PB CONSULT
ENVIRONMENTAL MANAGEMENT SERVICES

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

DIEMERSFONTEIN TELCOM MAST

THE PROPOSED ESTABLISHMENT OF A 25 M HIGH TELECOMUNICATION BASE STATION ON DIEMERSFONTEIN (FARM PAARL RD, ERF 1765), PAARL DRAKENSTEIN MUNICIPALITY, WESTERN CAPE PROVINCE.

PREPARED FOR:

ENVIROAFRICA

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9 October 2024

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EXECUTIVE SUMMARY

Mast Services (Pty) Ltd, proposes the development of a telecommunications base station (tower) on Farm Paarl Rd, Erf 1765 (Paarl), near Wellington to improve telecommunication services in the surrounding area. The development footprint will be about 100 m^2 (with a 25 m high lattice mast structure) and will be located on a disturbed area on top of a small rocky outcrop (koppie), surrounded by vineyards. The mast will be located within a disturbed area on the koppie, but the koppie itself, still supports some natural vegetation patches. The vegetation is not typical renosterveld, but almost thicket like stands of trees and larger shrubs typically associated with these granite outcrops.

VEGETATION TYPE & STATUS

According to the South African vegetation map (2018) (Mucina & Rutherford, 2006), the study area overlaps an area supporting **endangered** Swartland Granite Renosterveld vegetation (Figure 6).

WATERCOURSES & WETLANDS

There are no watercourses or wetlands within or near the footprint area.

VEGETATION ENCOUNTERED

The proposed location for the base station is on top of a small rocky outcrop. The koppie represents a small, isolated patch of remaining natural veld (protected by the rocky nature of the outcrop) within the surrounding agricultural landscape (vineyards). The vegetation on the koppie is not typical renosterveld but represents patches of almost thicket-like stands of small to medium sized trees, as is typical of the granite outcrops in this vegetation type. The tree layer was dominated by *Searsia* species but also included several large old wild olive trees (*Olea europaea*) scattered in between the larger rocks. Larger shrubs were encountered on the edges of woody stands and in more disturbed or open areas in between the rocky areas.

However, the footprint of the development will be very small (approximately 100 m^2) and will be located in an area already disturbed (Photo 2). The potential additional **impact** on **vegetation is considered negligible**.

CONSERVATION PRIORITY AREAS

According to the 2017, Western Cape Biodiversity Spatial Plan (WCBSP) the study area will not impact on ecological support areas (ESA's) or critical biodiversity areas (CBA's) but it is in close proximity to CBA areas associated with the remaining natural veld on the koppie (Figure 3) (CapeNature, 2017).

As long as the development does not impact on the remaining natural veld there should be **no significant additional impact on conservation priority areas** (refer to the site sensitivity map, Figure 7, and the impact minimisation recommendations).

PROTECTED PLANT SPECIES

According to the DFFE screening tool report for this project (Refer to Appendix 1), the relative plant species sensitivity is considered **Low Sensitive**. This corresponds to with the findings of this study (especially because of the degraded status of the proposed footprint area).

However, there is several large indigenous trees (especially the old wild olive trees) that must be regarded as conservation worthy and must be protected. In fact, none of the larger indigenous trees should be impacted (to be protected), while woody invasive species such as the *Acacia cyclops* (Rooikrans) individuals should be removed.

FAUNA & AVI-FAUNA

Historically several large and small mammals would have been expected to occur within the Fynbos / Renosterveld vegetation of the Swartland area (although not in large numbers). Fynbos does not support a high number of birds , but all six bird species

endemics to the south-west Cape are fynbos species. On the other hand, Fynbos supports large numbers of butterfly species, many of which, are now at risk, especially the myrmecophilous (ant associated) butterflies from the family Lycaenidae, because of ongoing disturbances to their preferred habitat (often small areas). Although fynbos is not particularly rich in reptiles and amphibians, many of the species living there are both endemic and threatened. The very rare geometric tortoise is found in only a few surviving fynbos areas and is regarded as the world's second rarest tortoise. The Cape has more than half of South Africa's frog species. Furthermore, of the 62 different frogs occurring here, 29 are endemic being found nowhere else on earth.

According to the **NEMA EIA Sensitivity** scan for the site (Appendix 1) the Animal Species Theme Sensitivity is **Medium Sensitive** because of the potential presence of the species listed in the Table below (Table 8). Unfortunately, because of the long history of agriculture and the transformed nature of the site (Refer to the reasons listed in Table 8) it is considered highly unlikely that the proposed development will result in any significant additional impact on any of these species.

As a result, the animal species sensitivity for this project is considered **Low Sensitive**.

TERRESTRIAL BIODIVERSITY

According to the **NEMA EIA Sensitivity** scan for the site (Appendix 1) the Terrestrial Biodiversity Theme Sensitivity is considered **VERY HIGH SENSITIVE** because of the potential impact on endangered Swartland Granite Renosterveld vegetation.

However, the proposed footprint is very small and will be located within an area already disturbed (and will thus not have any additional impact on natural vegetation). According to the terrestrial impact assessment given in Table 9 the main impacts associated with the proposed development is likely to be:

- The potential impact on invertebrate species of conservation concern (a low negative potential impact).
- The potential accumulative impact is considered to a **Low negative**, which can be reduced to very low with mitigation.

With mitigation it is considered highly unlikely that the development will contribute to any of the following:

- Significant loss of vegetation type and associated habitat.
- Loss of ecological processes (e.g., migration patterns, pollinators, river function etc.) due to construction and operational activities.
- Loss of local biodiversity and threatened plant species.
- Loss of ecosystem connectivity.

As a result, the Terrestrial Biodiversity Impact associated with this project is considered **LOW SENSITIVE**.

MAIN CONCLUSION

The proposed location for the base station is considered well-chosen in that it is located on land already degraded/transformed with no intact or natural veld of any significance remaining. In addition, it will not result in additional impact on connectivity or critical biodiversity areas.

It is the opinion of the author that a full botanical assessment will not produce any significant additional information. The sensitivity map focuses on the protection of the the remaining natural veld on the larger rocky outcrop. (Refer to Figure 7).

WITH THE AVAILABLE INFORMATION IT IS RECOMMENDED THAT THE PROJECT BE APPROVED.

DETAILS OF THE AUTHOR

This is a specialist report compiled by Peet Botes from PB Consult.

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INDEPENDENCE & CONDITIONS

PB Consult is an independent entity with no interest in the activity other than fair remuneration for services rendered. Remunerations for services are not linked to approval by decision making authorities and the company have no interest in secondary or downstream development because of the authorization of this project. There are no circumstances that compromise the objectivity of this report. The findings, results, observations and recommendations given in this report are based on the author's best scientific and professional knowledge and available information. The author reserves the right to modify aspects of this report, including the recommendations if new information become available which may have a significant impact on the findings of this report.

RELEVANT QUALIFICATIONS & EXPERIENCE OF THE AUTHOR

Mr. Peet Botes holds a BSc. (Hons.) degree in Plant Ecology from the University of Stellenbosch (Nature Conservation III & IV as extra subjects). Since qualifying with his degree, he had worked for more than 20 years in the environmental management field, first at the Overberg Test Range (a Division of Denel) managing the environmental department of OTR and being responsible for developing and implementing an ISO14001 environmental management system, ensuring environmental compliance, performing environmental risk assessments with regards to missile tests and planning the management of the 26 000 ha of natural veld, working closely with CapeNature (De Hoop Nature Reserve).

In 2005 he joined Enviroscientific, an independent environmental consultancy specializing in wastewater management, botanical and biodiversity assessments, developing environmental management plans and strategies, environmental control work as well as doing environmental compliance audits and was also responsible for helping develop the biodiversity part of the Farming for the Future audit system implemented by Woolworths. During his time with Enviroscientific he performed more than 400 biodiversity and environmental legal compliance audits.

During 2010 he joined EnviroAfrica in order to move back to the biodiversity aspects of environmental management. Experience with EnviroAfrica includes NEMA EIA applications, environmental management plans for various industries, environmental compliance audits, environmental control work as well as more than 70 biodiversity & botanical specialist studies.

Towards the end of 2017, Mr Botes started his own small environmental consulting business focusing on biodiversity & botanical assessments, biodiversity management plans and environmental compliance audits.

Mr. Botes is a registered Professional Botanical, Environmental and Ecological Scientists at SACNASP (South African Council for Natural Scientific Professions) as required in terms of Section 18(1)(a) of the Natural Scientific Professions Act, 2003, since 2005.

DECLARATION OF INDEPENDENCE

THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS

I Petrus, Jacobus, Johannes Botes, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014, as amended, and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 (specifically in terms of regulation 13 of GN No. R. 326) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 13 of GN No. R. 326.

Note: The terms of reference must be attached.

Signature of the specialist:

PB Consult (Sole Proprietor)

Name of company:

9 October 2024

Date:

CONTENTS

LIST OF FIGURES

LIST OF PHOTOS

ABBREVIATIONS

BAR	Basic Assessment Report
CBA	Critical biodiversity area (in terms of the 2017 City of Cape Town Biodiversity Network)
EA	Environmental Authorization (Record of Decision)
EAP	Environmental assessment practitioner
ECO	Environmental Control Officer
EIA	Environmental impact assessment
EMP	Environmental Management Plan or Program
EMS	Environmental management system
EN	Endangered
ESA	Ecological support area (in terms of the 2017 City of Cape Town Biodiversity Network)
LT	Least Threatened
NEMA	National Environmental Management Act, 1998 (Act no. 107 of 1998)
VU	Vulnerable

1. INTRODUCTION

Mast Services (Pty) Ltd, proposes the development of a telecommunications base station (tower) on Farm Paarl Rd, Erf 1765 (Paarl), near Wellington to improve telecommunication services in the surrounding area. The development footprint will be about 100 m^2 (with a 25 m high lattice mast structure) and will be located on a disturbed area on top of a small rocky outcrop (koppie), surrounded by vineyards. The mast will be located within a disturbed area on the koppie, but the koppie itself, still supports some natural vegetation patches. The vegetation is not typical renosterveld, but almost thicket like stands of trees and larger shrubs typically associated with these granite outcrops.

According to the vegetation map of South Africa (2018), the site falls within an area expected to support Swartland Granite Renosterveld (Figure 6), a vegetation type that has been classified as **endangered** in terms of the revised national list of ecosystems that are threatened and in need of protection (2022). There are no rivers or wetlands in close proximity to the proposed site. Critical biodiversity areas (CBA's) had been identified, on the southern parts of the koppie, but the site itself will not impact on any CBA or ESA (ecological support areas).

The site visit confirmed that the proposed base station will be located in an area already transformed, but that the surrounding rocky areas on the koppie still supports a number of indigenous trees, mostly dominated but *Searsia* species, but also several old wild olive trees (*Olea europaea*), .

The DFFE screening report for the proposed site, compiled by EnviroAfrica on the 2nd of August 2024 (Appendix 1), identifies the following potential environmental sensitivities:

- The relative Animal species theme sensitivity is considered of **Medium Sensitivity**;
- The relative Plant species theme sensitivity is considered of **Low Sensitivity**;
- The relative Terrestrial Biodiversity theme sensitivity is considered of **Very High Sensitivity**.

A freshwater specialist had been appointed to evaluate the aquatic biodiversity theme (which is also considered **Very Hight Sensitive**).

1.1. LEGISLATION GOVERNING THIS STUDY

This is a specialist report, compiled in terms of:

- The National Environmental Management Act, Ac. 107 of 1998 (NEMA);
- 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 NEMA (Government Notice No. 320 of 20 March 2020).

1.2. TERMS OF REFERENCE

Since the Terrestrial Biodiversity Theme has been identified as very high a Terrestrial Biodiversity Assessment or Compliance Statement were required. PB Consult was appointed by EnviroAfrica to perform a site sensitivity verification and a terrestrial biodiversity report.

The terms of reference for this appointment were to:

- Perform a site visit and evaluate the sensitivity of the site in terms of the Biodiversity Protocol

for specialist assessment.

- Determine and record the position of any flora or fauna species of special significance (e.g., protected species, or rare or endangered species) that should be avoided or that may require "search & rescue" intervention.
- Locate and record sensitive areas from a terrestrial biodiversity perspective within the proposed development footprint that may be interpreted as obstacles to the proposed development.
- Map a sensitive areas and make recommendations on optimal placement (in terms of minimum environmental impact) of the proposed sand mine.
- Make recommendations on impact minimization where applicable

1.3. ACTIVITY DESCRIPTION

Mast Services (Pty) Ltd, proposes the development of a telecommunications base station (tower) on Farm Paarl Rd, Erf 1765 (Paarl), near Wellington to improve telecommunication services in the surrounding area.

Specifications for the development footprint are as follows:

- The development footprint for the base station will be about 100 m^2;
- It will include a fence around the base station (included within the 100 m^2 footprint area);
- It will support a lattice mast, 25 m in heigh;
- Power will be supplied from Eskom lines.

2. STUDY AREA

2.1. LOCATION & LAYOUT

The proposed telecommunication base station will be located in the northern part of Farm Paarl Rd, Erf 1765 (Paarl), which is part of the Diemersfontein wine and country estate. Farm Paarl Rd, Erf 1765 is about 74.15 ha in size and is located to the southeast of Wellington and to the northeast of Paarl (east of the Hillcrest area) (Figure 1). It falls within the Drakenstein Municipal area of the Western Cape Province.

Figure 2 shows the farm boundaries (red) and the proposed location of the base station (red and yellow dot). It also shows the location of watercourses and wetlands in the surrounding landscape (the nearest watercourse being a seasonal stream, in the valley bottom about 240 m to the south).

The base station itself will be about 100 m^2 in size and will be located in a disturbed area on top of a small rocky outcrop (koppie) on the farm (Figure 2).

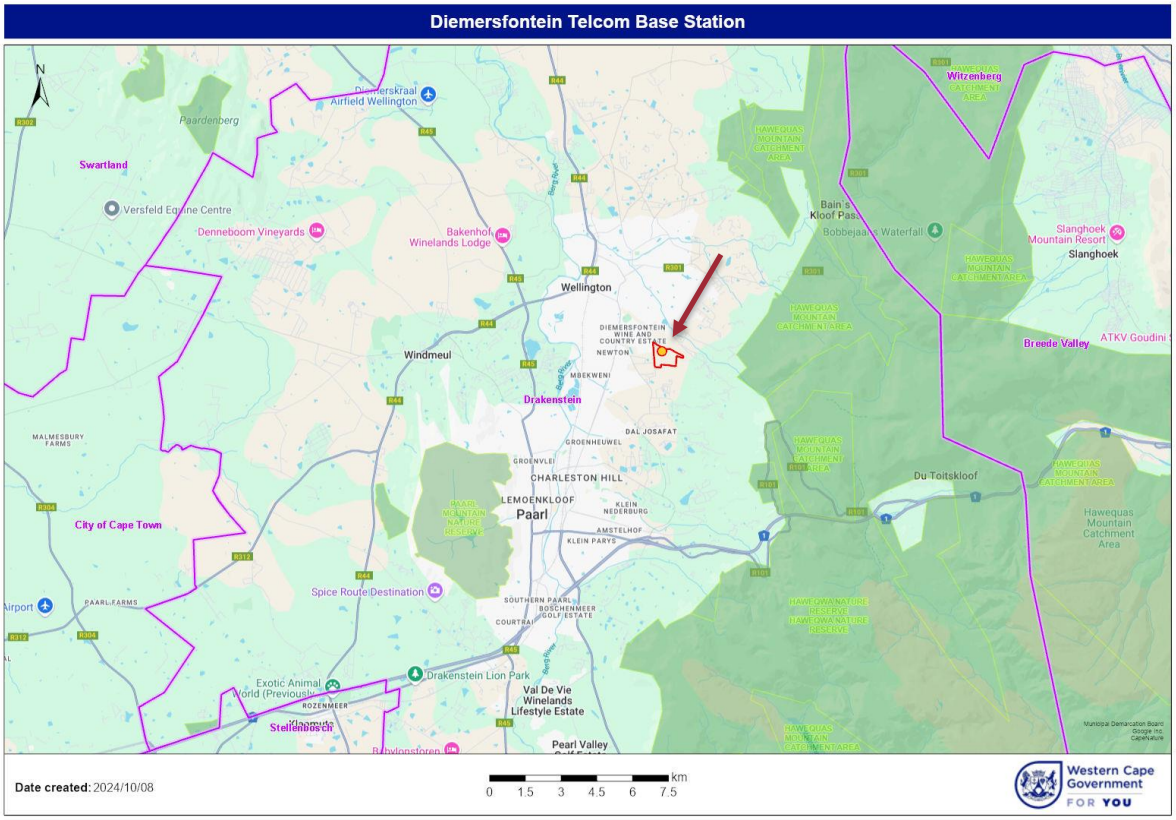

Figure 1: A map showing the location of the farm and the base station in relation to Wellington and Paarl.

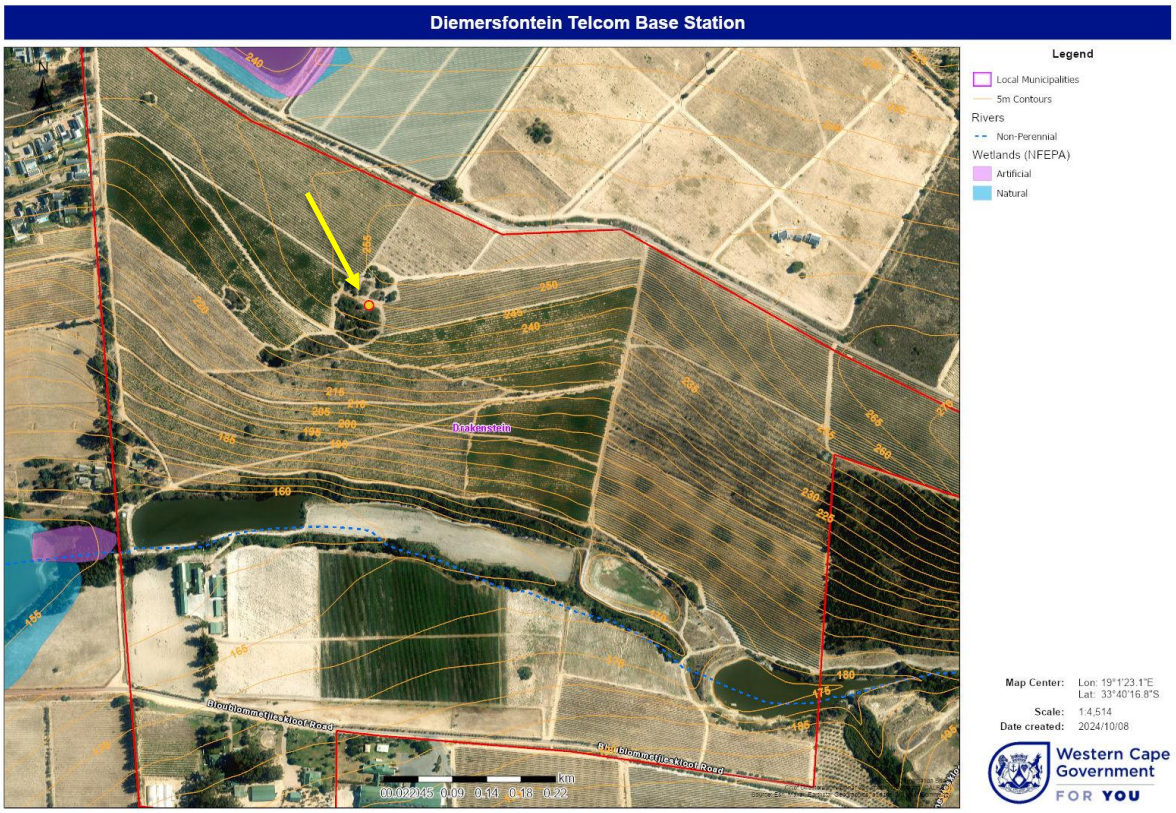

Figure 2: CapeFarmMapper image showing the farm boundary (red) and the location of the proposed base station (red & yellow dot).

2.2. CRITICAL BIODIVERSITY AREAS MAPS

The 2017 Western Cape Biodiversity Spatial Plan (WCBSP) includes a map of biodiversity importance for the entire province, covering both the terrestrial and freshwater realms, as well as major coastal and estuarine habitats (Pool-Stanvliet, 2017). It is the product of a systematic biodiversity plan that delineates, on a map, Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which require safeguarding to ensure the continued existence and functioning of species and ecosystems, including the delivery of ecosystem services (CapeNature, 2017).

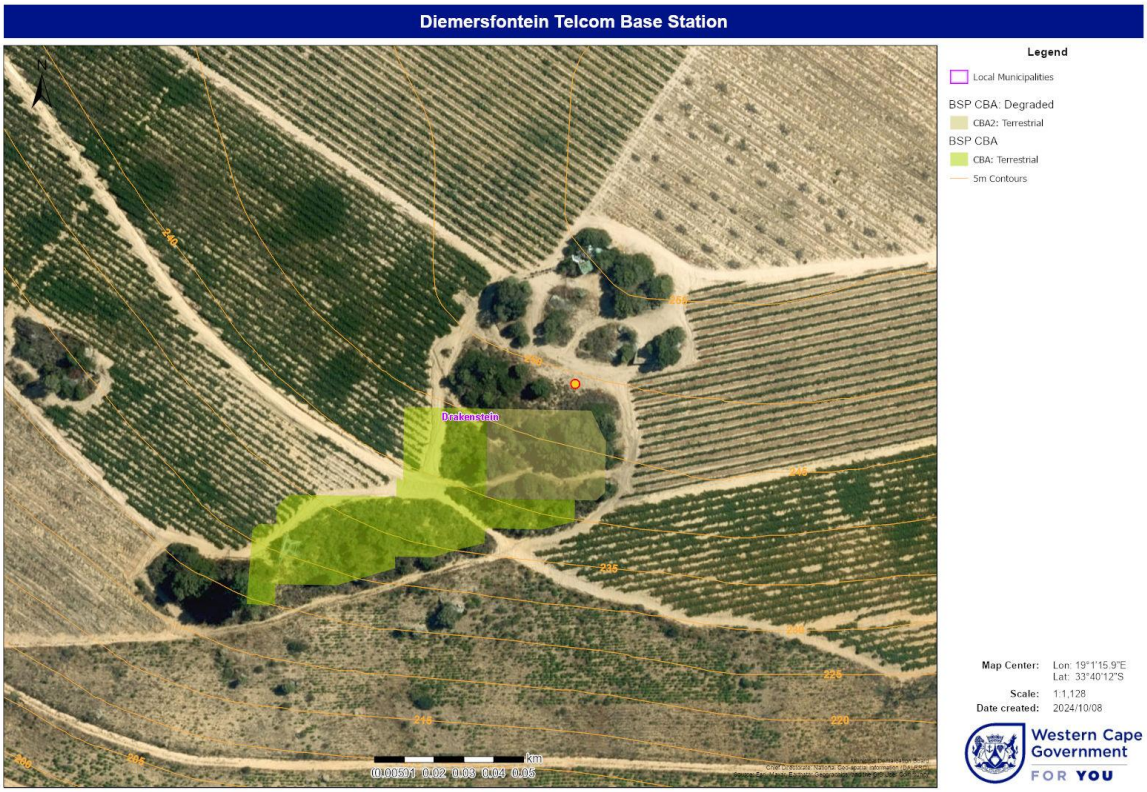

Figure 3: Western Cape Biodiversity Spatial Plan (2017) showing the approximate location of the base station (red & yellow dot) and critical biodiversity areas (CapeFarmMapper) in its vicinity.

According to the 2017, Western Cape Biodiversity Spatial Plan (WCBSP) the study area will not impact on ecological support areas (ESA's) or critical biodiversity areas (CBA's) but it is in close proximity to CBA areas associated with the remaining natural veld on the koppie (Figure 3) (CapeNature, 2017).

The koppie represents a small, isolated patch of remaining natural veld (almost thicket like), protected by the rocky nature of the outcrop, surrounded by intensive agriculture (vineyards) (Figure 3).

2.3. LANDUSE

According to the 2020, DEA Land Cover (9-class) map of South Africa, the study area might still support low shrubland (fynbos) (Refer to Figure 4). However, the site visit confirmed that the proposed location for the base station will be located on a disturbed portion of land, but that the surrounding koppie still supports patches of natural veld.

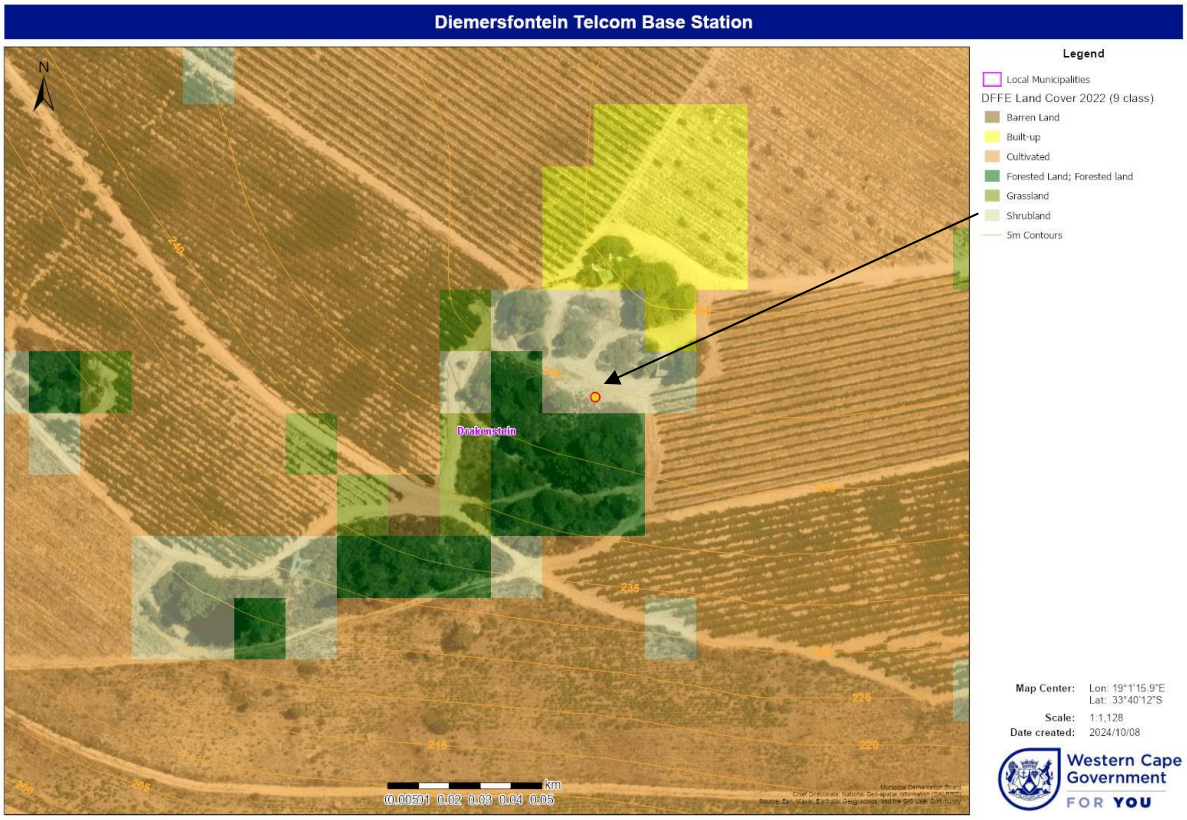

Figure 4: Land Cover 9-class (DEA, 2020) showing the expected land cover in the vicinity of the proposed development.

3. APPROACH & METHODOLOGY

The protocol for specialist assessment and minimum report content and requirements for environmental impacts on terrestrial biodiversity was published in GN. No. 320 of 20 March 2020. It includes the requirements for a desktop analysis and site verification.

3.1. DESKTOP ANALYSIS

The first step of the study was to conduct a desktop analysis of the study area and its immediate surroundings. Using the DFFE screening tool report as basis, spatial information from online databases such as SANBI BGIS and Google Earth were used to evaluate the site in terms of vegetation, obvious differences in landscape (e.g., variations in soil type, rocky outcrops etc.) or vegetation densities , which might indicate differences in plant community or species composition, critical biodiversity areas and other terrestrial biodiversity features as identified in the screening tool.

This information was used to prepare a study area map, which is used as a reference during the physical site visit. Plant species lists were prepared, and species of special significance were flagged.

3.2. SITE SENSITIVITY VERIFICATION

The fieldwork for project was carried out on the 1st of October 2024. The site survey was conducted over a 2-hour period, by walking and driving the site and sampling the vegetation, using a modified approach, based on the Braun-Blanquet vegetation survey method (Werger, 1974).

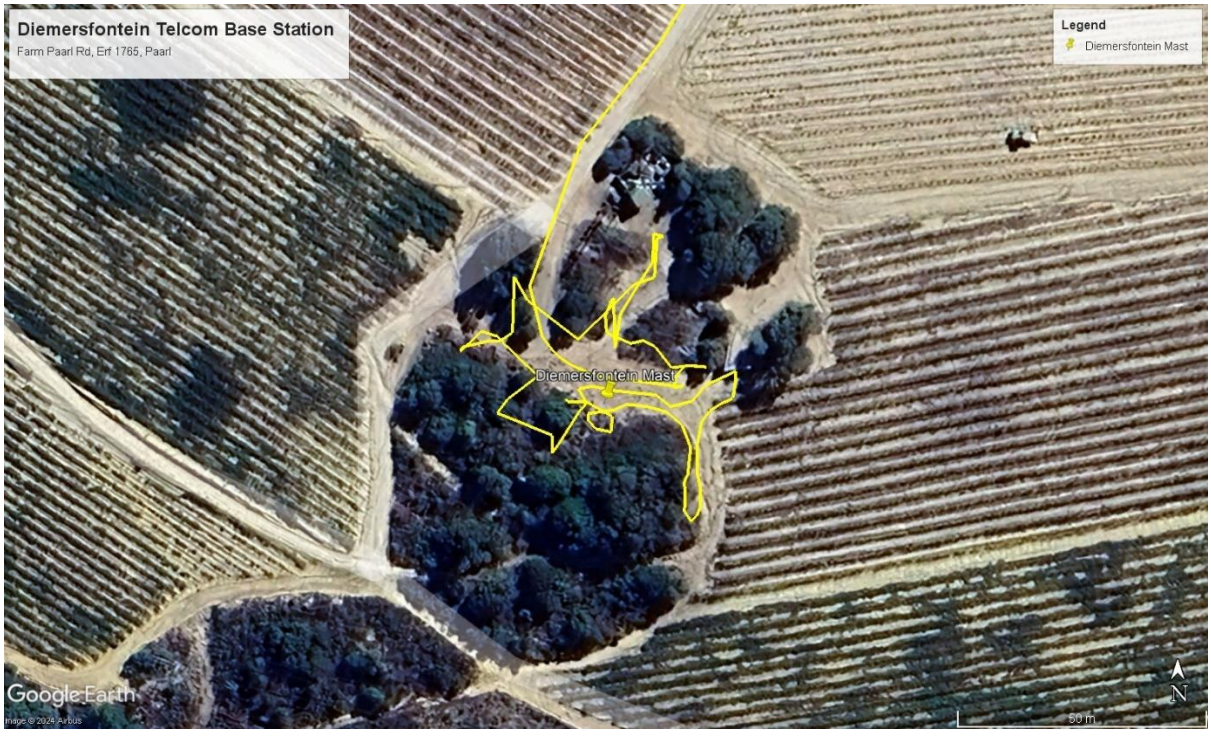

Figure 5: Google overview, showing the site verification routes.

Protected or other special plants and any terrestrial feature of significance was, marked by waypoints and/or on the study map, and photographed (Figure 5). A hand-held Garmin GPSMAP 62s was used

to track the sampling route and for recording waypoints. During the survey notes, and photographic records were collected. All efforts were made to ensure that any variation in vegetation or soil condition, which might indicate special botanical features (e.g., rocky outcrops, watercourses or heuweltjies), were visited. Efforts was also made to ensure that the plant species list was as complete as possible.

3.3. LIMITATIONS, ASSUMPTIONS AND UNCERTAINTIES

The findings are based on a one-day site visit (not long-term repetitive sampling), which means that it is likely that some species might have been missed. However, the proposed location for the base station overlaps a transformed part of the koppie, although the remainder of the koppie still surrounding indigenous vegetation patches. All significant plant species were identifiable and a good understanding of the status of the vegetation and plant species in the study areas were obtained. Confidence in the findings is high. There should be no limiting factors which could significantly alter the outcome of this study (especially since the site location is basically transformed). It is unlikely that a full botanical assessment will result in any additional findings that would have a significant impact on the outcome.

3.4. IMPACT ASSESSMENT METHOD

The concept of environmental impact assessment in terms of the National Environmental Management Act, Act 107 of 1998 (NEMA) and the Environmental Impact Assessment (EIA) was developed to identify and evaluate the nature of potential impact to determine whether an activity is likely to cause significant environmental impact on the environment. The concept of significance is at the core of impact identification, evaluation and decision making, but despite this the concept of significance and the method used for determining significance remains largely undefined and open to interpretation (DEAT, 2002).

The objective of this study was to evaluate the remaining biodiversity of the study area to identify significant environmental features which might be impacted by of the proposed activity. The Ecosystem Guidelines for Environmental Assessment (De Villiers *et. al*., 2005), were used to evaluate the botanical significance of the property with emphasis on:

- Significant ecosystems
    - Threatened or protected ecosystems
    - Special habitats
    - Corridors and or conservancy networks
- Significant species
    - Threatened or endangered species
    - Protected species.

3.4.1. DETERMINING SIGNIFICANCE

Determining impact significance from predictions of the nature of the impact has been a source of debate and will remain a source of debate. The author used a combination of scaling and weighting methods to determine significance based on a simple formula. The formula used is based on the method proposed by Edwards (2011). However, the criteria used were adjusted to suite its use for botanical assessment. In this document significance rating was evaluated using the following criteria.

Significance = Conservation Value x (Likelihood + Duration + Extent + Severity) (Edwards 2011)

3.4.2. CRITERIA USED

***Conservation value*:** Conservation value refers to the intrinsic value of an attribute (e.g., an ecosystem, a vegetation type, a natural feature or a species) or its relative importance towards the conservation of an ecosystem or species or even natural aesthetics. Conservation status is based on habitat function, its vulnerability to loss and fragmentation or its value in terms of the protection of habitat or species (Refer to Table 1 for categories used).

Likelihood refers to the probability of the specific impact occurring because of the proposed activity (Refer to Table 2, for categories used).

Duration refers to the length in time during which the activity is expected to impact on the environment (Refer to Table 3).

Extent refers to the spatial area that is likely to be impacted or over which the impact will have influence, should it occur (Refer to Table 4).

Severity refers to the direct physical or biophysical impact of the activity on the surrounding environment should it occur (Refer to Table 5).

Table 1: Categories used for evaluating conservation status.

CONSERVATION VALUE	
Low (1)	The attribute is transformed, degraded not sensitive (e.g. Least threatened), with unlikely possibility of species loss.
Medium/low (2)	The attribute is in good condition but not sensitive (e.g. Least threatened), with unlikely possibility of species loss.
Medium (3)	The attribute is in good condition, considered vulnerable (threatened), or falls within an ecological support area or a critical biodiversity area, but with unlikely possibility of species loss.
Medium/high (4)	The attribute is considered endangered or, falls within an ecological support area or a critical biodiversity area, or provides core habitat for endemic or rare & endangered species.
High (5)	The attribute is considered critically endangered or is part of a proclaimed provincial or national protected area.

Table 2: Categories used for evaluating likelihood.

LIKELIHOOD	
Highly Unlikely (1)	Under normal circumstances it is almost certain that the impact will not occur.
Unlikely (2)	The possibility of the impact occurring is very low, but there is a small likelihood under normal circumstances.
Possible (3)	The likelihood of the impact occurring, under normal circumstances is 50/50, it may or it may not occur.
Probable (4)	It is very likely that the impact will occur under normal circumstances.
Certain (5)	The proposed activity is of such a nature that it is certain that the impact will occur under normal circumstances.

Table 3: Categories used for evaluating duration.

DURATION	
Short (1)	Impact is temporary and easily reversible through natural process or with mitigation. Rehabilitation time is expected to be short (1-2 years).
Medium/short (2)	Impact is temporary and reversible through natural process or with mitigation. Rehabilitation time is expected to be relative short (2-5 years).
Medium (3)	Impact is medium-term and reversible with mitigation but will last for some time after construction and may require ongoing mitigation. Rehabilitation time is expected to be longer (5-15 years).
Long (4)	Impact is long-term and reversible but only with long term mitigation. It will last for a long time after construction and is likely to require ongoing mitigation. Rehabilitation time is expected to be longer (15-50 years).
Permanent (5)	The impact is expected to be permanent.

Table 4: Categories used for evaluating extent.

EXTENT	
Site (1)	Under normal circumstances the impact will be contained within the construction footprint.
Property (2)	Under normal circumstances the impact might extent outside of the construction site (e.g., within a 2 km radius), but will not affect surrounding properties.
Surrounding properties (3)	Under normal circumstances the impact might extent outside of the property boundaries and will affect surrounding landowners or –users, but still within the local area (e.g., within a 50 km radius).
Regional (4)	Under normal circumstances the impact might extent to the surrounding region (e.g., within a 200 km radius), and will impact on landowners in the larger region (not only surrounding the site).
Provincial (5)	Under normal circumstances the effects of the impact might extent to a large geographical area (>200 km radius).

Table 5: Categories used for evaluating severity.

SEVERITY	
Low (1)	It is expected that the impact will have little or no affect (barely perceptible) on the integrity of the surrounding environment. Rehabilitation not needed or easily achieved.
Medium/low (2)	It is expected that the impact will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved.
Medium (3)	It is expected that the impact will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved.
Medium/high (4)	It is expected that the impact will have a severe impact on the surrounding environment. Functioning may be severely impaired and may temporarily cease. Rehabilitation will be needed to restore system integrity.
High (5)	It is expected that the impact will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible due to cost.

3.4.3. SIGNIFICANCE CATEGORIES

The formal NEMA EIA application process was developed to assess the significance of impacts on the surrounding environment (including socio-economic factors), associated with any specific development proposal to allow the competent authority to make informed decisions. Specialist studies must advise the environmental assessment practitioner (EAP) on the significance of impacts in his field of specialty. To do this, the specialist must identify all potentially significant environmental impacts, predict the nature of the impact, and evaluate the significance of that impact should it occur.

Potential significant impacts are evaluated, using the method described above, to determine its potential significance. The potential significance is then described in terms of the categories given in Table 6. Mitigation options are evaluated, and comparison is then made (using the same method) of potential significance before mitigation and potential significance after mitigation (to advise the EAP).

Table 6: Categories used to describe significance rating (adjusted from DEAT, 2002)

SIGNIFICANCE	DESCRIPTION
Insignificant or Positive (4-22)	There is no impact, or the impact is insignificant in scale or magnitude because of low sensitivity to change or low intrinsic value of the site, or the impact may be positive.
Low (23-36)	An impact barely noticeable in scale or magnitude because of low sensitivity to change or low intrinsic value of the site or will be of very short-term or is unlikely to occur. Impact is unlikely to have any real effect and no or little mitigation is required.
Medium Low (37-45)	Impact is of a low order and therefore likely to have little real effect. Mitigation is easily achieved. Social, cultural, and economic activities can continue unchanged, or impacts may have medium to short term effects on the social and/or natural environment within site boundaries.
Medium (46-55)	Impact is real, but not substantial. Mitigation is both feasible and easily possible but may require modification of the project design or layout. Social, cultural, and economic activities of communities may be impacted, but can continue (albeit in a different form). These impacts will usually result in medium to long term effect on the social and/or natural environment, within site boundary.
Medium high (56-63)	Impact is real, substantial, and undesirable, but mitigation is feasible. Modification of the project design or layout may be required. Social, cultural, and economic activities may be impacted, but can continue (albeit in a different form). These impacts will usually result in medium to long-term effect on the social and/or natural environment, beyond site boundary within local area.
High (64-79)	An impact of high order. Mitigation is difficult, expensive, time-consuming or some combination of these. Social, cultural, and economic activities of communities are disrupted and may come to a halt. These impacts will usually result in long-term change to the social and/or natural environment, beyond site boundaries, regional or widespread.
Unacceptable (80-100)	An impact of the highest order possible. There is no possible mitigation that could offset the impact. Social, cultural, and economic activities of communities are disrupted to such an extent that these come to a halt. The impact will result in permanent change. Very often these impacts are un-mitigatable and usually result in very severe effects, beyond site boundaries, national or international.

4. THE VEGETATION

According to the South African vegetation map (2018) (Mucina & Rutherford, 2006), the site falls within an area expected to support Swartland Granite Renosterveld (Figure 6). **Swartland Granite Renosterveld** is considered "**endangered**" (having experienced extensive spatial decline of approximately 83% since 1750, with high rates of habitat loss since 1990, with ongoing biotic disruption from invasive species and overgrazing), in terms of the "*Revised List of ecosystems that are threatened and in need of protection*" (GN 2747 of 18 November 2022), promulgated in terms of the National Environmental Management Biodiversity Act, Act 10 of 2004.

Figure 6: Vegetation map of South Africa (2024), showing the expected vegetation in the vicinity of the footprint.

Mucina & Rutherford (2006) describe Swartland Granite Renosterveld as a mosaic of grasslands/herblands and medium dense, microphyllous shrublands dominated by renosterbos, with groups of small trees and tall shrubs associated with heuweltjies and rock outcrops, occurring on undulating plains and moderate foot slopes of the mountains.

4.1. THE VEGETATION IN CONTEXT

Due to its relatively flat topography, fertile soils, and proximity to Cape Town, the Swartland became established as a wheat-growing area around the mid-1700s. In the late 1800s, when gold and diamonds were discovered upcountry, farming in the region expanded significantly. During this time the Swartland became an almost uninterrupted agricultural area. Renosterveld is a part of the Fynbos Biome but does not include the three major families that typify Fynbos. Proteaceae, Ericaceae and

Restionaceae are rarely present or entirely absent.

Renosterveld has long been the least understood component of the Fynbos Biome, with very little known of its functioning and ecological requirements. It is, however becoming increasingly appreciated for its uniqueness and high species diversity, especially geophytes (Jacobs & Jangle, 2008). Four of the 30 recognized types of renosterveld occur in the Swartland, namely Swartland Shale, Granite, Silcrete and Alluvium Renosterveld. Three of these types are classified as Critically Endangered and the fourth as Vulnerable. The South African Red List (2020) states that Swartland Shale Renosterveld contains the highest concentration of threatened plant species: 214 species in total, 25 of which are endemic to this vegetation type. Historically, Swartland Granite Renosterveld was next most widespread vegetation type in the Swartland. A very prominent feature of Swartland renosterveld is its heuweltjies (earth mounds). These are the distinctive circular patches or 'spots' in the veld that give the Tygerberg its name (Mucina & Rutherford, 2006). The formation these *heuweltjies* is attributed to harvester termites (Van Wyk & Smith, 2001). . These patches are subject to constant disturbance by termites and their predators, and the on-going transportation of plant material by termites to the *heuweltjies* results in nutrient enrichment mounds (Mucina & Rutherford, 2006).

Swartland Granite Renosterveld occurs on sandy to loamy soils delivered from Cape Granite and can retain a considerable amount of moisture during the winter and spring. Almost 80% of this vegetation type had been transformed due to agriculture (it being prime quality land) and by urban sprawl. Hence the conservation target of 26% remains unattainable. Only very small portions (0.5%) enjoy statutory protection. Alien grasses are particularly pervasive, the most important being *Lolium multiflorum*, *Avena fatua* and *Bromus diandrus*. Alien woody species include *Acacia saligna*, *Pinus pinaster* as well as various species of *Eucalyptus* (Cape E-news, 10-07-2018).

A further important threat to biodiversity conservation in lowland vegetation is invasive alien species. The Core Cape Floristic Subregion is particularly susceptible to invasion by alien trees, mostly species of Australian *Acacia*, Hakea and *Eucalyptus*, and pines from the Northern Hemisphere. Many of these trees are considered ecosystem transformers as they out-compete the indigenous vegetation and alter ecosystem processes, such as nutrient cycling, fire, and the hydrological regime.

4.2. VEGETATION ENCOUNTERED

The proposed location for the base station is on top of a small rocky outcrop. The rocky outcrop is basically an isolated island within the surrounding agricultural landscape (vineyards), but it still supports natural vegetation (protected within larger rocks). The vegetation on the koppie is not typical renosterveld but represents patches of almost thicket-like stands of small to medium sized trees, as is typical of the granite outcrops in this vegetation type. The tree layer was dominated by *Searsia* species but also included several large old wild olive trees (*Olea europaea*) scattered in between the larger rocks. Larger shrubs were encountered on the edges of woody stands and in more disturbed or open areas in between the rocky areas.

Several twee-spoor tracks crosses through these areas, and portions of the koppie had been opened up, leaving just the larger trees (the wild olive trees seems to be protected by default). Rest areas were observed underneath a couple of the larger trees (used by workers during the work days). The proposed base station will be located within a larger open area towards the top of the koppie. This

area is already disturbed (almost transformed) and, apart from some weedy species and grasses, is almost devoid of any natural vegetation (Photo 1 to Photo 4).

Photo 1: Looking from the northeast towards the koppie with its remaining natural vegetation (within the yellow polygon). The arrow shows the approximate location of the proposed mast. Note the existing mast to the right on the koppie.

Photo 2: Looking from east to west over the disturbed area where the base station will be located. The yellow polygon shows the larger disturbed area within which the base station will be located.

Photo 3: A picture showing the interface between the disturbed area (yellow) and the edge vegetation to the south of the site.

Photo 4: A picture showing the interface between the disturbed area (yellow) and the patch of shrub vegetation to the north of the site.

To the south and north of the proposed site (Photo 3 to Photo 5) small areas covered by a lower shrub layer (about 1 m in height) was encountered (open areas between the larger trees). This shrub layer usually consisted of a mixture of the following species: *Eriocephalus africanus*, *Salvia africana*, *Asparagus rubicundus*, *Osteospermum moniliferum* (=*Chrysanthemoides monilifera*), *Metalasia densa*, *Montinia caryophyllacea*, *Dicerothamnus rhinocerotis* (renosterbos), *Muraltia spinosa*, *Osteospermum monstrosum* (trekkertjie) and *Selago fruticosa*. Within these shrubs climbers such as *Cyphia volubilis* and the beautiful wax creeper, *Microloma tenuifolium* were sometimes observed. Only a few geophytes were observed. The striking blue *Codonorhiza corymbosa* and the baster trewwa, *Pterygodium orobanchoides*, was only observed along the disturbed edges of the shrub layer while one patch of the much larger *Watsonia borbonica* was observed in the shrub layer to the south of the proposed site. Weedy species such as *Arctotheca calendula*, *Oxalis* species and *Plantago lanceolata* were common.

Photo 5: A photo showing some of the shrub and tree layer to the southwest of the site. *Eriocephalus* dominant in this area.

In the vicinity of the proposed site the edges of the tree layer was usually dominated by dense stands of *Searsia lucida* or *Searsia glauca* of up to 2.5m in height (Photo 5 to Photo 9). *Asparagus declinatus* and *Lobostemon fruticosus* was also observed along the edges of the tree layer, but only next to the road well away to the south of the site. The tree layer was generally dominated by *Olea europaea* in combination with *Maytenus oleoides* and *Searsia angustifolia* with *Euclea tomentosa* occasionally present. In the undergrowth species like *Searsia tomentosa*, the climber *Cissampelos capensis, Myrsine africana* and *Hermania alnifolia* was occasionally observed. The woody alien invasive, *Acacia cyclops* was also observed.

Photo 6: A photo showing the tree layer to the south of the site.

Photo 7: The tree layer to the northwest of the site. Dominated by *Olea europaea*.

Photo 8: One of the larger wild olive trees (*Olea europaea*) to the north west of the site. Note the disturbance underneath the tree.

Photo 9: A "picnic" or lunch area underneath a few larger wild olive trees.

In general, the vegetation (including the areas covered by trees) to the north of the site was significantly more disturbed than the vegetation to the south of the site. This agrees or compliments the CBA's identified in the southern parts of the koppie.

4.3. FLORA ENCOUNTERED

Table 7 gives a list of the plant species encountered in the study area. It is important to note that the species list is based on a one-day site visit, and the focus was on the evaluation of the vegetation status more than a full botanical assessment. However, the author took care to look for potential significant species (e.g., protected- and rare or endangered species) that might be located within this vegetation type (most of the weedy alien species were not listed). No red-listed plants or any other protected plant species were observed.

Table 7: List of plant species observed within the proposed development footprint.

NO.	SPECIES NAME	FAMILY	STATUS	LOCATION
1.	*Acacia cyclops*	FABACEAE	Woody Invasive Species	Occasionally observed within the tree layer – to be removed.
2.	*Arctotheca calendula*	ASTERACEAE	LC	Weedy species, relatively common in disturbed areas and shrub layer.
3.	*Asparagus declinatus*	ASPARAGACEAE	LC	One observation to the south along the edges of the tree layer.
4.	*Asparagus rubicundus*	ASPARAGACEAE	LC	Common in the shrub layer between the trees.
5.	*Cissampelos capensis*	MENISPERMACEAE	LC	A climber occasionally within the undergrowth of the tree layer.
6.	*Codonorhiza corymbosa*	IRIDACEAE	LC	Only one patch observed on the edges of the disturbed area (south).
7.	*Cyphia volubilis*	LOBELIACEAE	LC	A climber occasionally observed within the shrub layer.
8.	*Dicerothamnus rhinocerotis*	ASTERACEAE	LC	Occasional in the shrub layer between the trees.
9.	*Eriocephalus africanus*	ASTERACEAE	LC	Common to dominant in the shrub layer between the trees.
10.	*Euclea tomentosa*	EBENACEAE	LC	Occasional (one observation) in the tree layer to the south of the site.
11.	*Hermania alnifolia*	MALVACEAE	LC	Occasional in the undergrowth of the tree layer.
12.	*Lobostemon fruticosus*	BORAGINACEAE	LC	One observation away to the south on the edge of the tree layer.
13.	*Maytenus oleoides*	CELASTRACEAE	LC	A common tree in the protected rocky areas.
14.	*Maytenus oleoides*	CELASTRACEAE	LC	Small tree only observed within the Diep River riparian zone.
15.	*Metalasia densa*	ASTERACEAE	LC	Occasionally in the shrub layer between the trees.
16.	*Microloma tenuifolium*	APOCYNACEAE	LC	A climber occasionally observed within the shrub layer.
17.	*Montinia caryophyllacea*	MONTINIACEAE	LC	Occasional in the shrub layer (near rocky areas).
18.	*Muraltia spinosa*	POLYGALACEAE	LC	Occasionally in the shrub layer between the trees.
19.	*Myrsine africana*	MYRSINACEAE	LC	Occasional in the undergrowth of the tree layer.
20.	*Olea europaea*	OLEACEAE	LC	One of the dominant trees in the protected rocky areas.
21.	*Osteospermum moniliferum (=Chrysanthemoides monilifera)*	ASTERACEAE	LC	Prominent too common in the shrub layer between the trees.
22.	*Osteospermum monstrosum*	ASTERACEAE	LC	Occasionally in the shrub layer between the trees.

NO.	SPECIES NAME	FAMILY	STATUS	LOCATION
23.	*Plantago lanceolata*	PLANTAGINACEAE	LC	A weedy species relatively common in disturbed areas.
24.	*Pterygodium orobanchoides*	ORCHIDACEAE	LC	A few individuals on the edges of the disturbed area (north).
25.	*Salvia africana*	LAMIACEAE	LC	Prominent too common in the shrub layer between the trees.
26.	*Searsia angustifolia*	ANACARDACEAE	LC	Common within the tree layer to the south of the site.
27.	*Searsia glauca*	ANACARDACEAE	LC	Common along the edges of the tree layer.
28.	*Searsia lucida*	ANACARDACEAE	LC	Common to dominant along the edges of the tree layer.
29.	*Searsia tomentosa*	ANACARDACEAE	LC	Occasional in the undergrowth of the tree layer.
30.	*Selago fruticosa*	SCROPHULARIACEAE	LC	Occasional too common in the shrub layer between the trees.
31.	*Watsonia borbonica*	IRIDACEAE	LC	One patch in the shrub layer to the south of the site.

4.4. THREATENED AND PROTECTED PLANT SPECIES

South Africa has become the first country to fully assess the status of its entire flora. Major threats to the South African flora are identified in terms of the number of plant taxa Red-Listed as threatened with extinction as a result of threats like, habitat loss (e.g. infrastructure development, urban expansion, crop cultivation and mines), invasive alien plant infestation (e.g. outcompeting indigenous plant species), habitat degradation (e.g. overgrazing, inappropriate fire management etc.), unsustainable harvesting, demographic factors, pollution, loss of pollinators or dispersers, climate change and natural disasters (e.g. such as droughts and floods). South Africa uses the internationally endorsed IUCN Red List Categories and Criteria in the Red List of South African plants. However, due to its strong focus on determining risk of extinction, the IUCN system does not highlight species that are at low risk of extinction but may nonetheless be of high conservation importance. As a result, a SANBI uses an amended system of categories to highlight species that may be of low risk of extinction but are still of conservation concern (SANBI, 2015).

Red list of South African plant species: The Red List of South African Plants online provides up to date information on the national conservation status of South Africa's indigenous plants (SANBI, 2020).

- No red-listed species was observed during the study.

NEM:BA protected plant species: The National Environmental Management: Biodiversity Act, Act 10 of 2004, **provides** for the protection of species through the "Lists of endangered, endangered, vulnerable and protected species" (GN. R. 152 of 23 February 2007).

- No species protected in terms of NEM: BA was observed.

NFA Protected plant species: The National Forests Act (NFA) of 1998 (Act 84 of 1998) provides for the protection of forests as well as specific tree species (as updated).

- No species protected in terms of the NFA was observed.

4.5. PLANT SPECIES SENSITIVITY THEME

According to the DFFE screening tool report for this project (Refer to Appendix 1), the relative plant species sensitivity is considered Low Sensitive. This corresponds to with the findings of this study (especially because of the degraded status of the proposed footprint area).

However, there is several large indigenous trees (especially the old wild olive trees) that must be regarded as conservation worthy and must be protected. In fact, none of the larger indigenous trees should be impacted (to be protected), while woody invasive species such as the *Acacia cyclops* (Rooikrans) individuals should be removed.

5. FAUNA AND AVI-FAUNA

Because of the disturbed nature of the proposed footprint area, no fauna or avi-fauna screening was done as part of this study, but observations were made during the site visit. The larger property has been under intensively cultivation (vineyards) over a long period of time and also falls within an area with a long history of intensive cultivation. The vegetation associated with the rocky granite outcrop represents a small, isolated patch of remaining natural veld within this agricultural landscape.

5.1. ANIMAL SPECIES THEME SENSITIVITY

Historically it is expected that large mammals such as Mountain Zebra, Quagga, Bluebuck, Red Hartebeest, Eland, Bontebok, Elephant, Black Rhino, Buffalo, Lion, Cheetah, Wild Dog, Spotted Hyena and Leopard were common in the Western Cape (although probably not in large numbers). Of these large mammals, only the Mountain Zebra and Leopard survived (by fleeing to the mountains), with the Zebra and Bontebok just surviving near Bredasdorp (or within reserves). All the other species became extinct in the Fynbos Biome, although many have been re-introduced into conservation areas from outside the region. The Quagga and Bluebuck are now extinct (www.inaturalist.org/posts/13033-renosterveld).

Smaller mammals common to the Western Cape are chacma baboons, klipspringers, grysbok, dassies, mongooses, cape dune mule-rat and the striped mouse. Fynbos also does not support high numbers of birds, but all six bird species endemic to the south-west Cape are fynbos species, e.g. the Cape sugarbird and orange breasted sunbird. These two birds are found only in fynbos and play an important role in pollinating flowers, including those of heaths (erica's) and proteas. Another very common sunbird frequenting the fynbos biome, is the lesser double collared sunbird. On the other hand, Fynbos supports large numbers of butterfly species, many of which, are now at risk, especially the myrmecophilous (ant associated) butterflies from the family Lycaenidae. The early stages (larvae) of many of these butterfly species are entirely carnivorous and live on a diet of ant brood. The butterfly larvae live inside the nest of their host ant. Myrmecophilous butterflies require the presence of both host ant and host plant as well as optimal climatic conditions. The disturbance of their preferred habitat (often small areas) could lead to the extinction of a rare species confined to a single location. Although fynbos is not particularly rich in reptiles and amphibians, many of the species living there are both endemic and threatened. The very rare geometric tortoise is found in only a few surviving fynbos areas and is regarded as the world's second rarest tortoise. The Cape has more than half of South

Africa's frog species. Furthermore, of the 62 different frogs occurring here, 29 are endemic being found nowhere else on earth. The Table Mountain ghost frog lives only in the mountain's fast-flowing rocky streams. The tiny micro frog and Cape platanna are restricted to a few surviving vleis in the south-west Cape (https://whalecoast.info/attraction/animals-living-in-fynbos/).

According to the **NEMA EIA Sensitivity** scan for the site (Appendix 1) the Animal Species Theme Sensitivity is Medium Sensitive because of the potential presence of the species listed in the Table below (Table 8).

Table 8: Animal species theme according to the NEMA EIA Sensitivity Scan results.

FEATURES	MOTIVATION
Invertebrate – Medium *Conocephalus peringueyi* (Peringuey's Meadow Katydid) **Vulnerable (VU)**	**Status**: Peringuey's Meadow Katydid is considered **vulnerable** because its extent of occurrence and area of occupancy are relatively small and has only been recorded in six known locations. The greatest threats to this species are habitat destruction due to livestock grazing and habitat shifts caused by climate change (Bazelet & Naskrecki, 2013). **Habitat**: This species of grasshopper is only known from mountains in the Fynbos biome of South Africa. It is a mountain specialist and is only known to occur at high elevations. Because it is a mountain specialist, as temperatures rise and suitable conditions are found at higher elevations, this species will have nowhere to go since it is already found at high elevations (Bazelet & Naskrecki, 2013). This species of grasshopper is only known from mountains in the Fynbos biome at high elevations (altitude not specified). While the proposed site might fall within the larger distribution range for this species, the koppie itself (at 250 m above sea level) is probably considered at a low elevation. It is much more likely that this species might occur on the mountain slops to the east of the site. Furthermore, because of the small size of the site (10 x 10m) and the disturbed nature of the site, it is considered highly unlikely that the development of the base station and mast will have any significant impact on the preferred habitat for this species. With regards to the is project the sensitivity rating is considered **low sensitive**.
Invertebrate – Medium *Brinckiella aptera* (Mute Winter Katydid) **Vulnerable (VU)**	**Status**: The Mute Winter Katydid is considered **vulnerable** because its extent of occurrence is relatively small (only recorded in four locations), and its habitat quality is estimated to be in decline. The principal threat to this species is habitat destruction (annual crop cultivation), over-grazing, urban development and alien species invasion. Climate change is also likely to affect the distribution of the host plants by altering rainfall patterns and ambient temperatures (Bazelet & Naskrecki, 2014). **Habitat**: The species of grasshopper is endemic to the Fynbos and Succulent Karoo Biomes, both of which are notable biodiversity hotspots, naturally geographically restricted and under anthropogenic stress. It probably feeds on flowers and leaves of a very narrow range of host plants and occurs primarily on low, herbaceous shrubs. It feeds and stridulates at night but can be found basking in the daytime on sunny days during the winter and early spring, from August until October, a time when very few insects are active. Very unusual for this genus and for katydids in general, this species is the first in its subfamily to display a complete lack of stridulatory organs, raising interesting evolutionary questions regarding mate attraction and intraspecies communication (Bazelet & Naskrecki, 2014). It is likely that the site might overlap the larger distribution range for this species, but the development footprint will be very small and will not impact on remaining natural veld. As a result, it is considered unlikely that the proposed project will result in any significant additional impact on host plants or habitat of this species. With regards to this project the sensitivity rating should be **low sensitive**.

FEATURES	MOTIVATION
Invertebrate – Medium *Aneuryphymus montanus* (Yellow-winged Agile Grasshopper) **Vulnerable (VU)**	**Status**: The Yellow-winged Agile Grasshopper is a **vulnerable** endemic to the Cape region of South Africa. The continuing decline in the quality of habitat have resulted in a continuing decline in the number of mature individuals inferred. It is only known from six localities in the Cape region of South Africa (Hochkirch *et. al.*, 2018). **Habitat**: The species is associated with fynbos vegetation, where it has been collected "amongst partly burnt stands of evergreen sclerophyllous plants in rocky foothills" (Brown, 1960 in Hochkirch *et.al.*, 2018). It prefers south-facing cool slopes (Kinvig, 2005 in Hochkirch *et.al*., 2018). It is likely that the site might overlap the larger distribution range for this species, but the development footprint will be very small and will not impact on remaining natural veld. As a result, it is considered unlikely that the proposed project will result in any significant additional impact on host plants or habitat of this species. With regards to the is project the sensitivity rating should be **low sensitive**.

6. TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

The proposed project entails the construction of a telecommunication base station and mast on top of a small rocky outcrop. The rocky outcrop still support natural vegetation (Swartland Granite Renosterveld an **endangered** vegetation type) (Figure 6). However, the footprint of the development will be very small (approximately 100 m^2) and will be located in an area already disturbed (Photo 2).

- The site verification confirmed that the proposed footprint area had been degraded (basically transformed) (renosterveld does not restore itself easily, once disturbed).
- The footprint will have no direct impact on any CBA or ESA (Figure 3) and the impact on connectivity will be negligible..
- No plant species of conservation concern (SoCC) were observed within the footprint area or its immediate surroundings (although the surrounding tree layers did support a number of indigenous trees that are considered of special significance – however, they will not be impacted) (Refer to Heading 4.5).
- The impact on fauna species of conservation concern is expected to be low to negligible (Refer to Heading 5.1).
- There will be no direct impact on watercourses or wetlands.

6.1. INDIRECT IMPACTS

Indirect impacts occur away from the 'action source' i.e., away from the development site. The impact assessed here is specifically how the proposed development would have an indirect impact on vegetation, flora, mammals, birds, reptiles, and invertebrates away from the development site.

In this case the direct impact will be contained in a very small, degraded footprint area (not supporting remaining natural veld) with available access (no roads need to be constructed or upgraded). Indirect impacts will be mainly associated with the very short (usually less than 8 weeks) construction period (e.g., additional disturbance as a result of laydown areas, vehicle parking and concrete or cement mixing, potential pollution as a result of poor waste- or wastewater management). However, telecommunication construction sites are usually very well managed and with good environmental oversight, it is unlikely that result in any significant indirect impact. In addition, the mast might have a visual impact (not assessed in this report) and might (because of its height) be considered an additional flight obstacle for bird species (however, because they are static, this is highly unlikely).

With good environmental oversight the indirect impacts should be **negligible** or (very) **Low Negative**.

6.2. THE NO-GO ALTERNATIVE

The site is already degraded, and the current land use will continue. As a result, the No-Go alternative will not necessarily result in NO further impact. The site will still be used for agricultural related practices.

6.3. TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT

The aim of the terrestrial biodiversity assessment is to evaluate the environmental impacts associated with the proposed development (using the methods described under Heading 3.4), taking all of the discussion in this report into account. . It also evaluates the expected accumulative impact of the development. Refer to Table 6 for a description of how the colouring relates to the significance categories in the table belowTable 9.

Table 9: Impact assessment associated with the proposed activity.

Impact assessment								
Aspect	**Mitigation**	**CV**	**Lik**	**Dur**	**Ext**	**Sev**	**Significance**	Short discussion
Special habitats: Potential impact on special habitats (e.g. true quartz or "heuweltjies")	Without mitigation	3	1	4	1	1	21	The granite outcrop is seen as special habitat (parts of it overlaps a CBA), but the footprint will be located in an area already disturbed, outside the CBA.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).
Vegetation status: Loss of vulnerable or endangered vegetation and associated habitat.	Without mitigation	3	1	4	1	1	21	The footprint is very small and will be located in an area already disturbed.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).
Conservation priority: Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	Without mitigation	3	1	4	1	1	21	The footprint will have no direct impact on a CBA or ESA, it is very small and will be located in an area already disturbed.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).
Connectivity: Potential loss of ecological migration corridors.	Without mitigation	3	1	4	1	1	21	The footprint is very small and will be located in an area already disturbed and is not expected to have any additional impact on connectivity.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).
Plant SoCC: Potential impact on threatened or protected plant species.	Without mitigation	1	1	4	1	1	7	No red-data- or protected plant species (SoCC) were observed within the footprint area or its immediate surroundings.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).
Fauna SoCC: Potential impact on mammals, reptiles & amphibians.	Without mitigation	3	2	4	1	2	27	The DFFE screening report lists sensitive invertebrate species that might be impacted. The potential impact is rated as Low Sensitive. Refer to Table 8.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).
Cumulative impacts: Cumulative impact associated with proposed activity.	Without mitigation	3	2	4	1	2	27	The development of a Telcom base station and mast with a very small footprint, located within an area already disturbed.
	With mitigation	1	1	4	1	1	7	Ensure that the construction activities does not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).

Impact assessment								
Aspect	**Mitigation**	**CV**	**Lik**	**Dur**	**Ext**	**Sev**	**Significance**	Short discussion
The "No-Go" option: Potential impact associated with the No-Go alternative.	Without mitigation	3	2	3	1	1	21	The site is already degraded, and the current land use will continue. As a result, the No-Go alternative will not necessarily result in NO further impact. The site will still be used for agricultural related practices.
	With mitigation							

According to the **NEMA EIA Sensitivity** scan for the site (Appendix 1) the Terrestrial Biodiversity Theme Sensitivity is considered **VERY HIGH SENSITIVE** because of the potential impact on endangered Swartland Granite Renosterveld vegetation.

However, the proposed footprint is very small and will be located within an area already disturbed (and will thus not have any additional impact on natural vegetation). According to the terrestrial impact assessment given in Table 9 the main impacts associated with the proposed development is likely to be:

- The potential impact on invertebrate species of conservation concern (a low negative potential impact).
- The potential accumulative impact is considered to a **Low negative**, which can be reduced to very low with mitigation.

With mitigation it is considered highly unlikely that the development will contribute to any of the following:

- Significant loss of vegetation type and associated habitat.
- Loss of ecological processes (e.g., migration patterns, pollinators, river function etc.) due to construction and operational activities.
- Loss of local biodiversity and threatened plant species.
- Loss of ecosystem connectivity.

As a result, the Terrestrial Biodiversity Impact for the proposed project is considered **LOW SENSITIVE**.

6.4. SITE SENSITIVITY MAP

The site sensitivity map (Figure 7) focuses on the protection of the remaining natural veld on the larger rocky outcrop.

CBA area (green): Remaining natural veld (trees and tall shrubs associated with the rocky granite outcrop) in relatively good to good condition, supporting a number of indigenous trees. It is considered of **high botanical significance.**

ESA area (yellow): Although degraded, this area still supports a number of indigenous trees (including magnificent and very old *Olea europaea* trees). It is considered of M**edium-high botanical significance** (and should be protected and allowed to rehabilitate where possible).

Figure 7: Sensitivity map: Google Earth Image showing the location of the sensitive areas (green & yellow)**.**

7. RECOMMENDATIONS

The proposed location for the base station is considered well-chosen in that it is located on land already degraded/transformed with no intact or natural veld of any significance remaining. In addition, it will not result in additional impact on connectivity or critical biodiversity areas.

The following mitigation recommendations should be implemented (refer to Figure 7).

- A suitably qualified environmental control officer (ECO) should be appointed to oversee the construction phase, including laydown areas selection and waste- and wastewater management.
- The green & yellow area in Figure 7 area considered of botanical significance and should be protected and regarded as No-Go areas during the construction phase.
- The construction site must be demarcated (approved by the ECO) and all construction activities must remain within this demarcated area.
- No additional impact must be allowed on the remaining indigenous vegetation (Refer to Figure 7).

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APPENDIX 1: NEMA EIA SCREENING REPORT

APPENDIX 2: CURRICULUM VITAE – P.J.J. BOTES

Curriculum Vitae: Peet JJ Botes

Address: 22 Buitekant Street, Bredasdorp, 7280; **Cell**: 082 921 5949

Nationality:	South African
ID No.:	670329 5028 081
Language:	Afrikaans / English
Profession:	Environmental Consultant & Auditing
Specializations:	Botanical & Biodiversity Impact Assessments
	Environmental Compliance Audits
	Environmental Impact Assessment
	Environmental Management Systems
Qualifications:	**BSc** (Botany & Zoology), with Nature Conservation III & IV as extra subjects; Dept. of Natural Sciences, Stellenbosch University 1989.
	Hons. BSc (Plant Ecology), Stellenbosch University, 1989
	More than 20 years of experience in the Environmental Management Field (Since 1997 to present).
Professional affiliation:	Registered Professional Botanical, Environmental and Ecological Scientist at SACNASP (South African Council for Natural Scientific Professions) since 2005.
SACNAP Reg. No.:	400184/05

BRIEF RESUME OF RELEVANT EXPERIENCE

1997-2005: Employed by the Overberg Test Range (a Division of Denel), responsible for managing the environmental department of OTB, developing and implementing an ISO14001 environmental management system, ensuring environmental compliance, performing environmental risk assessments with regards to missile tests and planning the management of the 26 000 ha of natural veld, working closely with CapeNature (De Hoop Nature Reserve).

2005-2010: Joined Enviroscientific, as an independent environmental consultant specializing in wastewater management, botanical and biodiversity assessments, developing environmental management plans and strategies, environmental control work as well as doing environmental compliance audits and was also responsible for helping develop the biodiversity part of the Farming for the Future audit system implemented by Woolworths. During his time with Enviroscientific he performed more than 400 biodiversity and environmental legal compliance audits.

2010-2017: Joined EnviroAfrica, as an independent Environmental Assessment Practitioner and Biodiversity Specialist, responsible for Environmental Impact Assessments, Biodiversity & Botanical specialist reports and Environmental Compliance Audits. During this time Mr Botes compiled more than 70 specialist Biodiversity & Botanical impact assessment reports ranging from agricultural-, infrastructure pipelines- and solar developments.

2017-Present: Establish a small independent consultancy (PB Consult) specialising in Environmental Audits, Biodiversity and Botanical specialist studies as well as Environmental Impact Assessment.

LIST OF MOST RELEVANT BOTANICAL & BIODIVERSITY STUDIES

Botes. P. 2007: Botanical assessment. Schaapkraal, Erf 644, Mitchell's Plain. A preliminary assessment of the vegetation in terms of the Fynbos Forum: Ecosystem guidelines. 13 November 2007.

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Botes, P. 2010(c): Botanical assessment: Proposed Sparrenberg dam, on Sparrenberg Farm, Ceres. . A Botanical scan and an assessment of the natural vegetation of the site. 15 September 2010.

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Botes, P. 2012(d): Proposed Keimoes Keren Energy Holdings Solar Facility at Keimoes. A Biodiversity Assessment (with botanical input) taking into consideration the findings of the National Spatial Biodiversity Assessment of South Africa. 9 March 2012.

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Botes, P. 2020(b): Feldspar Prospecting & Mining, Farm Rozynen Bosch 104, Kakamas. Botanical assessment of the proposed prospecting and mining activities on Portion 5 of The Farm Rozynen Bosch No. 104, Kakamas, Khai !Garib Local Municipality, Northern Cape Province. 12 February 2020.

Botes, P. 2020(c): Boegoeberg housing project – Botanical assessment of the proposed formalization and development of 550 new erven on the remainders of farms 142 & 144 and Plot 1890, Boegoeberg settlement, !Kheis Local Municipality, Northern Cape Province. 1 July 2020.

Botes, P. 2020(d): Komaggas Bulk Water supply upgrade – Botanical assessment of the proposed upgrade of the existing Buffelsrivier to Komaggas BWS system, Rem. of Farm 200, Nama Khoi Local Municipality, Northern Cape Province. 8 July 2020.

Botes, P. 2020(e): Grootdrink housing project – Botanical assessment of the proposed formalization and development of 370 new erven on Erf 131, Grootdrink and Plot 2627, Boegoeberg Settlement, next to Grootdrink, !Kheis Local Municipality, Northern Cape Province. 14 July 2020.

Botes, P. 2020(f): Opwag housing project – Botanical assessment of the proposed formalization and development of 730 new erven on Plot 2642, Boegoeberg Settlement and Farm Boegoeberg Settlement NO.48/16, Opwag, !Kheis Local Municipality, Northern Cape Province. 16 July 2020.

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Botes, P. 2020(h): Topline (Saalskop) housing project – Botanical assessment of the pproposed formalization and development of 248 new erven on Erven 1, 16, 87, Saalskop & Plot 2777, Boegoeberg Settlement, Topline, !Kheis Local Municipality, Northern Cape Province. 18 July 2020.

Botes, P. 2020(i): Gariep housing project – Botanical assessment of the proposed formalization and development of 135 new erven on Plot 113, Gariep Settlement, !Kheis Local Municipality, Northern Cape Province. 20 July 2020.