# Terrestrial Biodiversity Compliance Statement

## Farm 12-746 24G Cape St Francis

Date: 09/07/2025
Version: Draft
Author: J. Pote

# Terrestrial Biodiversity Compliance Statement

## Farm 12-746 24G Cape St Francis

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Compiled for: **EcoRoute Environmental Consultancy**

Date of report: **09/07/2025**

## Draft Report



## Revisions

| Report/Revision Version | Date: | Approved by: |
|---|---|---|
| First Draft | 2025/07/09 | Jamie Pote |
| Revisions/Comments | | |
| Final Draft | | |
| IAP comments | | |
| Final Version | | |

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# 1 Introduction & Background

## 1.1 Background

The Eastern Cape Department of Economic Development and Environmental Affairs and Tourism (DEDEAT) issued a notice of intention to issue a compliance notice to the landowner (Soundprops 1246 cc) on 23 October and 26 October 2024. The notice was issued in terms of section 31L of the National Environmental Management Act, 1998 (Act 107 of 1998) as amended in respect of the commencement of activities on portion 12 of the Farm Ongegunde Vryheid No 746. Listed activities in terms of the 2014 Environmental Impact assessment (EIA) regulations, as amended, 2017 included in the notice dated 23 October 2024 are LN 1 (GNR 327): Activity 19A & LN 1 (GNR 327): Activity 54. Listed activities in terms of the 2014 EIA regulations, as amended, 2017 included in the notice dated 26 October 2024 are LN 1 (GNR 327): Activity 54 & LN 3 (GNR 324): Activity 5. None of these listed in the notice specifically pertain to terrestrial biodiversity but rather proximity to the sea and/or development of a hospitality facility.

The landowner (Soundprops 1246 cc) responded on 4 November 2024 to indicate that the intention is to apply to the DEDEAT for the regularization of unlawful commencement or continuation of listed activities in terms of Section 24G of the NEMA. Eco Route Environmental Consultancy was appointed to undertake the necessary environmental applications for proposed expansion of dwelling on Erf 1220, St Francis Bay, Kouga Local Municipality (Figure 1). As part of this process a terrestrial biodiversity and/or plant species assessment is required, hence this report.

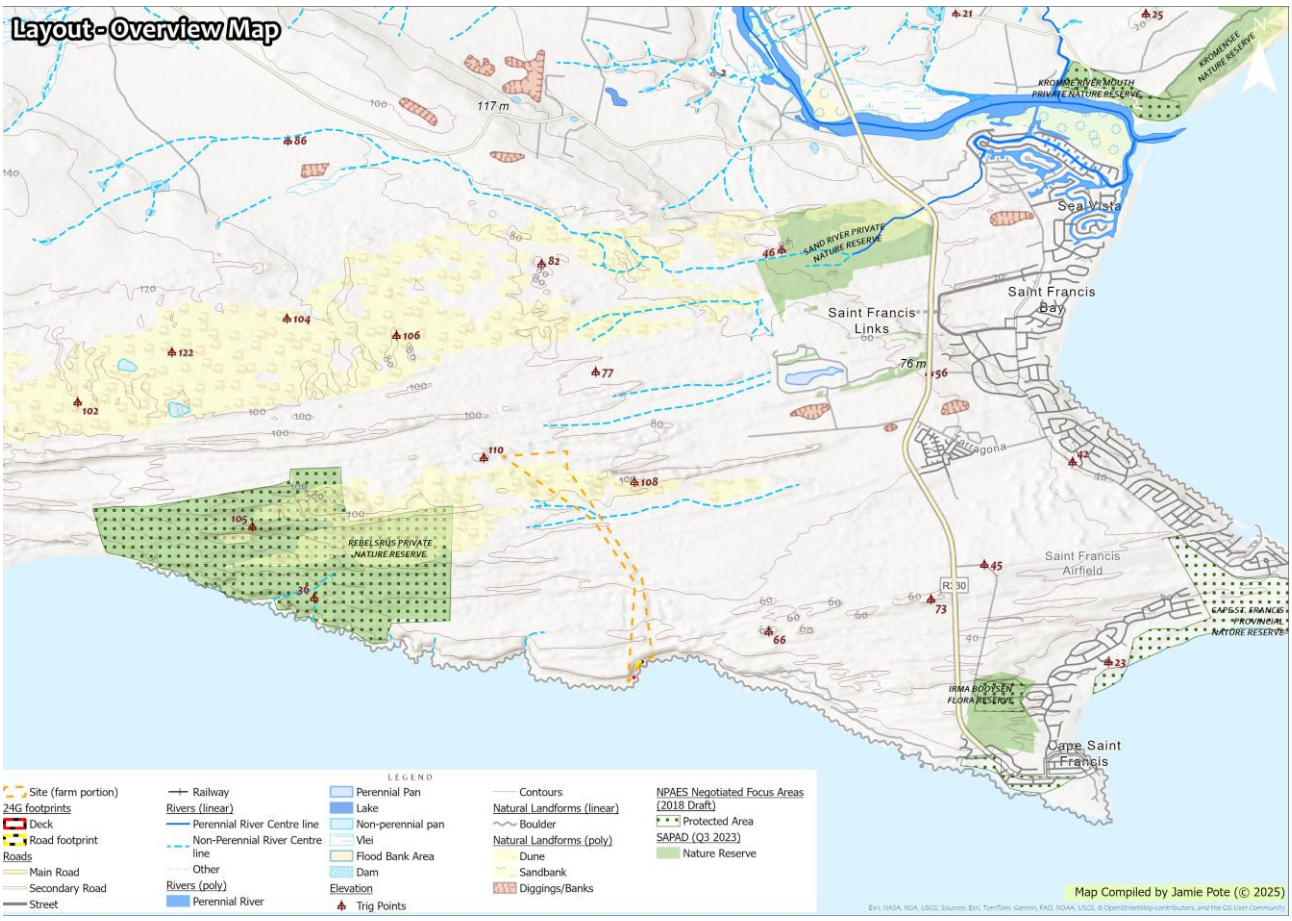


*Figure 1: Site locality.*

## 1.2 Activity Description

The property was purchased by the current landowner in 1993; two dwellings were in place at the time. Google Earth historical imagery (2005) shows two dwellings in place on the property. The southwestern dwelling has been used by the landowners as a private holiday residence; the north eastern dwelling consists of 5 rooms and an outside cottage; the 5 rooms can sleep 2 persons per room and have been rented to guests since ownership in 1993. The outside room is not rented. A maximum of 12 guests (10 adults; 2 children) have been permitted at the NE dwelling over the years. In about 2021 the owner refurbished and renovated the dwellings; the following activities took place:

- Rerouting of road (200m$^2$) behind the NE dwelling, renovation of dwelling, putting in place a deck with a plunge pool (140m$^2$) in the footprint of the old road
- Renovation of south western dwelling in the same development footprint.

The total development footprint of the two dwellings (inclusive of the existing dwellings footprint) and road is approximately 1600m$^2$. The site are both within 100m of the high-water mark and are situated on more or less on the convergence of the terrestrial and beach environments (Figure 2). The site is one of several small coastal dwellings that is situated within a larger undeveloped area and is approximately 3.2 km to the west of Cape St Francis.


*Figure 2: Site locality Aerial for proposed water infrastructure (blue).*

## 1.3 Purpose of Report

### 1.3.1 Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes

**This report is compiled according to the requirements for a Site Sensitivity Verification Report SSVR) for a Low Sensitivity site.**

The report is compiled to fulfil protocol requirement for a **Terrestrial Biodiversity Assessment** as per the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of NEMA (GNR 320), **as gazetted on 20 March 2020.** This report is undertaken as supporting information as part of a greater environmental application process and is compliant in terms of the requirements in the above regulations in terms of Terrestrial Biodiversity. In terms of the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of sections 24(5)(a) and (h) and 44 of NEMA, gazetted **on 30 October 2020**, relating to requirements relating specifically to the **Terrestrial Plant and Animal (species) themes**, this report includes these requirements.

The principles that guide this process include protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources which are fundamental to sustainable development.

### 1.3.2 Site visit

A site inspection was conducted on **03 April 2025**, late summer. The site falls within a bimodal summer/winter rainfall area, and for the purposes of this assessment and reporting, a single seasonal site visit is deemed to be adequate.

### 1.3.3 Assumptions, Uncertainties and Gaps in Knowledge

The findings and recommendations of this report may be susceptible to the following uncertainties and limitation:

- No assessment has been made of aquatic aspects relating to any wetlands, pans, and rivers/seeps and/or estuaries outside of the scope of a terrestrial biodiversity report. Refer to separate aquatic report.
- Any botanical surveys based upon a limited sampling time-period, may not reflect the actual species composition of the site due to seasonal variations in flowering times. Additionally, the composition of fire adapted vegetation may vary depending on level of maturity or time since last burn. As far as possible, site collected data has been supplemented with desktop and database-centred distribution data.

# 2 Policy

## 2.1 Legislation Framework

In terms of NEMA EIA Regulations (07 April 2014, as amended), the following is applicable[1]:

1 *The listed activities itemized are only those with Biodiversity relevance to this report and is not a complete list.*

- In terms of section 52 of NEMBA *(Activity (a)(i))*, the vegetation unit St Francis Dune Thicket, has a **Least Concern** status as per National Biodiversity Assessment (2022).
- In terms of the CBA classification (ECBCP 2019), the site does fall within a designated Critical Biodiversity Area, associated with the represented habitat.

**Listing Notice 1:**
Activity 15: The development of structures in the coastal public property where the development footprint is bigger than 50 square metres,

The proposed footprint will exceed 50m², but the site is outside the coastal public property.

Activity 17: Development—
(v) if no development setback exists, within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater;

in respect of—
(e) buildings of 50 square metres or more; or
(f) infrastructure with a development footprint of 50 square metres or more —

The site and footprint are within 100 m of the high-water mark. The site is not within an urban area.

Activity 18: The planting of vegetation or placing of any material on dunes or exposed sand surfaces of more than 10 square metres, within the littoral active zone, for the purpose of preventing the free movement of sand, erosion or accretion, excluding where —
(i) the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation undertaken in accordance with a maintenance management plan; or
(ii) such planting of vegetation or placing of material will occur behind a development setback.

The site would be considered to be adjacent to the littoral active zone () and is not within a sand dune system nor would it likely interfere with the free movement of sand above baseline levels pre construction.

Activity 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from—
(i) a watercourse.
(ii) the seashore.
(iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater—

The activity may exceed the excavation or infilling of more than 5 cubic meters and is situated within 100m of the high-water mark of the sea.

Activity 27: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—
(i) the undertaking of a linear activity; or
(ii) ~~maintenance purposes undertaken in accordance with a maintenance management plan.~~

The proposed activity will not exceed 1 Ha, nor will any indigenous vegetation clearing exceed 1 Ha.

**Listing Notice 2:**
None are applicable.

**Listing Notice 3:**

12. The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.
(a) Eastern Cape

i. Within critical biodiversity areas identified in bioregional plans.
ii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.

The activity is within a designated Critical Biodiversity Area and is within 100m of the high water mark of the sea but would be situated on the inland edge of the littoral active zone. While the structures in question do exceed 300m$^2$, it is unlikely that more than 300m$^2$of vegetation has been cleared, as the site was already disturbed and vegetation cover is sparse.

In terms of the EIA Listing Notices, no activity pertaining to the clearance of indigenous vegetation and/or dune vegetation are likely to have been triggered as the respective thresholds are not exceeded.

## 2.2 Systematic Planning Frameworks

A screening of Systematic Planning Framework for the region was undertaken (summarised in Table 1), that included the following features:

- National Environmental Screening Tool
- Critically Endangered, Endangered and Vulnerable Ecosystems
- Critical Biodiversity and Ecological Support Areas
- River, Estuarine and Wetland Freshwater Ecosystem Priority Areas (FEPAs) and buffers
- Protected Areas (and buffers) and National Protected Area Expansion Strategy areas (NPAES).
- Critical Habitat for listed endemic or protected species.

*Table 1: Summary of Regional Planning Biodiversity features.*

| FEATURE[2] | DESCRIPTION | IMPLICATIONS/COMMENT |
|---|---|---|
| National Environmental Screening Tool (Terrestrial Biodiversity) | Terrestrial Biodiversity<br>High & Medium Plant & Animal Species sensitivities<br>Aquatic Biodiversity | Very High<br>Several Plant & Animal Species are flagged for screening.<br>Low |
| National Vegetation Map (NVM, 2018) | St Francis Dune Thicket<br>Cape Seashore Vegetation | Least Concern<br>Least Concern |
| Critically Endangered and Endangered Ecosystems (NBA 2018) | None | N/A |
| Vulnerable Ecosystems (NBA) | None | N/A |
| Eastern Cape Biodiversity Conservation Plan (2019) | CBA 1 | N/A |
| Protected Areas (SAPAD) | None | N/A |
| NPAES | None | N/A |
| Strategic Water Source Areas (SWSA) | None | N/A |
| Freshwater Ecosystem Priority Areas (FEPA's) | None | N/A |
| Regional Hotspots & Regions of Endemism | None | N/A |

[2] Refer to Figure 7 to Figure 10.

| FEATURE[2] | DESCRIPTION | IMPLICATIONS/COMMENT |
|---|---|---|
| Important Bird Areas (IBA's) | None | N/A |
| Key Biodiversity Areas (KBA's) | None | N/A |
| Marine/Coastal areas | Site on inland side of littoral zone, within 100m of high water mark | N/A |
| RAMSAR sites | None | N/A |
| Within 32 m of Watercourse | None | N/A |
| Within 100 m of River | None | N/A |
| Estuary | None | |
| Within 500 m of Wetland | None | N/A |
| Forest | None | N/A |
| Surrounding Land Uses | Surrounding land primarily rural, with several small coastal dwellings in vicinity | Site and surrounding area is generally a natural near natural landscape, with Cape t Francis to the east. |
| Critical Habitat for listed endemic/ protected species | No specific populations of threatened species were identified within the footprint and the affected footprint is largely disturbed or comprised of secondary vegetation. There are several red listed species in the surrounding area and vegetation units that are known to have limited distributions; however, none were recorded within the footprint. | |

### 2.2.1 National Environmental Screening Tool

The DEA Screening Tool indicates the following, summarised in Table 1:

- Terrestrial Biodiversity is Very High (Figure 3).
- Plant species sensitivity is Low/Moderate (Figure 4).
- Animal Species sensitivity is Moderate/High (Figure 5).
- Aquatic Sensitivity is Very High (Figure 6).

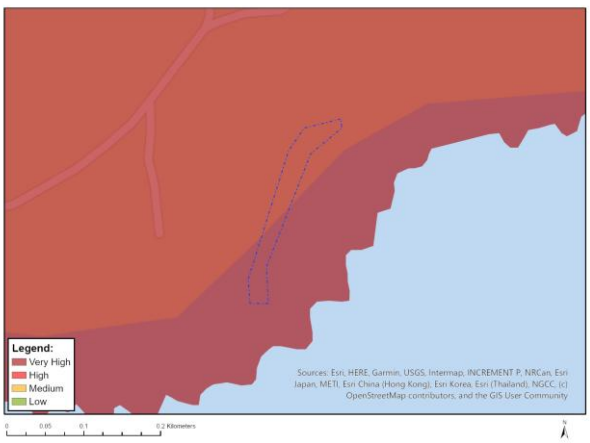


*Figure 3: Terrestrial Biodiversity Sensitivity*


*Figure 4: Plant Species Sensitivity*

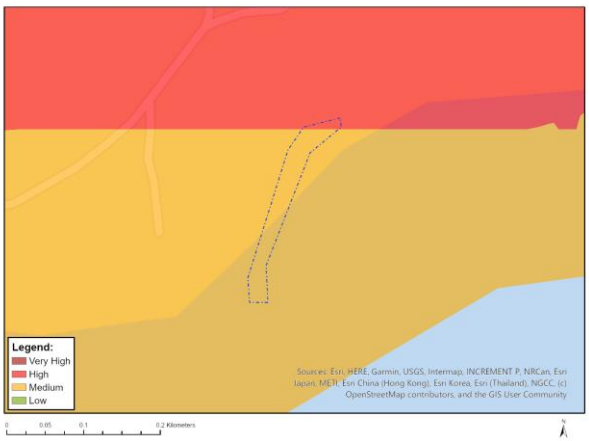


*Figure 5: Animal Species Sensitivity*

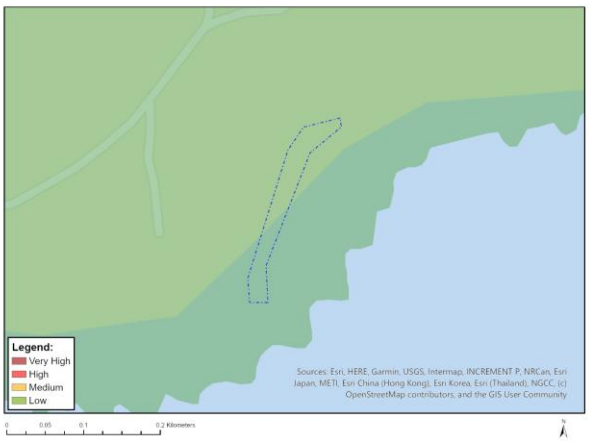


*Figure 6: Aquatic Sensitivity*

*Table 2: Summary of Screening tool designations.*

| **Terrestrial Sensitivity** | **Feature(s) in proximity** |
|---|---|
| Very High | CBA 1 |
| High | None |
| Medium | None |
| Low | Present |
| **Plant Sensitivity** | **Feature(s) in proximity** |
| Very High | None |
| High | None |
| Medium | *Aspalathus recurvispina, Hyobanche robusta, Erica chloroloma, Erica glandulosa subsp. fourcadei, Centella tridentata var. hermanniifolia, Rapanea gilliana, Syncarpha sordescens, Agathosma stenopetala, Cotyledon adscendens, Capeochloa cincta subsp. sericea, Erica glumiflora* & Sensitive species 308, 588, 657, 434, 1192, 1032, 78 & 448 |
| Low | Present |
| **Animal Sensitivity** | **Feature(s) in proximity** |
| Very High | None |
| High | *Circus maurus* (bird) |
| Medium | *Stephanoaetus coronatus* (bird) & *Aneuryphymus montanus* (invertebrate) |
| Low | None |
| **Aquatic Sensitivity** | **Feature(s) in proximity** |
| Very High | None |
| High | None |
| Medium | None |
| Low | Present |

The site has a low Screening Tool designated Terrestrial Biodiversity and Aquatic sensitivity, with Medium Plant and Animal sensitivities. The site verification will screen for the presence or likely presence of these species.

### 2.2.2 Vegetation of Southern Africa & Red Listed Ecosystems

The National Vegetation Type (NBA, 2022, Annexure A.2, Figure 7) indicated for the site and surrounding area is St Francis Dune Thicket, having a **Least Concern** status, as per National Biodiversity Assessment (2022). The site is situated on the shoreline, so does partly overlap with Cape Seashore Vegetation, also **Least Concern**, which is not reflected due to the scale of the National Vegetation Map.

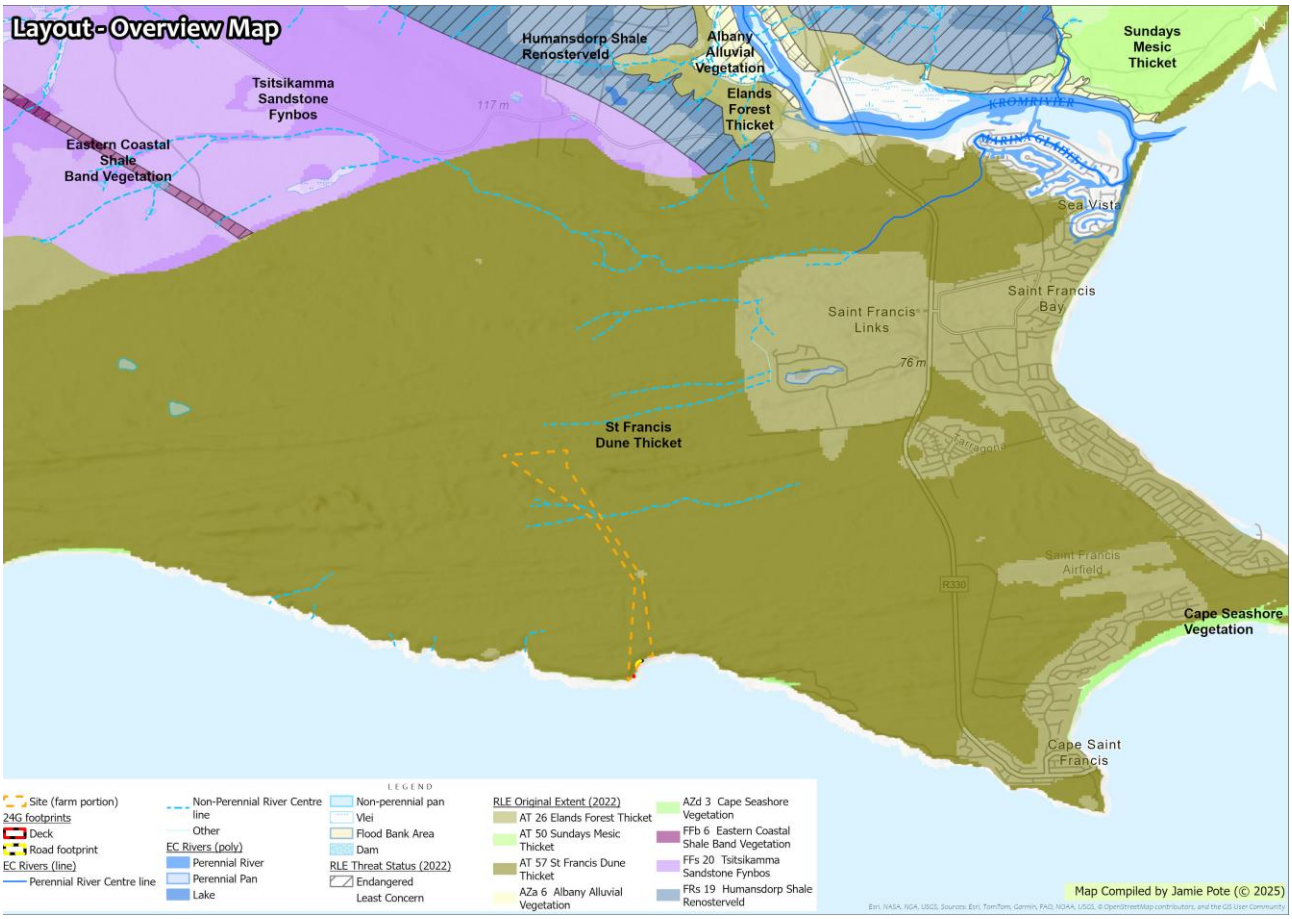


*Figure 7: National Biodiversity Assessment Vegetation Type and Conservation Status (NBA, 2018).*

The NBA/RLE (National Biodiversity Assessment and Red Listed Ecosystems) is the primary tool for monitoring and reporting on the state of biodiversity in South Africa and informs policies, strategic objectives, and activities for managing and conserving biodiversity more effectively. Ecosystem protection level is an indicator that tracks how well represented an ecosystem type is in the protected area network. It has been used as a headline indicator in national reporting in South Africa since 2005. The outcome of the most recent National Biodiversity Assessment or Red Listed Ecosystem Status (2022) indicate that both St Francis Dune Thicket and Cape Seashore Vegetation have a Least Concern conservation status (Table 1), which indicates that more than 60 % of the units remain, and that ecosystem functioning is not under imminent threat by loss of natural habitat.

## *St Francis Dune Thicket* (NBA, 2022)

Type history: STEP map - Algoa Dune Thicket (36 %), Colchester Strandveld (20 %), St. Francis Dune Thicket (38 %); 2012 VEGMAP – AZs 1 Algoa Dune Strandveld (88 %), FFd 11 Southern Cape Dune Fynbos (7 %))

**Distribution:** This thicket unit occurs in the Eastern Cape Province. In coastal stretches from near the Tsitsikamma River Mouth (west of Oyster Bay) eastward to the Sundays River Mouth.

**Vegetation & Landscape Features:** Flat to moderately undulating coastal dunes. A mosaic of low (1 - 3 m) thicket, occurring in small bush clumps dominated by small trees and woody shrubs, in a mosaic of low (1 - 2 m) asteraceous fynbos. Thicket clumps are best developed in fire-protected dune slacks, and the fynbos shrubland occurs on upper dune slopes and crests. The fynbos component in the vegetation diminishes from west to east, with *Portulacaria afra* occurring occasionally east of Port Elizabeth.

**Geology and Soils:** The vegetation type is largely restricted to the Schelm Hoek Formation. The main land types are Ha and Ia.

**Climate:** Non-seasonal rainfall dominates the region, with MAP between 397 mm and 868 mm. Frost is present for approximately 3 days per year. The mean monthly maximum is 25.21 °C in February and the mean monthly minimum is 8.31 °C in July. Altitude ranges from 0 - 221 masl.

**Important Taxa:** (d=dominant, e=South African endemic, et=possibly endemic to a vegetation type)

| Growth form | Species |
|---|---|
| **Small tree** | *Olea capensis, Pterocelastrus tricuspidatus* (d), *Sideroxylon inerme* (d), *Tarchonanthus littoralis* (d) |
| **Succulent shrub** | *Cotyledon adscendens, Carpobrotus acinaciformis* (e), *Cotyledon orbiculata* (e), *Crassula nudicaulis, Euphorbia mauritanica, Gasteria acinacifolia* (e), *Portulacaria afra, Zygophyllum morgsana*, *Aloe africana* (d) |
| **Low shrub** | *Coleonema pulchellum* (d), *Erica chloroloma,* (e), *Erica glumiflora* (d), *Erica zeyheriana* (e), *Eriocephalus africanus* var. *paniculatus* (e), *Felicia echinata* (e), *Morella cordifolia* (d), *Muraltia spinosa* (d), *Phylica ericoides* (d), *Syncarpha sordescens* (d) |
| **Graminoid** | *Andropogon eucomus, Cymbopogon pospischilii, Cynodon dactylon* (d), *Ehrharta calycina, Eustachys paspaloides, Digitaria eriantha, Pentasmeris heptameris, Pentameris pallida, Restio eleocharis* (d), *Stenotaphrum secundatum, Thamnochortus cinereus* (e), *Themeda triandra* (d), *Tristachya leucothrix, Imperata cylindrica* (d) |
| **Tall shrub** | *Azima tetracantha* (d), *Carissa bispinosa* (d), *Mystroxylon aethiopicum* subsp. *aethiopicum* (e), *Cassine peragua, Cussonia thyrsiflora* (d), *Euclea racemosa* (d), *Grewia occidentalis, Gymnosporia buxifolia, Gymnosporia capitata* (e), *Lycium cinereum, Lycium ferocissimum, Maytenus procumbens, Metalasia muricata* (d), *Olea exasperata* (d), *Osteospermum moniliferum* (d), *Passerina rigida* (d), *Putterlickia pyracantha* (d), *Robsonodendron maritimum* (e), *Searsia crenata* (d), *Searsia glauca* (e), *Searsia pterota* (e), ), *Rapanea gilliana* (d) |
| **Geophytic herb** | *Brunsvigia litoralis* (e) |
| **Herb** | *Pelargonium suburbanum* subsp. *suburbanum* (e), *Agathosma stenopetala* (e). *Aspalathus cliffortiifolia* ($e_t$), *Aspalathus recurvispina* ($e_t$), *Othonna rufibarbis* ($e_t$) |
| **Herbaceous climber** | *Cynanchum natalitium* (e), *Rhoicissus digitata, Solanum africanum* (e) |
| **Woody succulent climber** | *Cynanchum viminale* (e) |
| **Woody climber** | *Asparagus aethiopicus* |

*All taxonomic names are the latest names as they were listed in the Biodiversity Database of South Africa (BODATSA) on the 11 January 2019)

**Conservation:** Least Concern (NBA/RLE, 2022)

| | |
|---|---|
| **Conservation Target** | 19 % |
| **Conserved in** | Cape Recife Nature Reserve, Sardinia Bay Nature Reserve, Nelson Mandela Bay Metropolitan University Private Nature Reserve, Rebelsrus Private Nature Reserve |
| **Area transformed** | 14.13 % |
| **Threat activities** | Mining, alien invasions by *Acacia cyclops*, urban sprawl, erosion low |
| **Protection Level** | Poorly protected |

## *Cape Seashore Vegetation (AZd 3)*

Including *Didelta–Psoralea* Littoral-dune Open Grassland (Boucher & Jarman 1977). *Ehrharta–Ficinia* Strand Pioneers (Boucher 1978). *Tetragonia decumbens–Agropyron distichum* Fore-dune Community (O'Callaghan 1990a).

**Distribution:** Western Cape and Eastern Cape Provinces: Temperate coasts of the Atlantic Ocean (Olifants River mouth to Cape Agulhas) and Indian Ocean (Cape Agulhas to East London). According to Tinley (1985; see also Lubke et al. 1997), this stretch of coast comprises the South West and South Coasts.

**Vegetation & Landscape Features:** Beaches, coastal dunes, dune slacks and coastal cliffs of open grassy, herbaceous and to some extent also dwarf-shrubby (sometimes succulent) vegetation, often dominated by a single pioneer species. Various plant communities reflect the age of the substrate and natural disturbance regime (moving dunes), distance from the upper tidal mark and the exposure of dune slopes (leeward versus seaward).

**Geology, Soils & Hydrology:** Young coastal sandy sediments forming beaches and dunes (Strandveld Formation), exposed to reworking by relentless winds and frequent sea storms. Some stretches of the West Coast are covered by extensive shell beds.

**Climate:** The climate diagram for this unit (Figure 14.3) shows a largely uniform, all-year precipitation pattern, but this pattern must be interpreted with care since the unit encompasses regions of very diverse precipitation regimes. The West Coast (under influence of the Benguela Current) and the portion of the South Coast bordering on the Atlantic Ocean are characterised by cold seawater and frequent upwelling events. The local precipitation is low (as low as 100 mm in places) and typically seasonal (winter-rainfall peak). From Cape Agulhas westwards the coast is influenced by occasional eddies of the Agulhas Current, but the water stays generally cold. The precipitation becomes transitional, with a considerable increase of summer rainfall eastwards. MAP in Lambert's Bay, Cape Town, Plettenberg Bay and Port Elizabeth is 128 mm, 517 mm, 661 mm and 604 mm, respectively. The temperature varies less than precipitation (17–18°C for both Lambert's Bay and Port Elizabeth). See also climate diagram for this unit (Figure 14.3).

**Important Taxa** **Dunes & beaches:** Succulent Shrubs: *Drosanthemum candens* (d), *Pelargonium capitatum* (d), *Tetragonia decumbens* (d), *Didelta carnosa* var. *tomentosa*, *Exomis microphylla* var. *axyrioides*, *Lycium tetrandrum*, *Scaevola plumieri*. Low Shrubs: *Hebenstretia cordata* (d), *Frankenia repens*, *Oncosiphon sabulosum*. Semiparasitic Shrub: *Thesidium fragile*. Herbaceous Climbers: *Cynanchum ellipticum*, *C. obtusifolium*. Herbs: *Gazania rigens* (d), *Senecio littoreus* (d), *Amellus asteroides*, *Dasispermum suffruticosum*, *Manulea tomentosa*, *Polygonum maritimum*, *Senecio elegans*. Geophytic Herb: *Trachyandra divaricata*. Succulent Herbs: *Arctotheca populifolia* (d), *Carpobrotus acinaciformis*, *C. edulis*. Graminoids: *Cladoraphis cyperoides* (d), *Ehrharta villosa* var. *maxima* (d), *Sporobolus virginicus* (d), *Stipagrostis zeyheri* subsp. *barbata*. **Cliffs:** Succulent Shrubs: *Disphyma crassifolium* (d), *Sarcocornia littorea* (d). Herb: *Gazania rigens* (d).

**Endemic Taxa** **Dunes & beaches:** Low Shrub: *Psoralea repens* (d). Succulent Shrub: *Amphibolia laevis* (d). Herbs: *Amellus capensis*, *Gazania maritima*, *G. rigens* var. *leucolaena*, *Silene crassifolia*. Succulent Herbs: *Senecio litorosus*, *S. maritimus*. Graminoids: *Thinopyrum distichum* (d), *Eragrostis sabulosa*. **Dune slacks:** Herb: *Vellereophyton vellereum*. **Cliffs:** Succulent Shrubs: *Drosanthemum marinum* (d), *D. stokoei*, *Erepsia steytlerae*, *Prenia vanrensburgii*. Low Shrub: *Syncarpha sordescens*. Herbs: *Limonium* sp. nov. (*Mucina 6942/1* STEU), *Lobelia boivinii*.

*All taxonomic names are the latest names as they were listed in the Biodiversity Database of South Africa (BODATSA) on the 11 January 2019)

**Conservation:** Least Concern (NBA/RLE, 2022)

| | |
|---|---|
| **Conservation Target** | 19 % |
| **Conserved in** | Almost half of the area statutorily conserved in the West Coast, Cape Peninsula, Agulhas, proposed Garden Route and Greater Addo Elephant National Parks as well as the Rocher Pan, Cape Columbine, Dassen Island, Wolvengat, Kleinmond, Walker Bay, De Mond (Ramsar site), De Hoop, Kleinjongensfontein, Geelkrans, Robberg, (all Western Cape), and Cape St Francis, Cape Recife, Joan Muir, Gxulu, Cape Henderson, Kwelera and Bosbokstrand Nature Reserves (all Eastern Cape). A number of private conservation areas such as Donkin Bay, Robben Island, Rein's Coastal Reserve and Tharfield Nature Reserve protect other considerable portions of the Cape Seashore Vegetation. |

| | |
|---|---|
| **Area transformed** | 1.7 % |
| **Threat activities** | Urban development, erosion low to moderate (dunes) |
| **Protection Level** | Poorly protected |

**Remark** Extensive dunefields are found at De Hoop, Cape St Francis, Gamtoos, Alexandria and Boknes along this coastal stretch (Tinley 1985, Young 1987, Talbot & Bate 1991).

**References** *Muir (1929), Dyer (1937), Martin & Noel (1960), Comins (1962), Boucher (1972, 1977, 1978, 1986, 1987, 1989, 1992, 1993, 1994, 1995, 1997, 1998a, b, c, e, 1999a–e), Heydorn (1975), Boucher & Jarman (1977), Boucher & Le Roux (1981), Taylor & Morris (1981), Van Rooyen (1981), Lubke & Avis (1982a, b, 1988, 2000), Lubke (1983), Boucher et al. (1986), La Cock (1986), McLachlan et al. (1987), Young (1987), Avis (1989, 1992, 1995), Lubke & De Villiers (1991), Parker-Nance et al. (1991), Talbot & Bate (1991), Bate & Dobkins (1992), Turner (1992), Boucher & Le Roux (1993), Taylor & Boucher (1993), Boucher & Rode (1995a, b, 1999), Britton & Jackelman (1995), Lubke et al. (1995, 1997), Gray (1997), Hertling (1997), Hertling & Lubke (1999a, b), Hesp & McLachlan (2000), Hoare et al. (2000), Ripley (2001), Barker et al. (2002).*

## 2.2.3 Eastern Cape Biodiversity Conservation Plan (ECBCP, 2019) – Terrestrial

The Eastern Cape Biodiversity Conservation Plan – Terrestrial (2019, Figure 8) indicates the site falling within a designated CBA area.

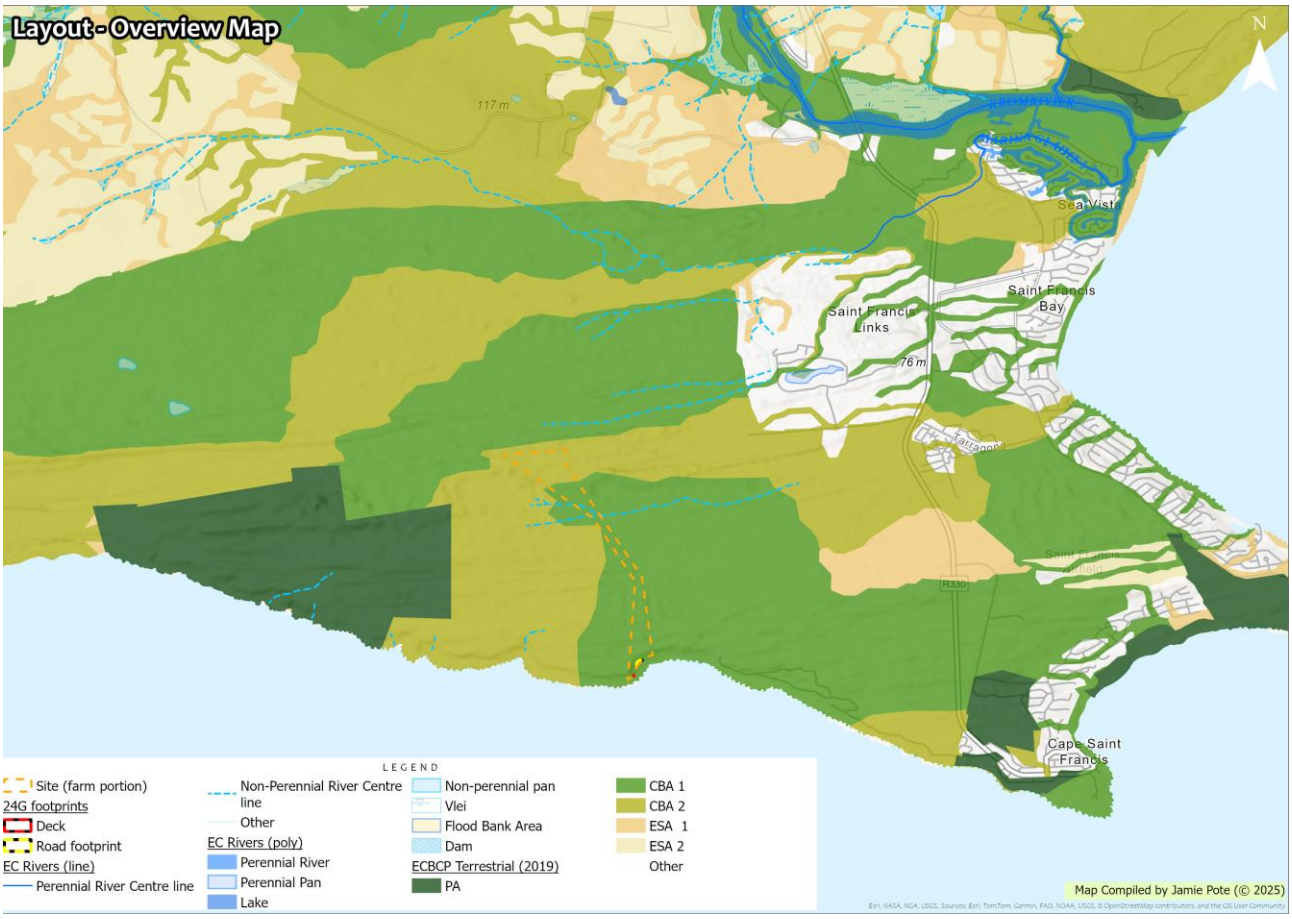


*Figure 8: Eastern Cape Biodiversity Conservation Plan (ECBCP, 2019) – Terrestrial.*

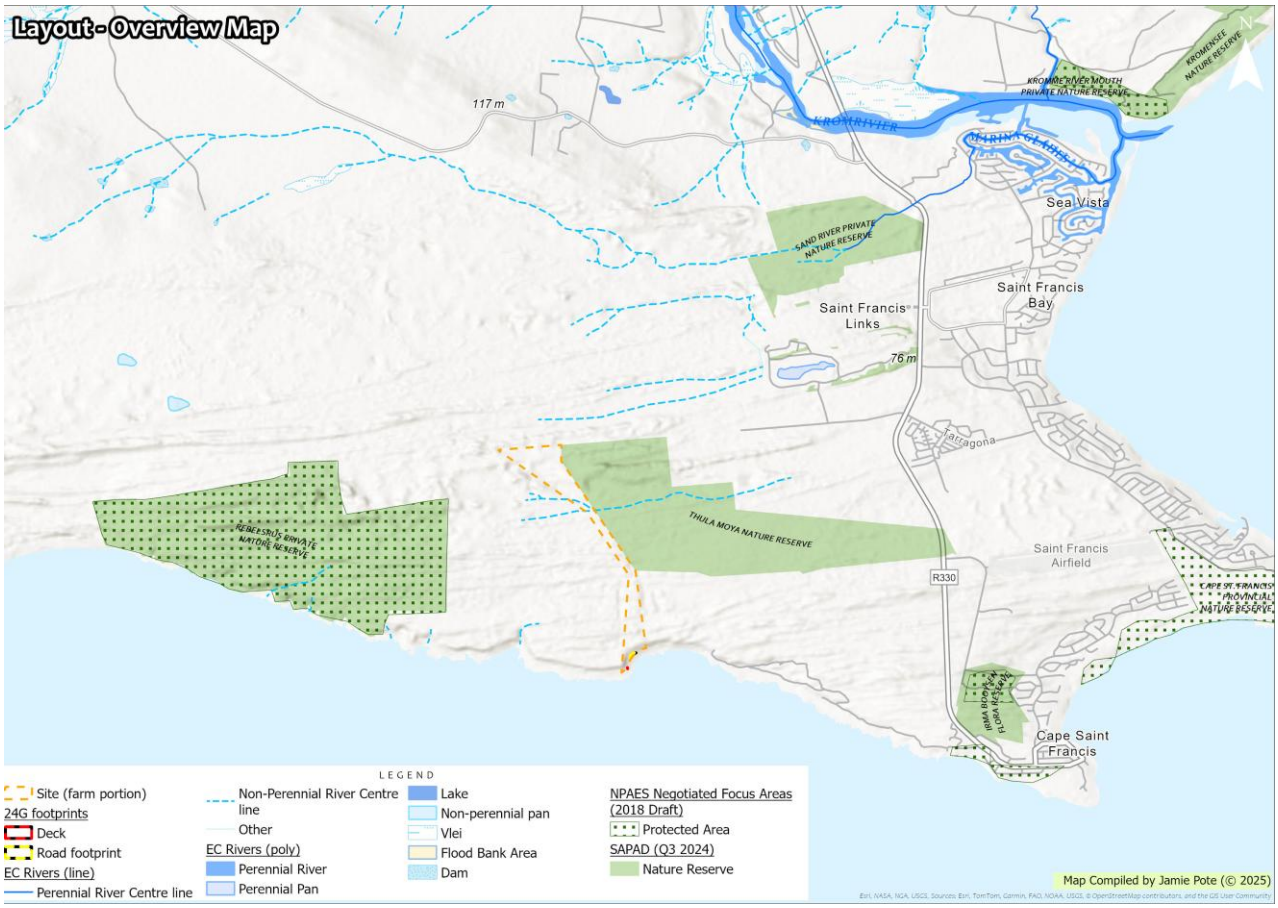


*Figure 9: Protected Areas.*

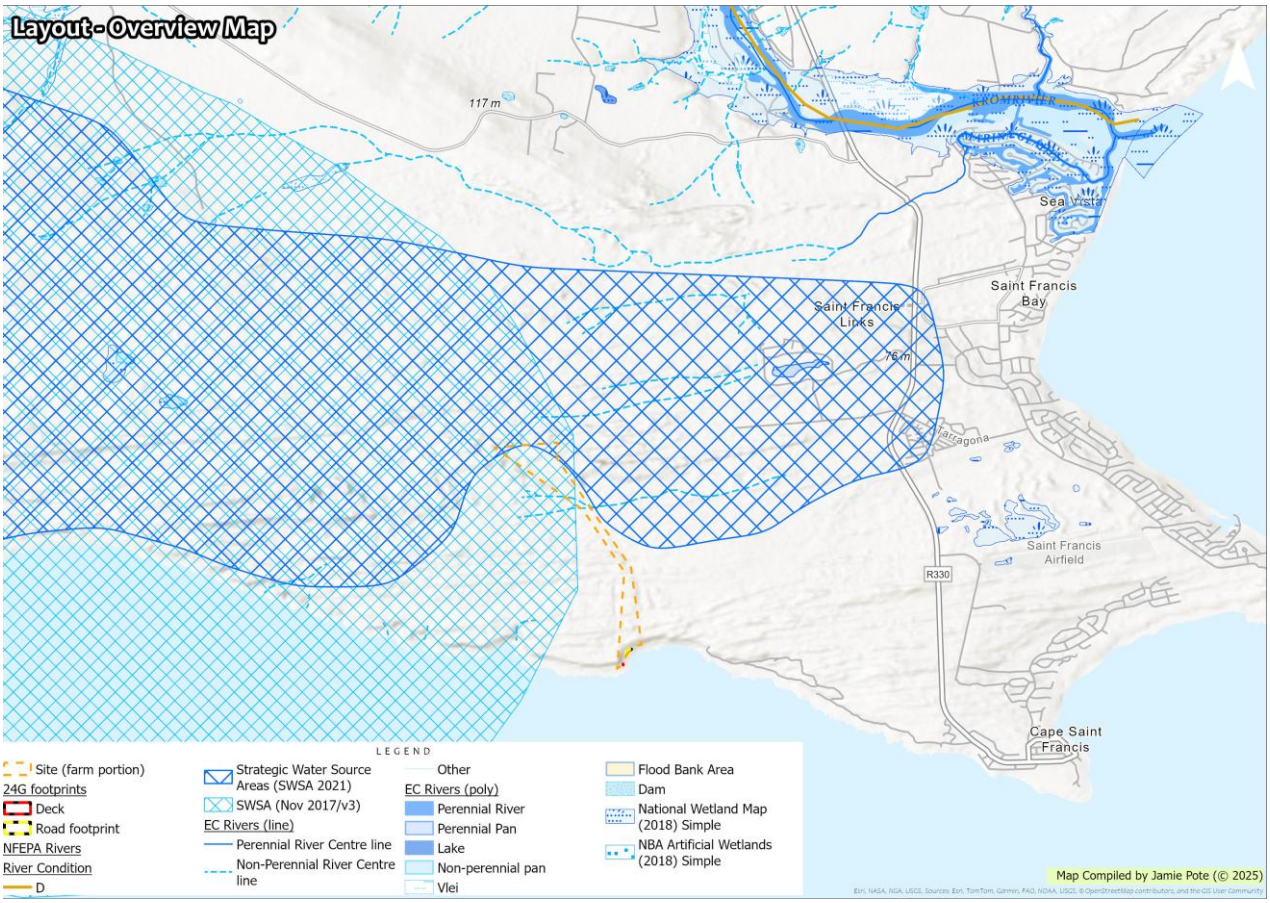


*Figure 10: Rivers. Wetlands and Estuaries.*

### 2.2.4 Protected areas

The site does not overlap with any designated Protected Area, NPAES designated area, Important Bird Area (IBA) and/or any associated buffers (Figure 9)The northern portion of the farm is on the western boundary of the Thula Moya Nature Reserve, but the actual site being assessed is at the southern end of the farm portion. The activity is thus unlikely to have any direct or indirect impact on any protected area. Several local nature reserves in the area represent the vegetation unit including the Rebelsrus Private Nature Reserve, Cape Recife Nature Reserve, Irma Booysen Flora Reserve, Sand River Private Nature Reserve & Kromme River Nature Reserve.

### 2.2.5 Rivers and Wetlands

The site is outside of any designated aquatic CBA or ESA areas, NFEPA or SWSA areas, nor in proximity to any watercourses or wetlands.

# 3 Biodiversity Risk Identification and Assessment

## 3.1 Baseline Biodiversity Description

The site under assessment is located on a farm portion, approximately 3.2 km ot he west of Cape St Francis. The site is one of several coastal dwellings within an undeveloped landscape. Access to the site is via an unpaved track/road from the north-east, which serves several of the dwellings in the surrounding area.


*Figure 11: Vegetation/Sensitivity of the site.*

The two dwellings being investigated are situated within a footprint where natural vegetation was cleared historically in order to construct the dwellings un question (*Figure 12* to *Figure 21*). The remainder of the farm portion is undeveloped and in a natural/near natural state St Francis Dune Thicket, comprising a mozaic of both thicket and fynbos elements, within some alien invasion (Rooikrantz). The remainder of the site is not directly affected by the activity and will thus not be considered further in detail. The site is situated on the edge of a transitional zone between the St Francis Dune Thicket and the littoral/seashore vegetation. The site is also located within a stretch of rocky shore, with vegetated palaeodunes on the inland side and adjacent to a small sandy beach within the broader stretch of rocky shore. While the alterations associated with the activity and dwelling has resulted in some clearing of natural vegetation elements, it is highly unlikely that more than 300m$^2$ of natural vegetation was cleared The remnant elements are significantly less than the minimum trigger area for clearance of indigenous vegetation (i.e. 300m$^2$) and development of the site, including removal of any remnant or indigenous vegetation will thus not trigger ant vegetation related listed activities. The site is bounded on the east side by a naturally vegetated east facing slope elevated above the seashore as well as on the south-eastern side. The north and south-western sides are bounded by developed erven and a surfaced road. The proposed expansions are all situated within lawn areas of the Erf.

*Figure 12: Front deck on edge of historically disturbed access road footprint*

*Figure 13: Front deck on edge of historically disturbed access road footprint*

*Figure 14: Front deck on edge of historically disturbed access road footprint.*

*Figure 15: Front deck on edge of historically disturbed access road footprint.*

*Figure 16: Rear access road within historically disturbed cut and fill area.*

*Figure 17: Rear access road within historically disturbed cut and fill area.*

*Figure 18: Rear access road within historically disturbed cut and fill area.*

*Figure 19: Typically weedy secondary thicket vegetation.*

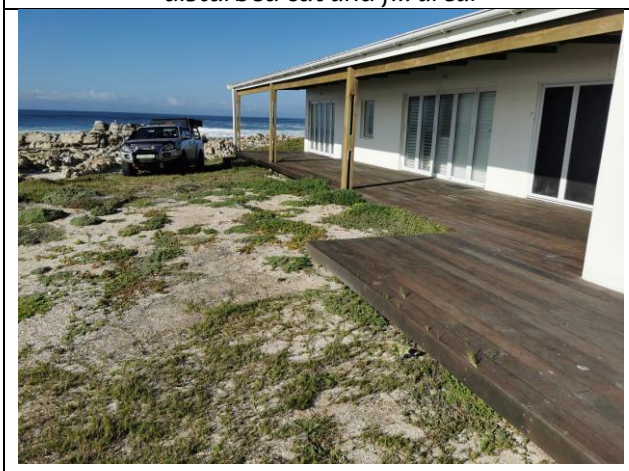

*Figure 20: Front deck on edge of historically disturbed western dwelling.*

*Figure 21: Front deck on edge of historically disturbed western dwelling.*

The proposed expansion will not have any impact on any indigenous vegetation as it will be within a transformed erf and the specific extension occurs on a lawn. Any indigenous remnant or indigenous landscaped garden elements within the erf in any event constitute less than 300m$^2$ of vegetation, hence the removal thereof will not exceed triggering thresholds for listed activities pertaining to indigenous vegetation clearing.

### 3.1.1 Present Ecological State

The site footprint is entirely transformed but is surrounded by natural/near natural vegetation. The entire activity has taken place within an area that was previously disturbed surrounding the historical seaside dwelling. The eastern deck on the eastern dwelling is situated what was previously the access road as well as the disturbed area around the house, which would have been significantly disturbed with only a few secondary and remnant tufts of *Drosanthemum candens, Tetragonia decumbens*, *Lycium tetrandrum, Gazania rigens*, *Arctotheca populifolia*, *Carpobrotus edulis, Sporobolus virginicus, Cynodon dactylon and Gazania rigens*, which are common in the surrounding undisturbed areas. The new access route has been diverted behind the dwelling and appears to be across a previously cut and fill area at the rear of the dwelling which most likely consisted of secondary thicket vegetation elements including *Pterocelastrus tricuspidatus, Tarchonanthus littoralis, Zygophyllum morgsana, Cynodon dactylon, Lycium cinereum, Osteospermum moniliferum* & *Searsia glauca*, which would have regenerated in the fill area after construction of the dwelling historically. It is not likely that any original natural vegetation of significance was cleared, as the area behind the dwelling is clearly historically disturbed. The deck on the western dwelling was likely constructed over a previous disturbed area that is not likely to have had any natural vegetation other than perhaps a few weed tufts.

### 3.1.2 Flora & Fauna

No endemic and range restricted species were recorded to be present. Several species are known from the surrounding area but were not recorded on within the affected site footprint or likely affected by the proposed activity.

#### ***Red Listed, Endemic and Protected Flora***

The site falls within the general distribution range of several endemic species and other species with a highly localised distribution, some of which are Critically Endangered, Endangered, Vulnerable or Rare. Some of these species are also only from a single or a few populations. As per Table 3, no Endangered or Critically Endangered flora species were confirmed to be present.

*Table 3: Flora Species of Special Concern*

| SCIENTIFIC NAME | STATUS[3] | COMMENT/PRESENCE |
|---|---|---|
| *Agathosma stenopetala* | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |
| *Aspalathus recurvispina* | NEST (M), CR | Somewhat widespread distribution. Not recorded on site. Landscaped road verges do not provide suitable habitat for this species. |
| *Capeochloa cincta subsp. sericea* | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |
| *Centella tridentata var. hermanniifolia* | NEST (M), Rare | Somewhat widespread distribution. Not recorded on site. |
| *Cotyledon adscendens* | NEST (M), En | Somewhat widespread distribution. Not recorded on site. |
| *Erica chloroloma* | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |
| *Erica glandulosa subsp. fourcadei* | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |
| *Erica glumiflora* | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |

3 **PNCO -** Provincial Nature Conservation Ordinance (1974); **NFA** - National Forests Act of (1998); ToPS – Threatened or Protected Species; **IUCN:** CR - Critically - Endangered, En - Endangered, Vu - Vulnerable; LC - Least Concern.

| SCIENTIFIC NAME | STATUS[3] | COMMENT/PRESENCE |
|---|---|---|
| *Hyobanche robusta* | NEST (M), En | Somewhat widespread distribution. Not recorded on site. |
| *Rapanea gilliana* | NEST (M), En | Somewhat widespread coastal distribution. Not recorded on site. |
| Sensitive species 1032 | NEST (M), Vu | Somewhat widespread distribution including a population around St Francis. Not recorded on site but found in surrounding area. Landscaped road verges do not provide suitable habitat for this species. |
| Sensitive species 1192 | NEST (H, M), Vu | Localised distribution Port Elizabeth extending to Thyspunt, often in coastal dunes. Not recorded on site but found in surrounding area. Landscaped road verges do not provide suitable habitat for this species. |
| Sensitive species 308 | NEST (M), Vu | Localised distribution Natures Valley to Storms River. Not recorded on site. Suitable habitat not present. |
| Sensitive species 434 | | Somewhat widespread distribution. Not recorded on site. |
| Sensitive species 448 | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |
| Sensitive species 588 | NEST (M), Vu | Somewhat widespread distribution. Not recorded on site. |
| Sensitive species 657 | NEST (M), EN | Somewhat widespread distribution. Not recorded on site. |
| Sensitive species 78 | NEST (M), Vu | Localised distribution Port Elizabeth extending to Cape St Francis. Not recorded on site. |
| *Sideroxylon inerme* | NFA | Present in the surrounding thicket vegetation. None present in close proximity and not likely that any were removed during the activity. NFA permits would be required to prune, trim or remove. Species is common locally and not under threat. |
| *Syncarpha (Achyranthemum) sordescens* | NEST (M), Vu | Localised distribution Seaview to Port Alfred Thyspunt. Not recorded on site. |

PNCO (Provincial Nature Conservation Ordinance) permits are unlikely to be required, however NFA (National Forests Act) permits would be required should any of the small Milkwood trees (*Sideroxylon inerme*) require removal at any stage. No such species are likely to have been affected by the activity.

## Red Listed and Protected Fauna

As per Table 4, no Endangered or Critically fauna species were found to be present nor are known to be present in close proximity to the affected area or are likely to be directly affected by the proposed activity. The site falls within the general distribution range of a single faunal SCC as indicated in Table 4 below, however none are confirmed to be present. Since the project footprint is relatively small, is situated directly adjacent to urban and disturbed areas and also surrounded by extensive outlying areas of natural habitat, any disturbance or displacement associated with increased activity or habitat destruction as a direct result of the activity is unlikely to pose a significant negative impact faunal species and in particular the species of special concern.

*Table 4: Fauna Species of Special Concern (SCC)*

| SCIENTIFIC NAME | COMMON NAME | STATUS[4] | COMMENT/PRESENCE |
|---|---|---|---|
| **Mammals** | | | |
| None | | | |
| **Birds** | | | |
| *Circus maurus* | Black harrier | NEST (H) | Unlikely to be affected by the proposed activity as the scale of activity around |

4 **PNCO** - Provincial Nature Conservation Ordinance (1974); ToPS – Threatened or Protected Species

| SCIENTIFIC NAME | COMMON NAME | STATUS[4] | COMMENT/PRESENCE |
|---|---|---|---|
| *Stephanoaetus coronatus* | Crowned Eagle | NEST (M) | existing dwellings and access tracks will not pose any risk to the species which generally have extensive foraging habitat and no suitable nesting sites in proximity. |
| **Reptiles** | | | |
| None | | | |
| **Amphibians** | | | |
| *None* | | | |
| **Invertebrates** | | | |
| *Aneuryphymus montanus* | Yellow-winged Agile Grasshopper | VU, NEST (M) | Unlikely to be affected by the proposed activity as outside of known range and suitable vegetation is not present. |

No fauna PNCO permits are anticipated to be required.

## *Alien Invasive Species*

On 18 September 2020, the Minister of Environmental Affairs published the Alien and Invasive Species Regulations ("the Regulations") which came into effect on the 18 October 2020 in a bid to curb the negative effects of IAPs. The Regulations call on landowners and sellers of land alike to assist the Department of Environmental Affairs to conserve our indigenous fauna and flora and to foster sustainable use of our land. Non-adherence to the Regulations by a landowner or a seller of land can result in a criminal offence punishable by a fine of up to R 5 million (R 10 million in case of a second offence) and/or a period of imprisonment of up to 10 years.

Category 1a and 1b listed invasive species must be controlled and eradicated. Category 2 plants may only be grown if a permit is obtained, and the property owner ensures that the invasive species do not spread beyond his or her property. The growing of Category 3 species is subject to various exemptions and prohibitions. Some invasive plants are categorised differently in different provinces. *For example*: the Spanish Broom plant is categorised as a category 1b (harmful) invasive plant in Eastern Cape and Western Cape, but it is a category 3 (less harmful) invasive plant in the other seven provinces.

Invasive alien plants have a significant negative impact on the environment by causing direct habitat destruction, increasing the risk and intensity of wildfires, and reducing surface and sub-surface water. Landowners are under legal obligation to control alien plants occurring on their properties. Alien Invasive Plants require removal according to the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and the National Environmental Management: Biodiversity Act (10 of 2004; NEMBA): Alien and Invasive Species Lists (GN R598 and GN R599 of 2014). Alien control programs are long-term management projects and a clearing plan, which includes follow up actions for rehabilitation of the cleared area, is essential. This will save time, money, and significant effort. Collective management and planning with neighbours allow for more cost-effective clearing and maintenance considering aliens seeds as easily dispersed across boundaries by wind or water courses. All clearing actions should be monitored and documented to keep track of which areas are due for follow-up clearing. A general rule of thumb is to first target lightly infested areas before tackling densely invaded areas and prioritize sensitive areas such as riverbanks and wetlands. Alien grasses are among the worst invaders in lowland ecosystems adjacent to farms but are often the most difficult to detect and control.

*Acacia cyclops* (Rooikrantz) is known to proliferate in the area and was historically introduced to stabilise the mobile dune field that is situated to the north of the site. This species has not proliferated in the area directly adjacent to the site footprint but is common in the wider surrounding area where it is present as localised dense clumps as well as scattered trees.

### 3.1.3 Terrestrial Vegetation Sensitivity Assessment

An overall vulnerability assessment of proposed activity, incorporating key vegetation and ecological indicators was undertaken and includes the following key criteria:

- relative levels of *intactness* in terms of overall loss of indigenous vegetation cover.
- presence, diversity, and abundance of *species of special concern* (weighted in favour of local endemic species).
- extent of *invasion* (severity and overall ecological impact), as well as the degree to which successful rehabilitation could take place.
- overall degradation incorporating above factors.
- relative importance of the vegetation communities relative to regional conservation status - indicated as vulnerability of the area because of loss.

#### *Intactness*

Three basic classes are differentiated as follows:

- **Low**: > 75 % of original vegetation has been removed or lost; and/or no species of special concern present that are critically endangered, endangered, or endemic with highly localised distribution.
- **Moderate**: 25 - 75 % of original vegetation has been removed/lost; and or presence of species of special concern but not having high conservation status or high levels of endemicity or highly localised distributions.
- **High**: < 25 % of original vegetation has been removed or lost; and or presence of species with a highly endemicity and or high conservation status (endangered or critically endangered).

Intactness for the site and footprint is **Very Low**. Intactness for the broader site outside of the footprint is Moderate to High.

#### *Alien Invasion*

Three classes are differentiated as follows:

- **Low**: no or few scattered individuals.
- **Moderate**: individual clumps of invasives present but cover less than 50% or original area.
- **High**: dense, impenetrable stands of invasives present, or cover > 50 % of area with substantial loss functioning. Rehabilitation will most likely require specialised techniques over an extended period (> 5 years).

Invasion for the site and footprint is **Low**. Invasion for the broader site outside of the footprint is Low to High (localised dense clumps and scattered trees).

#### *Degradation*

Overall Degradation is determined from the above alien invasion and intactness scores, according to the following matrix:

| INTACTNESS | INVASION | | |
|---|---|---|---|
| | LOW | MODERATE | HIGH |
| High | Pristine | Near Pristine | Moderately Degraded |
| Moderate | Near Pristine | Moderately Degraded | Severely Degraded |
| Low | Moderately Degraded | Severely Degraded | Transformed |

Degradation for the site footprint is **High** (Transformed). Degradation for the broader is Low to near pristine and pristine.

### *Overall Sensitivity*

Overall vulnerability (or Sensitivity) of the vegetation within the site is calculated according to the following matrix which combines degradation and overall conservation status of the vegetation units of the site.

| DEGRADATION | CONSERVATION STATUS | | | |
|---|---|---|---|---|
| | LEAST THREATENED | VULNERABLE | ENDANGERED | CRITICALLY ENDANGERED |
| Severely degraded/ Transformed | **Very Low** | Low | Moderate | Moderate - High |
| Moderately degraded | **Low** | Moderate | High | High |
| Ecologically Pristine or near Pristine | **Moderate** | Moderate - High | High | Very High (No-Go area) |

### *Habitat Sensitivity*

The entire site footprint has a low sensitivity. The unaffected area surrounding the site footprint would be designated a Moderate to High sensitivity but is not affected by the activity. .

#### 3.1.4 No-Go Areas

No-go areas are not identified but no further mechanical clearing of natural vegetation should occur on the vegetated dune behind the dwelling or within the littoral active zone.

## 3.2 Risks and Potential Impacts to Biodiversity

### 3.2.1 Potential Terrestrial Biodiversity Impacts (Direct)

No direct impacts are anticipated pertaining to terrestrial biodiversity due to the existing transformation of the site above pre-existing baseline levels.

### 3.2.2 Potential Terrestrial Biodiversity Impacts (Indirect)

No indirect impacts are anticipated pertaining to terrestrial biodiversity due to the existing transformation of the site.

### 3.2.3 Potential Terrestrial Biodiversity Impacts (Cumulative)

No cumulative impacts are anticipated pertaining to terrestrial biodiversity due to the existing transformation of the site.

### 3.2.4 Terrestrial Biodiversity Impact Reversibility

In general, most impacts will have a low reversibility in the affected habitat, due to the existing historical impacts.

### 3.2.5 Impacts and Risks to Irreplaceable Biodiversity Resources

Risks to Irreplaceable Biodiversity Resources is low to very low.

### 3.2.6 Residual Risks and Uncertainties

No residual risks or uncertainties are anticipated.

## 3.3 Findings, Outcomes and Recommendations

- The vegetation within the site footprint was likely disturbed with a few secondary or remnant Dune Thicket elements behind the eastern dwelling and cape seashore vegetation elements in front of

both dwellings. These elements are not present in any ecologically functioning way but comprised of a few tufts of remnant indigenous and weed elements, that are likely secondary elements, as the area surrounding the dwellings will have been subject to vehicular and foot traffic historically.
- No Sensitive plant or Animal species identified as per the National Environmental Screening Tool were found to be present or likely to have been affected.
- CBA 1 does overlap with the site, but the activity was unlikely to have resulted in any significant loss of natural vegetation.
- The entire site is considered to have a LOW Sensitivity due to the historical disturbed and transformed nature.
- No No-go areas are identified within the affected site footprint, but the remaining natural vegetation on the reminder of the property (excluding densely invaded areas) would be considered to have an elevated sensitivity.
- No direct, indirect or cumulative impacts to terrestrial biodiversity are anticipated to have occurred.
- The proposed activity is unlikely to pose any risk to natural ecological processes, vegetarian or plant and animal species of conservation concern.
- No flora or fauna relocation is anticipated to be required.
- No PNCO (Provincial Nature Conservation Ordinance) permits are likely to be required.
- Several Milkwood trees are present in the broader area, but it is not likely that such trees were significantly disturbed above baseline levels.
- The Site Sensitivity Verification disputes the terrestrial biodiversity very high sensitivity, as the footprint is within an existing disturbed area (dwelling and road). The specialist thus designates a low terrestrial biodiversity sensitivity fort the affected footprint.
- The Site Sensitivity Verification disputes the flagged medium flora ('plant') species designations, the specialist assigning a low plant species sensitivity.
- The Site Sensitivity Verification disputes the flagged medium fauna ('animal') species designations, the specialist assigning a low animal species sensitivity.
- The Site Sensitivity Verification confirms the screening tool low aquatic sensitivity designation.
- No monitoring is anticipated to be required pertaining to terrestrial biodiversity aspects for construction and operational phases.

## 3.4 Open Space Management/Conservation Plan

None are applicable for this project.

## 3.5 Maintenance Management Plan

Ongoing maintenance is likely to be required in the long-term, which could include re-excavation of portions of the site for maintenance. All measures of this report, including should be adhered for any maintenance requirements.

# 4 Stakeholder Engagement

Possible Stakeholders relating to Biodiversity could include the following key groups:

- Neighbouring Property Owners
- Local Regional and National Conservation Authorities

No Stakeholder Engagement was conducted specifically by the Specialist. Stakeholder Engagement will be undertaken by the EAP as part of the environment application public participatory process. Any comments raised relating to Biodiversity will be addressed by the specialist in the final report.

# 5 Appendices

## 5.1 Appendix A: References

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Web Databases


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- Global Biodiversity Information Facility (GBIF): http://gbif.org
- International Union for Conservation of Nature (IUCN) Redlist: http://iucnredlist.org
- Millennium Ecosystem Assessment (MEA). 2005: https://www.millenniumassessment.org
- Plants of Southern Africa: http://newposa.sanbi.org
- South African National Biodiversity Institute (SANBI) Redlist: http://redlist.sanbi.org
- South African Bird Atlas Project: http://sabap2.birdmap.africa
- United Nations Environment Programme (UNEP), *A to Z Areas of Biodiversity Importance:* http://www.biodiversitya-z.org
- United Nations Environment Programme (UNEP), *World Database on Protected Areas*, Protected Planet: http://www.protectedplanet.net
- World Resources Institute (WRI): https://www.wri.org

## 5.2 Appendix B: Abbreviations & Glossary

### 5.2.1 Abbreviations

| | |
|---|---|
| CARA | Conservation of Agricultural Resources Act, Act 43 of 1983 |
| CBA | Critical Biodiversity Area |
| DEA | Department of Environmental Affairs (*now DFFE, see below*) |
| DEDEAT | Department of Economic Development, Environmental Affairs and Tourism |
| DFFE | The Department of Environmental Affairs was renamed the Department of Forestry, Fisheries & the Environment (DFFE) in April 2021, incorporating the forestry and fisheries functions from the previous Department of Agriculture, Forestry and Fisheries. |
| DEMC | Desired Ecological Management Class |
| DWS | Department of Water Affairs and Sanitation |
| DWAF | Department of Water Affairs and Forestry (former department name) |
| EA | Environmental Authorisation |
| ECO | Environmental Control Officer |
| EIA | Environmental Impact Assessment |
| EIR | Environmental Impact Report |
| EMC | Ecological Management Class |
| EMP | Environmental Management Plan |
| EMPr | Environmental Management Programme report |
| ER | Environmental Representative |
| ESS | Ecosystem Services |
| IAP's | Interested and Affected Parties |
| IEM | Integrated Environmental Management |
| LM | Local Municipality |
| masl | meters above sea level |
| NBA | National Biodiversity Assessment |
| NEMA | National Environmental Management Act, Act 107 of 1998 |
| NFA | National Forests Act |
| NEM:BA | National Environmental Management: Biodiversity Act 10 of 2004 |
| NFA | National Forest Act, Act 84 of 1998 |
| PEMC | Present Ecological Management Class |
| PES | Present Ecological State |
| PNCO | Provincial Nature and Environment Conservation Ordinance (No. 19 of 1974). |
| RDL | Red Data List |
| RHS | Right Hand Side |
| RoD | Record of Decision |
| SANBI | South African National Biodiversity Institute |
| SDF | Spatial Development Framework |
| SoER | State of the Environment Report |
| SSC | Species of Special Concern |
| ToPS | Threatened of Protected Species |
| ToR | Terms of Reference |
| +ve | Positive |
| -ve | Negative |

### 5.2.2 Glossary

| | |
|---|---|
| Alien Invasive Species (AIS) | An alien species whose introduction and/or spread threaten biological diversity (Convention on Biological Diversity). Note: "*Alien invasive species*" is considered to be equivalent to "*invasive alien species*". An alien species which becomes established in natural or semi-natural ecosystems or habitat, is an agent of change, and threatens native biological diversity (*IUCN*). |
| Best Environmental Practice | The application of the most appropriate combination of environmental control measures and strategies (Stockholm Convention). |
| Best Management Practice | Established techniques or methodologies that, through experience and research, have proven to lead to a desired result (BBOP). |
| Biodiversity | Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. |
| Biodiversity Offset | Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure and ecosystem function and people's use and cultural values associated with biodiversity (BBOP). |
| Bioremediation | The use of organisms such as plants or microorganisms to aid in removing hazardous substances from an area. Any process that uses microorganisms, fungi, green plants, or their enzymes to return the natural environment altered by contaminants to its original condition. |
| Boundary | Landscape patches have a boundary between them which can be defined or fuzzy (Sanderson and Harris, 2000). The zone composed of the edges of adjacent ecosystems is the boundary. |
| Catchment | In relation to a watercourse or watercourses or part of a watercourse, means the area from which any rainfall will drain into the watercourse or watercourses or part of a watercourse, through surface flow to a common point or common points. |
| Connectivity | The measure of how connected or spatially continuous a corridor, network, or matrix is. For example, a forested landscape (the matrix) with fewer gaps in forest cover (open patches) will have higher connectivity. |
| Corridors | Have important functions as strips of a landscape differing from adjacent land on both sides. Habitat, ecosystems or undeveloped areas that physically connect habitat patches. Smaller, intervening patches of surviving habitat can also serve as "steppingstones" that link fragmented ecosystems by ensuring that certain ecological processes are maintained within and between groups of habitat fragments. |
| Critically Endangered (CR) | A category on the IUCN Red List of Threatened Species which indicates a taxon is considered to be facing an extremely high risk of extinction in the wild (*IUCN*). |
| Cultural Ecosystem Services | The non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experience, including, e.g. knowledge systems, social relations, and aesthetic values (Millennium Ecosystem Assessment). |
| Cumulative Impacts | The total impact arising from the project (under the control of the developer), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures |

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| | and trends which may be unregulated. The project's impact is therefore one part of the total cumulative impact on the environment. The analysis of a project's incremental impacts combined with the effects of other projects can often give a more accurate understanding of the likely results of the project's presence than just considering its impacts in isolation (BBOP). |
| Data Deficient (DD) | A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat(*IUCN*). |
| Degraded Habitat/Land | Land that has been impacted upon by human activities (including introduction of invasive alien plants, light to moderate overgrazing, accelerated soil erosion, dumping of waste), but still retains a degree of its original structure and species composition (although some species loss would have occurred) and where ecological processes still occur (albeit in an altered way). Degraded land is capable of being restored to a near-natural state with appropriate ecological management. |
| Disturbance | An event that significantly alters the pattern of variation in the structure or function of a system, while fragmentation is the breaking up of a habitat, ecosystem, or land-use type into smaller parcels. Disturbance is generally considered a natural process. |
| Ecological Function | How each of the elements in the landscape interacts based on its life cycle events [Producers, Consumers, Decomposers Transformers]. Includes the capacity of natural processes and components to provide goods and services that satisfy human needs, either directly or indirectly. |
| Ecological Pattern | The contents and internal order of the landscape, or its spatial (and temporal) components. May be homogenous or heterogenous. Result from the ecological processes that produce them. |
| Ecological Process | Includes *Physical processes* [Climate (precipitation, insolation), hydrology, geomorphology]; *Biological processes* [Photosynthesis, respiration, reproduction]; *Ecological processes* [Competition, predator-prey interactions, environmental gradients, life histories] |
| Ecological Processes | Ecological processes typically only function well where natural vegetation remains, and where the remaining vegetation is well-connected with other nearby patches of natural vegetation. Loss and fragmentation of natural habitat severely threatens the integrity of ecological processes. Where basic processes are intact, ecosystems are likely to recover more easily from disturbances or inappropriate actions if the actions themselves are not permanent. Conversely, the more interference there has been with basic processes, the greater the severity (and longevity) of effects. Natural processes are complex and interdependent, and it is not possible to predict all the consequences of loss of biodiversity or ecosystem integrity. When a region's natural or historic level of diversity and integrity is maintained, higher levels of system productivity are supported in the long run and the overall effects of disturbances may be dampened. |
| Ecological Structure | The composition, or configuration, and the proportion of different patches across the landscape. Relates to species diversity, the greater the diversity, the more complex the structure. A description of the organisms and physical features of environment including nutrients and climatic conditions. |
| Ecosystem | All the organisms of a habitat, such as a lake or forest, together with the physical environment in which they live. A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. |

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| Ecosystem Services | A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. Supporting Ecosystem services are those that are necessary for the maintenance of all other ecosystem services. Some examples include biomass production, production of atmospheric oxygen, soil formation and retention, nutrient cycling, water cycling, and provisioning of habitat. |
| Ecosystem Status | Ecosystem status of terrestrial ecosystems is based on the degree of habitat loss that has occurred in each ecosystem, relative to two thresholds: one for maintaining healthy ecosystem functioning, and one for conserving the majority of species associated with the ecosystem. As natural habitat is lost in an ecosystem, its functioning is increasingly compromised, leading eventually to the collapse of the ecosystem and to loss of species associated with that ecosystem (Millennium Ecosystem Assessment). |
| Ecotone | The transitional zone between two communities. Ecotones can arise naturally, such as a lakeshore, or can be human created, such as a cleared agricultural field from a forest. The ecotonal community retains characteristics of each bordering community and often contains species not found in the adjacent communities. Classic examples of ecotones include fencerows; forest to marshlands transitions; forest to grassland transitions; or land-water interfaces such as riparian zones in forests. Characteristics of ecotones include vegetational sharpness, physiognomic change, and occurrence of a spatial community mosaic, many exotic species, ecotonal species, spatial mass effect, and species richness higher or lower than either side of the ecotone. |
| Edge | The portion of an ecosystem near its perimeter, where influences of the adjacent patches can cause an environmental difference between the interior of the patch and its edge. This edge effect includes a distinctive species composition or abundance in the outer part of the landscape patch. For example, when a landscape is a mosaic of perceptibly different types, such as a forest adjacent to a grassland, the edge is the location where the two types adjoin. In a continuous landscape, such as a forest giving way to open woodland, the exact edge location is fuzzy and is sometimes determined by a local gradient exceeding a threshold, as an example, the point where the tree cover falls below thirty-five percent. |
| Emergent Tree | Trees that grow above the top of the canopy |
| Endangered (En) | Endangered terrestrial ecosystems have lost significant amounts (more than 60 % lost) of their original natural habitat, so their functioning is compromised.<br>A taxon (species) is Endangered when the best available evidence indicates that it meets any of the criteria for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild (*IUCN*). |
| Endemic | A plant or animal species, or a vegetation type, which is naturally restricted to a defined region or limited geographical area. Many endemic species have widespread distributions and are common and thus are not considered to be under any threat. They are however noted to be unique to a region, which can include South Africa, a specific province or a bioregion, vegetation type, or a localised area. In cases where it is highly localised or known only from a few or a few localities, and is under threat, it may be red listed either in terms of the South Africa Threatened Species Programme, NEMBA Threatened or Protected Species (ToPS) or the IUCN Red List of Threated Species. |
| Environment | The external circumstances, conditions and objects that affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects. |
| Estuary | a partially or fully enclosed body of water -<br>(a) which is open to the sea permanently or periodically; and |

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| | (b) within which the sea water can be diluted, to an extent that is measurable, with fresh water drained from land. |
| Evolutionary Processes | The process by which genetic changes have taken place and continue to take place in populations of plants and animals over successive generations in response to environmental changes. Evolutionary Processes includes the mechanisms that produce the biodiversity of life and include Mutation and Migration (Gene Flow), Genetic Drift, Natural Selection, Common Descent, Speciation, Sexual Selection, and Biogeography. Disruptions to evolutionary processes can prevent ecosystems and species from adapting to environmental change over time. Significant fragmentation is considered to be an important disrupter of evolutionary processes.<br>Series of actions which enable new species to evolve in response to changing Biodiversity is maintained by ecological processes at the micro-scale (such as in pollination and nutrient cycling via microbial action) through to the mega-scale (natural events e.g. fire, flood; migration of species along river valleys or coastal areas, quality and quantity of water feeding rivers and estuaries; marine sand movement and the seasonal mountain-to-coast migration of birds that pollinate plants). |
| Exotic | Non-indigenous; introduced from elsewhere, may also be a *weed* or alien *invasive* species. Exotic species may be invasive or non-invasive. |
| Fragmentation (Habitat Fragmentation) | The 'breaking apart' of continuous habitat into distinct pieces. Causes land transformation, an important current process in landscapes as more and more development occurs. |
| Habitat | The home of a plant or animal species. Generally, those features of an area inhabited by animal or plant which are essential to its survival. |
| Habitat Banking | A market where credits from actions with beneficial biodiversity outcomes can be purchased to offset the debit from environmental damage. Credits can be produced in advance of, and without ex-ante links to, the debits they compensate for, and stored over time (IEEP). |
| IFC PS6 | International Finance Corporation Performance Standard 6 – A standard guiding biodiversity conservation and sustainable management of living natural resources for projects financed by the International Finance Corporation (IFC) |
| Indicator | Information based on measured data used to represent an attribute, characteristic, or property of a system. |
| Indicator species | A species whose status provides information on the overall condition of the ecosystem and of other species in that ecosystem. They reflect the quality and changes in environmental conditions as well as aspects of community composition. |
| Indigenous | Native; occurring naturally in a defined area. |
| Indigenous Species (Native species) | A species that has been observed in the form of a naturally occurring and self-sustaining population in historical times (*Bern Convention 1979*).<br>A species or lower taxon living within its natural range (past or present) including the area which it can reach and occupy using its natural dispersal systems (*modified after the Convention on Biological Diversity*) |
| Indirect Impact | Impacts triggered in response to the presence of a project, rather than being directly caused by the project's own operations (BBOP) |
| Instream habitat | Includes the physical structure of a watercourse and the associated vegetation in relation to the bed of the watercourse; |
| Intact Habitat / Vegetation | Land that has not been significantly impacted upon by man's activities. These are ecosystems that are in a near-pristine condition in terms of structure, species composition and functioning of ecological processes. |
| Intrinsic Value | The inherent worth of something, independent of its value to anyone or anything else. |

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| Keystone Species | Species whose influence on ecosystem function and diversity are disproportionate to their numerical abundance. Although all species interact, the interactions of some species are more profound and far-reaching than others, such that their elimination from an ecosystem often triggers cascades of direct and indirect changes on more than a single trophic level, leading eventually to losses of habitats and extirpation of other species in the food web. |
| Landscape | An area of land that contains a mosaic of ecosystems, including human-dominated ecosystems (Millennium Ecosystem Assessment). |
| Landscape Approach | Dealing with large-scale processes in an integrated and multidisciplinary manner, combining natural resources management with environmental and livelihood considerations (FAO). |
| Landscape connectivity | The degree to which the landscape facilitates or impedes movement among resource patches. |
| Least threatened / Least Concern (LC) | These ecosystems have lost only a small proportion (more than 80 % remains) of their original natural habitat and are largely intact (although they may be degraded to varying degrees, for example by invasive alien species, overgrazing, or overharvesting from the wild).<br>A taxon (species) is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category (*IUCN*). |
| Matrix | The "*background ecological system*" of a landscape with a high degree of connectivity. |
| Natural Forest (Indigenous Forest) | The definition of "*natural forest*" in the National Forests Act of 1998 (NFA) Section 2(1)(xx) is as follows: 'A natural forest means a group of indigenous trees.<br>• whose crowns are largely contiguous.<br>• or which have been declared by the Minister to be a natural forest under section 7(2)?<br>This definition should be read in conjunction with Section 2(1)(x) which states that 'Forest' includes:<br>• A natural forest, a woodland, and a plantation<br>• The forest-produce in it; and<br>• The ecosystems which it makes up.<br>The legal definition must be supported by a technical definition, as demonstrated by a court case in the Umzimkulu magisterial district, relating to the illegal felling of Yellowwood (Podocarpus latifolius) and other species in the Gonqogonqo forest. From scientific definitions (also see Appendix B) we can define natural forest as:<br>• A generally multi-layered vegetation unit<br>• Dominated by trees that are largely evergreen or semi-deciduous.<br>• The combined tree strata have overlapping crowns, and crown cover is >75%<br>• Grasses in the herbaceous stratum (if present) are generally rare.<br>• Fire does not normally play a major role in forest function and dynamics except at the fringes.<br>• The species of all plant growth forms must be typical of natural forest (check for indicator species)<br>• The forest must be one of the national forest types |
| Near Threatened (NT) | A taxon (species) is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable |

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| | now, but is close to qualifying for or is likely to qualify for a threatened category in the near future (*IUCN*). |
| Patch | A term fundamental to landscape ecology, is defined as a relatively homogeneous area that differs from its surroundings. Patches are the basic unit of the landscape that change and fluctuate, a process called patch dynamics. Patches have a definite shape and spatial configuration and can be described compositionally by internal variables such as number of trees, number of tree species, height of trees, or other similar measurements. |
| Protected Area | A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. |
| Range restricted species | Species with a geographically restricted area of distribution. Note: Within the IFC PS6, restricted range refers to a limited extent of occurrence (EOO):<br>• For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an EOO less than 50,000 square kilometres (km2). |
| Refugia | A location which supports an isolated or relict population of a once more widespread species. This isolation can be due to climatic changes, geography, or human activities such as deforestation and overhunting. |
| Rehabilitation | Measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and/ or minimised. Rehabilitation emphasizes the reparation of ecosystem processes, productivity and services, whereas the goals of restoration also include the re-establishment of the pre-existing biotic integrity in terms of species composition and community structure (BBOP). |
| Resilience | The capacity of a natural system to recover from disturbance (OECD). |
| Restoration | The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. An ecosystem has recovered when it contains sufficient biotic and abiotic resources to continue its development without further assistance or subsidy. It would sustain itself structurally and functionally, demonstrate resilience to normal ranges of environmental stress and disturbance, and interact with contiguous ecosystems in terms of biotic and abiotic flows and cultural interactions (IFC). |
| Riparian | Pertaining to, situated on or associated with the banks of a watercourse, usually a river or stream. |
| Riparian Habitat | Includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas. |
| River Corridors | River corridors perform several ecological functions such as modulating stream flow, storing water, removing harmful materials from water, and providing habitat for aquatic and terrestrial plants and animals. These corridors also have vegetation and soil characteristics distinctly different from surrounding uplands and support higher levels of species diversity, species densities, and rates of biological productivity than most other landscape elements. Rivers provide for migration and exchange between inland and coastal biotas. |
| Sustainable Development | Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED). |
| Terrestrial | Occurring on, or inhabiting, land. |
| Threatened Species | Umbrella term for any species categorised as Critically Endangered, Endangered or Vulnerable by the IUCN Red List of Threatened Species (*IUCN*). Any species that |

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| | is likely to become extinct within the foreseeable future throughout all or part of its range and whose survival is unlikely if the factors causing numerical decline or habitat degradation continue to operate (EU). |
| Traditional Ecological Knowledge | Knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry (CBD). |
| Transformation | In ecology, transformation refers to adverse changes to biodiversity, typically habitats or ecosystems, through processes such as cultivation, forestry, drainage of wetlands, urban development or invasion by alien plants or animals. Transformation results in habitat fragmentation – the breaking up of a continuous habitat, ecosystem, or land-use type into smaller fragments. |
| Transformed Habitat/Land | Land that has been significantly impacted upon as a result of human interferences/disturbances (such as cultivation, urban development, mining, landscaping, severe overgrazing), and where the original structure, species composition and functioning of ecological processes have been irreversibly altered. Transformed habitats are not capable of being restored to their original states. |
| Tributary | A small stream or river flowing into a larger one. |
| Untransformed Habitat/Land | Land that has not been significantly impacted upon by man's activities. These are ecosystems that are in a near-pristine condition in terms of structure, species composition and functioning of ecological processes. |
| Vulnerable (Vu) | Vulnerable terrestrial ecosystems have lost some (more than 60 % remains) of their original natural habitat and their functioning will be compromised if they continue to lose natural habitat.<br>A taxon (species) is Vulnerable when the best available evidence indicates that it meets any of the criteria for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild (*IUCN*). |
| Watercourse | Natural or man-made channel through or along which water may flow.<br>A river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows. and a reference to a watercourse includes, where relevant, its bed and banks; |
| Weed | An indigenous or non-indigenous plant that grows and reproduces aggressively, usually a ruderal pioneer of disturbed areas. Weeds may be unwanted because they are unsightly, or they limit the growth of other plants by blocking light or using up nutrients from the soil. They can also harbour and spread plant pathogens. Weeds are generally known to proliferate through the production of large quantities of seed. |
| Wetlands | A collective term used to describe lands that are sometimes or always covered by shallow water or have saturated soils, and where plants adapted for life in wet conditions usually grow. |

## 5.3 Appendix C: Declaration, Specialist Profile and Registration

To be added in final

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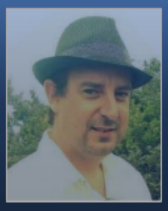
**Annexure 1**

**CV**



# Jamie Pote

SENIOR ECOLOGIST AND ENVIRONMENTAL SCIENTIST

## CONTACT

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## ABOUT ME

*16 years broad professional experience in Biodiversity, Ecological and Vegetation Assessments on over 220 projects in southern, western and central Africa. Senior Environmental Consultant and EAP on over 50 projects in the mining, infrastructure, housing and agricultural sectors. Environmental monitoring and auditing on over 50 civil infrastructure and construction projects. Have managed all aspects of projects from inception through to implementation. GIS mapping and analytics.*

## EDUCATION

Bachelor of Science
*Rhodes University*
2001 (Botany & Environmental Science)

Bachelor of Science (Honours)
*Rhodes University*
2002 (Botany)

Professional Natural Scientist
*SACNASP*
2016

## SERVICES

*Terrestrial Biodiversity/Ecological Assessments*
*Environmental & Ecological Risk-Assessments*
*Bioremediation, Restoration & Rehabilitation Plans*
*Environmental Management Plans & Programmes*
*GIS Mapping & Analysis & Web maps*
*Alien Invasive Management (Terrestrial)*
*Environmental Auditing & Monitoring (ECO)*
*Flora Search & Rescue & Relocation*
*Independent Environmental & Ecological review*
*Permit and License applications*
*Environmental & Mining Applications*

## EXPERIENCE AND CLIENTS

### Key Sectors

- *Wind, Solar Energy Facilities*
- *Infrastructure and Housing*
- *Agriculture and Forestry*
- *Mining and Industrial*

### Key Projects

- *Over 220 independent Biodiversity/Ecological Assessments throughout southern, western and central Africa.*
- *Mining applications and construction auditing on over 40 projects and more than 300 gravel borrow pits for the Eastern Cape Department of Roads and Public Works, Department of Transport and the South African National Roads Agency (SANRAL) throughout the Eastern Cape.*
- *South-End Precinct Mixed Use Development for Mandela Bay Development Agency - Environmental application, Ecological assessments and Construction monitoring.*
- *Coega Development Corporation IDZ projects – Ecological assessments, Flora search & rescue and Construction monitoring.*
- *Environmental applications, construction monitoring and auditing for a wide range of projects, including infrastructure and housing for various clients including the Department of Transport and SANRAL.*
- *Various agricultural expansion and infrastructure projects.*
- *Various wind and solar energy and associated infrastructure projects.*
- *Numerous infrastructure projects including electrical, water and roads.*
- Various Environmental Management and Rehabilitation Plans.

SACNASP
South African Council for Natural Scientific Professions

**herewith certifies that**

**Jamie Robert Claude Pote**

Registration Number: 115233

**is a registered scientist**

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Ecological Science (Professional Natural Scientist)

Effective **20 July 2016** Expires **31 March 2026**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

## PROJECT EXPERIENCE

PERFORMANCE STANDARD BIODIVERSITY AND CRITICAL HABITAT ASSESSMENTS (IFC PS6)

- DBSA Environmental & Social Safeguards Standards 9: Biodiversity Conservation and Sustainable Management Assessment: The Ilitha Fibre Project, Ethekwini 2021
- Critical Habitat & Biodiversity Assessment - Roggeveld Wind Energy Project 2020
- Biodiversity Assessment for Kalukundi Copper/Cobalt Mine, Democratic Republic of Congo 2008

TERRESTRIAL BIODIVERSITY ASSESSMENTS AND COMPLIANCE STATEMENTS

- Terrestrial Biodiversity Assessment (Addo BSD Offices) 2021
- Terrestrial Biodiversity Assessment (Blaauwater Farms) 2021
- Terrestrial Biodiversity Assessment (Buffelshoek Farm, Loerie) 2021
- Terrestrial Biodiversity & Aquatic Assessment & Review (Falcon Ridge Dam) 2021
- Terrestrial Biodiversity Assessment (Gubenxa Valley Deciduous Fruit) 2021
- Terrestrial Biodiversity Assessment (Little Chelsea Mixed-use) 2021
- Terrestrial Biodiversity Compliance Statement (Maidenhead Farm) 2021
- Terrestrial Biodiversity Review, Mulilo Total Hydra Storage Project Grid Interconnection 2021
- Terrestrial Biodiversity Compliance Statement (Lahlangubo River Bridge) 2021
- Terrestrial Biodiversity Assessment (Mbashe access roads - 3 sites) 2021
- Terrestrial Biodiversity Assessment (Burlington Farm Citrus Development, Cookhouse) 2020
- Terrestrial Biodiversity Compliance Statement: CHDM Cluster 9 Phase 3D Pipeline 2020
- Terrestrial Biodiversity Review, Mulilo Total Hydra Storage Project BESS 2020
- Terrestrial Biodiversity Assessment (Mbashe housing projects, Dutywa & Willowvale) 2020
- Terrestrial Biodiversity Assessment (Helpmekaar Dam, Tarkastad) 2020
- Terrestrial Biodiversity Assessment (Herbertsdale pipeline, Mossel Bay) 2020
- Terrestrial Biodiversity Assessment (Keurbooms Erf 155, Keurboomstrand) 2020
- Terrestrial Biodiversity Assessment (Lowmar Hydroelectric Project, Cradock) 2020
- Terrestrial Biodiversity Assessment (Mossel Bay Gas Power Plant) 2020
- Terrestrial Biodiversity Assessment (Erf 1820, Mthatha) 2020
- Terrestrial Biodiversity Assessment (Newlyn Manganese Terminal, Coega SEZ) 2020
- Terrestrial Biodiversity Assessment Thornhill Phase 2 Sanitation Link 2020

ENERGY PROJECTS (WIND FARM AND PHOTOVOLTAIC INFRASTRUCTURE)

- Preliminary Biodiversity Screening for Chrisdelina Ranch Agricultural Project, Kizenga District 2020
- Preliminary Biodiversity Screening and GIS mapping for Balekani Photovoltaic Solar Project 2020
- Preliminary Biodiversity Screening and GIS mapping for Sihhoye Photovoltaic Solar Project 2020
- Preliminary Biodiversity Screening and GIS mapping Mpaka Photovoltaic Solar Project 2020
- Preliminary Biodiversity Screening and GIS mapping for Chiwelwa Hydroelectric project 2020
- Ecological Assessment for Vermaak Boerdery Hydro Turbine (Cookhouse), Eastern Cape 2020
- Ecological Assessment for Windcurrent Wind Farm, Eastern Cape 2012
- Ecological Assessment for Universal Windfarm, NMB 2011
- Ecological Assessment for Inca Energy Windfarm, Northern Cape 2011
- Ecological Assessment for Broadlands Photovoltaic Farm, Eastern Cape 2011
- Botanical Assessment for Electrawinds Windfarm Coega, NMB 2010
- Botanical Assessment and Open Space Management Plan for Mainstream WEF Phase 2, Eastern Cape 2010

SPECIALISED ECOLOGICAL REPORTS AND REVIEWS

- Rebels Vlei Riparian delineation 2021

- Buck Kraal Dam Rehabilitation Plan Review 2020
- Rehabilitation Plan for Hitgeheim Farm (Farm 960), Sunland, Eastern Cape 2017
- Green Star Rating Ecological Assessment for SANRAL office, Bay West City, NMBM 2015
- Section 24G Assessment and Rehabilitation Plan for Bingo Farm, Eastern Cape 2014
- Mapping and Ecological services for Congo Agriculture, Republic of Congo 2013
- Rehabilitation Plan for Nieu Bethesda, Eastern Cape 2011
- Mapping of pipeline for Kenton Water Board, Eastern Cape 2010
- Rehabilitation Plan for N2 Upgrade - Coega to Colchester, NMB 2010
- Representative for landowner group for Seaview burial Park, NMB 2010
- Botanical Sensitivity Analysis for LSDF, Greenbushes-Hunters Retreat, NMB 2008
- Forestry Rehabilitation Assessment Report for Amahlathi Forest Rehabilitation, Eastern Cape 2007
- Botanical & Riparian Assessment for Orange River Weirs-Boegoeberg, Douglas Dam and Sendelingsdrif, Northern Cape 2006
- Botanical Assessment for State of the Environment Report for Chris Hani District Municipality SoER, Eastern Cape 2003

ROAD AND RAILWAY INFRASTRUCTURE PROJECTS

- Ecological Assessment for CDC IDZ Mn Terminal, conveyor and railway line, NMB 2013
- Ecological Assessment Review for Penhoek Road widening, Eastern Cape 2012
- Ecological Assessment for R61 road widening, Eastern Cape 2012
- Botanical Assessment for Chelsea RD - Walker Drive Ext., NMB 2010
- Botanical Assessment for Motherwell - Blue Water Bay Road, NMB 2010
- Ecological Assessment for Port St John Road, Eastern Cape 2010
- Botanical Basic Assessment for Bholani Village Rd, Port St Johns, Eastern Cape 2009
- Botanical Report, EMP and Rehab Plan for Coega-Colchester N2 Upgrade, NMB 2009
- Botanical Assessment for Manganese Conveyor Screening Report, NMB 2008
- Ecological Assessment for Road Layout for Whiskey Creek- Kenton, Eastern Cape 2006

MINING PROJECTS

- Ecological Assessment for Bochum Borrow Pits, Limpopo 2013
- Ecological Assessment and Mining and Rehabilitation Plan for Greater Soutpansberg Mining Project, Limpopo (3 proposed Mines) 2013
- Ecological Assessment for Thulwe Road Borrow Pits, Limpopo 2013
- Ecological Assessment and Mining and Rehabilitation Plan for Baghana Mining, Ghana 2010
- Botanical Assessment for Zwartenbosch Quarry, Eastern Cape 2008
- Botanical description & map production for Quarry - Rudman Quarry, Eastern Cape 2008
- Botanical Basic Assessment, Rehab Plan & Maps for Borrow Pit - Rocklands/Patensie, Eastern Cape 2008
- Botanical Assessment & Maps for Sandman Sand Gravel Mine, Eastern Cape 2008
- Botanical Assessment & GIS maps for Shamwari Borrow Pit, Eastern Cape 2008
- Detailed Botanical Assessment, EMP and Rehab Plan for Kalukundi Copper/Cobalt Mine, Democratic Republic of Congo 2008
- Botanical Assessment, Rehab Plan & Maps for Borrow Pit Humansdorp/Oyster Bay, Eastern Cape 2008
- Botanical Assessment, Rehab Plan & Maps for AWRM - Cala, Eastern Cape 2008
- Botanical Assessment, Rehab Plan & Maps for AWRM - Camdeboo, Eastern Cape 2008
- Botanical Assessment, Rehab Plan & Maps for AWRM - Somerset East, Eastern Cape 2008
- Botanical Assessment, Rehab Plan & Maps for AWRM - Nkonkobe, Eastern Cape 2008
- Botanical Assessment, Rehab Plan & Maps for AWRM - Ndlambe, Eastern Cape 2008
- Botanical Assessment, Rehab Plan & Maps for AWRM - Blue Crane Route, Eastern Cape 2008

- Botanical Assessment, EMP and Rehabilitation Plan for AWRM - Cathcart, Eastern Cape 2008
- Botanical Assessment, GIS maps and Rehab Plan for Mthatha Prospecting, Eastern Cape 2008
- Regional Botanical Map for mining prospecting permit, Welkom 2008
- Botanical Assessment for Scoping Report and Detailed Botanical Assessment and Rehab Plan for Elitheni Coal Mine, Eastern Cape 2007
- Botanical Assessment, Rehab Plan & Maps for Borrow Pit - Oyster Bay, Eastern Cape 2007
- Botanical Assessment, Rehab Plan & Maps for Borrow Pit - Bathurst/GHT, Eastern Cape 2007
- Botanical Assessment, Rehab Plan & Maps for Borrow Pit – Jeffreys Bay, Eastern Cape 2007
- Botanical Assessment, Rehab Plan & Maps for Borrow Pit - Storms River/Kareedouw, Eastern Cape 2007
- Biophysical Assessment for Humansdorp Quarry, Eastern Cape 2006
- Botanical Assessment, Rehab Plan & Maps for Quarry-Cathcart & Somerset East, Eastern Cape 2006
- Botanical Assessment, Rehab Plan & Maps for Quarry - Despatch Quarry, NMB 2006
- GIS Mapping & Botanical Assessment and Rehab Plan for Quarry - JBay Crushers, Eastern Cape 2006
- Botanical Assessment, EMP and Rehabilitation Plan for Polokwane Silicon Smelter, Limpopo 2006
- Application for Mining Permit for Bruce Howarth Quarry, Eastern Cape 2006

<u>POWERLINE INFRASTRUCTURE PROJECTS</u>

- Ecological Assessment: Dieprivier-Karreedouw 132kV Powerline realignment, Kouga LM 2016
- Eskom Ecological Walkdown: Dieprivier-Karreedouw 132 kV Powerline, Kouga LM 2016
- Eskom Solar one Ecological Walkdown: Nieuwehoop 400 kV powerline 2015
- Rehabilitation Plan and Auditing for Grassridge-Poseidon Powerline Rehab, Eastern Cape 2013
- Ecological Assessment for Dieprivier Karreedouw 132kV Powerline, Eastern Cape 2012
- Flora and Fauna search and Rescue plan for Van Stadens Windfarm Powerline, NMB 2012
- Botanical Assessment for Dedisa-Grassridge Powerline, Eastern Cape 2010
- Ecological Assessment for Grahamstown-Kowie Powerline, Eastern Cape 2010
- Species of Special Concern Mapping Transmission Line for San Souci to Nivens Drift 132kV powerline, NMB 2009
- Botanical Assessment for Eskom Powerline - Albany-Kowie, Eastern Cape 2009
- Botanical Assessment for Eskom 132 kV Dedisa Grassridge Power line-Coega, NMB 2006
- Botanical Assessment for Eskom Power line – Tyalara-Wilo, Eastern Cape 2006
- Botanical Assessment for Steynsburg - Teebus 132 kV powerline, Eastern Cape 2004

<u>PIPELINE INFRASTRUCTURE PROJECTS</u>

- Terrestrial Biodiversity Assessment for Thornhill Phase 2 Sanitation Link, Ndlambe, Eastern Cape 2020
- Botanical Assessment for Ngqamakhwe Regional Water Supply Scheme (Phase 3) 2018
- Ecological Assessment for Butterworth Emergency Bulk Water Supply Scheme 2017
- Ecological Assessment for Karringmelkspruit Emergency Bulk Water Supply (Lady Grey) 2017
- Ecological Assessment for Wanhoop-Willowmore Bulk Water Supply, Eastern Cape 2016
- Ecological Assessment for Steytlerville Bulk Water Supply, Eastern Cape (Phase 4) 2013
- Ecological Assessment for Steytlerville Bulk Water Supply, Eastern Cape (Phase 5) 2013
- Detailed Ecological Assessment for Suikerbos Pipeline, Gauteng 2012
- Basic Botanical Assessment for Wanhoop farm pipeline, Eastern Cape 2010
- Basic Botanical Assessment for Chatty Sewer, NMB 2010
- Species of Special Concern Mapping for Seaview Pipeline, NMB 2009
- Species of Special Concern Mapping for Chelsea Bulk Water Pipeline, NMB 2009
- Map Production for Russell Rd Stormwater, NMB 2008
- Basic Botanical Assessment for Albany Pipeline, Eastern Cape 2008
- Environmental Risk Assessment for Elands River pipeline, Eastern Cape 2007

- Detailed Botanical Assessment for Motherwell Pipeline, NMB 2007
- Detailed Botanical Assessment, GIS maps for Erasmuskloof Pipeline, Eastern Cape 2007
- Botanical & Floristic Report for Hankey pipeline, Eastern Cape 2006
- Detailed Botanical Assessment for Port Alfred water pipeline, Eastern Cape 2004

GENERAL INFRASTRUCTURE DEVELOPMENT PROJECTS

- Ecological Assessment for Amalinda crossing, BCM, Eastern Cape 2019
- Ecological Assessment for Cookhouse Bridge rehabilitation and temporary deviation, Eastern Cape 2019
- Ecological Assessment for Nelson Mandela University Access Road, NMB 2019
- Botanical Assessment for Zachtevlei Dam (Lady Grey), Eastern Cape 2017
- Botanical Assessment for Gcebula River bridge (Peddie), Eastern Cape 2017
- Botanical Assessment for Kouga Dam wall upgrade, Eastern Cape 2012
- Botanical Assessment for Jansenville Cemetery, Eastern Cape 2009
- Botanical Assessment for Radar Mast construction for South African Weather Service – BCM & NMB 2008
- Botanical Assessment and GIS mapping for golf course realignment for East London Golf Course, BCM, Eastern Cape 2007
- Botanical Assessment for PE Airport Extention, NMB 2006
- Botanical Assessment for Kidd's Beach Desalination Plant, BCM, Eastern Cape 2006

HOUSING DEVELOPMENT PROJECTS

- Terrestrial Biodiversity Assessment for Erf 1820 Mthatha, KSDM, Eastern Cape 2020
- Ecological Assessment for Erf 599 Walmer Mixed Use Development, Nelson Mandela Bay 2019
- Ecological Assessment Portion 21-23 and 41 of Farm 807, Gonubie, Buffalo City 2019
- Ecological Assessment for Emerald Sky Housing Project, BCMM 2019
- Ecological Assessment for Erf 14, Kabega, Port Elizabeth 2017
- Ecological Assessment for Fairwest Rental Housing, Port Elizabeth 2017
- Ecological Assessment for Hankey Housing, Kouga District Municipality 2015
- Ecological Assessment for Lebowakgoma Housing, Limpopo 2013
- Ecological Assessment for Giyani Development, Limpopo 2013
- Ecological Assessment for Palmietfontein Development, Limpopo 2013
- Ecological Assessment for Seshego Development, Limpopo 2013
- Botanical Assessment for Sheerness Road, BCM, Eastern Cape 2013
- Ecological Assessment for Ethembeni Housing, NMB 2012
- Ecological Assessment for Pelana Housing, Limpopo 2012
- Flora Search and Rescue Plan for Kwanobuhle Housing, Western Cape 2011
- Botanical Assessment for The Crags 288/03, Western Cape 2010
- Ecological Assessment Revision Report for Fairview Housing, NMB 2010
- Botanical Assessment, EMP and Open Space Management Plan for Hornlee Housing Development, Western Cape 2010
- Botanical Assessment for Little Ladywood, Western Cape 2010
- Botanical Assessment and Open Space Management Plan for Motherwell NU31, NMB 2010
- Botanical Assessment and Open Space Management Plan for Plett 443/07, Western Cape 2010
- Botanical Assessment for Willow Tree Farm, NMB 2010
- Botanical Assessment for Kouga RDP Housing, Eastern Cape 2009
- Botanical Assessment for Fairview Erf 1226 (Wonderwonings), NMB 2009
- Species List Compilation for Zeekoerivier Humansdorp, Eastern Cape 2009
- Botanical Assessment for Woodlands Golf Estate (Farm 858), BCM, Eastern Cape 2009

- Botanical Assessment for Plettenberg Bay - 438/4, Western Cape 2009
- Vegetation Assessment for Kwanokuthula RDP housing project, Western Cape 2008
- Site screening assessment for Greenbushes Site screening, NMB 2008
- Botanical Assessment for Fairfax development, Eastern Cape 2008
- Botanical Assessment for Plettenberg Bay Brakkloof 50&51, Western Cape 2008
- Botanical Assessment, GIS mapping for Theescombe Erf 325, NMB 2008
- Site Screening for Mount Road, NMB 2008
- Botanical Assessment for Greenbushes Farm 40 Swinburne 404, NMB 2008
- Botanical Assessment for Greenbushes 130, NMB 2008
- Botanical Assessment for Greenbushes Kuyga no. 10, NMB 2008
- Botanical Assessment for Plettenberg Bay - 438/24, Western Cape 2007
- Botanical Assessment for Plettenberg Bay - Olive Hills 438/7, Western Cape 2007
- Botanical Assessment for Gonubie Portion 809/9, BCM, Eastern Cape 2006
- Botanical Assessment for Glengariff Farm 723, BCM, Eastern Cape 2006
- Botanical Assessment for Gonubie Portion 809/10, BCM, Eastern Cape 2006
- Botanical Assessment for Gonubie Portion 809/4 & 5, BCM, Eastern Cape 2006
- Botanical Assessment for Plettenberg bay - Ladywood 438/1&3, Western Cape 2006
- Botanical Assessment and Rehab Plan for Winterstrand Desalination Plant, BCM 2006
- Botanical Assessment for Bosch Hoogte, NMB 2006
- Botanical Assessment for Plettenberg bay Farm 444/38, Western Cape 2006
- Botanical Assessment for Plettenberg Bay - 444/27, Western Cape 2006
- Botanical Assessment for Leisure Homes, BCM, Eastern Cape 2006
- Botanical Basic Assessment for Trailees Wetland Assessment, Eastern Cape 2005
- Botanical Assessment and Rehab Plan for Arlington Racecourse - PE, NMB 2005
- Botanical Assessment for Smart Stone, NMB 2005
- Botanical Assessment for Peninsular Farm (Port Alfred), Eastern Cape 2005
- Botanical Assessment for Mount Pleasant - Bathurst, Eastern Cape 2005
- Botanical Assessment and RoD amendments for Colchester Erven 1617 & 1618 (Riverside), NMB 2005
- Basic Botanical Assessment for Parsonsvlei 3/4, Eastern Cape 2005
- Botanical Assessment for Bridgemead – Malabar PE, NMB 2004

AGRICULTURAL PROJECTS

- Ecological Assessment for Vermaak Boerdery Hydro Turbine (Cookhouse)2020 2020
- Thornhill Eggland Specialist Ecological Assessment 2020
- Ecological Assessment for Citrus expansion on Hitgeheim Farm, Sunland, Eastern Cape 2015
- Ecological Assessment for Citrus expansion on farm 960, Patensie (AIN du Preez Boerdery) 2014
- Ecological Assessment for Doornkraal Pivot (Hankey), Eastern Cape 2014
- Ecological Assessment for Tzaneen Chicken Farm, Limpopo 2013
- Botanical Assessment and Open Space Management Plan for Kudukloof, NMB 2010
- Botanical Assessment and Open Space Management Plan for Landros Veeplaats, NMB 2010
- Botanical Assessment and Flora Relocation Plan for Wildemans Plaas, NMB 2006

GOLF ESTATE AND RESORT DEVELOPMENT PROJECTS

- Species List& Comments Report for Kidds Beach Golf Course, BCM, Eastern Cape 2009
- Botanical Assessment for Plettenberg Bay -Farm 288/03, Western Cape 2009
- Botanical Assessment for Rockcliff Golf Course, BCM, Eastern Cape 2008
- Botanical Assessment for Rockcliff Resort Development, BCM, Eastern Cape 2007
- Botanical Assessment, EMP and Rehabilitation Plan for Tiffendel Ski Resort, Eastern Cape 2006

MIXED USE DEVELOPMENT PROJECTS

- Ecological Assessment for South-End Precinct Mixed Use Development, Nelson Mandela Bay 2018
- Botanical Assessment, EMP and Open Space Management Plan for Bay West City, NMB 2010
- Botanical Assessment, GIS maps, Open Space and Rehab Plans for Fairview Erf 1082, NMB 2009
- Botanical Assessment and GIS maps for Utopia Estate PE, NMB 2008
- Botanical Assessment and GIS mapping for Madiba Bay Leisure Park, NMB 2007
- Botanical Assessment and GIS mapping for Madiba Bay Leisure Park, NMB 2007
- Botanical Basic Assessment for Cuyler Manor (Farm 320), Uitenhage, NMB 2007

BUSINESS AND INDUSTRIAL DEVELOPMENT PROJECTS

- Ecological Assessment for Parsonsvlei Erf 984 & 1134 Parsonsvlei, NMB 2020
- Mthatha Retails and Service Center 2020
- Ecological Assessment for Walmer Erf 11667 - Bidfood Warehousing Development, NMB 2020
- Ecological Assessment for Portion 87 of the Farm Little Chelsea No 10, NMB 2020
- Ecological Assessment for Bay West City ENGEN Service Station, NMB 2015
- Ecological Assessment for Green Star grading for SANRAL, NMB 2014
- Ecological Assessment for OTGC Tank Farm, NMB 2012
- Botanical Assessment and Open Space Management Plan for Petro SA Refinery, Coega IDZ, NMB 2010
- Botanical Assessment for Bluewater Bay Erf 805, NMB 2009
- Ecological Assessment for Bay West City, NMB 2007
- Botanical Assessment for Kenton Petrol Station, Eastern Cape 2005
- Botanical Assessment and RoD amendments for Colchester Petrol Station, NMB 2005

ECO-ESTATE DEVELOPMENT PROJECTS

- Botanical Re-Assessment of Swanlake Eco Estate, Aston Bay, Eastern Cape 2018
- Detailed Botanical Assessment and Open Space Management Plan for Olive Hills, Western Cape 2010
- Botanical Assessment and EMP for Zwartenbosch Road, Eastern Cape 2010
- Botanical Assessment - Poultry Farm for Coega Kammaskloof Farm 191, NMB 2008
- Botanical Assessment - Housing development for Coega Ridge, NMB 2008
- Botanical Assessment, Rehabilitation Plan, EMP and GIS maps for Amanzi Estate, NMB, 2008
- Botanical Assessment for Roydon Game farm, Queenstown, Eastern Cape 2007
- Botanical Assessment for Winterstrand Estate (Farm 1008), BCM, Eastern Cape 2007
- Botanical Assessment for Homeleigh Farm 820, BCM, Eastern Cape 2007
- Botanical Basic Assessment, Rehab Plan & Maps for Candlewood, Tsitsikamma, Western Cape 2007
- Botanical Assessment, EMP and Rehab Plan for Carpe Diem Eco development, Eastern Cape 2007
- Botanical Assessment, EMP and Rehabilitation Plan for Seaview Eco-estate, NMB 2006
- Botanical Assessment for Kidd's Beach portion 1076, BCM, Eastern Cape 2006
- Botanical Assessment for Palm Springs, Kidds Beach East London, BCM, Eastern Cape 2006
- Botanical Assessment for Nahoon Farm 29082, BCM, Eastern Cape 2006
- Botanical Assessment for Rosehill Farm, Eastern Cape 2005
- Botanical Assessment for Resolution Game Farm, Eastern Cape 2005
- Botanical Assessment for Gonubie Portion 809/11, BCM, Eastern Cape 2005
- Botanical Assessment for Kidd's Beach portion 1075, BCM, Eastern Cape 2005

FLORA AND FAUNA RELOCATION PLANS, PERMITS AND IMPLEMENTATION

- Flora Search and Rescue for Nelson Mandela University Phase 2 & 3 Residences, Eastern Cape 2020

- Flora Search and Rescue for Fairwest Housing Estate, Nelson Mandela Bay, Eastern Cape 2019
- Flora Search and Rescue for Utopia Estate, Nelson Mandela Bay, Eastern Cape 2019
- Flora Search and Rescue for Citrus expansion on Boschkraal Citrus Farm, Sunland, Eastern Cape 2018
- Flora Search and Rescue for Wanhoop pipeline, Willowmore, Eastern Cape 2018
- Flora Search and Rescue for Wilgekloof pipeline, Willowmore, Eastern Cape 2018
- Flora Search and Rescue for Citrus expansion on Hitgeheim Farm (Farm 960), Sunland, Eastern Cape 2017
- Flora Search and Rescue for Steytlerville Bulk Water Supply, Eastern Cape (Phase 5) 2016
- Flora Search and Rescue for Citrus expansion on Farm 960, Patensie (AIN du Preez Boerdery) 2016
- Flora Search and Rescue for Steytlerville Bulk Water Supply & WTW, Eastern Cape (Phase 4) 2015
- Flora and Fauna Search and Rescue for Riversbend Citrus Farm, NMB 2014
- Flora and Fauna Search and Rescue for Mainstream Windfarm, Eastern Cape 2013
- Flora Search and Rescue for Steytlerville Bulk Water Supply, Eastern Cape (Phase 1, 2 & 3) 2013
- Flora and Fauna Search and Rescue for OTGC Tank Farm, Coega IDZ, NMB 2013
- Flora and Fauna Search and Rescue for Jeffreys Bay School, Eastern Cape 2013
- Flora Search and Rescue Plan for Red Cap Wind Farm, Eastern Cape 2012
- Flora Relocation for Disco Poultry Farm, NMB 2010
- Flora Relocation for Mainstream Windfarm, Eastern Cape 2010

ENVIRONMENTAL MANAGEMENT PLANS

- Final Environmental Management Programme (EMPr) and Maintenance Management Plan for South End Precinct Mixed Use Zone, Nelson Mandala Bay Municipality 2020
- Final Environmental Management Programme (EMPr) for Coega Land-Based Aquaculture Development Zone (ADZ), Coega Industrial Development Zone (IDZ), Nelson Mandela Bay Municipality 2019
- Basic Botanical Assessment for Kromensee EMP (Jeffries Bay), Eastern Cape 2010
- Wetland Management Plan for NMB Portnet, NMB 2010
- Baseline Botanical Study, Vegetation mapping and EMP for Local Nature Reserve for Plettenberg Bay Lookout LNA, Western Cape 2009
- Biodiversity & Ecological Processes for Bathurst-Commonage, Eastern Cape 2006
- EMP for Kromensee EMP (Jeffries Bay), Eastern Cape 2006
- Floral Survey for Mbotyi Conservation Assessment, Eastern Cape 2005
- Identifying and Assessment on Aquatic Weeds for Pumba Private Game Reserve, Eastern Cape 2005

BASIC ASSESSMENT APPLICATION PROJECTS (DEDEAT)

- Basic Assessment Application for Parsonsvlei Erf 984 & 1134 Parsonsvlei 2020
- Construction of Deviation and Rehabilitation of Bridge along DR02481 road 2020
- Basic Assessment Application for Vermaak Boerdery Hydro Turbine (Cookhouse) 2020
- Basic Assessment Application for Walmer Erf 11667 Bidfood Warehousing Development 2020
- Basic Assessment Application for Portion 87 of the Farm Little Chelsea No 10 2020
- Basic Assessment Application for Nelson Mandela University Access Road, NMB 2019
- Basic Assessment, WULA and Borrow Pit/Quarry Mining Application, Clarkebury Rd, Idutywa 2019

- Basic Assessment Application for Erf 599 Walmer Mixed Use Development, Nelson Mandela Bay 2019
- Basic Assessment Application for Cookhouse Bridge rehabilitation and temporary deviation 2019
- Basic Assessment Application for Erf 14 Kabega, NMBM 2017
- Basic Assessment Application for Hankey Housing, Kouga District Municipality 2017
- Basic Assessment Application for Fairwest Rental Housing, Nelson Mandela Bay 2017
- Basic Assessment Application for Citrus expansion on Hitgeheim Farm, Sunland, Eastern Cape 2015

- Basic Assessment Application for Hankey Housing, Kouga District Municipality 2015
- Basic Assessment Application for Citrus expansion on farm 960, Patensie (AIN du Preez Boerdery) 2014
- Basic Assessment Application for South-End Precinct Mixed Use Development, Nelson Mandela Bay 2018

MINING PERMIT/ENVIRONMENTAL MANAGEMENT PROGRAMME APPLICATIONS (DMR)

- Mining BAR/EMP's for Blue Crane Route & Camdeboo LM 12 Borrow Pits – (DoT) 2019
- Mining BAR/EMP's for Elundini LM 6 Borrow Pits (DoT)
- Mining BAR/EMP's for Baviaans LM 6 Borrow Pits (DoT)
- Mining BAR/EMP's for Kouga & Koukamma LM 12 Borrow Pits (DoT)
- Mining BAR/EMP's for Sakhisizwe & Engcobo LM 12 Borrow Pits (DoT)
- Mining BAR/EMP's for Senqu LM 12 Borrow Pits (DoT)
- Mining BAR/EMP's for 24 Borrow Pits in 6 districts within the Eastern Cape– (SANRAL) 2018
- Mining BAR/EMP's for Ingquza Hill LM Borrow Pits – (SANRAL) 2017
- Mining BAR/EMP's for Baviaans LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Senqu LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Kouga/Koukamma LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Inkwanca (Enoch Mgijima) LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Kouga/Koukamma LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Sakhisizwe/Engcobo LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Raymond Mahlaba LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Camdeboo LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Elundini LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Emalahleni/Intsika Yethu LM Borrow Pits – (DRPW) 2017
- Mining BAR/EMP's for Nkonkobe LM Borrow Pits – (SANRAL) 2016
- Mining BAR/EMP's for Mbhashe LM Borrow Pits – (SANRAL) 2016
- Mining BAR/EMP's for Mbizana LM Borrow Pits – (SANRAL) 2016
- Mining BAR/EMP's for Senqu LM Borrow Pits – (SANRAL) 2016
- Mining BAR/EMP's for Elundini LM Borrow Pits – (SANRAL) 2016
- Mining BAR/EMP's for Emalahleni LM Borrow Pits – (SANRAL) 2016
- Mining BAR/EMP's for Emalahleni LM Borrow Pits – (DRPW) 2016
- Mining BAR/EMP's for Ikwezi/Baviaans LM Borrow Pits – (DRPW) 2016
- Mining BAR/EMP's for Chris Hani DM Borrow Pits - MR00716 (Tarkastad) (DRPW) 2015
- Mining BAR/EMP's for Chris Hani DM Borrow Pits – Intsika Yethu and Emalahleni (DRPW) 2015
- Mining BAR/EMP's for Joe Gqabi DM Borrow Pits – Senqu (DRPW) 2015
- Mining BAR/EMP's for Makana/Ndlambe LM Borrow Pits – Sarah Baartman (DRPW) 2015
- Mining BAR/EMP's for Amahlathi LM Borrow Pits – Amatole (DRPW) 2015
- Mining BAR/EMP's for Mbashe/Mqume LM Borrow Pits – Amatole (DRPW) 2015
- Mining BAR/EMP's for Sundays River Valley LM Borrow Pits – Sarah Baartman (DRPW) 2015
- Mining BAR/EMP's for Kouga LM Borrow Pits – Sarah Baartman (DRPW) 2015
- Mining BAR/EMP's for Chris Hani DM Borrow Pits - MR00716 (DRPW) 2014
- Mining BAR/EMP's for Chris Hani DM Borrow Pits - DR02581 (DRPW) 2014
- Mining BAR/EMP's for Chris Hani DM Borrow Pits - DR08041, DR08247, DR08248 & DR08504 (DRPW) 2014
- Mining BAR/EMP's for Chris Hani DM Borrow Pits - DR08599, DR08601 & DR08570 (DRPW) 2014
- Mining BAR/EMP's for Chris Hani DM Borrow Pits - DR08235, DR08551 & DR08038 (DRPW) 2014
- Mining BAR/EMP's for Alfred Nzo DM Borrow Pits - DR08092, DR08093 & DR08649 (DRPW) 2014
- Mining BAR/EMP's for Alfred Nzo DM Borrow Pits - DR08090, DR08412, DR08425, DR08129, DR08109, DR08106, DR08104 & DR08099 – Matatiele (DRPW) 2014

ENVIRONMENTAL COMPLIANCE AUDITING

- Environmental Compliance Audit (Habata Boerdery) 2021
- Environmental Compliance Audit (Sontule Farm) 2021

ENVIRONMENTAL MANAGEMENT, AUDITING, COMPLIANCE AND MONITORING PROJECTS

- Environmental Auditing Services Pre-construction and Construction (Rocky Coast Farm) 2021
- Environmental Auditing Services (Middledrift Breeder Facility) 2021
- Coega Aquaculture Development Zone Environmental Compliance and Monitoring for Construction (24 Months) 2020
- Construction of NMU West End Student Residences Phases 1 & 3 Environmental Control Office (30 Months) 2020
- Environmental Auditing and construction monitoring for construction of Phase 1 River Park (South End Precinct) 2020
- Waste Management License audit for Bedford Recycling project 2020
- Auditing for Construction of Fairwest Village Housing Project 2019
- Auditing for Construction of Utopia Estate monthly auditing 2019
- ECO for DRPW IRM Road Maintenance projects, Baviaans LM 2019
- ECO for DRPW IRM Road Maintenance projects, Senqu LM 2019
- ECO for DRPW IRM Road Maintenance projects, Kouga/Koukamma LM 2019
- ECO for DRPW IRM Road Maintenance projects, Sakhisizwe/Engcobo LM 2019
- ECO for DRPW IRM Road Maintenance projects, Elundini LM 2019
- ECO for DRPW IRM Road Maintenance projects, Emalahleni/Intsika Yethu LM 2019
- ECO for Construction of Fairwest Village Housing Project 2019
- ECO for Construction of Utopia Estate Mixed Use Project 2019
- ECO for Construction of NMU West End Student Residences Phases 1 & 3 2019
- ECO for Construction of Eco-Pullets pullet rearing facility, Paterson 2018
- ECO for DRPW IRM Road Maintenance projects, Raymond Mahlaba LM 2018
- ECO for DRPW IRM Road Maintenance projects, Inkwanca (Enoch Mgijima) LM 2018
- ECO for Citrus expansion on Farm 960, Patensie (AIN du Preez Boerdery) 2017
- ECO for Citrus expansion on Hitgeheim Farm (Farm 960), Sunland, Eastern Cape 2017
- DEO for improvement of national route R67 section 5 from Whittlesea (km 0.00) to Swart Kei river (km 15.40) – Murray & Roberts 2017
- ECO for SANRAL RRP Road Maintenance projects, Mbizana LM 2017
- ECO and Botanical Specialist for the special maintenance of national route R61 Section 2 from Elinus Farm (km 42.2) to N10 (km 85.0) (SANRAL) 2016
- Environmental Control Officer (ECO): Construction of NSRI Slipway - Port Elizabeth Harbour 2016
- ECO for SANRAL RRP Road Maintenance projects, Mbashe LM 2016
- ECO for SANRAL RRP Road Maintenance projects, Nkonkobe LM 2016
- ECO for SANRAL RRP Road Maintenance projects, Mbizana LM 2016
- ECO for SANRAL RRP Road Maintenance projects, Senqu LM 2016
- ECO for SANRAL RRP Road Maintenance projects, Elundini LM 2016
- ECO and Environmental Management for closure of Bushmans River Landfill site 2016
- ECO for DRPW IRM Road Maintenance projects, Amahlathi Municipality 2015
- ECO for DRPW IRM Road Maintenance projects, Makana/Ndlambe Municipality 2015
- ECO for DRPW IRM Road Maintenance projects, Mbashe/Mqume Municipality 2015
- ECO for DRPW IRM Road Maintenance projects, Port St Johns, Mbizana, Ingquza Hill LM's 2015
- ECO for Riversbend Citrus Farm, NMB 2014
- ECO for Alfred Nzo DM Road resurfacing - DR08071, DR08649, DR08092, DR08418, DR08452, DR08015, DR08085, DR08639 & DR08073, Eastern Cape - MSBA 2014

- ECO Audits for Koukamma Flood Damage Road Repairs – Hatch Goba 2014
- EMP and ECO for Utopia Estate, NMB 2013
- Final EMPr submission for Seaview Garden Estate, NMB 2012
- ECO audits for NMB Road surfacing, NMB (multiple contacts) 2011
- EMPr submission and ECO for Seaview Garden Estate, NMB 2010
- ECO for Mainstream Windfarm wind monitoring mast installation, Eastern Cape 2010
- EMP and ECO for Sinati Golf Estate EMP, BCM, Eastern Cape 2009
- Flora Relocation Plan and Permit application for Wildemans Plaas, NMB 2006

ENVIRONMENTAL SCREENING PROJECTS

- Somerset East Stormwater Environmental Screening Report 2021
- Woodlands Diary Road Upgrade Environmental Screening Report, Kouga LM 2021
- Risk Assessment and Screening for proposed Heatherbank access road, NMB 2020
- Environmental Screening Report for Proposed Life Hospital parking expansion, NMB 2019
- Environmental Screening Report for Erf 984 & 1134 development, Parsonsvlei, NMB 2019
- Environmental Screening Report for proposed Khayalethu School, Buffalo City 2018
- Environmental Screening Report for Proposed Housing Development of Erf 8700, Kabega Park, NMB 2017
- Environmental Screening Report for Proposed Housing Development of Erf 14, Kabega Park, NMB 2017
- Environmental Screening Report for Proposed Fairwest Social Housing project, Fairview, NMB 2016
- Environmental Screening Report for Development of Little Chelsea No 25, NMB 2016
- Terrestrial Vegetation Risk Assessment for proposed Skietnek Citrus Farm development (Kirkwood) 2015
- Preliminary Environmental Risk Assessment: NSRI Slipway Port Elizabeth 2015
- Environmental Screening Report for Proposed Development of a Dwelling on Erf 899, Theescombe 2015
- Environmental Screening Report for Proposed Development on Erf 559, Walmer, Port Elizabeth 2015
- Environmental Screening Report for Proposed Housing Scheme Development of Erf 8709, Wells Estate 2015
- Environmental Screening Report for Development of Portion 10 of Little Chelsea No 87, NMB 2015

SECTION 24G APPLICATIONS

- 12 000 ML Dam constructed on farm 960, Patensie (MGM Trust) 2015
- Illegal clearing of 20 Ha of lands on Hitgeheim Farm, Sunland, Eastern Cape 2015

CONFERENCES AND PUBLICATIONS

- Pote, J., Shackleton, C.M., Cocks, M. & Lubke, R. 2006. *Fuelwood harvesting and selection in Valley Thicket*, South Africa. Journal of Arid Environments, 67: 270-287.
- Pote, J., Cocks, M., Dold, T., Lubke, R.A. and Shackleton, C. 2004. *The homegarden cultivation of indigenous medicinal plants in the Eastern Cape*. Indigenous Plant Use Forum, 5 - 8 July 2004, Augsburg Agricultural School, Clanwilliam, Western Cape.
- Pote, J. & Lubke, R.A. 2003. *The selection of indigenous species suitable for use as fuelwood and building materials as a replacement of invasive species that are currently used by the under-privileged in the Grahamstown commonage.* Working for Water Inaugural Research Symposium 19 - 21 August 2003, Kirstenbosch. Poster presentation.
- Pote, J. & Lubke, R.A. 2003. *The screening of indigenous pioneer species for use as a substitute cover crop for rehabilitation after removal of woody alien species by WfW in the grassy fynbos biome in the Eastern Cape*. Working for Water Inaugural Research Symposium 19 - 21 August 2003, Kirstenbosch, South Africa.

OTHER RESEARCH EXPERIENCE

- Resource assessment of bark stripped trees in indigenous forests in Weza/Kokstad area (June 2000; Dr C. Geldenhuis & Mr. M. Kaplin).
- Working for Water research project for indigenous trees for woodlots (December 2000/January 2001; Prof R.A. Lubke, Rhodes University).
- Project coordinator and leader of the REFYN project – A BP conservation gold award: Conservation and Restoration of Grassy-Fynbos. A multidisciplinary project focusing on management, restoration and public awareness/education (2001 – 2002).
- Conservation Project Management Training Workshops: Royal Geographical Society, London 2001 – Fieldwork Techniques, Habitat Assessment, Biological Surveys, Project Planning, Public Relations and Communications, Risk Assessment, Conservation Education
- Selection and availability of wood in Crossroads village, Eastern Cape, South Africa. Honours Research Project 2002. Supervisors: Prof. R.A. Lubke & Prof. C. Shackleton.
- Floral Morphology, Pollination and Reproduction in Cyphia (LOBELIACEAE). Honours Research Project 2002. Supervisor: Mr. P. Phillipson.
- Forestry resource assessment of bark-stripped species in Amatola District (December 2002; Prof R.A. Lubke).
- Homegarden Cultivation of Medicinal Plants in the Amathole area. Postgraduate Research Project (2003-2005; Prof R.A. Lubke, Prof C.M. Shackleton and Ms C.M., Cocks).

## 5.4 Appendix D: Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity

**SCOPE**

The protocol (*Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation* (GN 320, 20 March 2020)) provides the criteria for the assessment and reporting of impacts on terrestrial biodiversity for activities requiring environmental authorisation.

The protocol (*Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of sections 24(5)(a) and (h) and 44 of NEMA, gazetted on 30 October 2020*), provides the criteria for the assessment and reporting of impacts on plant and animal species for activities requiring environmental authorisation.

These protocols replace the requirements of Appendix 6 of the Environmental Impact Assessment Regulation[5].

The assessment and minimum reporting requirements of this protocol are associated with a level of environmental sensitivity identified by the national web based environmental screening tool (https://screening.environment.gov.za/screeningtool). The requirements for terrestrial biodiversity are for landscapes or sites which support various levels of biodiversity. The relevant terrestrial biodiversity data in the screening tool has been provided by the South African National Biodiversity Institute[6].

**SITE SENSITIVITY VERIFICATION AND MINIMUM REPORT CONTENT REQUIREMENTS**

Prior to commencing with a specialist assessment, the current use of the land and the potential environmental sensitivity of the site under consideration as identified by the screening tool must be confirmed by undertaking a site sensitivity verification.

2.1. The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.

2.2. The site sensitivity verification must be undertaken through the use of:

(a) a desk top analysis, using satellite imagery,

(b) a preliminary on-site inspection; and

(c) any other available and relevant information.

2.3. The outcome of the site sensitivity verification must be recorded in the form of a report that:

(a) confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;

(b) contains a motivation and evidence (e.g., photographs) of either the verified or different use of the land and environmental sensitivity; and

(c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

[5] The Environmental Impact Assessment Regulations, as promulgated in terms of Section 24 (5) of the National Environmental Management Act, 1998 (Act 107 of 1998).

[6] The biodiversity dataset has been provided by the South African National Biodiversity Institute (for details of the dataset, click on the options button to the right of the various biodiversity layers on ther screening tool).

**TERRESTRIAL BIODIVERSITY SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS**

| TABLE 1: | ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY | REPORT REFERENCE |
|---|---|---|
| 1 | **General Information** | - |
| 1.1 | An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified on the screening tool as being "*very high sensitivity*" for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment. | ✓ |
| 1.2 | An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being ***'low sensitivity'*** for terrestrial biodiversity, must submit a Terrestrial Biodiversity Compliance Statement. | ✓ |
| 1.3 | However, where the information gathered from the site sensitivity verification differs from the designation of ***'very high'*** terrestrial biodiversity sensitivity on the screening tool and it is found to be of a ***'low'*** sensitivity, then a Terrestrial Biodiversity Compliance Statement must be submitted. | ✓ |
| 1.4 | Similarly, where the information gathered from the site sensitivity verification differs from that identified as having a ***'low'*** terrestrial biodiversity sensitivity on the screening tool, a Terrestrial Biodiversity Specialist Assessment must be conducted. | ✓ |
| 1.5 | If any part of the proposed development footprint falls within an area of ***'very high'*** sensitivity, the assessment and reporting requirements prescribed for the ***'very high'*** sensitivity apply to the entire footprint, excluding linear activities for which impacts on terrestrial biodiversity are temporary and the land in the opinion of the terrestrial biodiversity specialist, based on the mitigation and remedial measures, can be returned to the current state within two years of the completion of the construction phase, in which case a compliance statement applies. Development footprint in the context of this protocol means the area on which the proposed development will take place and includes any are that will be disturbed. | ✓ |
| | **VERY HIGH SENSITIVITY RATING for terrestrial biodiversity features** | |
| 3.1.13 | a motivation must be provided if there were development footprints identified as per paragraph 2.3.6 above that were identified as having a 'low' terrestrial biodiversity sensitivity and that were not considered appropriate, | ✓ |
| | **LOW SENSITIVITY RATING – for terrestrial biodiversity features** | |
| 4 | **Terrestrial Biodiversity Compliance Statement** | ✓ |
| 4.1 | The compliance statement must be prepared by a specialist registered with the SACNASP and having expertise in the field of ecological sciences. | ✓ |
| 4.2 | The compliance statement must: | |
| 4.2.1 | be applicable to the preferred site and proposed development footprint; | ✓ |
| 4.2.2 | confirm that the site is of 'low' sensitivity for terrestrial biodiversity; and | ✓ |
| 4.2.3 | indicate whether or not the proposed development will have any impact on the biodiversity feature. | ✓ |
| 4.3 | The compliance statement must contain, as a minimum, the following information: | |
| 4.3.1 | the contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae; | ✓ |
| 4.3.2 | a signed statement of independence by the specialist; | ✓ |
| 4.3.3 | a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; | ✓ |
| 4.3.4 | a baseline profile description of biodiversity and ecosystems of the site; | ✓ |
| 4.3.5 | the methodology used to verify the sensitivities of the terrestrial biodiversity features on the site, including equipment and modeling used, where relevant; | ✓ |
| 4.3.6 | in the case of a linear activity, confirmation from the terrestrial biodiversity specialist that, in their opinion, based on the mitigation and remedial measures propped, the land can be returned to the current state within two years of completion of the construction phase; | ✓ |
| 4.3.7 | where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; | ✓ |
| 4.3.8 | a description of the assumptions made and any uncertainties or gaps in knowledge or data; and | ✓ |

| | | |
|---|---|---|
| 4.3.9 | any conditions to which this statement is subjected. | EAP |
| 4.4 | A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report. | EAP |

**ANIMAL SPECIES SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS**

| TABLE 1: | ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY | REPORT REFERENCE |
|---|---|---|
| **1** | **General Information** | |
| 1.1 | An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of "*very high*" or "*high*" sensitivity for terrestrial animal species must submit a **Terrestrial Animal Species Specialist Assessment Report**. | ✓ |
| 1.2 | An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of "*medium sensitivity*" for terrestrial animal species must submit **either a Terrestrial Animal Species Specialist Assessment Report or a Terrestrial Animal Species Compliance Statement**, depending on the outcome of a site inspection undertaken in accordance with paragraph 4. | ✓ |
| 1.3 | An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of "*low*" sensitivity for terrestrial animal species must submit a **Terrestrial Animal Species Compliance Statement.** | ✓ |
| 1.4 | Where the information gathered from the site sensitivity verification differs from the screening tool designation of "*very high*" or "*high*", for terrestrial animal species sensitivity and it is found to be of a "*low*" sensitivity, then a **Terrestrial Animal Species Compliance Statement** must be submitted. | ✓ |
| 1.5 | Where the information gathered from the site sensitivity verification differs from the screening tool designation of "*low*" terrestrial animal species sensitivity and it is found to be of a "*very high*" or "*high*" terrestrial animal species sensitivity, a **Terrestrial Animal Species Specialist Assessment** must be conducted. | ✓ |
| 1.6 | If any part of the development falls within an area of confirmed "*very high*" or "*high*" sensitivity, the assessment and reporting requirements prescribed for the "*very high*" or "*high*" sensitivity, apply to the entire development footprint. Development footprint in the context of this protocol means, the area on which the proposed development will take place and includes the area that will be disturbed or impacted. | ✓ |
| 1.7 | The **Terrestrial Animal Species Specialist Assessment** and the **Terrestrial Animal Species Compliance Statement** must be undertaken within the *study area*. | ✓ |
| 1.8 | Where the nature of the activity **is not** expected to have an impact on species of conservation concern (SCC) beyond the boundary of the preferred site, the study area means the proposed development footprint within the preferred site. | ✓ |
| 1.9 | Where the nature of the activity **is** expected to have an impact on SCC beyond the boundary of the preferred site, the *project areas of influence* (PAOI) must be determined by the specialist in accordance with *Species Environmental Assessment Guideline*[7], and the study area must include the PAOI, as determined. | ✓ |
| | **VERY HIGH AND HIGH SENSITIVITY RATING for terrestrial animal species** | |
| **2** | **Terrestrial Animal Species Specialist Assessment** | |
| | VERY HIGH SENSITIVITY RATING<br>1. Critical habitat for range-restricted species[8] of conservation concern, that have a global range of less than 10 km$^2$. | ✓ |

[7] Available at https://bgis.sanbi.org/
[8] Species with a geographically restricted area of distribution.

| | | |
|---|---|---|
| | 2. SCC listed on the IUCN Red List of Threatened Species[9] or on South Africa's National Red List website[10] as Critically Endangered, Endangered or Vulnerable according to the IUCN Red List 3.1. Categories and Criteria or listed as Nationally Rare.<br>3. Species aggregations that represent ≥1% of the global population size of a species, over a season, and during one or more key stages of its life cycle.<br>4. The number of mature individuals that ranks the site among the largest 10 aggregations known for the species.<br><br>These areas are irreplaceable for SCC. | |
| | HIGH SENSITIVITY RATING<br><br>1. Confirmed habitat for SCC.<br>2. SCC, listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered or Vulnerable, according to the IUCN Red List 3.1. Categories and Criteria and under the national category of Rare.<br><br>These areas are unsuitable for development due to a very likely impact on SCC. | ✓ |
| 2.2.12 | identify any alternative development footprints within the preferred site which would be of "*low*" or "*medium*" sensitivity as identified by the screening tool and verified through the site sensitivity verification. | ✓ |
| 2.3 | The findings of the assessment must be written up in a **Terrestrial Animal Species Specialist Assessment Report**. | ✓ |
| 3 | **Terrestrial Animal Species Specialist Assessment Report** | |
| 3.1.13 | a motivation must be provided if there were any development footprints identified as per paragraph 2.2.12 above that were identified as having "*low*" or "*medium*" terrestrial animal species sensitivity and were not considered appropriate. | ✓ |
| **4** | **MEDIUM SENSITIVITY SPECIES OF CONSERVATION CONCERN CONFIRMATION** | |
| | **MEDIUM SENSITIVITY RATING – for terrestrial animal species:**<br><br>1. Suspected habitat for SCC based either on historical records (prior to 2002) or being a natural area included in a habitat suitability model for this species[11].<br>2. SCC listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered or Vulnerable according to the IUCN Red List 3.1. Categories and Criteria and under the national category of Rare. | ✓ |
| 4.6 | Where SCC are found on site or have been confirmed to be likely present, a **Terrestrial Animal Species Specialist Assessment** must be submitted in accordance with the requirements specified for "*very high*" and "*high*" sensitivity in this protocol. | ✓ |
| 4.7 | Similarly, where no SCC are found on site during the site inspection or the presence is confirmed to be unlikely, a **Terrestrial Animal Species Compliance Statement** must be submitted. | ✓ |
| **5** | **LOW SENSITIVITY RATING – for terrestrial animal species** | |
| | **Terrestrial Animal Species Compliance Statement**<br><br>1. Areas where no natural habitat remains.<br>2. Natural areas where there is no suspected occurrence of SCC. | ✓ |
| 5.1 | The compliance statement must be prepared by a SACNASP registered specialist under one of the two fields of practice (Zoological Science or Ecological Science). | ✓ |
| 5.2 | The compliance statement must: | ✓ |
| 5.2.1 | be applicable to the study area; | ✓ |
| 5.2.2 | confirm that the study area, is of "*low*" sensitivity for terrestrial animal species; and | ✓ |

[9] https://www.iucnredlist.org/
[10] This category includes the categories Extremely Rare, Critically Rare and Rare
[11] The methodology by which habitat suitability models have been developed are explained within the Species Environmental Assessment Guideline.

| | | |
|---|---|---|
| 5.2.3 | indicate whether or not the proposed development will have any impact on SCC. | ✓ |
| 5.3 | The compliance statement[12] must contain, as a minimum, the following information: | ✓ |
| 5.3.1 | contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae; | ✓ |
| 5.3.2 | a signed statement of independence by the specialist; | ✓ |
| 5.3.3 | a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; | ✓ |
| 5.3.4 | a description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant; | ✓ |
| 5.3.5 | the mean density of observations/ number of samples sites per unit area[15]. | ✓ |
| 5.3.6 | where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMPr; | ✓ |
| 5.3.7 | a description of the assumptions made and any uncertainties or gaps in knowledge or data; and | ✓ |
| 5.3.8 | any conditions to which the compliance statement is subjected. | ✓ |
| 6 | A signed copy of the **Terrestrial Animal Species Compliance Statement** must be appended to the Basic Assessment Report or the Environmental Impact Assessment Report. | ✓ |

**PLANT SPECIES SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS**

| TABLE 1: | ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY | REPORT REFERENCE |
|---|---|---|
| 1 | **General Information** | |
| 1.1 | An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of "*very high*" or "*high*" sensitivity for terrestrial plant species must submit a **Terrestrial Plant Species Specialist Assessment Report**. | ✓ |
| 1.2 | An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of "*medium sensitivity*" for terrestrial plant species must submit **either a Terrestrial Plant Species Specialist Assessment Report or a Terrestrial Plant Species Compliance Statement,** depending on the outcome of a site inspection undertaken in accordance with paragraph 4. | ✓ |
| 1.3 | An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of "*low*" sensitivity for terrestrial plant species must submit a **Terrestrial Plant Species Compliance Statement.** | ✓ |
| 1.4 | Where the information gathered from the site sensitivity verification differs from the screening tool designation of "*very high*" or "*high*", for terrestrial plant species sensitivity and it is found to be of a "*low*" sensitivity, then a **Terrestrial Plant Species Compliance Statement** must be submitted. | ✓ |
| 1.5 | Where the information gathered from the site sensitivity verification differs from the screening tool designation of "*low*" terrestrial plant species sensitivity and it is found to be of a "*very high*" or "*high*" terrestrial plant species sensitivity, a **Terrestrial Plant Species Specialist Assessment** must be conducted. | ✓ |
| 1.6 | If any part of the development falls within an area of confirmed "*very high*" or "*high*" sensitivity, the assessment and reporting requirements prescribed for the "*very high*" or "*high*" sensitivity, apply to the entire development footprint. Development footprint in the context of this protocol means, the area on which the proposed development will take place and includes the area that will be | ✓ |

[12] An example of a what is contained in a Compliance Statement for Animal Species Impact Assessment can be found in the Species Environmental Impact Assessment Guideline

| | | |
|---|---|---|
| | disturbed or impacted. | |
| 1.7 | The **Terrestrial Plant Species Specialist Assessment** and the **Terrestrial Plant Species Compliance Statement** must be undertaken within the *study area*. | ✓ |
| 1.8 | Where the nature of the activity **is not** expected to have an impact on species of conservation concern (SCC) beyond the boundary of the preferred site, the study area means the proposed development footprint within the preferred site. | ✓ |
| 1.9 | Where the nature of the activity **is** expected to have an impact on SCC beyond the boundary of the preferred site, the *project areas of influence* (PAOI) must be determined by the specialist in accordance with *Species Environmental Assessment Guideline*[13], and the study area must include the PAOI, as determined. | ✓ |
| | **VERY HIGH AND HIGH SENSITIVITY RATING for terrestrial plant species** | |
| 2 | **Terrestrial Plant Species Specialist Assessment** | |
| | VERY HIGH SENSITIVITY RATING<br><br>1. Critical habitat for range-restricted species[14] of conservation concern, that have a global range of less than 10 km$^2$.<br>2. SCC listed on the IUCN Red List of Threatened Species[15] or on South Africa's National Red List website[16] as Critically Endangered, Endangered or Vulnerable according to the IUCN Red List 3.1. Categories and Criteria or listed as Nationally Rare.<br>3. Species aggregations that represent ≥1% of the global population size of a species, over a season, and during one or more key stages of its life cycle.<br>4. The number of mature individuals that ranks the site among the largest 10 aggregations known for the species.<br><br>These areas are irreplaceable for SCC.<br><br>HIGH SENSITIVITY RATING<br><br>1. Confirmed habitat for SCC.<br>2. SCC, listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered or Vulnerable, according to the IUCN Red List 3.1. Categories and Criteria and under the national category of Rare.<br><br>These areas are unsuitable for development due to a very likely impact on SCC. | ✓ |
| 2.3.12 | identify any alternative development footprints within the preferred site which would be of "*low*" or "*medium*" sensitivity as identified by the screening tool and verified through the site sensitivity verification. | ✓ |
| 2.4 | The findings of the assessment must be written up in a **Terrestrial Plant Species Specialist Assessment Report**. | ✓ |
| 3 | **Terrestrial Plant Species Specialist Assessment Report** | ✓ |
| 3.1.13 | a motivation must be provided if there were any development footprints identified as per paragraph 2.3.12 above that were identified as having "*low*" or "*medium*" terrestrial plant species sensitivity and were not considered appropriate. | ✓ |
| 4 | **MEDIUM SENSITIVITY SPECIES OF CONSERVATION CONCERN CONFIRMATION** | |
| | **MEDIUM SENSITIVITY RATING – for terrestrial plant species:** | |
| | 1. Suspected habitat for SCC based either on there being records for this species collected in the past, prior to 2002, or being a natural area included in a habitat suitability model[17]. | ✓ |

[13] Available at https://bgis.sanbi.org/
[14] Species with a geographically restricted area of distribution.
[15] https://www.iucnredlist.org/
[16] This category includes the categories Extremely Rare, Critically Rare and Rare
[17] The methodology by which habitat suitability models have been developed are explained within the Species Environmental Assessment Guideline.

| | | |
|---|---|---|
| | 2. SCC listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered or Vulnerable according to the IUCN Red List 3.1. Categories and Criteria and under the national category of Rare. | |
| 4.6 | Where SCC are found on site or have been confirmed to be likely present, a **Terrestrial Plant Species Specialist Assessment** must be submitted in accordance with the requirements specified for "*very high*" and "*high*" sensitivity in this protocol. | ✓ |
| 4.7 | Similarly, where no SCC are found on site during the site inspection or the presence is confirmed to be unlikely, a **Terrestrial Plant Species Compliance Statement** must be submitted. | ✓ |
| **5** | **LOW SENSITIVITY RATING – for terrestrial plant species** | |
| | **Terrestrial Plant Species Compliance Statement**<br>1. Areas where no natural habitat remains.<br>2. Natural areas where there is no suspected occurrence of SCC. | ✓ |
| 5.1 | The compliance statement must be prepared by a SACNASP registered specialist under one of the two fields of practice (Botanical Science or Ecological Science). | ✓ |
| 5.2 | The compliance statement must: | ✓ |
| 5.2.1 | be applicable to the study area; | ✓ |
| 5.2.2 | confirm that the study area, is of "*low*" sensitivity for terrestrial plant species; and | ✓ |
| 5.2.3 | indicate whether or not the proposed development will have any impact on SCC. | ✓ |
| 5.3 | The compliance statement[18] must contain, as a minimum, the following information: | ✓ |
| 5.3.1 | contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae; | ✓ |
| 5.3.2 | a signed statement of independence by the specialist; | ✓ |
| 5.3.3 | a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; | ✓ |
| 5.3.4 | a description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant; | ✓ |
| 5.3.5 | where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMPr; | ✓ |
| 5.3.6 | a description of the assumptions made and any uncertainties or gaps in knowledge or data; | ✓ |
| 5.3.7 | the mean density of observations/ number of samples sites per unit area[19]; and | ✓ |
| 5.3.8 | any conditions to which the compliance statement is subjected. | ✓ |
| 6 | A signed copy of the **Terrestrial Plant Species Compliance Statement** must be appended to the Basic Assessment Report or the Environmental Impact Assessment Report. | ✓ |

[18] An example of a what is contained in a Compliance Statement for Plant Species Impact Assessment can be found in the Species Environmental Impact Assessment Guideline
[19] Refer to the Species Environmental Assessment Guideline

# 5.5 Appendix E: Site Sensitivity Verification Report

## 5.5.1 Purpose of Report

The "*Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of sections 24 (5) (a) and (h) and 44 of the Act, when applying for Environmental Authorisation*", as published on 20 March, 2020 in National Gazette, No. 43110 in terms of NEMA (Act 107 of 1998) sections 24(5)(a), (h) and 44, lists protocols and minimum report requirements for environmental impacts on terrestrial biodiversity and provides the criteria for the assessment and reporting of impacts on terrestrial biodiversity for activities requiring environmental authorisation. The assessment and minimum reporting requirements of this protocol are associated with a level of environmental sensitivity identified by the National web based Environmental Screening Tool. Prior to commencing with a specialist assessment, the current use of the land and the environmental sensitivity of the site under consideration, identified by the screening tool, must be confirmed by undertaking a **site sensitivity verification**, which must include the following.

1. The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.
2. The site sensitivity verification must be undertaken through the use of:
    a. a desk top analysis, using satellite imagery.
    b. a preliminary on -site inspection; and
    c. any other available and relevant information.
3. The outcome of the site sensitivity verification must be recorded in the form of a report that:
    a. confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool.
    b. contains a motivation and evidence of either the verified or different use of the land and environmental sensitivity; and
    c. is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

The National Web Based Screening Tool was used to generate the potential environmental sensitivity of the site which has then been compared to various online and other databases and information sources in order to verify and confirm the validity of the screening tool findings. This was further supported with on-site observations and analysis of most recent aerial photography.

This terrestrial biodiversity site verification has been undertaken as per the requirements of the Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation (GN 320, 20 March 2020).

## 5.5.2 Background

Eco Route Environmental Consultancy was appointed to undertake the necessary environmental applications for proposed expansion of dwelling on Erf 1220, St Francis Bay, Kouga Local Municipality (Figure 1). As part of this process a terrestrial biodiversity assessment is required.

# 5.6 Activity Description

The owners of Erf 1220, St Francis Bay wish to construct some extensions on the erf and being in proximity to the high-water mark, an environmental application process is triggered. The site is a developed erf along the cost, within an urban area (Figure 2).

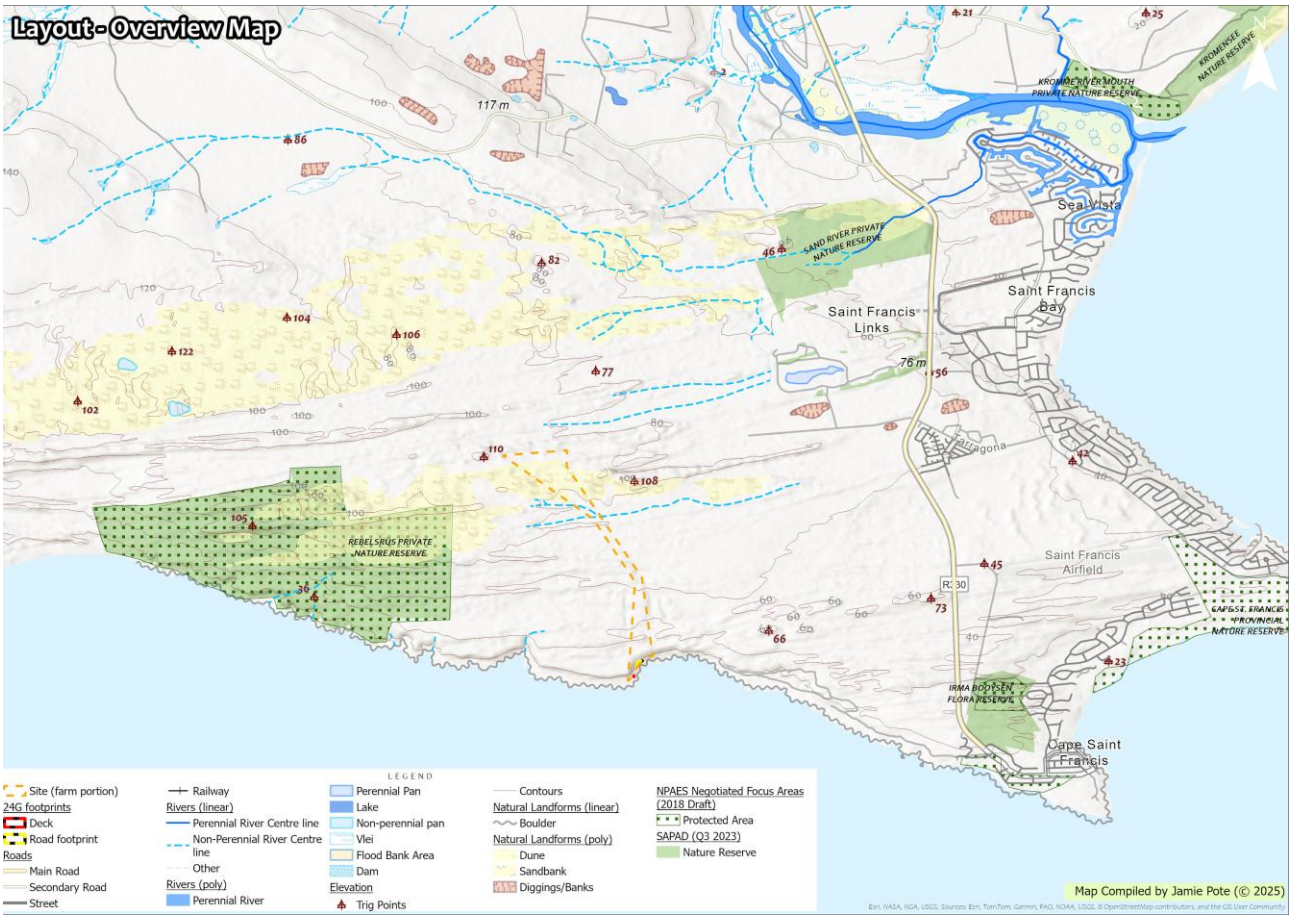


*Figure 22: Site locality.*


*Figure 23: Site locality Aerial for proposed water infrastructure (blue).*

### 5.6.1 Data sources and references

Data sources that were utilised for this report include the following:

- National (DFFE) Web Based Screening Tool – to generate the sites potential environmental sensitivity.
- National Vegetation Map 2018 (NVM, 2018), Mucina & Rutherford (2006) and National Biodiversity Assessment (NBA, 2019) – description of vegetation types, species (including endemic) and vegetation unit conservation status.
- National and Regional Legislation including Provincial Nature Conservation Ordinance (P.N.C.O). NEM:BA Threatened or Protected Species (ToPS).
- Botanical Database of Southern Africa (BODATSA) and New Plants of Southern Africa (POSA) – lists of plant species and potential species of concern found in the general area (SANBI.)
- International Union for Conservation of Nature (IUCN) - Red List of Threatened Species.
- Animal Demography Unit Virtual Museum (VM) – potential faunal species.
- Global Biodiversity Information Facility (GBIF) – potential faunal species.
- Southern African Bird Atlas Project 2 (SABAP2) – for bird species records.
- National Red Books and Lists - mammals, reptiles, frogs, dragonflies & butterflies.
- National Freshwater Ecosystem Priority Areas assessment (NFEPA, 2011) - important catchments.
- National Protected Areas Expansion Strategy (NPAES, 2018) and South Africa Protected Area database (2020) – protected area information.
- SANBI BGIS – All other biodiversity GIS datasets.
- Aerial Imagery – Google Earth, ESRI, Chief Surveyor General (http://csg.dla.gov.za).
- Cadastral and other topographical country data - Chief Surveyor General (http://csg.dla.gov.za).
- Other sources include peer-reviewed journals, regional and local assessments, and studies in the general location of the project and its area of influence, landscape prioritization schemes (Key Biodiversity Areas), systematic conservation planning assessments and plans (as above), and any pertinent masters and doctoral theses, among others.

### 5.6.2 Site visit

A site inspection was conducted on **22 August 2024**, during winter. The site falls within a summer rainfall area, however for the purposes of this report, a single site visit is deemed to be adequate, specifically due to the disturbed nature of the site within a developed erf.

### 5.6.3 Assumptions, Uncertainties and Gaps in Knowledge

The findings and recommendations of this report may be susceptible to the following uncertainties and limitation:

- No assessment has been made of aquatic aspects relating to any wetlands, pans and rivers/seeps and/or estuaries outside of the scope of a terrestrial biodiversity report and have been undertaken by an aquatic specialist.
- No specific faunal assessment has been undertaken, but animals have been assessed in term of the terrestrial Biodiversity Assessment requirements.
- Any flora surveys based upon a limited sampling time-period, may not reflect the actual species composition of the site due to seasonal variations in flowering times.
- As far as possible, site collected data has been supplemented with desktop and database-centred distribution data as well as previous studies undertaken in the area.

## 5.6.4 National Environmental Screening Tool

The DEA Screening Tool indicates the following, summarised in Table 2:

- Terrestrial Biodiversity is Very High (Figure 24).
- Plant species sensitivity is Low/Moderate (Figure 25).
- Animal Species sensitivity is Moderate/High (Figure 26).
- Aquatic Sensitivity is Very High (Figure 27).

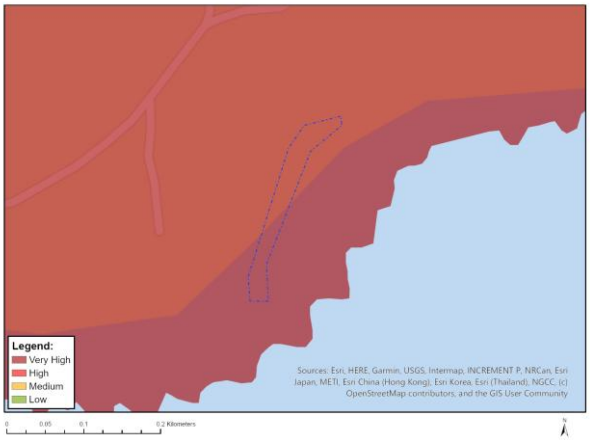


*Figure 24: Terrestrial Biodiversity Sensitivity*


*Figure 25: Plant Species Sensitivity*

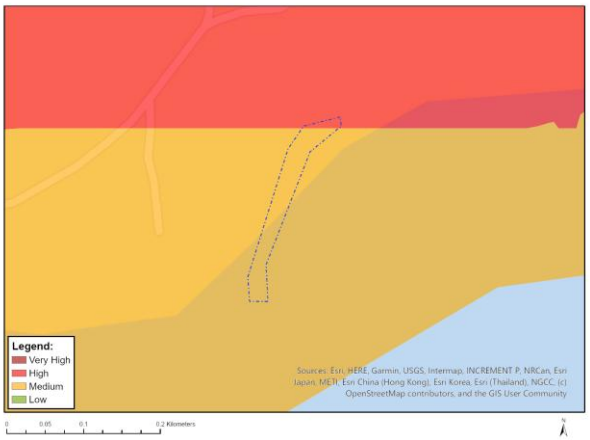


*Figure 26: Animal Species Sensitivity*


*Figure 27: Aquatic Sensitivity*

*Table 5: Summary of Screening tool designations.*

| **Terrestrial Sensitivity** | **Feature(s) in proximity** |
|---|---|
| Very High | CBA 1 |
| High | None |
| Medium | None |
| Low | Present |
| **Plant Sensitivity** | **Feature(s) in proximity** |
| Very High | None |
| High | None |
| Medium | *Aspalathus recurvispina, Hyobanche robusta, Erica chloroloma, Erica glandulosa subsp. fourcadei, Centella tridentata var. hermanniifolia, Rapanea gilliana, Syncarpha sordescens, Agathosma stenopetala, Cotyledon adscendens, Capeochloa cincta subsp. sericea, Erica glumiflora* & Sensitive species 308, 588, 657, 434, 1192, 1032, 78 & 448 |
| Low | Present |

| **Animal Sensitivity** | **Feature(s) in proximity** |
|---|---|
| Very High | None |
| High | *Circus maurus* (bird) |
| Medium | *Stephanoaetus coronatus* (bird) & *Aneuryphymus montanus* (invertebrate) |
| Low | None |
| **Aquatic Sensitivity** | **Feature(s) in proximity** |
| Very High | None |
| High | None |
| Medium | None |
| Low | Present |

The site has a low Screening Tool designated Terrestrial Biodiversity and Aquatic sensitivity, with Medium Plant and Animal sensitivities. The site verification will screen for the presence or likely presence of these species.
The site has a low Screening Tool designated Terrestrial Biodiversity and Aquatic sensitivity, with Medium Plant and Animal sensitivities.

The site assessment has physically screened for the presence of any species as listed in the National Environmental Screening Tool, as well as other possible species or sensitivities that are not identified in the screening tool. Not all features are directly affected, but being in proximity, the risks associated with the activity will be investigated further and addressed in the report.

## 5.6.5 Findings, Outcomes and Recommendations

### ***Terrestrial Biodiversity***

Site verification of the Terrestrial Biodiversity sensitivities is summarised in Table 6 and depicted in *Figure 28*, confirming that the site is not within any CBA, ESA or other designated sensitive features.

*Table 6: Terrestrial Biodiversity Features flagged in the National Environmental Screening Tool.*

| Feature | | COMMENT |
|---|---|---|
| Critical Biodiversity Area 1 | CBA 1 | **Confirm** – the site is an urban Erf and is not within any designated sensitive terrestrial biodiversity areas. |
| Critical Biodiversity Area 2 | CBA 2 | |
| Ecological Support Area | ESA 1 | |

### ***Plant Species (Flora)***

National Environmental Screening Tool flagged several flora species. Almost the entire urban Erf is situated within landscaped garden where little natural vegetation remains, other than a few remnant Milkwood Trees and other nominal dune thicket elements.

The SSVR thus disputes the flagged medium flora ('plant') species designations, the specialist assigning a low plant species sensitivity.

### ***Animal Species (Fauna)***

National Environmental Screening Tool flagged several flora species. Almost the entire urban Erf is situated within landscaped garden where little natural vegetation remains, other than a few remnant Milkwood Trees and other nominal Dune Thicket elements. The site verification confirmed that no

animal species of conservation concern having an elevated status and/or limited distribution range as flagged in the screening tool are present or likely to occur.

The SSVR thus disputes the flagged medium fauna ('animal') species designations, the specialist assigning a low animal species sensitivity.

### *Aquatic*

Wetland and River features are present in the broader area, including non-perennial watercourses but not in proximity to the site.

The SSVR thus confirms the screening tool low aquatic sensitivity designation.

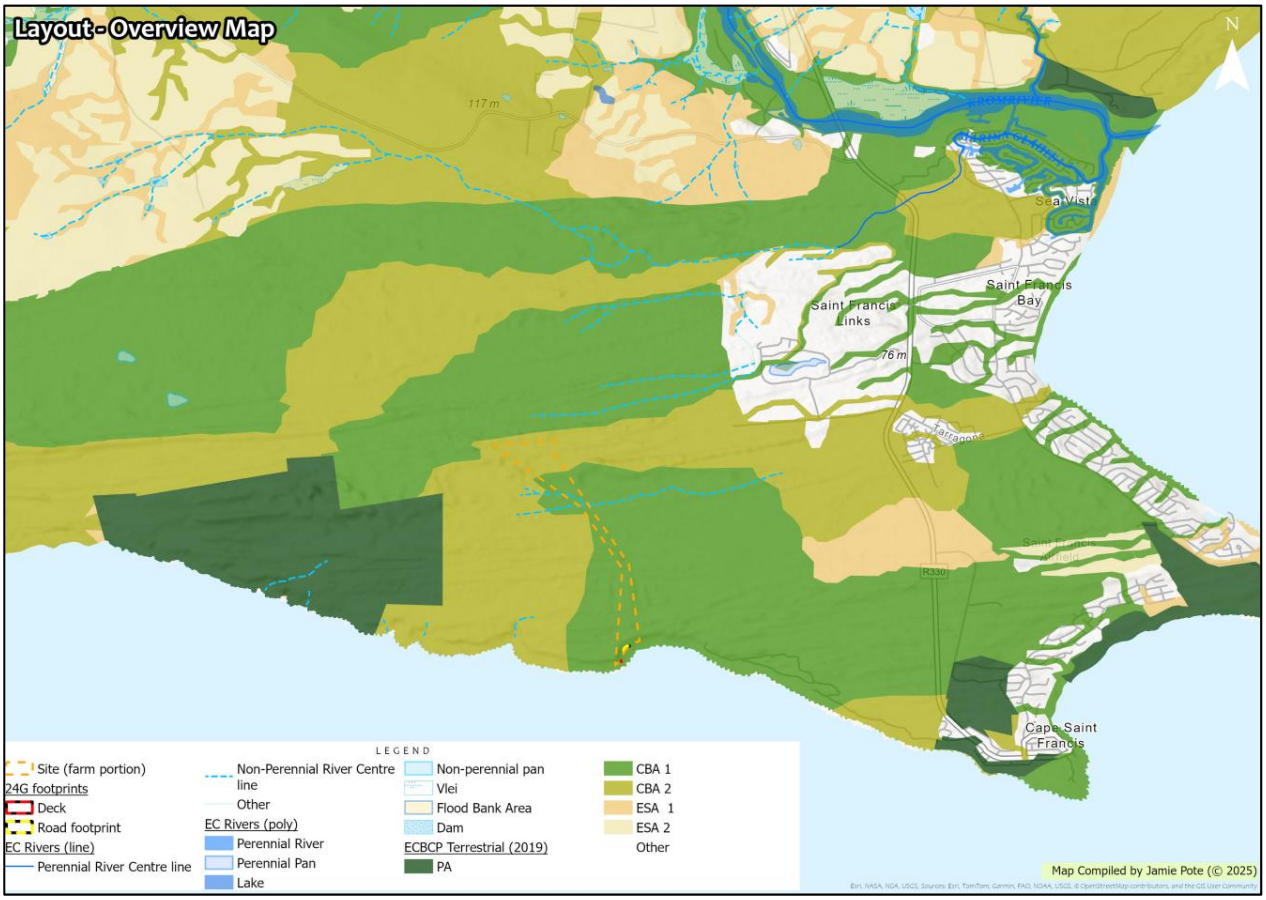


*Figure 28: Eastern Cape Biodiversity Conservation Plan (2019) – site does not overlap with any CBA or ESA designations.*

## 5.6.6 Conclusions

The site verification thus confirms that while the site does overlap with designated CBA, the footprint is within an existing footprint associated with the historical dwelling and access road and the CBA designation is thus disputed. The specialist thus designates a low terrestrial biodiversity sensitivity for the affected site footprint. The site verification disputes that any of the screening tool flagged flora and fauna species of conservation concern are present or likely to have been affected. The specialist thus designates a low plant & animal sensitivity for the affected site footprint.

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