

**TERRESTRIAL FAUNAL AND AVIFAUNAL SPECIES COMPLIANCE  
STATEMENT REPORT FOR THE PROPOSED CONSTRUCTION OF  
TWO HARD WATER RESERVOIRS AND ASSOCIATED  
INFRASTRUCTURE AT THE KOEBERG NUCLEAR POWER  
STATION LOCATED ON THE FARM DUYNEFONTYN NO. 1552,  
CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY**

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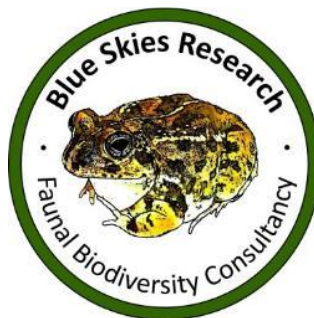
**November 2023**

**Prepared for:**



Sharples Environmental Services cc (SES)

**Prepared by:**



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## Specialist details and expertise

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### Qualifications

- PhD (Zoology), University of Johannesburg (2015 - 2017)
- MSc (Zoology), Stellenbosch University (2011 - 2013)
- BSc Honours (Zoology) cum laude, Stellenbosch University (2010)
- BSc (Biodiversity and Ecology) cum laude, Stellenbosch University (2007 - 2009)

### Expertise

- 27 years of in-the-field naturalist experience involving all faunal groups
- Zoologist with 16 years of professional experience
- 14 Peer-reviewed publications in high impact national and international scientific journals on the patterns and processes which drive and maintain faunal biodiversity, as well as on aspects of faunal biology and ecology
- Five IUCN Red List assessments

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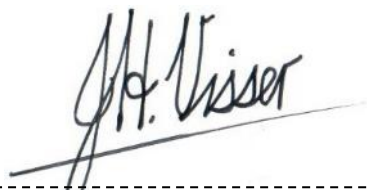
- Involved in the Southern African Bird Atlas Project 2 (SABAP2)
- Contributor on the National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity. Synthesis Report. South African National Biodiversity Institute, an entity of the Department of Environment, Forestry and Fisheries, Pretoria.

## **Declaration of independence by the independent person who compiled a specialist report or undertook a specialist process**

I, Dr Jacobus Hendrik Visser, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations and any specific environmental management Act;
- have no and will not have any vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;

- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence.



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30 November 2023

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Date



# Blue Skies Research

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30 November 2023

## **TERRESTRIAL FAUNAL AND AVIFAUNAL SPECIES COMPLIANCE STATEMENT REPORT FOR THE PROPOSED CONSTRUCTION OF TWO HARD WATER RESERVOIRS AND ASSOCIATED INFRASTRUCTURE AT THE KOEBERG NUCLEAR POWER STATION LOCATED ON THE FARM DUYNEFONTYN NO. 1552, CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY**

### **1. Introduction**

The applicant is proposing the construction of two hard water reservoirs along with associated inlet, outlet (pipelines) and electrical infrastructure at the Koeberg Nuclear Power Station located on the Farm Duynefontyn No. 1552, Melkbosstrand, City of Cape Town Metropolitan Municipality, Western Cape Province. The proposed development originally formed part a previous application submitted to the Department of Environment Affairs (DEA) (DEA Reference: 14/12/16/3/3/1/1759) as approved in 2017. Following detailed design and planning, it was found that, because of the topography of the area, an alternative site (approximately 22m east of the originally proposed site) would be preferred for the proposed project. This alternative site therefore forms the footprint for the current investigation (hereafter referred to as the “study area” or “site”).

In terms of the Cape Town Zoning Scheme (2015), the site is zoned as Risk Industry. The following specialist studies were undertaken for the proposed development in terms of the previous EIA process:

- A Botanical Impact Assessment, 2016; and

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- A Heritage and Palaeontological Assessment, 2016.

Both studies were undertaken in 2016, prior to the instigation of the protocols for the minimum requirements for specialist assessments as promulgated in March 2020, which are based on the findings of the report extracted from the DFFE web-based screening tool. Because terrestrial faunal and avifaunal species sensitivity is flagged as “High” for the current development footprint (Section 3), Blue Skies Research was appointed by Sharples Environmental Services cc (SES) on behalf of the applicant to perform the required terrestrial faunal and avifaunal assessment of the study area (see Sections 2 and 3). The current report represents a Compliance Statement for the proposed development, following a terrestrial faunal and avifaunal assessment of the site in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment (EIA) Regulations 2014 (Government Notice (GN) 984), as amended.

## **2. Terms of Reference**

### *2.1. General legislature pertaining to this report*

This terrestrial faunal and avifaunal assessment report is compiled in accordance with the following guidelines:

- *Department of Environmental Affairs and Development Planning (DEA&DP) Guidelines for Involving Biodiversity Specialists in the EIA Process (Brownlie, 2005).*
- *Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes, Government Notice No. 320 (Gazetted 20 March 2020).*
- *Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Animal Species, Government Notice No. 1150 (Gazetted 30 October 2020).*
- *South African National Biodiversity Institute (SANBI). 2020. Species Environmental Assessment Guideline. Guidelines for the implementation of the*

*terrestrial fauna and terrestrial flora species protocols for environmental impact assessments in South Africa*. South African National Biodiversity Institute, Pretoria. Version 2.1 2021.

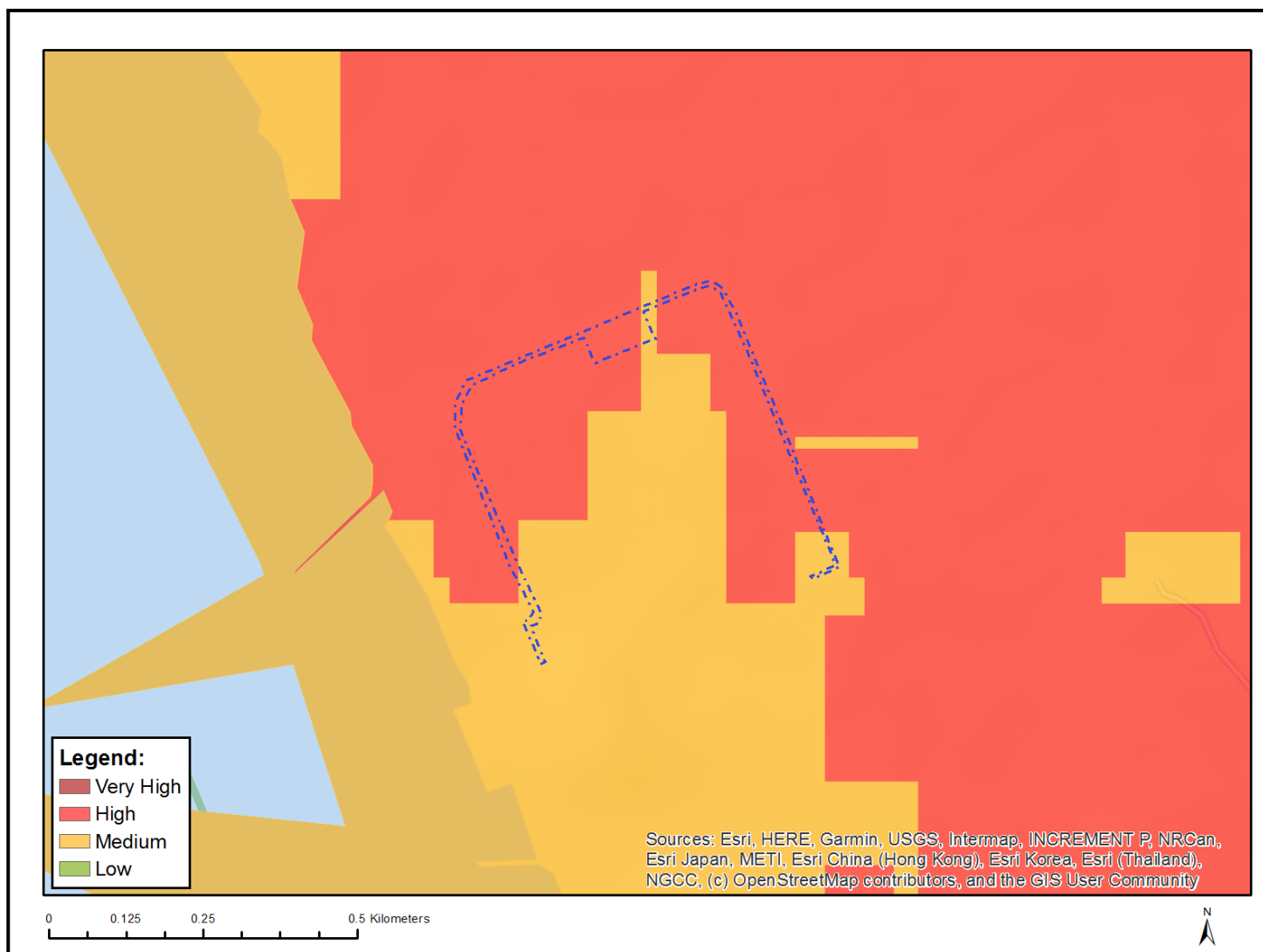
## 2.2 Other sources consulted

Other sources pertaining to this report are as follows:

- IUCN. 2021. The IUCN Red List of Threatened Species. Version 2021-3. <https://www.iucnlist.org>. Accessed on 25 November 2023.
- *National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): Publication of lists of critically endangered, endangered, vulnerable and protected species, Government Notice No. 2007 (Gazetted 14 December 2007)*.

## 3. Reporting protocol

The DFFE Screening Tool Report generated for the project footprint identifies the site as being of an overall “High” sensitivity under the “Relative Animal Species Sensitivity Theme” (Figure 1). This follows from the projected and possible occurrence of three avifaunal and two invertebrate Species of Conservation Concern (SCC) (see Table 1). The current report therefore assesses the presence or likely presence of these avifaunal and invertebrate SCC (as well as other possible SCC within these faunal groups, see Section 9) within the study area in accordance with the protocols outlined in the Species Environmental Assessment Guideline (SANBI, 2020).



**Figure 1** Relative Animal Species Sensitivity Map retrieved for the study area (Blue polygon = Study area) by the DFFE Screening Tool (<https://screening.environment.gov.za/screeningtool/>).

**Table 1** List of Species of Conservation Concern (SCC) identified in the DFFE Screening Tool Report (<https://screening.environment.gov.za/screeningtool/>). For each, the listed sensitivity (possibility of occurrence within the study area), scientific name and common name is shown, along with its current IUCN status.

Sensitivity	Species	Common name	IUCN status
High	<i>Circus maurus</i>	Black Harrier	Endangered
High	<i>Afrotis afra</i>	Southern Black Korhaan	Vulnerable
High	<i>Circus ranivorus</i>	African Marsh-harrier	Least Concern
Medium	<i>Pachysoma aesculapius</i>	West Coast Flightless Dungbeetle	Vulnerable
Medium	<i>Bullacris obliqua</i>	Bladder grasshopper	Vulnerable

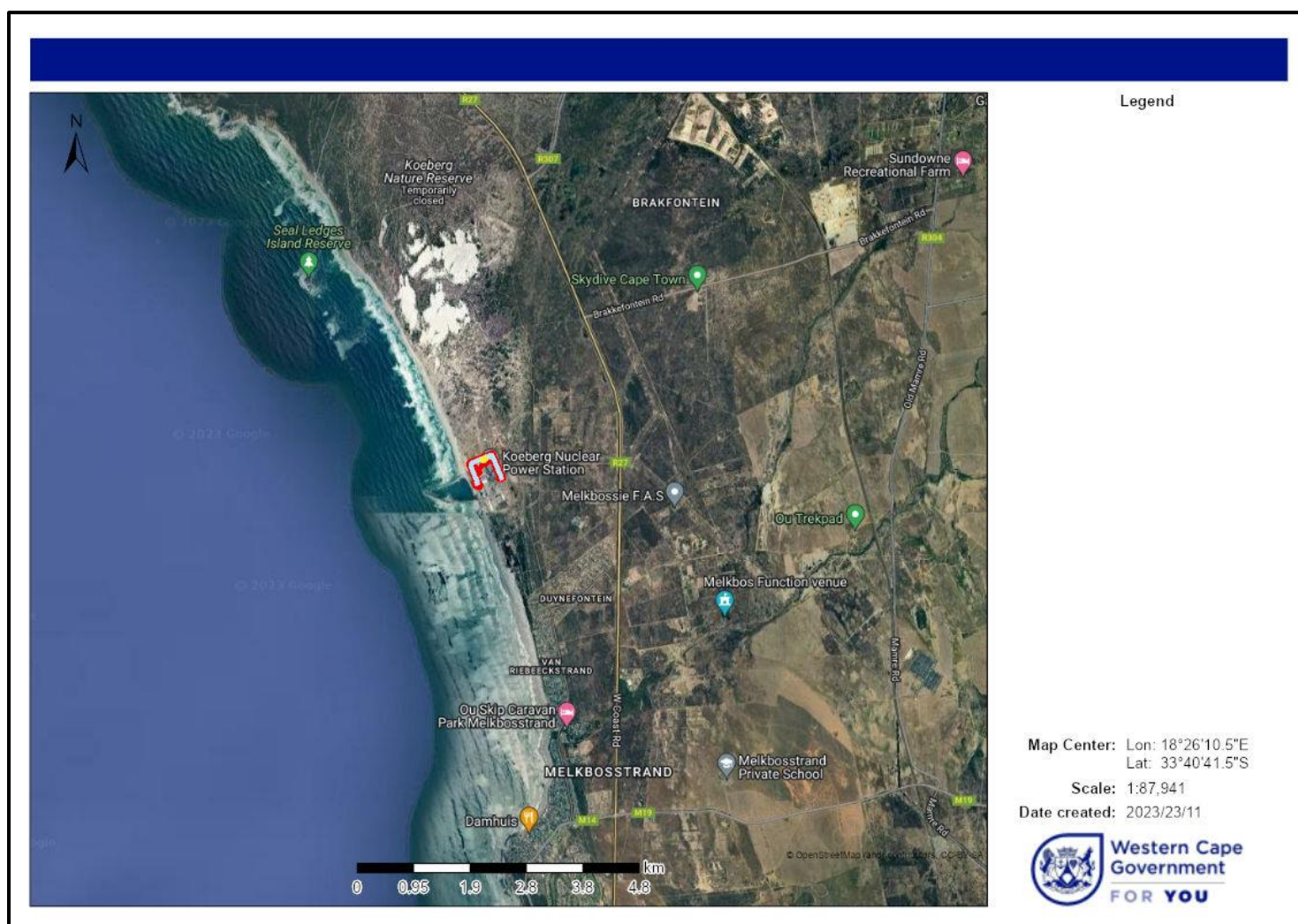
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## 4. Overview of the study area

### 4.1 Geographic location

The project footprint is located entirely within the grounds of the Koeberg Nuclear Power Station on the Farm Duynfontyn No. 1552 (Figures 2 and 3). Although an area of around 12 hectares has been identified as the potential study area, the physical footprint of the proposed reservoirs and pipelines will be spatially limited and largely follow existing cleared areas and access roads (Figure 3).



**Figure 2** Spatial location of the study area on a broad scale (Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; map generated in Cape Farm Mapper version 3, Western Cape Department of Agriculture).





**Figure 3** Spatial location of the study area at a finer scale (Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; map generated in Cape Farm Mapper version 3, Western Cape Department of Agriculture).

#### 4.2 Topology

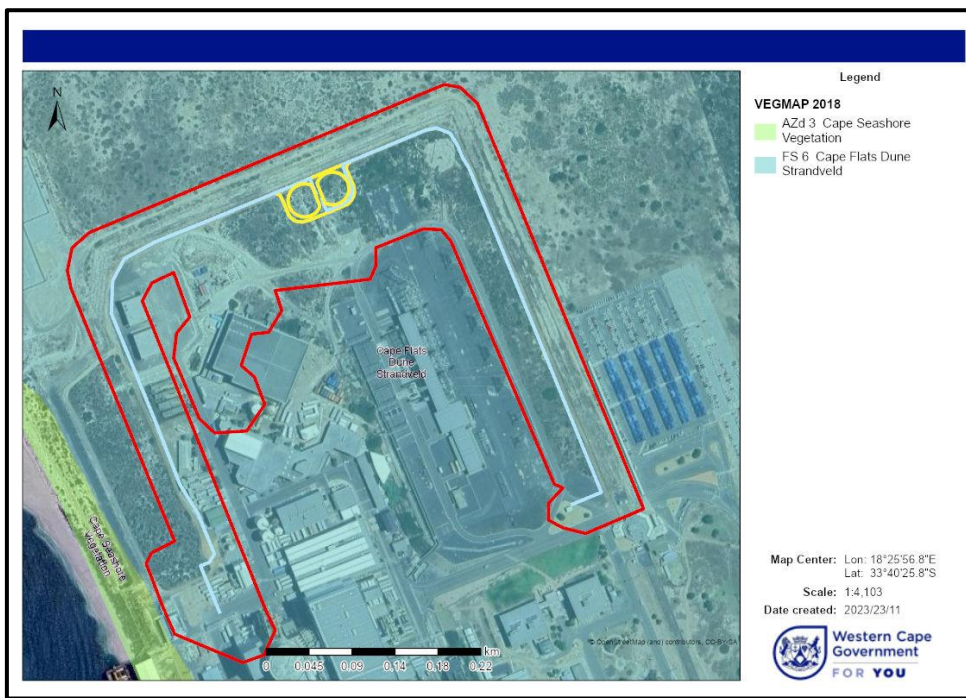
The topology of the study area is mostly flat, sloping very gently westward towards the Atlantic Ocean (Figure 4).



**Figure 4** Topology of the study area showing 5 meter contour lines (Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; map generated in Cape Farm Mapper version 3, Western Cape Department of Agriculture).

#### 4.3 Vegetation

Vegetation across study area would have historically comprised Cape Flats Dune Strandveld (VegMap, 2018; Figure 5) which represents an “Endangered” ecosystem type (*The National List of Ecosystems that are Threatened and Need of Protection*, Government Gazette, 2011; Figure 6). Even so, very little of the natural vegetation remains on the site, with only remnant currently present (Section 7).



**Figure 5** Vegetation type across the study area (VEGMAP, SANBI 2018; Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; map generated in Cape Farm Mapper version 3, Western Cape Department of Agriculture).



**Figure 6** Spatial location of ecosystems and their threat statuses according to *The National List of Ecosystems that are Threatened and Need of Protection* (Government Gazette, 2011), overlapping with study area (Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; map generated in Cape Farm Mapper version 3, Western Cape Department of Agriculture).

#### 4.4 Land cover

Classification of land cover over the study area indicates the presence of and industrially zoned area over the entirety (Figure 7; Land Cover 73-class, Department of Environmental Affairs, 2020). This designation was found to be accurate, but fail to take into account the remnant stands of shrubland on the site (Section 7).



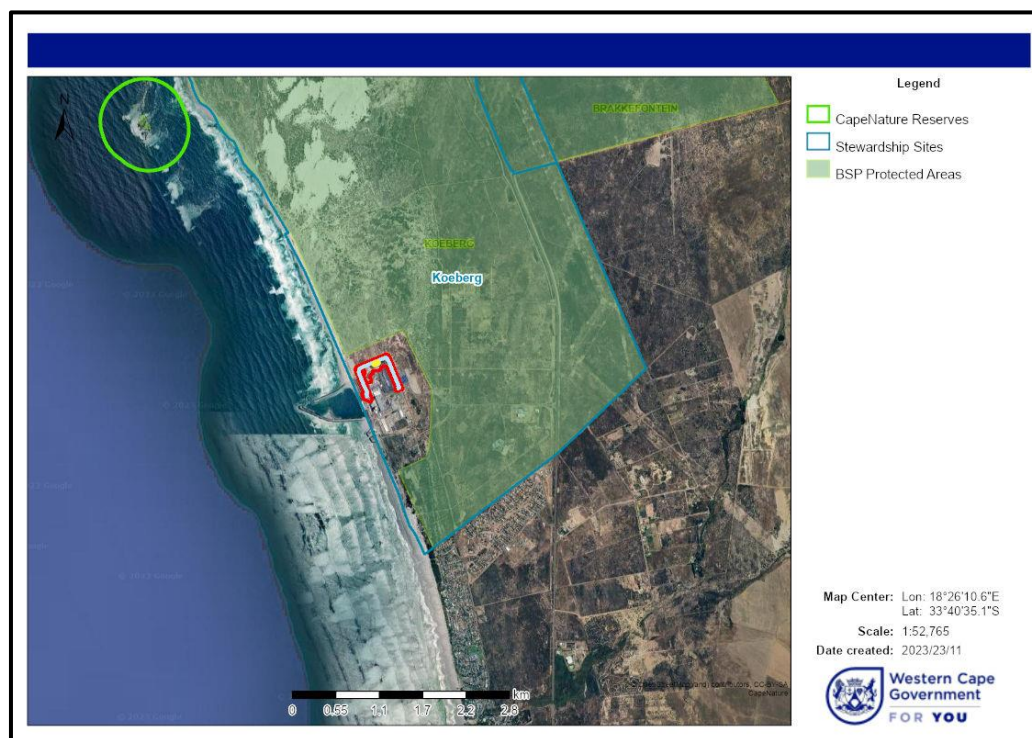
**Figure 7** Land cover (Land Cover 73-class, Department of Environmental Affairs, 2020) within the study area (Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; map generated in Cape Farm Mapper version 3, Western Cape Department of Agriculture).

#### 4.5 Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs)

Critical Biodiversity Areas (CBAs) are areas required to meet biodiversity targets for ecosystems, species and ecological processes, as identified in a systematic biodiversity plan (Purves and Holmes, 2015). Ecological Support Areas (ESAs) are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of CBAs and/or in delivering ecosystem services. The study area currently does not overlap with and areas regarded as CBA or ESA (Cape Farm Mapper version 3, Western Cape Department of Agriculture).

#### 4.6 Nearby conservation areas

In a broader conservation context, the entire site is surrounded by the Koeberg Private Nature Reserve designated as a “Protected Area” (CapeNature Stewardship Sites, 2022, CapeNature Reserves, 2022; Figure 8).



**Figure 8** Spatial location of CapeNature Stewardship Sites and CapeNature Reserves relative to the study area (Red polygon = Study area, Yellow polygons = Proposed reservoirs, Blue lines = Proposed pipelines; information sourced from Cape Farm Mapper version 3, Western Cape Department of Agriculture).

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## 5. Study methodology

### 5.1 Study aims

This study represents an assessment of the terrestrial faunal and avifaunal diversity and abundances, -habitat composition, ecosystem dynamics and potential occurrence of avifaunal and invertebrate (and other) SCC within the study area. As such, the aims of this investigation were to:

- 1.) Assess, define and create a spatial rendering of available faunal habitats across the study area based on information gathered during the field survey as well as through a desktop assessment using the latest satellite imagery,
- 2.) compile a complete faunal desktop species list (including avifauna, dungbeetles and grasshoppers / katydids) for the study area based on a thorough desktop assessment so as to assess the presence of any of the listed SCC (Table 1) as well as any additional SCC within these faunal groups,
- 3.) compile a faunal species list (including mammals, avifauna, dungbeetles and grasshoppers / katydids) within the study area through field surveying so as to assess the possibility of occurrence of the SCC retrieved in the desktop assessment (based on appropriate sampling methods, as well as the presence of suitable habitat for these species), or any additional SCC which are present on the site, and
- 4.) generate spatial occurrence maps for the recovered faunal species within the study area to assess the spatial extent of areas supporting higher levels of diversity, and SCC sub-populations and habitats which may be of conservation concern.

### 5.2 Desktop assessment

To assess the possible occurrence of the listed (Table 1) as well as any additional avifaunal, dungbeetle and grasshopper / katydid SCC, a desktop

assessment was performed to create a representative desktop species list for these faunal groups.

### 5.2.1 Avifauna

The desktop avifaunal species list for the study area was generated by referring to the species records of the South African Bird Atlas Project 2 (SABAP2, <https://sabap2.birdmap.africa/>) (Appendix A). The study area overlaps with one pentad (see below) which is well-represented in the atlassing cards:

#### **Pentad: 3340\_1825**

Full protocol cards: 130

Ad-hoc protocol cards: 346

Total cards: 476

To create the desktop avifaunal species list for the study area, the species observed in the pentad was included (see Appendix A), noting the total number of observations (including both full and ad-hoc protocols) and the latest date that the species was recorded within this pentad.

### 5.2.1 Dungbeetles and grasshoppers / katydid

The desktop species list for dungbeetle and grasshoppers / katydid species was constructed with reference to the observational records available for these groups on the DungBeetleMAP (<https://vmus.adu.org.za/>) and iNaturalist (www.iNaturalist.org) platforms (<https://vmus.adu.org.za/>) (QDGS: 3318BC).

### 5.3 Field survey

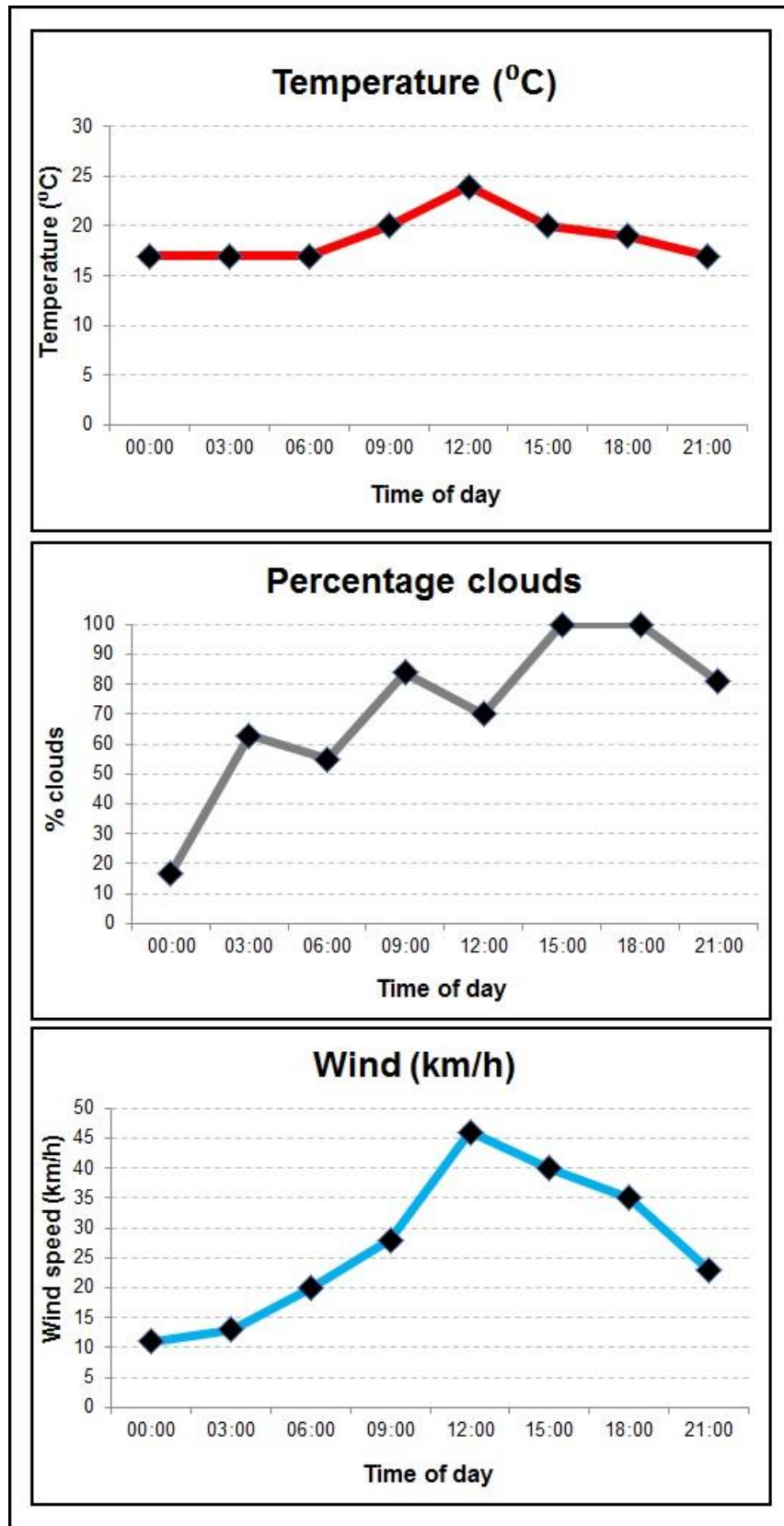
The study area was surveyed on foot over a single day on the 20<sup>th</sup> of November 2023, during the Spring season. Weather conditions during the surveying period

were characterised by relatively warm daily temperatures, moderate cloud cover and moderate wind conditions (Figure 9).

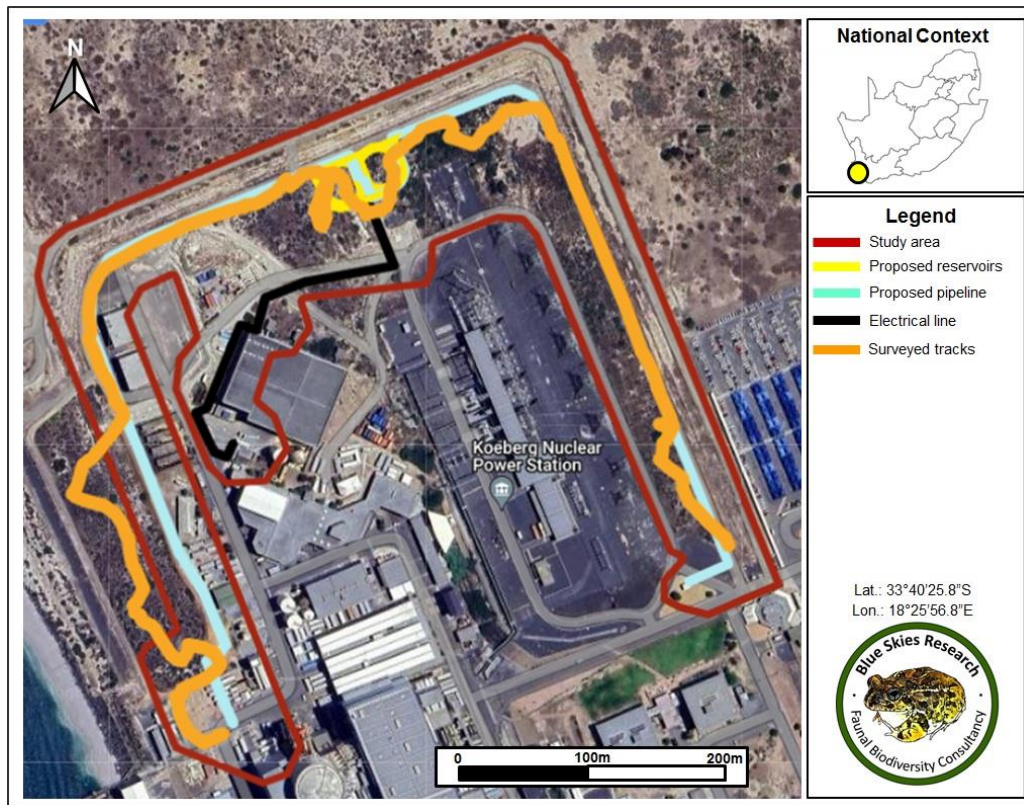
Surveying included unconstrained point sampling through search meanders, as well as active searching under rocks and debris. All tracks surveyed were recorded by GPS (Garmin eTrex® 10, Garmin International Inc, USA) and are represented in Figure 10. Terrestrial faunal species (mammals) were identified by direct visual observation, or by their tracks, burrows, remains or scat. Avifaunal species were identified by visual observation or by auditory means. The presence or absence of the West Coast Flightless Dungbeetle was assessed based on remains of this species. Finally, the presence or absence of the Bladder Grasshopper was assessed based on the suitable host plant for species (*Kapokbos*, *Erioccephalus africanus*). All observations were recorded by GPS and a species list for all fauna recorded within the study area is given in Appendix B.

Given relatively optimal weather conditions, faunal and avifaunal species' activity was observed to be high over the surveying period, thereby resulting in 28 recorded observations across the study area (Figure 11, Appendix B), relating to one observation per every 0.4 hectares of study area. During surveying, faunal habitats were broadly identified in the field, and thereafter delineated through a desktop assessment of the study area using satellite imagery (CapeFarmMapper Version 3, Western Cape Department of Agriculture).

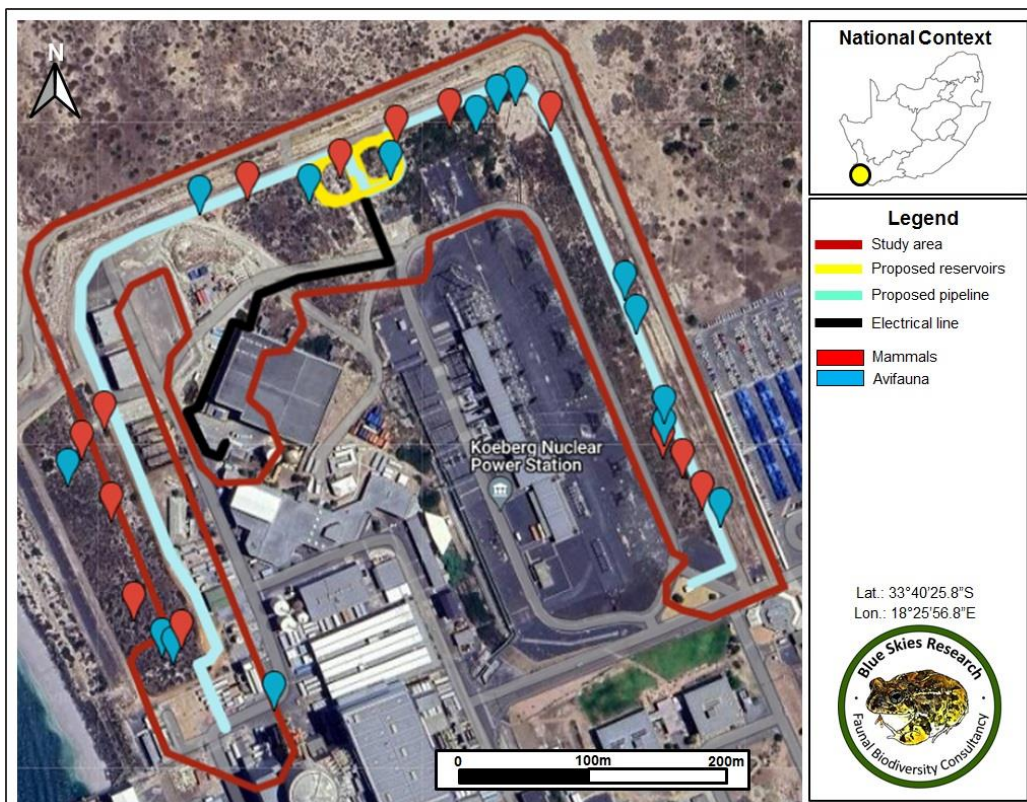




**Figure 9** Weather conditions in the study area over the surveying period (20 November 2023). The time of day is indicated, along with the temperature (in °C), percentage cloud cover and wind speed (in km/h) (weather data sourced from <https://www.worldweatheronline.com>).



**Figure 10** Spatial tracks recorded by GPS for all the search meanders across the study area over the surveying period.



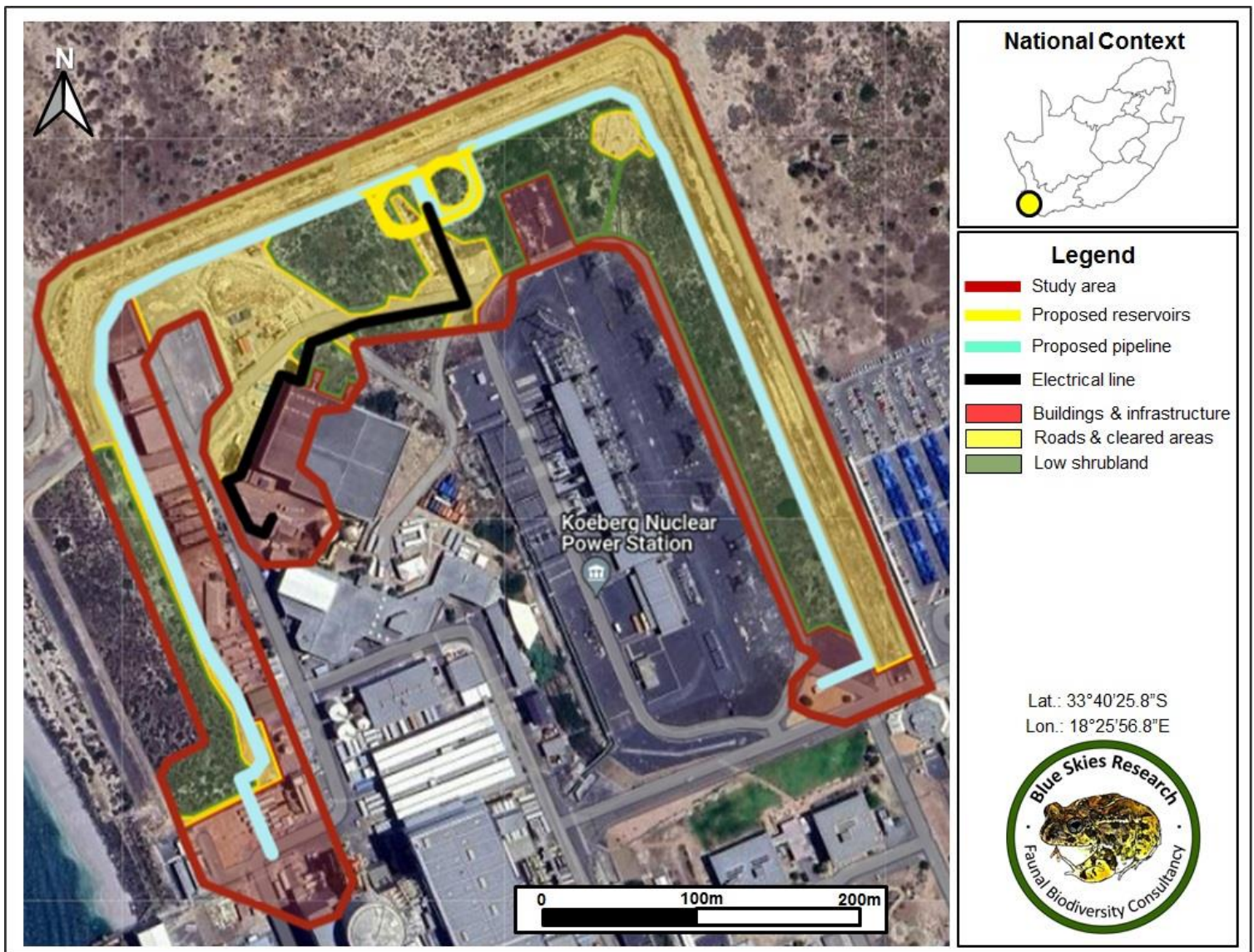
**Figure 11** Spatial locations of all the faunal observations across the study area over the surveying period.

## **6. Assumptions and limitations**

Relatively optimal weather conditions during the surveying period along with the majority of the site being of a transformed nature (buildings, infrastructure, cleared areas or access roads) and with the very little remaining vegetation being of a degraded and open structure, were ideal for detecting a representative sample of the resident terrestrial faunal and avifaunal species diversity. Even so, not all species could be observed (especially cryptic species), and it is further possible that the surveying period did not correspond to the activity period or activity season of some species. Furthermore, given regulations of the Koeberg Nuclear Power Station that no cellphones or cameras are allowed within the facility grounds, it was not possible to provide photographic evidence of either the species or the on-site habitats.

## **7. Faunal habitat types within the study area**

The study area is comprised of only a single natural habitat type comprising low remnant shrubland vegetation of Cape Flats Dune Strandveld which exists in a degraded and open state (Figure 12). In the context of the current development, the footprints of the proposed hard water reservoirs intersect with a small portion (0.3 hectares) of this habitat type. The remaining larger part of the site comprises buildings and infrastructure, or cleared areas and access roads. No natural vegetation remains in these parts, which intersect with the placement of the proposed pipelines and proposed electrical line (Figure 12).



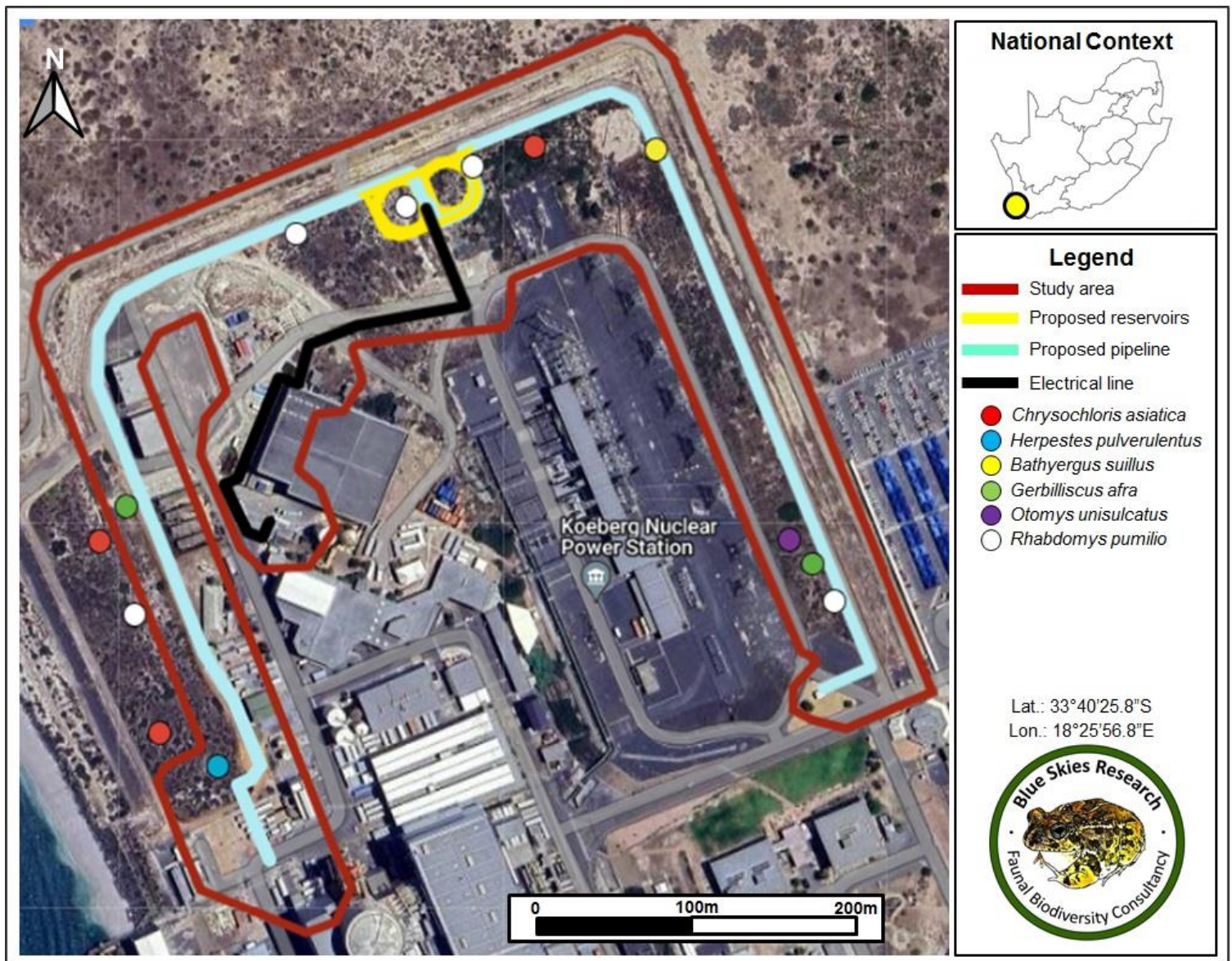
**Figure 12** A broad indication of the spatial extent of habitat types within the study area.

## 8. Faunal and avifaunal composition within the study area

### 8.1 Mammals

Six mammal species were recovered within the study area (Figure 13), all of which are currently classified as “Least concern” by the IUCN (Appendix B). Given the deep sandy substrate on the site, a number of burrowing mammal species are present including the Cape Golden Mole (*Chrysochloris asiatica*), Cape Dune Mole-rat (*Bathyergus suillus*) and Cape Gerbil (*Gerbilliscus afra*). The Four-striped Grass Mouse (*Rhabdomys pumilio*) is the most abundant terrestrial rodent species, with

evidence of the Bush Vlei Rat (*Otomys unisulcatus*) also recovered. Given the presence of this rodent prey base, evidence of one small mammal predator species, the Cape Grey Mongoose (*Herpestes pulverulentus*) was also recovered on the site.



**Figure 13** Spatial locations of the different mammal species recorded within the study area.

## 8.2 Avifauna

### 8.2.1 Desktop assessment

According to the SABAP2 records, 188 bird species have been recorded from the pentad overlapping the study area with 175 species classified as “Least Concern”

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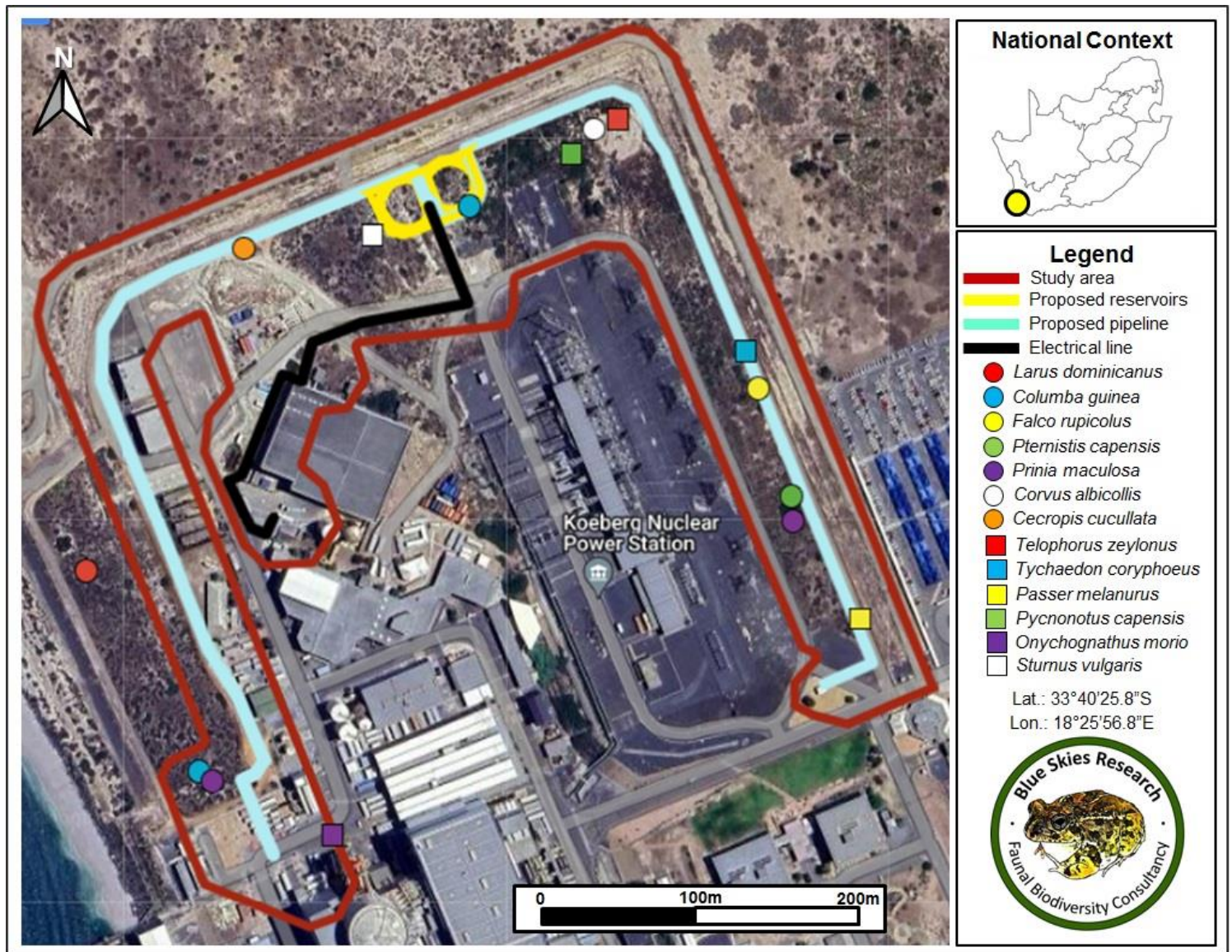
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by the IUCN, and 13 species which constitute avifaunal SCC (Appendix A). These avifaunal SCC includes the:

1. Black Harrier (*Circus maurus*) classified as “Endangered”,
2. African Marsh Harrier (*Circus ranivorus*) classified as “Least Concern”,
3. Secretarybird (*Sagittarius serpentarius*) classified as “Endangered”,
4. Maccoa Duck (*Oxyura maccoa*) classified as “Endangered”,
5. Red Knot (*Calidris canutus*) classified as “Near-Threatened”,
6. Curlew Sandpiper (*Calidris ferruginea*) classified as “Near-Threatened”,
7. Blue Crane (*Anthropoides paradiseus*) classified as “Vulnerable”,
8. Southern Black Korhaan (*Afrotis afra*) classified as “Vulnerable”,
9. Lesser Flamingo (*Phoeniconaias minor*) classified as “Near-Threatened”,
10. African Penguin (*Spheniscus demersus*) classified as “Endangered”,
11. Cape Cormorant (*Phalacrocorax capensis*) classified as “Endangered”,
12. Bank Cormorant (*Phalacrocorax neglectus*) classified as “Endangered”, and
13. Cape Gannet (*Morus capensis*) classified as “Endangered” by the IUCN.

### 8.2.2 Field survey

In total, only 13 bird species were recorded within the study area, all of which are currently classified as “Least concern” (Figure 14, Appendix B). The site appears depauperate in avifaunal diversity, likely given its location proximate to a high level of daily disturbances and within an area with little remaining natural habitat of a degraded structure (Section 7). To this end, all of the avifauna on the site constitutes common vegetation associated species which are tolerant of high levels of disturbance. The only notable avifaunal element comprises the Rock Kestrel (*Falco rupicolus*), the presence of which may be linked to the presence of suitable rodent prey (Subsection 8.1).



**Figure 15** Spatial locations of the different avifaunal species recorded within the study area.

### 8.3 Dungbeetles

#### 8.3.1 Desktop assessment

Currently, no records of any dungbeetle species are available for the study area landscape on either the DungBeetleMAP (<https://vmus.edu.org.za/>) or iNaturalist ([www.iNaturalist.org](http://www.iNaturalist.org)) platforms (<https://vmus.edu.org.za/>) (QDGS: 3318BC). To this end, it is not possible to confirm the possible presence of the West Coast Flightless Dungbeetle within this part of the landscape.

### 8.3.2 Field survey

No living individuals or remains of any dungbeetle species were detected in the study area over the surveying period, with the study area exhibiting a distinct lack of any invertebrate species. It is furthermore doubtful that the site will harbour subpopulations of any dungbeetle species, given a complete lack of dung from any larger herbivore species, along with a degraded habitat structure on the site.

## 8.4 Grasshoppers / katydids

### 8.4.1 Desktop assessment

Within the study area landscape, records of five grasshopper species are available on the iNaturalist ([www.iNaturalist.org](http://www.iNaturalist.org)) platform. Among these, two have been identified to the genus level (Genus *Lamarckian* and Genus *Hoplolopha*, both of which are currently not assessed by the IUCN), and three to the species level *Phymateus morbillosus* and *Porthetis carinata* which are currently not assessed, and *Hetrodes pupus* classified as “Least Concern” by the IUCN).

### 8.4.2 Field survey

No grasshopper species were observed within the study area landscape, with the study area exhibiting a distinct lack of any invertebrate species likely owing to the degraded habitat structure on the site. Even so, the presence of the Bladder Grasshopper was evaluated based on the presence of its host plant, *Eriocephalus africanus*. Because this plant species is not present on the site, it is highly unlikely that the Bladder Grasshopper will occur here.

## 8.5 Faunal and avifaunal diversity within the study area

The larger part of the site comprises building and infrastructure, or cleared areas and access roads, with only a relatively small portion harbouring remnant vegetation which exists in a degraded state. Furthermore, the entire site is surrounded by wire



mesh fencing which precludes the movement of all but the smallest fauna (e.g, rodents), also rendering the site as highly isolated from the surrounding landscape. In addition, daily disturbances are evident on the site, including human foot traffic and vehicle traffic. To this end, the habitats which do support some fauna on the site exist in a degraded and disturbed state.

Not surprisingly given these habitat conditions, the site supports a highly impaired faunal and avifaunal diversity with only common species of “Least Concern” (IUCN, 2021) being present. Even though the site does supports some intact predator-prey dynamics (as is evidenced by the presence of one mammal and one avifaunal predator), ecosystem dynamics appear highly altered and compromised. Taken together, the site therefore does not form any important ecological link in the study area landscape and has a low sensitivity from a faunal biodiversity perspective.

## 9. Species of Conservation Concern

Among the avifaunal SCC recovered in the desktop assessment, a large number comprises either marine-associated or freshwater-associated species. Although the site is located near the Atlantic Ocean, it is highly unlikely that the proposed development activities will impact on this habitat or any of the species present within this habitat (Section 11). To this end, the site does not contain any marine or freshwater features, and therefore the avifaunal SCC which strictly relies on these habitats were not further considered in this report. These marine and freshwater species include the:

1. Maccoa Duck (*Oxyura maccoa*),
2. Red Knot (*Calidris canutus*),
3. Curlew Sandpiper (*Calidris ferruginea*),
4. Lesser Flamingo (*Phoeniconaias minor*),
5. African Penguin (*Spheniscus demersus*),
6. Cape Cormorant (*Phalacrocorax capensis*),
7. Bank Cormorant (*Phalacrocorax neglectus*), and
8. Cape Gannet (*Morus capensis*).

Given the habitat characteristics of the site (i.e., terrestrial habitat), the presence of two other avifaunal SCC were therefore considered along with the five (three avifaunal and two invertebrate) SCC listed in the DFFE Screening Tool (Table 1). The probability of occurrence of each specific SCC within the study area landscape was assessed based on the following criteria:

**Confirmed** - The species was confirmed as present within or near the study area during the field survey.

**High** - The species was not confirmed as present within or near the study area during the field survey but has been recorded in the overlapped pentad / QDGS recently (less than 2 years ago) and in high number (>10 times) and is therefore likely to also occur in the study area, given suitable habitat characteristics.

**Medium** - The species was not confirmed as present within the study area during the field survey, but has been recorded a number of times (<10 times) in the overlapped pentad / QDGS recently (less than 2 years ago). Suitable habitat for the species is also present in the study area.

**Low** - No suitable habitat for the species is present in the study area, or the species has been recorded a low number of times (<10 times) or more than five years ago in the overlapped pentad / QDGS.

Conditions in the study area currently point to altered and compromised ecosystem dynamics, isolation from the surrounding natural landscape, impaired terrestrial faunal and avifaunal diversity and a degraded habitat structure with significant daily disturbances (see Subsection 11.1). To this end, the site does not constitute suitable habitat for any of the SCC considered in the current assessment, and it is highly unlikely that these species will occur here (Table 2).

**Table 2** Probability of occurrence of specific SCC in the study area. For each species, the taxonomic Family, scientific name and common name is shown, along with its current classification under the IUCN Red List of Threatened Species (IUCN, 2021). In addition, the species' preferred habitat and the probability that the species occurs within the study area is given, along with a justification for listing this probability.

Family	Species	Common name	Status	Habitat	Probability of occurrence in the study area	Justification of probability
Accipitridae	<i>Circus maurus</i>	Black Harrier	Endangered	The species occurs in coastal and montane Fynbos, highland grasslands, Karoo subdesert scrub, open plains with low shrubs and croplands (Curtis <i>et al.</i> 2004). In the Western Cape of South Africa it is most abundant in coastal and montane fynbos (Curtis <i>et al.</i> 2004), and loose colonies may aggregate around wetland areas. The Black Harrier prefers open ground with low vegetation for hunting, where it feeds mainly on small mammals, especially <i>Otomys</i> and <i>Rhabdomys</i> species, although its diet may also include birds and reptiles (Garcia-Heras <i>et al.</i> 2017). The main diet of the Black Harrier however constitutes the Four-striped Grass Mouse, <i>Rhabdomys pumilio</i> (Garcia-Heras <i>et al.</i> 2017). The species breeds close to coastal and upland marshes (damp sites, near vleis, marshes or streams are preferred for breeding), but may also nest in montane habitats, preferring south-facing slopes (Brown <i>et al.</i> 1982; Curtis <i>et al.</i> 2004). Nests are built on the ground in tall vegetation such as shrubs or reeds (Brown <i>et al.</i> 1982, Curtis <i>et al.</i> 2004). The species does not breed in transformed and cultivated lands, although it may forage in these environments (Curtis <i>et al.</i> 2004).	Low	The species was not confirmed during the field survey, and has been recorded only four times in the study area landscape more than six years ago (November 2017, Appendix A). Although the site does support the preferred rodent prey base for this species, these species only occur in a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.
Accipitridae	<i>Circus ranivorus</i>	African Marsh Harrier	Least Concern	The species breeds in wetlands, foraging primarily over reeds and lake margins (Harrison <i>et al.</i> 1997). Its diet consists largely of small mammals, particularly striped mouse <i>Rhabdomys pumilio</i> (Kemp and Dean, 1988).	Low	The species was not confirmed during the field survey, but has been recorded a number of times (13 times) in the study area landscape with the last observation three years ago (October 2021, Appendix A). Even so, the site does not contain any of the wetland habitats required by this species and furthermore supports only a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.

Sagittariidae	<i>Sagittarius serpentarius</i>	Secretarybird	Endangered	<p>The species inhabits open landscapes, ranging from open plains and grasslands, to lightly wooded savanna, but is also found in agricultural areas and sub-desert (Ferguson-Lees and Christie, 2001), with up to 50% of recorded individuals in the Fynbos biome in winter being found in transformed environments (Hofmeyr <i>et al.</i> 2014). The species avoids areas of &gt;20% wood cover (Loftie-Eaton, 2017). Although the species is nomadic, individuals which inhabit moist grassland tend to be less nomadic but may travel 20-30 km per day while foraging (Kemp and Kemp, 1977; Whitecross <i>et al.</i> 2019). The species preys on a variety of invertebrates (insects form 86% of the diet, Whitecross <i>et al.</i> 2019) and vertebrates (rodents, other mammals, lizards, snakes, eggs, young birds and amphibians, Kemp and Kemp, 1977; Ferguson-Lees and Christie, 2001). Breeding occurs throughout the year and the species typically nests in a flat-topped Acacia or other thorny tree (Ferguson-Lees and Christie, 2001).</p>	Low	<p>The species was not confirmed during the field survey, and has been recorded only four times in the study area landscape more than three years ago (January 2020, Appendix A). In addition, the site only supports a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.</p>
Gruidae	<i>Anthropoides paradiseus</i>	Blue Crane	Vulnerable	<p>This species breeds in natural grass- and sedge-dominated habitats, preferring secluded grasslands at high elevations where the vegetation is thick and short (Barnes, 2000). Occasionally it will breed in or near wetland areas (Barnes, 2000), in pans or on islands in dams (Hockey <i>et al.</i> 2005). Particularly in the Western Cape of South Africa, it also uses lowland agricultural areas, particularly pasture, fallow fields and cereal crop fields as stubble becomes available after harvest (Barnes, 2000, Hockey <i>et al.</i> 2005). During the non-breeding season the species inhabits short, dry, natural grasslands, as well as the Karoo and fynbos biomes (Barnes, 2000). In fynbos it occurs almost exclusively in cultivated habitats, largely avoiding the natural vegetation (Barnes, 2000), although this habitat may provide important cover for juveniles (Bidwell <i>et al.</i> 2006). The agricultural habitats that it uses include pastures, croplands, particularly where cereal crops are grown (Barnes, 2000), and fallow fields. It is intolerant of intensively grazed and burnt grassland (Hockey <i>et al.</i> 2005). It roosts in shallow wetlands (Barnes, 2000, Hockey <i>et al.</i> 2005).</p>	Low	<p>The species was not confirmed during the field survey, but has been recorded a high number of times (45 times) in the study area landscape, with the latest observation in April 2023 (Appendix A). Even so, the site does not harbour an adequate prey base for this species and furthermore only supports a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.</p>

Otididae	<i>Afrodis afra</i>	Southern Black Korhaan	Vulnerable	The species is restricted to the non-grassy, winter rainfall or mixed winter-summer rainfall fynbos and succulent Karoo biomes, and the extreme south of the Nama-Karoo biome, in a narrow strip along the southern and western coastlines of South Africa (Hofmeyr, 2012). It also occurs in semi-arid scrub and dunes with succulent vegetation, and extends into renosterveld scrub and semi-arid karoo (del Hoyo et al. 1996, Hockey et al. 2005). It occurs occasionally in cultivated fields with nearby cover (Hockey et al. 2005). The diet consists of insects, small reptiles and plant material, including seeds and green shoots (Hockey et al. 2005).	Low	The species was not confirmed during the field survey, and has been recorded only once in the study area landscape more than seven years ago (October 2016, Appendix A). In addition, the site only supports a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.
Scarabaeidae	<i>Pachysoma aesculapius</i>	West Coast Flightless Dungbeetle	Vulnerable	This large, day-active, flightless species is restricted to the firm deep sand of coastal hummocks, river banks and vegetated dunes. It has been trapped in small numbers to cattle dung baits in open shrubland on sand flats on the farm Modderrivier, 60 km north of Cape Town. A total of 25 out of 28 records coincide with the southwest coastal part of the Lowland fynbos and renosterveld ecoregion (ecoregions based on Olson et al. 2001).	Low	This species was not observed during the field survey, with the site furthermore not harbouring any larger mammal species which provide dung for this species. In addition, the site only supports a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.
Pneumoridae	<i>Bullacris obliqua</i>	Bladder Grasshopper	Vulnerable	The species inhabits the Fynbos biome. <i>Erioccephalus africanus</i> is currently the only confirmed host plant for this species.	Low	This species was not observed during the field survey with the site furthermore not harbouring the preferred host plant of this species ( <i>Erioccephalus africanus</i> ). In addition, the site only supports a small portion of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Taken together, it is highly unlikely that this species will be present.

## 10. Evaluation of Site Ecological Importance (SEI)

### 10.1 Evaluating SEI for habitats in the study area

Given the low probability of occurrence of any of the included SCC, the evaluation of the Site Ecological Importance (SEI) was performed for a combination of both assessed faunal groups (i.e., avifauna and invertebrates), and follows the methods and criteria outlined in the Species Environmental Assessment Guideline (SANBI, 2020). In short, SEI is a function of the Biodiversity Importance (BI) of the receptor (e.g., SCC, the vegetation/faunal community or habitat type present on the site) and its resilience to impacts (Receptor Resilience, RR) as follows:  $SEI = BI + RR$ . Biodiversity Importance (BI) is in turn a function of Conservation Importance (CI) and the Functional Integrity (FI) of the receptor as follows:  $BI = CI + FI$ .

To calculate the Conservation Importance (CI) and Functional Integrity (FI) of each habitat within the study area, the criteria outlined in Table 3 and Table 4 were respectively used.

According to the Species Environmental Assessment Guideline, Conservation Importance (CI) may be defined as follows:

Conservation Importance (CI): *“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 (table adapted from the Species Environmental Assessment Guideline, SANBI, 2020).

Conservation Importance (CI)	Fulfilling Criteria
Very high	Confirmed or highly likely occurrence of CR, EN, VU or Extremely Rare or Critically Rare species that have a global EOO of < 10 km <sup>2</sup> .
	Any area of natural habitat of a CR ecosystem type or large area (> 0.1% of the total ecosystem type extent) 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 km <sup>2</sup> . 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.

According to the guideline, Functional Integrity (FI) is defined as:

Functional integrity (FI): *“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: ‘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 (table adapted from the Species Environmental Assessment Guideline, SANBI, 2020).

Functional Integrity (FI)	Fulfilling Criteria
Very high	<p>Very large (&gt; 100 ha) intact area for any conservation status of ecosystem type or &gt; 5 ha for CR ecosystem types.</p> <p>High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches.</p> <p>No or minimal current negative ecological impacts with no signs of major past disturbance (e.g. ploughing).</p>
High	<p>Large (&gt; 20 ha but &lt; 100 ha) intact area for any conservation status of ecosystem type or &gt; 10 ha for EN ecosystem types.</p> <p>Good habitat connectivity with potentially functional ecological corridors and a regularly used road network between intact habitat patches.</p> <p>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.</p>
Medium	<p>Medium (&gt; 5 ha but &lt; 20 ha) semi-intact area for any conservation status of ecosystem type or &gt; 20 ha for VU ecosystem types.</p> <p>Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches.</p> <p>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.</p>
Low	<p>Small (&gt; 1 ha but &lt; 5 ha) area.</p> <p>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.</p> <p>Several minor and major current negative ecological impacts.</p>
Very low	<p>Very small (&lt; 1 ha) area.</p> <p>No habitat connectivity except for flying species or flora with wind-dispersed seeds.</p> <p>Several major current negative ecological impacts.</p>

Based on assessments of CI and FI for habitats within the study area, the Biodiversity Importance (BI) of each habitat was calculated using the matrix in Table 5 (based on the formula:  $BI = CI + FI$ ). As Biodiversity Importance (BI) is a function of Conservation Importance (CI) and the Functional Integrity (FI) of a receptor, BI can be derived from a simple matrix of CI and FI as follows:



**Table 5** Matrix for calculating Biodiversity Importance (BI) (table adapted from the Species Environmental Assessment Guideline, SANBI, 2020).

Biodiversity Importance (BI)		Conservation Importance (CI)				
		Very high	High	Medium	Low	Very low
Functional Integrity (FI)	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

Finally, the Receptor Resilience for each habitat was evaluated following the criteria listed in Table 6. According to the Species Assessment Guidelines, Receptor resilience (RR) may be defined as follows:

Receptor resilience (RR): “*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.*”

**Table 6** Receptor Resilience (RR) criteria (table adapted from the Species Environmental Assessment Guideline, SANBI, 2020).

Receptor Resilience (RR)	Fulfilling Criteria
Very high	Habitat that can recover rapidly (~ less than 5 years) to restore > 75% 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.

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Taken together, the Site Ecological Importance (SEI) was calculated for each habitat within the study area using the formula:  $SEI = BI + RR$ , and following the matrix outlined in Table 7. The interpretation of the development actions allowed for each SEI category are outlined in Table 8.

**Table 7** Matrix for calculating Site Ecological Importance (SEI) (table adapted from the Species Environmental Assessment Guideline, SANBI, 2020).

Site Ecological Importance (SEI)		Biodiversity Importance (BI)				
		Very high	High	Medium	Low	Very low
Receptor Resilience (RR)	Very high	Very high	Very high	High	Medium	Low
	High	Very high	Very high	High	Medium	Very low
	Medium	Very high	High	Medium	Low	Very low
	Low	High	Medium	Low	Very low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

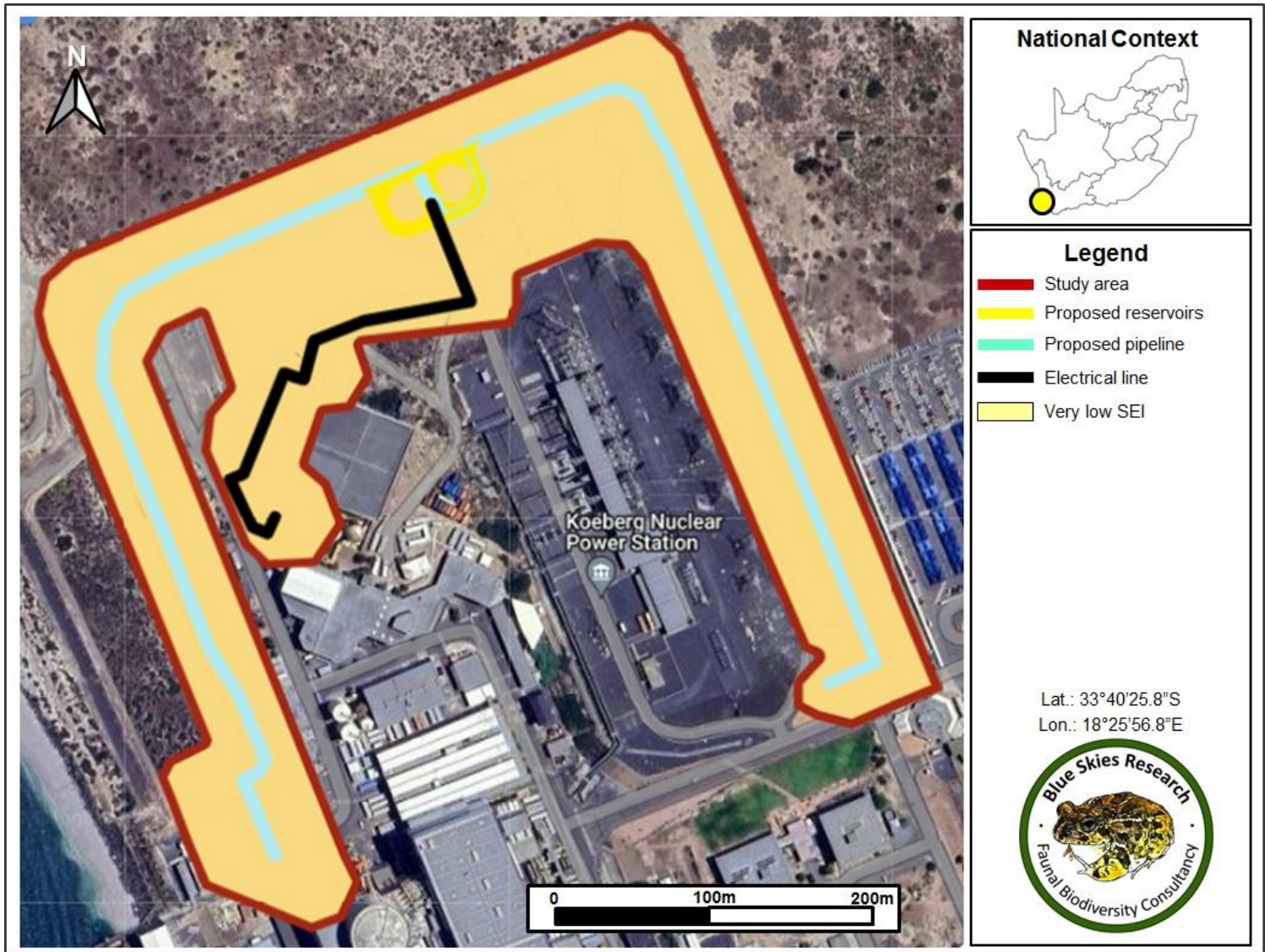
**Table 8** Guidelines for interpreting SEI in the context of the proposed development activities (table adapted from the Species Environmental Assessment Guideline, SANBI, 2020).

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.

### 10.2 SEI for habitats in the study area

The SEI results for habitats within the study area are given in Table 9 with the spatial representation for each habitat and its concomitant SEI category portrayed in Figure 18. The site currently does not support any confirmed or potential subpopulations of terrestrial faunal or avifaunal SCC, with the only remaining natural habitats existing

in a degraded state, and this habitat subjected to multiple major negative ecological impacts. As such, all habitats on the site are retrieved as having a “Very low” SEI. Minimisation mitigation is therefore acceptable, allowing for development activities of medium to high impact without restoration activities being required (Table 8).



**Figure 16** Spatial representation of the SEI of habitats within the study area.

**Table 9** Evaluation of SEI for habitats within the study area. BI = Biodiversity Importance, RR = Receptor Resilience.

Habitat type	Conservation Importance	Functional Integrity	Receptor Resilience	Site Ecological Importance
Buildings & infrastructure	<b>Very low</b> - No confirmed and highly unlikely populations of terrestrial faunal or avifaunal SCC.	<b>Very low</b> - No remaining natural habitat with no connectivity except for flying species and several current negative ecological impacts (buildings).	<b>Very high</b> - No remaining natural habitat.	Very low - BI = Very low; RR = Very high
Roads & cleared areas	<b>Very low</b> - No confirmed and highly unlikely populations of terrestrial faunal or avifaunal SCC.	<b>Very low</b> - No remaining natural habitat with no connectivity except for flying species and several current negative ecological impacts (cleared areas and regularly used access roads).	<b>Very high</b> - No remaining natural habitat.	Very low - BI = Very low; RR = Very high
Low shrubland	<b>Very low</b> - No confirmed and highly unlikely populations of terrestrial faunal or avifaunal SCC.	<b>Low</b> - Small portion (<5 ha) of remnant and degraded vegetation which is surrounded by wire mesh fencing, and is subjected to daily disturbances. Almost no habitat connectivity exists, but migrations are still possible across some modified or degraded natural habitat and with a very busy used road network surrounding the area. Low rehabilitation potential.	<b>Very high</b> - Small portion (<5 ha) of remnant and degraded shrubland vegetation with low rehabilitation potential.	Very low - BI = Very low; RR = Very high

## **11. Current impacts, project-related impacts and mitigation measures**

### *11.1 Current impacts*

Because the study area is located within the grounds of the Koeberg Nuclear Power Station, several current impacts are evident. These impacts include the following:

- The larger part of the site comprises buildings and infrastructure, or cleared areas and access roads where no natural habitat remains.
- Regular human foot traffic and vehicle traffic (noise and vibration) is evident along the access roads of the site, as well as within and along the buildings and infrastructure, and cleared areas.
- The entire site is surrounded by wire mesh fencing which precludes the movement of fauna, also rendering the site as highly isolated from the surrounding landscape.
- Only a small portion of the site harbours remnant vegetation which exists in an degraded state and is subject to daily disturbances.
- There are some signs of pollution on the site.
- The site exhibits a highly impaired faunal diversity and compromised ecosystem dynamics.

Collectively, these encompass the current impacts within the study area, and it is highly likely that the natural habitat on the site will continue to degrade the site over the next five to ten years.

### *11.2 Anticipated project impacts*

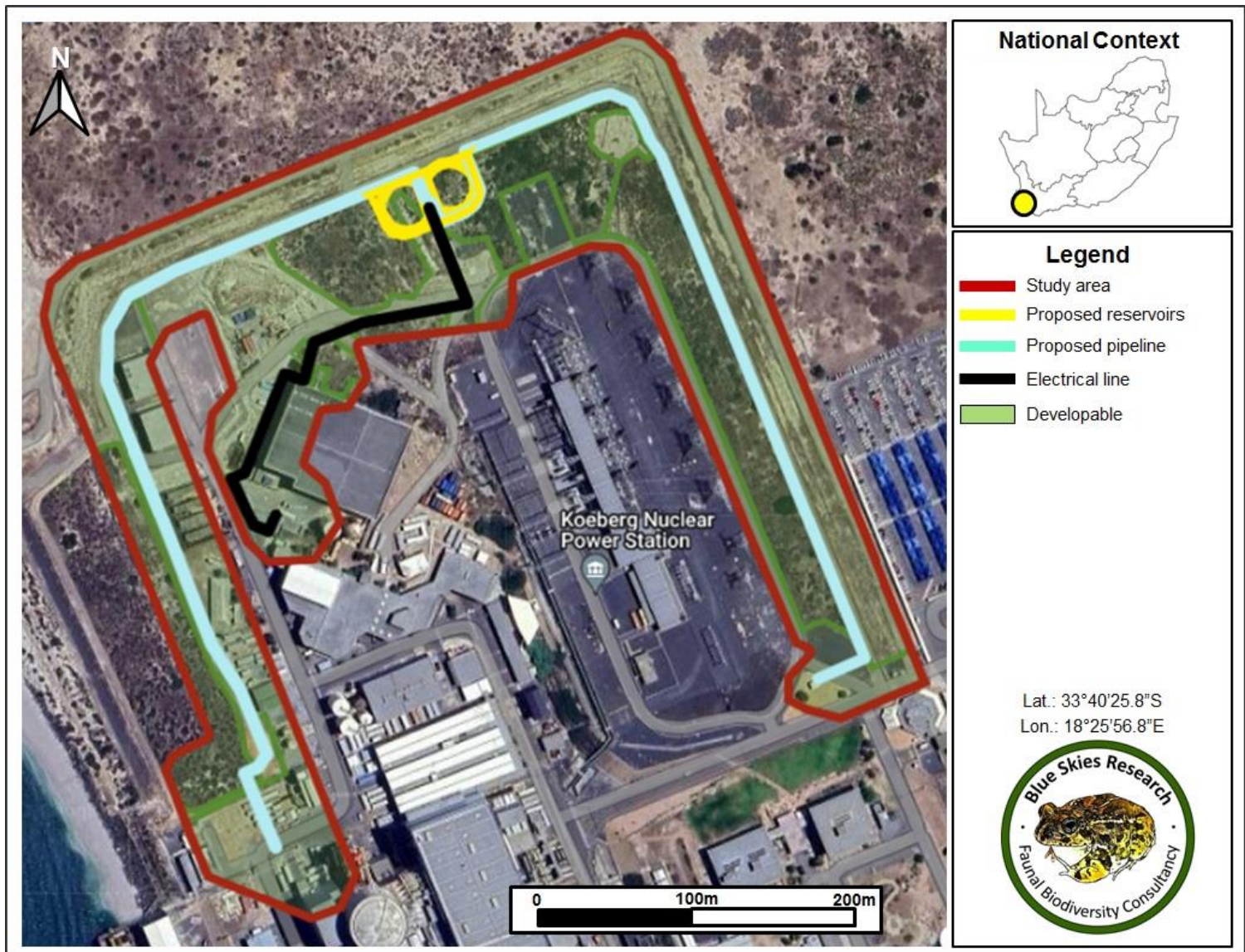
Planned development activities across the project footprint will include the construction of two hard water reservoirs, and excavation of trenches and installation of associated inlet and outlet pipelines and electrical infrastructure. These pipelines (associated infrastructure) will follow existing access roads and the trenches will subsequently be back-filled. To this end, no impacts on the resident

fauna are expected over the pipeline footprints, either during the construction or operational phases of the project.

Aside from the pipeline footprints, the footprint of the two hard water reservoirs will encompass approximately 0.3 hectares of low shrubland habitat. To this end, planned development activities over this footprint will include the clearing of vegetation, soil preparation and constructions of the reservoirs. Given that the footprint of the reservoirs will be spatially limited to an already degraded area on the outer limits of the shrubland habitat, along with the ability of the resident faunal species to move away from this disturbance, impacts from the construction of the two hard water reservoirs are expected to be limited in extent and duration during the construction and operational phases of the project, and should not impinge on faunal biodiversity, either on the site or in the surrounding landscape.

Even so, every effort should be made to save and relocate any mammal, reptile, amphibian, bird, or invertebrate that cannot flee of its own accord, encountered during site preparation (i.e., to avoid and minimise the direct mortality of faunal species). These animals should be relocated to a suitable habitat area immediately outside the project footprint, but under no circumstance to an area further away.

Taken together therefore, all development footprints on the site will be restricted to areas of low faunal sensitivity (Figure 17), thereby rendering the proposed development layout as acceptable for Environmental Authorisation (EA).



**Figure 17** “Constraints and Opportunities” map of the study area showing areas which are suitable for potential development without considering mitigation.

## 12. Conclusion

### 12.1 Listed sensitivity in the DFFE Screening Tool Report

The results from this report confirm the site sensitivity to be “Low” in contrast to the “High” site sensitivity retrieved in the DFFE Screening Tool Report (Figure 1, Section 3). The site currently does not support any confirmed or potential subpopulations of terrestrial faunal or avifaunal SCC (Section 9), with only a small portion of natural habitat remaining on the site which exists in a degraded state (Section 7), harbours

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an impaired terrestrial faunal and avifaunal diversity and compromised ecosystem dynamics (Section 8), and is subject to with multiple daily disturbances (Section 11). To this end, the habitats on the site are retrieved as having a “Very low” SEI (Section 10). Taken together, these factors confirm the sensitivity of the project footprint to be “Low” from a terrestrial faunal and avifaunal perspective, thereby confirming the requirement for this Compliance Statement Report.

## *12.2 Conclusion*

This report provides a representative faunal assessment of the study area considering facets of:

- Terrestrial faunal and avifaunal habitat composition (Section 7),
- terrestrial faunal and avifaunal components (Section 8),
- the presence of any terrestrial faunal and avifaunal SCC on the site (Section 9),
- the SEI of habitats within the study area with associated acceptable development activities (Section 10), and
- current impacts in the study area, along with possible project-related impacts and a “Constraints and Opportunities” map of the site (Section 11).

Taken together, the results of the report indicate the following:

- The study area is comprised of only a single natural habitat type of low remnant shrubland vegetation of Cape Flats Dune Strandveld which exists in a degraded and open state (Section 7). The remaining larger part of the site comprises buildings and infrastructure, or cleared areas and access roads.
- The site supports a highly impaired faunal and avifaunal diversity, some intact predator-prey dynamics, but with altered and compromised ecosystem dynamics in an isolated environment (Section 8). The site therefore does not form any important ecological link in the study area landscape and has a low sensitivity from a faunal biodiversity perspective.



- The site does not constitute suitable habitat for any of the SCC considered in the current assessment, and it is highly unlikely that these species will occur here (Section 9).
- All habitats on the site are retrieved as having a “Very low” SEI where minimisation mitigation is therefore acceptable, and allowing for development activities of medium to high impact without restoration activities being required (Section 10).
- Because the study area is located within the grounds of the Koeberg Nuclear Power Station, several current impacts are evident and it is highly likely that the natural habitat on the site will continue to degrade the site over the next five to ten years (Section 11).
- Planned development activities across the project footprint (construction of two hard water reservoirs installation of associated inlet and outlet pipelines and electrical infrastructure) will be restricted to areas of low faunal sensitivity and should not impinge on faunal biodiversity during the construction and operational phases of the project, either on the site or in the surrounding landscape (Section 11).
- The sensitivity of the study area is confirmed to be “Low” from a terrestrial faunal and avifaunal perspective (Subsection 12.1).

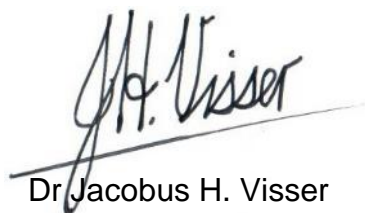
Taken together therefore, the site is of a lower sensitivity from a faunal biodiversity perspective and project activities will not have any further significant direct impacts on terrestrial biodiversity features in the study area landscape. The current development layout and associated activities are therefore supported from a faunal biodiversity perspective, and are therefore acceptable for Environmental Authorisation (EA).

### **13. Conditions to which this statement is subjected**

The content of this report is based on the author’s best scientific and professional knowledge as well as available information. Since environmental impact studies deal with dynamic natural systems, additional information may come to light at a later stage which is not listed in this report. As such, the conclusions and

recommendations made in this report are done in good faith based on information gathered at the time of the investigation.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of the report, which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

A handwritten signature in black ink, appearing to read 'J.H. Visser', is written over a horizontal line.

Dr Jacobus H. Visser

(PhD Zoology; Pr. Sci. Nat.)

SACNASP Registration Number: 128018

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## Appendix A

**Appendix A** Desktop species list of the avifaunal species which have been recorded in the pentad (3340\_1825) which overlaps the study area (the South African Bird Atlas Project 2, <https://sabap2.birdmap.africa/>). To create this species list, the species observed were included, noting the total number of observations, and also the latest date the species was recorded within this pentad. Furthermore, for each species, the taxonomic Order, Family, species binomial name and common name is shown, along with the current IUCN Red List classification of the species. Species in bold represent avifaunal species of conservation concern (SCC).

Avifauna Desktop Species List						
Order	Family	Species	Common name	IUCN status	Number of observations	Latest record
Accipitriformes	Accipitridae	<i>Accipiter melanoleucus</i>	Black Sparrowhawk	Least Concern	3	2023/10/19
		<i>Buteo buteo</i>	Common Buzzard	Least Concern	36	2023/02/01
		<i>Buteo rufofuscus</i>	Jackal Buzzard	Least Concern	48	2023/10/19
		<b><i>Circus ranivorus</i></b>	<b>African Marsh</b>	<b>Least Concern</b>	<b>4</b>	<b>2017/11/04</b>
		<b><i>Circus maurus</i></b>	<b>Black Harrier</b>	<b>Endangered</b>	<b>13</b>	<b>2021/10/24</b>
		<i>Elanus caeruleus</i>	Black-winged Kite	Least Concern	95	2023/09/09
		<i>Haliaeetus vocifer</i>	African Fish Eagle	Least Concern	13	2017/03/05
		<i>Hieraaetus pennatus</i>	Booted Eagle	Least Concern	4	2023/05/17
		<i>Milvus aegyptius</i>	Yellow-billed Kite	Least Concern	79	2023/11/05
			Sagittariidae	<b><i>Sagittarius serpentarius</i></b>	<b>Sagittarius serpentarius</b>	<b>Endangered</b>
Anseriformes	Anatidae	<i>Alopochen aegyptiaca</i>	Egyptian Goose	Least Concern	222	2023/11/05
		<i>Anas capensis</i>	Cape Teal	Least Concern	35	2023/07/10
		<i>Anas erythrorhyncha</i>	Red-billed Teal	Least Concern	22	2023/07/10
		<i>Anas platyrhynchos</i>	Mallard	Least Concern	1	2011/05/27
		<i>Anas sparsa</i>	African Black Duck	Least Concern	2	2023/05/23
		<i>Anas undulata</i>	Yellow-billed Duck	Least Concern	59	2023/09/09

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		<i>Dendrocygna viduata</i>	White-faced Whistling Duck	Least Concern	2	2023/10/05
		<b><i>Oxyura maccoa</i></b>	<b>Maccoa Duck</b>	<b>Endangered</b>	<b>1</b>	<b>2008/10/26</b>
		<i>Plectropterus gambensis</i>	Spur-winged Goose	Least Concern	58	2023/10/19
		<i>Spatula smithii</i>	Cape Shoveler	Least Concern	71	2023/10/01
		<i>Tadorna cana</i>	South African Shelduck	Least Concern	2	2011/03/20
		<i>Thalassornis leuconotus</i>	White-backed Duck	Least Concern	2	2014/09/11
Bucerotiformes	Upupidae	<i>Upupa africana</i>	African Hoopoe	Least Concern	3	2023/10/20
Caprimulgiformes	Apodidae	<i>Apus affinis</i>	Little Swift	Least Concern	85	2023/10/17
		<i>Apus apus</i>	Common Swift	Least Concern	2	2022/12/16
		<i>Apus barbatus</i>	African Black Swift	Least Concern	39	2023/11/05
		<i>Apus caffer</i>	White-rumped Swift	Least Concern	92	2023/11/05
		<i>Apus horus</i>	Horus Swift	Least Concern	4	2023/01/08
		<i>Cypsiurus parvus</i>	African Palm Swift	Least Concern	8	2023/07/13
		<i>Tachymarpis melba</i>	Alpine Swift	Least Concern	42	2023/10/19
	Caprimulgidae	<i>Caprimulgus pectoralis</i>	Fiery-necked Nightjar	Least Concern	6	2023/08/30
Charadriiformes	Burhinidae	<i>Burhinus capensis</i>	Spotted Thick-knee	Least Concern	156	2023/11/05
		<i>Burhinus vermiculatus</i>	Water Thick-knee	Least Concern	125	2023/10/12
		<i>Charadrius hiaticula</i>	Common Ringed Plover	Least Concern	1	2010/04/09
		<i>Charadrius marginatus</i>	White-fronted Plover	Least Concern	63	2023/07/10
		<i>Charadrius pecuarius</i>	Kittlitz's Plover	Least Concern	7	2022/04/30
		<i>Charadrius tricollaris</i>	Three-banded Plover	Least Concern	39	2023/02/18
		<i>Vanellus armatus</i>	Blacksmith Lapwing	Least Concern	254	2023/10/20
		<i>Vanellus coronatus</i>	Crowned Lapwing	Least Concern	13	2022/09/26
	Haematopodidae	<i>Haematopus moquini</i>	African Oystercatcher	Least Concern	122	2023/07/13
	Laridae	<i>Larus cirrocephalus</i>	Grey-headed Gull	Least Concern	8	2023/10/24
		<i>Larus dominicanus</i>	Kelp Gull	Least Concern	186	2023/09/02
		<i>Larus hartlaubii</i>	Hartlaub's Gull	Least Concern	239	2023/10/01
		<i>Hydroprogne caspia</i>	Caspian Tern	Least Concern	8	2023/07/10
		<i>Sterna hirundo</i>	Common Tern	Least Concern	31	2023/04/01

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		<i>Sterna vittata</i>	Antarctic Tern	Least Concern	2	2014/08/14
		<i>Thalasseus bergii</i>	Greater Crested Tern	Least Concern	48	2023/07/10
		<i>Thalasseus sandvicensis</i>	Sandwich Tern	Least Concern	35	2023/02/25
	Recurvirostridae	<i>Himantopus himantopus</i>	Black-winged Stilt	Least Concern	132	2023/10/19
		<i>Recurvirostra avosetta</i>	Pied Avocet	Least Concern	14	2022/12/18
	Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	Least Concern	1	2022/12/16
		<i>Arenaria interpres</i>	Ruddy Turnstone	Least Concern	8	2015/11/10
		<b><i>Calidris canutus</i></b>	<b>Red Knot</b>	<b>Near-Threatened</b>	<b>1</b>	<b>2010/04/09</b>
		<b><i>Calidris ferruginea</i></b>	<b>Curlew Sandpiper</b>	<b>Near-Threatened</b>	<b>3</b>	<b>2010/04/13</b>
		<i>Calidris minuta</i>	Little Stint	Least Concern	3	2022/12/16
		<i>Calidris pugnax</i>	Ruff	Least Concern	3	2022/12/16
		<i>Calidris alba</i>	Sanderling	Least Concern	2	2023/02/01
		<i>Gallinago nigripennis</i>	African Snipe	Least Concern	2	2021/12/18
		<i>Numenius phaeopus</i>	Eurasian Whimbrel	Least Concern	2	2018/12/05
		<i>Tringa glareola</i>	Wood Sandpiper	Least Concern	1	2012/02/19
		<i>Tringa nebularia</i>	Common Greenshank	Least Concern	9	2023/02/18
	Stercorariidae	<i>Ciconia ciconia</i>	White Stork	Least Concern	2	2020/01/11
Coliiformes	Coliidae	<i>Colius colius</i>	White-backed Mousebird	Least Concern	197	2023/10/19
		<i>Colius striatus</i>	Speckled Mousebird	Least Concern	16	2023/10/20
		<i>Urocolius indicus</i>	Red-faced Mousebird	Least Concern	110	2023/11/05
Columbiformes	Columbidae	<i>Columba guinea</i>	Speckled Pigeon	Least Concern	214	2023/11/05
		<i>Columba livia</i>	Rock Dove	Least Concern	33	2023/09/15
		<i>Oena capensis</i>	Namaqua Dove	Least Concern	24	2023/01/31
		<i>Spilopelia senegalensis</i>	Laughing Dove	Least Concern	216	2023/11/05
		<i>Streptopelia capicola</i>	Cape Turtle Dove	Least Concern	49	2022/12/03
		<i>Streptopelia semitorquata</i>	Red-eyed Dove	Least Concern	183	2023/10/25
Coraciiformes	Alcedinidae	<i>Ceryle rudis</i>	Pied Kingfisher	Least Concern	6	2022/03/27
		<i>Corythornis cristatus</i>	Malachite Kingfisher	Least Concern	8	2022/12/07
		<i>Megaceryle maxima</i>	Giant Kingfisher	Least Concern	1	2015/06/04

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	Meropidae	<i>Merops apiaster</i>	European Bee-eater	Least Concern	7	2022/12/16
Cuculiformes	Cuculidae	<i>Centropus burchellii</i>	Burchell's Coucal	Least Concern	1	2011/04/16
		<i>Chrysococcyx caprius</i>	Diederik Cuckoo	Least Concern	21	2023/11/05
		<i>Chrysococcyx klaas</i>	Klaas's Cuckoo	Least Concern	15	2023/10/17
Falconiformes	Falconidae	<i>Falco biarmicus</i>	Lanner Falcon	Least Concern	6	2023/04/25
		<i>Falco naumanni</i>	Lesser Kestrel	Least Concern	2	2023/02/26
		<i>Falco peregrinus</i>	Peregrine Falcon	Least Concern	19	2023/01/29
		<i>Falco rupicolus</i>	Rock Kestrel	Least Concern	99	2023/11/05
Galliformes	Gruidae	<b><i>Anthropoides paradiseus</i></b>	<b>Blue Crane</b>	<b>Vulnerable</b>	<b>45</b>	<b>2023/04/10</b>
	Numididae	<i>Numida meleagris</i>	Helmeted Guinea fowl	Least Concern	54	2023/09/09
	Phasianidae	<i>Coturnix coturnix</i>	Common Quail	Least Concern	1	2012/10/28
		<i>Pternistis capensis</i>	Cape Spur fowl	Least Concern	232	2023/11/05
		<i>Scleroptila afra</i>	Grey-winged Francolin	Least Concern	5	2019/05/19
	Rallidae	<i>Fulica cristata</i>	Red-knobbed Coot	Least Concern	229	2023/11/05
		<i>Gallinula chloropus</i>	Common Moorhen	Least Concern	165	2023/11/05
		<i>Porphyrio madagascariensis</i>	African Swamp phen	Least Concern	42	2022/12/03
		<i>Zapornia flavirostra</i>	Black Crake	Least Concern	4	2020/07/23
	Otidiformes	Otididae	<b><i>Afrotis afra</i></b>	<b>Southern Black Korhaan</b>	<b>Vulnerable</b>	<b>1</b>
Passeriformes	Acrocephalidae	<i>Acrocephalus baeticatus</i>	African Reed Warbler	Least Concern	3	2012/10/28
		<i>Acrocephalus gracilirostris</i>	Lesser Swamp Warbler	Least Concern	103	2023/11/05
	Alaudidae	<i>Calandrella cinerea</i>	Red-capped Lark	Least Concern	32	2022/09/12
		<i>Galerida magnirostris</i>	Large-billed Lark	Least Concern	17	2021/12/18
		<i>Mirafrapa apiata</i>	Cape Clapper Lark	Least Concern	1	2020/09/22
	Buphagidae	<i>Buphagus erythrorhynchus</i>	Red-billed Oxpecker	Least Concern	3	2019/06/09
	Cisticolidae	<i>Apalis thoracica</i>	Bar-throated Apalis	Least Concern	119	2023/11/05
		<i>Cisticola fulvicapilla</i>	Neddicky	Least Concern	1	2016/04/03
		<i>Cisticola juncidis</i>	Zitting Cisticola	Least Concern	1	2010/08/25
		<i>Cisticola subruficapilla</i>	Grey-backed Cisticola	Least Concern	36	2023/10/01
<i>Cisticola textrix</i>		Cloud Cisticola	Least Concern	9	2023/07/10	

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	<i>Cisticola tinniens</i>	Levaillant's Cisticola	Least Concern	57	2023/10/12
	<i>Prinia maculosa</i>	Karoo Prinia	Least Concern	249	2023/11/05
Corvidae	<i>Corvus albicollis</i>	White-necked Raven	Least Concern	6	2019/07/31
	<i>Corvus albus</i>	Pied Crow	Least Concern	209	2023/09/22
Dicruridae	<i>Dicrurus adsimilis</i>	Fork-tailed Drongo	Least Concern	2	2023/02/26
Emberizidae	<i>Emberiza capensis</i>	Cape Bunting	Least Concern	37	2022/09/12
Estrildidae	<i>Estrilda astrild</i>	Common Waxbill	Least Concern	48	2023/10/02
Fringillidae	<i>Crithagra albugularis</i>	White-throated Canary	Least Concern	37	2022/12/16
	<i>Crithagra flaviventris</i>	Yellow Canary	Least Concern	59	2023/04/30
	<i>Crithagra gularis</i>	Streaky-headed Seedeater	Least Concern	2	2008/08/07
	<i>Crithagra sulphurata</i>	Brimstone Canary	Least Concern	70	2023/10/19
	<i>Serinus canicollis</i>	Cape Canary	Least Concern	120	2023/10/25
Hirundinidae	<i>Cecropis cucullata</i>	Greater Striped Swallow	Least Concern	129	2023/11/05
	<i>Hirundo albigularis</i>	White-throated Swallow	Least Concern	59	2023/10/12
	<i>Hirundo dimidiata</i>	Pearl-breasted Swallow	Least Concern	54	2023/10/25
	<i>Hirundo rustica</i>	Barn Swallow	Least Concern	75	2023/06/18
	<i>Ptyonoprogne fuligula</i>	Rock Martin	Least Concern	86	2023/10/01
	<i>Riparia cincta</i>	Banded Martin	Least Concern	15	2017/11/01
	<i>Riparia paludicola</i>	Brown-throated Martin	Least Concern	99	2023/10/25
Laniidae	<i>Lanius collaris</i>	Southern Fiscal	Least Concern	180	2023/11/05
Locustellidae	<i>Bradypterus baboecala</i>	Little Rush Warbler	Least Concern	56	2023/11/05
Macrosphenidae	<i>Sphenoeacus afer</i>	Cape Grassbird	Least Concern	18	2019/11/09
	<i>Sylvietta rufescens</i>	Long-billed Crombec	Least Concern	46	2023/08/09
Malaconotidae	<i>Laniarius ferrugineus</i>	Southern Boubou	Least Concern	49	2023/11/05
	<i>Telophorus zeylonus</i>	Bokmakierie	Least Concern	78	2023/07/10
Motacillidae	<i>Anthus cinnamomeus</i>	African Pipit	Least Concern	36	2023/07/20
	<i>Macronyx capensis</i>	Cape Longclaw	Least Concern	25	2022/09/26
	<i>Motacilla capensis</i>	Cape Wagtail	Least Concern	280	2023/11/05
Muscicapidae	<i>Cossypha caffra</i>	Cape Robin-Chat	Least Concern	208	2023/11/05

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		<i>Melaenornis silens</i>	Fiscal Flycatcher	Least Concern	60	2023/10/25
		<i>Oenanthe familiaris</i>	Familiar Chat	Least Concern	1	2021/12/03
		<i>Oenanthe pileata</i>	Capped Wheatear	Least Concern	59	2022/09/26
		<i>Saxicola torquatus</i>	African Stonechat	Least Concern	3	2022/06/02
		<i>Turdus olivaceus</i>	Olive Thrush	Least Concern	59	2023/10/12
		<i>Tychaedon coryphoeus</i>	Karoo Scrub Robin	Least Concern	58	2023/01/29
	Nectariniidae	<i>Cinnyris chalybeus</i>	Southern Double-collared Sunbird	Least Concern	214	2023/10/19
		<i>Nectarinia famosa</i>	Malachite Sunbird	Least Concern	135	2023/10/25
	Paridae	<i>Melaniparus afer</i>	Grey Tit	Least Concern	1	2011/02/03
	Passeridae	<i>Passer domesticus</i>	House Sparrow	Least Concern	170	2023/10/20
		<i>Passer melanurus</i>	Cape Sparrow	Least Concern	235	2023/11/05
	Platysteiridae	<i>Batis capensis</i>	Cape Batis	Least Concern	5	2023/02/26
	Ploceidae	<i>Euplectes capensis</i>	Yellow Bishop	Least Concern	25	2023/08/27
		<i>Euplectes orix</i>	Southern Red Bishop	Least Concern	208	2023/10/25
		<i>Ploceus capensis</i>	Cape Weaver	Least Concern	238	2023/11/05
		<i>Ploceus velatus</i>	Southern Masked Weaver	Least Concern	118	2023/11/05
	Promeropidae	<i>Promerops cafer</i>	Cape Sugarbird	Least Concern	1	2015/04/13
	Pycnonotidae	<i>Andropadus importunus</i>	Sombre Greenbul	Least Concern	1	2023/02/01
		<i>Pycnonotus capensis</i>	Cape Bulbul	Least Concern	191	2023/11/05
	Remizidae	<i>Anthoscopus minutus</i>	Cape Penduline-tit	Least Concern	1	2009/12/22
	Sturnidae	<i>Lamprotornis bicolor</i>	Pied Starling	Least Concern	30	2020/01/25
		<i>Onychognathus morio</i>	Red-winged Starling	Least Concern	43	2023/03/09
		<i>Sturnus vulgaris</i>	Common Starling	Least Concern	275	2023/10/25
	Sylviidae	<i>Curruca layardi</i>	Layard's Warbler	Least Concern	3	2015/04/16
		<i>Curruca subcoerulea</i>	Chestnut-vented Warbler	Least Concern	46	2022/03/31
	Viduidae	<i>Vidua macroura</i>	Pin-tailed Whydah	Least Concern	46	2023/10/02
	Zosteropidae	<i>Zosterops virens</i>	Cape White-eye	Least Concern	174	2023/10/25
Pelecaniformes	Ardeidae	<i>Ardea cinerea</i>	Grey Heron	Least Concern	50	2023/02/10
		<i>Ardea intermedia</i>	Intermediate Egret	Least Concern	15	2022/10/23

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		<i>Ardea melanocephala</i>	Black-headed Heron	Least Concern	76	2023/08/09
		<i>Ardea purpurea</i>	Purple Heron	Least Concern	26	2023/10/31
		<i>Bubulcus ibis</i>	Western Cattle Egret	Least Concern	72	2023/10/25
		<i>Egretta garzetta</i>	Little Egret	Least Concern	84	2023/08/03
		<i>Ixobrychus minutus</i>	Little Bittern	Least Concern	1	2021/11/01
		<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	Least Concern	90	2023/07/23
	Pelecanidae	<i>Pelecanus onocrotalus</i>	Great White Pelican	Least Concern	32	2023/07/13
	Scopidae	<i>Scopus umbretta</i>	Hamerkop	Least Concern	1	2011/08/22
	Threskiornithidae	<i>Bostrychia hagedash</i>	Hadada Ibis	Least Concern	181	2023/11/05
		<i>Platalea alba</i>	African Spoonbill	Least Concern	11	2015/06/28
		<i>Plegadis falcinellus</i>	Glossy Ibis	Least Concern	5	2021/10/12
		<i>Threskiornis aethiopicus</i>	African Sacred Ibis	Least Concern	145	2023/11/05
Phoenicopteriformes	Phoenicopteridae	<b><i>Phoeniconaias minor</i></b>	<b>Lesser Flamingo</b>	<b>Near-Threatened</b>	<b>31</b>	<b>2022/12/03</b>
		<i>Phoenicopterus roseus</i>	Greater Flamingo	Least Concern	29	2022/09/13
Piciformes	Lybiidae	<i>Tricholaema leucomelas</i>	Acacia Pied Barbet	Least Concern	28	2023/10/24
Podicipediformes	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little Grebe	Least Concern	98	2023/10/31
Sphenisciformes	Spheniscidae	<b><i>Spheniscus demersus</i></b>	<b>African Penguin</b>	<b>Endangered</b>	<b>1</b>	<b>2007/11/18</b>
Strigiformes	Strigidae	<i>Bubo africanus</i>	Spotted Eagle-Owl	Least Concern	4	2023/10/20
	Tytonidae	<i>Tyto alba</i>	Common Barn-owl	Least Concern	1	2011/10/13
Struthioniformes	Struthionidae	<i>Struthio camelus</i>	Common Ostrich	Least Concern	1	2023/02/01
Suliformes	Anhingidae	<i>Anhinga rufa</i>	African Darter	Least Concern	69	2023/10/19
	Phalacrocoracidae	<i>Microcarbo africanus</i>	Reed Cormorant	Least Concern	112	2023/10/17
		<b><i>Phalacrocorax capensis</i></b>	<b>Cape Cormorant</b>	<b>Endangered</b>	<b>101</b>	<b>2023/07/13</b>
		<i>Phalacrocorax lucidus</i>	White-breasted Cormorant	Least Concern	101	2023/09/08
		<b><i>Phalacrocorax neglectus</i></b>	<b>Bank Cormorant</b>	<b>Endangered</b>	<b>8</b>	<b>2022/05/09</b>
		<i>Microcarbo coronatus</i>	Crowned Cormorant	Least Concern	66	2023/07/10
	Sulidae	<b><i>Morus capensis</i></b>	<b>Cape Gannet</b>	<b>Endangered</b>	<b>1</b>	<b>2023/07/10</b>

## Appendix B

**Appendix B** Species list of the faunal species recovered within the study area during the field survey. For each, the taxonomic Order, Family, species binomial name and species common name are shown, along with the current IUCN Red List classification of the species, and the number of records of the species during the surveying period.

Mammals					
Order	Family	Species	Common name	IUCN status	Number of observations
Afrosoricida	Chrysochloridae	<i>Chrysochloris asiatica</i>	Cape Golden Mole	Least Concern	3
Carnivora	Herpestidae	<i>Herpestes pulverulentus</i>	Cape Grey Mongoose	Least Concern	1
Rodentia	Bathyergidae	<i>Bathyergus suillus</i>	Cape Dune Mole-rat	Least Concern	1
	Muridae	<i>Gerbilliscus afra</i>	Cape Gerbil	Least Concern	2
		<i>Otomys unisulcatus</i>	Bush Vlei Rat	Least Concern	1
		<i>Rhabdomys pumilio</i>	Four-striped Grass Mouse	Least Concern	5
Avifauna					
Order	Family	Species	Common name	IUCN status	Number of observations
Charadriiformes	Laridae	<i>Larus dominicanus</i>	Kelp Gull	Least Concern	1
Columbiformes	Columbidae	<i>Columba guinea</i>	Speckled Pigeon	Least Concern	2
Falconiformes	Falconidae	<i>Falco rupicolus</i>	Rock Kestrel	Least Concern	1
Galliformes	Phasianidae	<i>Pternistis capensis</i>	Cape Spurfowl	Least Concern	1
Passeriformes	Cisticolidae	<i>Prinia maculosa</i>	Karoo Prinia	Least Concern	2
	Corvidae	<i>Corvus albicollis</i>	White-necked Raven	Least Concern	1
	Hirundinidae	<i>Cecropis cucullata</i>	Greater Striped Swallow	Least Concern	1
	Malaconotidae	<i>Telophorus zeylonus</i>	Bokmakierie	Least Concern	1
	Muscicapidae	<i>Tychaedon coryphoeus</i>	Karoo Scrub Robin	Least Concern	1
	Passeridae	<i>Passer melanurus</i>	Cape Sparrow	Least Concern	1

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Pycnonotidae	<i>Pycnonotus capensis</i>	Cape Bulbul	Least Concern	1
Sturnidae	<i>Onychognathus morio</i>	Red-winged Starling	Least Concern	1
	<i>Sturnus vulgaris</i>	Common Starling	Least Concern	1

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## Appendix C

### Curriculum Vitae of Jacobus Hendrik Visser

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#### Qualifications

- PhD (Zoology), University of Johannesburg (2015 - 2017)
- MSc (Zoology), Stellenbosch University (2011 - 2013)
- BSc Honours (Zoology) cum laude, Stellenbosch University (2010)
- BSc (Biodiversity and Ecology) cum laude, Stellenbosch University (2007 - 2009)

#### Scientific publications

- **Visser J.H.** (2013). Gene-flow in the rock hyrax (*Procavia capensis*) at different spatial scales. MSc thesis, Stellenbosch University, Stellenbosch, South Africa. <https://core.ac.uk/download/pdf/37420485.pdf>
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### List of fauna reports

- **Visser, J.H.** Terrestrial Animal Species Compliance Statement Report For A Portion of Remainder of Farm 630, Rawsonville, Breede Valley Municipality. November 2021. Prepared for inClover Environmental Consulting.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Compliance Statement Report for a Portion of Brazil 329, Nama Khoi Municipality, Namakwa District. April 2022. Prepared for WNel Environmental Consulting Services.
- **Visser, J.H.** Terrestrial Faunal And Avifaunal Species Scoping Report for the Proposed Waste Management Facility at Portions 1 and 6 of Farm 32 Brakkefontein, City of Cape Town. April 2022. Prepared for SLR Consulting.
- **Visser, J.H.** Terrestrial Faunal And Avifaunal Species Impact Assessment Report for a Portion of Riet Valleij (Somerset Vale, Farm Portion RE/150), Estelm Boerdery, Swellendam Municipality, Overberg District. June 2022. Prepared for PHS Consulting.
- **Visser, J.H.** Site Sensitivity Verification Report for Remainder of Farm De Draay No 563, Overstrand Municipality. August 2022. Prepared for PHS Consulting.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Impact Assessment Report for Remainder of Farm Rooilandia No. 472, Breede Valley Municipality. October 2022. Prepared for McGregor Environmental Services.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for Portion 3 of Farm 781, Theewaterskloof Local Municipality. December 2022. Prepared for PHS Consulting.

- **Visser, J.H.** Terrestrial Faunal Species Compliance Statement Report for Farm Portion 49, Hansmoeskraal Farm 202, George Local Municipality. April 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Compliance Statement Report for Farm 153 Vissershok (C1038: Upgrading of TR11/1), City of Cape Town Municipality. May 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for Farm Witteklip 69/123, Vredenburg, Saldanha Bay Municipality. June 2023. Prepared for Ecosense Environmental Consultants.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for the Proposed Greenvalley Mixed-use Development on Portion 28, 31 and 32 of the Farm Wittedrift No. 306, and Associated Bulk Infrastructure, Plettenberg Bay, Bitou Municipality. June 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Compliance Statement Report for the Upgrade of the Schaapkop Sewer Rising Main on Remainder of Erf 464 and Erf 13486, George Local Municipality. July 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for the Proposed Mixed-use Housing Development on Portions 7 and 8 of the Farm Kranshoek No. 432, Plettenberg Bay, Bitou Municipality. July 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Compliance Statement Report for the Proposed Sandmine on Portion 109 of the Farm Zwarte Jongers Fontein No. 489, Hessequa Municipality. August 2023. Prepared for Pro-Earth Consulting.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for the Upgrading of Herold's Bay Sewer Pump Station and Associated Rising Main on Remainder of Farm Brakfontein 236, Portion 10 of Farm Brakfontein 236 and Erven RE/95 and 116, Herholds Bay, George Municipality. September 2023. Prepared for Sharples Environmental Services cc (SES).

- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for the Proposed Flood Damage Repairs, Rehabilitation and Other Mitigation Measures in Van Riebeeck Gardens and Camphersdrift, George, George Municipality. September 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Compliance Statement Report for the Proposed Hartenbos Waste Water Treatment Works PV Solar Plant on Remainder of Portion 101 of the Farm Hartenbosch 217, Mossel Bay, Mossel Bay Municipality. September 2023. Prepared for Sharples Environmental Services cc (SES).
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Site Sensitivity Verification Report for the Proposed Construction of Tourist Accommodation on Portions 10, 11 and 13 of the Farm Arieskraal A 456, Elgin. September 2023. Prepared for PHS Consulting.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Impact Assessment Report for the Proposed Multifunctional Agricultural Development on Remainder of Farm De Draay No 563, Overstrand Municipality. November 2023. Prepared for PHS Consulting.
- **Visser, J.H.** Terrestrial Faunal and Avifaunal Species Site Sensitivity Verification Report for Portion 7 of the Farm Witteklip No. 123, Saldanha Bay Municipality. November 2023. Prepared for Ecosense Environmental Consultants.

### **Other projects**

- Southern African Bird Atlas Project 2 (SABAP2)
- Endemism, genetic variance and conservation priorities in the highlands of south-western Africa.
- Biodiversity and ecology of scorpions in the Cape Floristic Region.
- National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity. Synthesis Report. South African National Biodiversity Institute, an entity of the Department of Environment, Forestry and Fisheries, Pretoria.

## Conferences

- Presenter at the 2017 conference of the South African Wildlife Management Association (Presentation title: The influence of commercial game farming on maintaining genetic diversity in the sable antelope (*Hippotragus niger*) and roan antelope (*Hippotragus equinus*))
- Presenter at the 2017 conference of the Zoological Society of Southern Africa (Presentation title: Evolution of the South African Bathyergidae: Patterns and processes)
- Presenter at the 2010 conference of the Zoological Society of Southern Africa (Presentation title: Local and regional scale genetic variation in the Cape dune mole-rat, *Bathyergus suillus*)