# TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT

## MIXED-USE DEVELOPMENT ON A PORTION OF PORTION 4 OF FARM NO. 560, YZERFONTEIN.

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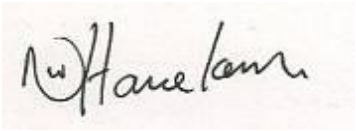
**AUGUST 2025**

## DECLARATION OF THE SPECIALIST

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

I **Nicolaas Willem Hanekom**, 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
- 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.



**Nicolaas Hanekom**
**Pri.Sci.Nat (Ecology) 004415** **23 August 2025**

Signature of the ~~EAP~~/ Specialist: Date:

**Enviro-EAP (Pty) Ltd**

Name of company (if applicable):

**COMPLIANCE WITH THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS SCREENING TOOL (GOVERNMENT NOTICE NO. 648, GOVERNMENT GAZETTE 45421: 10 MAY 2019)**

| **Department of Environmental Affairs screening Tool (Government Notice No. 648, GOVERNMENT GAZETTE 45421: 10 MAY 2019)** | **ADDRESSED IN SPECIALIST REPORT** |
|---|---|
| Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise and their curriculum vitae | Page 1 |
| A signed statement of independence by the specialist | Page 2 of report |
| Duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment | Section 1.8 |
| A description of the methodology used to undertake the impact assessment and site inspection, including equipment and modelling used where relevant | Section 1.5 |
| A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations | Section 1.6 |
| Areas not suitable for development, to be avoided during construction and operation (where relevant) | Section 5 |
| Additional environmental impacts expected from the proposed development based on those already evident on the site and a discussion on the cumulative impacts | Section 6 |
| Impact management actions and impact management outcomes proposed by the specialist for inclusion in the EMPr | Section 6 |
| A motivation where the development footprint identified as per section 2.3 in this Table were not considered stating reasons why these were not being considered | Section 1 and 7 |
| A reasoned opinion, based on the findings of the specialist assessment, regarding the acceptability or not of the development and if the development should receive approval or not, and any conditions to which the statement is subjected | Section 7 |

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# 1. INTRODUCTION AND METHODOLOGY

The Department of Environmental Affairs screening report from the national web based environmental screening tool reported a Very High sensitivity for Terrestrial Biodiversity" sensitivity. A terrestrial biodiversity impact assessment was conducted. This report presents the findings of the Terrestrial Biodiversity Impact Assessment that was prepared by Nicolaas Hanekom as part of the EIA for the proposed development application on portion 4 of farm 560, Yzerfontein.

## *1.1. Background & Competency*

Nicolaas Hanekom is a registered Professional Natural Scientist in the ecological science field with the South African Council for Natural Scientific Professions ("SACNASP"), (Ecology field) and a qualified registered Environmental Assessment Practitioner ("EAP") who holds a Masters Technologiae, Nature Conservation ("Vegetation Ecology and Biodiversity Assessment") degree from the Cape Peninsula University of Technology (Refer to Appendix A, CV). Nicolaas Hanekom is suitably qualified SACNASP registered specialist.

## *1.2. Conditions Relating to this Report*

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information and knowledge of the area. Nicolaas Hanekom reserves the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field, pertaining to this assessment.

This report may not be altered or added to without the prior written consent of the author. This restraint also refers to electronic copies of this report which are supplied as sub portion of other reports, including main reports. Similarly, any recommendations, statements, or conclusions drawn from or based on this report must specifically refer to this report. If such comments form part of a main report for this investigation, the report must be included in its entirety as an appendix or separate section to the main report.

## *1.3. Scope and Objectives*

The assessments entailed both a literature review of the region, as well as on site evaluations, during which specific primary data will be collected and evaluated. In addition, the identification of key ecological features will be undertaken allowing for the interpretation of the prevailing habitat form and associated processes.

All data collected in the field and during the literature review will be evaluated and interpreted in order to provide an understanding of the nature of the prevailing environment at a landscape and habitat level. In addition, specific evaluation of data relating to habitat form and structure will be undertaken, aiding in the identification of bio-physical anomalies within the prevailing environment. Such variance may be considered to be indicative of differing habitat forms, which under consideration, may be of higher order ecological value in relation of the prevailing environment.

The protocol[1] provides the criteria for the reporting of requirements for the assessment and reporting of impacts on terrestrial biodiversity for activities requiring environmental authorisation.

**General Information**

An applicant intending to undertake an activity identified in the Scope of this Protocol, on a site identified as being of "very high sensitivity" for terrestrial biodiversity on the national web based environmental screening tool must submit a Terrestrial Biodiversity Impact Assessment Report. However, where the information gathered from the Initial Site Sensitivity Verification and the specialist assessment differs from the designation of "very high" terrestrial biodiversity sensitivity from the national web based environmental screening tool and it is found to be of a "low" sensitivity, then a terrestrial biodiversity impact assessment is not required. Should this apply, a Terrestrial Biodiversity Compliance Statement is to be provided.

### *1.4. Methodology Terms of Reference*

The assessment must be undertaken by a suitably qualified and SACNASP registered specialist, within the preferred development site and on the preferred development footprint. The description of the preferred site must include the following aspects, as a minimum and must be considered in the baseline description:

- A description of the ecological drivers/processes of the system and how the proposed development will impact these;
- Ecological functioning and ecological processes (e.g. fire, migration, pollination, etc.) that operate within the proposed development site;
- The ecological corridors that the development would impede including migration and movement of flora and fauna;
- The description of any significant landscape features (including rare or important flora/faunal associations, presence of Strategic Water Source Areas (SWSAs) or Freshwater Ecosystem Priority Areas (FEPA) sub-catchments;
- The description of the terrestrial biodiversity and ecosystems on the proposed development site must include:
  - Main vegetation types;
  - Threatened ecosystems, including Listed Ecosystems as well as locally important habitat types identified;
  - Ecological connectivity, habitat fragmentation, ecological processes and fine-scale habitats; and
  - Species, distribution, important habitats (e.g. feeding grounds, nesting sites, etc.) and movement patterns identified.

The assessment must identify any alternative development footprints within the preferred development site which would be of a "low" sensitivity as identified by the national web based environmental screening tool and verified through the Initial Site Sensitivity Verification. The

1 Published in Government Notice No. 648GOVERNMENT GAZETTE 4542110 MAY 2019.This gazette is also available free online at www.gpwonline.co.za

Terrestrial Biodiversity Impact Assessment must be based on the results of a site inspection undertaken on the preferred development site and must identify:

The assessment report must describe Terrestrial Critical Biodiversity Areas (CBAs), including:

- The reasons why an area has been identified as a CBA;
- An indication of whether or not the development is consistent with maintaining the CBA in a natural or near natural state or in achieving the goal of rehabilitation;
- The impact on species composition and structure of vegetation with an indication of the extent of clearing activities;
- The impact on ecosystem threat status;
- The impact on explicit subtypes in the vegetation;
- The impact on overall species and ecosystem diversity of the site; and
- The impact on populations of species of special concern in the CBA.

The assessment report must describe Terrestrial Ecological Support Areas, including:

- The impact on the ecological processes that operate within or across the site;
- The extent the development will impact on the functionality of the ESA; and
- Loss of ecological connectivity (on site, and in relation to the broader landscape) due to the degradation and severing of ecological corridors or introducing barriers that impede migration and movement of flora and fauna.

The assessment report must describe Protected Areas as defined by the National Environmental Management: Protected Areas Act, 2004 including an opinion on whether the proposed development aligns with the objectives/purpose of the Protected Area and the zoning as per the Protected Area Management Plan.

The assessment report must describe Priority Areas for Protected Area Expansion, including the way in which in which the development will compromise or contribute to the expansion of the protected area network.

The assessment report must describe Strategic Water Source Areas (SWSA) including:

- The impact(s) on the terrestrial habitat of a Strategic Water Source Area, and
- The impacts of the development on the SWSA water quality and quantity (e.g. describing potential increased runoff leading to increased sediment load in water courses).

The assessment report must describe Freshwater Ecosystem Priority Area (FEPA) sub catchments, including the impacts of the development on habitat condition and/or species in the FEPA sub catchment, including National wetland map 5.

The assessment report must describe Indigenous Forests, including:

- Impact on the ecological integrity of the forest;
- Extent of natural or near natural indigenous forest area lost.

The findings of the Terrestrial Biodiversity Impact Assessment must be written up in a Terrestrial Biodiversity Impact Assessment Report. This report must include as a minimum the following information:

- Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise and their curriculum vitae;
- A signed statement of independence by the specialist;

- Duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;
- A description of the methodology used to undertake the impact assessment and site inspection, including equipment and modelling used where relevant;
- A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations;
- Areas not suitable for development, to be avoided during construction and operation (where relevant);
- Additional environmental impacts expected from the proposed development based on those already evident on the site and a discussion on the cumulative impacts;
- Impact management actions and impact management outcomes proposed by the specialist for inclusion in the EMPr;
- A motivation why any alternative development footprints within the preferred development site which would be of a "low" sensitivity as identified by the national web based environmental screening tool were not considered stating reasons why these were not being not considered; and
- A reasoned opinion, based on the findings of the specialist assessment, regarding the acceptability or not of the development and if the development should receive approval or not, and any conditions to which the statement is subjected.

### *1.5. Approach and Methodology*

A literature review and desktop analysis were undertaken prior to the field investigation, utilizing various sources including the South African National Biodiversity Institute (SANBI) data and other relevant sources. Recent and historical aerial imagery of the site was reviewed in order to identify points for investigation during the field survey. Utilising the above information, a field investigation was undertaken whereby:

- Sites of geomorphological or topographic variance were identified and subjected to an evaluation of species present within transects established across the selected site.
- Species were identified and collated.
- Additional random sample points were selected from other sites surrounding the proposed impacted areas for comparative purposes.
- Any additional species of significance, not identified within the sample sites were also noted.

As explained below, the ideal period for the assessment of terrestrial plants within this region is between August and end October months. Dr Keet botanical survey was conducted on 15 – 18 July and 22 – 23 July 2025. However, for Terrestrial Biodiversity the optimal period is not link to the optimal time for plant species assessment. The sampling and analysis of the site on 8 December 2021 and also 11 January 2023, as well as monthly observation for the last three years, provides suitable data and results to present an informed decision on the local ecology. It must also be noted that the area was at least visited once a month for the last 3 years, as well as knowledge of the area since 1999 which also informed the findings in this report.

All data was collated and subjected to evaluation using methods in order to:

- Give consideration to the overall structure of habitat within the subject site.
- Identify any habitat anomalies that may be identified in such analysis.
- Allow for the interpretation of such data in order to prioritise and evaluate habitat form and

structure within the study area.

### *1.6. Assumptions and limitations*

The specialist made use of other specialist studies conducted in the area. The presence of fauna must be evaluated based on the literature and available databases but in many cases, these databases are not intended for fine-scale use and the reliability and adequacy of these data sources relies heavily on the extent to which the area has been sampled in the past. Many areas have not been well sampled with the result that the species lists derived for the area do not always adequately reflect the actual fauna and flora present at the site. This is acknowledged as a limitation of the study, however it is substantially reduced through extracting the species lists for a substantially larger area than the site and through the inclusion of information from previous experience in the wider area. The assessment was undertaken using sampling methods appropriate to the protocols, terms of reference and methodologies described above. The timing of the survey is therefore regarded as optimal in terms of accurately assessing the flora and fauna of the site. The overall condition of the vegetation can still be determined with a high degree of confidence. An accurate idea of the priority conservation areas, animals and botanical species was gained, due to the use of a combined habitat and species-based approach, and confidence in the accuracy of the findings is high. The overall confidence in the completeness and accuracy of the terrestrial biodiversity findings at this point in time is considered to be good. A follow-up survey is not considered essential for decision-making.

Temporal variation plays an important role in the structure and patterns of plant biodiversity, communities, and species occurrences. One site visit (or even multiple visits), or a single season's survey, might not fully catalogue plant species diversity in an area (for example, due to seasonal variation in vegetation and plant growth patterns). Specifically, some annual, short-lived, ephemeral (plants surviving unfavourable conditions as seeds), geophytic (species with underground storage organs), or other cryptic species might not be observable/detectable. That is, many plant species are known to completely die back during certain times of the year, depending on their respective life strategies. Thus, during these times such species remain unobservable/undetectable and survive only as dormant bulbs, corms, tubers, or rhizomes (for geophytes), or seeds (for ephemeral species) below the soil surface. Together with this, rare and threatened plant species are generally uncommon and/or localized, and can easily be overlooked. Even multiple site visits might fail to locate such species.

Furthermore, flowers and fruits are crucial for the complete and accurate identification of plant species, and any absence of such flowers and fruits might prevent the complete and accurate identification of such plant species. Flowering and fruiting times are species specific, and there are invariably always some plant species not flowering and/or fruiting during surveying. This not only impacts identifiability, but also detectability/visibility.

Finally, in practice it is almost always impossible to survey any area to its full extent, both spatially (i.e., over land surface area) and temporally (i.e., over time). The total number of plant species recorded in any area is, therefore, almost always an underestimate of the potential number of species that could occur in such an area.

Considering all of the aforementioned, the possibility always exists that certain plant species might not be observable/detectable on site during the time of surveying, as a result of their

potential annual, short-lived, dormant, cryptic, or ephemeral nature, or their rare and/or localized distributions on site, or the incomplete and inaccurate identification of plant species which lacked flowers and/or fruits and/or other characteristic features during surveying. This presents a gap in knowledge, but can be mitigated to a great extent by supplementing site species lists with records from online databases.

The comprehensive assessment of conservation value (or ecological importance/sensitivity) can pose a significant challenge, particularly when considering SCC and threatened vegetation types. The inherent difficulty stems from the multi-dimensional nature of "value", encompassing ecological functionality, distinctiveness/uniqueness, cultural significance, and even the provision of ecosystem services. Quantifying these diverse facets is frequently hampered by data deficiencies, especially concerning the population dynamics, distributional ranges, and specific habitat requirements of many rare or elusive species. Furthermore, the complex interdependencies between species often result in unforeseen ecological cascades, making the prediction of long-term conservation outcomes difficult. The evaluation of conservation value is further complicated in transition zones, or ecotones. These areas, characterized by their inherent dynamic nature, serve as critical ecological interfaces. The simultaneous presence of diverse species from adjacent ecosystems, even though they might be common within the broader landscape, exacerbates the challenge of prioritizing conservation efforts for such areas.

### *1.7. Source of Information*

This assessment was undertaken utilising:

- 1:50 000 topographic mapping sourced from the Surveyor General's office;
- Aerial imagery sourced from Google Earth.
- Aerial imagery sourced from ESRI.
- Vegetation Map of South Africa, Lesotho and Swaziland 2018: A description of changes since 2006. Bothalia, 49(1), a2452. https://doi.org/10.4102/ abc.v49i1.2452
- Information on plant and animal species recorded for the Quarter Degree Squares (QDS) was extracted from the SABIF/SIBIS database hosted by SANBI.
- The IUCN conservation status of the species in the list was also extracted from the database and is based on the Threatened Species Programme, Red List of South African Plants (2011).
- Threatened Ecosystem data was extracted from the National List of Threatened Ecosystems 2010.
- Freshwater and wetland information was extracted from the National Freshwater Ecosystem Priority Areas assessment, NFEPA (Nel et al. 2011) and National Wetlands Map.
- Important catchments and protected areas expansion areas were extracted from the National Protected Areas Expansion Strategy 2008 (NPAES).
- The CapeNature Spatial Biodiversity Plan 2017 (Turner *et al* 2017)

In addition, use was made of the following data:

- Wetland and riparian habitat Geographic Information System (GIS) data sourced from the National Freshwater Ecological Priority Area Programme of South African National Biodiversity Institute (SANBI);
- SANBI veld types data; and
- Literature as referenced

### *1.8. Site Visit*

The sampling and analysis of the site during on 8 December 2021 and also 11 January 2023, as well as Dr Keet botanical surveys conducted on 15 – 18 July and 22 – 23 July 2025, provides suitable data and results to present an informed decision on the local ecology. It must also be noted that the area was at least visited once a month for the last 3 years which also informed the findings in this report. The sampling and analysis of the site provides suitable data and results to present an informed decision on the local terrestrial biodiversity and ecology. During the site visit, the different biodiversity features, habitat, vegetation and landscape units present were identified and recorded in the field. Walk-through-surveys were conducted of representative habitats and areas of interest and all plant and animal species observed were recorded. Searches for listed and protected plant species at the site were conducted and the location of all listed plant species observed was recorded (if present). Active searches for reptiles and amphibians were also conducted within habitats likely to harbour or be important for such species. The presence of sensitive habitats such as wetlands or pans and unique edaphic environments, such as rocky outcrops or quartz patches, were noted in the field if present and recorded and mapped using satellite imagery of the site.

The property was included in CBA and ESA categories in the Western Cape Biodiversity Spatial Plan (Turner et al 2017).

**Critical Biodiversity Areas Category 2: CBA: Terrestrial**
Definition: Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
Objective: Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

Feature: Coastal Corridor, Critically Endangered or Endangered veg Category 1: ESA: Terrestrial
Definition: Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective: Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.

The proposed development site is not located inside a protected area. The proposed development area is not located inside an aquatic CBA or ESA.

The property is located in the proposed North South corridor and protected expansion area. No Freshwater Ecosystem Priority Area (FEPA) and Freshwater Ecological features are inside or close to the development area. No indigenous forests are inside or close to the study area.

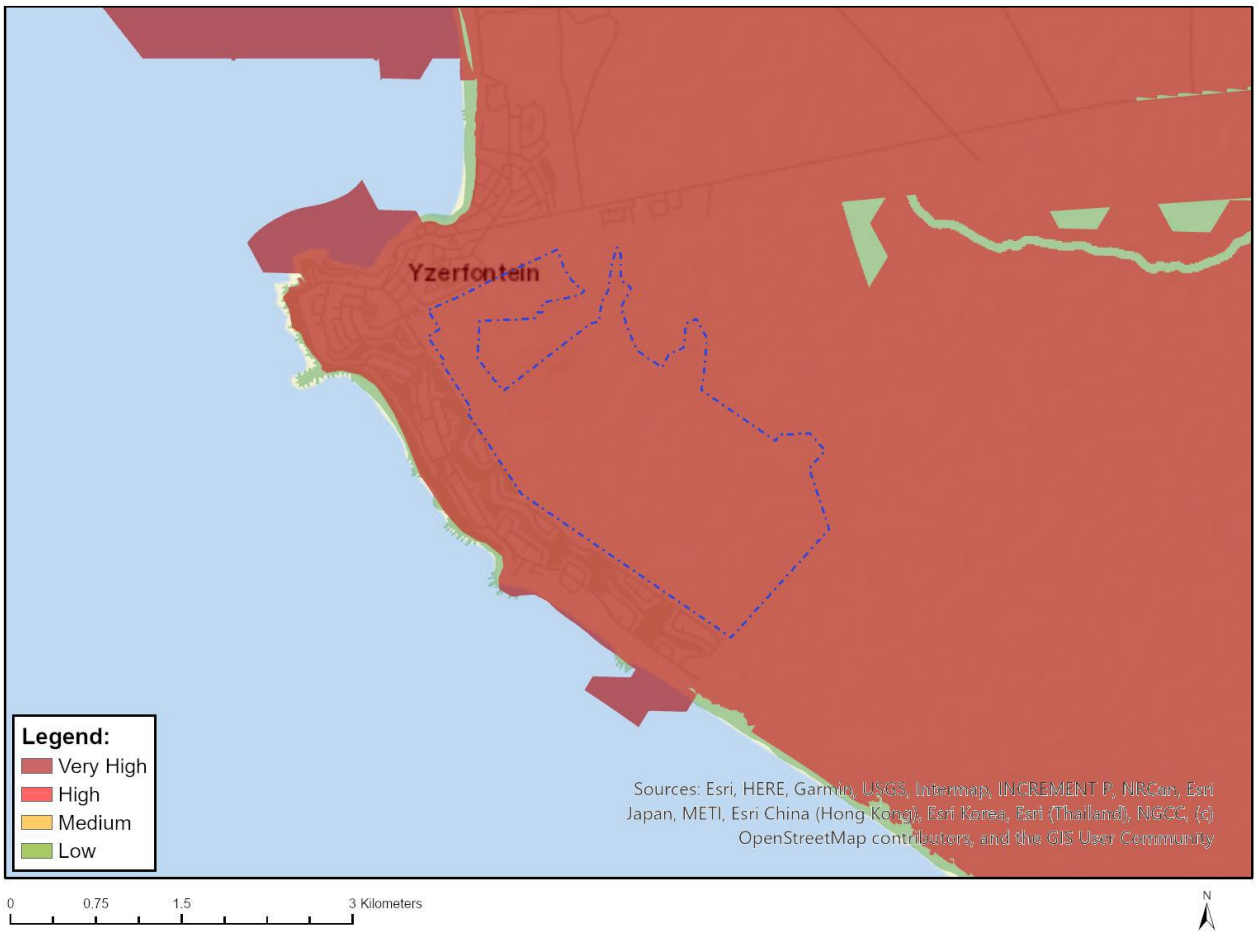


**Figure 1:** Project Area Of Influence (PAOI) map relevant to plant species as per the environmental screen tool report.

### *1.9. Sensitivity Mapping and Assessment (Site Ecological Importance)*[2]

The botanical survey conducted by Dr Keet (2025) of EcoFloristix Specialist Botanical Surveys was used to determine the SEI (Refer to Appendix E for more detail)

According to Keet (2025), the comprehensive assessment of conservation value (or ecological importance/sensitivity) can pose a significant challenge, particularly when considering SCC and threatened vegetation types. The inherent difficulty stems from the multi-dimensional nature of "value", encompassing ecological functionality, distinctiveness/uniqueness, cultural significance, and even the provision of ecosystem services. Quantifying these diverse facets is frequently hampered by data deficiencies, especially concerning the population dynamics, distributional ranges, and specific habitat requirements of many rare or elusive species. Furthermore, the complex interdependencies between species often result in unforeseen ecological cascades, making the prediction of long-term conservation outcomes difficult. The evaluation of conservation value is further complicated in transition zones, or ecotones. These areas, characterized by their inherent

[2] South African National Biodiversity Institute (SANBI). 2020. *Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa.* South African National Biodiversity Institute, Pretoria. Version 3.1. 2022.

dynamic nature, serve as critical ecological interfaces. The simultaneous presence of diverse species from adjacent ecosystems, even though they might be common within the broader landscape, exacerbates the challenge of prioritizing conservation efforts for such areas.

All pristine units of **Saldanha Limestone Strandveld** are considered to be **Very High** in their conservation value according to Keet (2025). This is firstly due to the vegetation type itself being listed as Critically Endangered, as well as the fact that the units harbour a diversity of SCC. Those units that are subject to degradation were considered to be either High or Medium depending on the extent of degradation present. They still represent valuable areas that might be rehabilitated and added to conservation targets.

**Langebaan Dune Strandveld** has been assessed as having a **Medium** conservation value according to Keet (2025). Although the vegetation type is listed as Endangered, not many SCC were found to occur in, and it is quite abundant within the southern part of the study area.

**Saldanha Flats Strandveld** was assessed as having a **Medium** conservation value according to Keet (2025). Firstly, similar to Langebaan Dune Strandveld, it is quite abundant within the southern part of the study area and did not have many SCC. Furthermore, much of this unit is dominated by the common sonkwasriet (*Willdenowia incurvata*), and should likely be considered a vegetation type in its own right, and not necessarily Saldanha Flats Strandveld per se. Thus, it is not considered as conservation worthy in this context as the Saldanha Limestone Strandveld units. Nevertheless, for the exact reason given, i.e. that it might be a vegetation type in its own right (which could become known with more study), it must not be considered any lower than Medium. Its pristine nature, especially in the southern part of the study area, further warrants this. In fact, together with the transitional zones and inland limestone vegetation fragments, it might even be considered as bordering on High conservation value.

**Transition zones** were assessed as having a **High** conservation value according to Keet (2025). Although their dynamic nature complicates their classification, they serve as important ecological interfaces and often harbour species characteristic of their neighbouring vegetation types. In that sense they can act as reservoirs for these species, especially if they are SCC (or limestone indicators in this context), thereby contributing to the gene pool and acting as buffers against disturbances.

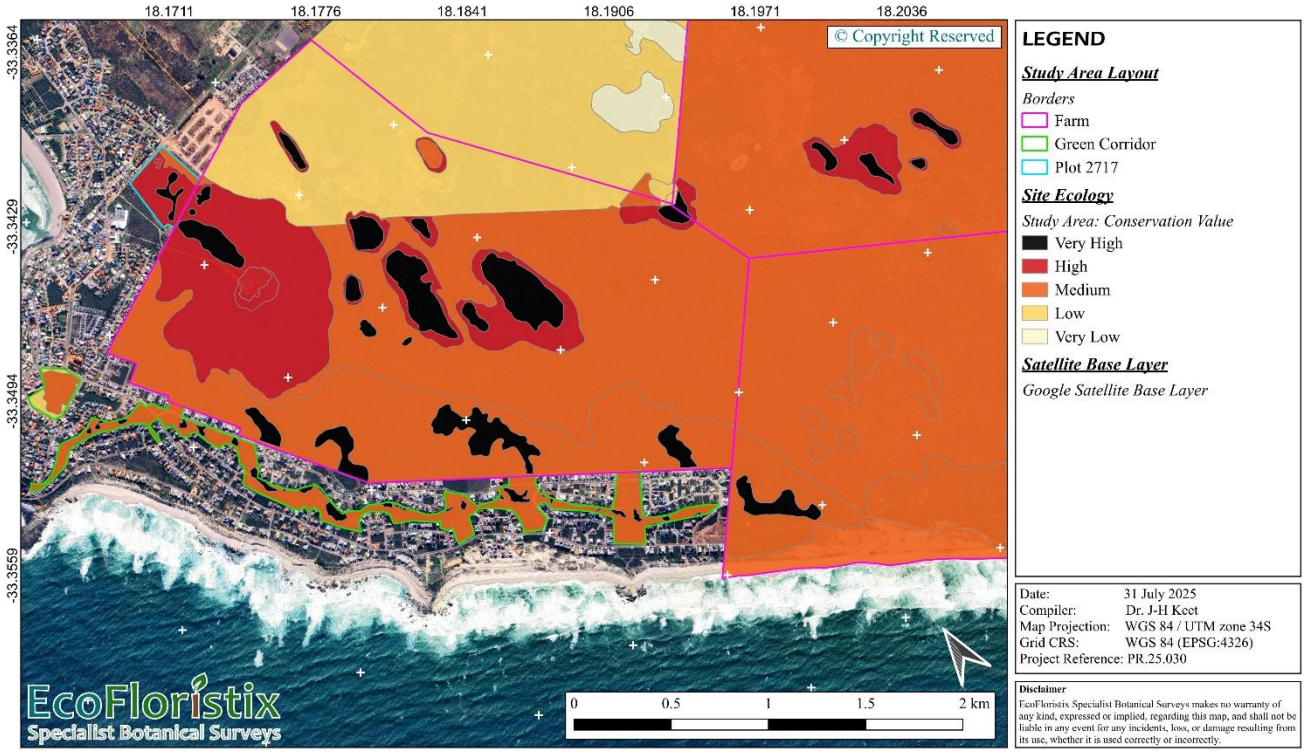


**Figure 2:** Site Ecological Importance.

## 2. APPLICABLE LEGISLATION AND PERMIT REQUIREMENTS

The proposed development within the study site is considered to elicit a requirement for possible compliance with the following legislation applicable to this assessment.

- The National Environmental Management: Biodiversity Act (Act 10 of 2004)
- The National Forest Act (Act 84 of 1998)
- Invasive species are controlled by the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) - Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014

The potential applicability of the abovementioned acts to the subject site is provided below:

### *The National Environmental Management: Biodiversity Act (Act 10 of 2004)*

This Act serves to control the disturbance and land utilisation within certain habitats, as well as the planting and control of certain exotic species. The effective disturbance and removal of species identified above, as well as possible other species (i.e. Threatened or Protected Species (TOPS) species), will require specific permission from the applicable authorities. In addition, the planting and management of exotic plant species on site, if and where required, will be governed by the Alien and Invasive Species (AIS) regulations, which were gazetted in 2014. These regulations compel landowners to manage exotic weeds on land under their jurisdiction and control.

### *The National Forest Act (Act 84 of 1998)*

The National Forest Act (Act 84 of 1998) governs the removal, disturbance, cutting or damage and destruction of identified “protected trees”. No listed species were encountered or recorded on site and an application for the “clearing of a *natural forest*”, as defined within the Act, will not be required on the site in question.

***Invasive species are controlled by the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) - Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014.***

Notably most listed alien invasive species are propagated and driven by the disturbance of land during and following construction. The planting and management of exotic plant species on site, if and where required, will be governed by the Alien and Invasive Species (AIS) regulations. Continue control of alien invasive species of the proposed offset and conservation area must continue.

## 3. DESCRIPTION OF PROJECT ASPECTS RELEVANT TO TERRESTRIAL BIODIVERSITY FEATURES

Project – PROPOSED ACTIVITY DESCRIPTION
The proposed development will be done in phases:

- 749 Residential Zone 1 erven - ±50.4421ha
- 3 General Residential Zone 1 (grouphouse). Total of 168 units - ±6.8237ha
- Open Space Zone 1 erven - ±85.6363ha
- 2 Business Zone 2 erven - ±1.0071ha
- Transport Zone 2: Roads - ±14.0582ha

## 4. DESCRIPTION OF THE AFFECTED ENVIRONMENT.

### *4.1. Locality*

Yzerfontein is approximately 80 kilometres from Cape Town along the west coast. This location advantage and accessibility contributes to the town's attractiveness and growth over the past years. Portion 4 of Farm No.560, Malmesbury RD is located south-east of the existing residential area of town.

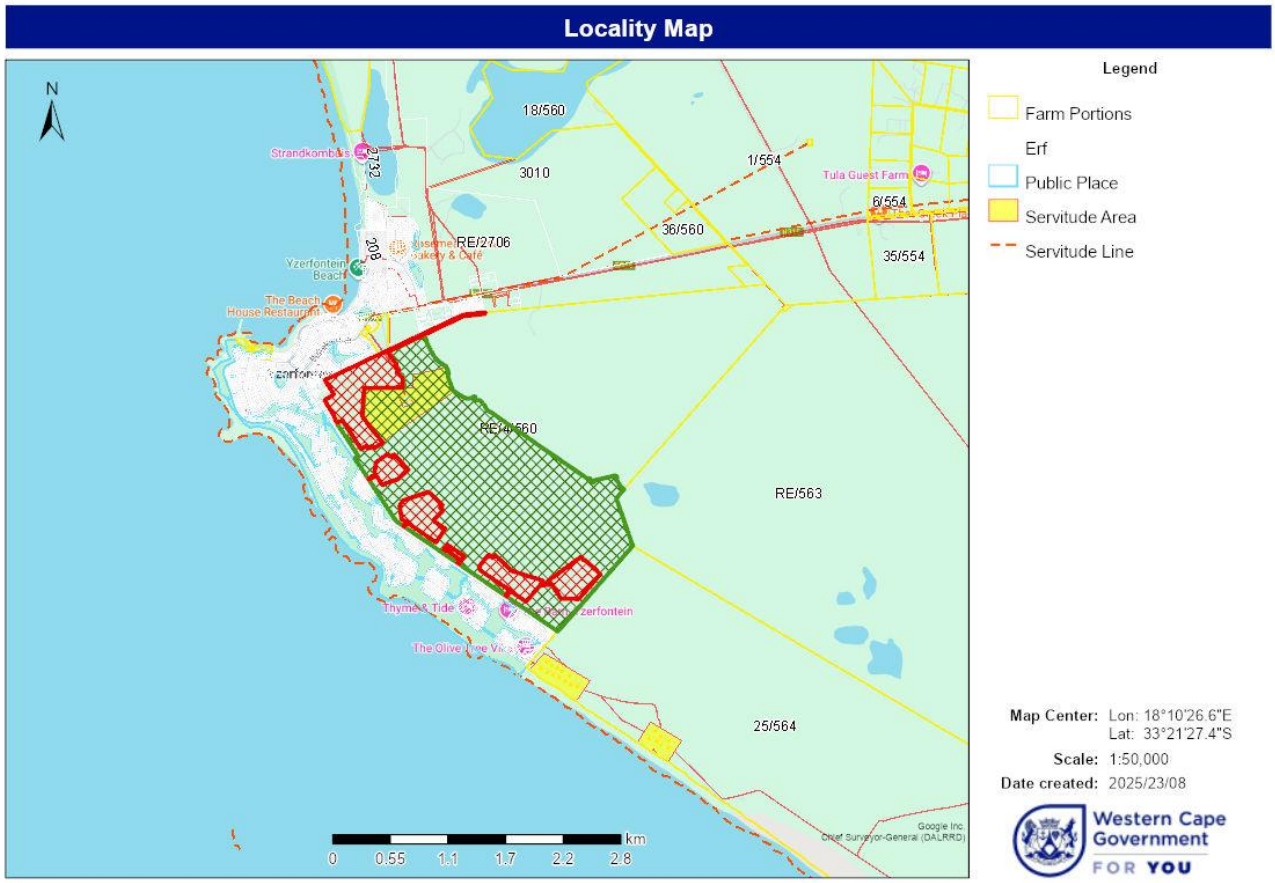


**Figure 3: Locality Map**

### *4.2. Topography*

The site is between 25 and 74m above sea level. The area is characterised by a landscape with a moderate slope. The elevation profile is as follows: west to east along Atlantic drive and western border and South to north in the northern section of the development area. There are no unstable rocky slopes or steep slopes with loose soil. The site does not contains dispersive soils (soils that dissolve in water) and does not have a high clay content.

### *4.3. Geology and Soils*

Soil and Geology
Soil: Glenrosa and/or Mispah forms (other soils may occur), lime generally present in the entire landscape
Geology: Mainly Quaternary limestone and calcrete of the Langebaan Formation and Quaternary quartz sand of the Springfontein Formation as well as diorite and gabbro of the Yzerfontein Suite.
Source: CapeFarmMapper

### *4.4. Description of The Ecological Drivers/Processes, Functioning, Ecological Corridors that the Development Would Impede Including Migration and Movement of Flora and Fauna, and Description of any Significant Landscape Features*

Fire is not a significant driver of ecological process or pattern in the Strandveld vegetation types, but is important in Hopefield Sand Fynbos. The most important determinant of pattern in the Strandveld is soil type, followed by distance from the sea (De Villiers et al 2005). According to Helme (2008), most of the original edaphic soil interfaces in the interior parts of the property have been destroyed by agriculture, but limestone, granite, and sand interfaces all still occur on the assessed western side of the property. The presence of Species of Conservation Concern (SCCs) highlights the significant biodiversity value of the study area, particularly within Saldanha Limestone Strandveld. These limestone fragments of Saldanha Limestone Strandveld present as very unique habitats given that they are essentially "islands" within a matrix of lowland vegetation of a completely different composition and structure. These inland limestone units are characterized by distinct transitional zones around their borders that merge with the surrounding low-lying valley bottom strandveld where the restio *Willdenowia incurvata* dominates.

### *4.5. Description of the Terrestrial Biodiversity and Ecosystems*

#### *4.5.1. Main Vegetation Types*

The National Vegetation Map of South Africa (2018) identifies the remnants of natural vegetation occurring within the proposed development area as Saldanha Flats Strandveld, endangered (EN).

Classifying vegetation on-site Keet (2025) into the categories defined by VegMap presents several challenges, primarily because the map's classifications are broad, often regional, and based on dominant species and ecological processes. A key difficulty is that local variations in soil type/depth, topography, and/or disturbance history can lead to large differences in species composition and community structure within a single mapped vegetation type. A prime example here constitutes the ploughed fields that would've been Saldanha Flats Strandveld, but due to their disturbance history now harbour a completely different suite of dominant plant species. Similarly, the two dense invasive Acacia stands (falling just outside the study area border) also would've been Saldanha Flats Strandveld, but is now dominated by species that are not characteristic of the vegetation type, and also differs markedly from the mentioned ploughed fields (and even the pristine areas dominated by sonkwasriet). Furthermore, transitional zones between different vegetation types often create a mosaic of species from both categories, making it difficult to assign a definitive classification. The National Vegetation Map is a powerful tool for large-scale planning and conservation, but its generalized nature means that it cannot fully capture the fine-scale complexity and dynamic nature of real-world ecosystems. This is exactly why site-specific classifications of plant communities are preferred above VegMap vegetation types. Nevertheless, given that redlist statuses and other relevant information are tied to vegetation types as defined by VegMap, all of the plant community types on site were classified into vegetation types as best possible. However, it must be stressed that these classifications should not be interpreted alone, and should be studied carefully together with the preferred classifications. Although Saldanha Flats Strandveld has been chosen to represent the valley bottom strandveld as used in this report, it does not conform well to VegMap definitions (especially near the coast) and should likely be considered a vegetation type in its own right. However, given that limited surveying occurred in it, since it was not a major focus, it has been kept as Saldanha Flats Strandveld,

which is based primarily on its topographic nature. Thus, it must be noted that the intention with this classification is not that it should be interpreted as being typical Saldanha Flats Strandveld. Similarly, the transitional zones surrounding the small inland limestone outcrops ("islands") have been classified as Langebaan Dune Strandveld. They do not have a characteristic open vegetation structure, abundance of calcrete rocks and shallow soils, or limestone indicator species, and thus do not conform well to typical Saldanha Limestone Strandveld. However, they also differed markedly form the surrounding lowland vegetation matrix that is dominated by *Willdenowia incurvata*, which has been classified as Saldanha Flats Strandveld. Thus, the only option left is Langebaan Dune Strandveld. Finally, the highly modified ploughed fields and invasive Acacia stands have been classified as Saldanha Flats Strandveld purely because it would've been present prior to these disturbances. They do not truly conform to Saldanha Flats Strandveld.

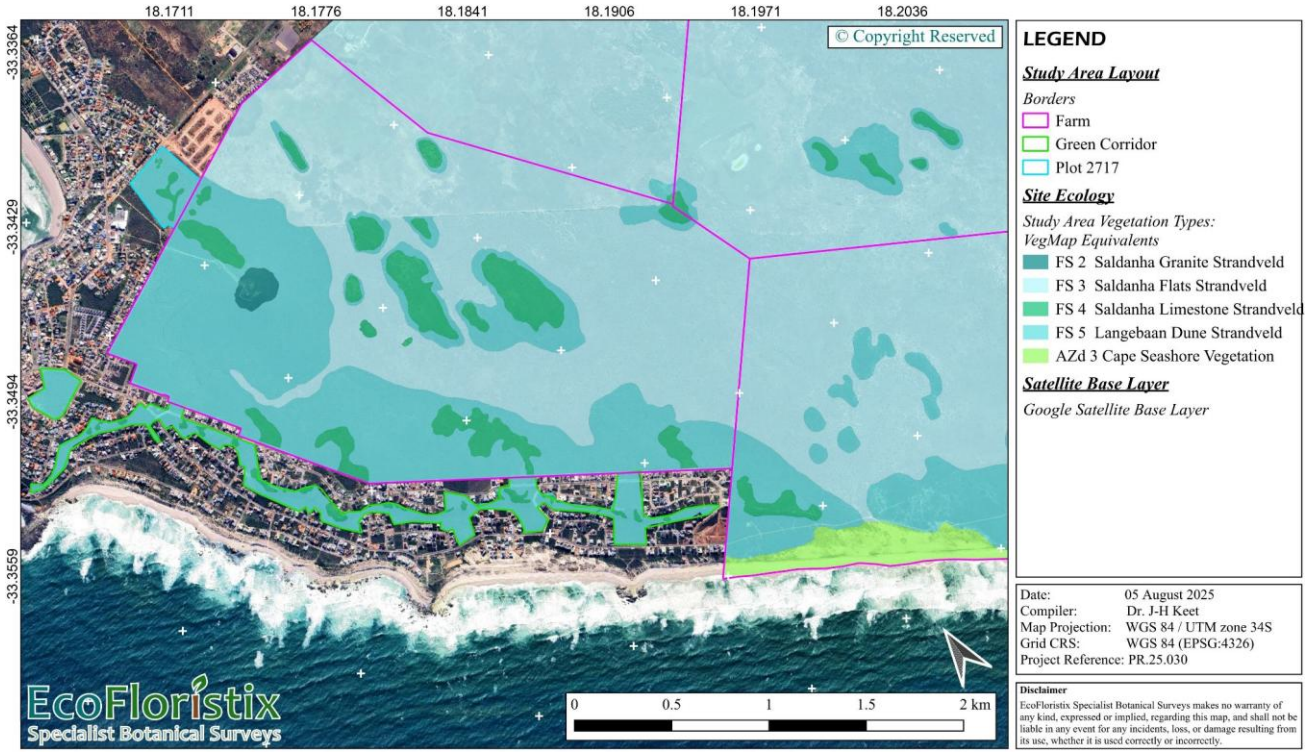


**Figure 4:** Study area vegetation types as they equate to units circumscribed by VegMap. Note that some of the vegetation on site does not conform well to VegMap definitions.

However, it was correctly delineated and mapped after the site survey and verification. Saldanha Flats Strandveld, (±168ha) with an endangered (EN) conservation status, Langebaan Dune Strandveld, (±190ha) with an endangered (EN) conservation status, Saldanha Granite Strandveld, (±3.5ha) with a critically endangered (CR) conservation status and Saldanha Limestone Strandveld, (±40ha) with a critically endangered (CR) conservation status was mapped on site.

### *4.5.2. Threatened Ecosystems, Including Listed Ecosystems*

Four vegetation types were mapped on site, namely Saldanha Flats Strandveld with an endangered (EN) conservation status, Saldanha Granite Strandveld with a critically endangered (CR) conservation status, Saldanha Limestone Strandveld with a critically endangered (CR) conservation status and Langebaan Dune Strandveld with an endangered (EN) conservation status.

### *4.5.3. Ecological Connectivity, Habitat Fragmentation, Ecological Processes and Fine-Scale Habitats*

The development supports the protection of high value vegetation by ensuring that only the 50% of the mapped medium value conservation areas in the botanical sensitivity by Helme (2008) study are developed, leaving the high value areas untouched. The proposed open space corridors will allow for connectivity to the Open Spaces in Yzerfontein and therefore ensure a coastal inland corridor. The proposed conservation area will also ensure ecological corridor connection in terms of the proposed North South corridor and ensure the connection to the north and the West Coast National Park, as well as to the east and south. The location of the proposed open space and offset area was designed to specifically prevent continual sprawl around Yzerfontein, in perpetuity. The landowner and developer continually involvement in the north south corridor project and the positive impact of the proposed offset area and work done to date had and will have a positive impact on the North South Corridor project. By conserving the offset area as proposed will conserve the proposed sections now and stop sprawl beyond the urban edge.

### *4.5.4. Species, Distribution, Important Habitats*

**Vegetation Characteristics and Description**

Classifying vegetation on-site Keet (2025) into the categories defined by VegMap presents several challenges, primarily because the map's classifications are broad, often regional, and based on dominant species and ecological processes. A key difficulty is that local variations in soil type/depth, topography, and/or disturbance history can lead to large differences in species composition and community structure within a single mapped vegetation type. A prime example here constitutes the ploughed fields that would've been Saldanha Flats Strandveld, but due to their disturbance history now harbour a completely different suite of dominant plant species. Similarly, the two dense invasive Acacia stands (falling just outside the study area border) also would've been Saldanha Flats Strandveld, but is now dominated by species that are not characteristic of the vegetation type, and also differs markedly from the mentioned ploughed fields (and even the pristine areas dominated by sonkwasriet). Furthermore, transitional zones between different vegetation types often create a mosaic of species from both categories, making it difficult to assign a definitive classification. The National Vegetation Map is a powerful tool for large-scale planning and conservation, but its generalized nature means that it cannot fully capture the fine-scale complexity and dynamic nature of real-world ecosystems. This is exactly why site-specific classifications of plant communities are preferred above VegMap vegetation types. Nevertheless, given that redlist statuses and other relevant information are tied to vegetation types as defined by VegMap, all of the plant community types on site were classified into vegetation types as best possible. However, it must be stressed that these classifications should not be interpreted alone, and should be studied carefully together with the preferred classifications. Although Saldanha Flats Strandveld has been chosen to represent the valley bottom strandveld as used in this report, it does not conform well to VegMap definitions (especially near the coast) and should likely be considered a vegetation type in its own right. However, given that limited surveying occurred in it, since it was not a major focus, it has been kept as Saldanha Flats Strandveld, which is based primarily on its topographic nature. Thus, it must be noted that the intention with this classification is not that it should be interpreted as being typical Saldanha Flats Strandveld. Similarly, the transitional zones surrounding the small inland limestone outcrops

("islands") have been classified as Langebaan Dune Strandveld. They do not have a characteristic open vegetation structure, abundance of calcrete rocks and shallow soils, or limestone indicator species, and thus do not conform well to typical Saldanha Limestone Strandveld. However, they also differed markedly form the surrounding lowland vegetation matrix that is dominated by *Willdenowia incurvata*, which has been classified as Saldanha Flats Strandveld. Thus, the only option left is Langebaan Dune Strandveld. Finally, the highly modified ploughed fields and invasive Acacia stands have been classified as Saldanha Flats Strandveld purely because it would've been present prior to these disturbances. They do not truly conform to Saldanha Flats Strandveld.

The presence of Species of Conservation Concern (SCCs) highlights the significant biodiversity value of the study area, particularly within Saldanha Limestone Strandveld according to Keet (2025). These limestone fragments of Saldanha Limestone Strandveld present as very unique habitats given that they are essentially "islands" within a matrix of lowland vegetation of a completely different composition and structure. These inland limestone units are characterized by distinct transitional zones around their borders that merge with the surrounding low-lying valley bottom strandveld where the restio *Willdenowia incurvata* dominates.



**Photograph 1:** Taken on 8 December 2021. General ecological state of the site.



**Photograph 2:** Taken on 8 December 2021. General ecological state of the site.



**Photograph 3:** Taken on 8 December 2021. General ecological state of the site.



**Photograph 4:** Taken on 8 December 2021. General ecological state of the site.

### *4.6. Terrestrial Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs)*

The property was included in CBA and ESA categories in the Western Cape Biodiversity Spatial Plan (Turner et al 2017).

**Critical Biodiversity Areas Category 2: CBA: Terrestrial**
Definition: Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
Objective: Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

Feature: Coastal Corridor, Critically Endangered or Endangered veg
Category 1: ESA: Terrestrial
Definition: Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective: Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.

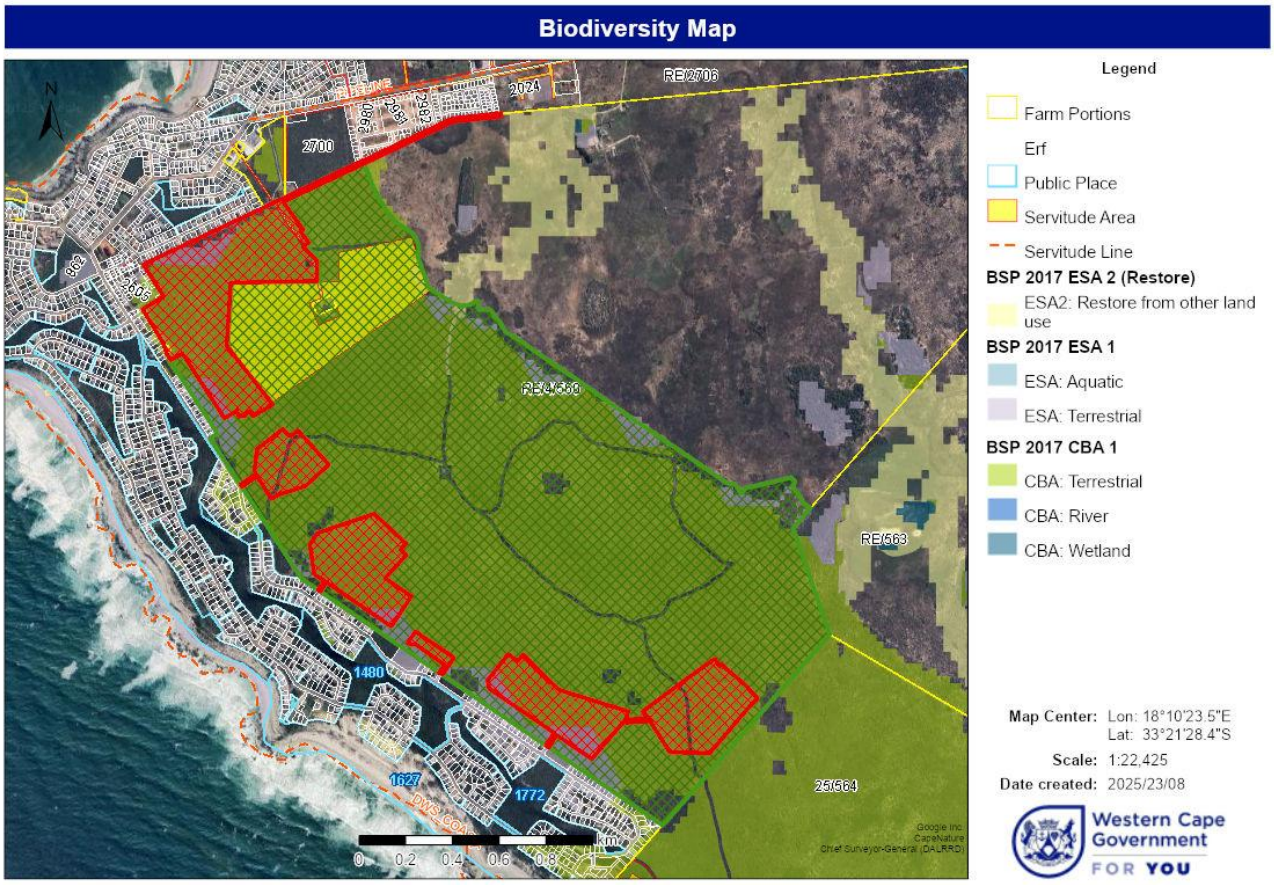


**Figure 5:** CBA Map

### *4.7. Protected Areas and Priority Areas for Protected Area Expansion*

The proposed development area is not located in an area that was identified as a National Protected Areas Expansion Strategy.

### *4.8. Strategic Water Source Areas (SWSA)*

The property falls outside of the West Coast Aquifer strategic water source areas.

### *4.9. Freshwater Ecosystem Priority Area (FEPA) and Freshwater Ecological features*

No Freshwater Ecosystem Priority Area (FEPA) and Freshwater Ecological features are inside or close to development area.

### *4.10. Indigenous Forests*

No indigenous forests are inside or close to the study area.

## 5. SITE SENSITIVITY ASSESSMENT

Mostly medium sensitivity areas, with smaller areas mapped as High sensitivity areas will be impacted by the proposed developed areas. The very high and some high and medium sensitive areas are located outside the development footprints and is located in the proposed offset conservation area.

## 6. IMPACT ASSESSMENT

### *6.1. Assessment & Significance Criteria*

The assessment criteria used in the assessment are drawn from the protocol for the specialist assessment and minimum report content requirements for environmental impacts (published in Government Notice **no. 320 in** Government Gazette **43110** 20 March 2020) were used.

### *6.2. Assessment of Potential Impacts*

The impacts identified are assessed below, before and after mitigation as well as during construction. The impact assessment which follows is based on the site sensitivity and any deviations from the site sensitivity map as provided may invalidate the results of the assessment.

### *6.3. Risk Assessment Criteria*

**Step 1**: Determine the **PROBABILITY** of the impact by calculating the average between the Frequency of the Aspect, the Availability of a pathway to the receptor and the availability of the receptor (thus: Sum of the three column scores below ÷ 3)

| Frequency of Aspect / Unwanted Event | Score | Availability of pathway from the source to the receptor | Score | Availability of receptor | Score |
|---|---|---|---|---|---|
| Never known to have happened, but may happen | 1 | A pathway to allow for the impact to occur is never available | 1 | The receptor is never available | 1 |
| Known to happen in industry | 2 | A pathway to allow for the impact to occur is almost never available | 2 | The receptor is almost never available | 2 |
| < once a year | 3 | A pathway to allow for the impact to occur is sometimes available | 3 | The receptor is sometimes available | 3 |
| Once per year to up to once per month | 4 | A pathway to allow for the impact to occur is almost always available | 4 | The receptor is almost always available | 4 |
| Once a month - Continuous | 5 | A pathway to allow for the impact to occur is always available | 5 | The receptor is always available | 5 |

**Step 2**: Determine the **MAGNITUDE** of the impact by calculating the average of the factors below (thus: Sum of all six column ratings below ÷ 6)

| Source | | | | | | | Receptor | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Duration of impact** | **Score** | **Extent** | **Score** | **Volume / Quantity / Intensity** | **Score** | **Toxicity / Destruction Effect** | **Score** | **Reversibility** | **Score** | **Sensitivity of environmental component** | **Score** |
| Lasting days to a month | 1 | Effect limited to the site. (metres); | 1 | Very small quantities / volumes / intensity (e.g. < 50L or < 1Ha) | 1 | Nontoxic (e.g. water) / Very low potential to create damage or destruction to the environment | 1 | Bio-physical and/or social functions and/or processes will remain unaltered. | 1 | Current environmental component(s) are largely disturbed from the natural state.<br>Receptor of low significance / sensitivity | 1 |
| Lasting 1 month to 1 year | 2 | Effect limited to the activity and its immediate surroundings. (tens of metres) | 2 | Small quantities / volumes / intensity (e.g. 50L to 210L or 1Ha to 5Ha) | 2 | Slightly toxic / Harmful (e.g. diluted brine) / Low potential to create damage or destruction to the environment | 2 | Bio-physical and/or social functions and/or processes might be negligibly altered or enhanced / Still reversible | 2 | Current environmental component(s) are moderately disturbed from the natural state.<br>No environmentally sensitive components. | 2 |
| Lasting 1 – 5 years | 3 | Impacts on extended area beyond site boundary (hundreds of metres) | 3 | Moderate quantities / volumes / intensity (e.g. > 210 L < 5000L or 5 – 8Ha) | 3 | Moderately toxic (e.g. slimes) Potential to create damage or destruction to the environment | 3 | Bio-physical and/or social functions and/or processes might be notably altered or enhanced / Partially reversible | 3 | Current environmental component(s) are a mix of disturbed and undisturbed areas.<br>Area with some environmental sensitivity (scarce / valuable environment etc.). | 3 |
| Lasting 5 years to Life of Organisation | 4 | Impact on local scale / adjacent sites (km's) | 4 | Very large quantities / volumes / intensity (e.g. 5000 L – 10 000L or 8Ha– 12Ha) | 4 | Toxic (e.g. diesel & Sodium Hydroxide) | 4 | Bio-physical and/or social functions and/or processes might be considerably altered or enhanced / potentially irreversible | 4 | Current environmental component(s) are in a natural state.<br>Environmentally sensitive environment / receptor (endangered species / habitats etc.). | 4 |

| Source | | | | | | | | Receptor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Duration of impact** | **Score** | **Extent** | **Score** | **Volume / Quantity / Intensity** | **Score** | **Toxicity / Destruction Effect** | **Score** | **Reversibility** | **Score** | **Sensitivity of environmental component** | **Score** |
| Beyond life of Organization / Permanent impacts | 5 | Extends widely (nationally or globally) | 5 | Very large quantities / volumes / intensity (e.g. > 10 000 L or > 12Ha) | 5 | Highly toxic (e.g. arsenic or TCE) | 5 | Bio-physical and/or social functions and/or processes might be severely/substantially altered or enhanced / Irreversible | 5 | Current environmental component(s) are in a pristine natural state. Highly Sensitive area (endangered species, wetlands, protected habitats etc.) | 5 |

**Step 3**: Determine the **SEVERITY** of the impact by plotting the averages that were obtained above for Probability and Magnitude in the table below.

| ENVIRONMENTAL IMPACT RATING / PRIORITY | | | | | |
|---|---|---|---|---|---|
| | **MAGNITUDE** | | | | |
| **PROBABILITY** | **1 Minor** | **2 Low** | **3 Medium** | **4 High** | **5 Major** |
| **5 Almost Certain** | Low | Medium | High | High | High |
| **4 Likely** | Low | Medium | High | High | High |
| **3 Possible** | Low | Medium | Medium | High | High |
| **2 Unlikely** | Low | Low | Medium | Medium | High |
| **1 Rare** | Low | Low | Low | Medium | Medium |

TERRESTRIAL BIODIVERSITY IMPACTS

**Preferred Alternative as well as alternative layout**

| **Proposed development of whole property** | **Degradation / loss of naturally occurring / indigenous flora and habitats** |
|---|---|
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | |
| **Potential impact and risk:** | **Loss of Terrestrial Biodiversity and ecological functioning** |
| Nature of impact: | **Vegetation will be removed if the proposed development is approved.** |
| Extent and duration of impact: | **Permanent for developed areas** |
| Consequence of impact or risk: | **Activities can disturb and impact on surrounding terrestrial biodiversity features.** |
| Magnitude | **3** |
| Probability of occurrence: | **5** |
| Degree to which the impact may cause irreplaceable loss of resources: | **Resource will be destroyed on developed areas** |
| Degree to which the impact can be reversed: | **Not reversible** |
| Indirect impacts: | **Disturbance to surface area can result in erosion and dust generation which may affect surrounding terrestrial biodiversity features.** |
| Cumulative impact prior to mitigation: | **Loss of significantly impacted upon vegetation and habitat.** |
| Significance rating of impact prior to mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | **High** |
| Degree to which the impact can be avoided: | **High** |
| Degree to which the impact can be managed: | **High** |
| Degree to which the impact can be mitigated: | **Only by means of offset of the medium and high sensitive development areas** |
| Proposed mitigation: | **Construction activities must be controlled to ensure that the adjacent vegetated areas are not negatively impacted.**<br>**Undertake construction activities only in identified and specifically demarcated areas.**<br>**Because the proposed development site was mapped having medium and high sensitive areas, mitigation to compensate under the polluter pays principle in terms of the offset must be implemented. The proposed offset areas must be conserved by means of a conservation servitude and regarded as no go areas.** |
| Residual impacts: | **Will be high if the mitigation measures are adhered to.** |

| | |
|---|---|
| Cumulative impact post mitigation: | **Will be high if the mitigation measures are adhered to.** |
| Significance rating of impact after mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | **High** |
| **OPERATIONAL PHASE** | |
| **Potential impact and risk:** | **Not applicable to operational phase.** |
| Nature of impact: | **Non development areas will be conserved in terms of Stewardship agreement and management plan with funding for 30 years from applicant.** |
| Extent and duration of impact: | **Long term** |
| Consequence of impact or risk: | **Low if managed and audited externally** |
| Magnitude | **3** |
| Probability of occurrence: | **5** |
| Degree to which the impact may cause irreplaceable loss of resources: | **Resource will not be destroyed of managed in terms of management plan** |
| Degree to which the impact can be reversed: | **High** |
| Indirect impacts: | **Disturbance to surface area can result in erosion and dust generation which may affect surrounding terrestrial biodiversity features.** |
| Cumulative impact prior to mitigation: | **Vegetation with an endangered and critically endangered conservation status with SCC will be protected.** |
| Significance rating of impact prior to mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | **High** |
| Degree to which the impact can be avoided: | **High** |
| Degree to which the impact can be managed: | **High** |
| Degree to which the impact can be mitigated: | **High** |
| Proposed mitigation: | **Operational activities must be controlled to ensure that the adjacent vegetated areas are not negatively impacted.**<br>**Undertake operational activities only in identified and specifically demarcated areas.**<br>**Invasive vegetation to be removed.**<br>**The proposed offset areas must be protected and management as per the approved EMP for the conservation area must be adhered to.** |
| Residual impacts: | **It is not anticipated that the impact will be high if the mitigation measures are adhered to.** |
| Cumulative impact post mitigation: | **It is not anticipated that the impact will be high if the mitigation measures are adhered to.** |
| Significance rating of impact after mitigation | **Medium** |

| | |
|---|---|
| (e.g. Low, Medium, Medium-High, High, or Very-High) | |

***Cumulative Impacts***

Cumulative impacts arise from the combined presence of several similar developments within an area which affect terrestrial biodiversity and ecological processes operating at broader scales or which each have a small impact which becomes significant when combined. The development was densified around the koppie in order to increase the connecting corridor to Tygerfontein and Koffiefontein. Mostly medium sensitivity areas, with smaller areas mapped as High sensitivity areas will be impacted by the proposed developed areas, which must be offset. The development supports the protection of very high value vegetation by ensuring that only the 50% of the medium value conservation areas as mapped in the Helme (2008) Botanical Sensitivity Study are developed, leaving the high value areas untouched. The proposed open space corridors will allow for connectivity to the Open Spaces in Yzerfontein and therefore ensure a coastal inland corridor as per the objectives of the Western Cape Biodiversity Spatial Plan (Turner et al 2017). The proposed conservation area will also ensure ecological corridor connection in terms of the protection of the vegetation types and to ensure ecological functioning of the proposed conservation offset area. The location of the proposed open space and offset area was designed to specifically prevent continual sprawl around Yzerfontein, in perpetuity. By conserving the offset area as proposed will conserve the proposed sections now and stop sprawl beyond the urban edge.

## 7. CONCLUSION AND RECOMMENDATIONS

The sampling and analysis of the site during the optimum season, provides suitable data and results to present an informed decision on the local ecology and terrestrial biodiversity features. The lists of species for the site are based on those observed at the site as well as those likely to occur in the area based on their distribution and habitat preferences. This represents a sufficiently conservative and cautious approach. During the site visits, the different biodiversity features, habitat, vegetation and landscape units present were identified and recorded in the field. Walk-through-surveys were conducted of representative habitats and areas of interest and species observed were recorded. Searches for listed species of conservation concern at the site were conducted. The presence of sensitive habitats such as wetlands or pans and unique edaphic environments, such as rocky outcrops or quartz patches, Saldanha Limestone Strandveld, are present and therefore was recorded and mapped.

The study recorded medium, high and very high sensitivity areas within the study area. The development of the medium and high conservation areas as mapped in the botanical sensitivity study and survey, avoiding the SCC allows for continuation of ecological corridors with restricted residential development. The medium conservation area was identified by Helme (2008) for restricted development potential with a ratio of 50% development footprint and 50% for conservation that was set as a benchmark for the development on the medium conservation value area as mapped in the botanical sensitivity study that was include in the urban edge.
The proposed development area will impact on medium sensitive mapped Saldanha Flats Strandveld with an endangered conservation status, high sensitive Saldanha Limestone Strandveld with an critically endangered conservation status and medium and high sensitive

mapped Langebaan Dune Strandveld with an endangered conservation status. In terms of the mitigation hierarchy, biodiversity offsets should be considered to compensate for residual negative impacts on biodiversity of 'medium' to 'high' significance (DFFE 2022). The areas mapped as very high may not be offset and must be protected.

The National Biodiversity Offset Guideline 2023 (NBOG) were published in terms of section 24J of the National Environmental Management Act 108 of 1998 ("NEMA"). this guideline is an implementation guideline contemplated in section 24J of NEMA. It must, in accordance with section 24O of NEMA and regulation 18 of the EIA Regulations, be taken into account by a CA when considering an application for an EA. It is therefore not absolutely binding and can be deviated from when justifiable under the circumstances[3]. It is emphasised here that the standard approach is not binding, but a guide based on relevant scientific information on ecosystems. Competent authorities must apply their minds to each case, which would involve considering additional factors, such as the size of the historical extent of the ecosystem measured against the extent of the residual negative impact (if a large percentage of the extent of the ecosystem would be impacted on, a higher ratio would be justified) and the cumulative residual negative impact of the activity, or activities, on biodiversity.[4] The NBOG offset ratio for Saldanha Flats Strandveld is REE 37 (%), Transformation Band 2A, B. RE & EPL Ratios (PP - 10), C. ETS Ratios (PP - 10) and D. Starting Ratios (PP - 10). The NBOG offset ratio for Langebaan Dune Strandveld is REE 87 (%), Transformation Band 4, C. ETS Ratios (WP - 10) and D. Starting Ratios (WP - 10). The NBOG offset ratio for Saldanha Granite Strandveld is REE 28 (%), Transformation Band 1, A. TPC Ratio (PP – 30), C. ETS (PP -30) and Ratios D. Starting (PP - 30). The NBOG offset ratio for Saldanha Limestone Strandveld is REE 82 (%), Transformation Band 4, C. ETS Ratios (PP - 30) and D. Starting Ratios (PP - 30).

The Western Cape Guideline on Biodiversity Offsets (2015) must be used to determine the offset ratios. The terms of the WC Guideline on Biodiversity Offsets (2015), offset ratios for EN and CR ecosystems inside urban areas can potentially be reduced to a minimum of 1:1 and 2:1, respectively (see section 7.4.1.1, pg. 85).

Three vegetation types were identified on site, being Saldanha Limestone Strandveld (CR) with an 2:1 ratio, and Saldanha Flats Strandveld and Langebaan Dune Strandveld (EN) with a ratio of 1:1. However, according to the Western Cape Biodiversity Offset Guideline (DEADP, 2015), where a proposed development would transform or result in loss of CBAs, then the applicant must demonstrate that it is feasible to meet all the biodiversity targets for which the affected CBA has been selected, elsewhere in the landscape. This is to ensure that residual impacts on biodiversity and ecosystem services are compensated by applicants so that biodiversity targets are not undermined, ecological integrity is maintained, and development is sustainable.

The following assessment was used to justify the proposed ratios and the size of the historical extent of the ecosystem measured against the extent of the residual negative impact was used. The next step was to assess the extent of CBA loss and if it is feasible to meet all the biodiversity targets for which the affected CBA has been selected, elsewhere in the landscape.

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[3] Page 15 of the National Biodiversity Offset Guideline, 2023
[4] Page 37 of the National Biodiversity Offset Guideline, 2023

Of importance is that the vegetation impacted by the development was mapped as Saldanha Limestone Strandveld, critically endangered conservation status, Saldanha Flats Strandveld and Langebaan Dune Strandveld, which has an endangered conservation status.

**For Saldanha Flats Strandveld**
Saldanha Flats Strandveld is narrowly distributed with high rates of habitat loss in the past 28 years (1990-2018), placing the ecosystem type at risk of collapse.

Conservation Status
Saldana Flats Strandveld is classified as Endangered (EN) (B1(i)) due to its narrow distribution and high rates of habitat loss in the past 28 years which has placed this ecosystem type at risk of collapse (DFFE, 2022). Only 36% (591.6 $km^2$) of the historical extent remains and it is considered poorly protected, of which (15%) is conserved in the West Coast National Park. Saldanha Flats Strandveld Provincial Protection Target is 38 067.06ha. The target conserved in the Sandveld Coastal Complex 533.77ha (1.40%). The vegetation type has a conservation target of 24%.

The Saldanha Bay Strategic Offset Strategy (SSOS) 2020 was developed in response to the conflict between Critical Biodiversity Areas (CBAs) and the area designated for large scale industrial expansion around the Port of Saldanha, and the Saldanha Bay Industrial Development Zone (SBIDZ) highlighted by the Greater Saldanha Environmental Management Framework (EMF). According to Dr Holness (2020), the Core Corridor as an offset receiving area "*would secure the intact climate change connectivity corridor which is an irreplaceable CBA feature. This offset receiving area also plays an important role for the overall potential success of the offset process by reducing the total requirement for offsetting Saldanha Flats Strandveld, which is the major limiting factor in securing a "like for like" offset in this area.*"" *This offset receiving area should be implemented as soon as possible*." The specific aim of the SSOS is to unlock development potential in Saldanha Bay whilst ensuring that conservation targets for the ecosystem types in the Greater Saldanha Bay Area can be partly met and maintained in perpetuity. The SOSS core areas will contribute approximately 850 ha towards the conservation of Saldanha Flats Strandveld. The SOSS mapped offset areas will further contribute towards the conservation of this vegetation type. Further, significant areas to be conserve in terms of offset requirements exists in the Berg River Municipal Area. Additionally, approximately 280ha of this vegetation type is informally protected on the property south of this area on Farm 564, portion 25, Tygerfontein, Malmesbury, with development authorization with condition that the non-developed areas on the property be protected in terms of Open Space zoning.

A very small area (14 ha or 8.54% on this property) of this vegetation type will be affected by the development and 149.91ha protected as part of the offset at a ratio of 1:1.

Therefore, using the offset guidelines of 1:1 in urban areas and 10:1 outside urban areas, the total ha areas to be conserve should be met. However, it must also be noted that it is highly unlikely that all of this area will be development and therefore not be conserved, but the biodiversity offset guidelines are there to ensure that should any development occur, it can contribute to offset and conservation target to protect this vegetation type. Therefore, the offset ratio of 1:1 on the development is a justifiable ratio and that the development on this vegetation

will not lead to the conservation targets of 24% not be met.

Langebaan Dune Strandveld Provincial Protection Target is 7 492.64ha. Target conserved in the Sandveld Coastal Complex is 737.97ha 9.84%

Langebaan Dune Strandveld is listed as endangered and is well conserved (27%) in the West Coast National Park, with a 24% conservation target and some 64% remaining (Mucina & Rutherford 2018).

A total area of (58.4ha or 37.49% on this property) of this vegetation type will be affected by the development and 97ha protected as part of the offset at a ratio of 1:1.

The conservation target for this vegetation type is already met. Additionally, there are other areas that can still be offset and conserve in terms of the offset guidelines. However, it must also be noted that it is highly unlikely that all of this area will be development and therefore not be conserved, but the biodiversity offset guidelines are there to ensure that should any development occur, it can contribute to offset and conservation target to protect this vegetation type. Therefore, the offset ratio of 1:1 on the development is a justifiable ratio as the conservation targets are already met.

**For Saldanha Limestone Strandveld**
Very limited distribution on slightly undulating limestone ridges and steeper coastal slopes supporting low shrublands including succulent-leaved dwarf shrubs and annual or geophytic herbs in cracks or shallow depressions in the exposed limestone. Main transformation drivers: coastal settlements, agricultural cultivation, grazing pressure, and alien invasive plants.

Conservation Status
Critically Endangered B1(iii). This means it is considered to be facing an extremely high risk of extinction in the wild due to a severely restricted geographic distribution and ongoing habitat degradation. The "B1" part of the designation refers to the restricted geographic range, while "(iii)" indicates that the habitat is experiencing ongoing decline due to factors like invasive species and overgrazing.
Critically Endangered: This is the highest threat level for extinction in the wild, according to the IUCN Red List.
B1: This criterion is met when a taxon (species or ecosystem) has a severely restricted geographic distribution, often defined by a limited area of occupancy or extent of occurrence.
(iii): This sub-criterion under B1 indicates that the habitat of the taxon is experiencing ongoing decline due to factors like habitat degradation, fragmentation, or biotic impacts (e.g., invasive species, overgrazing).

The vegetation type has a conservation target of 24%.
Total Saldanha Limestone mapped is 6102 ha
Of this 1046ha is protected = 16.4%

In terms of a mapped Saldanha Limestone Strandveld in the Saldanha Strategic Offset Study Peninsula Consolidation area, approximately 3174 ha was mapped of which approximately 70%

are mapped CBA, 20% degrade CBA and the rest no CBA was mapped.

Of this 3174ha, 15 ha is inside urban areas (Jacobs Bay) and 3159 ha outside urban areas. If a ratio of 2:1 is used to offset any development in terms of the guidelines inside the urban areas, this offset will contribute 30 ha towards conserving this vegetation type. The other 3159 is outside urban areas and an offset ratio of 30:1 is applicable (critically endangered vegetation and mostly mapped CBA) in terms of the guideline and if this ratio is used a total of 94 770ha be offset.

Firstly, at this offset ratio of 30:1, the ha required to be offset is more that wat is available for this mapped vegetation type. Therefore, using the guidelines a total of 94800 ha will need to be offset for development. However, it must also be noted that it is highly unlikely that all of this area will be development and therefore not be conserved, but the biodiversity offset guidelines are there to ensure that should any development occur, it can contribute to offset and conservation target to protect this vegetation type. Therefore, it has to be calculated if the offset ratio of 2:1 on the development is a justifiable ratio and that the development on this vegetation will not lead to the conservation targets of 24% not be met.

If a ratio of 2:1 is used in terms of the WCBOG (2015) for critically endangered vegetation inside an urban area, then 0.0288ha is required to be offset. However, a total of 41.24 ha will be conserved that will contribute to the conservation targets. Firstly, this vegetation type was not originally mapped on this site. Secondly, the development will only impact on 0.0144 ha and 41.24ha will be conserved on the site within a proposed offset area, which is a ratio of 41:1.

Furthermore, the CBA objectives will still be met and the residual impacts on biodiversity and ecosystem services are not undermined, ecological integrity is maintained, and development is sustainable.

The proposed development as per the site development plan will have relatively little terrestrial biodiversity and ecological impact on sensitivity areas and the surrounding terrestrial biodiversity features provided that appropriate mitigation measures included in the impact table above are included in the EMPr and adhered to. The proposed open space corridors will allow for connectivity to the Open Spaces in Yzerfontein and therefore ensure a coastal inland corridor. The proposed conservation area will also ensure ecological corridor connection in terms of threatened and protected vegetation and species. The location of the proposed open space and offset area was designed to specifically prevent continual sprawl around Yzerfontein, in perpetuity. By conserving the offset area as proposed will conserve the proposed sections now and stop sprawl beyond the urban edge.

The development supports the protection of high value vegetation by ensuring that only the 50% of the medium value conservation areas are developed, leaving the high value areas untouched. The identified Species of Conservation Concern as identified in the botanical assessment is included in the proposed open spaces and will be protected.

No additional survey or further assessment is in the authors view recommended.

Provided that activities are restricted to the property and the mitigation measures to reduce the

impacts of the activities are implanted, then the activities are not likely to result in long-term degradation of the receiving environment or significant net loss of terrestrial biodiversity. The green open spaces corridors in Yzerfontein is an example of how the corridors are able to maintain its pristine conditions, which in this case will be more relevant because management actions in terms of a management plan and funding with external auditing will be in place, which is not the case for the Yzerfontein Reserve (open space corridors).

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## APPENDIX A
## SPECIALIST CV

### CURRICULUM VITAE – NICOLAAS WILLEM HANEKOM

**Profession:** Environmental Scientist and Environmental Assessment Practitioner
**Date of Birth:** 01/02/1967

### BIOGRAPHICAL SKETCH

Nicolaas Hanekom is a qualified Environmental Assessment Practitioner (”EAP”) who holds a Masters Technologiae, Nature Conservation (“Vegetation Ecology and Biodiversity Assessment”) degree from the Cape Peninsula University of Technology. Nicolaas is certified in terms of section 20(3)(a) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), as a Professional Natural Scientist Ecological Science (Pri.Sci.Nat); Aquatic Science & Conservation Science (Cand.Sci.Nat), Registration Number: 004415. He further qualified in Environmental Management Systems ISO 14001:2004, at the Centre for Environmental Management, North-West University, as well as Environmental Management Systems ISO 14001:2004 Audit: Internal Auditors Course to ISO 19011:2003 level, from the Centre for Environmental Management, North-West University qualifying him to execute audits to ISO/SANS environmental compliance and EMS standards.

He has also completed the suite of Greener Governance courses with certificates in;

- An Overview of Environmental Management at the Local Government Level, Centre for Environmental Management, North-West University;
- Greener Governance for Local Authorities, Centre for Environmental Management, North-West University;
- Tools for Integrated Environmental Management and Governance, Centre for Environmental Management, North-West University.

He further attended and obtained a certificate on Integrated Protected Area Planning at the Centre for Environmental Development, University of Kwa Zulu Natal and a certificate in Project Management (Theory and Practical), through CS Holdings. Nicolaas has lectured in two subjects at the Cape Peninsula University of Technology. He has 26 years of environmental planning experience, working for Free State and Western Cape departments of environmental affairs, where he reviewed and commented on development (EIA) applications, in the West Coast Region.

He has, as practising EAP been responsible for many environmental impact assessments and EIA applications, waste license and atmospheric emission license applications.

He has also been involved in the implementation of several environmental management systems. He has engaged successfully with various clients as set out below.

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| **Areas of specialisation:** | • Ecosystem (terrestrial and aquatic) monitoring and assessments<br>• Design of monitoring programmes for ecosystems (terrestrial and aquatic)<br>• Environmental Impact Assessments<br>• River classification and environmental water requirements<br>• Wetlands Delineation<br>• River and Wetlands management<br>• Water Use Authorization Applications<br>• Water quality management<br>• River Health Assessments |
| **Countries of Work Experience:** | South Africa (Northern Cape, Western Cape, Free State, Mpumalanga, Gauteng) |
| **Employment Record** | • Student at Bontebok National Park (1992)<br>• Assistant Reserve Manager at Gariep Dam Nature Reserve, Free State (1993 - 1998)<br>• Reserve Manager, Conservation Services Manager for Western Cape Nature Conservation Board (1998 - 2006)<br>• External Lecturer at Cape Peninsula University of Technology (2003 - 2005)<br>• Director: Environmental Management at Cape Lowlands Environmental Services (2006 – 2010)<br>• Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Eco Impact (Pty) Ltd (2010 – to August 2019)<br>• Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Enviro-EAP (Pty) Ltd (September 2019 – to date) |
| **Professional membership, accreditations and courses** | • South African Council for Natural Scientists Professions Pri.Sci.Nat (Ecological Science)<br>• Riparian vegetation identification and health assessment. Internal Western Cape Nature Conservation short course presented by Dr C Boucher (Stellenbosch University) in 2000.<br>• SASS5 Aquatic Biomonitoring Training Course. 2 to 5 September 2013. Ground Truth Water and Environmental Engineering consultancy in partnership with the Department of Water Affairs.<br>• Workshop on “Section 21(c) and (i) Water Use Training: Understanding Watercourses and Managing Impacts to their Characteristics”. 10 May 2017. Presented by Dr Wietsche Roets of the Department of Water and Sanitation (Sub-Directorate: Instream Water Use). |
| **Summary of experience** | 1992: South African National Parks. Student at Bontebok National Park with management and monitoring actions related to the Breede River. |

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| | 1993 -1998: Free State Nature Conservation. Ecological management and monitoring actions related to the Gariep Dam, Orange and Caledon Rivers.<br>1998 -2006: CapeNature. Ecological management and monitoring actions related to the Berg River Estuary, Verlorenvlei, Lamberts bay's Jackalsvlei, Wadrift Soutpanne, Oliphant's River mouth, Rocherpan Nature Reserve, etc. Review and assessment of EIA applications, inclusive of Freshwater ecology. Did some site visits with Department of Water Affairs and Forestry (Hester Lyons) to confirm the presence of aquatic ecological features during EIA water use registration applications.<br>2006 to date: Cape Lowland Environmental Services, Eco Impact Legal Consultant and Enviro-EAP. Ecological (Freshwater and aquatic) Specialist input, assessment, monitoring and reports. |
| **Publications and assessment reports** | Just to name a few. Was involved in many Ecological Assessments, monitoring and inputs in EIA applications.<br>• Elandskloof Farm 475 Citrusdal Biodiversity Baseline Survey. August 2010. This Biodiversity Assessment Covering Terrestrial and Aquatic Aspects to Inform Decisions Regarding The Proposed Elandskloof Weir Flood Damage Project On Farm 475, In The Citrusdal Area.<br>• Cape Solar Energy Electricity Generation Facility. Farm 187/3 & 187/13 Kenhardt. Biodiversity And Ecological Baseline Survey. January 2011. (Included Terrestrial and aquatic ecological assessments and water use authorization applications)<br>• Prieska Photvoltaic Power Generation Project. Prieska Commonage Northern Cape. Biodiversity And Ecological Baseline Survey. July 2011. (Included Terrestrial and aquatic ecological assessments and water use authorization applications)<br>• Witteklip Erf 123 Extension, Vredenburg. Biodiversity Baseline Survey. Updated - October 2012 (Included Terrestrial and aquatic ecological assessments and water use authorization applications)<br>• Baseline Biodiversity Survey And Wetland Delineation for ECCA Holdings: Cape Bentonite Mine on Erf 1412 Near Heidelberg. Prepared for: Shangoni Management Services Pry (Ltd). October 2014.<br>• Freshwater Impact Assessment Laingsburg Flood Damage Repairs & Storm Water Infrastructure. 18 February 2016.<br>• Ecological Assessment for Swartland Municipality - Upgrades To Voortrekker/Bokomo Road And Voortrekker/Rozenburg Road Intersections and Upgrade to the Diep River Bridge, Malmesbury on A Portion Of Erf 327, Malmesbury (Road) Erf 1530, Diep River Bridge Crossing, and Erf 1528, Property South of Diep River where Road Widening and Turning Circle Will Be |

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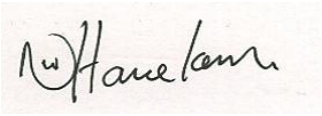
| | Constructed. March 2016. (Freshwater Ecology Inputs and Water Use Registration)<br>• Freshwater Impact Assessment. McGregor Bridge, Robertson Bridge and Willem Nels River Maintenance Management Plan. 24 June 2016. (Freshwater Ecology assessment and input as well as Water Use Registration)<br>• Water Use Authorization Application Risk Matrix. Orange Grove Trust Vegetation Clearing and Agricultural Development on Portion 4 of Farm Glen Heatlie No 316, Worcester. 12 June 2017. (Freshwater ecological inputs in EIA process and Water Use Registration).<br>• Water Use Authorization Application Risk Matrix Prepared For: Witzenberg Municipality Sand Mine Farm 1 Prince Alfred Hamlet. 28 March 2017. (Freshwater ecological inputs in EIA process and Water Use Registration).<br>• Proposed Hartmanshoop Agri Vegetation Clearing Project and Irrigation on Erf 686, Laingsburg. 12 August 2017. (Freshwater ecological inputs in Water Use Registration).<br>• County Fair: Hocraft Abattoir And Rendering Facility Waste Water Treatment Works "CF Hocraft WWTW" Mosselbank River Second Quarter 2018 Biomonitoring Report. June 2018. (Done quarterly biomonitoring for the last three years). |

## CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.



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