river systems in the district.

Neotis denhami prefers open vegetation, including cultivated fields and open fynbos vegetation. The habitat in the area is potentially suitable, but it is highly unlikely that this species will occur at the site, due to the high level of disturbance present in the area - this species is absent from areas with high human disturbance levels (Allan, 1993; Allan, 2005).

Bradypterus sylvaticus prefers dense vegetation, especially along streams and in wooded areas with tangled undergrowth present (Smith, 2005). It is unlikely that this species occurs at the site, though there is a stream present next to Area C and a small thicket to the south of Area C. The thicket south of Area C is not extensive enough to support a population of this species, and the vegetation next to the stream does not appear dense and tall enough to support this species. It is therefore unlikely that this species occurs at the site.

Chlorotalpa duthieae has three records from the George area, with two at Carmel near Victoria Heights, and one at the Garden Route Botanical Gardens (GRBG). In the two cases at Carmel, specimens were recorded in gardens adjacent to an area invaded by black wattle, *Acacia mearnsii*, trees; in the GRBG specimen's case, it was recorded in indigenous forest at the botanical gardens. This species prefers forested habitats, including coastal scarp forest, and prefers deep forest (Bronner, 2014). Though they are also found in cultivated areas, it is unlikely that they occur at this site, due to the absence of large, forested areas at the site.

Sensitive Species 8 (which cannot be disclosed) occurs in forested environments Venter et al., 2016), and is highly unlikely to occur at the site, due to the absence of suitable habitats at the site or nearby. The proximity of the site to high levels of infrastructure also reduces the suitability of the habitat for this species.

Aneuryphymus montanus occurs in rocky, mountainous habitats, especially where sclerophyllous (tough-leaved) fynbos vegetation occurs in these habitats (Brown, 1960). The study site is dominated by short, fynbos-like vegetation, which may not be a preferred habitat for this grasshopper species. Additionally, the closest record of this species is from the arid mountain fynbos in the Swartberg Mountains north of Oudtshoorn (90 km from this site). It is therefore highly unlikely that this site is suitable for this species, and that it occurs here.

3.2. Site visit

3.2.1. Vegetation

The site visit, performed on 16 May 2023, confirmed that the study site was dominated by open vegetation.

Area A consisted of unmowed lawn grasses, with very few other plants present (Figures 3 and 4). The vegetation was very homogeneous, and most likely does not provide habitat for any of the SCC identified by the screening tool, nor for any SCC not identified by the screening tool.

Fig. 3: Area A, as viewed towards the south. It is dominated by a homogeneous field of tall grasses.

Fig. 4: The homogeneous tall grass vegetation at Area A of the study site, which is located adjacent to the eastern sports field.

Area B is dominated by grasses (Fig. 5), with sedges present at the wetland that is located to the southeast of the study site (Fig. 6). Until recently, there were exotic *Acacia* trees present (Fig.), particularly Australian blackwood (*Acacia melanoxylon*). A few large specimens of Spike dottypea (*Psoralea stachyera*) also occur in an area along the footpath, and a few Water waxberry (*Morella serrata*) grow near the wetland to the southeast of this area.

Fig. 5: Area B at the study site is dominated by taller grasses, with a few shrubs also present. The remains of *A. melanoxylon* that were controlled can be seen in the background.

Fig. 6: The vegetation at the seasonal wetland (to the southeast of Area B) is dominated by perennial sedges, which demarcate the area where standing water is present during the wet season.

Fig. 7: The remains of the exotic Australian blackwood trees, which were cleared in Area B of the study site.

The vegetation at Area C is dominated by short fynbos shrubs. Graminoids consist mainly of restios, while shrubs are dominated by *Helichrysum cymosum*, stinking everlasting (*H. foetidum*), blombos (*Metalasia muricata*), and the occasional black wattle (*A. mearnsii*) sapling (Fig. 8). The stream to the west of the study site (Fig. 9) has a number of Arum lilies (*Zantedeschia aethiopica*), present, as well as Slender knotweed (*Persicaria decipiens*; Fig. 10). The occurrence of *P. decipiens* at this wetland system is noteworthy, as it is a plant species that is often used by *A. knysnae* for egg-laying. There are ample pools along the stream where the water is flowing slow enough (and there is a presence of *P. decipiens*) to highlight this stream as a potential habitat of *A. knysnae*. These frogs are not currently at their breeding sites, however, and are likely in surrounding vegetation if they are present in the area.

There is an area in the southern section of Area C that has a very high abundance of *Watsonia* plants. These plants flower during spring, and are an important food source for vertebrate and invertebrate nectarivores, and therefore play an important role in the environment.

Fig. 8: The typical short fynbos at Area C of the study site, dominated by short shrubs and restios. The arrow indicates where a dense clump of *Watsonia* is present.

Fig. 9: The vegetation at the stream to the west of Area C, dominated by water-loving plant species. Pools of slower-flowing water in this stream may be suitable for *A. knysnae*.

Fig. 10: *Persicaria decipiens*, a known nest plant of *Afrixalus knysnae*, recorded at the stream to the west of Area C of the study site.

In addition to the stream and the short fynbos vegetation, Area C also has a thicket of exotic trees occurring to the south of the demarcated area. The site visit determined that the thicket is too small to be suitable for thicket-loving SCC, such as *B. sylvaticus*, *C. duthieae* and Sensitive Species 8.

3.2.2. Terrestrial animal species sensitivity

During the site visit, no signs were observed of any of the seven SCC. There is also a **very low** likelihood that *C. ranivorus*, *N. denhami*, Sensitive Species 8 or *A. montanus* occur at the study site. For *C. ranivorus*, the wetland areas are too small to form attractive habitats, while the high level of human disturbance in the area results in a very low likelihood of this species using the surrounding open vegetation as breeding habitat. For *N. denhami*, the level of human disturbance is too high, as this species avoids areas of high human disturbance. Sensitive Species 8 requires intact thickets or forests, which are absent from the site; the small thicket to the south of Area C is too small to support this species. The vegetation is not particularly sclerophyllous, and that (combined with the lack of rocky terrain and high rainfall the area receives) makes it highly unlikely that *A. montanus* occurs in the area. There is therefore a very low likelihood that this development will impact these four SCC.

Due to the general absence of forested environments, there is also a **low likelihood** that *B. sylvaticus* or *C. duthieae* occurs at the study site. No *B. sylvaticus* were heard calling, though they are vocal at this time of year. There is therefore a low likelihood that this development will impact these two SCC.

Due to the stream to the west of Area C, and the presence of a plant species commonly used by *A. knysnae* for nest construction (Fig. 11), there is a **medium** likelihood that *A. knysnae* occurs at the site, and may be impacted by this development (particularly closer to Area C). As mentioned, this frog species cannot currently be found at wetlands, and one cannot say for certain whether this development will impact the species.

Fig. 11: A nest of the Knysna leaf-folding frog (*Afrixalus knysnae*), with the leaf of *Persicaria decipiens* rolled around the eggs. This photo was **not** taken at the study site, but the plant species was recorded there during the site visit.

3.2.3. Other terrestrial animal species

During the site visit, nineteen (19) animal species were recorded at the study site (Appendix 1). None of these were species of conservation concern. The majority of species are common in disturbed and grass-rich habitats, with the exception of the Olive bush-shrike and two frog species (being a forest and wetland species, respectively).

4. SITE SENSITIVITY VERIFICATION FINDINGS AND EVIDENCE

The DFFE screening tool identified this development as having a **Medium** sensitivity for the terrestrial animal species theme, due to the potential presence of seven species of conservation concern. The desktop study and site visit confirmed that this development has a **Medium** sensitivity in terms of this theme, as there is a very low likelihood of *C. ranivorus*, *N*. *denhami*, Sensitive Species 8 and *A. montanus*, a low likelihood of *B. sylvaticus* and *C. duthieae*, and a medium likelihood of *A. knysnae* occurring at the site of this proposed development.

A sensitivity map in terms of the terrestrial animal species theme has been compiled for this site (Fig. 12), and for the individual areas: Area A (Fig. 13); Area B (Fig. 14); and Area C (Fig. 15). The areas near the wetland habitats (the stream west of Area C, and the temporary wetland southeast of Area B) should be viewed as high sensitivity. The surrounding vegetation, however, should be viewed as having medium sensitivity (rather than low sensitivity), as any amphibians utilising the wetland sites during their breeding season will likely use the vegetation in these areas to aestivate or hibernate outside the main breeding season. Additionally, these areas form part of important ecological corridors centred around the wetland areas, and should not be disturbed.

Fig. 12: The sensitivity map of this proposed development (adapted from Google Earth, 2022).

Fig. 13: The sensitivity map of Area A. The entire area is low sensitivity, due to the homogeneity of the vegetation, and few animal species being supported thereby.

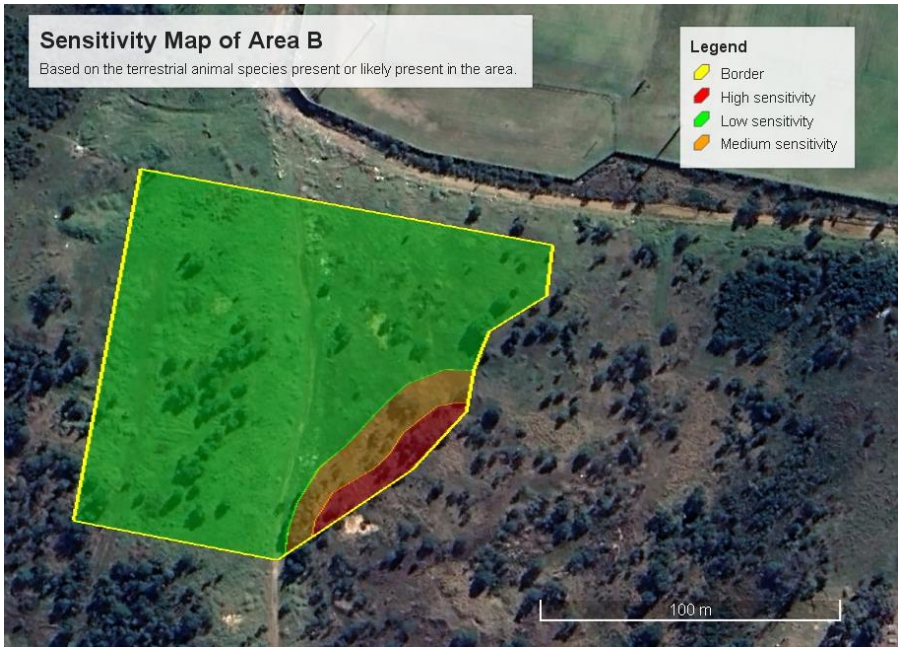

Fig. 14: The sensitivity map of Area B. The majority of the area is low sensitivity, due to the disturbed nature of the site. The southeasternmost corner is high sensitivity, due to the proximity to the wetland, and a medium sensitivity buffer surrounds it.

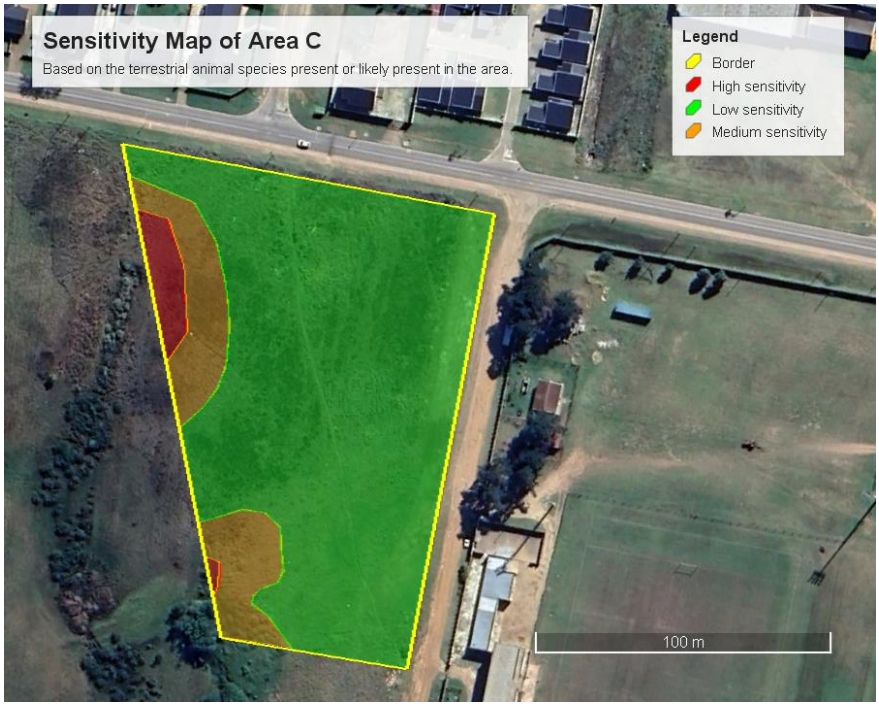

Fig. 15: The sensitivity map of Area C. The majority of the area is of low sensitivity, due to the disturbed nature of the area. However, the area closest to the stream is high sensitivity, and surrounding buffer zone medium sensitivity, due to the likelihood of *A. knysnae* occurring in the area. The *Watsonia*-clump is also classified as medium sensitivity due to its importance as a pollinator hotspot in the landscape.

The entire Area A, as well as the majority of Areas B and C are low sensitivity, due to the high level of transformation and disturbance that has occurred in these areas. There is a footpath running through Areas B and C (Fig. 16), and high levels of trash (Fig. 17, which was taken along the footpath through Area B).

Fig. 16: The footpath, where it runs through Area B. This footpath experience high levels of foot traffic, and there were multiple sets of dog tracks, indicating the high level of human disturbance this area experiences.

Fig. 17: Some of the rubbish present along the foot path through Area B.

The areas adjacent to the stream (adjacent to Area C) and the wetland (adjacent to Area B) should be regarded as high sensitivity, and not disturbed during development. Additionally, the patch of *Watsonia* plants in Section C (Fig. 18) has been classified as a medium sensitivity, due to their importance for nectar-feeding animals in the ecosystem. This area should also be disturbed as little as possible.

Fig. 18: The dense cluster of *Watsonia* at Area C, with old flowering stems still present. In the background (indicated by an arrow), the thicket (consisting mostly of exotic species) to the south of Area C can be seen.

5. RECOMMENDATIONS

Based on the medium likelihood of *A. knysnae*, low likelihood of *B. sylvaticus* and *C. duthieae*, and very low likelihood of *C. ranivorus*, *N. denhami*, Sensitive Species 8 and *A. montanus* occurring at the site, the EAPs confirm (through the desktop study and site visit) that this site has an overall **Medium sensitivity** in terms of the terrestrial animal species sensitivity. The areas demarcated as high sensitivity should not be disturbed in any way, as these form potential habitats for SCC, and are probable ecological corridors through the landscape. Additionally, the buffer zones around the high sensitivity zones (demarcated as medium sensitivity) should not be disturbed by the development, as these areas are likely used by SCC as shelter during the non-breeding season. Continued clearing of alien invasive species (especially the saplings of *A. mearnsii* in Area C) is recommended, to prevent further deterioration of the landscape.

Since the area has a **Medium sensitivity** in terms of the terrestrial animal species theme, Terrestrial Animal Species Compliance Statement is required.

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APPENDIX 1: THE TERRESTRIAL ANIMAL SPECIES RECORDED IN THE AREA OF REMAINDER 325 WEST, SURVEYED DURING THE SITE VISIT ON 16 MAY 2023.

Common name	Scientific name
Arachnids	
Spider, Sheetweb	*Euprosthenopsis* sp.
Birds	
Apalis, Bar-throated	*Apalis thoracica*
Bishop, Yellow	*Euplectes capensis*
Dove, Red-eyed	*Streptopelia semitorquata*
Egret, Cattle	*Bubulcus ibis*
Fiscal, Southern	*Lanius collaris*
Kite, Black-shouldered	*Elanus caeruleus*
Lapwing, Blacksmith	*Vanellus armatus*
Longclaw, Cape	*Macronyx capensis*
Shrike, Olive bush-	*Chlorophoneus olivaceus*
Starling, Common	*Sturnus vulgaris*
Waxbill, Common	*Estrilda astrild*
Amphibians	
Frog, Clicking stream	*Strongylopus grayii*
Frog, Striped stream	*Strongylopus fasciatus*
Insects: Blattodea	
Termite, Blackmound	*Amitermes hastatus*
Insects: Hymenoptera	
Bee, Cape honey	*Apis mellifera capensis*
Insects: Lepidoptera	
Pansy, Dark blue	*Junonia oenone*
Insects: Orthoptera	
Grasshopper, Elegant	*Zonocerus elegans*
Katydid, Spotted meadow	*Conocephalus maculatus*