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SECTION 5.3: ECOLOGY	
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AMENDMENT RECORD			
Rev	Draft	Date	Description
0		January 2017	New section. Thyspunt Site Safety Report compiled in support of Eskom's Nuclear Installation Site Licence for the Thyspunt site and submitted to the NNR.
0a		January 2025	Section updated to address NNR comments.
0b		March 2026	Minor corrections.

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EXECUTIVE SUMMARY

The site comprises marine, freshwater and terrestrial environments. The site is located approximately 12 km to the west of Cape St. Francis in the Eastern Cape Province, and falls within the warm-temperate Agulhas Bioregion, a region of high marine species richness and high rates of endemism. However, none are endemic to this part of the coast. The shoreline at the site consists mainly of a very exposed intertidal habitat, including both rocky and sandy shores. The site is of some conservation value, with some parts of the panhandle categorised as a Critical Biodiversity Area (CBA) 2. The coastline is of more value, and primarily comprises areas mapped as CBA 1. A lucrative fishery for chokka squid *Loligo vulgaris* is located in inshore waters along this region of coast.

The western portion of the site is drained by the Slang and Klipdrif Rivers. The northern and eastern portions of the site drain via the Sand River into the Krom River. Wetlands in the north-eastern portion of the site are considered the most significant hydrological features on the site. Two major dune types, with one important subtype, are recognised in the region and occur on the site, viz. unvegetated mobile dunefields and vegetated stable dune ridges.

The site lies within the Cape Floristic Region (CFR), an exceptionally biodiverse region with very high levels of species endemism. Five major vegetation types occur on the site: Algoa Dune Strandveld, Southern Cape Dune Fynbos, Tsitisikama Sandstone Fynbos, Cape Seashore Vegetation and Cape Lowland Freshwater Wetlands. In total, 383 plant species have been recorded from the site, with a very low rare species count (14 or 3.7 per cent), with only one local endemic found on the site. A small number of Red Listed animal species (c. five) occur on the site.

Five species of interest include Elandsberg Dwarf Chameleon *Bradypodion taeniabronchum*, Péringuey's Coastal Leaf-toed Gecko *Cryptactites peringueyi*, African Black Oystercatcher *Haematopus moquini*, Chokka squid *Loligo reynaudii* and abalone *Haliotis midae*.

Three notable jellyfish ingress events have been recorded at Koeberg Nuclear Power Station (KPNS) on the West Coast of South Africa. However, jellyfish are not considered to pose any threat to the nuclear installation(s) at the (Thyspunt) site, as there is no evidence that these organisms reach high densities along this section of coastline. Evidence supporting global increases in jellyfish in response to climate change remains inconclusive.

Existing monitoring programmes (at KPNS) of sessile organisms (which may foul cooling pipes) are considered adequate at that site and should be adopted at Thyspunt. In addition, the potential bioaccumulation in chokka squid of radioactive liquid effluent, should be monitored. No additional monitoring of ecological aspects of the site is required from a safety perspective.

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5.3 ECOLOGY

5.3.1 Introduction

This section of this Site Safety Report (SSR) provides an overview of the ecological aspects of the site and site region as a basis for the identification and input into the evaluation of those safety related issues that need to be taken into consideration during the site confirmation, design, construction, operation and decommissioning of the proposed nuclear installation(s).

For the purpose of this section, ‘ecology’ is considered to be the interactions of living organisms with each other and with their environment. Many physical aspects of the environment (e.g. geology, geohydrology, surface water, meteorology) are addressed in other sections of this SSR, so this section focuses on the biotic aspects of the environment.

In being identified as a candidate for investigation and development of this SSR, the site has passed a number of screening phases. These phases are described in **Chapter 4** (Site Investigation Approach). In terms of ecology, the following preliminary work was carried out on or in the vicinity of the site:

- desktop review of existing literature, particularly site-specific environmental reports, regional vegetation maps, aerial photographs and satellite imagery;
- preliminary data analysis, where required, e.g. the development of species richness and endemicity indices from primary taxonomic data, where site specific information is absent (especially for terrestrial invertebrates) and the selection of target taxa for study;
- preliminary site reconnaissance.

This section also provides the interface with other relevant parts of this SSR, such as **Section 5.5** (Land and Water Use), **Section 5.6** (Adjacent Sea Use), **Section 5.9** (Oceanography and Coastal Engineering), **Chapter 6** (Evaluation of External Events) and **Chapter 7** (Potential Radiological Impact on the Public and the Environment, PRIPE).

In addition, relevant studies commissioned for the Environmental Impact Assessment (EIA) (GIBB (Pty) Ltd, 2016), and listed in **Subsection 5.3.5** have been considered and incorporated in this assessment.

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5.3.2 Purpose and Scope

The purpose of this section of this SSR is to present an integrated baseline description of the ecology of the site in the context of the site region. Data used in the development of the ecological baseline include species diversity, density and distribution, physical characterisation and distribution of habitats, etc. The ecological baseline is focused on those aspects that are important to nuclear installation safety and this SSR, i.e.:

- any ecological characteristics of the site that have a bearing on nuclear installation safety are identified (e.g. where an area is known to support high densities of jellyfish or other sessile organisms that can potentially affect cooling water inlets);
- any ecological characteristics that may assist in the identification of potential exposure pathways to human receptors, although this is largely captured in other sections (notably **Sections 5.5, 5.6** and **Chapter 7**).

It must be noted that background radiological assessments are required in support of a nuclear installation license application and a background radiological survey must be undertaken at least two years before any nuclear material is brought onto site, followed by routine surveys. While these surveys do not form part of this SSR *per se*, the data collected during the ecological baseline description may inform the identification of suitable reference species for the assessment of the effects of ionising radiation on non-human species (plants and animals), should this become a requirement.

This section of this SSR presents an overview of the regulatory framework relevant to ecological aspects of the site. A general description of the baseline ecological characteristics of the site and the site region (including the marine and terrestrial environments) is given to enable an evaluation of the compliance of the site with the regulatory requirements. Relevant data and a summary of the methods used to obtain the data are presented, and conclusions are drawn with respect to the ecological characteristics of the site that are of relevance to nuclear installation safety. Based on these site characteristics, recommendations are made regarding future monitoring requirements.

5.3.3 Regulatory Framework

The only national regulations specifically relevant to the ecological aspects of this SSR are the Regulations on Licensing of Sites for New Nuclear Installations (Department of Energy, 2011). The regulation broadly applicable to ecology is:

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- *Regulation 4: Factors to be considered when evaluating sites for nuclear installation: “Factors to be considered in evaluating an application for a nuclear installation site license will include, but not be limited to ... the characteristics specific to the site...”.*

The above regulation is not specific in terms of ecology and so the Technical Specification (Eskom, 2022) and safety guides listed in **Subsection 5.3.4** were used to best determine the approach to the site investigation.

5.3.4 Standards and Guidelines

The following international standards and guidelines were considered in order to follow international best practice and Eskom policies:

- The National Nuclear Regulator (2016), RG-0011: Interim Guidance for The Siting of Nuclear Facilities (National Nuclear Regulator, 2016).
- Eskom's Technical Specification for Site Safety Reports (Rev 2). **Section 5.3** (Ecology), (Eskom, 2022). This document incorporates guidelines and safety requirements of the International Atomic Energy Agency and United States Nuclear Regulatory Commission, as listed below, but these references are not cited again herein;
- International Atomic Energy Agency (IAEA) Safety Standards Series No. SSR-1, Site Evaluation for Nuclear Installations (International Atomic Energy Agency, 2019) Sections 2(4), 3 (5), 4(6a), 4(12-15), 5(32) and 7(1) assessment and monitoring of site characteristics and natural events that may affect the safety of the nuclear installation(s);
- IAEA Safety Standards No. SSG-18, Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installation: Section 7(9) biological fouling by animals (e.g. fish, jellyfish, mussels and clams (International Atomic Energy Agency, 2011);
- Canadian Nuclear Safety Commission (CNSC) REGDOC – 1.1.1, Site Evaluation and Site Preparation for New Reactor Facilities (Canadian Nuclear Safety Commission, 2022): Appendix E.7 Prediction of non-malevolent biological events.

5.3.5 Approach to the Evaluation

This section of this SSR considers all aspects of the environment that are represented on the site and in the site region, in part determined by the specialists who conducted ecological studies for the EIA. On this basis, the scope of the study is summarised in **Table 5.3.1**.

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Table 5.3.1
Scope of Site Evaluation¹

Discipline	Aspects	Study Area	Reference
Marine Ecology	Estuarine ecosystems Intertidal ecosystems Benthic ecosystems (nearshore) Open water ecosystems (nearshore)	Thyspunt site/coastline and immediate surrounds	(Eskom, 2011d)
Freshwater Ecology	Inland wetland ecosystems	Thyspunt site and immediate surrounds	(Eskom, 2011a)
Terrestrial Ecology	Terrestrial Invertebrate fauna	Thyspunt site and immediate surrounds	(Eskom, 2014)
	Terrestrial Vertebrate fauna	Thyspunt site and immediate surrounds	(Eskom, 2011c)
	Botanical and Dunes	Thyspunt site and immediate surrounds	(Eskom, 2011b)
	Dune geomorphology	Thyspunt site and immediate surrounds	(Eskom, 2009e)
	Ecological processes		All of the above

The baseline description presented in this section of this SSR provides a general overview and interpretation of the notable ecological characteristics of the site and its regional context, with a focus on those specific aspects of the baseline that will assist in identifying any ecological aspects of the site that:

- may act as potential pathways to human receptors;
- have a bearing on nuclear installation safety;
- require monitoring during the lifetime of the nuclear installation(s) as a result of the above criteria.

The approach to the investigation followed the requirements set out in **Section 5.3** of the Technical Specification for SSRs (Eskom, 2022), viz.:

- desk study – This phase included detailed review and collation of available information; site reconnaissance; formulation of an Integrated Management System, Method Statement, Quality Control Plan and

¹ The TSSR is explicitly based on studies commissioned for the EIA, (the “jellyfish” study being the only exception). However, in 2023 SRK reviewed the specialist studies undertaken for the Thyspunt EIA to ascertain whether they were still fit for purpose. This was to inform the Minister’s decision regarding appeals against the Nuclear-1 EIA.

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client approval thereof.

- field work - Studies were carried out to provide information for the EIA. These field studies included marine ecology, freshwater ecology and terrestrial ecology (comprising dune systems, terrestrial flora and fauna) and were also used to provide information for this SSR.
- evaluation – This phase entailed an assessment of ecological aspects that may have a bearing on nuclear installation safety.
- reporting - This phase included writing and internally reviewing this SSR; reviewing and approval of this SSR by Eskom Holdings (further referred to as Eskom), the external peer reviewer and the Technical Writer.

5.3.6 Baseline Description

RG-0011 requires descriptions of the flora and fauna in the vicinity of the site, their habitats and their distribution, and identification of important species that:

- are threatened or endangered - This information is presented in the sections below as appropriate, with comprehensive descriptions provided in the EIA (GIBB (Pty) Ltd, 2016).
- are commercially or recreationally valuable - This information is presented in the sections below as appropriate, with comprehensive descriptions provided in **Section 5.5** and **Section 5.6**.
- affect the well-being of another species critical to the structure and function of the ecological system or a biological indicator of radionuclides or chemical pollutants in the environment (including pollutants such as thermal and chlorine) - This information is presented in the sections below as appropriate, with comprehensive descriptions provided in **Section 5.6** and **Section 5.9**.

5.3.6.1. Marine Ecology

Situated approximately 12 km to the west of Cape St. Francis within the Eastern Cape Province, the site falls within the warm-temperate Agulhas Bioregion. Although the general area is one of high marine species richness and high rates of endemism (Eskom, 2011d), site surveys detected no rocky or sandy shore species endemic to this part of the coast. A list of important species potentially inhabiting the site and/or in the vicinity of the site is presented in **Table 5.3.4**, while a tabulated list of all species is provided in **Appendix 5.3.A**.

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The shoreline at the site consists mainly of a very exposed intertidal habitat, including both rocky and sandy shores (Eskom, 2011d). Due to the restricted access at this site, these shores have been protected from all forms of utilisation. A lucrative fishery for chokka squid *Loligo vulgaris* is located in inshore waters along this region of coast.

The marine environment can be divided into a number of zones, namely the intertidal zone, the benthic (assumed to include the subtidal zone) environment and open water environment. Each of these zones is discussed below.

Intertidal Zone

The intertidal zone at the site consists of both sandy and rocky shores. Rocky shores at the site are steep and strongly dissected. The high-shore zone is dominated by the alga *Porphyra capensis* **Table 5.3.A.2** and the tiny gastropod *Afrolittorina africana*, see **Table 5.3.A.1** (Eskom, 2011d). The mid-shore forms a distinct band dominated by the barnacle *Chthamalus dentatus*, but also supports low densities of the alien mussel *Mytilus galloprovincialis*, and see **Table 5.3.A.1**. In contrast, low-shore communities are dominated by a variety of algae, all of which are common in this region (Eskom, 2011d). Three rocky-shore endemic species have been recorded at the site, each with an extensive range along the South African coast. Although not recorded during recent surveys, the giant periwinkle *Turbo sarmaticus* (alikeukel) occurs in the vicinity of the site, where it is harvested in large numbers on a recreational and artisanal basis (**Table 5.3.A.1**) (Eskom, 2011d).

Rocky shores in the vicinity of the site support a variety of coastal birds which are typical of such shores in the Eastern Cape region (**Table 5.3.A.6**). Species most often observed include the Kelp Gull *Larus dominicanus* and the African Black Oystercatcher *Haematopus moquini*. On sandy shores Sandwich Terns (*Sterna sandvicensis*) and Common Terns (*S. hirundo*) are common in summer months (Eskom, 2011d).

The exposed sandy beaches at this site consist of coarse sand and support a very low diversity of organisms: only four species were recorded, viz. the wedge clam / white sand mussel *Donax serra*, the right-angle beach louse *Eurydice longicornis*, the isopod *Excirolana latipes* and the plough shell *Bullia digitalis* (most common of the four species), while no (South Coast) endemic species were recorded (Eskom, 2011d).

No species of special conservation interest were recorded in the intertidal environment at the site. The biota of the intertidal zone (consisting of both

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sandy and rocky shores) is considered highly tolerant to disturbance due to the natural variability which typifies these shores. As such the intertidal zone is considered a low sensitivity habitat (Eskom, 2011d).

Benthic Environment

Both sandy and rocky bottoms are present in the vicinity of the site (Eskom, 2011d). Species composition and abundance in these habitats are typical of the region. Rocky reef communities are dominated by colonial ascidians, hydroids and sponges, with coralline algae being important to a depth of about 20 m (Eskom, 2011d). The benthic environment hosts species typical of the region and demonstrates medium tolerance to disturbance and as a result is rated as a medium sensitivity habitat.

Open Water Environment

Since the mid-1980s a coastal jigging fishery for chokka squid *Loligo vulgaris* has developed along the south coast of South Africa, although this species occurs from southern Namibia to approximately East London (Eskom, 2011d). Spawning occurs mainly, although not exclusively, in shallow bays along the South African southern coast, with the most important spawning grounds occurring between Plettenberg Bay and Algoa Bay. It is on these spawning grounds that squid are targeted by the chokka fishery (Eskom, 2011d). This represents a potential pathway to human receptors (**Section 5.6**).

Squid spawn on the sea-bed, usually in inshore waters with spawning grounds occurring between 30 and 60 m isobaths (**Section 5.6**). Egg capsules are deposited mainly on low-profile reefs or fine sandy bottoms of large, relatively sheltered bays, such as that to the east of Thyspunt itself (Eskom, 2011d). Generally, egg deposition occurs at depths of less than 50 m (Eskom, 2011d), but it has been observed that spawning occurs in water as shallow as 20 m and as deep as 200 m (**Section 5.6**); during years of severe winter storms, elevated swell and turbidity result in spawning at greater depths (Eskom, 2011d). During these times, the squid are lost to the jig fishery (Eskom, 2011d). Surveys conducted between 1985 and 1992 failed to detect egg beds in the area immediately surrounding Thyspunt (Eskom, 2011d).

Egg capsules develop optimally at temperatures between 12°C and 20°C. Development is retarded and mortality rates increase at temperatures above 22°C. Almost 100 per cent mortality has been recorded from temperatures rising above 24°C (**Section 5.6**). If sea bottom temperatures are dramatically affected, it is likely to negatively impact on the egg beds. The

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warm-water plume may therefore impact on squid populations (**Section 5.6**), which are expected to avoid water temperatures elevated above their thermal tolerance range. However, the area predicted to be affected represents less than one per cent of the coastal spawning ground. The potential effects on the squid fishery are considered in **Section 5.6**.

Shore and ski boat-based recreational angling occurs extensively along the Eastern Cape coast, including in the general Cape St. Francis area. Species of importance to these fisheries include Dusky Kob (*Argyrosomus japonicus*), Silver Kob (*A. inodorus*), Cape Salmon (otherwise known as Geelbek, *A. aequidens*), Shad (otherwise known as Elf, *Pomatomus saltatrix*), White Steenbras (*Lithognathus lithognathus*) and Bronze Bream (*Pachymetopon grande*). Spearfishing and scuba diving are also popular activities in this area. Although both demersal (bottom) and pelagic (midwater) (commercial) fisheries operate in the area offshore from the site, these fisheries occur outside the zone of influence of the proposed nuclear installation(s) (Eskom, 2011d).

While marine mammals (**Table 5.3.A.7**) such as the Indo-Pacific Bottlenosed Dolphin (*Tursiops aduncus*), Long-beaked Common Dolphin (*Delphinus capensis*) and - far less frequently - Humpback (*Megaptera novaeangliae*) and Southern right whales (*Balaena glacialis*) are observed in the general vicinity of the site, these species are transient within the area. The appearance of whales in this area is random and not linked to the birth of calves. No seal colonies occur near the site (Eskom, 2011d).

Although plankton productivity is not considered to be high in this area, when compared with the West Coast, nearshore waters are subjected to moderate sporadic coastal upwelling and resulting plankton blooms during summer. The highly dynamic nature of the open water environment translates into low sensitivity to disturbance (Eskom, 2011d).

The potential impacts of marine biota on the proposed nuclear installation(s) stem from entrainment of marine organisms and settlement of sessile organisms in the intake pipes, resulting in blockage and loss of cooling water supply, viz:

- Medusae of the phylum Cnidaria (jellyfish) and planktonic forms of the phylum Ctenophora (comb-jellies) are known to cause blocking of power station cooling systems when they reach high densities (Eskom, 2011d). Jellyfish are not considered to pose any threat to the nuclear installation(s) at the (Thyspunt) site, as these organisms do not reach high densities along this section of coastline (Eskom, 2011d). However, studies have shown a noticeable increase in jellyfish along the South

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African West Coast since the 1970s and this is considered to be very probably linked to climate change (Eskom, 2011d). There is therefore a possibility that jellyfish populations elsewhere along the (South) coast will also increase, with consequent increased possibility of entrainment of these organisms into the cooling water system of a proposed nuclear installation(s).

- Of the 450 species of marine Scyphozoa reported from the Southern African coastline, two species are endemic to the South (and West) Coast, namely the root-mouthed jelly (*Eupilema inexpectata*), which occurs as far east as East London, and the Cape compass jelly *Chrysoaura agulhensis*, which is fairly cosmopolitan throughout the region, particularly along the South Coast (Pisces Environmental Services (Pty) Ltd, 2024). Swarms of these compass jellies have been responsible for blockages of the cooling water intakes at Koeberg and have caused localised problems to the offshore diamond mining industry. Occasional and unpredictable blooms have been reported from Port Elizabeth (Gibbons, 2024). A further swarming species, *Pelagia noctiluca*, occurs offshore of the South and West Coasts but can be blown towards the coast by strong onshore winds resulting in large numbers accumulating in bays and washing up on beaches. The hydromedusan crystal jellyfish *Aequorea forskalea* occurs in all suitable temperate to tropical waters throughout the Atlantic and Indo-Pacific Oceans and is the second dominant large medusa besides the compass jelly around the South African coast, occurring more commonly in offshore waters (>150 m). Growing to a diameter of up to 12 cm, it preys non-selectively on zooplankton and ichthyoplankton (Pisces Environmental Services (Pty) Ltd, 2024).
- Three notable jellyfish ingress events have been recorded since Koeberg Nuclear Power Station (KNPS) commenced operation in the 1980s, viz. in February 1997, June 1999 and May 2005 (a separate event in March 2020 was attributed to anchovy). The species involved, *Chrysaora fulgida* and an undescribed species tentatively referred to as *C. agulhensis*, are known to gather in substantial numbers², forming large spawning aggregations during winter (Pisces Environmental Services (Pty) Ltd, 2020). In all three cases, massive ingress of jellyfish into the inlet basin significantly affected normal operations of the nuclear installation (Eskom, 2011e). However, it should be noted that although ingress of jellyfish poses a significant hazard to normal operation at

² Other jellyfish species are known to occur, but do not swarm, so are not described.

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KNPS, it is expected to have no effect on the safe shutdown of the reactors (Eskom, 2011e) at KNPS or elsewhere.

- Considering the noticeable increase in jellyfish along the South African West Coast since the 1970s, the probability of entrainment of high densities of these organisms into the cooling water system of a proposed nuclear installation(s) in this area appears to be increasing (Eskom, 2011d). As long-term regime shifts in plankton composition have been reported to favour jellyfish outbreaks and their rise, the observed increases in abundance of zooplankton along the South Coast following changes in upwelling-favourable winds may promote jellyfish blooms in the area. However, predation pressure by the relatively stable pelagic fish stock may be providing enough competition for the zooplankton resource for jellyfish not to gain dominance in the ecosystem, as they did off northern Namibia (Pisces Environmental Services (Pty) Ltd, 2024). While continued anthropogenic pressures on global marine ecosystems will likely see future increases in jellyfish blooms and consequently increased risks of jellyfish-related blockages at the seawater intakes, evidence supporting climate change as a driver of such increases remains inconclusive (Pisces Environmental Services (Pty) Ltd, 2024).
- Experience at KNPS has demonstrated that during ingress of jellyfish into the inlet basin, a percentage of jellyfish is removed from both the rake and drum screens and diverted to the washwater waste sump, while the remainder of the jellyfish adhere to the screens (particularly the drum screen). In past events at KNPS, the drum screen became saturated with jellyfish which necessitated the use of high-pressure firehoses to clean it (Eskom, 2011e).
- Design and maintenance mechanisms for addressing the risk of ingress of swarms of jellyfish are considered in **Section 5.9** and are also discussed in **Section 5.6**. It is recommended that the cooling water intakes are designed to cope with the potential risk of blockage of the cooling intake represented by species identified in **Section 5.9**.
- Floating kelp (and large seaweed) is also known to potentially block water intakes of nuclear installation(s). However, kelp (and large seaweed) does not occur in this region and therefore presents no risk to a nuclear installation(s) at the site (Eskom, 2011d).
- Colonisation by sessile organisms, such as mussels and barnacles, may result in the fouling of cooling pipes (Eskom, 2011d). Biofouling has been monitored at KNPS by Eskom, where management through

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regular maintenance procedures, including chlorination produced through electrolysis, has been found to provide effective control (**Section 5.9**). Existing monitoring programmes at KNPS are considered adequate and will be adequate at Thyspunt.

An associated risk (not directly affecting the nuclear installation) is ingress of harmful algal blooms into seawater intakes, potentially affecting a Reverse Osmosis desalination plant at Thyspunt:

- As the upwelling events along the South Coast are generally relatively weak and short lived, the proliferation of (harmful) algal blooms (HABs) was, until recently, not known to occur. Between December 2013 and March 2014, however, a large and persistent harmful algal bloom of *Lingulodinium polyedrum* formed within Algoa Bay and spread along the east coast as far as Wilderness. The species is non-indigenous to South Africa, usually only found in tropical and temperate northern hemisphere waters and is thought to have been introduced in ballast water as benthic resting cysts. *Lingulodinium polyedrum* produces yessotoxins that are toxic to mice and may accumulate in bivalves, although toxicity to humans is not known. This species irritates the gills of fish, interfering with respiration, and has caused fish kills in several places within Algoa Bay and mass mortality of farmed abalone in Hermanus and Gansbaai. The ingress of (harmful) algal blooms primarily affects Reverse Osmosis desalination plants and mariculture operations (Pisces Environmental Services (Pty) Ltd, 2024). In desalination plants harmful algal blooms can cause significant operational issues by clogging filters and fouling membranes in the pre-treatment and reverse osmosis systems. They also pose potential health concerns for consumers as some algal cells produce toxic substances or taste and odour compounds that would affect the quality of the produced water.

The effect of radioactive material potentially released to the environment on Representative Animals and Plants (RAPs), specifically species named and/or discussed in **Subsection 5.3.6.1** and which may represent a pathway to human receptors, is addressed in **Chapter 7**.

5.3.6.2. Wetland Ecosystems

The western portion of the site lies within the Department of Water and Sanitation's quaternary catchment K80F, drained by the Slang and Klipdrif Rivers (Eskom, 2011a). The Slang River receives run-off from valley bottom and hillslope seep wetlands in the northern panhandle portion of the site (**Drawing 5.3.1**) and flows immediately north of the Oyster Bay dunefield as a channelised, increasingly disturbed valley bottom wetland. The

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Pennysands River is a naturally channelled valley bottom wetland on the north of the site, which dissipates into the dunefield near the entrance to the site panhandle.

The northern and eastern portions of the site lie within quaternary catchments K90D and K90E, draining via the Sand River into the Krom River (**Drawing 5.3.1**). The Sand River system is considered to be a unique feature. Local conservation groups are in the process of compiling an application for the system's declaration as a Ramsar wetland site (Eskom, 2011a).

In addition to these relatively major river systems, a number of unnamed but nevertheless significant drainage lines occur on and near the site, also mainly comprising valley bottom wetlands.

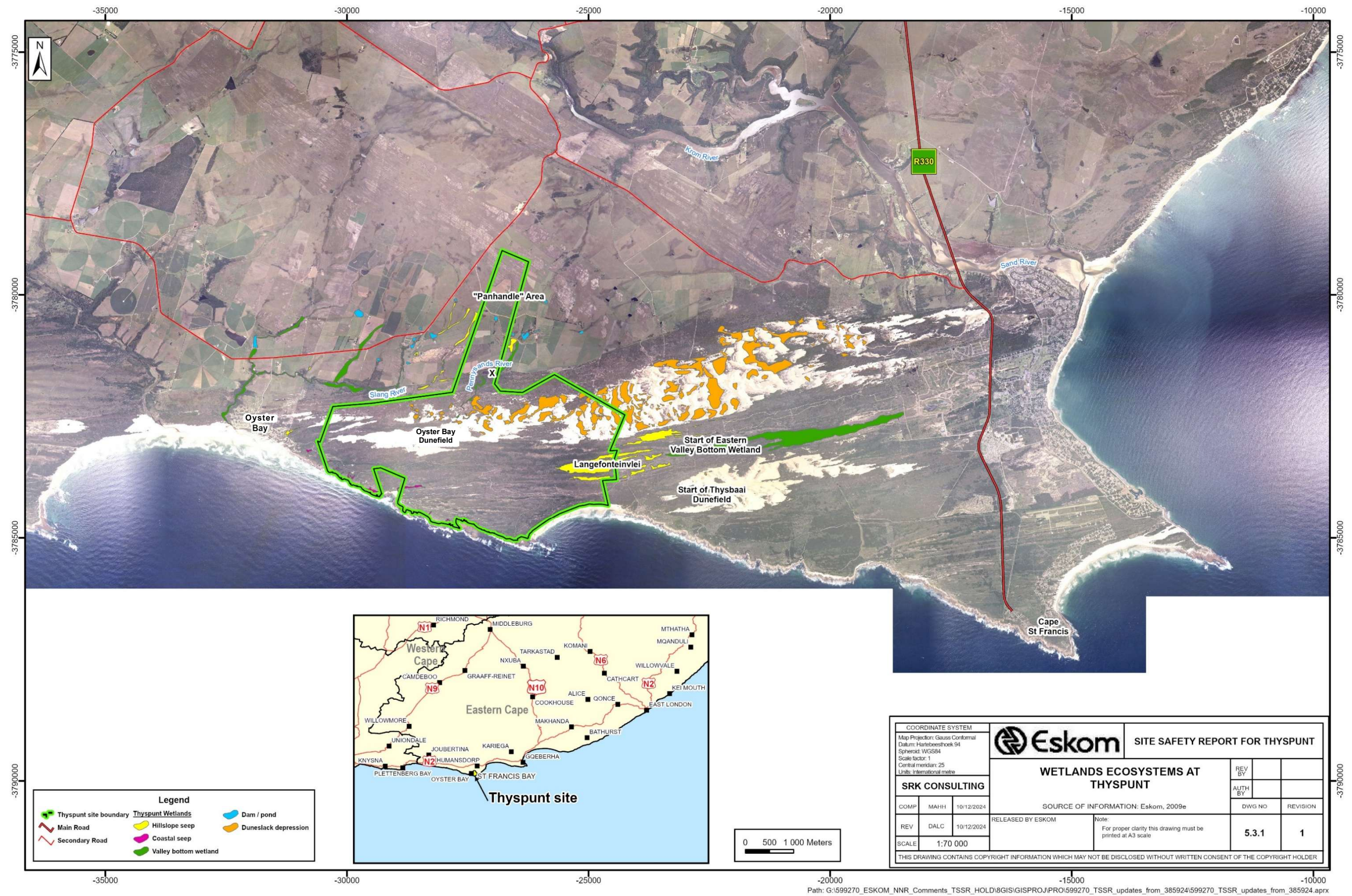
Wetlands and river systems are the most significant hydrological features on the site and the following wetland types, classified in terms of the National Wetland Classification System (NWCS), occur within, or in the vicinity of, the site (Eskom, 2011a).

Wetland Depressions within the Mobile Dunefields (also referred to as Duneslack Wetlands)

These are depressions that occur in an otherwise sloped terrain. The wetlands form against the leeward toe of the two largely unvegetated mobile dune systems and collectively comprise an extensive band of seasonally (or at least non-permanently) inundated pools, ranging from less than 30 cm in depth to over 2 m.

The wetlands are aligned in an east-northeast/west-southwest direction, becoming more extensive in the east, where they widen to form swathes of permanently saturated, vegetated wetlands, which in places span a relatively high proportion of the dunefield width, and are linked at times by minor channels, which braid across the interdune surfaces. These wetlands occur predominantly in the northeast of the site and their approximate distribution is shown in **Drawing 5.3.1**. Note that wetlands are dynamic systems, undergoing shrinkage or expansion on an annual basis, and are periodically infilled by encroaching dunes.

The duneslack wetlands are probably a combination of wetlands which are fed by water from the underlying aquifer, coupled with some that result from perching of water at a more local level above layers of calcrete or aeolianite and a deep organic base that underlie the mobile dunes in places (**Subsection 5.11.6.7** in **Section 5.11**, Geohydrology).



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From a wetlands habitat perspective, two different wetland types occur, viz. vegetated, semi-permanent depressional wetlands, which occur mainly along the wetter, northern edge and the central to eastern extent of the Oyster Bay Dunefield (which traverses the northern section of the site) (see **Subsection 5.3.6.7**), and unvegetated depressional wetlands (Eskom, 2011a).

Standing water in the duneslack wetlands is mildly alkaline, an expected result in these coastal systems, and associated with relatively high levels of calcium carbonate. The water generally has a low salt content. The wetlands are considered highly sensitive to activities that will disrupt their supply of water on a long-term basis although they are probably not highly sensitive to short-term impacts on water supply, i.e. over a few months. The duneslack wetlands of the Oyster Bay Dunefield all fall within the Southern Cape Dune Fynbos vegetation type. At least 43 plant species have been recorded in the transverse dune wetlands, three of which are Red Data species (Eskom, 2011a).

The duneslack wetlands show the highest diversity of all wetlands on the site in terms of aquatic invertebrate communities (**Table 5.3.A.3**). A number of larger faunal species are wholly or partially reliant on the duneslack wetlands during at least part of their life cycles, including the Cape Sand Toad *Vandijkophrynus angusticeps* which, at this location, may be genetically and even taxonomically distinct from other populations (**Table 5.3.A.5**).

Duneslack wetlands are not known to occur elsewhere in South Africa on the scale at which they occur in the Sand River system. The duneslack wetlands as a group are considered a singularly important component of the overall habitat diversity of the site. Seasonal duneslack wetlands were assessed as a Present Ecological Status (PES) Category A³ reflecting a largely unmodified, near-natural condition (Eskom, 2011a).

³ Present Ecological Status (PES) is assessed using a DWAF-prescribed scoring methodology, which requires the scoring of attributes associated with particular criteria (namely: hydrologic, water quality, hydraulic and biotic criteria). The mean of all scores is then used to place the wetland in a conservation class, with PES A defined as 'Unmodified or approximates natural condition', PES B defined as 'Largely natural with few modifications'. A slight change in ecosystem processes is discernible and a small loss of natural habitats and biota may have taken place'; Category C defined as 'Moderately modified. A moderate change in ecosystem processes and loss of natural habitats has taken place but the natural habitat remains predominantly intact', ranging to PES F, being defined as 'Critically modified. Losses of habitat and function are almost total, and the wetland has been modified completely' (Eskom, 2011a).

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Permanently to Seasonally Saturated Hillslope Seeps

The hillslope seeps occur in a relatively small section in the east of the site, with one other narrow seep located in the southern section of the panhandle. Coastal seeps occur in a narrow strip near the coastline, generally to the west of Thyspunt itself. Three distinct types of hillslope seeps occur on and in the vicinity of the site, distinguished on the basis of their location (Eskom, 2011a):

- hillslope seeps, which occur where groundwater daylights along the coast (also referred to as 'coastal seeps') - On the site, the coastal seep wetlands occur along the rocky shore west of the sandy beach and Thyspunt itself, as far as the western site boundary and extending towards Oyster Bay. The highest density of these seeps lies towards the east, in the vicinity of Thyspunt itself. The largest of the seeps extends beyond the 200 m coastal setback line and is a channelled system, passing through a dense swathe of saturated vegetation (Eskom, 2011a).

The seeps display a range in salinity, but all were more saline than the non-coastal wetlands on the site. They were sodium chloride dominated with a high calcium component, suggesting that they are fed by the Algoa Aquifer. The nature of the coastal seeps is likely to be sensitive to changes in water quantity and the biota would be susceptible to increases in salinity (Eskom, 2011a).

The coastal seeps are characterised by surprisingly high plant species numbers for wetland habitat (52), one of which (dune chaff-flower *Syncarpha sordescens*) is a Red Data species. They provide a source of clean fresh water for small mammals such as otters, e.g. Cape Clawless Otter *Aonyx capensis* (Near Threatened), and mongooses as well as small antelope and other animals (Eskom, 2011a).

Coastal seeps are considered presently unimpacted within the site and were assessed as Present Ecological State (PES) Category A. These coastal seeps, particularly in the relatively pristine state in which they occur at the site, are considered highly threatened. This is despite the fact that they are not at the same level of unreplicated, one-of-a-kind habitat as some of the other wetland systems on the site. Their relative regional scarcity reflects the extent of development along the Eastern Cape coastline. This development is resulting in degradation, drainage, canalisation or piping of such wetlands and leading to their transformation into *Typha capensis*-dominated linear channels (Eskom, 2011a).

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- hillslope seeps within the largely agricultural area to the north of the Oyster Bay Dunefield – These feed into both artificially and naturally channelled valley-bottom wetlands, which drain to the west of the site, as well as into the northern portion of the Oyster Bay Dunefield. *In situ* electrical conductivity data indicated that freshwater decay of fynbos litter in the broader area, and its subsequent leaching into streams by way of groundwater movements, may explain the darker tannin-stained waters that characterise the wetlands on the northwestern end of the dunefield in the vicinity of the panhandle and immediately west of the site boundary (Eskom, 2011a).

The disturbed hillslope seep and valley bottom wetlands associated with the Pennysands River lie in a Sandstone Fynbos plant community and are located on sandstone-derived alluvium. A moderate total number of 35 plant species were found including one Red Data species. The wetlands in this area are attractive habitats for smaller mammals including antelope, porcupines, bush pig, otters and mongooses. The valley bottoms are also likely to serve as useful longitudinal corridors for faunal movements, linking to the main dunefield and its wetlands (Eskom, 2011a).

The wetlands are generally degraded – only a portion of the hillslope seep running immediately east of the panhandle retains significant areas of indigenous vegetation. The wetlands would be sensitive to change, including infilling and further physical disturbance. These wetlands were assessed as a PES Category B, while those in agricultural areas were assessed as having a PES of Category C (Eskom, 2011a).

- hillslope seeps arising in the area between the two mobile dunefields – The largest of these comprises the Langefonteinvelei, and its southern counterpart (**Drawing 5.3.1**). Numerous smaller seeps occur at slightly higher elevations between the Langefonteinvelei and the Oyster Bay Dunefield. Water in these wetlands is fresh with negligible concentrations of nitrogen. Water quality appears to be calcium-sodium-chloride dominated, with relatively high sulphate concentrations too, consistent with the presence of large volumes of decaying organic matter (Eskom, 2011a).

The Langefonteinvelei comprises mainly a densely vegetated, permanently saturated wetland in which 56 plant species were identified, none of which were Red Data species (**Table 5.3.B.1**). The wetland supports a substantial (but unquantified) community of invertebrates and small vertebrates. The Elandsberg Dwarf Chameleon

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Bradypodius taeniabronchum was found in the wetland, representing a new locality for this species. *B. taeniabronchum* is described as Critically Endangered, as a result of its restricted distribution range and loss of suitable habitat in these areas (**Table 5.3.A.5**) (Eskom, 2011a).

The hillslope wetlands are likely to be particularly sensitive to impacts that alter the flow of water through the wetlands. The Langefonteinvelei and the smaller adjacent system to the south were assessed as PES Category A (Eskom, 2011a).

Permanently to Seasonally Saturated Valley Bottom Wetlands

Again, two distinct types of this wetland have been distinguished in the area, though neither occurs on the site itself (Eskom, 2011a), viz:

- artificially and naturally channelled valley bottom wetlands – These occur in conjunction with extensive hillslope seeps within the largely agricultural area to the north of the Oyster Bay Dunefield and either dissipate into the main dunefields or drain to the east and west of the site, feeding into the Sand and Slang rivers, respectively. In the vicinity of the Oyster Bay Dunefield, these wetlands feed into a complex mosaic of depressional wetlands and wetland flats, which proliferate along the northern edge of the mobile dunes, particularly in the area just west and east of the panhandle (Eskom, 2011a).
- unchannelled valley bottom wetlands in the area between the two main mobile dune fields – These are fed largely by hillslope seeps daylighting in this area, and probably receive direct inflows from groundwater. The main unchannelled valley bottom wetland in this area is referred to as the Eastern Valley Bottom Wetland (Eskom, 2011a).

The once-off water quality sample indicated water that was sodium-chloride dominated, with relatively high calcium, and slightly elevated sulphate, the latter probably consistent with the accumulation and breakdown of plant material in a wetland system (Eskom, 2011a).

Altogether, a total of 25 invertebrate taxa were identified and the invertebrate community was found to be more characteristic of pond habitat, with low numbers of individuals contributing to a relatively diverse group of benthic fauna (**Table 5.3.A.3**). The Eastern Valley Bottom Wetland lies wholly off the site and, despite its level of impact, the system is considered regionally and locally rare. These wetlands were assessed as PES Category C (Eskom, 2011a).

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Wetland ecosystems do not present any threat to the proposed nuclear installation(s) and will not result in any impact on the proposed nuclear installation(s).

Conservation Value

The Thyspunt site is mostly categorised as an Ecological Support Area 1 (ESA 1) with some parts of the panhandle categorised as a Critical Biodiversity Area 2 (CBA 2). The coastline of the Thyspunt site primarily comprises areas mapped as:

- CBA 1): Natural;
- CBA 1: Restore (Eastern Cape Department of Economic Development and Environmental Affairs, 2019).

CBA 1 indicates irreplaceable or near-irreplaceable sites that are required to meet biodiversity targets with limited, if any, option to meet targets elsewhere.

5.3.6.3. Terrestrial Ecology

The site is underlain by mostly unconsolidated sediments of the Algoa Group (**Subsection 5.11.6.1**). At the coast, quartzitic sandstone is exposed. Further inland, the narrow northern boundary of the site extends into quartzitic sandstone (Eskom, 2011b).

Based on the geology, soils fall within two broad groups. Shallow to deep calcareous sands (Fernwood Form, old Langebaan Series) occur on the Quaternary-age sediments. On sandstone, soils are generally residual due to gentle slopes, and are acid and infertile, showing a range in depth (Eskom, 2011b).

The geomorphology of the site is dominated by a headland bypass dune system⁴ running west to east, inland of the small peninsulas of Seal Point and Cape St. Francis, to the east of the site boundary. Dunes form a series of parallel ridges alternating with broad to narrow slacks (valleys) (Eskom, 2011b).

The site lies within the Cape Floristic Region (CFR) which is largely restricted to the Western Cape and Eastern Cape provinces. This is an exceptionally biodiverse region with very high levels of plant species

⁴ Headland bypass systems consist of sand originating at a point source and feeding a bay across a headland, maintaining the long-term down-drift of sand along a coast.

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endemism (Eskom, 2011c). Evidence of the site's potential sensitivity is that the CFR has been identified as a global Biodiversity Hotspot by Conservation International and is the focus of a South African government-supported initiative, *Cape Action for People and the Environment*, based at the South African National Biodiversity Institute (Eskom, 2011c).

The site is registered with the Department of Water and Environmental Affairs as a Natural Heritage Site (Eskom, 2011c).

5.3.6.4. Terrestrial Invertebrate Fauna

The discussion on terrestrial invertebrates is based on the information contained in **Table 5.3.A.4** (Eskom, 2014).

The site displays considerable habitat diversity in the form of a number of contrasting vegetation types (Eskom, 2014). A summary of the diversity of the various taxa sampled on (or near) the site, based in part on a winter survey (when sampling may be less successful) is provided in **Table 5.3.2**.

Table 5.3.2
Summary of Invertebrate Taxon Diversity at the Site

Taxon	Description of findings
Ants	Ant diversity is relatively low (a total of 21 ant species was collected, with an estimated total diversity of approximately 26 species). Two undescribed species, and one extremely rarely encountered ant species, were identified, namely <i>Tetramorium</i> sp., <i>Monomorium</i> sp. and <i>Diplomorium longipenne</i> . No specimens of the invasive Argentine Ant <i>Linepithema humile</i> were found.
Butterflies	Twenty-two butterfly species were observed during the field surveys, but observations of the habitats and food plants aided in refining the desktop assessment of probable species diversity. The predicted species count for this site is 42.6 with a Red List species probability of 0.01. One of these (<i>Antanartia hippomene hippomene</i>) is considered to be rare and localised, and infrequently encountered on the coast – it is more often found in Afromontane forests further inland, e.g. W Cape (Knysna), E Cape (Amatola) and Kwazulu-Natal (Eshowe). Regional endemics that might occur here are <i>Aloeides pallida</i> ssp. Nova (recorded from Oyster Bay) and <i>Chrysoritis whitei</i> (known from Humewood, Port Elizabeth). The dominant species were <i>Leptotes pirithous</i>, <i>Belenois gidica abyssinica</i> (both widespread and common species), <i>Chrysoritis chrysaor</i>, <i>Leptotes pirithous</i> and <i>Papilio d. demodocus</i>. There is also a remote possibility that

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Taxon	Description of findings
	the site could harbour the Red-listed <i>Aslauga australis</i> , which is known only from coastal bush in the Eastern Cape.
Velvet worms (Onchyophora)	One specimen of velvet worm (species unrecorded) was found at the edge of a field on the inland (agriculturally transformed) portion of the site.
Mygalomorph spiders (Arachnida: Araneae: Mygalomorphae)	None found.
Scorpions (Arachnida: Scorpiones)	Due to time limitations a partial search was conducted. During this search no species were found, but are expected to occur at the site.
Soldier flies (Mydidae)	None found.
Heelwalkers (Mantophasmatodea)	None found.
Monkey beetles (Hopliini)	None found.
Millipedes (Myriapoda)	Three species found.
Jewel beetles (Buprestidae)	None found.
Spoonwing lacewings (Nemopteridae)	None found.
Horseflies (Tabanidae)	None found

Source: (Eskom, 2014)

Aside from the invertebrate species of interest discussed in ***Table 5.3.2***, no further evidence was found during the site surveys to suggest that the site was of high significance in terms of terrestrial invertebrates. However, the combination of high butterfly and ant diversity and the onchyophoran species (velvetworm) indicate that the site does have significant conservation value (Eskom, 2014).

There is no record that large and aggressive swarms or colonies of insects are especially prevalent in this area. Nevertheless, the possibility of swarms or colonies invading and clogging, e.g. air inlets, cannot be ruled out. To the extent that this is a safety risk, it can be mitigated through regular maintenance and appropriate design of inlets. There are no other aspects of terrestrial invertebrate ecology that represent a threat to nuclear installation safety.

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5.3.6.5. Terrestrial Vertebrate Fauna

Amphibians

The discussion on amphibians is based on the information contained in **Table 5.3.A.5**, compiled from (Eskom, 2011c).

Fifteen species of amphibian are of probable or confirmed occurrence at the site. None of these species is threatened (Eskom, 2011c), but there are nevertheless some important conservation issues around amphibians and important habitats on site (Eskom, 2011c).

The wetland depressions (also known as duneslack wetlands) are occupied by a number of species and these have been the subject of several studies (Eskom, 2011c). A population of Cape Sand Toad *Vandijkophrynus angusticeps* is of special interest because it is at the eastern extremity of its range here. The population is probably isolated from all other populations of this species and may, therefore, be genetically and even taxonomically distinct. The population needs to be studied further but, in the interim, should be regarded as rare, important and sensitive and requiring the highest levels of protection (Eskom, 2011c).

Also of considerable interest are the frogs that occupy the coastal wetlands and seeps above the rocky shoreline. Seven species (Common Platanna *Xenopus laevis*, Common River Frog *Amietia angolensis*, Cape River Frog *Amietia fuscigula*, Bronze Caco *Cacosternum nanum*, Striped Stream Frog *Strongylopus fasciatus*, Clicking Stream Frog *Strongylopus grayii*, and the Cape Sand Frog *Tomopterna delalandii*) were observed in these habitats, which is an unusually high species richness for localities so close to the sea. It can be assumed that these species are also breeding here. This community of amphibians is of special scientific and conservation interest and needs to be protected (Eskom, 2011c).

Penther's Rain Frog *Breviceps adspersus pentheri*, a burrowing terrestrial frog, is a range-restricted taxon endemic to the Eastern Cape and therefore of special conservation significance. It probably occurs in the site panhandle (Eskom, 2011c).

Reptiles

The discussion on reptiles is based on the information contained in **Table 5.3.A.5** (Eskom, 2011c).

There are 62 species that possibly occur here, 50 of which are of probable or confirmed occurrence for the site (Eskom, 2011c). Probably occurring species that are provisionally Red Listed are FitzSimons' Long-tailed Seps

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Tetradactylus fitzsimonsi (Vulnerable) and Tasman's Girdled Lizard *Cordylus tasmapercent* (Vulnerable). In addition, Péringuey's Coastal Leaf-toed Gecko *Cryptactites peringueyi* (Critically Endangered) may occur here too. This extremely range-restricted Eastern Cape endemic species is known from only two localities, one of which is the Krom River estuary, situated only a few kilometres to the east of the site. If it does occur here, it is likely to be associated with vegetation in the splash zone along the coast (Eskom, 2011c).

The Herald Snake *Crotaphopeltis hotamboeia* and the Cape Girdled Lizard *Cordylus cordylus* were found very near to the sea, in association with the coastal wetlands. The Herald Snake is a specialist predator of frogs. These findings strengthen the impression that a community of wetland-associated species exists immediately adjacent to the marine environment – an unusual and rare ecosystem which should be protected (Eskom, 2011c).

In addition, one provisionally Red Listed species has been confirmed, namely the Elandsberg Dwarf Chameleon *Bradypodion taeniabronchum* (endangered) which was found to inhabit the vegetation in the Langefonteinvllei but not at any other locality on site. This is a new locality for the species, and since the site is well removed from other known localities, this population may be genetically distinct from other populations of the species (Eskom, 2011c).

Birds

The discussion on birds is based on the information contained in **Table 5.3.A.6** (Eskom, 2011c).

There are 206 species that might occur on site and 61 of them are confirmed (Eskom, 2011c). Several Threatened and Near Threatened species are of likely or confirmed occurrence on site: Blue Crane *Anthropoides paradiseus* (Vulnerable), Black-winged Lapwing *Vanellus melanopterus* (Near Threatened), African Black Oystercatcher *Haematopus moquini* (recently reclassified as Near Threatened), African Marsh Harrier *Circus ranivorus* (Vulnerable), Black Harrier *C. maurus* (Near Threatened), Secretarybird *Sagittarius serpentarius* (Near Threatened), White-bellied Korhaan *Eupodotis senegalensis* (Vulnerable), Denham's Bustard *Neotis denhami* (Vulnerable), Knysna Woodpecker *Campethera notata* (Near Threatened) and Knysna Warbler *Bradypterus sylvaticus* (Vulnerable) (Eskom, 2011c).

Threatened seabirds that are likely to roost and/or forage on the coast are the Roseate Tern *Sterna dougalli* (Endangered) and the Damara Tern *Sterna balaenarum* (Endangered) (Eskom, 2011c).

Threatened birds likely to occur on the inland portion of the site, and to be particularly affected by transmission lines there, are Blue Crane, Denham's

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Bustard, White-bellied Korhaan and Secretarybird (Eskom, 2011c).

An area at the head of the sheltered bay just to the west of Thyspunt itself appears to be important as a roosting site for terns of a variety of species. It is also along the shoreline of this bay that the greatest concentration of coastal seeps occurs. This bay should be viewed as a sensitive locality requiring the highest level of protection (Eskom, 2011c).

Mammals

The discussion on mammals is based on the information contained in **Table 5.3.A.7** (Eskom, 2011c).

There are 58 species that might occur on site and 44 of them are of probable or confirmed occurrence (Eskom, 2011c). Only three species are Red Listed as Threatened or Near Threatened, namely the Fynbos Golden Mole *Amblysomus corriae* (Near Threatened), the Honey Badger *Mellivora capensis* (Near Threatened) and the Blue Duiker *Philantomba monticola* (Vulnerable). The Blue Duiker and Honey Badger are almost certain to occur. The duiker depends for protection on the patches of dense coastal thicket and forest on site (Eskom, 2011c).

At the coast, especially at or near to coastal wetlands, there were abundant spoor of the Cape Clawless Otter *Aonyx capensis* and the Marsh Mongoose *Atilax paludinosus*, as well as antelope, probably Bushbuck *Tragelaphus scriptus* and Common Duiker *Sylvicapra grimmia*. The occurrence on site of these species provides further evidence of the ecological importance, as well as the richness and sensitivity, of the coastal wetlands (Eskom, 2011c).

Leopards *Panthera pardus* are likely to be present on the site because a number of suitable prey species are present in good numbers here, e.g. Bushpig, Vervet Monkey, Common Duiker, Bushbuck and Red Necked Spurfowl. While the leopard is not a threatened species, its occurrence in coastal environments has become rare (Eskom, 2011c).

There are no aspects of terrestrial vertebrate ecology that represent any threat to the nuclear installation safety.

5.3.6.6. Terrestrial Vegetation

Flora

The discussion on vegetation is based on the information contained in **Appendix 5.3.B** (Eskom, 2011b).

In total, 383 plant species have been recorded from the site, with a very low rare species count (14 or 3.7 per cent), compared with other coastal areas which might exhibit less than 5 per cent (Eskom, 2011b). While a large

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number of the plant species found at the site are widespread but confined to coastal habitats, only three are endemic to the region: *Alepidia delicatula* found in the Swartberg and Outeniqua Mountains, *Senecio oederiifolius*, found from Humansdorp to the van Staden's Mountains and *Agathosma stenopetala*, known from Humansdorp to Gqeberha.

Analysis of on-site vegetation shows a clear distinction between calcareous and non-calcareous habitats, with total carbon in soil playing a key role as one moves inland from the coast, through primary dunes, stable dunes and forest. Species rarity is generally low, with the exception of one or two habitats. Endemism is also low, with only one local (as opposed to regional) endemic (*Delosperma patersoniae*) found on the site (Eskom, 2011b).

Dominant families are the Asteraceae (daisies) (60 species), Cyperaceae (sedges), Fabaceae (peas) (both 20 species), Poaceae (grasses) (17 species) and Scrophulariaceae (snapdragons) (11 species) (Eskom, 2011b). The site is heavily infested by woody aliens, notably *Acacia cyclops* - rooikrans and *A. saligna* - Port Jackson willow. Eskom has undertaken an extensive alien clearing programme (Eskom, 2011b).

Vegetation types

Five major vegetation types occur on the site (conservation status in brackets): Algoa Dune Strandveld (Least Threatened), Southern Cape Dune Fynbos (Least Threatened), Tsitisikama Sandstone Fynbos (Vulnerable), Cape Seashore Vegetation (Least Threatened) and Cape Lowland Freshwater Wetlands (Vulnerable). Nine major plant communities occur within these vegetation types (Eskom, 2011b). The nine plant communities are listed below. Additional details on these communities (T1 to T9) is provided in **Table 5.3.3** and mapped and illustrated in **Figure 5.3.1** and **Figure 5.3.2**.

- **Cape Seashore Vegetation** (Least Threatened), which forms a narrow strip at the coast on both calcareous sands and sandstone, consists of the following two communities:
 - Rocky Shore (community T1);
 - Primary and Foredunes (community T2);
- **Algoa Dune Strandveld** (Least Threatened) covering the majority of the site area, but confined to calcareous substrates and comprising four communities, namely:
 - Transverse Dunes (community T3);

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- Dwarf Coastal Thicket (community T4);
- Tall Dune Thicket (community T5);
- Coastal Forest (community T6);
- **Southern Cape Dune Fynbos** (Least Threatened), also confined to calcareous substrates and occurring over a relatively large area of the site, comprising the following two communities:
 - Dune Fynbos (community T7);
 - Fynbos on Limestone (community T8);
- **Tsitsikamma Sandstone Fynbos** (Vulnerable), which occurs on a relatively small inland extension of the site on quartzitic sandstone, most of which has been transformed by agriculture, comprising a single community, viz. Fynbos on Sandstone (community T9);
- **Cape Lowland Freshwater Wetlands** (Vulnerable), along the dune slacks in the centre of the site. These are all located on calcareous substrates and occur due to impeded drainage over calcrete and aeolianite. It is important to note that a detailed description of these wetland systems is provided in **Subsection 5.3.6.2**. However, for the purposes of the vegetation description in this SSR, a total of six wetland types and a river system were recognised, viz: Communities T10A-G (six wetland types and a river system).

Habitat rarity is fairly low, except for the transverse dunes, coastal limestones and wetlands. Sensitivity of plants is greatest on both mobile and stable dunes, with most of the plants showing high tolerance to droughts. Habitat resilience is lowest for the mobile dunes, coastal limestones and wetlands. The headland bypass dune system at the site is the largest such system on the South African coastline (Eskom, 2011b).

All fynbos communities are prone to burning and this is exacerbated by the density of alien woody plant species on site. The risk of naturally occurring fires is discussed and evaluated in **Subsection 6.5.1.3.2**.

Excessive leaf litter leading to e.g. blocked drains and air inlets, is not a phenomenon normally associated with the vegetation types found on the site. Nevertheless, the possibility of blockages cannot be ruled out. To the extent that this is a safety risk, it could be mitigated through regular maintenance. There are no other aspects of terrestrial vegetation that represent any threat to nuclear installation safety.

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Table 5.3.3
Plant Communities and Summary of Plant Species Data at the Site

Map Ref.	Community	Description	Total Plant Species (# Red List species)	Study Area ha (Area %)
Calcareous Sands and Limestones				
T1	Rocky Shore	Immediately above the high-water mark and closely associated with primary dunes. Found on thin, windblown sand over an ancient platform cut by waves in the underlying sandstone. Dune formation is either minimal or non-existent. Plant cover is generally fairly high, but plants are kept short by onshore winds and salt spray. Key species include: <i>Carpobrotus deliciosus</i> sour fig, <i>Chrysanthemoides monilifera</i> bietou, <i>Crassula nudicaulis</i> skraalplakkie, <i>Felicia echinata</i> bloublommetjie, <i>Ficinia lateralis</i> dune sedge, <i>Helichrysum teretifolium</i> , <i>Maytenus procumbens</i> duinekokoboom, <i>Metalasia muricata</i> blombos, <i>Olea capensis</i> subsp. <i>capensis</i> ysterhout, <i>Osyris compressa</i> Cape sumach, <i>Passerina rigida</i> duinegonnabas, <i>Phyllica litoralis</i> , <i>Rhus crenata</i> duinekraaibessie and <i>Stenotaphrum secundatum</i> buffalo grass.	63 (1)	25,0 (1,1)
T2	Primary and Foredunes	Occurs at the coast on primary and foredunes immediately above the high-water mark. Characterised by sand mobility and sparse to moderate vegetation cover, with plants generally of low height. Key species include <i>Arctotheca populifolia</i> sea pumpkin, <i>Dasispermum suffruticosum</i> duineseldery, <i>Felicia amoena</i> subsp. <i>latifolia</i> , <i>Gazania rigens</i> strandgousblom, <i>Hebenstretia cordata</i> kusslakblom, <i>Heliophila linearis</i> , <i>Metalasia muricata</i> blombos, <i>Morella cordifolia</i> dune waxberry, <i>Passerina rigida</i> duinegonnabas, <i>Scaevola plumieri</i> seeplakkie, <i>Seriphium plumosum</i> slangbos and <i>Tetragonia decumbens</i> kinkelbossie.	30 (0)	9,9 (0,2)
T3	Transverse Dunes	Vegetation of this mobile system tends towards fynbos, although localised patches of dune thicket may be encountered. Vegetation cover is lowest or even absent where dune mobility is greatest. Key species include <i>Chironia baccifera</i> bitterbessiebos, <i>Ehrharta villosa</i> var. <i>maxima</i> pypgras, <i>Felicia amoena</i> subsp. <i>latifolia</i> , <i>Ficinia nodosa</i> steekbiesie, <i>Helichrysum cymosum</i> yellow-tipped straw flower, <i>Ficinia lateralis</i> dune sedge, <i>Metalasia muricata</i> blombos, <i>Morella cordifolia</i> dune waxberry, <i>Passerina rigida</i> duinegonnabas, <i>Psoralea repens</i> duine-ertjie and <i>Seriphium plumosum</i> slangbos.	32 (2)	399,5 (18,3)

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Map Ref.	Community	Description	Total Plant Species (# Red List species)	Study Area ha (Area %)
T4	Dwarf Coastal Thicket	A wind- and salt-spray-pruned thicket, rarely more than 1 m in height, found close to the coast, invariably above the rocky shore and primary/foredune communities, but also mosaics with dune fynbos (T7). The majority of species are broad-leaved. Key species including <i>Carissa bispinosa</i> noem-noem, <i>Olea capensis</i> subsp. <i>capensis</i> ysterhout, <i>Olea exasperate</i> slanghout, <i>Psyrax 5.3-32ix asp</i> subsp. <i>5.3-32ix asp</i> kwar, <i>Pterocelastrus tricuspidatus</i> kershout, <i>Rhus crenata</i> duinekraaibessie and <i>Rhynchosia caribaea</i> .	42 (0)	338,5 (15,5)
T5	Tall Thicket (includes invasive <i>Acacia cyclops</i> rooikrans)	A taller form of the previous community, but occurs further inland where coastal conditions are less harsh and where parallel dune ridges offer some protection from the wind. This is a true succession to coastal forest. It reaches some 5 m and higher and has a closed canopy. Broad-leaved species again dominate the community. Key species include <i>Canthium spinosum</i> coastal canthium, <i>Cynanchum obtusifolium</i> bobbejaantou, <i>Diospyros simii</i> ranktolbos, <i>Dovyalis rhamnoides</i> common dovyalis and <i>Sideroxylon inerme</i> milkwood. Part of the mapped community has been invaded by <i>Acacia cyclops</i> rooikrans.	44 (1)	680,7 (31,2)
T6	Coastal Forest on older inland dunes	The climax of the dune thicket to dune/coastal forest succession, with this community attaining a height of 10 m. Occupies stable sands of the deflated parabolic dune cordon, generally quite some distance from the coast. Key species in this multi-layered community include <i>Allophylus decipiens</i> bastertaaiibos, <i>Canthium spinosum</i> coastal canthium, <i>Cassine peragua</i> bastersaffraan, <i>Dovyalis rhamnoides</i> common dovyalis and <i>Sideroxylon inerme</i> milkwood. Various climbers also make up the community and these include <i>Asparagus africanus</i> bush asparagus, <i>Rhoicissus digitata</i> wild grape and <i>Secamone alpini</i> melktou. Herbaceous species in the understory include <i>Oxalis incarnata</i> , <i>Leidesia procumbens</i> and the grass <i>Ehrharta erecta</i> .	42 (1)	10,7 (0,5)

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Map Ref.	Community	Description	Total Plant Species (# Red List species)	Study Area ha (Area %)
T7	Dune Fynbos	A dominant plant community at the Thyspunt site, found predominantly on older deflated parabolic dunes, although a less dense and floristically different form does occur on the transverse dunes of the area. Although mapped separately, much of the site supports a rich mosaic of thicket and fynbos. The balance between the two depends on at least two factors: fire and soils, with soils appearing to play a minor role. Key species include <i>Agathosma apiculata</i> knoffelboegoe, <i>A.stenopetala</i> , <i>Erica chloroloma</i> , <i>Erica</i> cf. <i>glumiflora</i> , <i>Helichrysum teretifolium</i> , <i>Ischyrolepis eleocharis</i> katsterriet, <i>I.leptoclados</i> besemriet, <i>Metalasia muricata</i> blombos, <i>Muraltia squarrosa</i> , <i>Olea exasperata</i> slanghout and the sedge <i>Tetraria</i> cf <i>cuspidate</i> .	141 (5)	403,4 (18,5)
T8	Fynbos on Limestone, chiefly in south-west of site	Poorly represented at the Thyspunt site, as limited to the spines of dune ridges that are exposed when sand is blown away. This results in an abrupt change in species composition due to shallower depths and sometimes different soil chemistry. Key species in this community include <i>Agathosma apiculata</i> knoffelboegoe, <i>Chironia baccifera</i> bitterbessiebos, <i>Helichrysum teretifolium</i> , <i>Maytenus procumbens</i> duinekokooboom and <i>Sideroxylon inerme</i> milkwood, the last two being typical thicket species.	74 (4)	11,1 (0,5)
Sandstone				
T9	Sandstone Fynbos	Restricted to the narrow strip in the northern part of the site, north of the transverse dunes. Most of this community has been severely degraded through high-frequency burning (4-5 year cycles) – presumably for grazing – as well as likely over-grazing and trampling (there are a number of cattle farms in this area). Vegetation tends to be one to five years old, with older stands occurring occasionally outside the Thyspunt boundary. The vegetation is distinctly different from those types occurring on calcareous substrates. Key species in the present study include <i>Erica</i> cf. <i>sparmannii</i> , <i>Helichrysum teretifolium</i> , <i>Leucadendron salignum</i> sunshine bush, <i>Protea neriifolia</i> blousuikerbos, <i>Tetraria bromoides</i> bergpalmiet and <i>Thamnochortus fruticosus</i> besemriet. Vegetation rarely attains more than 2 m in height.	51 (1)	83,6 (3,8)
Wetlands (only coastal sites mapped – see <u>Subsection 5.3.6.2</u> for detailed description)				
T10A	Coastal wetlands on calcareous sands just above the high-water mark		52 (1)	4,4 (0,1)

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Map Ref.	Community	Description	Total Plant Species (# Red List species)	Study Area ha (Area %)
T10B		Inland wetland in calcareous parabolic dune slack (Langefontein)	56 (0)	38,7 (1,8)
T10C		Wetlands in main spine of transverse dunes	43 (3)	N/A
T10D		Wetland on upper Slang River	35 (1)	N/A
T10E		Wetlands on northern edge of transverse dunes	42 (3)	N/A
T10F		Middle Slang River channel	64 (0)	N/A
T10G		Wetland on middle Slang River	33 (0)	N/A
Transformed Land				
-		Developed areas, chiefly farmland	N/A	178,0 (8,2)
Total			384 (14)	2 183,5 (100,0)

Source: (Eskom, 2011b)

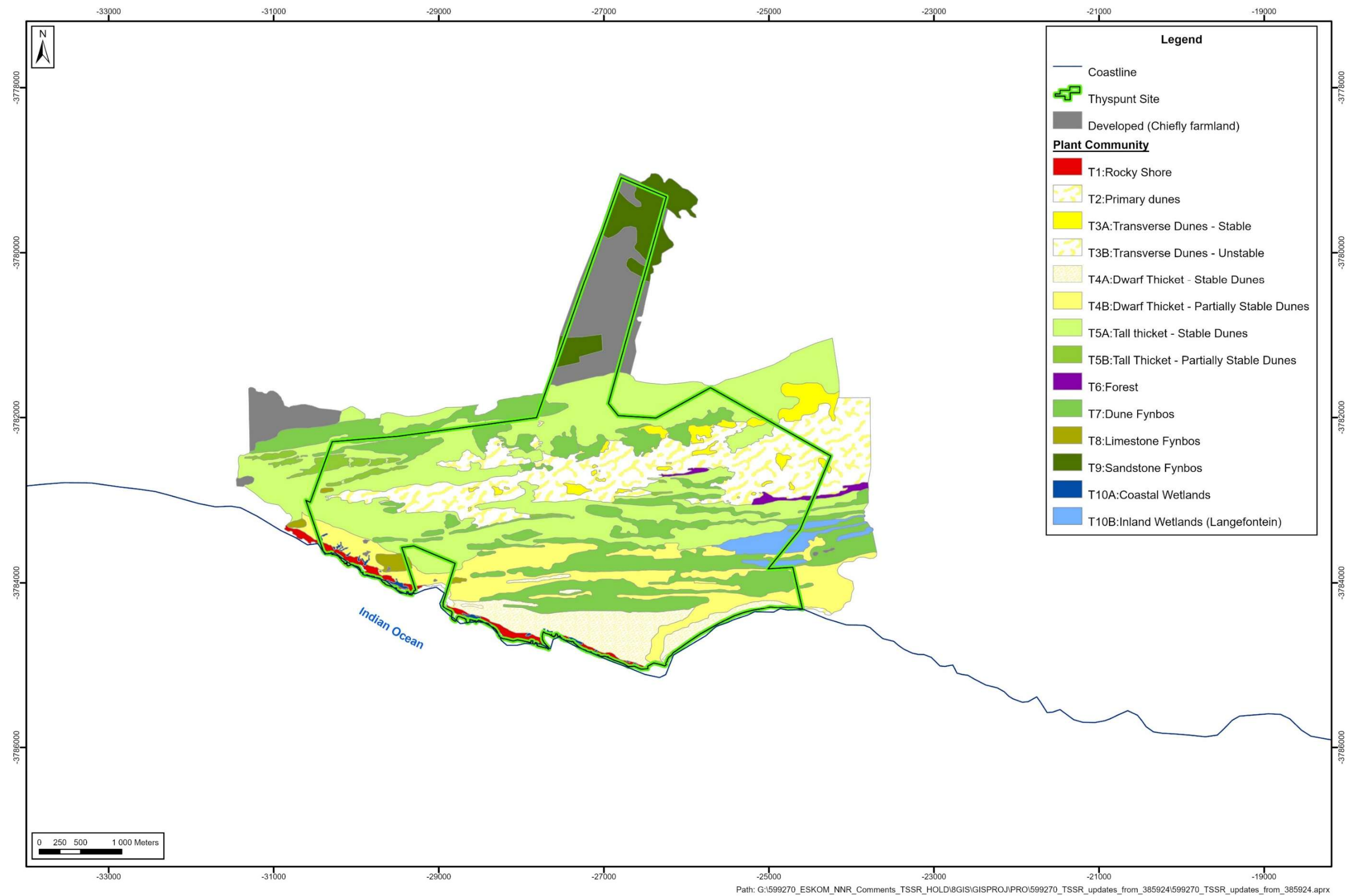


Figure 5.3.1 Plant Communities Occurring at Thyspunt

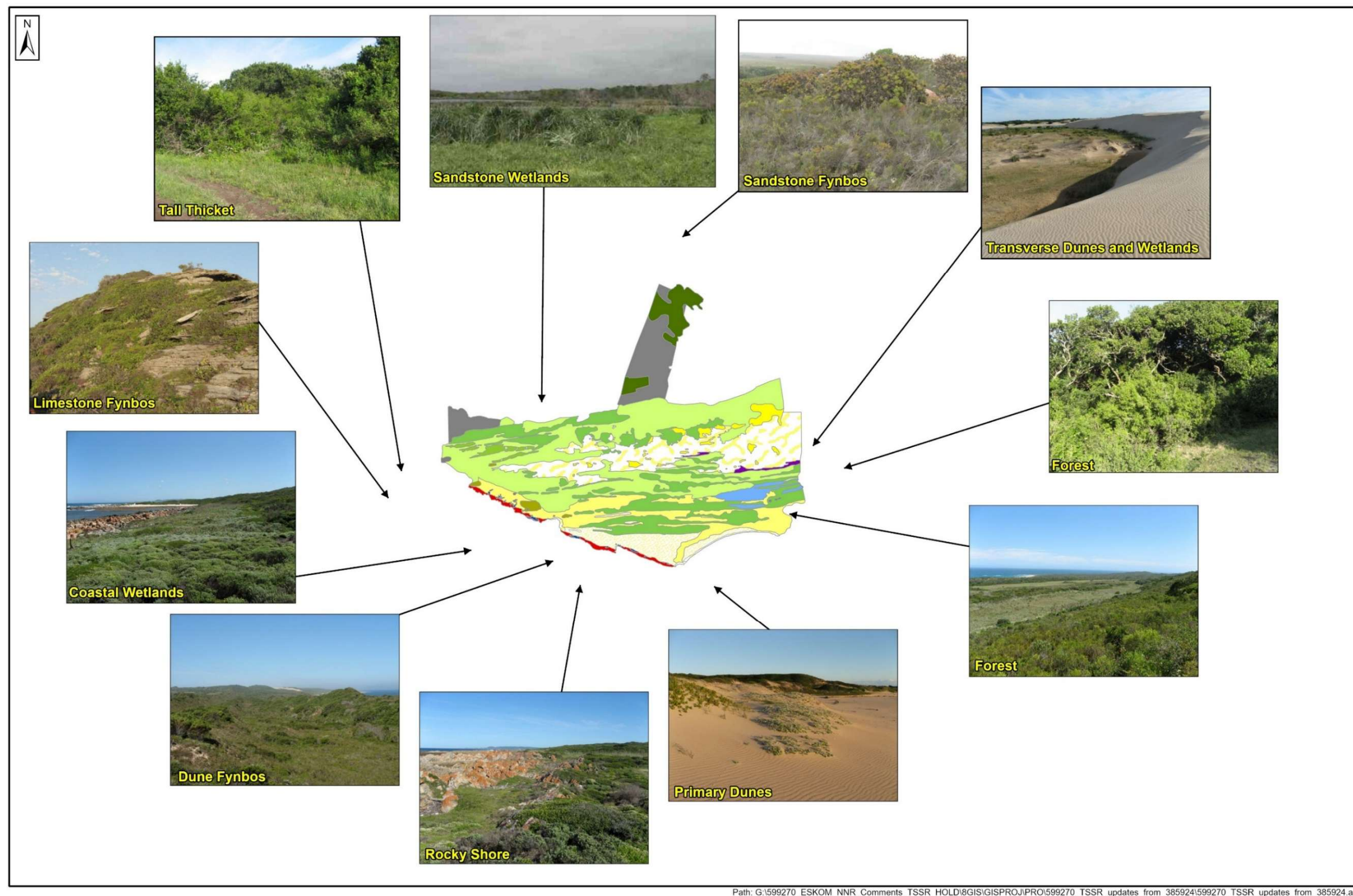


Figure 5.3.2 Images of Dominant Plant Communities at the Site

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5.3.6.7. Dune Systems

Two major dune types are recognised in the region and occur on the site (Eskom, 2009e):

- unvegetated mobile dunefields, mainly comprising the headland-bypass dunefield subtype;
- vegetated stable dune ridges.

The dynamic, low-relief Cape St. Francis headland bypass dunefield hosts the most spectacular and the last two remaining active examples of large-scale mobile headland-bypass dunefields (i.e. Oyster Bay and Thysbaai dunefields) on the south coast of South Africa. Corridors of transverse dunes run parallel to the dominant westerly to southwesterly winds (Eskom, 2009e).

The larger Oyster Bay Dunefield originates from the beach at Oyster Bay and spans the Cape St. Francis headland and is currently active over a length of about 14 km, as both ends of the dunefield have been artificially stabilised. Dunefield width varies from about 500 m to 1 200 m. Transverse dune height varies from 40 m in the western end of the dunefield to 5 m at the eastern end. The smaller Thysbaai dunefield, south of the Oyster Bay Dunefield, originates from the Thysbaai beach. It has a maximum length of about 6 km and a maximum width of 1 000 m. Average transverse dune height within this dunefield is about 11 m (Eskom, 2009e).

Mobility of sand is a critical aspect of natural dune regimes and helps to drive vegetation structure and successional dynamics in the dune system and also promotes diversification of terrestrial plant species. A large portion of the site is covered with unvegetated mobile dunes. Already the natural functioning of the dunefields has been curtailed by humans in the past century and both dune systems have been cut off from their respective source beaches, and will slowly be stabilised by natural re-vegetation processes over the next 1 000 years or so (Eskom, 2009e).

The vegetated dunefield between the Oyster Bay Dunefield and the sea consists mostly of parabolic dunes and hairpin parabolic dunes up to 25 m high. Sidewalls of previously mobile dunefields form long ridges in some areas, up to 15 m high. Similarly, the arms of the parabolic dunes and sidewalls of the previously mobile dunefields form steep ridges. The ridges are all oriented parallel to the dominant wind, roughly east-west. Older dune ridges may become lightly cemented to form 'dune rock'. The dunefield is well-vegetated with South Coast Dune Fynbos and Dune Forest (Eskom,

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2009e).

In some places, where previously mobile dunefields have been vegetated naturally, the erosional base level over which the dunefields move, with a thin veneer of fossil soils and calcrete in places, has been exposed. In addition, 20 to 40 m high fossil dune ridges are associated with the sand-supply ends of both the Thysbaai and Oyster Bay dunefields (Eskom, 2009e).

There are no ecological aspects of dune systems that represent a significant threat to nuclear installation safety. Movement of windblown sand onto roads and against solid structures is considered to be a maintenance issue and must be addressed as such. Other potential threats such as sand storms and associated abrasive effects of windblown sand, the liquefaction potential of sand and its potential effects on founding conditions and stability of excavations are addressed in **Section 5.15** (Geotechnical Characterisation) and **Chapter 6**.

5.3.6.8. Important Species

RG-0011 (National Nuclear Regulator, 2016) requires that important species in the vicinity of the site should be identified. Important species are defined as being endangered, commercially or recreationally valuable and/or affecting the-well-being of another species critical to the structure and function of the ecological system or function as a biological indicator of radionuclides or chemical pollutants in the environment. A list of important species potentially inhabiting the site and/or in the vicinity of the site is presented in **Table 5.3.4**.

Table 5.3.4
Important Animal Species at or near the Site

Latin Name	Common Name	Status
<i>Bradypodion taeniabronchum</i>	Elandsberg Dwarf Chameleon	Endangered
<i>Cryptactites peringueyi</i>	Péringuey's Coastal Leaf-toed Gecko	Critically Endangered
<i>Haematopus moquini</i>	African Black Oystercatcher	Near Threatened
<i>Loligo reynaudii</i>	Chokka squid	Commercial
<i>Haliotis midae</i>	Abalone	Endangered

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Note: a list of indicator species and RAPs for estimating bioaccumulation in, and exposures (through human consumption) to, Flora and Fauna (Non-Human Biota) as per RG-0011 Section 8.7 (National Nuclear Regulator, 2016), is provided in **Section 5.5** and **Chapter 7**.

Also, a count and description of agricultural and domestic animals, in particular cattle, sheep and other meat animals that may (indirectly) expose humans to radionuclides, is included in **Section 5.5**.

5.3.6.9. Ecological Processes

Neither species nor habitats can survive and thrive in the absence of the ecological processes which sustain them. Some key ecological processes operating at the site are described below:

Habitat Connectivity

The presence of several different habitat types on the site means that there are also extensive ecotonal areas where habitats intergrade. Such areas are important in promoting adaptability and resilience of ecosystems. The inter-connectedness of habitats is particularly prominent as a result of the extensive wetland systems on site. These are thought to provide important faunal corridors between the interior of the site and the coast. This means that a wide variety of resources is available to animals, helping to ensure the sustainability of populations. Thus, the diversity of habitats and their use by animals is an important determinant of the biodiversity of the site (Eskom, 2011c).

The duneslack wetlands as a group are considered a singularly important component of the overall habitat diversity of the site. To the north, they link with the permanently saturated to inundated depressions and valley bottoms along the edge of the farmland. Much of the natural connectivity between these different habitats has, however, been fragmented by agricultural activities (see **Section 5.5**). The ecological links between the duneslack wetlands and terrestrial habitat to the south of the high dunefields is thus considered of significantly greater importance, given the fact that these systems have been largely protected, at least within the site, from impacts such as agriculture and burgeoning resort development that threaten the system on either side (Eskom, 2011a).

The valley-bottom wetlands provide a continuous corridor from the western edge of the Links Golf Course (in Cape St. Francis) through to the site, thus connecting to the broad habitat types presently preserved on the site, and including the high dunes, the coastal seeps and the Langefonteinvelei (Eskom, 2011a).

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Habitat connectivity does not represent a significant threat to nuclear installation safety.

Hydrological Cycle

The relationship between dryland and wetland communities is a key feature of the ecology of the site. The presence of perennial water on site is an important feature in sustaining aquatic and semi-aquatic species in particular, and animal life in general. These include the Langefonteinvei, the riparian habitats in the northern parts of the site, the seasonal wetlands in the dune field, and the many coastal wetlands, seeps and streams that are created by seepage of groundwater (Eskom, 2011a).

The coastal seep wetlands are linked geohydrologically with the duneslack, hillslope seep and valley bottom wetlands between the Oyster Bay Dunefield and the coast and may also play a role as ecological corridors, facilitating the movement of mammals between the coast and the dune areas (Eskom, 2011a).

The Sand River is an episodic river comprised largely of subsurface flow, except during floods, when it drains the dunes and surrounding farmland into the Krom River to the north. The dune/river system is thought to be driven mainly by a combination of wind and groundwater influences. Over the last 200 years the river has migrated between St. Francis Bay and a point some 4 km upstream of the mouth of the Krom River. This dune/river system and the broad matrix of wetlands with which it is linked, is considered to be a regionally unique feature (Eskom, 2011a).

Potential flooding of the Sand River system must be considered in the design of the nuclear installation(s). This is addressed in detail in **Section 5.10** (Hydrology and Hydraulics) and **Chapter 6**.

5.3.7 Monitoring

It is recommended that the occurrence, distribution and density of jellyfish in and near the vicinity of the water intakes be monitored to more accurately ascertain the potential risk to the nuclear installation safety posed by clogging of intakes. The monitoring should be designed in such a way as to provide an early warning system of possible jellyfish ingress. Different scientific approaches have been investigated (for existing nuclear facilities), including habitat modelling, hydrodynamic modelling, and the development of automated recognition systems using machine-learning algorithms. These have been applied using a range of different technologies including satellites, drones, spectral analysis, hydrodynamic modelling, seafloor-mounted multi beam acoustic sonar and the design of automated cleaning equipment. However, none of the current approaches may yield a practical solution (Pisces Environmental Services (Pty) Ltd, 2020) and a definitive

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monitoring programme is yet to be developed.

The development in South Africa of the Oceans and Coast Information Management System, has already proven beneficial in avoiding mariculture mortalities associated with harmful algal blooms. The application now relies primarily on the Ocean and Land Colour Imager on the European Space Agency's Sentinel-3 satellites. Estimates of the concentration of chlorophyll-a, which serves as a proxy for phytoplankton biomass, are derived using algorithms that have been optimised for South Africa's coastal waters (Pisces Environmental Services (Pty) Ltd, 2020). Insofar as (harmful) algal blooms pose a risk to the Reverse Osmosis desalination plant (and a concomitant indirect risk to a nuclear installation), (harmful) algal blooms should be tracked on the Oceans and Coast Information Management System.

Further research is required to investigate the potential of expanding such an application to include jellyfish (Pisces Environmental Services (Pty) Ltd, 2024).

Existing monitoring programmes (at KNPS) of sessile organisms (which may result in the fouling of cooling pipes) are considered adequate at that site and should be adopted at Thyspunt.

In addition, the potential bioaccumulation in chokka squid of radioactive liquid effluent, should be monitored.

A list of RAPs for estimating bioaccumulation in, and exposures, to Flora and Fauna (Non-Human Biota) as per RG-0011 Section 8.7 (National Nuclear Regulator, 2016), is provided in **Chapter 7**.

No additional monitoring of ecological aspects of the site is required from a safety perspective.

5.3.8 Management of Uncertainties

A number of uncertainties regarding the baseline studies are listed in the EIA specialist studies (Eskom, 2011d), (Eskom, 2011a), (Eskom, 2014), (Eskom, 2011c) and (Eskom, 2011b)). These uncertainties pertain mainly to the adequacy of sampling that was undertaken to inform these studies for the purposes of the EIA.

Climate change is as an area of uncertainty that can affect the ecology of a nuclear installation site, for example through extreme flood events and changes in sea temperature that may affect population densities of marine organisms and therefore increase the risk of the blockage of cooling

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uptakes.

Changes in upwelling-favourable winds may promote jellyfish blooms in the area. However, predation pressure by the relatively stable pelagic fish stock may be providing enough competition for the zooplankton resource for jellyfish not to gain dominance in the ecosystem as occurred off northern Namibia (Pisces Environmental Services (Pty) Ltd, 2024). Evidence supporting climate change as a driver of such increases remains inconclusive (Pisces Environmental Services (Pty) Ltd, 2024).

An associated risk (not directly affecting the nuclear installation) is ingress of harmful algal blooms into seawater intakes, potentially affecting a Reverse Osmosis desalination plant at Thyspunt, notably by clogging filters and fouling membranes in the pre-treatment and reverse osmosis systems (Pisces Environmental Services (Pty) Ltd, 2024). They also pose potential health concerns for consumers as some algal cells produce toxic substances or taste and odour compounds that would affect the quality of the produced water.

Monitoring of relevant populations will be undertaken as part of the EIA's Environmental Management and Monitoring Plan, and the implications of any changes in population density must be considered in future revisions of this SSR.

5.3.9 Management System

All activities associated with the compilation of this section of this SSR have been conducted in accordance with the overall management system for the production and update of this SSR (see **Chapter 10**, Management System). The ecological study undertaken for this SSR entailed the following:

- desk study and site reconnaissance to gain a high-level understanding of the site;
- reporting and peer review.

A quality assurance programme was established to control the effectiveness of the evaluation and the formulation of conclusions on the site acceptability. This conforms to the overall management system for this SSR (**Chapter 10**), licensing regulations and international guidelines (**Subsection 5.3.3**) and relevant Eskom classification procedures.

Specialist reports compiled for the EIA were reviewed by the EIA consultants in terms of their quality assurance requirements. In addition, specialist reports were critically scrutinised by the SSR team prior to use, adding

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another layer of quality assurance. Finally, this SSR was subject to peer review. This was carried out by a suitably qualified, independent and experienced professional (listed in **Chapter 10** of this SSR), whose review was based on her knowledge of the area and ecological processes.

Prior to the start of the ecological study described herein, the following documents were compiled by the consultant and approved by Eskom to assist in quality assurance:

- Project Quality Plan (later incorporated into the overall Integrated Management System, as further described in **Chapter 10**);
- Method Statement;
- Quality Control Plan.

No Risk Assessment or Health, Safety and Environmental Management Plan were compiled for this section as no fieldwork was undertaken directly as part of this study (although fieldwork and studies undertaken for the EIA provided information used in this SSR).

A summary of activities, links within this SSR and quality requirements is given in **Table 5.3.5**. The relevant safety classifications for the various monitoring disciplines are also listed.

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The information contained in this SSR is mainly extracted from the baseline studies that were conducted for the EIA. Detailed records of the work carried out were kept by the EIA consultants. Peer review reports on the various EIA studies were used as assurance that quality standards had been adhered to and that the data used in this SSR were of a high standard.

The evaluation of a site's ecological characteristics does not lend itself to direct verification by inspections or tests that can be precisely defined and controlled and therefore a peer review process is the appropriate verification mechanism. This was carried out by a suitably qualified, independent and experienced professional, whose review was based on his/her knowledge of the area and of ecological processes.

Electronic records have been stored in a secure central repository with regular off-site back-up procedures and subject to Eskom's approval. The overall quality management system complied with the requirements set out in **Chapter 10**. All references cited are saved on the central repository.

5.3.10 Conclusions

The main conclusions regarding ecology at the site are the following:

- A coastal jigging fishery for chokka squid *Loligo vulgaris* has developed along the spawning grounds that occur between Plettenberg Bay and Algoa Bay, i.e. including the site area. Egg capsules are deposited mainly on low-profile reefs or fine sandy bottoms of large, relatively sheltered bays, generally at depths of less than 50 m. This represents a potential radiological exposure pathway to humans. The potential bioaccumulation in chokka squid of radioactive liquid effluent, will be monitored as part of the nuclear installation environmental surveillance programme. Chokka squid are expected to avoid water temperatures elevated above their thermal tolerance range. However, the area predicted to be affected represents less than 1 per cent of the coastal spawning ground.
- Some ecological aspects of the marine environment pose hazards that could result in an external event challenging the nuclear installation safety. Jellyfish may foul cooling pipes and result in a deterioration of safety functions related to the ultimate heat sink. Current survey data indicate that jellyfish do not reach high densities along this section of coastline. Furthermore, a study investigating the hazard posed by the ingress of jellyfish at KPNS concluded that, while they pose a significant threat to normal operation at KNPS, jellyfish ingress is expected to have no effect on the safe shutdown of the reactors. Provision of appropriate mitigation equipment on site including oil booms, a skimmer pontoon, bubble curtains and a high pressure hose will help to manage the hazard. The integrity, availability, and reliability of equipment used during such an event are essential to ensure the efficacy of the jellyfish

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ingress mitigation procedures.

- An associated risk (not directly affecting the nuclear installation) is ingress of harmful algal blooms into seawater intakes, potentially affecting a Reverse Osmosis desalination plant at Thyspunt, notably by clogging filters and fouling membranes in the pre-treatment and reverse osmosis systems. They also pose potential health concerns for consumers as some algal cells produce toxic substances or taste and odour compounds that would affect the quality of the produced water.
- Kelp is absent from this region and, therefore, does not currently pose a hazard to the nuclear installation(s) at the site. However, it is possible that marine conditions could change and kelp may become established in the region. Another hazard that requires consideration is colonisation by sessile organisms, such as mussels and barnacles that may result in the blockage of cooling pipes. The design of appropriate physical screening mechanisms of the cooling water intakes must consider all marine organisms at the site. Environmental monitoring for early warning purposes and precautionary actions, such as reactor shutdown to lower the heat load, can further mitigate this hazard.
- Wetland ecosystems do not present any hazard to the proposed nuclear installation(s) and will not result in any impact on the proposed nuclear installation(s).
- Terrestrial ecology presents hazards, such as clogging of drains and ventilation inlets by insects and leaves. These can be readily mitigated through design and routine surveillance and maintenance.

Based on the information presented above, it is concluded that the ecological hazards of the site can be managed through appropriate design and environmental management measures and pose no demonstrable threats to nuclear installation(s) safety. The site is considered suitable for a nuclear installation(s). On-going monitoring is recommended to collect additional information on marine ecology, especially jellyfish populations, and any changes to these in the vicinity of the site, as well as potential bioaccumulation in chokka squid of radioactive liquid effluent. The uncertainties listed do not materially affect this assessment.

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Appendix 5.3.A Selective Non-Plant Species List

With the exception of jellyfish, the species lists are wholly based on species identified in specialist studies undertaken for the EIA, using the taxonomy assigned in the specialist studies. Some common names were not available (n/a). Desktop studies were undertaken to identify the species listed below and supplemented by on-site sampling. The identified species occur in the region, but were not necessarily observed on the site.

**Table 5.3.A.1
Marine Invertebrates**

EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
Marine Ecology Assessment and Updated Baseline Status of Kelp and Jellyfish along the South Western Cape Coast	Crustacea: barnacles	<i>Chthamalus dentatus</i>	Tooth barnacle	Chthamalidae	Balanomorpha
		<i>Eurydice longicornis</i>	Right angle beach louse	Cirolanidae	Isopoda
	Mollusca: Mussels	<i>Donax serra</i>	White sand mussel	Donacidae	Cardiidae
		<i>Mytilus galloprovincialis</i>	Mediterranean mussel	Mytilidae	Mytilida
	Mollusca: Sea snails	<i>Bullia digitalis</i>	Finger plough shell or plough snail	Nassariidae	Neogastropoda
		<i>Helcion pruinosus</i>	Rayed limpet	Patellidae	Patellogastropoda
		<i>Afrolittorina knysnaensis</i>	Southern periwinkle	Littorinidae	Littorinimorpha
		<i>Oxystele variegata</i>	Variegated topshell	Trochidae	Trochida
		<i>Siphonaria serrata</i>	Saw-edged limpet	Siphonariidae	Siphonariida
		<i>Haliotis midae</i>	Abalone	Haliotidae	Archaeogastropoda
		<i>Scutellastra granularis</i>	Granular limpet	Patellidae	Patellogastropoda
	Cnidaria Jellyfish	<i>Chrysaora fulgida</i>	Benguela compass jelly	Scyphozoa	Semaeostomeae
		<i>Chrysaora africana</i>	Purple compass jelly	Scyphozoa	Semaeostomeae
		<i>Chrysaora agulhensis</i>	Cape compass jelly	Scyphozoa	Semaeostomeae
		<i>Pelagia noctiluca</i>	Night-light jelly	Scyphozoa	Semaeostomeae

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
	Cnidaria Jellyfish	<i>Aurelia aurita</i>	Moon jellyfish	Scyphozoa	Semaeostomeae
		<i>Aequorea forskalea</i>	Crystal jellyfish	Hydrozoa	Semaeostomeae
		<i>Carybdea murrayana</i>	Box jellyfish	Carybdeidae	Carybdeida
		<i>Eupilema inexpectata</i>	Root-mouthed jelly	Rhizostomata	Rhizostomeae
		<i>Aequorea forskalea</i>	Crystal jellyfish	Aequoreidae	Leptothecata

Table 5.3.A.2
Marine Algae (Seaweeds)

EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
Marine Ecology Assessment	Algae	<i>Ulva</i> spp.	Sea lettuce	Ulvaaceae	Ulvales
		<i>Porphyra</i> sp.	Purple Seaweed	Bangiaceae	Bangiales
		<i>Centroceras clavulatum</i>	Red Panache	Ceramiales	Ceramiales
		Coralline spp.	Crustose red seaweed	Corallinales	Corallinales
		<i>Spongites yendoii</i>	Crustose red seaweed	Corallinales	Corallinales
		<i>Rhodomenia capensis</i>	Cape wine-weed	Rhodomeniales	Rhodomeniales
		<i>Hildenbrandia</i> sp.	Encrusting red algae	Hildenbrandiales	Hildenbrandiales
		<i>Nothogenia erinacea</i>	Hedgehog seaweed	Scinaiales	Nematales
		<i>Hypnea spicifera</i>	Green tips	Cystocloniales	Gigartinales
		<i>Pterosiphonia cloiophylla</i>	Red feather-weed	Rhodomelales	Ceramiales
		<i>Caulacanthus ustulatus</i>	Stern thorn algae	Caulacanthales	Gigartinales
		<i>Lingulodinium polyedrum</i>	Sea sparkle	Gonyaulacales	Gonyaulacales

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Table 5.3.A.3
Aquatic Invertebrates

EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
Marine Ecosystems Specialist Study	Intertidal crustaceans	<i>Neomicrodeutopus nyala</i>	Sand fleas	Corophiidae	Amphipoda
		<i>Hyale grandicornis</i>	Sand flea	Hyalidae	Amphipoda
	Intertidal crustaceans	<i>Sinelobus stanfordi</i>	Tanaid	Tanaidae	Tanaidacea: Dikonophora
	Freshwater crustaceans	<i>Pseudochydorus</i> gr. <i>Globosus</i>	Water flea	Chydoridae	Cladocera
		<i>Simocephalus vetulus</i>	Water flea	Daphnidae	Cladocera
		<i>Metadiaptomus meridianus</i>	Copepod	Calanoida	Copepoda
		<i>Paracyclops</i> sp.	Copepod	Cyclopoida	Copepoda
		<i>Moina tenuicornis</i>	Water flea	Moinidae	Cladocera
		<i>Darwinula stevensoni</i>	seed shrimp	Darwinulidae	Ostracoda
		Cyprididae sp.	seed shrimp	Cyprididae	Podocopida
		<i>c.f. Podura</i> sp.	Spring tail	Poduridea	Collembola
	Freshwater Insect (larvae (L) and/or adults)	<i>Hydrovatus</i> sp. (L)	Predaceous diving beetle	Dytiscidae	Coleoptera
		<i>Uvarus</i> sp.	Predaceous beetle	Dytiscidae	Coleoptera
		<i>c.f. Bidessonotus</i> sp.	Predaceous beetle	Dytiscidae	Coleoptera
		<i>Cybister</i> sp.	Predaceous beetle	Dytiscidae	Coleoptera
		<i>Derovatellus</i> sp.	Predaceous Tiger beetle	Dytiscidae	Coleoptera
		<i>c.f. Hydroporus</i> sp. (L)	Predaceous beetle	Dytiscidae	Coleoptera
		<i>Hydaticus (Guignotites)</i> sp. (L)	Predaceous beetle	Dytiscidae	Coleoptera
		<i>Hydrocanthus</i> sp.	Burrowing water beetle	Noteridae	Coleoptera
		<i>Gyrinus vicinus</i> (L)	Whirligig beetle	Gyrinidae	Coleoptera
		<i>Ochthebius</i> sp.	Minute moss beetles	Hydraenidae	Coleoptera

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Berosus</i> sp.	Water scavenger beetle	Hydrophilidae	Coleoptera
		<i>Bezzia</i> sp. (L)	Biting midges, no-see-ums	Ceratopogoni dae:	Diptera
	Immature aquatic forms of Insects	<i>Dasyhelea</i> sp. (L)	Biting midges, no-see-ums	Ceratopogoni dae	Diptera
		<i>Atrichopogon</i> sp (L)	Biting midges, no-see-ums	Ceratopogoni dae	Diptera
		Chironomidae spp. (adults)	Non-biting midges	Chironomidae	Diptera
		<i>Cladotanytarsus</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Polypedilum</i> spp.	Non-biting midges	Chironomidae	Diptera
		<i>Tanytarsus</i> spp.	Non-biting midges	Chironomidae	Diptera
		<i>Cricotopus</i> spp	Non-biting midges	Chironomidae	Diptera
		<i>Corynoneura</i> spp.	Non-biting midges	Chironomidae	Diptera
		<i>Orthocladiina</i> e sp.	Non-biting midges	Chironomidae	Diptera
		<i>Orthocladius</i> sp	Non-biting midges	Chironomidae	Diptera
		<i>Parametriocnemus</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Parametriocnemus</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Rheocricotopus</i> spp.	Non-biting midges	Chironomidae	Diptera
		<i>Thienemannella</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Thienemannella</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Tvetenia calvenscens</i>	Non-biting midges	Chironomidae	Diptera
		<i>Ablabesmyia</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Clinotanypus</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Larsia</i> spp.	Non-biting midges	Chironomidae	Diptera
		<i>Nilotanypus</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Paramerina</i> spp.	Non-biting midges	Chironomidae	Diptera
		<i>Paramerina</i> spp.	Non-biting midges	Chironomidae	Diptera

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Procladius</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Tanypodinae</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Thienemanni myia</i> sp.	Non-biting midges	Chironomidae	Diptera
		<i>Dixa nebulosa</i>	Meniscus midges	Dixidae	Diptera
	Immature aquatic forms of Insects	<i>Sciomyzidae</i> sp.	Marsh flies	Sciomyzidae	Diptera
	Immature aquatic forms of Insects	<i>Stratiomyidae</i> sp.	Soldier flies	Stratiomyidae	Diptera
		<i>Cloeon</i> spp.	Minnow mayflies	Baetidae	Ephemeroptera
		<i>Caenis</i> sp.	Cainflies	Caenidae	Ephemeroptera
		<i>Sigara</i> spp.	Water boatmen	Corixidae	Hemiptera
		<i>Limnogonus c. capensis</i>	Water striders	Gerridae:	Hemiptera
		<i>Aquarius distanti</i>	Water striders,	Gerridae:	Hemiptera
		<i>Rhagadotarsus hutchinsonii</i>	Water striders	Gerridae	Hemiptera
		<i>Anisops</i> spp.	Backswimmers	Notonectidae	Hemiptera
		<i>Enithares</i> sp.	Backswimmers	Notonectidae	Hemiptera
		<i>Plea</i> spp.	Pigmy backswimmers	Pleidae	Hemiptera
		<i>Veliidae</i> sp.	Water crickets	Veliidae	Hemiptera
		<i>Pinheyschna subpupillata</i>	Stream hawker dragonflies	Aeshnidae	Odonata
		<i>Anax ephippiger/sp eratus</i>	Emperor dragonflies	Aeshnidae	Odonata
		<i>Notogomphus praetorius</i>	Yellowjack dragonflies	Gomphidae	Odonata
		<i>Diplacodes lefebvrii</i>	Black percher dragonflies	Libellulidae	Odonata
		<i>Diplacodes</i> sp.	Percher dragonflies	Libellulidae	Odonata
		<i>Orthetrum</i> sp.	Darter dragonflies	Libellulidae	Odonata:

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Ischnura senegalensis</i>	Blue damselflies	Coenagrionidae	Odonata:
		<i>Lestes plagiatus/virgatus</i>	Emerald damselflies	Lestidae	Odonata
		<i>Oxyethira velocipes</i>	Purse-cased caddisflies	Hydroptilidae	Trichoptera
	Mollusca Gastropoda	<i>Limnaea columella</i>	Reticulate pond snail	Lymnaeidae	Pulmonata

Table 5.3.A.4
Terrestrial Invertebrates

EIA Study	Taxon	Scientific name	Common Name	Family	Group / Order
Terrestrial Invertebrate Assessment	Terrestrial Insecta	<i>Danaus chrysippus orientis</i>	African queen butterfly	Nymphalidae	Lepidoptera
		<i>Dira clytus clytus</i>	Cape autumn widow butterfly	Nymphalidae	Lepidoptera
		<i>Cassionympha cassius</i>	Rainforest brown butterfly	Nymphalidae	Lepidoptera
		<i>Pseudonympha magus</i>	Silver-bottom brown butterfly	Nymphalidae	Lepidoptera
		<i>Charaxes varanes varanes</i>	Pearl emperor butterfly	Nymphalidae	Lepidoptera
		<i>Precis hierta cebrene</i>	Yellow pansy butterfly	Nymphalidae	Lepidoptera
		<i>Vanessa cardui</i>	Painted lady butterfly	Nymphalidae	Lepidoptera
		<i>Antanartia hippomene hippomene</i>	African admiral butterfly	Nymphalidae	Lepidoptera
		<i>Chrysoritis chrysaor</i>	Golden copper butterfly	Lycaenidae	Lepidoptera
		<i>Leptotes pirithous</i>	Lang's short-tailed blue butterfly	Lycaenidae	Lepidoptera
		<i>Lampides boeticus</i>	Pea blue butterfly	Lycaenidae	Lepidoptera
		<i>Tarucus thespis</i>	Fynbos blue butterfly	Lycaenidae	Lepidoptera

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EIA Study	Taxon	Scientific name	Common Name	Family	Group / Order
		<i>Eicochrysops messapus messapus</i>	Cupreous blue butterfly	Lycaenidae	Lepidoptera
		<i>Zizeeria knysna</i>	African grass blue butterfly	Lycaenidae	Lepidoptera
		<i>Colias electo electo</i>	African clouded yellow butterfly	Pieridae	Lepidoptera
	Terrestrial Insects	<i>Belenois aurota aurota</i>	Pioneer white butterfly	Pieridae	Lepidoptera
		<i>Belenois gidica abyssinica</i>	African Veined White butterfly	Pieridae	Lepidoptera
		<i>Dixeia charina charina</i>	African small white butterfly	Pieridae	Lepidoptera
		<i>Pontia helice helice</i>	Meadow white butterfly	Pieridae	Lepidoptera
		<i>Papilio demodocus demodocus</i>	Citrus swallowtail butterfly	Papilionidae	Lepidoptera
		<i>Papilio nireus lyaeus</i>	Green-banded swallowtail butterfly	Papilionidae	Lepidoptera
		<i>Pelopidas thrax inconspicua</i>	Pale small-branded swift butterfly	Hesperiidae	Lepidoptera
		<i>Gegenes niso niso</i>	Common Hottentot skipper butterfly	Hesperiidae	Lepidoptera
		Acrididae sp.3	Grasshopper	Acrididae	Orthoptera
		Acrididae sp. 7	Grasshopper	Acrididae	Orthoptera
		Acrididae sp.8	Grasshopper	Acrididae	Orthoptera
		Acrididae sp.9	Grasshopper	Acrididae	Orthoptera
		Acrididae sp.13	Grasshopper	Acrididae	Orthoptera
		Acrididae sp. 17	Grasshopper	Acrididae	Orthoptera
		<i>Anoplocheilius variabilis</i>	Fruit Chafer	Scarabaeidae	Coleoptera
		Apidae sp. 6	Bee	Apidae	Hymenoptera
		Apidae sp. 7	Bee	Apidae	Hymenoptera
		Asilidae sp. 4	Robber fly	Asilidae	Diptera
		Asilidae sp. 5	Robber fly	Asilidae	Diptera
		Buprestidae sp.5	Jewel beetle	Buprestidae	Coleoptera

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EIA Study	Taxon	Scientific name	Common Name	Family	Group / Order
		cf. <i>Ectrichodia crux</i>	assassin bug	Reduviidae	Hemiptera
		cf. <i>Holopterna alata</i>	Twig Wilter	Hemiptera	Coreidae
		Chrysomelidae sp.2	Leaf beetle	Chrysomelidae	Coleoptera
	Terrestrial Insects	Curculionidae sp.10	Snout beetle	Curculionidae	Coleoptera
		Curculionidae sp. 9	Snout beetle	Curculionidae	Coleoptera
		<i>Exosprosopa species</i>	Bee fly	Bombyliidae	Diptera
		Formicidae sp. 8	Cocktail Ant	Formicidae	Hymenoptera
		Hopliini sp. 4	Monkey beetle	Scarabaeidae	Coleoptera
		Hopliini sp. 6	Monkey beetle	Scarabaeidae	Coleoptera
		<i>Onthophagus minutus</i>	Dung beetle	Scarabaeidae	Coleoptera
		Histeridae sp.2	Clown beetles	Histeridae	Coleoptera
		Histeridae sp. 3	Steel beetle	Scarabaeidae	Coleoptera
		<i>Onthophagus giraffa</i>	Dung beetle	Scarabaeidae	Coleoptera
		Blaberidae sp.2	Table Mountain Cockroach	Blaberidae	Blattodea
		Melolonthinae sp.1	May beetles	Scarabaeidae	Coleoptera
		Melolonthinae sp. 6	May beetles	Scarabaeidae	Coleoptera
		<i>Odontoloma pusillum</i>	Scarab beetles	Scarabaeidae	Coleoptera
		<i>Dermestidae</i> sp.1	Skin beetles	Dermestidae	Coleoptera
		Tabanidae sp. 1	Horse flies	Tabanidae	Diptera
		Blatellidae sp. 4	German cockroach	Ectobiidae	Blattodea
		Blatellidae sp. 5	German cockroach	Ectobiidae	Blattodea
		Phasmatidae sp. 1	Stick insects	Phasmatidae	Phasmatodea
		Formicidae sp.13	Ants	Formicidae	Hymenoptera
		Formicidae sp. 11	Ants	Formicidae	Hymenoptera

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EIA Study	Taxon	Scientific name	Common Name	Family	Group / Order
		Staphilinidae sp. 1	Rove beetles	Staphylinidae	Coleoptera
		Staphilinidae sp. 2	Rove beetles	Staphylinidae	Coleoptera
		Myrmeleontidae sp. 6	Antlions	Myrmeleontidae	Neuroptera
	Terrestrial Insects	<i>Aphodius</i> sp.3	Dung beetles	Scarabaeidae	Coleoptera
		Carabidae sp. 7	Ground beetles	Carabidae	Coleoptera
		Coccinellidae sp. 1	Ladybug	Coccinellidae	Coleoptera
		Thanatophilus sp.	Corrion beetles	Silphidae	Coleoptera
		<i>Scarabaeus spretus</i>	Dung beetles	Scarabaeidae	Coleoptera
		Nitidulidae sp. 2	Sap beetles	Nitidulidae	Coleoptera
		Alticinae sp. 1	Flea beetles	Chrysomelidae	Coleoptera
		<i>Epirinus comosus</i>	Dung beetles	Scarabaeidae	Coleoptera
		<i>Psammodes species</i> sp. 1	Tapping toktokkies	Tenebrionidae	Coleoptera
		Cicadellidae sp. 3	Leafhoppers	Cicadellidae	Hemiptera
		<i>Cyathura estuaria Barnard</i>	Pillbug	Anthuridae	Isopoda
		<i>Armadillium vulgare</i>	Pillbug	Armadillidiidae	Isopoda
	Arachnida	Oribatidae spp.	Soil mites	Oribatidae	Oribatida
		<i>Opisthophthalmus macer</i>	Fynbos burrowing scorpion	Scorpionidae	Arachnida
	Myriapoda: Diplopoda	<i>Spirostreptidae</i> sp. 2	Millipedes	Spirostreptidae	Polyxenida
		<i>Spirostreptidae</i> sp. 1	Millipedes	Spirostreptidae	Spirostreptida

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**Table 5.3.A.5
Amphibians and Reptiles**

EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
Terrestrial Fauna Impact Study	Amphibia	<i>Amietophrynus pardalis</i>	Eastern Leopard Toad	Bufonidae	Anura
		<i>Amietophrynus rangeri</i>	Raucous Toad	Bufonidae	Anura
		<i>Vandijkophrynus angusticeps</i>	Cape Sand Toad	Bufonidae	Anura
		<i>Vandijkophrynus angusticeps</i>	Cape Sand Toad	Bufonidae	Anura
	Amphibia	<i>Hyperolius horstockii</i>	Arum Lily Frog	Hyperoliidae	Anura
		<i>Hyperolius marmoratus</i>	Painted Reed Frog	Hyperoliidae	Anura
		<i>Semnodactylus wealii</i>	Rattling Frog	Hyperoliidae	Anura
		<i>Breviceps adspersus pentheri</i>	Penther's Rain Frog	Microhylidae	Anura
		<i>Xenopus laevis</i>	Common Platanna	Pipidae	Anura
		<i>Amietia angolensis</i>	Common River Frog	Pyxicephalidae	Anura
		<i>Amietia fuscigula</i>	Cape River Frog	Pyxicephalidae	Anura
		<i>Cacosternum nanum</i>	Bronze Caco	Pyxicephalidae	Anura
		<i>Cacosternum boettgeri</i>	Boettger's Caco	Pyxicephalidae	Anura
		<i>Strongylopus fasciatus</i>	Striped Stream Frog	Pyxicephalidae	Anura
		<i>Strongylopus grayii</i>	Clicking Stream Frog	Pyxicephalidae	Anura
		<i>Tomopterna delalandii</i>	Cape Sand Frog	Pyxicephalidae	Anura
		<i>Phrynobatrachus natalensis</i>	Natal puddle frog	Ranidae	Anura
		<i>Xenopus</i> sp.	Platanna frog	Pipidae	Anura
	Reptilia	<i>Chersina angulata</i>	Angulate Tortoise	Testudinidae	Testudines
		<i>Stigmochelys pardalis</i>	Leopard Tortoise	Testudinidae	Testudines
		<i>Homopus areolatus</i>	Parrot-beaked Padloper	Testudinidae	Testudines

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Pelomedusa subrufa</i>	Marsh Terrapin	Pelomedusidae	Testudines
		<i>Rhinotyphlops lalandei</i>	Delalande's Beaked Blind Snake	Typhlopidae	Squamata
		<i>Leptotyphlops nigricans</i>	Black Thread Snake	Leptotyphlopidae	Squamata
		<i>Homoroselaps lacteus</i>	Spotted Harlequin Snake	Atractaspidae	Squamata
		<i>Crotaphopeltis hotamboeia</i>	Herald Snake	Colubridae	Squamata
		<i>Dasypeltis scabra</i>	Rhombic Egg-eater	Colubridae	Squamata
	Reptilia	<i>Dispholidus typus</i>	Boomslang	Colubridae	Squamata
		<i>Duberria lutrix</i>	Common Slug-eater	Colubridae	Squamata
		<i>Lamprophis aurora</i>	Aurora House Snake	Colubridae	Squamata
		<i>Lamprophis capensis</i>	Brown House Snake	Colubridae	Squamata
		<i>Lamprophis fuscus</i>	Yellow-bellied House Snake	Colubridae	Squamata
		<i>Lamprophis guttatus</i>	Spotted House Snake	Colubridae	Squamata
		<i>Lamprophis inornatus</i>	Olive House Snake	Colubridae	Squamata
		<i>Lycodonophis rufulus</i>	Common Brown Water Snake	Colubridae	Squamata
		<i>Lycodonophis laevis</i>	Dusky-bellied Water Snake	Colubridae	Squamata
		<i>Lycophidion capense</i>	Cape Wolf Snake	Colubridae	Squamata
		<i>Philothamnus hoplogaster</i>	Green Water Snake	Colubridae	Squamata
		<i>Philothamnus natalensis occidentalis</i>	Western Natal Green Snake	Colubridae	Squamata
		<i>Philothamnus semivariegatus</i>	Spotted Bush Snake	Colubridae	Squamata
		<i>Psammophis crucifer</i>	Crossed Whip Snake	Colubridae	Squamata
		<i>Psammophis notostictus</i>	Karoo Whip Snake	Colubridae	Squamata

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Psammophyla x r. rhombeatus</i>	Rhombic Skaapsteker	Colubridae	Squamata
		<i>Pseudaspis cana</i>	Mole Snake	Colubridae	Squamata
		<i>Aspidelaps lubricus lubricus</i>	Coral Shield "Cobra"	Elapidae	Squamata
		<i>Hemachatus haemachatus</i>	Rinkhals	Elapidae	Squamata
		<i>Naja nivea</i>	Cape Cobra	Elapidae	Squamata
		<i>Bitis arietans arietans</i>	Puff Adder	Viperidae	Squamata
		<i>Bitis atropos</i>	Berg Adder	Viperidae	Squamata
	Reptilia	<i>Causus rhombeatus</i>	Common or Rhombic Night Adder	Viperidae	Squamata
		<i>Acontias gracilicauda gracilicauda</i>	Thin-tailed Legless Skink	Scincidae	Squamata
		<i>Acontias percivali tasmani</i>	Tasman's Legless Skink	Scincidae	Squamata
		<i>Acontias lineicauda</i>	Algoa Legless Skink	Scincidae	Squamata
		<i>Acontias meleagris orientalis</i>	Eastern Legless Skink	Scincidae	Squamata
		<i>Scelotes anguineus</i>	Algoa Dwarf Burrowing Skink	Scincidae	Squamata
		<i>Scelotes caffer</i>	Cape Dwarf Burrowing Skink	Scincidae	Squamata
		<i>Trachylepis capensis</i>	Cape Skink	Scincidae	Squamata
		<i>Trachylepis homalocephala</i>	Red-sided Skink	Scincidae	Squamata
		<i>Trachylepis varia varia</i>	Variable Skink	Scincidae	Squamata
		<i>Nucras lalandii</i>	Delalande's Sandveld Lizard	Lacertidae	Squamata
		<i>Pedioplanis burchelli</i>	Burchell's Sand Lizard	Lacertidae	Squamata
		<i>Pedioplanis pulchella</i>	Pulchell's Sand Lizard	Lacertidae	Squamata

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Tropidosaura montana montana</i>	Common Mountain Lizard	Lacertidae	Squamata
		<i>Gerrhosaurus flavigularis</i>	Yellow-throated Plated Lizard	Gerrhosauridae	Squamata
		<i>Tetradactylus fitzsimonsi</i>	FitzSimons' Long-tailed Seps	Gerrhosauridae	Squamata
		<i>Tetradactylus seps</i>	Short-legged Seps	Gerrhosauridae	Squamata
		<i>Chamaesaura anguina</i>	Cape Grass Lizard	Cordylidae	Squamata
		<i>Cordylus cordylus</i>	Cape Girdled Lizard	Cordylidae	Squamata
	Reptilia	<i>Cordylus tasmani</i>	Tasman's Girdled Lizard	Cordylidae	Squamata
		<i>Pseudocordylus m. microlepidotus</i>	Cape Crag Lizard	Cordylidae	Squamata
		<i>Agama atra</i>	Southern Rock Agama	Agamidae	Squamata
		<i>Bradypodion ventrale</i>	Eastern Cape Dwarf Chameleon	Chamaeleonidae	Squamata
		<i>Bradypodion taeniabronchum</i>	Elandsberg Dwarf Chameleon	Chamaeleonidae	Squamata
		<i>Varanus albigularis albigularis</i>	Rock or White-throated Monitor	Varanidae	Squamata
		<i>Varanus niloticus</i>	Nile or Water Monitor	Varanidae	Squamata
		<i>Afrogecko porphyreus</i>	Marbled Leaf-toed Gecko	Gekkonidae	Squamata
		<i>Cryptactites peringueyi</i>	Péringuey's Coastal Leaf-toed Gecko	Gekkonidae	Squamata
		<i>Hemidactylus mabouia</i>	Moreau's Tropical House Gecko	Gekkonidae	Squamata
		<i>Lygodactylus capensis capensis</i>	Cape Dwarf Gecko	Gekkonidae	Squamata
		<i>Pachydactylus maculatus</i>	Spotted Gecko	Gekkonidae	Squamata

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Table 5.3.A.6
Birds

The numbering system used for common names correspond with the numbering system used in Roberts Bird Guide (Davies, et al., 2017).

EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
	Aves	<i>Struthio camelus</i>	1 Common Ostrich	Struthionidae	Struthioniformes
		<i>Spheniscus demersus</i>	3 African Penguin	Spheniscidae	Sphenisciformes
		<i>Tachybaptus ruficollis</i>	8 Little Grebe	Podicipedidae	Podicipediformes
	Aves	<i>Puffinus griseus</i>	37 Sooty Shearwater	Procellariidae	Procellariiformes
		<i>Morus capensis</i>	53 Cape Gannet	Sulidae	Suliformes
		<i>Phalacrocorax lucidus</i>	55 White-breasted Cormorant	Phalacrocoracidae	Suliformes
		<i>Phalacrocorax capensis</i>	56 Cape Cormorant	Phalacrocoracidae	Suliformes
		<i>Microcarbo africanus</i>	58 Reed Cormorant	Phalacrocoracidae	Suliformes
		<i>Anhinga rufa</i>	60 African Darter	Anhingidae	Suliformes
		<i>Ardea cinerea</i>	62 Grey Heron	Ardeidae	Pelecaniformes
		<i>Ardea melanocephala</i>	63 Black-headed Heron	Ardeidae	Pelecaniformes
		<i>Ardea purpurea</i>	65 Purple Heron	Ardeidae	Pelecaniformes
		<i>Egretta garzetta</i>	67 Little Egret	Ardeidae	Pelecaniformes
		<i>Ardea intermedia</i>	68 Yellow-billed Egret	Ardeidae	Pelecaniformes
		<i>Bubulcus ibis</i>	71 Cattle Egret	Ardeidae	Pelecaniformes
		<i>Scopus umbretta</i>	81 Hamerkop	Scopidae	Pelecaniformes
		<i>Ciconia ciconia</i>	83 White Stork	Ciconiidae	Ciconiiformes
		<i>Threskiornis aethiopicus</i>	91 African Sacred Ibis	Threskiornithidae	Pelecaniformes
		<i>Bostrychia hagedash</i>	94 Hadedash Ibis	Threskiornithidae	Pelecaniformes
		<i>Platalea alba</i>	95 African Spoonbill	Threskiornithidae	Pelecaniformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Thalassornis leuconotus</i>	101 White-backed Duck	Anatidae	Anseriformes
		<i>Alopochen aegyptiaca</i>	102 Egyptian Goose	Anatidae	Anseriformes
		<i>Tadorna cana</i>	103 South African Shelduck	Anatidae	Anseriformes
		<i>Anas undulata</i>	104 Yellow-billed Duck	Anatidae	Anseriformes
		<i>Anas sparsa</i>	105 African Black Duck	Anatidae	Anseriformes
	Aves	<i>Spatula cyanoptera</i>	108 Red-billed Teal	Anatidae	Anseriformes
		<i>Spatula smithii</i>	112 Cape Shoveler	Anatidae	Anseriformes
		<i>Plectropterus gambensis</i>	116 Spur-winged Goose	Anatidae	Anseriformes
		<i>Sagittarius serpentarius</i>	118 Secretarybird	Sagittariidae	Accipitriformes
		<i>Milvus aegyptius</i>	888 Yellow-billed Kite	Accipitridae	Accipitriformes
		<i>Elanus caeruleus</i>	127 Black-shouldered Kite	Accipitridae	Accipitriformes
		<i>Aquila pennatus</i>	136 Booted Eagle	Accipitridae	Accipitriformes
		<i>Polemaetus bellicosus</i>	140 Martial Eagle	Accipitridae	Accipitriformes
		<i>Haliaeetus vocifer</i>	148 African Fish-Eagle	Accipitridae	Accipitriformes
		<i>Buteo vulpinus</i>	149 Steppe Buzzard	Accipitridae	Accipitriformes
		<i>Buteo rufofuscus</i>	152 Jackal Buzzard	Accipitridae	Accipitriformes
		<i>Accipiter tachiro</i>	160 African Goshawk	Accipitridae	Accipitriformes
		<i>Circus ranivorus</i>	165 African Marsh-Harrier	Accipitridae	Accipitriformes
		<i>Circus maurus</i>	168 Black Harrier	Accipitridae	Accipitriformes
		<i>Polyboroides typus</i>	169 African Harrier Hawk	Accipitridae	Accipitriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
			(Gymnogene)		
		<i>Pandion haliaetus</i>	170 Osprey	Pandionidae	Accipitriformes
		<i>Falco biarmicus</i>	172 Lanner Falcon	Falconidae	Falconiformes
		<i>Falco rupicolus</i>	181 Rock Kestrel	Falconidae	Falconiformes
		<i>Scleroptila levaillantii</i>	192 Red-winged Francolin	Phasianidae	Galliformes
		<i>Pternistis afer</i>	198 Red-necked Spurfowl	Phasianidae	Galliformes
	Aves	<i>Coturnix coturnix</i>	200 Common Quail	Phasianidae	Galliformes
		<i>Numida meleagris</i>	203 Helmeted Guineafowl	Numididae	Galliformes
		<i>Grus paradisea</i>	208 Blue Crane	Gruidae	Galliformes
		<i>Amaurornis flavirostra</i>	213 Black Crane	Rallidae	Galliformes
		<i>Gallinula chloropus</i>	226 Common Moorhen	Rallidae	Galliformes
		<i>Fulica armillata</i>	228 Red - knobbed Coot	Rallidae	Galliformes
		<i>Neotis denhami</i>	231 Denham's Bustard	Otididae	Otidiformes
		<i>Eupodotis senegalensis</i>	233 White-bellied Korhaan	Otididae	Otidiformes
		<i>Actophilornis africanus</i>	240 African Jacana	Jacanidae	Charadriiformes
		<i>Haematopus moquini</i>	244 African Black Oystercatcher	Haematopodidae	Charadriiformes
		<i>Charadrius hiaticula</i>	245 Common Ringed Plover	Charadriidae	Charadriiformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Charadrius marginatus</i>	246 White - fronted Plover	Charadriidae	Charadriiformes
		<i>Charadrius pecuarius</i>	248 Kittlitz's Plover	Charadriidae	Charadriiformes
		<i>Charadrius hiaticula</i>	249 Three - banded Plover	Charadriidae	Charadriiformes
		<i>Vanellus armatus</i>	254 Grey (Black - bellied) Plover	Charadriidae	Charadriiformes
	Aves	<i>Vanellus coronatus</i>	255 Crowned Lapwing (Plover)	Charadriidae	Charadriiformes /
		<i>Vanellus melanopterus</i>	257 Black-winged Lapwing	Charadriidae	Charadriiformes
		<i>Vanellus armatus</i>	258 Blacksmith Lapwing (Plover)	Charadriidae	Charadriiformes
		<i>Arenaria interpres</i>	262 Ruddy Turnstone	Scolopacidae	Charadriiformes
		<i>Actitis hypoleucos</i>	264 Common Sandpiper	Scolopacidae	Charadriiformes
		<i>Tringa glareola</i>	266 Wood Sandpiper	Scolopacidae	Charadriiformes
		<i>Tringa stagnatilis</i>	269 Marsh Sandpiper	Scolopacidae	Charadriiformes
		<i>Tringa nebularia</i>	270 Common Greenshank	Scolopacidae	Charadriiformes
		<i>Calidris ferruginea</i>	272 Curlew Sandpiper	Scolopacidae	Charadriiformes
		<i>Calidris minuta</i>	274 Little Stint	Scolopacidae	Charadriiformes
		<i>Calidris alba</i>	281 Sanderling	Scolopacidae	Charadriiformes
		<i>Calidris pugnax</i>	284 Ruff	Scolopacidae	Charadriiformes
		<i>Gallinago nigripennis</i>	286 African (Ethiopian) Snipe	Scolopacidae	Charadriiformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Numenius phaeopus</i>	290 Common Whimbrel	Scolopacidae	Charadriiformes
		<i>Recurvirostra avosetta</i>	294 Pied Avocet	Recurvirostridae	Charadriiformes
		<i>Himantopus himantopus</i>	295 Black-winged Stilt	Recurvirostridae	Charadriiformes
		<i>Burhinus capensis</i>	297 Spotted Thick-knee (Dikkop)	Burhinidae	Charadriiformes
		<i>Burhinus capensis</i>	298 Water Thick-knee (Dikkop)	Burhinidae	Charadriiformes
	Aves	<i>Cursorius temminckii</i>	Temminck's Courser	Glareolidae	Charadriiformes
		<i>Larus dominicanus</i>	312 Kelp Gull	Laridae	Charadriiformes
		<i>Sterna caspia</i>	322 Caspian Tern	Laridae	Charadriiformes
		<i>Thalasseus bergii</i>	324 Swift (Great Crested) Tern	Laridae	Charadriiformes
		<i>Thalasseus sandvicensis</i>	326 Sandwich Tern	Laridae	Charadriiformes
		<i>Sterna hirundo</i>	327 Common Tern	Laridae	Charadriiformes
		<i>Sterna paradisaea</i>	328 Arctic Tern	Laridae	Charadriiformes
		<i>Chlidonias leucopterus</i>	339 White-winged Tern	Laridae	Charadriiformes
		<i>Chlidonias hybrida</i>	338 Whiskered Tern	Laridae	Charadriiformes
		<i>Gygis alba</i>	339 White-winged Tern	Laridae	Charadriiformes
		<i>Columba livia domestica</i>	348 Domestic pigeon	Columbidae	Columbiformes
		<i>Columba guinea</i>	349 Speckled (Rock) Pigeon	Columbidae	Columbiformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Columba arquatrix</i>	350 African Olive-Pigeon	Columbidae	Columbiformes
		<i>Streptopelia tranquebarica</i>	352 Red - eyed Dove	Columbidae	Columbiformes
		<i>Streptopelia capicola</i>	354 Cape Turtle-Dove	Columbidae	Columbiformes
		<i>Spilopelia senegalensis</i>	355 Laughing (Palm) Dove	Columbidae	Columbiformes
		<i>Oena capensis</i>	356 Namaqua Dove	Columbidae	Columbiformes
	Aves	<i>Turtur chalcospilos</i>	358 Emerald-spotted wood Dove	Columbidae	Columbiformes
		<i>Turtur tympanistria</i>	359 Tambourine Dove	Columbidae	Columbiformes
		<i>Tauraco corythaix</i>	370 Knysna Turaco	Musophagidae	Musophagiformes
		<i>Cuculus solitarius</i>	377 Red - chested Cuckoo	Cuculidae	Columbiformes
		<i>Clamator jacobinus</i>	382 Jacobin Cuckoo	Cuculidae	Cuculiformes
		<i>Chrysococcyx klaas</i>	385 Klaas's Cuckoo	Cuculidae	Cuculiformes
		<i>Chrysococcyx caprius</i>	386 Diederik Cuckoo	Cuculidae	Cuculiformes
		<i>Centropus burchellii</i>	391 Burchell's Coucal	Cuculidae	Cuculiformes
		<i>Tyto alba</i>	392 Barn Owl	Tytonidae	Strigiformes
		<i>Clanga clanga</i>	401 Spotted Eagle -Owl	Accipitridae	Strigiformes
		<i>Caprimulgus pectoralis</i>	405 Fiery - necked Nightjar	Caprimulgidae	Caprimulgiformes
		<i>Apus barbatus</i>	412 African Black Swift	Apodidae	Accipitriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Aeronautes saxatalis</i>	415 White - rumped Swift	Apodidae	Apodiformes
		<i>Apus horus</i>	416 Horus Swift	Apodidae	Apodiformes
		<i>Apus affinis</i>	417 Little Swift	Apodidae	Apodiformes
		<i>Tachymarptis melba</i>	418 Alpine Swift	Apodidae	Apodiformes
		<i>Colius striatus</i>	424 Speckled Mousebird	Coliidae	Coliiformes
		<i>Colius castanotus</i>	426 Red - faced Mousebird	Coliidae	Coliiformes
	Aves	<i>Ceryle rudis</i>	428 Pied Kingfisher	Alcedinidae	Coraciiformes
		<i>Megaceryle maxima</i>	429 Giant Kingfisher	Alcedinidae	Coraciiformes
		<i>Alcedo semitorquata</i>	430 Half-collared Kingfisher	Alcedinidae	Coraciiformes
		<i>Corythornis cristatus</i>	431 Malachite Kingfisher	Alcedinidae	Coraciiformes
		<i>Halcyon albiventris</i>	435 Brown-hooded Kingfisher	Alcedinidae	Coraciiformes
		<i>Coracias garrulus</i>	446 European Roller	Coraciidae	Coraciiformes
		<i>Upupa africana</i>	451 African Hoopoe	Upupidae	Bucerotiformes
		<i>Geocolaptes olivaceus</i>	480 Ground Woodpecker	Picidae	Piciformes
		<i>Campethera notata</i>	484 Knysna Woodpecker	Picidae	Piciformes
		<i>Mirafr africana</i>	494 Rufous-naped Lark	Alaudidae	Passeriformes
		<i>Mirafr apiata</i>	495 Cape Clapper Lark	Alaudidae	Passeriformes
		<i>Heteromirafr a ruddi</i>	500 Long-billed Lark	Alaudidae	Passeriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Calendulauda burra</i>	507 Redcapped Lark	Alaudidae	Passeriformes
		<i>Hirundo rustica</i>	518 Barn (European) Swallow	Hirundinidae	Passeriformes
		<i>Hirundo albigularis</i>	520 Whitethroated Swallow	Hirundinidae	Passeriformes
		<i>Hirundo dimidiata</i>	523 Pearlbreasted Swallow	Hirundinidae	Passeriformes
		<i>Cecropis cucullata</i>	526 Greater Striped Swallow	Hirundinidae	Passeriformes
	Aves	<i>Hirundo abyssinica</i>	527 Lesser Striped Swallow	Hirundinidae	Passeriformes
		<i>Ptyonoprogne fuligula</i>	529 Rock Martin	Hirundinidae	Passeriformes
		<i>Delichon urbicum</i>	530 Common House-Martin	Hirundinidae	Passeriformes
		<i>Riparia paludicola</i>	533 Brown-throated (Plain) Martin	Hirundinidae	Passeriformes
		<i>Riparia cincta</i>	534 Banded Martin	Hirundinidae	Passeriformes
		<i>Psalidoprocne pristoptera</i>	536 Black Saw-wing Swallow	Hirundinidae	Passeriformes
		<i>Dicrurus adsimilis</i>	541 Fork-tailed Drongo	Dicruridae	Passeriformes
		<i>Oriolus larvatus</i>	545 Black-headed Oriole	Oriolidae	Passeriformes
		<i>Corvus capensis</i>	547 Cape (Black) Crow	Corvidae	Passeriformes
		<i>Corvus albus</i>	548 Pied Crow	Corvidae	Passeriformes
		<i>Corvus albicollis</i>	550 White-necked Raven	Corvidae	Passeriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Pycnonotus capensis</i>	566 Cape Bulbul	Pycnonotidae	Passeriformes
		<i>Phyllastrephus terrestris</i>	569 Terrestrial Brownbul	Pycnonotidae	Passeriformes
		<i>Andropadus importunus</i>	572 Sombre Greenbul (Bulbul)	Pycnonotidae	Passeriformes
		<i>Turdus olivaceus</i>	577 Olive Thrush	Turdidae	Passeriformes
		<i>Oenanthe pileata</i>	587 Capped Wheatear	Muscicapidae	Passeriformes
		<i>Oenanthe familiaris</i>	589 Familiar Chat	Muscicapidae	Passeriformes
	Aves	<i>Cossypha caffra</i>	601 Cape Robin Chat	Muscicapidae	Passeriformes
		<i>Sittiparus castaneoventris</i>	621 Chestnutvented Tit Babbler	Paridae	Passeriformes
		<i>Acrocephalus baeticatus</i>	631 African Reed Warbler	Acrocephalidae	Passeriformes
		<i>Acrocephalus gracilirostris</i>	635 Lesser Swamp (Cape Reed) Warbler	Acrocephalidae	Passeriformes
		<i>Bradypterus baboecala</i>	638 Little Rush (African Sedge) Warbler	Locustellidae	Passeriformes
		<i>Bradypterus sylvaticus</i>	640 Knysna Warbler	Locustellidae	Passeriformes
		<i>Phylloscopus trochilus</i>	643 Willow Warbler	Phylloscopidae	Passeriformes
		<i>Apalis thoracica</i>	645 Bar throated Apalis	Cisticolidae	Passeriformes
		<i>Apalis flava</i>	648 Yellow-breasted Apalis	Cisticolidae	Passeriformes
		<i>Camaroptera brachyura</i>	657 Grey-backed Camaroptera	Cisticolidae	Passeriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Sphenoeacus afer</i>	661 Cape Grassbird	Macrosphenidae	Passeriformes
		<i>Cisticola exilis</i>	664 Zitting (Fan tailed) Cisticola	Cisticolidae	Passeriformes
		<i>Cisticola textrix</i>	666 Cloud (Tink-tink) Cisticola	Cisticolidae	Passeriformes
		<i>Cisticola fulvicapilla</i>	669 Grey backed (Red headed) Cisticola	Cisticolidae	Passeriformes
		<i>Cisticola rufilatus</i>	677 Le Vaillant's (Tinkling) Cisticola	Cisticolidae	Passeriformes
	Aves	<i>Cisticola fulvicapilla</i>	681 Neddicky	Cisticolidae	Passeriformes
		<i>Prinia maculosa</i>	686 Spotted Prinia	Cisticolidae	Passeriformes
		<i>Muscicapa adusta</i>	690 African Dusky Flycatcher	Muscicapidae	Passeriformes
		<i>Sigelus silens</i>	698 Fiscal Flycatcher	Muscicapidae	Passeriformes
		<i>Batis capensis</i>	700 Cape Batis	Platysteiridae	Passeriformes
		<i>Terpsiphone viridis</i>	710 African Paradise Flycatcher	Monarchidae	Passeriformes
		<i>Motacilla capensis</i>	713 Cape Wagtail	Motacillidae	Passeriformes
		<i>Anthus cinnamomeus</i>	716 African (Grassveld) Pipit	Motacillidae	Passeriformes
		<i>Anthus leucophrys</i>	718 Plain-backed Pipit	Motacillidae	Passeriformes
		<i>Macronyx capensis</i>	727 Orange-throated Longclaw	Motacillidae	Passeriformes
		<i>Lanius collaris</i>	732 Common Fiscal (Shrike)	Laniidae	Passeriformes
		<i>Laniarius ferrugineus</i>	736 Southern Boubou	Malaconotidae	Passeriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Dryoscopus cubla</i>	740 Black-backed Puffback	Malaconotidae	Passeriformes
		<i>Tchagra tchagra</i>	742 Southern Tchagra	Malaconotidae	Passeriformes
		<i>Telophorus zeylonus</i>	746 Bokmakierie	Malaconotidae	Passeriformes
		<i>Telophorus olivaceus</i>	750 Olive Bush-Shrike	Malaconotidae	Passeriformes
		<i>Sturnus vulgaris</i>	757 European Starling	Sturnidae	Passeriformes
		<i>Lamprotornis bicolor</i>	759 (African) Pied Starling	Sturnidae	Passeriformes
	Aves	<i>Creatophora cinerea</i>	760 Wattled Starling	Sturnidae	Passeriformes
		<i>Lamprotornis nitens</i>	764 Cape Glossy Starling	Sturnidae	Passeriformes
		<i>Lamprotornis corruscus</i>	768 Black-bellied Starling	Sturnidae	Passeriformes
		<i>Lamprotornis nitens</i>	769 Red-winged Starling	Sturnidae	Passeriformes
		<i>Promerops cafer</i>	773 Cape Sugarbird	Promeropidae	Passeriformes
		<i>Nectarinia famosa</i>	775 Malachite Sunbird	Nectariniidae	Passeriformes
		<i>Anthobaphes violacea</i>	777 Orange-breasted Sunbird	Nectariniidae	Passeriformes
		<i>Cinnyris afer</i>	785 Greater double-collared sunbird	Nectariniidae	Passeriformes
		<i>Chalcomitra amethystina</i>	792 Amethyst Sunbird	Nectariniidae	Passeriformes

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EIA Study	Taxon	Scientific Name	Common Name	Family	Group / Order
		<i>Hedydipna collaris</i>	793 Collared Sunbird	Nectariniidae	Passeriformes
		<i>Zosterops virens</i>	796 Cape White -eye	Zosteropidae	Passeriformes
		<i>Passer domesticus</i>	801 House Sparrow	Passeridae	Passeriformes
		<i>Passer melanurus</i>	803 Cape Sparrow	Passeridae	Passeriformes
		<i>Passer diffusus</i>	804 Sparrow	Passeridae	Passeriformes
		<i>Ploceus capensis</i>	813 Cape Weaver	Ploceidae	Passeriformes
		<i>Ploceus velatus</i>	814 Sn Masked-Weaver	Ploceidae	Passeriformes
		<i>Euplectes orix</i>	824 Sn Red (Red) Bishop	Ploceidae	Passeriformes
	Aves	<i>Euplectes capensis</i>	827 Yellow (Yellow-rumped) Widow	Ploceidae	Passeriformes
		<i>Euplectes progne</i>	832 Long-tailed Widowbird	Ploceidae	Passeriformes
		<i>Estrilda astrild</i>	846 Common Waxbill	Estrildidae	Passeriformes
		<i>Vidua macroura</i>	860 Pin-tailed Whydah	Viduidae	Passeriformes
		<i>Serinus canicollis</i>	872 Cape Canary	Fringillidae	Passeriformes
		<i>Crithagra sulphuratus</i>	877 Brimstone (Bully) Canary	Fringillidae	Passeriformes
		<i>Serinus albogularis</i>	879 White-throated Canary	Fringillidae	Passeriformes
		<i>Crithagra gularis</i>	881 Streaky-headed Seedeater	Fringillidae	Passeriformes

Table 5.3.A.7
Mammals

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0b	Section-Page
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EIA Study: Faunal Study	Animal	Latin Name	Common Name	Family	Group / Order
Vertebrate Faunal Assessment and Marine Ecology Assessment	Mammalia	<i>Amblysomus corriae</i>	Fynbos Golden Mole	Chrysochloridae	Afrosoricida
		<i>Amblysomus hottentotus</i>	Hottentot Golden Mole	Chrysochloridae	Afrosoricida
		<i>Chlorotalpa duthieae</i>	Duthie's Golden Mole	Chrysochloridae	Afrosoricida
		<i>Macroscelides proboscideus</i>	Round-eared Elephant-Shrew	Macroscelididae	Macroscelidea
		<i>Orycteropus afer</i>	Aardvark	Orycteropodidae	Tubulidentata
		<i>Procavia capensis</i>	Rock Hyrax	Procaviidae	Hyracoidea
		<i>Lepus saxatilis</i>	Scrub Hare	Leporidae	Lagomorpha
		<i>Pronolagus saundersiae</i>	Hewitt's Red Rock Rabbit	Leporidae	Lagomorpha
		<i>Cryptomys hottentotus</i>	African Mole-Rat	Bathyergidae	Rodentia
	Mammalia	<i>Georychus capensis</i>	Cape Mole-Rat	Bathyergidae	Rodentia
		<i>Hystrix africaeaustralis</i>	Cape Porcupine	Hystricidae	Rodentia
		<i>Graphiurus murinus</i>	Woodland Dormouse	Myoxidae	Rodentia
		<i>Graphiurus ocularis</i>	Spectacled Dormouse	Myoxidae	Rodentia
		<i>Dendromus melanotis</i>	Grey Climbing Mouse	Muridae	Rodentia
		<i>Dendromus mesomelas</i>	Brant's Climbing Mouse	Muridae	Rodentia
		<i>Mastomys natalensis</i>	Natal Multimammate Mouse	Muridae	Rodentia
		<i>Micaelamys namaquensis</i>	Namaqua Rock Mouse	Muridae	Rodentia
		<i>Mus minutoides</i>	Pygmy Mouse	Muridae	Rodentia
		<i>Mus musculus</i>	House Mouse	Muridae	Rodentia
		<i>Otomys irroratus</i>	Vlei Rat	Muridae	Rodentia
		<i>Otomys unisulcatus</i>	Bush Vlei Rat	Muridae	Rodentia
		<i>Rattus rattus</i>	House Rat	Muridae	Rodentia
		<i>Rhabdomys pumilio</i>	Four-Striped Grass Mouse	Muridae	Rodentia
		<i>Saccostomus campestris</i>	Pouched Mouse	Muridae	Rodentia

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EIA Study: Faunal Study	Animal	Latin Name	Common Name	Family	Group / Order
		<i>Cercopithecus pygerythrus</i>	Vervet Monkey	Cercopithecidae	Primates
		<i>Papio cynocephalus ursinus</i>	Chacma Baboon	Cercopithecidae	Primates
		<i>Crocidura cyanea</i>	Reddish-Grey Musk Shrew	Soricidae	Soricomorpha
		<i>Crocidura flavescens</i>	Greater Red Musk Shrew	Soricidae	Soricomorpha
		<i>Myosorex varius</i>	Forest Shrew	Soricidae	Eulipotyphla
		<i>Epomorphorus wahlbergi</i>	Wahlberg's Epauletted Fruit-bat	Pteropodidae	Chiroptera
		<i>Taphozous mauritianus</i>	Mauritian Tomb Bat	Emballonuridae	Chiroptera
	Mammalia	<i>Tadarida aegyptiaca</i>	Egyptian Free-Tailed Bat	Molossidae	Chiroptera
		<i>Neoromicia capensis</i>	Cape Serotine Bat	Vespertilionidae	Chiroptera
		<i>Nycteris thebaica</i>	Egyptian Slit-Faced Bat	Nycteridae	Chiroptera
		<i>Caracal caracal</i>	Caracal	Felidae	Carnivora
		<i>Felis cattus</i>	Domestic Cat (feral)	Felidae	Carnivora
		<i>Felis silvestris</i>	African Wild Cat	Felidae	Carnivora
		<i>Panthera pardus</i>	Leopard	Felidae	Carnivora
		<i>Genetta genetta</i>	Small-Spotted Genet	Viverridae	Carnivora
		<i>Genetta tigrina</i>	South African Large-Spotted Genet	Viverridae	Carnivora
		<i>Atilax paludinosus</i>	Marsh Mongoose	Herpestidae	Carnivora
		<i>Cynictis penicillata</i>	Yellow Mongoose	Herpestidae	Carnivora
		<i>Galerella pulverulenta</i>	Cape Grey Mongoose	Herpestidae	Carnivora
		<i>Herpestes ichneumon</i>	Large Grey Mongoose	Herpestidae	Carnivora
		<i>Canis mesomelas</i>	Black-Backed Jackal	Canidae	Carnivora
		<i>Canis vulgaris</i>	Domestic Dog (feral)	Canidae	Carnivora

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EIA Study: Faunal Study	Animal	Latin Name	Common Name	Family	Group / Order
		<i>Otocyon megalotis</i>	Bat-eared Fox	Canidae	Carnivora
		<i>Vulpes chama</i>	Cape Fox	Canidae	Carnivora
		<i>Mellivora capensis</i>	Honey Badger	Mustelidae	Carnivora
		<i>Aonyx capensis</i>	African (Cape) Clawless Otter	Mustelidae	Carnivora
		<i>Ictonyx striatus</i>	Striped Polecat	Mustelidae	Carnivora
		<i>Poecilogale albinucha</i>	African Striped Weasel	Mustelidae	Carnivora
		<i>Potamochoerus larvatus</i>	bushpig	Suidae	Artiodactyla
	Mammalia	<i>Philantomba monticola</i>	Blue Duiker	Bovidae	Artiodactyla
		<i>Raphicerus campestris</i>	Steenbok	Bovidae	Artiodactyla
		<i>Raphicerus melanotis</i>	Cape Grysbok	Bovidae	Artiodactyla
		<i>Sousa chinensis</i>	Humpback dolphin	Delphinidae	Artiodactyla
		<i>Sylvicapra grimmia</i>	Common Duiker	Bovidae	Artiodactyla
		<i>Tragelaphus scriptus</i>	Bushbuck	Bovidae	Artiodactyla

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Appendix 5.3.B Plant Species List

The species list is wholly based on species identified in a list appended to the Botany and Dune Ecology Impact Assessment specialist study for the EIA (Eskom, 2011b). The three local endemics are indicated in bold font.

**Table 5.3.B.1
Plants**

Latin Name	Common Name	Family
<i>Pupalia lappacea</i> (L.) A.Juss.	bosklits, sweethearts	Amaranthaceae
<i>Barleria obtusa</i> Nees	Bush violet	Acanthaceae
<i>Ceratosicyos laevis</i> (Thunb.) A.Meeuse	Creeper	Achariaceae
<i>Aizoon rigidum</i> L.f.	Succulent	Aizoaceae
<i>Tetragonia decumbens</i> Mill.	Kinkelbossie	Aizoaceae
<i>Tetragonia fruticosa</i> L.	kinkelbossie, kinkelklappers, kleinsaadklaapies brak, klimopkinkelbossie, porslein, slaaibos	Aizoaceae
<i>Boophone disticha</i> (L. f.) Herb.	Century plant, poison bulb, sore-eye flower; gifbol, seeroogblom, kopseerblom, boesmangif, perdespook; kxutsana-yanaha, motlatsisa; incumbe, siphahluka; incotho, incwadi; ibhade	Amaryllidaceae
<i>Brunsvigia gregaria</i> R. A. Dyer	Century Plant	Amaryllidaceae
<i>Cyrtanthus loddigesianus</i> (Herb.) R. A. Dyer	Grasveldlelie, sandlelie	Amaryllidaceae
<i>Scadoxus puniceus</i> (L.) Friis & Nordal	Paintbrush lily, Snake lily; Rooikwas; isisphompho, umgola	Amaryllidaceae
<i>Searsia crenata</i> Thunb.	(Dune) crowberry, duinekraaibessie, rosyntjebos; was <i>Rhus crenata</i>	Anacardiaceae
<i>Searsia glauca</i> Thunb.	Taaiblaar, blue kuni-rhus	Anacardiaceae
<i>Searsia laevigata</i> L.f.	Duinetaaibos, dune taaibos, koerentebos, ranktaaibos, taaibos, umhlakothi, dune currant	Anacardiaceae
<i>Searsia lucida</i> L. <i>forma lucida</i>	Blinktaaibos	Anacardiaceae
<i>Rhus lucida</i> L. <i>forma scoparia</i> (Eckl. & Zeyh.) Moffett	n/a	Anacardiaceae
<i>Rhus undulata</i> Jacq.	Karee, koeniebos, kuni-bush	Anacardiaceae
<i>Alepiea delicatula</i> Weim.	n/a	Apiaceae

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Latin Name	Common Name	Family
<i>Berula erecta</i> (Huds.) Coville subsp. <i>Thunbergia</i> (DC.) B.L.Burt	Tandpynbossie, tandpynwortel, toothache root, water parsnip	Apiaceae
<i>Dasispermum suffruticosum</i> (P.J. Bergius) B.L. Burt	Duineseldery	Apiaceae
<i>Peucedanum capense</i> (Thunb.) Sond.	Lidbossie	Apiaceae
<i>Peucedanum capense</i> (Thunb.) Sond.	Lidbossie	Apiaceae
<i>Sonderina caruifolia</i> (Sond.) H.Wolff	n/a	Apiaceae
<i>Astephanus marginatus</i> Decne	n/a	Apocynaceae
<i>Carissa bispinosa</i> (L.) Desf. Ex Brenan	Isibetha-nkunzi, noemnoem, numnum	Apocynaceae
<i>Cynanchum natalitium</i> Schltr.	Klimop	Apocynaceae
<i>Cynanchum obtusifolium</i> L.f.	Melktou, monkey rope	Apocynaceae
<i>Gomphocarpus fruticosus</i> (L.) Aiton	Shrubby milkweed, tontelbossie	Apocynaceae
<i>Microloma tenuifolium</i> (L.) K.Schum.	Kannetjies, skilpadbos, wax vine	Apocynaceae
<i>Secamone alpini</i> Schult.	Melktou, monkey rope	Apocynaceae
<i>Zantedeschia aethiopica</i> (L.) Spreng.	Arum, arum lily, calla lily, pig lily, varkblom	Araceae
<i>Centella asiatica</i> (L.) Urban	Waternaël	Araliaceae
<i>Centella hermanniifolia</i> (Eckl. & Zeyh.) Domin	n/a	Araliaceae
<i>Centella tridentata</i> (L.f.) Drude ex Domin subsp. <i>hermanniifolia</i> (Eckl. & Zeyh.) M.T.R.Schubert & B.-E.van Wyk	n/a	Araliaceae
<i>Cussonia thyrsiflora</i> Thunb.	Kuskiepersol	Araliaceae
<i>Hydrocotyle verticillate</i> Thunb.	Pennywort	Araliaceae
<i>Asparagus aethiopicus</i> L.	Wild asparagus, haakdoring	Asparagaceae
<i>Asparagus africanus</i> Lam.	Bush asparagus, African asparagus, wild asparagus, climbing asparagus fern, ornamental asparagus, sparrow grass; haakdoring, katdoring, wag-'n- bietjie; umathunga, ubulawu ubumhlope, umthunzi; isigoba, isigobo; lelala-tau-le-leholo, leunyeli	Asparagaceae
<i>Asparagus asparagoides</i> (L.) Druce	Breëblaarklimop, breëblaarkransie, krulkransie	Asparagaceae
<i>Asparagus racemosus</i> Willd.	n/a	Asparagaceae
<i>Asparagus virgatus</i> Baker	Broom asparagus, slender asparagus, 'Tiki' fern, African broom fern;	Asparagaceae

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Latin Name	Common Name	Family
	makkatdoring, katstertjie; ibutha, ihabiya, iphinganlhloya, unwele	
<i>Gasteria acinacifolia</i> (Jacq.) Haw.	Bontaalwyn	Asphodelaceae
<i>Kniphofia rooperi</i> (T.Moore) Lem.	Icacane, Lentevuurpyl, Umathunga Ompofu, Winter Poker	Asphodelaceae
<i>Trachyandra ciliata</i> (L. f.) Kunth	Hotnotskool, wildeblomkool	Asphodelaceae
<i>Asplenium cordatum</i> (Thunb.) Sw.	Resurrection Fern	Aspleniaceae
<i>Asplenium rutifolium</i> (P. J. Bergius) Kunze	Carrot fern	Aspleniaceae
<i>Arctotheca calendula</i> (L.) Levyns	Cape weed, gousblom	Asteraceae
<i>Arctotheca populifolia</i> (P.J.Bergius) Norl.	Sea pumpkin, seepampoen	Asteraceae
<i>Arctotis elongata</i> Thunb.	n/a	Asteraceae
<i>Aster bakerianus</i> Burt Davy ex C.A.Sm.	n/a	Asteraceae
<i>Chrysanthemoides monilifera</i> (L.) Norl.	Bietou, boetabessie, bosluisbessie, brother berry	Asteraceae
<i>Cineraria erodioides</i> DC.	n/a	Asteraceae
<i>Conyza scabrida</i> DC.	Bakbesembossie, oondbos, ovenbush	Asteraceae
<i>Cotula mariae</i> Bremer & Humphries	n/a	Asteraceae
<i>Cotula sericea</i> DC.	n/a	Asteraceae
<i>Cullumia decurrens</i> Less.	n/a	Asteraceae
<i>Dicrothamnus rhinocerotis</i> (DC.) Koekemoer	Renosterbos	Asteraceae
<i>Disparago ericoides</i> (P.J. Bergius) Gaertn.	n/a	Asteraceae
<i>Euryops munitus</i> (L.f.) B. Nord.	UmSola	Asteraceae
<i>Felicia aethiopica</i> (Burm.f.) Adamson & T.M.Salter	Wilde-aster, wildeastertjie	Asteraceae
<i>Felicia amelloides</i> (L.) Voss	Wilde-aster	Asteraceae
<i>Felicia amoena</i> (Sch.Bip.) Levyns subsp. <i>latifolia</i> Grau	n/a	Asteraceae
<i>Felicia echinata</i> (Thunb.) Less.	Bloublommetjie	Asteraceae
<i>Gazania krebsiana</i> Less.	Botterblom, gousblom, rooigazania, rooigousblom	Asteraceae
<i>Gazania linearis</i> (Thunb.) Druce var. <i>linearis</i>	Bensli, botterblom	Asteraceae
<i>Gazania rigens</i> (L.) Gaertn.	n/a	Asteraceae
<i>Helichrysum anomalum</i> Less.	n/a	Asteraceae

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Latin Name	Common Name	Family
<i>Helichrysum asperum</i> (Thunb.) Hilliard & B. L. Burt	Geilsiekte-opslag	Asteraceae
<i>Helichrysum crispum</i> (L.) D. Don.	Hottentotskooigoed, kooigoed	Asteraceae
<i>Helichrysum felinum</i> Less.	n/a	Asteraceae
<i>Helichrysum foetidum</i> (L.) Moench var. <i>foetidum</i>	Brandblom, geelsewejaartjie	Asteraceae
<i>Helichrysum gymnocomum</i> DC.	Imphepho, Phefo Ea Setlolo	Asteraceae
<i>Helichrysum helianthemifolium</i> (L.) D. Don.	n/a	Asteraceae
<i>Helichrysum littorale</i> Bolus	Everlasting	Asteraceae
<i>Helichrysum patulum</i> (L.) D. Don.	Hottentot's bedding, Hottentotskooigoed, kooigoed	Asteraceae
<i>Helichrysum petiolare</i> Hilliard & B. L. Burt	Kooigoed	Asteraceae
<i>Helichrysum praecinctum</i> Klatt	n/a	Asteraceae
<i>Helichrysum rutilans</i> (L.) D. Don	Sandsewejaartjie	Asteraceae
<i>Helichrysum teretifolium</i> (L.) D. Don.	n/a	Asteraceae
<i>Hippia frutescens</i> (L.) L.	Rankals	Asteraceae
<i>Metalasia densa</i> (Lam.) Karis	Blombos, steekbos, witsteekbossie	Asteraceae
<i>Nidorella auriculata</i> DC.	n/a	Asteraceae
<i>Othonna cylindrica</i> (Lam.) DC.	Dikblaarbobbbejaankool, ossierapuis	Asteraceae
<i>Othonna rufibarbis</i> Harv.	n/a	Asteraceae
<i>Plecostachys serpyllifolia</i> (P. J. Bergius) Hilliard & B. L. Burt	Vaaltee	Asteraceae
<i>Pteronia teretifolia</i> (Thunb.) Fourc.	n/a	Asteraceae
<i>Senecio deltoideus</i> Less.	Zigzag canary creeper	Asteraceae
<i>Senecio elegans</i> L.	Strandblommetjie, veld cineraria, wild cineraria	Asteraceae
<i>Senecio halimifolius</i> L.	Tabakbos	Asteraceae
<i>Senecio inaequidens</i> DC.	Narrow-leaved ragwort, South African ragwort	Asteraceae
<i>Senecio lanceus</i> Aiton	Kammiebos, vleibos	Asteraceae
<i>Senecio leptophyllus</i> DC.	n/a	Asteraceae
<i>Senecio litorosus</i> Fourc.	n/a	Asteraceae
<i>Senecio oederiifolius</i> DC.	Kouterbossie	Asteraceae
<i>Senecio pellucidus</i> DC.	n/a	Asteraceae
<i>Senecio purpureus</i> L.	n/a	Asteraceae
<i>Senecio rigidus</i> L.	Poisonous ragwort, rough ragwort	Asteraceae
<i>Senecio rosmarinifolius</i> L. f.	Gryshongerblom	Asteraceae

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Latin Name	Common Name	Family
<i>Seriphium cinereum</i> L.	Vaalhartebeskaroo, vaalrenosterbos	Asteraceae
<i>Seriphium plumosum</i> L.	"khoi"-kooigoed, slangbos	Asteraceae
<i>Syncarpha argentea</i> (Thunb.) B. Nord.	Silver everlasting	Asteraceae
<i>Syncarpha sordescens</i> (DC.) B. Nord.	n/a	Asteraceae
<i>Tarchonanthus camphoratus</i> L.	Camphor bush, isiduli, kanferbos	Asteraceae
<i>Ursinia anthemoides</i> (L.) Poir.	Bergmargriet, ma(r)griet, marigold	Asteraceae
<i>Vellereophyton vellereum</i> (R. A. Dyer) Hilliard	n/a	Asteraceae
<i>Behnia reticulata</i> (Thunb.) Didr.	African Solomon's seal	Behniaceae
<i>Anchusa capensis</i> Thunb.	Cape forget-me-not, forget-me-not, ystergras	Boraginaceae
<i>Myosotis graminifolia</i> DC.	n/a	Boraginaceae
<i>Capparis sepiaria</i> L.	Cape caperintshilo, kapkappertjie	Brassicaceae
<i>Heliophila linearis</i> (Thunb.) DC.	n/a	Brassicaceae
<i>Heliophila subulate</i> Burch. ex DC.	n/a	Brassicaceae
<i>Lepidium africanum</i> (Burm.f.) DC.	Bird-seed, peperbossie, pepper weed	Campanulaceae
<i>Grammatotheca bergiana</i> (Cham.) C. Presl	Water lobelia	Campanulaceae
<i>Lobelia anceps</i> L. f.	Vleilobelia	Campanulaceae
<i>Lobelia erinus</i> L.	Wild lobelia	Campanulaceae
<i>Monopsis unidentate</i> (Dryand. ex Aiton) E. Wimm.	Wild violet	Campanulaceae
<i>Cerastium capense</i> Sond.	horingblom	Caryophyllaceae
<i>Silene bellidioides</i> Sond.	Wild tobacco, wildetabak	Caryophyllaceae
<i>Silene primuliflora</i> Eckl. & Zeyh.	n/a	Caryophyllaceae
<i>Cassine peragua</i> L.	Bastard saffronwood, bastersaffraan, Cape saffron, ikhukhuzi, lepelhout	Celastraceae
<i>Gymnosporia buxifolia</i> (L.) Szyszyl.	Gewonependoring, mnquqoba, stinkpendoring	Celastraceae
<i>Lauridia tetragona</i> (L. f.) R. H. Archer	Climbing saffron, ranksaffraan	Celastraceae
<i>Maytenus procumbens</i> (L. f.) Loes.	Duinekokoboom, dune koko tree, umPhono-phono	Celastraceae
<i>Mystroxylon aethiopicum</i> (Thunb.) Loes.	Cape cherry, koeboebessie, kubusbessie	Celastraceae
<i>Pterocelastrus tricuspidatus</i> (Lam.) Sond.	Cherrywood, kershout, utwina	Celastraceae
<i>Putterlickia pyracantha</i> (L.) Szyszyl	Basterpendoring, pendoring, wildegranaat	Celastraceae

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<i>Robsonodendron maritimum</i> (Bulus) R. H. Archer	Duinesybas	Celastraceae
<i>Colchicum eucomoides</i> (Jacq.) J. C. Manning & Vinnersten	n/a	Colchicaceae
<i>Dichondra micrantha</i> Urban	Daisy grass	Convolvulaceae
<i>Falkia repens</i> L. f.	Oortjies	Convolvulaceae
<i>Cotyledon orbiculata</i> L.	Honde-oor, kouterie, pig's ear, plakkie(s), varkoor	Crassulaceae
<i>Crassula expansa</i> Dryand. subsp. <i>expansa</i>	Strepiescrassula	Crassulaceae
<i>Crassula nudicaulis</i> L.	Bergplakkie, skraalplakkie	Crassulaceae
<i>Crassula pubescens</i> Thunb. subsp. <i>pubescens</i>	n/a	Crassulaceae
<i>Crassula subulata</i> L. var. <i>fastigiata</i>	n/a	Crassulaceae
<i>Crassula tetragona</i> L.	Karkai	Crassulaceae
<i>Kedrostis nana</i> (Lam.) Cogn.	Bryony, ystervarkpatat(s)	Cucurbitaceae
<i>Zehneria scabra</i> (L. f.) Sond. subsp. <i>scabra</i>	Dawidjies	Cucurbitaceae
<i>Isolepis prolifera</i> R. Br.	Incapa, Vleigras	Cyperaceae
<i>Bolboschoenus maritimus</i> (L.) Palla	Sedge, snygras,	Cyperaceae
<i>Carex aethiopica</i> Schkuhr	n/a	Cyperaceae
<i>Cladium mariscus</i> (L.) Pohl subsp. <i>Jamaicense</i> (Crantz) Kuekenh.	n/a	Cyperaceae
<i>Cyperus longus</i> L.	Dooiwortel, waterbiesie, waterkweek	Cyperaceae
<i>Cyperus natalensis</i> Hochst.	n/a	Cyperaceae
<i>Cyperus sphaerospermus</i> Schrad.	n/a	Cyperaceae
<i>Cyperus thunbergii</i> Vahl	n/a	Cyperaceae
<i>Eleocharis limosa</i> (Schrad.) Schult.	n/a	Cyperaceae
<i>Ficinia bulbosa</i> (L.) Nees	n/a	Cyperaceae
<i>Ficinia capitella</i> (Thunb.) Nees	n/a	Cyperaceae
<i>Ficinia dunensis</i> Levyns	n/a	Cyperaceae
<i>Ficinia indica</i> (Lam.) Pfeiffer	n/a	Cyperaceae
<i>Ficinia lateralis</i> (Vahl) Kunth	n/a	Cyperaceae
<i>Ficinia nodosa</i> (Rottb.) Goetgh.	Steekbiesie, vleibiesie	Cyperaceae
<i>Ficinia ramosissima</i> Kunth	n/a	Cyperaceae
<i>Fuirena coerulescens</i> Steud.	n/a	Cyperaceae
<i>Fuirena hirsute</i> (P. J. Bergius) P. L. Forbes	n/a	Cyperaceae

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<i>Isolepis cernua</i> (Vahl) Roem. & Schult.	n/a	Cyperaceae
<i>Isolepis marginata</i> (Thunb.) A.Dietr.	n/a	Cyperaceae
<i>Isolepis rubicunda</i> Kunth	n/a	Cyperaceae
<i>Neesenbeckia punctoria</i> (Vahl) Levyns	n/a	Cyperaceae
<i>Scirpoides thunbergia</i> (Schrud.) Soják	n/a	Cyperaceae
<i>Tetraria brachyphylla</i> Levyns	n/a	Cyperaceae
<i>Tetraria bromoides</i> (Lam.) Pfeiffer	Bergpalmiet	Cyperaceae
<i>Tetraria cuspidate</i> (Rottb.) C. B. Clarke	n/a	Cyperaceae
<i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>aquilinum</i>	Eagle fern	Dennstaedtiaceae
<i>Dioscorea sylvatica</i> (Kunth) Eckl.	Elephants foot, hottentotsbrood	Dioscoreaceae
<i>Scabiosa columbaria</i> L.	Bitterbos, jongmansknoop, scabious	Dipsacaceae
<i>Cyrtomium micropterum</i> (Kunze) Ching	n/a	Dryopteridaceae
<i>Diospyros dichrophylla</i> (Gand.) De Winter	Poison peach, tolbos	Ebenaceae
<i>Diospyros simii</i> (Kuntze) De Winter	Climbing star-apple, rub-rub berry, star apple, ranksterappel, kraaibessie, kraaibessiebos, tanktolbessiebos, tolbessiebos, umbongisa, umngandane	Ebenaceae
<i>Euclea natalensis</i> A. DC.	Bergghwarrie, swartbasboom	Ebenaceae
<i>Euclea racemosa</i> Murray	Bosghwarrie, bush guarri, kersbos, sea guarri, seeghwarrie	Ebenaceae
<i>Erica chloroloma</i> Lindl.	n/a	Ericaceae
<i>Erica discolor</i> Andrews	Two-colour heath	Ericaceae
<i>Erica glumiflora</i> Klotzsch ex Benth	n/a	Ericaceae
<i>Erica gracilis</i> J.C.Wendl.	n/a	Ericaceae
<i>Erica pectinifolia</i> Salisb.	n/a	Ericaceae
<i>Erica sessiliflora</i> L. f.	green heath, white bottlebrush heath, groenheide, groenbottelheide	Ericaceae
<i>Erica sparmannii</i> L. f.	n/a	Ericaceae
<i>Adenocline acuta</i> (Thunb.) Baill	n/a	Euphorbiaceae
<i>Clutia affinis</i> Sond.	Oumeisieknie	Euphorbiaceae
<i>Clutia alaternoides</i> L.	n/a	Euphorbiaceae
<i>Clutia daphnoides</i> Lam.	Vaalblaar, vaalbliksembos, vaalbossie	Euphorbiaceae
<i>Euphorbia epicyparissias</i> E. Mey. ex Boiss.	Pisgoed	Euphorbiaceae
<i>Leidesia procumbens</i> (L.) Prain	n/a	Euphorbiaceae
<i>Dipogon lignosus</i> (L.) Verdc.	Bosklimop	Fabaceae

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<i>Indigofera heterophylla</i> Thunb.	n/a	Fabaceae
<i>Indigofera mollis</i> Eckl. & Zeyh.	n/a	Fabaceae
<i>Indigofera stricta</i> L. f.	n/a	Fabaceae
<i>Indigofera sulcata</i> DC.	n/a	Fabaceae
<i>Indigofera tomentosa</i> Eckl. & Zeyh	n/a	Fabaceae
<i>Indigofera zeyheri</i> Spreng. ex Eckl. & Zeyh	Leeuhout	Fabaceae
<i>Lessertia stenoloba</i> E. Mey.	n/a	Fabaceae
<i>Lotononis laxa</i> Eckl. & Zeyh.	n/a	Fabaceae
<i>Otholobium stachyerum</i> (Eckl. & Zeyh.) C. H. Stirt.	Spiked Hookleaf-pea	Fabaceae
<i>Otholobium virgatum</i> (Burm.f.) C. H. Stirt.	Carpet pea, mat otholobium, eight-day-healing bush, agtdaegeneesbossie	Fabaceae
<i>Psoralea affinis</i> Eckl. & Zeyh.	n/a	Fabaceae
<i>Psoralea pinnata</i> L.	bloubos, bloukeur, fonteinbos, fountain bush, penwortel	Fabaceae
<i>Psoralea</i> sp. nov. ABL 15269	n/a	Fabaceae
<i>Rhynchosia capensis</i> (Burm.f.) Schinz	n/a	Fabaceae
<i>Rhynchosia caribaea</i> (Jacq.) DC.	n/a	Fabaceae
<i>Rhynchosia chrysoscias</i> Benth. ex Harv.	n/a	Fabaceae
<i>Rhynchosia ciliate</i> (Thunb.) Schinz	n/a	Fabaceae
<i>Tephrosia capensis</i> (Jacq.) Pers.	n/a	Fabaceae
<i>Virgilia oroboides</i> (P. J. Bergius) T. M. Salter	Keurboom	Fabaceae
<i>Dovyalis rhamnoides</i> (Burch. ex DC.) Burch. & Harv.	Common sourberry, gewone suurbessie, ukhamgwindi, umqaqoba	Flacourtiaceae
<i>Dovyalis rotundifolia</i> (Thunb.) Thunb. & Harv.	Duinesuurbessie, dune dovyalis	Flacourtiaceae
<i>Scolopia zeyheri</i> (Nees) Harv.	Doringpeer, thorn pear	Flacourtiaceae
<i>Trimeria trinervis</i> Harv.	n/a	Flacourtiaceae
<i>Chironia baccifera</i> L.	Bitterbessiebos, perdebossie	Gentianaceae
<i>Chironia decumbens</i> Levyns	n/a	Gentianaceae
<i>Chironia peduncularis</i> Lindl.	n/a	Gentianaceae
<i>Chironia serpyllifolia</i> Lehm.	n/a	Gentianaceae
<i>Chironia tetragona</i> L. f.	n/a	Gentianaceae
<i>Sebaea minutiflora</i> Schinz	n/a	Gentianaceae
<i>Geranium ornithopodon</i> Eckl. & Zeyh.	n/a	Gentianaceae
<i>Pelargonium capitatum</i> (L.) L'Hér.	Kusmalva, rosescented pelargonium	Gentianaceae

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Latin Name	Common Name	Family
<i>Pelargonium grossularioides</i> (L.) L'Hér.	gooseberry-leaved pelargonium, rooirabas, rooirabassam, rooistingelhoutbas	Gentianaceae
<i>Pelargonium suburbanum</i> Clifford ex C. Boucher subsp. <i>suburbanum</i>	n/a	Gentianaceae
<i>Scaevola plumieri</i> (L.) Vahl	Seeplakkie, Umqhaphu	Goodeniaceae
<i>Gunnera perpensa</i> L.	river pumpkin, wild rhubarb, rivierpampoen, wilde ramenas, qobo, uqobho, rambola-vhazimu, shambola-vhazimu, iphuzi lomlambo, ighobo, uqobhe, uqobho	Gunneraceae
<i>Wachendorfia paniculata</i> Burm.	Koffiepit, rooikanol, spinnekopblom	Haemodoraceae
<i>Caesia contorta</i> (L. f.) T. Durand & Schinz	Sokkiesblom	Hemerocallidaceae
<i>Albuca cooperi</i> Baker	Blougif, geldbeursie	Hyacinthaceae
<i>Drimia hesperantha</i> J. C. Manning & Goldblatt	n/a	Hyacinthaceae
<i>Ornithogalum graminifolium</i> Thunb.	Metsana-a-manyenyane, Nko-ea-ntja	Hyacinthaceae
<i>Apodytes dimidiata</i> E. Mey. ex Arn. subsp. <i>dimidiata</i>	White pear, witpeer	Icacinaceae
<i>Aristea ecklonii</i> Baker	Blue stars, blousterre, umhushuza	Iridaceae
<i>Chasmanthe aethiopica</i> (L.) N. E. Br.	Kleinpiempiempie, suurkanolpypie	Iridaceae
<i>Gladiolus floribundus</i> Jacq.	Common swordlily	Iridaceae
<i>Gladiolus wilsonii</i> (Baker) Goldblatt & J. C. Manning	n/a	Iridaceae
<i>Melasphaerula ramose</i> (L.) N. E. Br.	baardmannetjie, bokbaardjie, feëklokkie	Iridaceae
<i>Moraea elliotii</i> Baker	Bloutulp	Iridaceae
<i>Moraea setifolia</i> (L. f.) Druce	Basterbloutulp, bokuintjie, knikkertjies, papieruintjie	Iridaceae
<i>Romulea rosea</i> (L.) Eckl.	Froetang, frutang, knikker, knikkertjie, rooiknikkertjie	Iridaceae
<i>Tritoniopsis caffra</i> (Ker Gawl. Ex Baker) Goldblatt	n/a	Iridaceae
<i>Watsonia angusta</i> Ker Gawl.	Patryskos, rooikanolpypie	Iridaceae
<i>Juncus capensis</i> Thunb.	n/a	Juncaceae
<i>Juncus kraussii</i> Hochst. subsp. <i>kraussii</i>	Biesie, rush	Juncaceae
<i>Juncus lomatophyllus</i> Spreng.	n/a	Juncaceae
<i>Triglochin striata</i> Ruiz & Pav.	Streaked Arrow-grass	Juncaginaceae
<i>Leonotis leonurus</i> (L.) R. Br.	duiwelstabak, klipdagga, rivierdagga, rooidagga, wildedagga	Lamiaceae
<i>Mentha aquatica</i> L.	Wild mint	Lamiaceae

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<i>Salvia africana-lutea</i> L.	Bruinsalie, sandsalie, strandsalie, wild sage	Lamiaceae
<i>Lanaria lanata</i> (L.) T. Durand & Schinz	Cape eidelweiss, kapokblom, perdekakok	Lanariaceae
<i>Cassytha ciliolata</i> Nees	False dodder, nooienshaar	Lauraceae
<i>Utricularia bisquamata</i> Schrank	n/a	Lentibulariaceae
<i>Linum africanum</i> L.	African flax	Linaceae
<i>Grewia occidentalis</i> L.	cross-berry, four-corners, kruisbessie, Mokukutu, Mogwane, iLalanyathi, umSipane, umNqabaza, Mulembu, Nsihana	Malvaceae
<i>Hermannia saccifera</i> (Turcz.) K. Schum.	Cumin hermannia, komynbossie	Malvaceae
<i>Hermannia velutina</i> DC.	n/a	Malvaceae
<i>Hibiscus aethiopicus</i> L.	n/a	Malvaceae
<i>Hibiscus diversifolius</i> Jacq.	Swamp hibiscus	Malvaceae
<i>Cissampelos capensis</i> L. f.	Davidjies, fynblaarklimop	Menispermaceae
<i>Carpobrotus acinaciformis</i> (L.) L. Bolus	Elandsy, Hottentot fig, sour fig, suurvy	Mesembryanthemaceae
<i>Carpobrotus deliciosus</i> (L. Bolus) L. Bolus	elicious sour fig, sweet sour fig, suurvy, perdevy, gaukum igcuthuma	Mesembryanthemaceae
<i>Delosperma patersoniae</i> (L. Bolus) L. Bolus	n/a	Mesembryanthemaceae
<i>Drosanthemum hispidum</i> (L.) Schwantes	Fyn t'nouroebos	Mesembryanthemaceae
<i>Mesembryanthemum canaliculatum</i> Haw.	kruipvygie	Mesembryanthemaceae
<i>Mesembryanthemum splendens</i> L. subsp. <i>splendens</i>	n/a	Mesembryanthemaceae
<i>Pharnaceum dichotomum</i> L.f.	n/a	Molluginaceae
<i>Morella cordifolia</i> (L.) Killick	Candle berry, dune waxberry, glashout, wasbessie, waxberry	Myricaceae
<i>Morella quercifolia</i> (L.) Killick	Maagpynbossie	Myricaceae
<i>Morella serrata</i> (Lam.) Killick	Gammabos, wasbessie, waterolier, waxberry	Myricaceae
<i>Rapanea gilliana</i> (Sond.) Mez	Dwarf Cape beech, dwergboekenhout	Myrsinaceae
<i>Rapanea melanophloeos</i> (L.) Mez	Cape Beech, Boekenhout, Beukehout, IsiCalabi, umaPhipha, iKhubalwane, isiQalaba sehlati, isiQwane sehlati, iGcolo, udzilidzili	Myrsinaceae
<i>Chionanthus foveolatus</i> (E.Mey.) Stearn subsp. <i>foveolatus</i>	Pock ironwood, pokysterhout, idlebedudu, idlabatheka, umdlebe, umqumaswele, isiduli, musiri, morasane	Oleaceae
<i>Olea capensis</i> L. subsp. <i>capensis</i>	Ysterhout	Oleaceae
<i>Olea exasperata</i> Jacq.	Slanghout	Oleaceae

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<i>Epilobium capense</i> <i>Buchinger ex Hochst.</i>	Cape Willowherb	Onagraceae
<i>Acrolophia cochlearis</i> (Lindl.) <i>Schltr. & Bolus</i>	Impimpi	Orchidaceae
<i>Bonatea speciosa</i> (L. f.) <i>Willd. var. speciosa</i>	Moederkappie, Oktoberlelie	Orchidaceae
<i>Disa chrysostachya</i> Sw.	Torch Orchid, Uklamkleshe, Umnduze Wotshani Obomvu, Umnduze Wotshani Ompofu	Orchidaceae
<i>Eulophia speciosa</i> (R. Br. ex Lindl.) <i>Bolus</i>	Large Yellow Eulophia, Umabelejongosi Ompofu, Umlunge Omhlophe	Orchidaceae
<i>Holothrix villosa</i> Lindl.	Wollie	Orchidaceae
<i>Satyrium hallackii</i> Bolus <i>subsp. hallackii</i>	n/a	Orchidaceae
<i>Satyrium membranaceum</i> Sw.	n/a	Orchidaceae
<i>Satyrium parviflorum</i> Sw.	Devil Orchid, Ilabatheka Elikhulu Elibomvu, Impimpi Enkulu	Orchidaceae
<i>Satyrium princeps</i> Bolus	Rooitrewwa	Orchidaceae
<i>Alectra sessiliflora</i> (Vahl) Kuntze	Verfblommetjie	Orobanchaceae
<i>Harveya purpurea</i> (L. f.) <i>Harv. ex Hook.</i>	n/a	Orobanchaceae
<i>Melasma scabrum</i> P. J. Bergius	n/a	Orobanchaceae
<i>Oxalis incarnata</i> L.	n/a	Oxalidaceae
<i>Oxalis polyphylla</i> Jacq.	Fynblaarsuring	Oxalidaceae
<i>Oxalis purpurea</i> L.	Grootsuring	Oxalidaceae
<i>Plantago crassifolia</i> Forssk.	Fleshy plantain	Plantaginaceae
<i>Limonium scabrum</i> (Thunb.) Kuntze	Brakblommetjie, sea lavender	Plumbaginaceae
<i>Limonium</i> sp. nov. ABL 15508	n/a	Plumbaginaceae
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass, couch, fine quick grass, fynkweek, gewone kweekgras	Poaceae
<i>Ehrharta calycina</i> Sm.	common ehrharta, polgras, rooigras, rooisaadgras	Poaceae
<i>Ehrharta erecta</i> Lam.	n/a	Poaceae
<i>Ehrharta villosa</i> Schult.f. var. <i>maxima</i>	n/a	Poaceae
<i>Ehrharta villosa</i> Schult. f. var. <i>villosa</i>	Pypgras	Poaceae
<i>Imperata cylindrica</i> (L.) <i>Raeuschel</i>	Beddinggras, cotton-wool grass, donsgras, silwergaargras, sygras	Poaceae
<i>Melica decumbens</i> Thunb.	Staggers grass, dronkgras	Poaceae

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<i>Merxmuellera cincta</i> (Nees) <i>Conert subsp. sericea</i> N. P. Barker	n/a	Poaceae
<i>Panicum maximum</i> Jacq.	Guinea grass, purple-top buffalo	Poaceae
<i>Pentaschistis pallida</i> (Thunb.) H. P. Linder	Duinegras, haasgras	Poaceae
<i>Phragmites australis</i> (Cav.) <i>Trin. ex Steud.</i>	Common reed, fluitjiesriet	Poaceae
<i>Polypogon strictus</i> Nees	n/a	Poaceae
<i>Setaria sphacelate</i> (Schum.) Stapf & C. E. Hubb. ex Moss var. <i>Sphacelata</i>	Bristle grass, golden timothy, kanariegras	Poaceae
<i>Sporobolus virginicus</i> (L.) Kunth	Brakgras, brakkweek, sea rush grass	Poaceae
<i>Stenotaphrum secundatum</i> (Walter) Kuntze	Buffalo grass, buffelsgras, kweekgras	Poaceae
<i>Themeda triandra</i> Forssk.	Red grass, rooigras	Poaceae
<i>Tribolium hispidum</i> (Thunb.) Desv.	Haasgras	Poaceae
<i>Muraltia squarrosa</i> (L. f.) DC.	n/a	Polygalaceae
<i>Polygala ericaefolia</i> DC.	n/a	Polygalaceae
<i>Polygala microlopha</i> DC.	n/a	Polygalaceae
<i>Polygala myrtifolia</i> L.	Septemberbos	Polygalaceae
<i>Polygala virgata</i> Thunb.	Purple Broom, Persboom, Bloukappie, Ea moru, Hlokoa leleue, Ithethe	Polygalaceae
<i>Persicaria attenuate</i> (R. Br.) <i>Soják subsp. africana</i> K. L. Wilson	n/a	Polygalaceae
<i>Rumex acetosella</i> L. subsp. <i>Angiocarpus</i> (Murb.) Murb.	Boksuring, sheep sorrel	Polygalaceae
<i>Rumex lanceolatus</i> Thunb.	Common Dock, Gladdetongblaar, Idolo Lenkonyane, Idolonyana, Khamane, Kxamane, Molokoli, Potaka-leleme, Smaller Dock, Smooth Dock	Polygalaceae
<i>Rumex pulcher</i> L. subsp. <i>divaricatus</i> (L.) Murb.	n/a	Polygalaceae
<i>Potamogeton pusillus</i> L.	Fonteingras, fonteinkruid	Potamogetonaceae
<i>Leucadendron salignum</i> P. J. Bergius	Common sunshine cone-bush, geelbos, geeltolbos, knopbos, knoppiesbos, rooibos, stompieknopbos, sunshine bush	Proteaceae
<i>Protea neriifolia</i> R. Br.	Blousuikerbos, blue sugarbush	Proteaceae
<i>Cheilanthes viridis</i> (Forssk.) Sw.	Common lip fern	Pteridaceae
<i>Clematis brachiata</i> Thunb.	Traveller's joy, old man's beard, wild clematis, klimop, lemoenbloeisels, ityolo, morara, mogau, umdlonzo	Ranunculaceae
<i>Knowltonia capensis</i> (L.) Huth	blistering leaves, brandblare, katjiedrieblaar	Ranunculaceae

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Latin Name	Common Name	Family
<i>Ranunculus multifidus</i> Forssk.	Buttercup	Ranunculaceae
<i>Elegia microcarpa</i> (Kunth) Pillans	n/a	Restionaceae
<i>Hypodiscus striatus</i> (Kunth) Mast.	n/a	Restionaceae
<i>Ischyrolepis eleocharis</i> (Nees ex Mast.) H. P. Linder	Katstert, katsterriet	Restionaceae
<i>Ischyrolepis leptoclados</i> (Mast.) H.P.Linder	Besemriet	Restionaceae
<i>Restio triticeus</i> Rottb.	Besemgoed, besemriet, kanet	Restionaceae
<i>Thamnochortus fruticosus</i> P. J. Bergius	Besemriet	Restionaceae
<i>Phylica gnidioides</i> Eckl. & Zeyh.	pink phylica, pink hardleaf, pienk-hardebos	Rhamnaceae
<i>Phylica litoralis</i> (Eckl. & Zeyh.) D.Dietr.	n/a	Rhamnaceae
<i>Rhamnus prinoides</i> L'Her.	African Dogwood, Camdeboo Stinkwood, Glossy-leaf, Blinkblaar, Camdeboostinkhout, umGlindi, Umlindi, umGilindi, uNyenyeye, umHlinye, liNyenyeye, Mofifi	Rhamnaceae
<i>Scutia myrtina</i> (Burm. f.) Kurz	Bobbejaantou, Bos-wag-'n-bietjie, Cat-thorn, Drogies, Droog-my-keel, Droog-my-keelbossie, Isibinda, Isincumcum, Isiphingo, Isiphingo, Isipinga, Isipingo, Katdoring, Katdoringnaels, Katnaal, Rank-wag-'n-bietjie, Umqapuma, Umsondeza, Umthole, Usondela, Usondelanganga, Wag-'n-bietjie, Wag-'n-bietjie-doring	Rhamnaceae
<i>Cliffortia filifolia</i> L. f.	n/a	Rosaceae
<i>Cliffortia odorata</i> L. f.	Wildewingerd	Rosaceae
<i>Cliffortia paucistaminea</i> Weim.	n/a	Rosaceae
<i>Rubus rigidus</i> Sm.	Braambos, Braambossie, Ijingijolo, Monoko-metsi, Monokotswai-wabanna, Ugagane, Umgcunube, White Bramble, Wild Bramble	Rosaceae
<i>Anthospermum aethiopicum</i> L.	Jakkalsstert, Katstert, Seeroogbossie	Rubiaceae
<i>Anthospermum herbaceum</i> L. f.	n/a	Rubiaceae
<i>Anthospermum prostratum</i> Sond.	n/a	Rubiaceae
<i>Anthospermum spathulatum</i> Spreng.	Skaapbos	Rubiaceae
<i>Canthium spinosum</i> (Klotzsch) Kuntze	Coastal Turkey-berry, Doringklipels, Doringtou	Rubiaceae
<i>Galopina circaeoides</i> Thunb.	n/a	Rubiaceae

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Latin Name	Common Name	Family
<i>Psydrax obovata</i> Eckl. & Zeyh. subsp. <i>obovata</i>	Coastal Pioneer Quar	Rubiaceae
<i>Agathosma apiculate</i> G. Mey.	Garlic buchu; knoffelboegoe	Rutaceae
<i>Agathosma</i> sp. nov. ABL 15400	n/a	Rutaceae
<i>Agathosma stenopetala</i> (Steud.) Steud.	n/a	Rutaceae
<i>Clausena anisata</i> (Willd.) Hook. f. ex Benth.	Horsewood, perdepis	Rutaceae
<i>Zanthoxylum capense</i> (Thunb.) Harv.	Kleinperdepram, small knobwood	Rutaceae
<i>Azima tetracantha</i> Lam.	bee-sting bush, needle bush, four-thorns, stink bush, byangelbos, groendoring, spelddoring, naaldebos, naaibos, stinkbos, igcegceleya, igceya, murunda, umgeza, ingungumela, isikhumukele, ribaba	Salvadoraceae
<i>Osyris compressa</i> (P. J. Bergius) A.DC.	Pruimbas	Santalaceae
<i>Rhoiacarpos capensis</i> (Harv.) A.DC.	n/a	Santalaceae
<i>Thesidium fragile</i> (Thunb.) Sond.	breekgroenbasbossie	Santalaceae
<i>Thesium commutatum</i> Sond.	n/a	Santalaceae
<i>Allophylus decipiens</i> (Sond.) Radlk.	Bastard Currant, Bastard Taaibos, Bastertaaibos, Baster-taaibos, False Currant, Rooibessieboom, Small-leaved False Currant, Umcandathambo, Umhlohlela, Umncandathambo, Uthathabani, Valstaaibos	Sapindaceae
<i>Sideroxylon inerme</i> L. subsp. <i>inerme</i>	White milkwood, witmelkhout, melkhoutboom, melkbessie; aMasethole, umQwashu; aMasethole-amhlope, uMakhwela-fingqane	Sapotaceae
<i>Schizaea pectinata</i> (L.) Sw.	Curly grass fern, toothbrush fern	Schizaeaceae
<i>Chaenostoma campanulatum</i> (Benth.) Kuntze	n/a	Scrophulariaceae
<i>Chaenostoma hispidum</i> (Thunb.) Druce	n/a	Scrophulariaceae
<i>Dischisma ciliatum</i> (P. J. Bergius) Choisy	n/a	Scrophulariaceae
<i>Hebenstretia cordata</i> L.	Kusslakblom	Scrophulariaceae
<i>Hebenstretia integrifolia</i> L.	n/a	Scrophulariaceae
<i>Jamesbrittenia microphylla</i> (L. f.) Hilliard	n/a	Scrophulariaceae
<i>Manulea obovata</i> Benth.	n/a	Scrophulariaceae

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Latin Name	Common Name	Family
<i>Selago canescens</i> L. f.	Canescent selago, bitter bush, blouaarbessie	Scrophulariaceae
<i>Selago rotundifolia</i> L. f.	n/a	Scrophulariaceae
<i>Veronica anagallis-aquatica</i> L.	Moqhobohobo-o-monyenyane, Water Speedwell, Waterereprys	Scrophulariaceae
<i>Zaluzianskya maritima</i> (L. f.) Walp.	Drumstick	Scrophulariaceae
<i>Solanum africanum</i> Mill.	Dronkbessie, dronktou, melkellie	Solanaceae
<i>Solanum linnaeanum</i> Hepper & E. Jaeger	Gifappel	Solanaceae
<i>Halleria lucida</i> L.	Tree fuschia	Stilbaceae
<i>Thelypteris confluens</i> (Thunb.) C.V.Morton	bog fern, scaly lady fern	Thelypteridaceae
<i>Gnidia stypheloides</i> Meisn.	n/a	Thymelaeaceae
<i>Passerina corymbosa</i> Eckl. ex C.H.Wright	Sandgannabos	Thymelaeaceae
<i>Passerina rigida</i> Wikstr.	Gonnabos	Thymelaeaceae
<i>Struthiola argentea</i> Lehm.	roemenaggie, aandgonna, slapgonna, slapaand	Thymelaeaceae
<i>Typha capensis</i> (Rohrb.) N. E. Br.	Bulrush, matjiesgoed, papkuil	Typhaceae
<i>Droguetia iners</i> (Forssk.) Schweinf.	n/a	Urticaceae
<i>Viscum obscurum</i> Thunb.	n/a	Viscaceae
<i>Rhoicissus tridentata</i> (L. f.) Wild & R. B. Drumm.	Northern Bushman's grape, bitter grape, wild grape; noordelike boesmansdruif, bitterdruif, droog-my-keel, wildedruif; isaqoni, umnxeba, ulatile, uchithibhunga; isinwazi, umthwazi; lumbu; morara-oo-thaba; murumbula-mbudzana	Vitaceae
<i>Cyphostemma cirrhosum</i> (Thunb.) Desc. ex Wild & R. B. Drumm.	Droog-my-keel, Wildedruif, Wildedruwe	Vitaceae
<i>Rhoicissus digitata</i> (L. f.) Gilg & M. Brandt	n/a	Vitaceae
<i>Rhoicissus tomentosa</i> (Lam.) Wild & R. B. Drumm.	wild grape, bush grape, African grape, forest Grape, monkey rope, wild vine; Bosdruif, Wildedruif, Bostou, Bobbejaantou, isaQoni, iDiliya, isiNwazi, Moaparo, isiNwati, Dyathoho, Makhulu-wa-khundwi	Vitaceae
<i>Roepera maritima</i> Sond.	n/a	Zygophyllaceae