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Terrestrial Biodiversity Assessment

Hansmoeskraal Farm 202 Portion 50

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Compiled for: **Sharples Environmental Services**

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Draft Report

Revisions

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First Draft	18/10/2024	Jamie Pote
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IAP comments		
Final Version		

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1 Introduction & Background

1.1 Background

Sharples Environmental Services cc (SES) has been appointed as the independent Environmental Assessment Practitioner (EAP) to conduct the Environmental Impact Assessment process for the proposed construction of commercial and residential development on Hansmoeskraal Farm 202, Portion 50, in the George Local Municipality, Garden Route District Municipality of the Western Cape. (Figure 1). As part of this application, a Terrestrial Biodiversity, Plant & Animal Specialist Assessment is required.

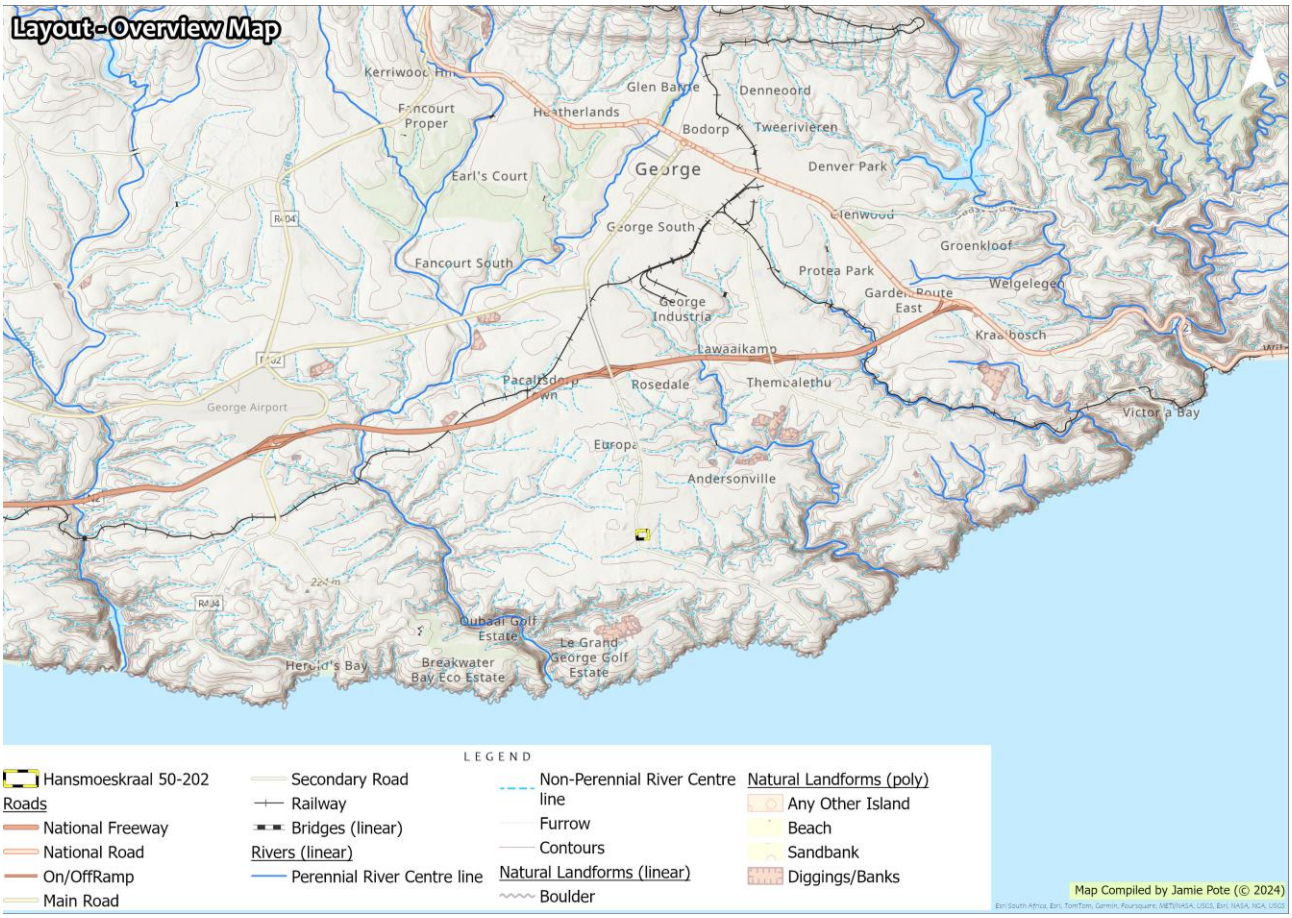

Figure 1: Site locality.

1.2 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.

1.3 Activity Description

The proposed preferred Site Development Plan (SDP), which will entail clearing of the entire site of vegetation is indicated in Figure 3. The proposed alternative Site Development Plan (SDP), Alternative B, will also entail clearing of the entire site of vegetation is indicated in Figure 3.

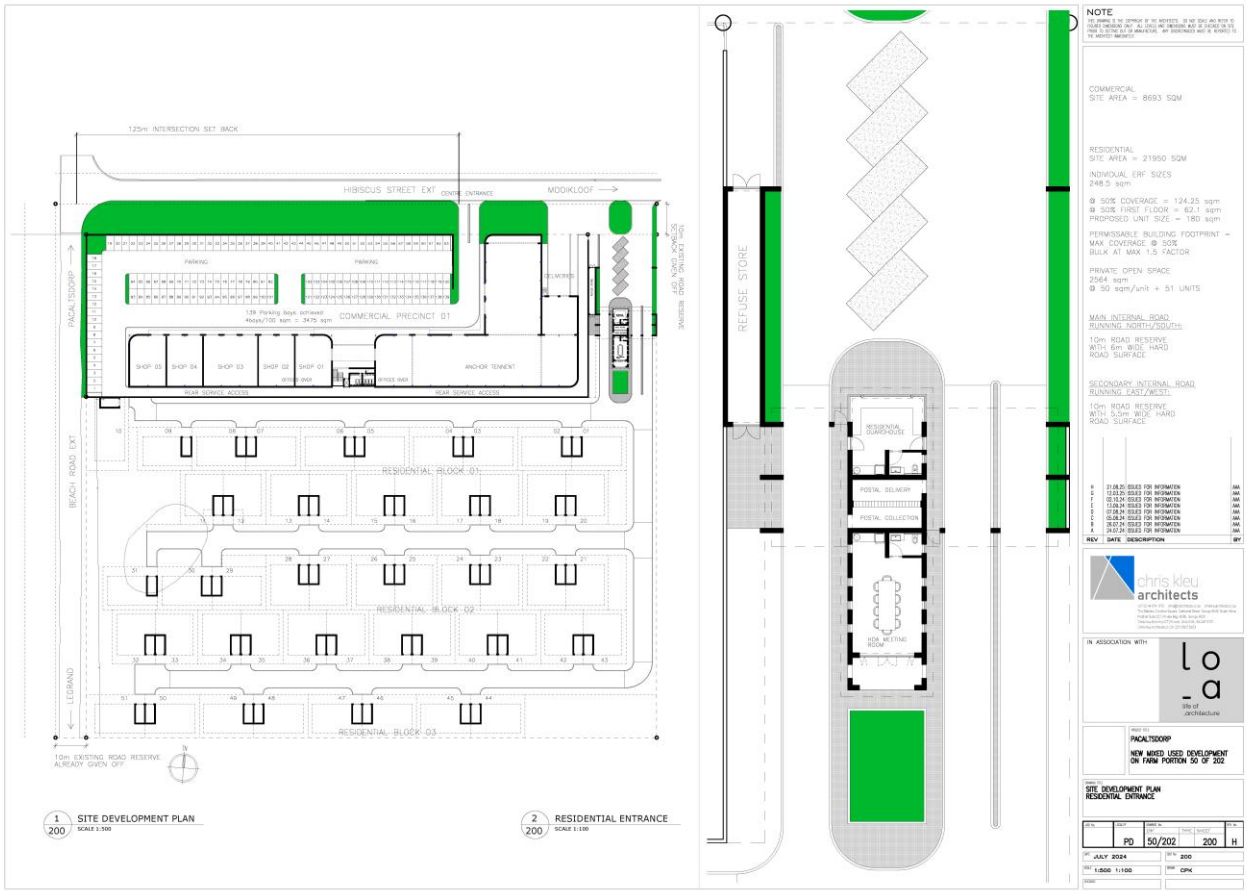

Figure 2: Hansmoeskraal Farm 202, Farm Portion 50 Preferred Site Development Plan (SDP).

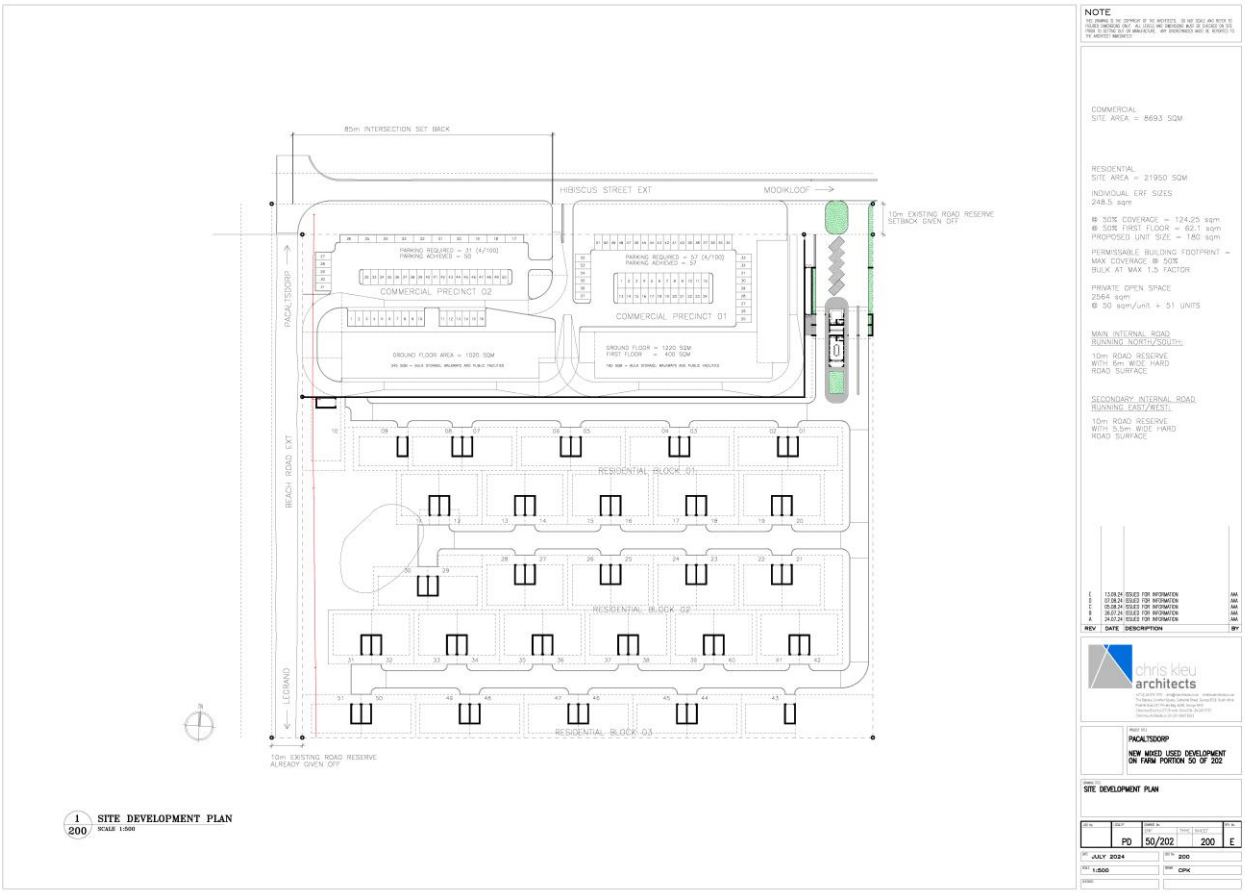

Figure 3: Hansmoeskraal Farm 202, Farm Portion 50 Alternative Site Development Plan (SDP) – Alternative B.

1.4 Methodology and Approach

The proposed methodology and approach followed in this assessment are outlined below:

- Conduct a comprehensive desktop study and identify potential risks relating to flora of the site and surrounding area, for a Terrestrial Biodiversity Assessment Report.
- Conduct a detailed site visit to assess the following:
  - Detailed field survey of flora and habitats present.
  - Plant species list, highlighting species that are of special concern, threatened, Red Data species and species requiring permits for destruction/relocation in terms of NEMBA and the Provincial Nature Conservation Ordinance No. 19 of 1974.
  - Detailed mapping of the various habitat units and assessment of habitat integrity, ecological sensitivity, levels of degradation and transformation, alien invasion and Species of Conservation Concern, the outcome being a detailed sensitivity map ranked into high, medium or low classes.
- Reporting is comprised of a preliminary summary, with identification of anticipated impacts and risks, a draft detailed Assessment Report (for public review and comment) and a Final Assessment Report for submission. The draft and final detailed reports will include the following:
  - Indicate any assumptions made and gaps in available information. Assessment of all the vegetation types and habitat units within the relevant Regional Planning Frameworks.
  - A plant species list highlighting the various Species of Conservation Concern categories (endemic, threatened, Red Data species and other protected species requiring permits for destruction/relocation and invasive/exotic weeds).
  - Description and assessment of the species and habitat sensitivities on site ranked into high, medium or low classes based on sensitivity and conservation importance. A standard methodology has been developed based on other projects in the specific area.

- Assessment of Impacts and Mitigation Measure, as well as specific measure that may be required for alternative development plans, for species of conservation concern only.
- EMPr guidelines for inclusion in the reports and EMP with specific management actions for Construction and Operation.
- A habitat sensitivity map will be compiled, indicting the sensitivities as described above.
- A map indicating buffers (if required) to accommodate Regional Planning and any other requirements.

This plant species site verification & assessment 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).

NOTE: Although the site has been deemed to have a low plant species sensitivity as per the SSVR, where a compliance statement would be adequate in terms of the required protocols, a more detailed reporting procedure is followed in this report, as the author does not deem the compliance statement protocol to be adequate, as it does amongst others not include an impact assessment and mitigation section, nor does the protocol make allowance for the necessary information to be provided that would permit the respective authorities and/or interested and affected parties to be adequately informed regarding the issues or risks. In the authors opinion, only a site that is completely transformed would qualify for a compliance statement where any risk or impact would be nil.

1.4.1 Site visit

A site inspection was conducted on **02 & 03 September 2024**, during late winter/early spring. The site falls within a temperate climate with rainfall occurring throughout the year but is often higher in winter, hence for the purposes of this report, a single site visit is deemed to be adequate, specifically due to the disturbed nature of the site.

1.4.2 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 or Red Listed Ecosystems (NBA/RLE, 2022) – description of vegetation types, species (including endemic) and most recent 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.
- Global Biodiversity Information Facility (GBIF) – potential flora & faunal species distributions.
- 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.
- Western Cape Biodiversity Spatial Plan (2017).
- 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 may 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.

This terrestrial biodiversity assessment 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).

1.4.3 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 or marine ecosystems outside of the scope of a terrestrial biodiversity report. Refer to separate reporting.
- No assessment has been made of terrestrial biodiversity or animal species, being outside the scope of this plant species assessment.
- 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 at any time may vary, depending on level of maturity or time since last burn. Species that are visible in an area having mature fynbos may differ from species that are visible in the months after a burn, where they would have been dormant in the seed bank during the mature period. As far as possible, site collected data has been supplemented with desktop and database-centred distribution data, as well as 20 plus years' experience in the associated vegetation.
- 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.

2 Policy

2.1 Legislation Framework

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

- In terms of section 52 of NEMBA *(Activity (a)(i))*, the vegetation unit Garden Route Granite Fynbos, has a **Critically Endangered** status as per National Biodiversity Assessment (2022).
- In terms of the Western Cape Biodiversity Spatial Plan (WCBSP, 2017), designated Ecological Support Area 2 overlaps partially with the site.
- Since this assessment only pertains to plant species, the above sensitivitie4s will not be considered in further detail.
- The list of activities is not exhaustive for the site, being outside the scope of this plant species assessment and trigger activities that do not pertain directly to terrestrial vegetation are not listed.

Listing Notice 1:
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—

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

(i) the undertaking of a linear activity; or
(ii)-~~maintenance purposes undertaken in accordance with a maintenance management plan.~~

The proposed activity will potentially exceed clearing of more than 1 Ha of indigenous vegetation.

Listing Notice 2:
None are applicable.

Listing Notice 3:
Activity 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) In Eastern Cape, Free State, Gauteng, Limpopo, North-West and Western Cape provinces:
i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or ~~prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004~~.
ii. Within critical biodiversity areas identified in bioregional plans.

The proposed activity will potentially exceed clearing of more than 300m^2 of indigenous vegetation from within designated Critically Endangered vegetation and Critical Biodiversity Area.

In terms of the EIA Listing Notices, listing notice 1 & 3, the activity is trigged as indicated above, thus requiring a Basic Assessment process. This Terrestrial Biodiversity Assessment will primarily deal with the activities triggering listed activities 12 (LN 1) and 14 (LN 3), depending on requirements for clearing of indigenous vegetation.

Other potentially relevant legislation, which will be evaluated as required, includes the following:

- Liability for any environmental damage, pollution, or ecological degradation: Arising from all -related activities occurring inside or outside the area to which the permission/right/permit relates is the responsibility of the rights holder. The National Water Act and NEMA both oblige any person to take all reasonable measures to prevent pollution or degradation from occurring, continuing, or reoccurring (polluter pays principle). Where a person/company fails to take such measures, a relevant authority may direct specific measures to be taken and, failing that, may carry out such measures and recover costs from the person responsible.
- Public participation: Public consultation and participation processes prior to granting licences or authorisations can be an effective way of ensuring that the range of ways in which the activities impact on the environment, social and economic conditions are addressed, and considered when the administrative discretion to grant or refuse the licence is made.
- Constitution of Republic of South Africa (1996): Section 24(a) of the Constitution states that everyone has the right *'to an environment that is not harmful to their health or well-being'*. Construction activities must comply with South African constitutional law by conducting their activities with due diligence and care for the rights of others.
- Western Cape Nature and Environmental Conservation Ordinance 19 of 1974: Lists Protected species, requiring permits for removal (Department of Economic Development, Environmental Affairs and Tourism).
- Water Use Authorisations: The National Water Act (No. 36 of 1998): Requires that provision is made both in terms of water quantity and quality for 'the reserve', namely, to meet the ecological requirements of freshwater systems and basic human needs of downstream communities. It is essential in preparing an EMP that any impacts on water resources be they surface water or groundwater resources, and/ or impacts on water quality or flow, are carefully assessed, and evaluated against both the reserve requirement and information on biodiversity priorities. This information will be required in applications for water use licenses or permits and/or in relation to waste disposal authorisations.

- Conservation of Agricultural Resources Act 43 of 1993: Lists Alien invasive species requiring removal.

2.1.1 National Environmental Screening Tool

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

- Terrestrial Biodiversity is Very High (Figure 4). Not Assessed, for context only.
- Plant species sensitivity is Low &Moderate (Figure 5). Assessed.

Figure 4: Terrestrial Biodiversity Sensitivity

Figure 5: Plant Species Sensitivity

Table 1: Summary of Screening tool designations.

Terrestrial Sensitivity	**Feature(s) in proximity**
Very High	ESA 2: Restore from other land use, CBA 2: Terrestrial, SWSA (SW, Outeniqua) Garden Route Granite Fynbos (Critically Endangered)
High	None
Medium	None
Low	Present
Plant Sensitivity	
Very High	None
High	None
Medium	*Erica glandulosa subsp. fourcadei, Hermannia lavandulifolia, Euchaetis albertiniana, Erica glumiflora, Lampranthus pauciflorus, Leucospermum glabrum, Diosma passerinoides, Sensitive species 1024, 1032, 800 & 500.* Lebeckia gracilis
Low	Present

2.2 Systematic Planning Frameworks

A screening of Systematic Planning Framework for the region has been undertaken for context (summarised in Table 2), which included the following features[2]:

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

[2] Features that do not provide context for this plant species assessment have been omitted from further reporting.

- Critical Habitat for listed endemic or protected species.

This assessment pertains only to plant species and will thus not give consideration to any terrestrial biodiversity features. The above is only provided for context.

Table 2: Summary of Regional Planning Biodiversity features.

FEATURE[3]	DESCRIPTION	IMPLICATIONS/COMMENT
National Environmental Screening Tool (Terrestrial Biodiversity)	Very High Terrestrial Biodiversity Low/Medium Plant Species	CBA 2, ESA 2, Critically Endangered ecosystem & SWSA Several Plant Species flagged by the screening tool
National Vegetation Map (NVM, 2018)	Garden Route Granite Fynbos	Critically Endangered
Critically Endangered and Endangered Ecosystems (NBA 2018)	Garden Route Granite Fynbos	Terrestrial Biodiversity Assessment to determine risks, outside the scope of this plant species assessment.
Vulnerable Ecosystems (NBA)	None	N/A
Western Cape Biodiversity Spatial Plan (2017)	Critical Biodiversity Area 1 & 2, Ecological Support Area 1	Assessment to determine risks.
Protected Areas (SAPAD)	None	N/A
Protected Areas (WC BSP)	None	N/A
NPAES (Draft 2018)	None	N/A
NPAES (2010)	None	N/A
Regional Hotspots & Regions of Endemism	Cape Floristic Region Hotspot	Specific activity and site unlikely to pose any risk to broader biodiversity hotspot.
Forest	None	N/A
Surrounding Land Uses	Surrounding land primarily used for urban dwellings.	Site and surrounding area are transformed and/or with scattered secondary vegetation elements.
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, nor are deemed likely to occur.	

2.2.1 Vegetation of Southern Africa

The National Vegetation Type (NBA, 2018, Figure 6) indicated for the site and surrounding area are Garden Route Granite Fynbos, having a *Critically Endangered* status, as per National Biodiversity Red Listed Ecosystems Assessment (NBA/RLE, 2022).

[3] Refer to Figure 6 to **Error! Reference source not found.**.

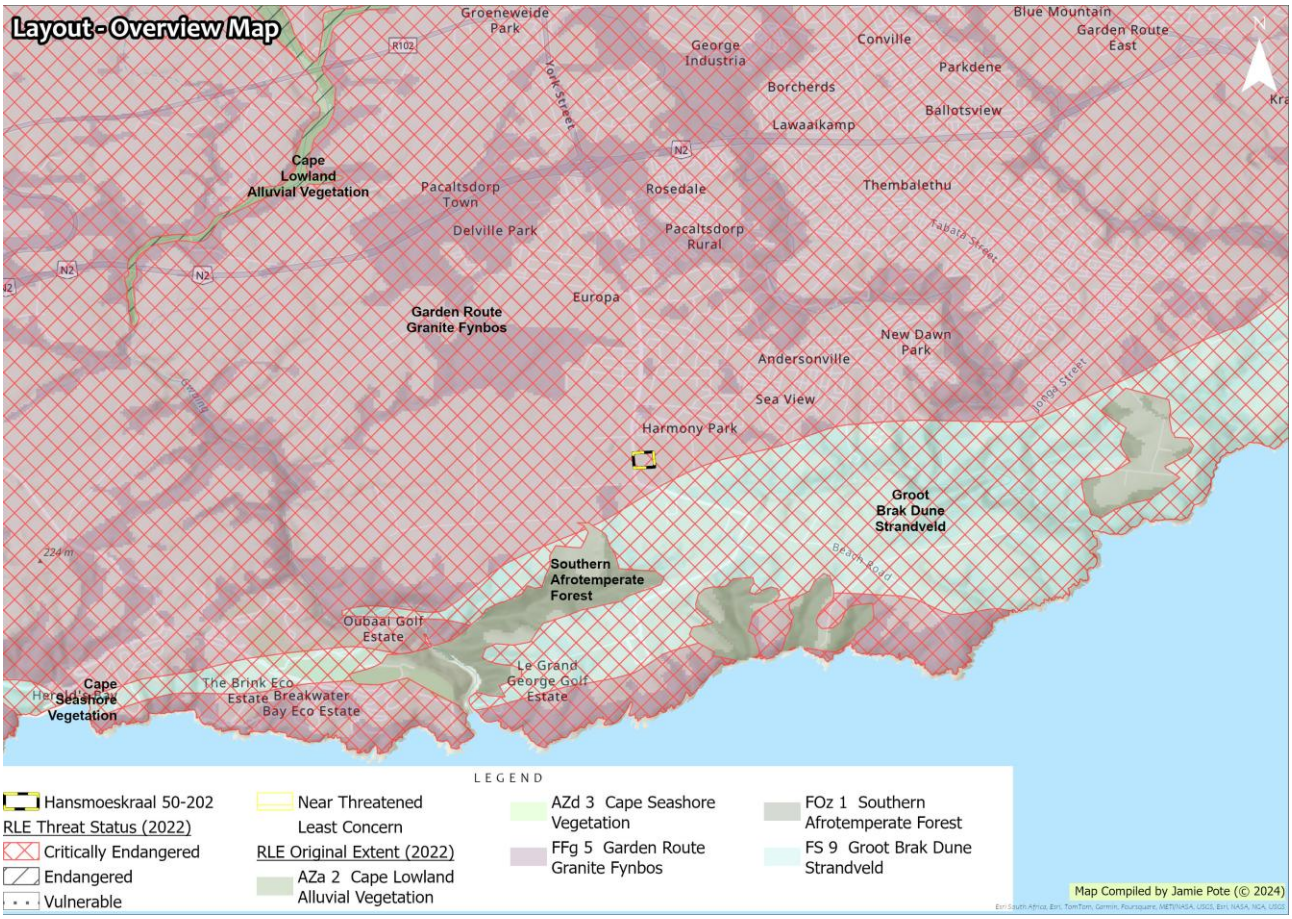

Figure 6: National Biodiversity Assessment Vegetation Type and Conservation Status (NBA, 2018). Darker shaded areas indicative of remnant vegetation.

Garden Route Granite Fynbos (FFg 5)

VT 46 Coastal Renosterbosveld (70%) (Acocks 1953). South Coast Renosterveld (22%) (Moll & Bossi 1983). LR 2 Afromontane Forest (67%) (Low & Rebelo 1996). BHU 100 Knysna Afromontane Forest (64%), BHU 28 Blanco Fynbos/Renosterveld Mosaic (36%) (Cowling et al. 1999b, Cowling & Heijnis 2001).

Distribution: Western Cape Province: Garden Route. Three main blocks south of the Outeniqua Mountains on the coastal plain from Botterberg west of Brandwaghoogte (south of Robinson Pass) to Groot Brak River; the largest block from Groot Brak River to Woodfield near the Wilderness (with a few strips along the coast from Bothastrand to the Wilderness); lastly, north of the lakes from Woodville to Hoogekraal Pass, west of Karatara.

Altitude: 0–300 m.

Vegetation & Landscape Features: Moderately undulating plains and undulating hills on the coastal forelands. Dense proteoid and ericoid shrubby grassland. Proteoid and graminoid fynbos are dominant with ericaceous fynbos in seeps. In the west, most remnants of this type are dominated by proteas. Eastwards graminoid and ericaceous fynbos are dominant on the flat plateaus, with proteas confined to the steep slopes.

Geology & Soils: George Batholith of the Cape Granite Suite. Deep, prismacutanic- and pedocutanic-dominated soils typical of Db land types (mainly).

Climate: MAP 350–880 mm (mean: 600 mm), with a slight low in early winter. Mean daily maximum and minimum temperatures 27.8°C and 6.8°C for January–February and July, respectively. Frost incidence 2 or 3 days per year.

Important Taxa: Tall Shrubs: *Passerina corymbosa* (d), *Cliffortia serpyllifolia*, *Protea coronata, P. lanceolata, P. neriifolia.* Low Shrubs: *Erica discolor variant 'speciosa'* (d), *E. peltata* (d), *Phylica confusa* (d), *Syncarpha paniculata* (d), *Agathosma ovata, Anthospermum prostratum, Aspalathus asparagoides, Cliffortia falcata,*

Cullumia bisulca, Erica canaliculata, E. diaphana, E. formosa, Eriocephalus africanus, Hermannia angularis, Leucadendron salignum, Lobelia tomentosa, Metalasia pungens, Mimetes cucullatus, Pelargonium fruticosum, Relhania calycina. Succulent Shrub: *Lampranthus sociorum*. Semiparasitic Shrubs: *Osyris compressa, Thesium virgatum.* Semiparasitic Epiphytic Shrub: *Viscum capense*. Geophytic Herb: *Schizaea pectinata*. Graminoids: *Tetraria cuspidata* (d), *Brachiaria serrata, Eragrostis capensis, Ficinia nigrescens, Heteropogon contortus, Pentaschistis eriostoma, Restio triticeus, Themeda triandra*.
Conservation: Critically Endangered (2022). Target 23%. Only about 1% conserved in the proposed Garden Route National Park. About 70% has been transformed for, cultivation (56%), pine plantations (7%) and by urban development (6%). Remnants are largely confined to isolated pockets on steeper slopes.
Erosion: Moderate and High. Very few patches of this type remain in a pristine condition as most of it has been converted to pasture by liming, bush-cutting and frequent burning, and augmented with pasture grasses. Western remnants suggest that proteoid fynbos might have been dominant historically. It is easily converted to graminoid fynbos by regular fires and augmentation with pasture grasses.
References: Drews (1980b), Hoare et al. (2000).

2.2.2 Protected areas

The South Africa Protected Areas Database (SAPAD) database, a comprehensive database of various protected area categories, is updated on a quarterly basis, and provides a comprehensive source of all national and private nature reserves, world heritage sites and other formal legally protected conservation areas situated within South Africa (Figure 7). When projects are located in legally protected and internationally recognized areas, clients should ensure that project activities are consistent with any national land use, resource use, and management criteria (including Protected Area Management Plans, National Biodiversity Strategy and Action Plans (NBSAP's), or similar documents). The proposed site does not overlap with any SAPAD designated Protected Areas and is unlikely to have any impacts of significance to any species or processes associated with any nearby Protected Areas. Nearest Protected Areas within 10 km of the site include Blydskap Private Nature Reserve (< 5 km SE), Cape Floral Kingdom Protected Areas (< 5 km NW), Garden Route National Park (< 5 km NE), George Private Nature Reserve (< 5 km SE), Katrivier Nature Reserve (< 2 km N), Van Kervel Nature Reserve (< 5 km NW), Kwelanga Private Nature Reserve (< 10 km S), Kleinbaai Private Nature Reserve (< 10 km SE), Kaaimans River Gorge Private Nature Reserve (< 10 km NE). The site is thus also not directly connected to any protected areas in a significant ecological manner, other than a narrow designated Ecological Support Area corridor on the south side, following a significantly invaded and transformed drainage line. The site is also not within or in proximity to any designated NPAES areas, where any impacts may arise.

2.2.3 Western Cape Biodiversity Spatial Plan (WCBSP, 2017) – Terrestrial

The Western Cape Biodiversity Spatial Plan (2017, Figure 8) indicates that the site overlaps with a designated Critical Biodiversity Area (CBA 2), which is associated with the site having natural vegetation and being undeveloped in an otherwise significantly fragmented landscape, where the vegetation unit is deemed ot be under threat. It is noted that in the broader area, several undeveloped erven within or surrounding the urban area are designated such, many of which, including the site in question, are isolated patches and would thus serve limited (if any) conservation function, not being part of a broader interconnected conservation network. A Critical Biodiversity Area 2 designation (supported by observations) also implies also implies the site would be in a degraded or secondary context and thus may also not provide a meaningful conservation contribution as an isolated site, without being part of a broader conservation initiative

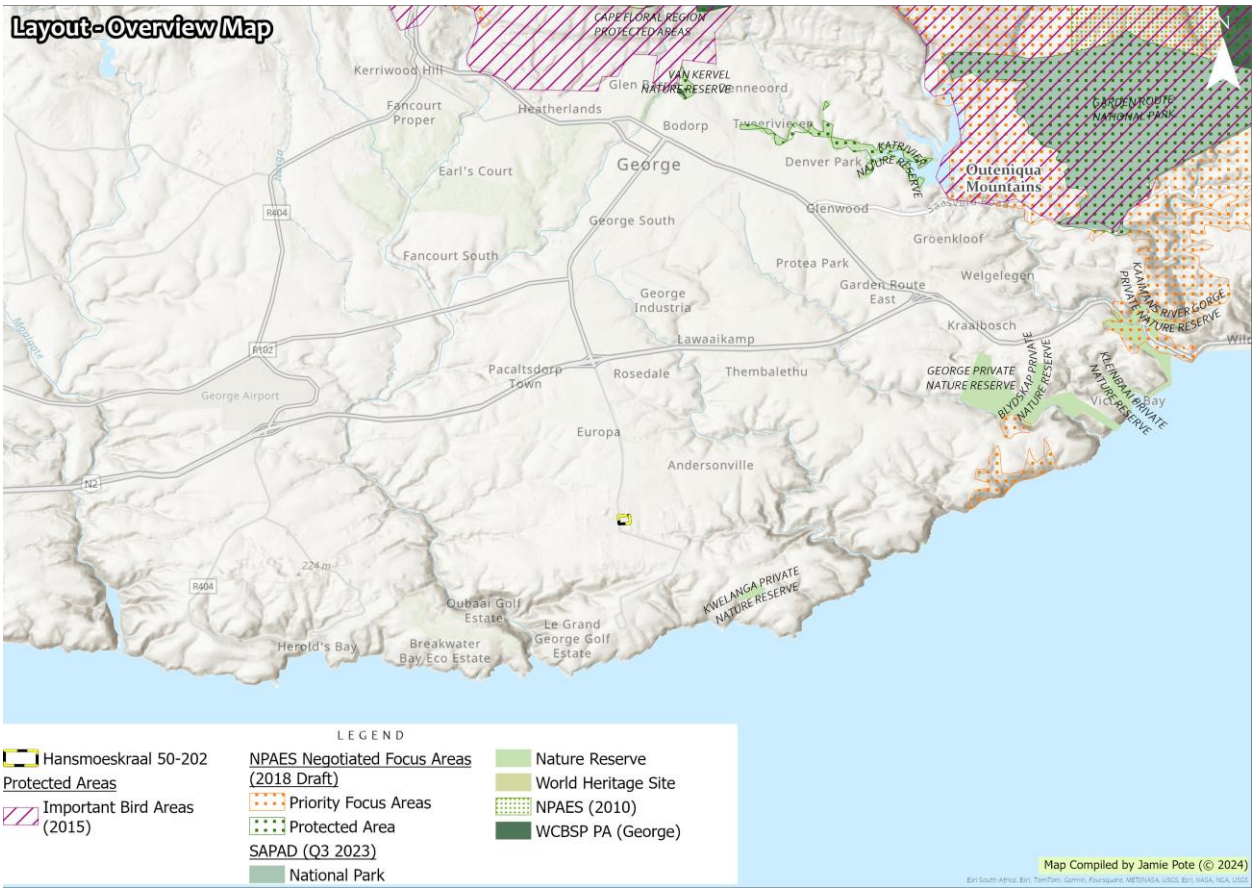

Figure 7: Protected Areas.

Figure 8:Western Cape Biodiversity Spatial Plan (WCBSP, 2017) –The site does overlap with some designated CBA 1, CBA 2 and ESA 2 areas.

2.2.4 Key Biodiversity Areas

Important Bird Areas

The site is not situated within or near nay designated Important Bird Area (Figure 7). The nearest IBA is the Outeniqua mountains IBA situated just over 3 km to the north and east. While the surrounding area may have transient bird species visitors that are associated with the IBA, it is unlikely that the specific activity, within an urban and significantly transformed and degraded area is likely to have any impact of significance to such occurrences.

3 Biodiversity Risk Identification and Assessment

3.1 Baseline Biodiversity Description

The site is located within a transformed developed urban and peri-urban area on a relatively flat plain, drained by often somewhat incised watercourses in a south-easterly and south-westerly direction.

Broadly speaking, the Fynbos represented in the flatter areas, tend ot be secondary and/or disturbed, as a result of historical land use (historical agricultural uses), whereas the vegetation on slopes tends to be of a more natural or intact nature.

The site is comprised predominantly of a patchy mozaic of transformed, densely invaded and secondary fynbos habitat that is bounded by a developed urban and/or transformed agricultural (farming) landscape on all sides. (Figure 9). On site observations indicate that the site has a history of dense alien infestation (primarily wattle species), which being prone to excessive and hot fire, tends to result in biochemical and soil changes, as well as vegetation composition changes. The fynbos elements seen on site are thus deemed to be secondary and comprised primarily of what would be considered to be pioneer fynbos species, with many groups typical of mature or intact fynbos being absent. The species composition is thus comprised of a limited number of species that are typical of such disturbed habitat, with elements that would be characteristic of the specific fynbos unit (Garden Route Granite Fynbos), in a natural context, being absent. This is typical of sites that have significant historical disturbance but are also now isolated from natural 'seed-source' areas, where the regenerating plants species are limited to a few pioneer and widespread species that may be common to disturbed areas such as road verges and such. Because the site is isolated, the potential for the site to rehabilitate to a functioning ecosystem with representative species of conservation concern, is thus limited, since there would be no natural seed-source in adequate proximity to the site.

Common secondary Fynbos species, that do occur within the site include *Passerina corymbosa, Cliffortia serpyllifolia, Anthospermum prostratum, Eriocephalus africanus, Metalasia pungens, Brachiaria serrata, Eragrostis capensis, Heteropogon contortus, Restio triticeus* & *Themeda triandra,* as well as several species in the general *Helichrysum and Senecio.*

Invasive (exotic) tree species include *Pinus* spp., *Acacia mearnsii*, *Acacia cyclops* & *Acacia dealbata*.

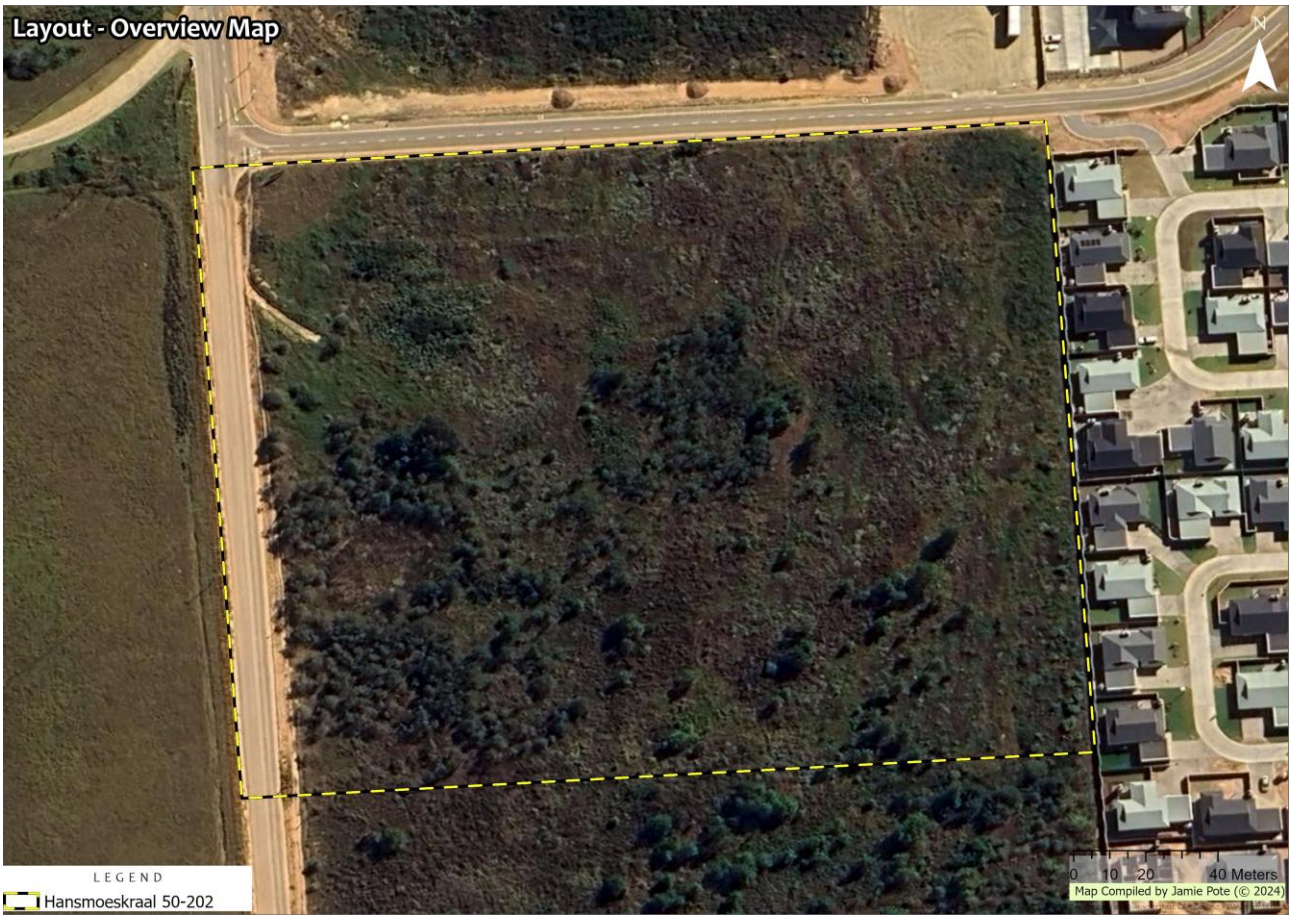

Figure 9: Aerial photo of the site.

Figure 10: Typical secondary vegetation.

Figure 11: Typical secondary vegetation.

Figure 12: Typical secondary vegetation with Fynbos elements.

Figure 13: Typical secondary vegetation with Fynbos elements.

Figure 14: Typical secondary with low density invasion.

Figure 15: Typical secondary vegetation with low density invasion.

Figure 16: Typical high-density invasion.

Figure 17: Typical high-density invasion.

Figure 18: Small dam with invaded riparian vegetation.

Figure 19: Small dam with invaded riparian vegetation.

3.2 Present Ecological State

In summary, the following general observations can be noted regarding the ecological state of the site:

- The area surrounding the site is completely transformed and/or degraded as a result of urban and agricultural development and roads, with the occasional remnant scattered indigenous species.
- Vegetation on the site would be considered to be mostly secondary Fynbos, with some commonly occurring and widespread species dominating the habitat, as result of dense alien invasion historically as well as other unknow land-use, which may have included historical vegetation clearing, but cannot be confirmed.
- Alien invasion on the site, primarily comprising wattle trees, is patchy with areas being high to very high, where there is little to no natural vegetation remaining.
- Ecological processes are thus significantly modified, as natural and indigenous vegetation elements that would be typical of mature climax fynbos area absent from within the site.

3.3 Flora

No endemic and range restricted species were recorded to be present. Several species are known from the surrounding area, but unlikely to be affected by the proposed activity. A summary of these is provided below.

3.3.1 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.

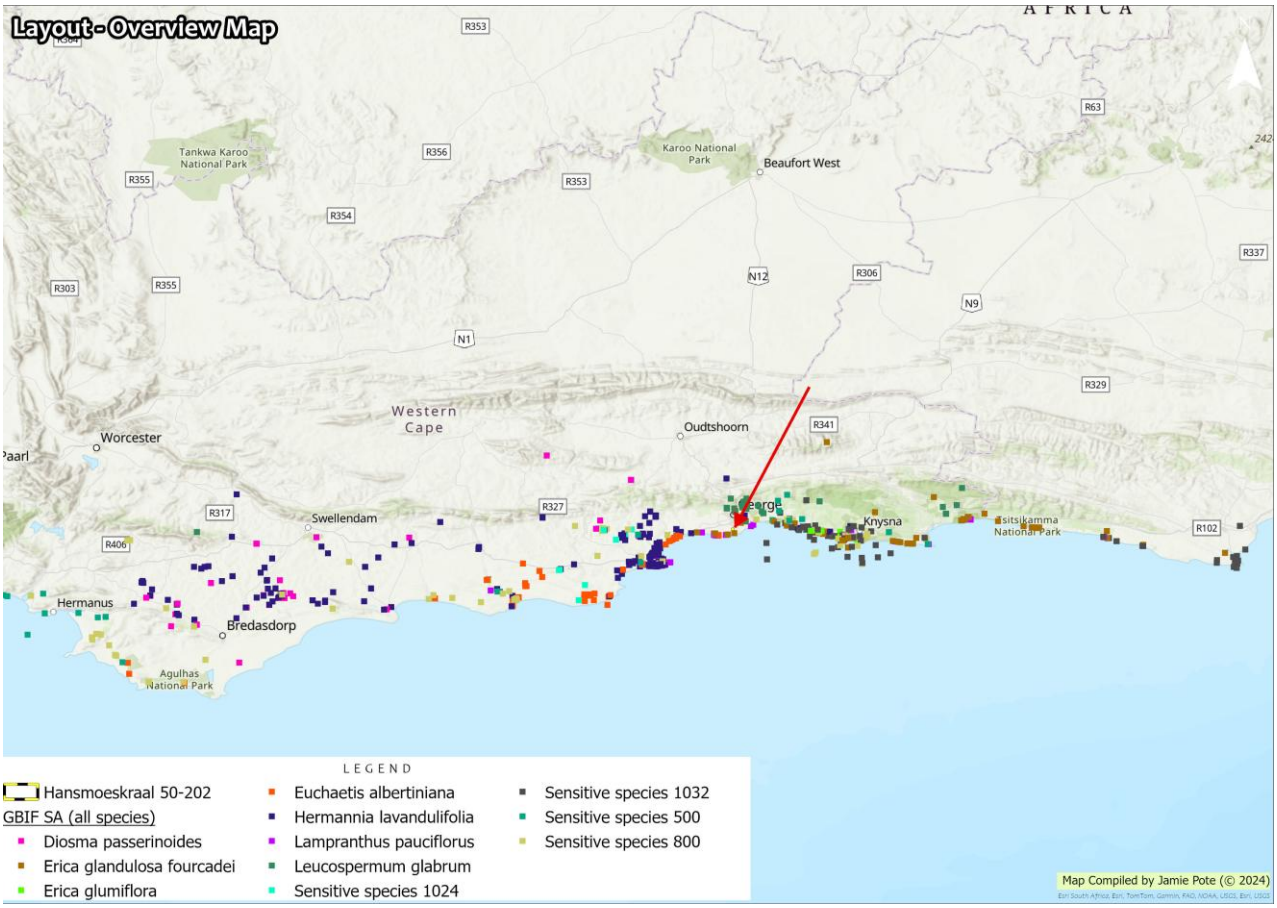

Figure 20: Distribution records of flora Species of Conservation Concern (GBIF, 26 July 2024)

Table 3: Flora Species of Special Concern

SCIENTIFIC NAME	STATUS[4]	COMMENT/PRESENCE
Diosma passerinoides	NEST (M), Vu	Total population size estimated to be <5 000 mature individuals, based on records of 18 out of 25 subpopulations where species is indicated to be rare, uncommon, or only a few plants present, and with survey data of seven subpopulations indicating that the largest subpopulation consists of no more than 500 mature individuals. These populations are declining due to a number of different threats such as invasive alien plants, habit degradation in the form grazing and habitat loss due to protea cultivation. Not recorded on site and no known localities in close proximity that suggest high likelihood of

4 **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. NEST – National Environmental Screening Tool (Very High, High. Medium & Low).

SCIENTIFIC NAME	STATUS[4]	COMMENT/PRESENCE
		a local occurrence. Site is not within known range, unlikely to occur. Not present.
Erica glandulosa subsp. fourcadei	NEST (M), Vu	EOO 5225 km², between eight and 12 severely fragmented subpopulations confined to a narrow coastal area continue to decline due to ongoing habitat loss, degradation and fragmentation as a result of coastal development, forestry plantations, lack of fire and competition from alien invasive plants. Eastern Cape, Western Cape, Mossel Bay to Cape St Francis. Many recent records indicate that this species is more common than previously estimated (occurring at between 10 and 20 locations), however, except for the area between Sedgefield and Knysna, where this species is still quite common, particularly in the Goukamma Nature Reserve, all other subpopulations are isolated due to habitat loss and fragmentation. Most likely to be present, but not recorded.
Erica glumiflora	NEST (M), Vu	EOO <6740 km², known from six locations. Although it is conserved in four nature reserves, these are all within the western portion of the range. In the eastern part of the range, coastal development and alien plant invasion are causing continuing declines to subpopulations. Eastern Cape, Western Cape. Wilderness to East London and extending inland around Grahamstown. Site is in proximity to known range, no records in close proximity. Not present.
Euchaetis albertiniana	NEST (M), En	A population reduction of at least 50% is estimated based on 55% habitat loss to urban expansion and crop and pasture cultivation in the past 40-60 years (generation length 15-20 years). Alien plant invasion and habitat degradation as a result of vegetation management for thatch harvesting is causing a continuing decline. Endemic to the Western Cape province, where it occurs in Albertinia. Site is not within known range, unlikely to occur. Not present.
Hermannia lavandulifolia	NEST (M), Vu	Hermannia lavandulifolia is a widespread and common species, with an extent of occurrence (EOO) of 12 018 km². It is declining due to severe, ongoing habitat loss and degradation. Based on the observed rate of habitat loss, a population reduction of 31% over three generations is inferred. It is therefore listed as Vulnerable under criterion A. Endemic to the Western Cape province of South Africa, where it occurs from Worcester to the Overberg, and extends along the southern Cape coastal lowlands as far east as Plettenberg Bay. Site is not within known range, unlikely to occur. Not present.
Lampranthus pauciflorus	NEST (M), En	EOO 1270 km², four known locations remain after most of this species' habitat has been transformed for coastal development. Habitat loss continues, especially around Plettenberg Bay, Mossel Bay and Knysna. Not recorded on site and no known localities in close proximity that suggest high likelihood of a local occurrence. Site is in proximity to known range, but generally know from coastal areas and no records in close proximity. Not present.
Leucospermum glabrum	NEST (M), En	Somewhat widespread distribution including a population in the northern areas of George. A restricted endemic with an extent of occurrence (EOO) ranging between 1620 and 1642 km², and an area of occupancy (AOO) of between 152 and 156 km². This species occurs as scattered small subpopulations with the total population not exceeding 2500 mature individuals, and each subpopulation having fewer than 250 plants. The mountains where this species occurs have been extensively surveyed. Road verges and significantly disturbed watercourses do not provide suitable habitat for this species. Not recorded on site, which is not typical of preferred habitat. Site is not within preferred habitat (South Outeniqua Sandstone Fynbos & Garden Route Shale Fynbos) in the mountainous areas to the north of George, unlikely to occur. Not present.
Sensitive species 1024	NEST (M), En	A range-restricted and very rare species known from four small, severely fragmented subpopulations. It has an extent of occurrence (EOO) of 971 km². The population consists of 2 500 mature individuals, and the largest subpopulation has less than 200 plants. Not recorded on site and no known localities in close proximity that suggest high likelihood of a local occurrence. Site is not within preferred habitat, unlikely to occur. Not present.
Sensitive species 1032	NEST (M), Vu	Somewhat widespread distribution including a population in the northern areas of George. Not recorded on site but found in surrounding area. Road verges and significantly disturbed watercourses do not provide suitable habitat for this species. Site is not within preferred habitat, unlikely to occur. Not present.

SCIENTIFIC NAME	STATUS[4]	COMMENT/PRESENCE
Sensitive species 500	NEST (M), En	Somewhat widespread distribution. Not recorded on site and no known localities in close proximity that suggest high likelihood of a local occurrence. Site is not within preferred habitat, unlikely to occur. Not present.
Sensitive species 800	NEST (M), Vu	Formerly a very common species, now remaining mostly as small, isolated subpopulations on fragments of natural vegetation within its lowland distribution range. Not recorded on site and no known localities in close proximity that suggest high likelihood of a local occurrence. Site is not within preferred habitat, unlikely to occur. Not present.

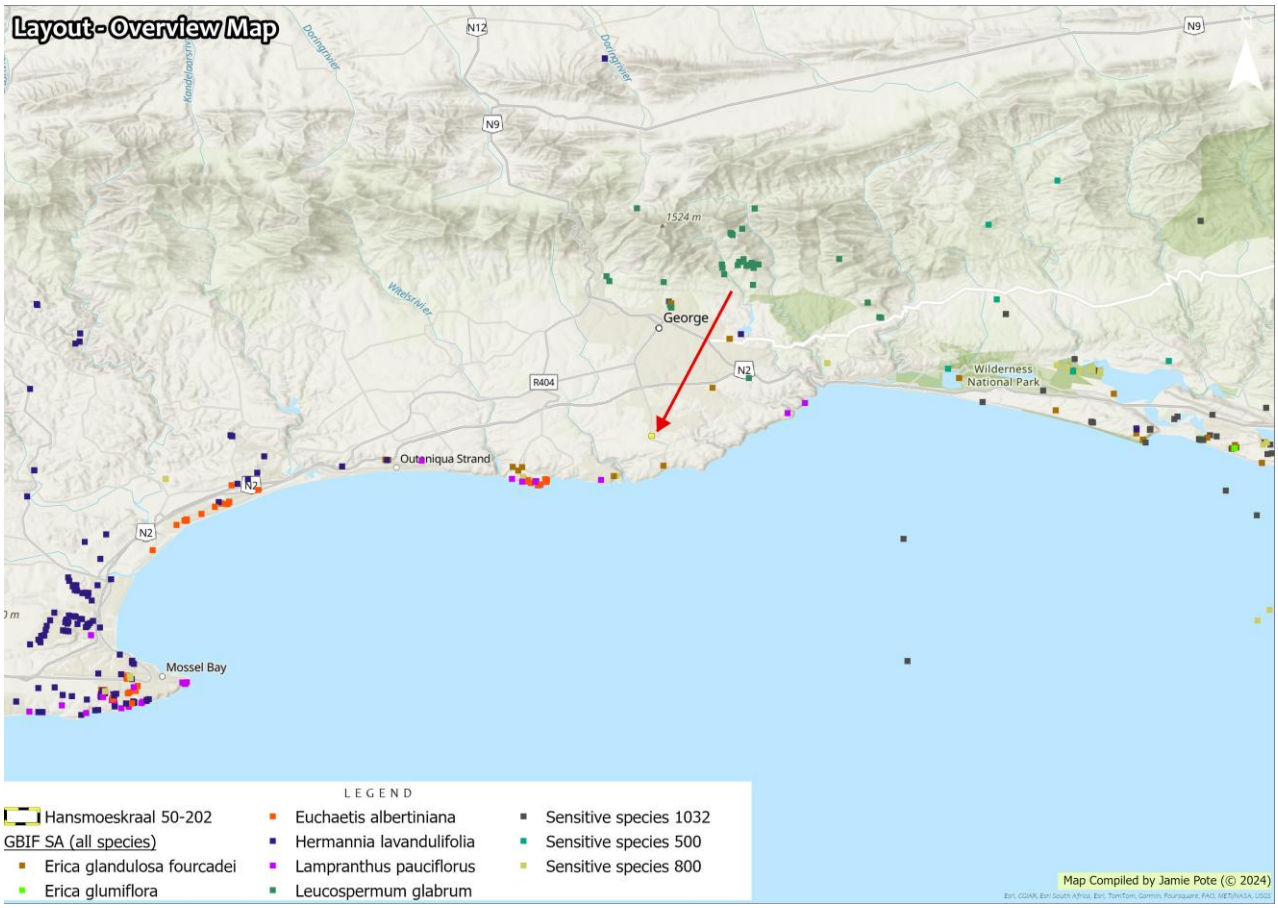

Figure 21: Distribution records of flora Species of Conservation Concern (GBIF, 26 July 2024).

As per Table 3, no Endangered or Critically Endangered flora species were confirmed to be present nor are known to be present in the affected area. The most likely species know to occur in the broader surrounding area include *Erica glandulosa* subsp. *fourcadei* and *Lampranthus pauciflorus. Lampranthus pauciflorus*, is mostly found in coastal area, so not expected to be on the site, nor was it found to be present. *Erica glandulosa* subsp. *fourcadei,* would be the most likely species to be found, as it is often seen in disturbed areas such as along road verges or growing where earthworks have occurred (such as after pipeline installation or grading along road verges. It was however not seen on the site, nor in any areas in the immediate vicinity of the site. Furthermore, while having a vulnerable status, the species is not under immediate threat and is relatively common in the broader area and within its distribution range, which extends significantly outside of the vegetation unit that is represented on the site.

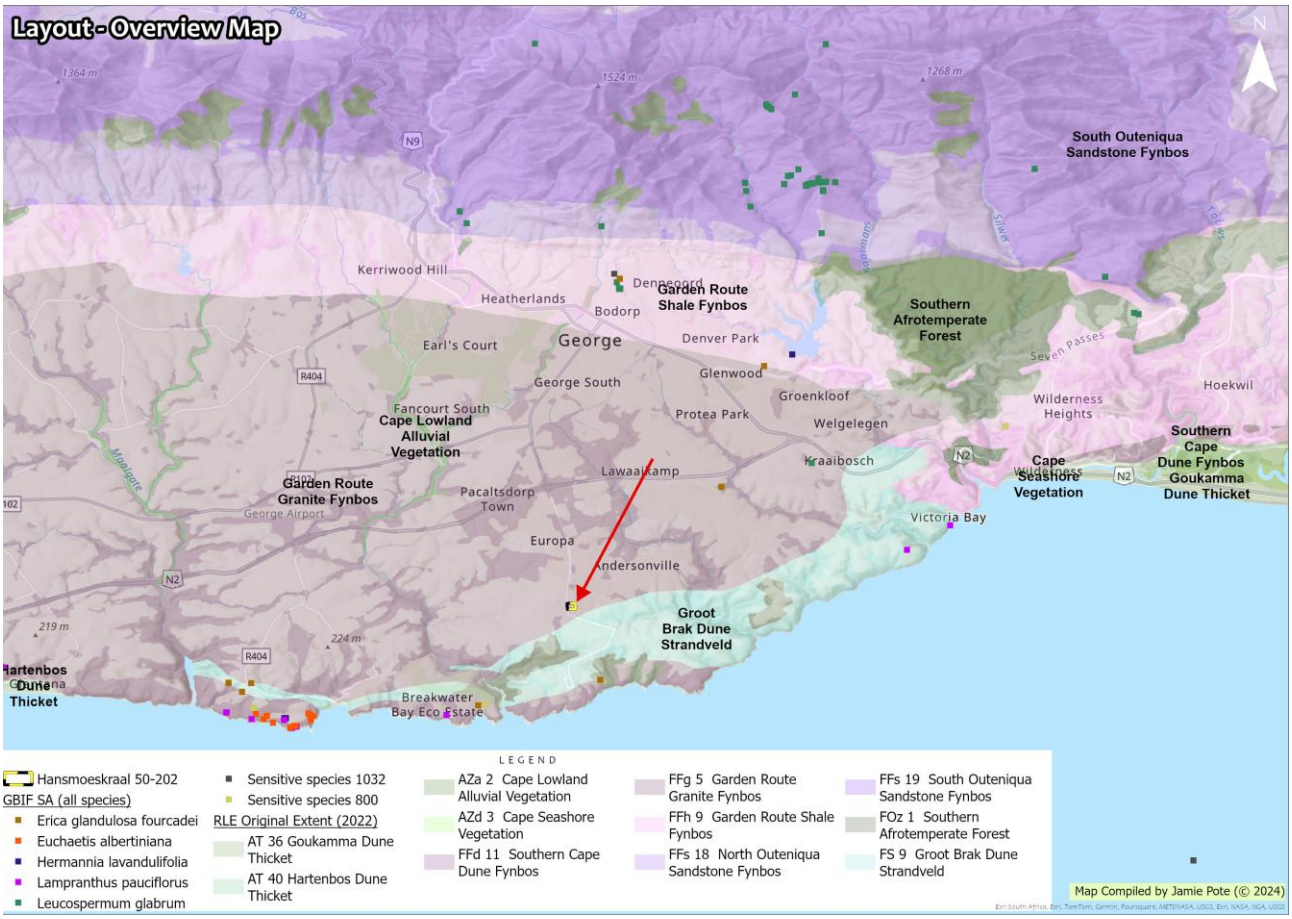

Figure 22: Distribution records of flora Species of Conservation Concern (GBIF, 26 July 2024) with known records in the vicinity of the site. NOTE some distribution records may have an offset for biosecurity purposes and/or accuracy errors but will non the less give an indication of general locality.

3.3.2 Red Listed and Protected Fauna

Not assessed in this plant species assessment.

3.3.3 Plant Species & Habitat 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 is **Low to Moderate (patchy)**.

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).

Alien invasion for the site is **Moderate to High(patchy)**.

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 is **Moderate to High** (patchy, secondary disturbed Fynbos with patches of high alien invasion.

Overall Sensitivity score

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 (VEGETATION UNIT OR SPECIES)			
	LEAST CONCERN	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED
Severely degraded/ Transformed	Very Low/Low	Low	Moderate	Moderate - High
Moderately degraded	Low	Moderate	High	High
Ecologically Pristine or near Pristine (or critical habitat for any species of conservation concern)	Moderate	Moderate - High	High	Very High (No-Go area)

Species Habitat Sensitivity

The entire vegetated and transformed area within the site is thus deemed to have a low plant species sensitivity, due to absence of any flagged species of conservation concern.

Figure 23: Plant Species Sensitivity.

3.3.4 Critical Habitat

The following Critical Habitat features have been identified within the site:

1. Criterion 1: Habitat for Critically Endangered (CR) and/or Endangered (EN) species
   - No Endangered or Critically Endangered Flora species were recorded. Several species known from general area were screened to confirm that none are present or affected.
2. Criterion 2: Habitat for Endemic or restricted-range species
   - Although several range restricted flora species are potentially present in the surrounding area and vegetation types, none were recorded within the site.
3. Criterion 3: Habitat for Migratory or congregatory species
   - No such terrestrial habitat will be directly or indirectly affected.
4. Criterion 4: Habitat for Highly threatened and/or unique ecosystems
   - Outside the scope of this plant species assessment – refer to separate terrestrial biodiversity assessment
5. Criterion 5: Habitat for Key evolutionary processes
   - Outside the scope of this plant species assessment – refer to separate terrestrial biodiversity assessment

3.3.5 No-Go Areas

No-go areas are not identified within the site.

3.3.6 Potential Development Footprints

The entire site is considered to be developable in terms of plant species risks.

3.4 Risks and Potential Impacts to Biodiversity

3.4.1 Summary of actions, activities, or processes that require mitigation.

The main impacts associated with the unauthorised activity include the following and are described in Table 4:

1. Permanent or temporary loss of indigenous vegetation cover.
2. Loss of flora Species of Conservation Concern.
3. Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species.
4. Disturbances to ecological processes (species).

3.4.2 Potential Terrestrial Biodiversity Impacts (Indirect)

No significant indirect impacts are anticipated. There will be no difference in plant species impact between the Preferred Alternative and Alternative B, as both will require the same clearing of the entire site.

3.4.3 Potential Terrestrial Biodiversity Impacts (Direct)

Overall impacts to terrestrial biodiversity are likely to be nominal, with loss resulting from removal of small footprints within the vegetated areas. As indicated in Figure 3, the proposed activity will require clearing of all vegetation within the site. There will be no difference in plant species impact between the Preferred Alternative and Alternative B, as both will require the same clearing of the entire site.

Table 4: Potential Impacts to Terrestrial Biodiversity.

IMPACT	Nature of Impact
Flora Species[5]	Loss of flora Species of Conservation Concern during pre-construction site clearing activities. Several special of concern are known from surrounding areas, which could be destroyed during site preparation, none of which were confirmed to be present.

3.5 Risks and Potential Impacts to Biodiversity

3.5.1 Potential Terrestrial Biodiversity Impacts (Direct)

The main direct impacts associated with the unauthorised activity include the Loss of Flora Species of Conservation Concern (and habitat for such species). There will be no difference in plant species impact between the Preferred Alternative and Alternative B, as both will require the same clearing of the entire site.

[5] Subject to findings of follow-up species survey.

3.6 Assessment of Risks and Impacts to Biodiversity

3.6.1 Criteria of assigning significance to potential impacts

The assessment criteria utilised in the Basic Assessment Report is based on, and adapted from, the Guideline on Impact Significance, Integrated Environmental Management Information Series 5 (Department of Environmental Affairs and Tourism (DEAT), 2002) and the Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations (DEAT, 2006).

Determination of Extent (Scale):

Site specific	On site or within 100 m of the site boundary, but not beyond the property boundaries.
Local	The impacted area includes the whole or a measurable portion of the site and property, but could affect the area surrounding the development, including the neighbouring properties and wider municipal area.
Regional	The impact would affect the broader region (e.g., neighbouring towns) beyond the boundaries of the adjacent properties.
National	The impact would affect the whole country (if applicable).

Determination of Duration:

Temporary	The impact will be limited to the construction phase.
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than 8 months after the completion of the construction phase.
Medium term	The impact will last up to the end of the construction phase, where after it will be entirely negated in a period shorter than 3 years after the completion of construction activities.
Long term	The impact will continue for the entire operational lifetime of the development but will be mitigated by direct human action or by natural processes thereafter.
Permanent	This is the only class of impact that will be non-transitory. Such impacts are regarded to be irreversible, irrespective of what mitigation is applied.

Determination of Probability:

Improbable	The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
Probable	There is a possibility that the impact will occur to the extent that provisions must therefore be made.
Highly probable	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up to mitigate the activity before the activity commences.
Definite	The impact will take place regardless of any prevention plans.

Determination of Significance (without mitigation):

No significance	The impact is not substantial and does not require any mitigation action.
Low	The impact is of little importance but may require limited mitigation.
Medium	The impact is of sufficient importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
Medium-High	The impact is of high importance and is therefore considered to have a negative impact. Mitigation is required to manage the negative impacts to acceptable levels.
High	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.
Very High	The impact is critical. Mitigation measures cannot reduce the impact to acceptable levels. As such the impact renders the proposal unacceptable.

Determination of Significance (with mitigation):

No significance	The impact will be mitigated to the point where it is regarded to be insubstantial.

Low	The impact will be mitigated to the point where it is of limited importance.
Medium	Notwithstanding the successful implementation of the mitigation measures, the impact will remain of significance. However, taken within the overall context of the project, such a persistent impact does not constitute a fatal flaw.
High	Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and taken within the overall context of the project, is considered to be a fatal flaw in the project proposal.

Determination of Reversibility:

Completely Reversible	The impact is reversible with implementation of minor mitigation measures
Partly Reversible	The impact is partly reversible but more intense mitigation measures
Barely Reversible	The impact is unlikely to be reversed even with intense mitigation measures
Irreversible	The impact is irreversible, and no mitigation measures exist

Determination of Degree to which an Impact can be Mitigated:

Can be mitigated	The impact is reversible with implementation of minor mitigation measures
Can be partly mitigated	The impact is partly reversible but more intense mitigation measures
Can be barely mitigated	The impact is unlikely to be reversed even with intense mitigation measures
Not able to mitigate	The impact is irreversible, and no mitigation measures exist

Determination of Loss of Resources:

No loss of resource	The impact will not result in the loss of any resources
Marginal loss of resource	The impact will result in marginal loss of resources
Significant loss of resources	The impact will result in significant loss of resources
Complete loss of resources	The impact will result in a complete loss of all resources

Determination of Cumulative Impact:

Negligible	The impact would result in negligible to no cumulative effects
Low	The impact would result in insignificant cumulative effects
Medium	The impact would result in minor cumulative effects
High	The impact would result in significant cumulative effects

Determination of Consequence significance:

Negligible	The impact would result in negligible to no consequences
Low	The impact would result in insignificant consequences
Medium	The impact would result in minor consequences
High	The impact would result in significant consequences

3.6.2 Assessment of Terrestrial Biodiversity Impacts

Operations can result in a range of negative impacts on terrestrial, marine and other aquatic ecosystems if not effectively managed. **Table 4** describes impacts that may potentially occur in the site (as per DEDEAT guidelines) as well indicating the relevant EMP section. The predicted significance of these during the construction and operational phases are summarised below

Construction Phase

ALTERNATIVE:	PREFERRED ALTERNATIVE A	NO-GO ALTERNATIVE
TERRESTRIAL BIODIVERSITY ASSESSMENT IMPACT 2		
Potential impact and risk:	**LOSS OF FLORA SPECIES OF CONSERVATION**	

Nature of impact:	Loss of flora Species of Conservation Concern during pre-construction site clearing activities. Several special of concern are known from surrounding areas, which could be destroyed during site preparation, none of which were confirmed to be present.	**No Impact**
Extent and duration of impact:	• Local and limited to site • Short term (1-5 years)	
Consequence of impact or risk:	Loss of Flora Species of Conservation Concern	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Low	
Degree to which the impact can be reversed:	High	
Indirect impacts:	None identified.	
Cumulative impact prior to mitigation:	None	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**No Impact**
Degree to which the impact can be avoided:	Low – No Species of Conservation Concern (as per screening tool) found on site. Widespread SCC protected ito PNCO include several species for which permits will be required only.	
Degree to which the impact can be managed:	Manageable	
Degree to which the impact can be mitigated:	Can be mitigated	
Proposed mitigation:	A flora search and rescue is unlikely to be required, but recommended as a precautionary measure. PNCO permits will be required for several species, which are generally not amenable to relocation (such as Erica spp.)	
Residual impacts:	None	
Cumulative impact post mitigation:	None	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very Low (-)**	**No Impact**

Mitigation measures to reduce residual risk or enhance opportunities:

- No clearing outside of development footprint to take place.
- Areas surrounding the footprints should be revegetated on completion of construction where disturbed during construction (e.g. for installation of services).
- A flora search and rescue is recommended before construction commences, including PNCO protected flora species.

Operational Phase Impacts

No operational phase impacts to plant species are identified, as impacts will occur during the construction phase only.

3.6.3 Potential Terrestrial Biodiversity Impacts (Cumulative)

No cumulative impacts are expected because of the development of the site providing recommendation and mitigation measures are adhered to, due to the limited disturbance area.

3.6.4 Terrestrial Biodiversity Impact Reversibility

In general, most impacts will have a high reversibility in the affected habitat, as well as transformed or degraded areas, except where hardening of surfaces or removal of topsoil may occur.

3.6.5 Impacts and Risks to Irreplaceable Biodiversity Resources

Risks to Irreplaceable Biodiversity Resources is low to very low.

3.6.6 Residual Risks and Uncertainties

No residual risks or uncertainties are anticipated.

3.7 Findings, Outcomes and Recommendations

3.7.1 Summary of Findings

- The vegetation on site is generally modified, degraded, transformed and/or secondary fynbos.
- No Sensitive Plant species identified as per the National Environmental Screening Tool were found to be present or likely to be present.
- The entire vegetated and transformed area within the site is thus deemed to have a low plant species sensitivity, due to absence of any flagged species of conservation concern.
- No No-go areas are identified within the site footprint.
- No significant direct, indirect or cumulative impacts are anticipated.
- There will be no difference in plant species impact between the Preferred Alternative and Alternative B, as both will require the same clearing of the entire site.
- While all efforts have been made to identify any plant species of conservation concern, factors outside of the control of the specialist, which include the state of vegetation (moribund) and time since previous burn, there is a residual risk that a species of conservation concern could being present. A pre-construction flora search and rescue (with permits_) is recommended before construction commences.

3.7.2 Recommendations & Mitigation Measures

A pre-construction flora search and rescue, with respective PNCO (Provincial Nature Conservation Ordinance) permits recommended before construction as a precautionary measure, although not specifically required ns species that occur are generally not suited to relocation (Erica spp.)

Table 5 lists specific mitigation measures that must be implemented and adhered to. These must be considered to be conditions of authorisation.

Table 5: Specific Mitigation Measures and Recommendations

IMPACT	MITIGATION MEASURES
Flora Species	• No clearing outside of development footprint to take place. • Areas surrounding the footprints should be revegetated on completion of construction. • A flora search and rescue is recommended before construction commences, including PNCO protected flora species. .

3.8 Open Space Management/Conservation Plan

None are applicable for this project.

3.9 Maintenance Management Plan

Ongoing maintenance is likely to be required in the long-term, which could include ongoing repairs to infrastructure. All measures of this report, including the EMPr should be adhered for any maintenance requirements. Any excavated areas must be stabilised and rehabilitated as per the measures indicated in this report.

4 Organizational Capacity and Competency

Successful Implementation will be in part be dependent on the organisational capacity and competency of the applicant and any implementing agents. The following aspects are likely to pose risk to the successful mitigation of the project:

- Budget constraints – budget allocated for environmental management tends to be inadequate for construction projects.
- Organisational Structure – implementing agents may or may not have adequate capacity and competency to ensure appropriate and adequate environmental management.

5 Emergency Preparedness and Response

Emergency Preparedness Plan must be included in the EMPr and should address specific measures relating to the following emergency risks:

- Fire management and response.
- Spill management and incident response.
- Waste management and incident response.
- Response to emergency site shutdown, including labour and protest actions.

6 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.

7 Monitoring and Review

Key monitoring activities should include the following:

1. Pre-construction
   a) Ensure flora permits are in place timeously (PNCO only) – allow at least 1 or 2 months before commencement.
   b) Environmental Awareness and training (EAT) – Ensure all labour are informed and plant operators are aware of risks, issues, do's and don'ts and no-go areas.
2. Bush clearing
   a) Ensure working plant has no oil or hydraulic leaks
   b) Check delineated footprints area not exceeded.
3. Construction
   a) Regular checks on trenches for trapped animals and possible drowning risks
   b) Regular checks of fences for snares
4. Rehabilitation

a) Check quality of topsoil and weed free.
b) Check for weed regrowth and manage timeously (before seed is set)

5. Operation monitoring
   a) Weed management on ongoing basis.
   b) Erosion to be addressed on ongoing basis

8 Appendices

8.1 Appendix A: References

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- World Resources Institute (WRI): https://www.wri.org

8.2 Appendix B: Abbreviations & Glossary

8.2.1 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

8.2.2 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

	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.

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. 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 - (a) which is open to the sea permanently or periodically; and

	(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. 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*). 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.

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). 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. • whose crowns are largely contiguous. • or which have been declared by the Minister to be a natural forest under section 7(2)? This definition should be read in conjunction with Section 2(1)(x) which states that 'Forest' includes: • A natural forest, a woodland, and a plantation • The forest-produce in it; and • The ecosystems which it makes up. 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: • A generally multi-layered vegetation unit • Dominated by trees that are largely evergreen or semi-deciduous. • The combined tree strata have overlapping crowns, and crown cover is >75% • Grasses in the herbaceous stratum (if present) are generally rare. • Fire does not normally play a major role in forest function and dynamics except at the fringes. • The species of all plant growth forms must be typical of natural forest (check for indicator species) • 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

	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): • 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

	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. 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. 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.

8.3 Appendix C: Site Photos





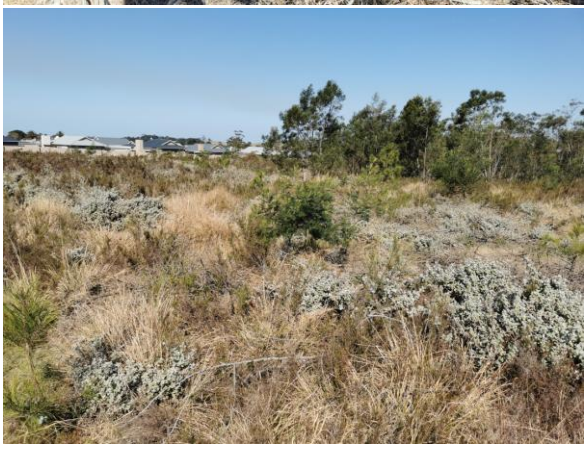




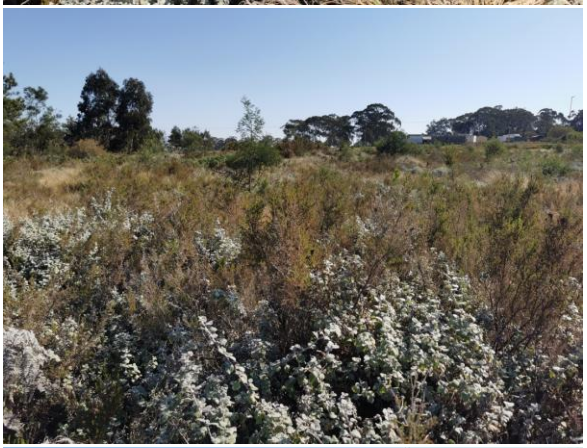














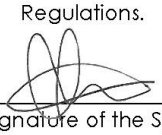

8.4 Appendix D: Declaration, Specialist Profile and Registration

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Mr Jamie Pote....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



18 October 2024

Signature of the Specialist: Date:

N/A

Name of company (if applicable):

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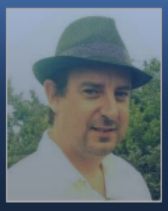

Jamie Pote

SENIOR ECOLOGIST AND ENVIRONMENTAL SCIENTIST

CONTACT

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Port Elizabeth, South Africa
Linkedin.com
Jamiepote
Bluesky-SA

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 2025**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

Mr Jamie Pote (BSc (Hons) PR. Sci. Nat.

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).

8.5 Appendix E: 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[6].

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[7].

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.

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

[7] 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).

PLANT SPECIES SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS

	ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY	
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 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*[8], 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 1. Critical habitat for range-restricted species[9] of conservation concern, that have a global range of less than 10 km². 2. SCC listed on the IUCN Red List of Threatened Species[10] or on South Africa's National Red List website[11] as Critically Endangered, Endangered or Vulnerable according to the IUCN Red List 3.1. Categories and Criteria or listed as Nationally Rare. 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. 4. The number of mature individuals that ranks the site among the largest 10 aggregations known for the species. These areas are irreplaceable for SCC.	✓

[8] Available at https://bgis.sanbi.org/
[9] Species with a geographically restricted area of distribution.
[10] https://www.iucnredlist.org/
[11] This category includes the categories Extremely Rare, Critically Rare and Rare

	ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY	
	HIGH SENSITIVITY RATING 1. Confirmed habitat for SCC. 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. 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[12]. 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 1. Areas where no natural habitat remains. 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[13] 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;	✓

[12] The methodology by which habitat suitability models have been developed are explained within the Species Environmental Assessment Guideline.
[13] 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

	ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY	
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[14]; 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.	✓

[14] Refer to the Species Environmental Assessment Guideline

8.6 Appendix F: Site Sensitivity Verification Report

8.6.1 Background

Sharples Environmental Services cc (SES) has been appointed as the independent Environmental Assessment Practitioner (EAP) to conduct the Environmental Impact Assessment process for the proposed construction of commercial and residential development on Hansmoeskraal Farm 202, Portion 50, in the George Local Municipality, Garden Route District Municipality of the Western Cape. (Figure 24). As part of this application, a Terrestrial Biodiversity, Plant & Animal Specialist Assessment is required.

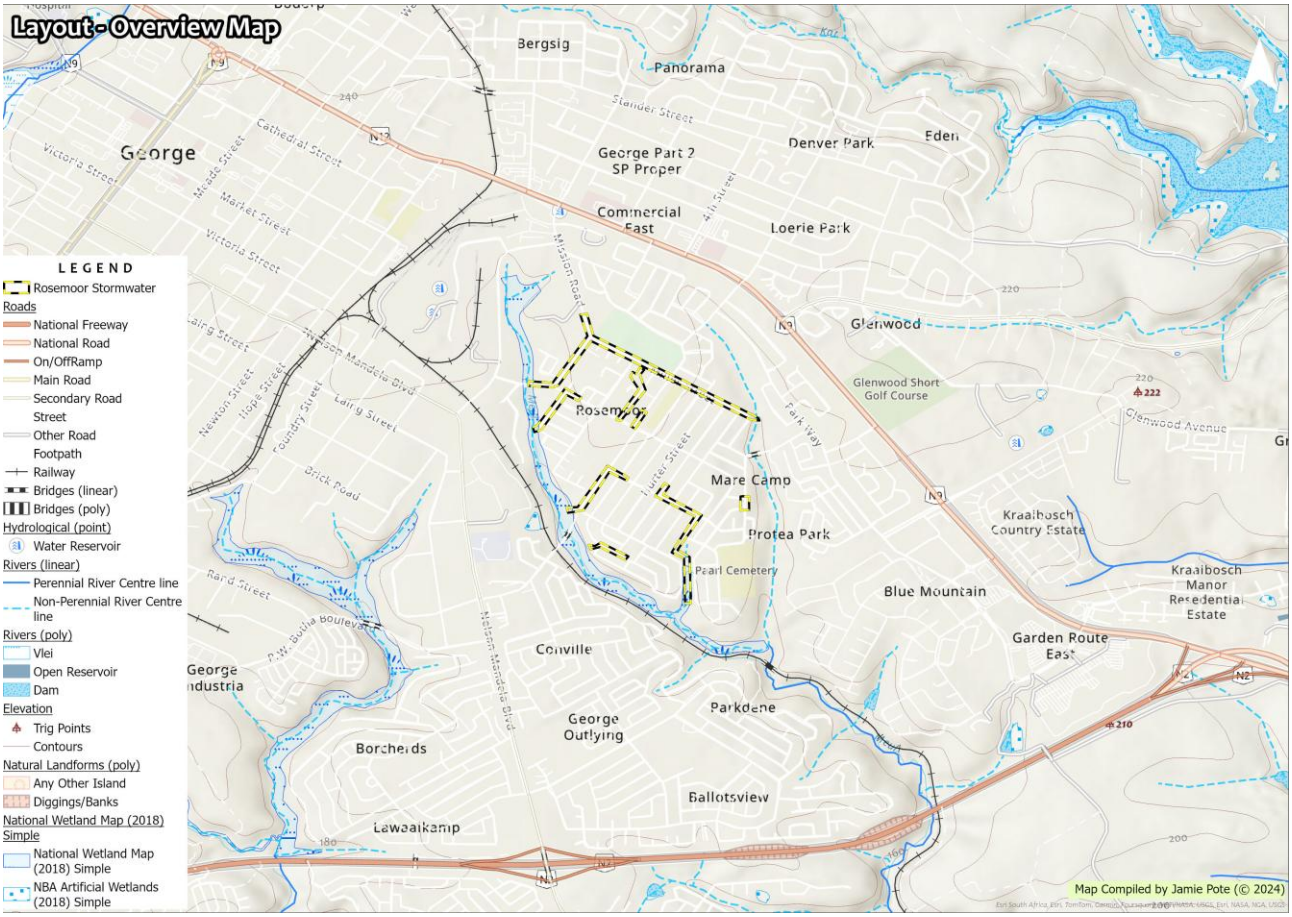

Figure 24: Site locality.

8.6.2 Activity Location and Description

The site is located within a transformed developed urban and peri-urban area on a relatively flat plain, drained by often somewhat incised watercourses in a south-easterly and south-westerly direction. Broadly speaking, the Fynbos represented in the flatter areas, tend ot be secondary and/or disturbed, as a result of historical land use (historical agricultural uses), whereas the vegetation on slopes tends to be of a more natural or intact nature. The site is comprised predominantly of a patchy mozaic of transformed, densely invaded and secondary fynbos habitat that is bounded by a developed urban and/or transformed agricultural (farming) landscape on all sides.

8.6.3 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.

4. The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.
5. 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.
6. 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).

8.6.4 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 or Red Listed Ecosystems (NBA/RLE, 2022) – description of vegetation types, species (including endemic) and most recent 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.
- Global Biodiversity Information Facility (GBIF) – potential flora & faunal species.
- National Protected Areas Expansion Strategy (NPAES, 2018) and South Africa Protected Area database (2020) – protected area information.
- SANBI BGIS – All other biodiversity GIS datasets.
- Western Cape Biodiversity Spatial Plan (2017).
- 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 may 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.

This plant species assessment 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).

8.6.5 Site visit

A site inspection was conducted on **02 & 03 September 2024**, during late winter/early spring. The site falls within a temperate climate with rainfall occurring throughout the year but is often higher in winter, hence for the purposes of this report, a single site visit is deemed to be adequate, specifically due to the disturbed nature of the site.

8.6.6 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 or marine ecosystems outside of the scope of a terrestrial biodiversity report. Refer to separate reporting.
- No assessment has been made of terrestrial biodiversity or animal species, being outside the scope of this plant species assessment.
- 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 at any time may vary, depending on level of maturity or time since last burn. Species that are visible in an area having mature fynbos may differ from species that are visible in the months after a burn, where they would have been dormant in the seed bank during the mature period. As far as possible, site collected data has been supplemented with desktop and database-centred distribution data, as well as 20 plus years' experience in the associated vegetation.
- 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.

8.6.7 National Environmental Screening Tool

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

- Terrestrial Biodiversity is Very High (Figure 4). Not Assessed, for context only.
- Plant species sensitivity is Low &Moderate (Figure 5). Assessed.

Table 6: Summary of Screening tool designations.

Terrestrial Sensitivity	**Feature(s) in proximity**
Very High	ESA 2: Restore from other land use, CBA 2: Terrestrial, SWSA (SW, Outeniqua) Garden Route Granite Fynbos (Critically Endangered)
High	None
Medium	None
Low	Present
Plant Sensitivity	

Very High	None
High	None
Medium	*Erica glandulosa subsp. fourcadei, Hermannia lavandulifolia, Euchaetis albertiniana, Erica glumiflora, Lampranthus pauciflorus, Leucospermum glabrum, Diosma passerinoides, Sensitive species 1024, 1032, 800 & 500.* Lebeckia gracilis
Low	Present

Figure 25: Terrestrial Biodiversity Sensitivity

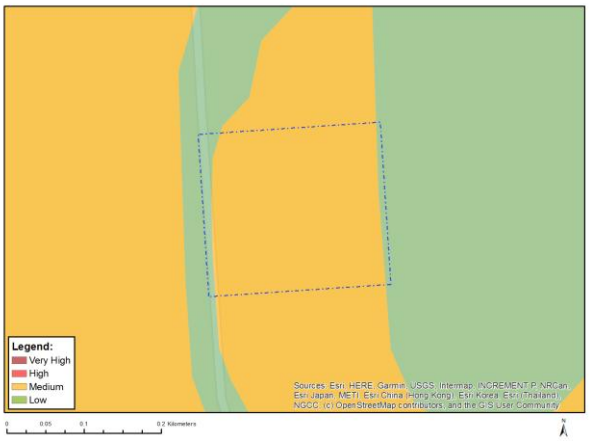

Figure 26: Plant Species Sensitivity

The site assessment will also physically screen for the presence of the listed, and other possible species and/or sensitivities that are not identified in the screening tool in addition to those that are flagged. 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.

The following is deduced from the DFFE National Environmental Screening Tool:

- Several flora (plant) species regarded as being of concern are flagged as potentially being present (Medium sensitivity) and are assessed further in the report, however none were found to be present during the site visit and are furthermore due to the degraded nature of the site, as well as being somewhat isolated from fully intact habitat, it is not deemed to be suitable habitat for any functional species population, nor were any flagged species found to occur. The Screening Tool designated medium sensitivity is thus disputed as no flagged plant species were found to occur. The specialist thus designated a low plant species sensitivity fort the site.
- The terrestrial biodiversity theme is Very-High, however is outside the scope of this plant species assessment.
- The impacts are assessed further in the relevant report sections in the accompanying report.

8.6.8 Findings, Outcomes and Recommendations

Terrestrial Biodiversity

Not assessed in this plant species assessment. Only provided for context.

Plant Species (Flora)

National Environmental Screening Tool flagged several flora species. Almost the entire site is situated within a significantly altered and degraded landscape, where little natural vegetation remains. No significant pockets of natural vegetation were found that might provide suitable habitat for these

species and it is confirmed that no species of conservation concern having an elevated status and/or limited distribution range as flagged in the screening tool are present.

The SSVR thus disputes the flagged flora ('plant') species of conservation concern and medium plant species designations, and the specialist designates a low plant species sensitivity.

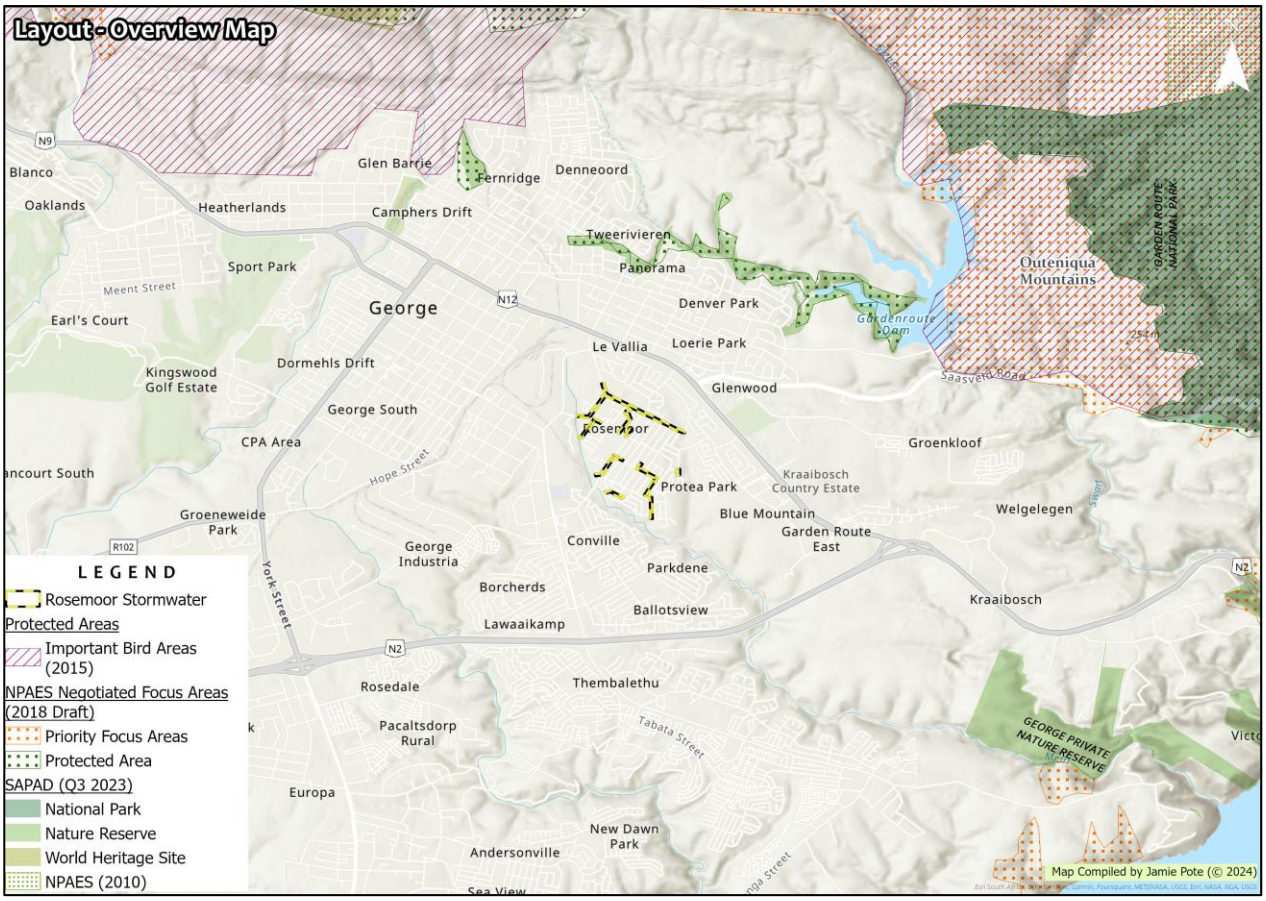

Figure 27: Protected Areas and NPAES in vicinity.

8.6.9 Conclusions

The site verification disputes that any of the screening tool flagged flora species of conservation concern are present nor likely to be affected by the proposed activity within a degraded, secondary and modified (transformed) landscape. The specialist plant species sensitivity designation for the site is thus low.

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