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

BIODIVERSITY OFFSET REPORT

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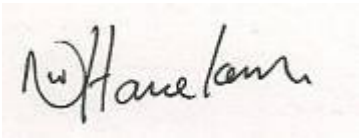
AUGUST 2025

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	**24 August 2025**
Signature of the ~~EAP~~/ Specialist:	Date:

Enviro-EAP (Pty) Ltd

Name of company (if applicable):

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Key Definitions

As indicated, biodiversity offsets are a relatively new concept in South Africa, and the definitions for various terms are also in flux. Key definitions relative to this report are outlined below regarding the National Biodiversity Offset Guidelines (DFFE, 2023).

"Biodiversity Offset" means the measurable outcome of compliance with a formal requirement contained in an environmental authorisation to implement an intervention that has the purpose of counterbalancing the residual negative impacts of an activity, or activities, on biodiversity, through increased protection and appropriate management, after every effort has been made to avoid and minimise impacts, and

rehabilitate affected areas;
"***Biodiversity Offset Implementation Agreement***" means a legally binding agreement that is entered into between the holder of an environmental authorisation and a third party, or third parties, for the implementation of a biodiversity offset;
*"**Biodiversity Offset Management Plan**"* means a plan setting out the management actions to be taken at a biodiversity offset site to achieve and maintain specific conservation outcomes in the long term.
"***Biodiversity Offset Report***" means a report prepared by a relevant specialist, or specialists, and submitted to a competent authority together with a basic assessment report, or environmental impact assessment report, setting out the findings of a biodiversity offset study;
*"**Biodiversity Offset Site**"* means a suitable area in the landscape which meets the offset requirements in an environmental authorisation and is secured for biodiversity conservation in the long term.
*"**Mitigation**"* means to avoid negative impacts, and where they cannot altogether be avoided, to minimise and remedy them, including through rehabilitation, restoration, and/or offsetting.
*"**Residual negative impacts**"* means negative impacts that remain after the proponent has made all reasonable and practicable changes to the location, siting, scale, layout, technology and design of the proposed development in consultation with the environmental assessment practitioner and specialists (including a biodiversity specialist), to avoid and minimise negative impacts, and/or rehabilitate and/or restore impacted areas within the prescribed timeframes specified for the completion of the rehabilitation in the EA;
"***Other Natural Area***" means an area in good or fair ecological condition (natural, near-natural or seminatural) that is not required to meet biodiversity targets for ecosystem types, species or ecological processes;
"***Rehabilitation***" means returning a disturbed, degraded or destroyed ecosystem to sustainable, productive use, with the emphasis on repairing ecological processes and ecosystem services;
"***Restoration***" means returning a disturbed, degraded or destroyed ecosystem to its natural condition, with the species present being representative of the ecosystem that occurred on the site prior to disturbance, and ecological processes supporting the long- term persistence of the ecosystem and species, and the associated ecosystem services, through active (with interventions) or passive (without interventions) means;

EXECUTIVE SUMMARY

In June 2023, the National Biodiversity Offset Guidelines (NBOG) were promulgated. Biodiversity Offsets is a measurable outcome of compliance with a formal requirement contained in an environmental authorisation to implement an intervention that has the purpose of counterbalancing the residual negative impacts of an activity, or activities, on biodiversity, through increased protection and appropriate management, after every effort has been made to avoid and minimise impacts and rehabilitate affected areas. The Applicant acknowledges that, as with any development project, the proposed development will result in the residual impacts to biodiversity. The site assessment considered offset implications. Consideration also needs to be given to how ratios are determined for development in the urban setting. Consideration should be given to approaches for determining biodiversity offset ratios for development in the urban environment. 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. 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 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

Other on-site mitigation proposed and included in the assessment and EMP are:

- Construction activities must be controlled to ensure that the adjacent vegetated areas are not negatively impacted.
- Undertake construction activities only in identified and specifically demarcated areas.
- Invasive vegetation to be removed during construction to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation.
- Search and rescue of plants must be done, alien invasive trees must be removed and non-developed and landscape areas must consists of indigenous vegetation.

Residual impacts were therefore calculated on the extent of vegetation that would be impacted by the development (Saldanha Limestone Strandveld ±144m^2, Saldanha Flats Strandveld ±14ha and Langebaan Dune Strandveld ±58.4ha with a total of 72.4 ha loss. Another ±2ha of degraded vegetation will be cleared). The offset target is then calculated by multiplying the residual impact by a ratio of 1:1 on ±72.4ha and 2:1 on ±144m^2 = total of ±72.5ha offset required (Saldanha Limestone Strandveld ±288m^2, Saldanha Flats Strandveld ±14ha and Langebaan Dune Strandveld ±58.4ha.

The offset ratio requirements were calculated as follows:
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.

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% (this include the existing conservation servitude of 26ha). The existing conservation servitude already in place contributed 0.45% to the conservation target of 24% = 1464.48ha.

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.

1. INTRODUCTION

This Biodiversity Offset Report is prepared in accordance with the National Biodiversity Offset Guidelines published in terms of section 24J of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). 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. 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 report is based on the information and development, specifically focusing on its potential impact on terrestrial biodiversity. The outcome of this report aims to investigate the impact significance proposed by the appointed terrestrial biodiversity specialist and determine whether the residual impact after the proposed mitigation has been implemented warrants a biodiversity offset.

1.1. Background & Competency

Nicolaas Hanekom is a suitably qualified biodiversity specialist 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 attended and obtained a certificate on Integrated Protected Area Planning at the Centre for Environmental Development, University of Kwa Zulu Natal. Nicolaas has lectured in two subjects at the Cape Peninsula University of Technology. He has 32 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 and where part of the CapeNature Stewardship Program for the West Coast Region which developed the Western Cape Biodiversity Offset Guideline in 2005. He specialises in conservation strategy, tactics and insight, primarily in the areas of water policy for catchment restoration, biodiversity offsets, land protection and stewardship.

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. The Significance of the Project

The specialist during the assessment confirmed that the vegetation on site that will be impacted are Saldanha Limestone Strandveld (CR), Saldanha Flats Strandveld (EN) and Langebaan Dune Strandveld (EN).

Residual impacts were therefore calculated on the extent of vegetation that would be impacted by the development (Saldanha Limestone Strandveld ±144m^2, Saldanha Flats Strandveld ±14ha and Langebaan Dune Strandveld ±58.4ha with a total of 72.4 ha loss. Another ±2ha of degraded vegetation will be cleared).

1.4. Site specific land use

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 a 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 proposed development will be done in phases:

- 749 Residential Zone 1 erven - ±51.5806ha
- General Residential Zone 1 (grouphouse). Total of 168 units - ±6.8237ha
- Open Space Zone 1 erven - ±84.4978ha
- 2 Business Zone 2 erven - ±1.0071ha
- Transport Zone 2: Roads - ±14.0582ha

The remaining area on the farm that was not included in the development and proposed offset area will stay agriculture.

1.5. Regional Biodiversity Context

The following section contains data accessed as part of the desktop assessment and is presented as a "dashboard" style report below (Table 1). The dashboard reports aim to present concise summaries of the data on as few pages as possible to allow for integration of results by the reader to take place. Where required, further discussion and interpretation is provided, and information that was considered to be of particular importance was emboldened.

Table 1 (a,b and c): Summary of the terrestrial conservation characteristics for the Study Area.

DETAILS OF THE STUDY AREA OF INTEREST IN TERMS OF THE 2018 FINAL VEGMAP OF SOUTH AFRICA, LESOTHO, AND SWAZILAND (SANBI, 2006-2018) ORIGINAL EXTENT OF VEGETATION TYPES	
Biome	The study area is situated within the Fynbos Biome.
Bioregion	The study area is located within the West Strandveld bioregion.
Vegetation Type	The study area is located in Endangered (EN) Saldanha flats Strandveld.
DESCRIPTION OF THE VEGETATION TYPE ASSOCIATED WITH THE STUDY AREA IN TERMS OF THE 2018 FINAL VEGMAP OF SOUTH AFRICA, LESOTHO, AND SWAZILAND (SANBI, 2018)	
Vegetation Type	Saldanha Flats Strandveld (Fs 3)
Climate	Mainly cyclonic rainfall varying from approximately 250 mm in the north to 380 mm in the south (overall MAP: 300 mm), almost exclusively in winter. Mean daily maximum and minimum temperatures 26.6°C and 7.9°C for February and July, respectively. Mean monthly maximum and minimum temperatures for Langebaanweg 36.5°C and 2.2°C for January/February and July/August, respectively. Advective sea fog and dew contribute to the moisture balance in summer and autumn. Frost infrequent. Strong southeasterly winds typical of the summer period, northerly winds more frequent in the winter months, especially between May and August.
Distribution	Western Cape Province: Extensive coastal flats from St Helena Bay and the southern banks of the Great Berg River near its mouth in the north to Saldanha and Langebaan in the south, with the southernmost extension at the coast near Yzerfontein and Rietduin. Altitude 0–120 m.
Conservation	Endangered. Target 24%. Some 11% statutorily conserved in the West Coast National Park and Yzerfontein Nature Reserve and a very small portion also in private conservation areas such as Jakkalsfontein and West Point. More than a half has already been transformed for cultivation, road building or by urban development. Serious alien infestation is caused by trees such as *Acacia cyclops* and *A. saligna* and herbs including *Bromus diandrus* and *Medicago hispida*. Erosion generally very low.
Geology and Soils	The main geology is shallow calcareous sand over a fossiliferous Pleistocene limestone hardpan layer along an old marine terrace. The hardpan of the Sandveld Group is exposed in places while farmers often rip the hardpan and accumulate rock piles in cultivated fields. The Sandveld Group overlies the Cape Granites as well as the Malmesbury Group metasediments into which the granites intruded. Dominant land type Hb (almost 50%), followed by Db and Ha.
Vegetation &	Sclerophyllous shrublands built of a sparse emergent and moderately tall shrub layer, with an open succulent

landscape features	shrub layer forming the undergrowth. With conspicuous displays of geophytes and annual herbaceous flora in spring.
Red List of Ecosystems (2022)	The Revised National List of Threatened Terrestrial Ecosystems list Saldanha Flats Strandveld with an endangered ecosystem status.
NBA (2018)	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%.
SAPAD (2022)[1]; SACAD (2022)[2]; NPAES (2018)	The existing conservation servitude of approximately 31ha as per the previous recommendations and EA conditions is the only area identified on the site. The site is not included in a NPAES, but link to the Yzerfontein Open Spaces which is a Yzerfontein Nature Reserve (Local).

DETAILS OF THE STUDY AREA OF INTEREST IN TERMS OF THE 2018 FINAL VEGMAP OF SOUTH AFRICA, LESOTHO, AND SWAZILAND (SANBI, 2006-2018) ORIGINAL EXTENT OF VEGETATION TYPES	
Biome	The study area is situated within the Fynbos Biome.
Bioregion	The study area is located within the West Strandveld bioregion.
Vegetation	The study area is located in Endangered (EN) Langebaan Dune Strandveld.

[1] SACAD (2022): The types of conservation areas that are currently included in the database are the following: 1. Biosphere reserves, 2. Ramsar sites, 3. Stewardship agreements (other than nature reserves and protected environments), 4. Botanical gardens, 5. Transfrontier conservation areas, 6. Transfrontier parks, 7. Military conservation areas and 8. Conservancies.

[2] SAPAD (2022): The definition of protected areas follows the definition of a protected area as defined in the National Environmental Management: Protected Areas Act, (Act 57 of 2003). Chapter 2 of the National Environmental Management: Protected Areas Act, 2003 sets out the "System of Protected Areas", which consists of the following kinds of protected areas - 1. Special nature reserves; 2. National parks; 3. Nature reserves; 4. Protected environments (1-4 declared in terms of the National Environmental Management: Protected Areas Act, 2003); 5. World heritage sites declared in terms of the World Heritage Convention Act; 6. Marine protected areas declared in terms of the Marine Living Resources Act; 7. Specially protected forest areas, forest nature reserves, and forest wilderness areas declared in terms of the National Forests Act, 1998 (Act No. 84 of 1998); and 8. Mountain catchment areas declared in terms of the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970).

Type	
DESCRIPTION OF THE VEGETATION TYPE ASSOCIATED WITH THE STUDY AREA IN TERMS OF THE 2018 FINAL VEGMAP OF SOUTH AFRICA, LESOTHO, AND SWAZILAND (SANBI, 2018)	
Vegetation Type	Langebaan Dune Strandveld (FS 5)
Climate	Climate Mainly cyclonic rainfall varying from approximately 230 mm in the north to 355 mm in the south, almost exclusively in winter and accompanied by frequent and strong northwesterly winds and cooler temperatures. Mean daily maximum and minimum temperatures 26.1°C and 7.8°C for February and July, respectively. Mean monthly maximum and minimum temperatures for Cape Columbine 29.8°C and 6.1°C for March and July, respectively. Southeasterly winds prevail in summer. Fog and dew contribute to the moisture in summer and autumn (especially in the northern part of the unit). Frost an infrequent phenomenon.
Distribution	Western Cape Province: West Coast lowlands from Aurora to Rondeberg, just south of Yzerfontein, with an outlier in the Strandveld at Kleinberg north of Langebaanweg. Altitude 20–150 m.
Conservation	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).
Geology and Soils	Deep, acid, tertiary sands, generally grey regic sands, sometimes pale yellow to reddish brown. Land types mainly Hb, Ha and Db.
Vegetation & landscape features	Flat to slightly undulating old coastal dune systems and stabilised inland duneveld supporting closed, evergreen, up to 2 m tall, sclerophyllous shrubland with prominent annual herbaceous flora occurring in gaps (and forming spectacular displays, especially after good rain in late winter).
Red List of Ecosystems (2022)	The Revised National List of Threatened Terrestrial Ecosystems lists Langebaan Dune Strandveld with an endangered ecosystem status.
SAPAD (2022)[3];	The existing conservation servitude of approximately 31ha as per the previous recommendations and EA conditions is the only area identified on the site. The site is not included in a NPAES, but link to the Yzerfontein

[3] SACAD (2022): The types of conservation areas that are currently included in the database are the following: 1. Biosphere reserves, 2. Ramsar sites, 3. Stewardship agreements (other than nature reserves and protected environments), 4. Botanical gardens, 5. Transfrontier conservation areas, 6. Transfrontier parks, 7. Military conservation areas and 8. Conservancies.

SACAD (2022)[4]; NPAES (2018)	Open Spaces which is a Yzerfontein Nature Reserve (Local).

DETAILS OF THE STUDY AREA OF INTEREST IN TERMS OF THE 2018 FINAL VEGMAP OF SOUTH AFRICA, LESOTHO, AND SWAZILAND (SANBI, 2006-2018) ORIGINAL EXTENT OF VEGETATION TYPES	
Biome	The study area is situated within the Fynbos Biome.
Bioregion	The study area is located within the West Strandveld bioregion.
Vegetation Type	The study area is located in critically endangered Saldanha Limestone Strandveld.
DESCRIPTION OF THE VEGETATION TYPE ASSOCIATED WITH THE STUDY AREA IN TERMS OF THE 2018 FINAL VEGMAP OF SOUTH AFRICA, LESOTHO, AND SWAZILAND (SANBI, 2018)	
Vegetation Type	Saldanha Limestone Strandveld (FS 4)
Climate	Mainly cyclonic rainfall varying from approximately 250 mm in the north to 350 mm in the south, almost exclusively in winter (overall MAP is around 300 mm). Mean daily maximum and minimum temperatures 25.3°C and 8.0°C for February and July/August, respectively.
Distribution	Western Cape Province: Very limited area with a larger patch on the Kliprug ridge between Saldanha and Paternoster, with several smaller outliers including those between Saldanha and north of Club Mykonos on the Langebaan Lagoon. Unmapped are small outcrops at Yzerfontein and on the tip of Langebaan Peninsula. Altitude 20–120 m.
Conservation	Critically endangered
Geology and Soils	Shallow sandy soil on hardpan Tertiary limestone of the Sandveld Group. Dominant land types Fc and Hb.

[4] SAPAD (2022): The definition of protected areas follows the definition of a protected area as defined in the National Environmental Management: Protected Areas Act, (Act 57 of 2003). Chapter 2 of the National Environmental Management: Protected Areas Act, 2003 sets out the "System of Protected Areas", which consists of the following kinds of protected areas - 1. Special nature reserves; 2. National parks; 3. Nature reserves; 4. Protected environments (1-4 declared in terms of the National Environmental Management: Protected Areas Act, 2003); 5. World heritage sites declared in terms of the World Heritage Convention Act; 6. Marine protected areas declared in terms of the Marine Living Resources Act; 7. Specially protected forest areas, forest nature reserves, and forest wilderness areas declared in terms of the National Forests Act, 1998 (Act No. 84 of 1998); and 8. Mountain catchment areas declared in terms of the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970).

Vegetation & landscape features	Slightly undulating ridges and steeper coastal slopes supporting low shrublands built of low succulent-stemmed and deciduous, fleshy leaved shrubs in deeper soils. Patches of prostrate, succulent-leaved dwarf shrubs and annual or geophytic herbs occupy cracks or shallow depressions in the exposed limestone.
Red List of Ecosystems (2022)	The Revised National List of Threatened Terrestrial Ecosystems lists Saldanha Limestone Strandveld with a critically endangered ecosystem status.
SAPAD (2022)[5]; SACAD (2022)[6]; NPAES (2018)	The existing conservation servitude of approximately 31ha as per the previous recommendations and EA conditions is the only area identified on the site. The site is not included in a NPAES, but link to the Yzerfontein Open Spaces which is a Yzerfontein Nature Reserve (Local).

[5] SACAD (2022): The types of conservation areas that are currently included in the database are the following: 1. Biosphere reserves, 2. Ramsar sites, 3. Stewardship agreements (other than nature reserves and protected environments), 4. Botanical gardens, 5. Transfrontier conservation areas, 6. Transfrontier parks, 7. Military conservation areas and 8. Conservancies.

[6] SAPAD (2022): The definition of protected areas follows the definition of a protected area as defined in the National Environmental Management: Protected Areas Act, (Act 57 of 2003). Chapter 2 of the National Environmental Management: Protected Areas Act, 2003 sets out the "System of Protected Areas", which consists of the following kinds of protected areas - 1. Special nature reserves; 2. National parks; 3. Nature reserves; 4. Protected environments (1-4 declared in terms of the National Environmental Management: Protected Areas Act, 2003); 5. World heritage sites declared in terms of the World Heritage Convention Act; 6. Marine protected areas declared in terms of the Marine Living Resources Act; 7. Specially protected forest areas, forest nature reserves, and forest wilderness areas declared in terms of the National Forests Act, 1998 (Act No. 84 of 1998); and 8. Mountain catchment areas declared in terms of the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970).

1.6. Biodiversity Conservation Status

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. Of the four, Saldanha Granite Strandveld will not be impacted and are already included in the conservation servitude.

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.

Approximately 66 ha was Mapped CBA and 6ha as ESA.

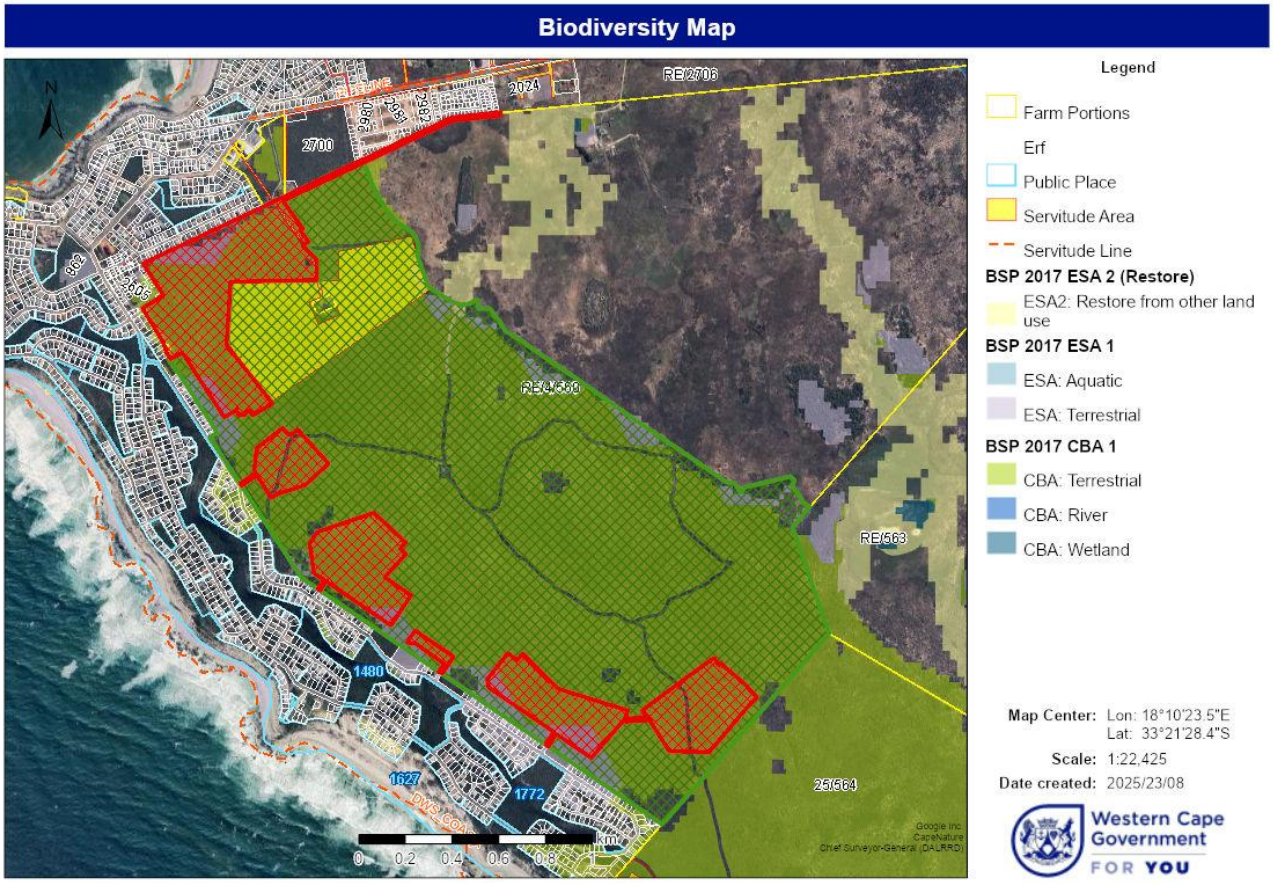

Figure 1: CBA Map

1.7. Existing and proposed conservation efforts

The existing conservation servitude of approximately 31ha as per the previous recommendations and EA conditions is the only area identified on the site. An additional 288 ha that was mapped as CBA that supports Species of Conservation Concern (SCCs) and the limestone fragments of Saldanha Limestone Strandveld which presents unique habitats given that they are essentially "islands" within a matrix of lowland vegetation of a completely different composition and structure will be protected.

2. SCOPE OF WORK

This report serves as a biodiversity offset study conducted with reference to the National Biodiversity Offset Guideline contemplated in section 24J of the National Environmental Management Act, 1998 (NEMA). Generally, it is recommended that the Biodiversity Offset Report be submitted together with the EIA Report to the Competent Authority (CA) before the legislated timeframes for the EIA phase lapse. This is crucial when the CA has decided to grant Environmental Authorisation (EA) for an activity or activities, subject to the condition that a biodiversity offset is implemented.

This report acts as a draft Biodiversity Offset Report, where residual impacts and associated offset targets are calculated with reference to available biodiversity offset guidelines). The report will then be included as an Addendum in the Draft Environmental Impact Assessment report for comment. The comment received through this interaction will then be used as a basis for refining and finalising the Biodiversity Offset Report.

The primary purpose of this Biodiversity Offset Report is to provide specific and actionable recommendations to compensate for the negative residual impacts of the proposed developments on biodiversity. Key aspects addressed explicitly in this plan include:

- A review of the ecological context and the biodiversity significance of the sites.
- An overview of offset policies and guidelines relevant to this application.
- An examination of measures taken to enhance the application of the mitigation hierarchy.
- The quantification of residual impacts and the establishment of offset targets using best-practice guidelines.
- The selection of an offset site and quantification of potential offset contributions.
- A concise outline of recommended offset actions.

The Scope of Work as part of offset initiative comprised the following key components:

- Assess historical information, desk-based sources and the updated biodiversity studies undertaken on the site;
- Attend a meeting with relevant stakeholders to identify potential offset alternatives;
- Define the residual negative impacts on biodiversity and species of conservation concern within the proposed project footprint as well as immediate surroundings, and define biodiversity offset requirements;
- Define the offset requirements based on the National Biodiversity Offset Guideline published in the Government Gazette No. 46088 on 25 March 2023 (NBOG) (2023) and the WCBOG (2015). Consideration was given to both the extent of CBA and ESA areas to be offset as well as the requirements of the ratio offset for CBA's to be generated in the proposed offset areas;
- The basic offset ratios and the specific offset requirements set out within the NBOG (2023), and WCBOG (2015) were also considered as the target and starting point;
- Based on the findings, both on-site and off-site options for biodiversity offsets were assessed;
- Biodiversity aspects highlighted that will affect the proposed offset areas included the confirmation of the loss of biodiversity (including CBA areas, ESA areas, habitat for species highlighted as SCC by the Department of Forestry, Fisheries, and the Environment (DFFE) screening tool;
- Engage with owners of the recipient areas of the offset to test willingness to enter into agreement on the offset;
- Present the final biodiversity offset quantum definition and alternative identification study for inclusion in the application for environmental authorization (EA); and
- Prepare a budget for the implementation of the proposed offset and compensation initiative.

3. TERM AND DURATION OF THE OFFSET

Due to the nature of the proposed development, and the related biodiversity offsets, it is important to ensure the long-term sustainability and viability of the offsets / compensation areas. In this regard, the proponent is obliged to ensure that the proposed offset areas are sustainably managed for the life of the project (defined as a 30-year period) and that these efforts are viable and sustainable "in perpetuity" (defined as 99 years) and that funding is provided for a lifetime (legally defined as 30 years).

4. INTRODUCTION TO BIODIVERSITY OFFSETS

4.1. Overview of Western Cape Offset Guidelines

The WCBOG was developed in 2005, revised in 2007 and updated in 2015. Land-intensive development poses a significant threat to the province's remaining biodiversity, and biodiversity conservation and essential ecosystem services must be prioritised. Biodiversity offset is vital for the Western Cape since the province contains exceptional biodiversity that is unique globally, and its ecosystems support socio- economic development and delivery of essential services such as the reliable supply of clean water, eco-tourism, and coastal protection (DEADP 2015). The objective of biodiversity offsets, through the development authorisation and associated EIA process, 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 (DEADP 2015). Spatial planning at all levels is essential for highlighting land conservation priorities and providing guidance on the spatial framework where economic development should occur. Such policies or plans inform the use of biodiversity offsets as an instrument for environmental management and provide a helpful tool to help meet provincial and national biodiversity targets (DEADP 2015).

Biodiversity offsets are considered the last resort option in a hierarchy of possible mitigation measures after taking steps to avoid and minimise significant negative impacts. Offsets may be considered to compensate for residual biodiversity impacts by securing priority habitat for biodiversity conservation in perpetuity and ensuring its effective management for a defined timeframe.

According to DEADP (2015), the trigger for biodiversity offsets is the significance of residual negative impacts of development, usually assessed during the EIA phase. When residual impacts on biodiversity are of moderate to high significance, offsets for biodiversity loss would be needed, while at low significance, there would be no need for biodiversity offsets. When residual impacts on biodiversity are highly significant, offsets cannot fully compensate for biodiversity loss. The proposed activities would likely lead to losing irreplaceable biodiversity or priority ecosystem services. In this case, the no-go alternative should be selected unless the need and desirability of the project are deemed to be overriding public interest, and there are no reasonable and feasible alternatives that could avoid or minimise impacts. Compensation for these impacts would be required in priority areas secured and managed for conservation.

According to DEADP (2015), the biodiversity offset system in the Western Cape is based on compensation in the form of a 'like or better' habitat, and in some instances, monetary compensation may be appropriate. Monetary compensation may comprise contributions to an accredited biodiversity conservation trust to acquire and manage priority habitats for biodiversity and/or provide funds to expand or manage publicly protected areas. In the Western Cape, offset requirements are linked to biodiversity targets to meet provincial and national biodiversity conservation obligations. Offsets are calculated by multiplying the measure of residual biodiversity loss by a basic offset ratio linked principally to the conservation status of the affected ecosystem:

- A 30:1 ratio for areas considered to be irreplaceable in terms of achieving biodiversity targets (e.g., Critical Biodiversity Areas) and for Critically Endangered ecosystems;
- From10:1 to 30:1 ratio for Endangered ecosystems;
- From 1:1 to 4:1 ratio for Vulnerable ecosystems; and
- No offset for 'least threatened' ecosystems.
- The WC Guideline on Biodiversity Offsets (2015) offset ratios for EN (1:1) and CR (2:1) ecosystems inside urban areas can potentially be reduced.

The area determined by the basic offset ratio is then adjusted by a range of context-specific considerations, including:

- The condition of the impacted habitat;
- The significance of residual impacts on threatened species;
- The significance of the residual impact on unique habitats;
- The significance of the residual impact on critical ecological corridors or process areas; and
- The significance of the residual impact on biodiversity underpinning ecosystem services with socio-economic or heritage value.

The long-term security of an offset is critical to achieving the intended benefits to biodiversity and supporting the sustainability of the development project. According to DEADP (2015), a careful offset design process must therefore be followed and should include the following:

- Measuring the residual negative impacts on biodiversity to determine an appropriate offset;
- Determining the most appropriate type of offset: 'like for like habitat', 'trading up' (where the habitat of a higher priority for biodiversity conservation than that affected by development is targeted as an offset) or monetary compensation;
- Determining the size and optimum location of the offset required to compensate for residual negative impacts on biodiversity;
- Checking the feasibility of securing offset site(s) and deciding on the best way to secure the offset: e.g., through the Stewardship Programme, conservation servitude, or as a donation to a statutory conservation authority (i.e., CapeNature or SANParks) or an accredited Public Benefit Organization; and
- Reaching in principle Agreement with landowners on the offset.

As the provincial biodiversity agency, the Competent Environmental Authority or

CapeNature, can call for biodiversity offsets during public participation in a Basic Assessment, Scoping or EIA process. In addition, they could comment on the proposed scope of specialist studies and the Terms of Reference for these studies (including offsets) and/ or on the adequacy of considering alternatives and proposed mitigation (including offsets) during the public participation stages (DEADP 2015).

Should the application for environmental authorisation be accepted conditional on an offset, then a detailed Offset Report and Offset Agreement would need to be prepared, together with an Offset Management Plan, providing details of how the offset site would be secured, financial requirements and provision, and implementation arrangements. CapeNature and the Competent Environmental Authority would need to review and accept these documents before the proposed activities could commence (DEADP 2015).

4.2. National Biodiversity Offset Guidelines

The NBOG (DFFE, 2023) is designed to give practical guidance on biodiversity offsetting in the environmental authorisation application process contemplated in NEMA.

The desired outcomes of biodiversity offsets as articulated in the NBOG are particularly relevant and aim to ensure the following:

- That biodiversity is secured long-term through protecting and appropriately managing ecosystems and species.
- Efforts to secure biodiversity in the long term contribute to the expansion of South Africa's protected area network and are focusing on areas identified as biodiversity priorities, with particular emphasis on the consolidation of priority areas and securing effective ecological links between priority areas.
- That ecological infrastructure and its services and benefits are maintained and, where necessary, restored.
- That the cumulative impact of the authorised activity, or activities, and land and resource use change does not –
    - result in the loss of irreplaceable biodiversity or jeopardise the ability to meet biodiversity targets;
    - lead to any ecosystem with a threat status of Vulnerable or Least Concern becoming Endangered, or any Endangered ecosystem becoming Critically Endangered;
    - Cause irreversible decline in the conservation status of species and the presence of special habitats; and
    - Cause significant loss in ecosystem services.

The NBOG recommend offset ratios for the preferred ecologically equivalent ('like-for-like') offsets.

The starting point for determining the size of a biodiversity offset is calculating an applicable ecosystem-based biodiversity offset ratio. A biodiversity offset ratio provides the area-based size of a biodiversity offset relative to the area of the residual negative biodiversity impact. Given that the focus is on ecosystems, the standard approach for

determining ratios is based on Ecosystem Extent, Ecosystem Protection Level (EPL) and Ecosystem Threat Status. It is also recommended that it is taken into consideration which type of biodiversity priority area the relevant area is classified as. This is to ensure that biodiversity priorities can still be met in areas that are CBA2s but were not selected because of ecosystem threat level.

Determining the basic offset ratio
The standard approach to determining a basic biodiversity offset ratio is based on biodiversity targets. Those targets are, in turn, based on Ecosystem Extent, Ecosystem Protection Level and Ecosystem Threat Status of the various ecosystem types identified in the ecosystem assessment conducted as part of the determination of ecosystems that are threatened and in need of protection in terms of the National Environmental Management: Biodiversity Act, 2004[7]. The proposed applicable ratios are listed in the look-up table, which is attached, marked **Annexure A** (NBOG 2023). The look-up table also sets out the rationale for the standard approach in greater detail and will be reviewed periodically and updated, if and when necessary.

The standard approach is shortly as follows:
1. If the Ecosystem Extent is less than or equal to 30%, the precautionary principle demands that a 30:1 ratio must be applied.
2. If the Ecosystem Extent is between 30 and 70%, the ratios provided for in the look-up table, which takes into consideration Ecosystem Extent and EPL, should be applied. The ratios in that range of Ecosystem Extent vary between 1:22 to 1:1 depending on the extent of the ecosystem remaining and how much of the relevant ecosystem type is protected.

Take into consideration the ecosystem threat status: it is recommended that the following ratios are applied for the different ecosystem threat statuses:
- Critically Endangered: 30:1.
- Endangered: 10:1.
- Vulnerable: 5:1.

'Like-for-better' biodiversity offsetting/ 'trading-up' Wherever possible, a 'like-for-like' biodiversity offset should be required and provided to ensure that residual negative impacts on the affected biodiversity features are appropriately compensated. In exceptional cases, targeting biodiversity of greater conservation concern (for example, ecosystems that have higher threat status than the impacted ecosystem, or areas of higher biodiversity priority as indicated in applicable systematic biodiversity plans), may be justifiable. Where such an approach of 'trading up' is being considered, a strong motivation should be provided for this choice (for example, when it can be shown that there are no suitable areas of the same or proxy habitat available). Such motivation should also show the relationship between the biodiversity offset site's biodiversity and impacted biodiversity.

[7] At the date of publication of this guideline, the latest such list was the one published under Government Notice No. 2747 in Government Gazette No. 47526 of 18 November 2022.

5. MITIGATION HIERARCHY ASSESSMENT

5.1. Introduction to the Mitigation Hierarchy

Best-practice dictates that offset investigations include a 'Mitigation Hierarchy Assessment' to determine what additional steps can be put in place before resorting to biodiversity offsets. An overview of the mitigation hierarchy is outlined here, followed by recommendations to strengthen existing mitigation measures to reduce negative impacts on biodiversity.

The protection of ecosystems and biodiversity generally begins with avoiding adverse impacts and, where such avoidance is not feasible, applying appropriate mitigation in the form of reactive practical actions that minimises or reduces impacts. Mitigation requires proactive planning that follows the mitigation hierarchy. The mitigation hierarchy's application is intended to avoid disturbance and/or loss of ecosystems, and where this cannot be avoided, to minimise, rehabilitate, and then finally offset any remaining significant residual impacts (Figure 2). The mitigation hierarchy is inherently proactive, requiring the ongoing and iterative consideration of alternatives in terms of project location, siting, scale, layout, technology, and phasing until the proposed development can best be accommodated without significant negative impacts on the receiving environment. In the case of sensitive ecosystems, where ecological impacts can be severe, the guiding principle should generally be "anticipate and prevent" rather than "assess and repair".

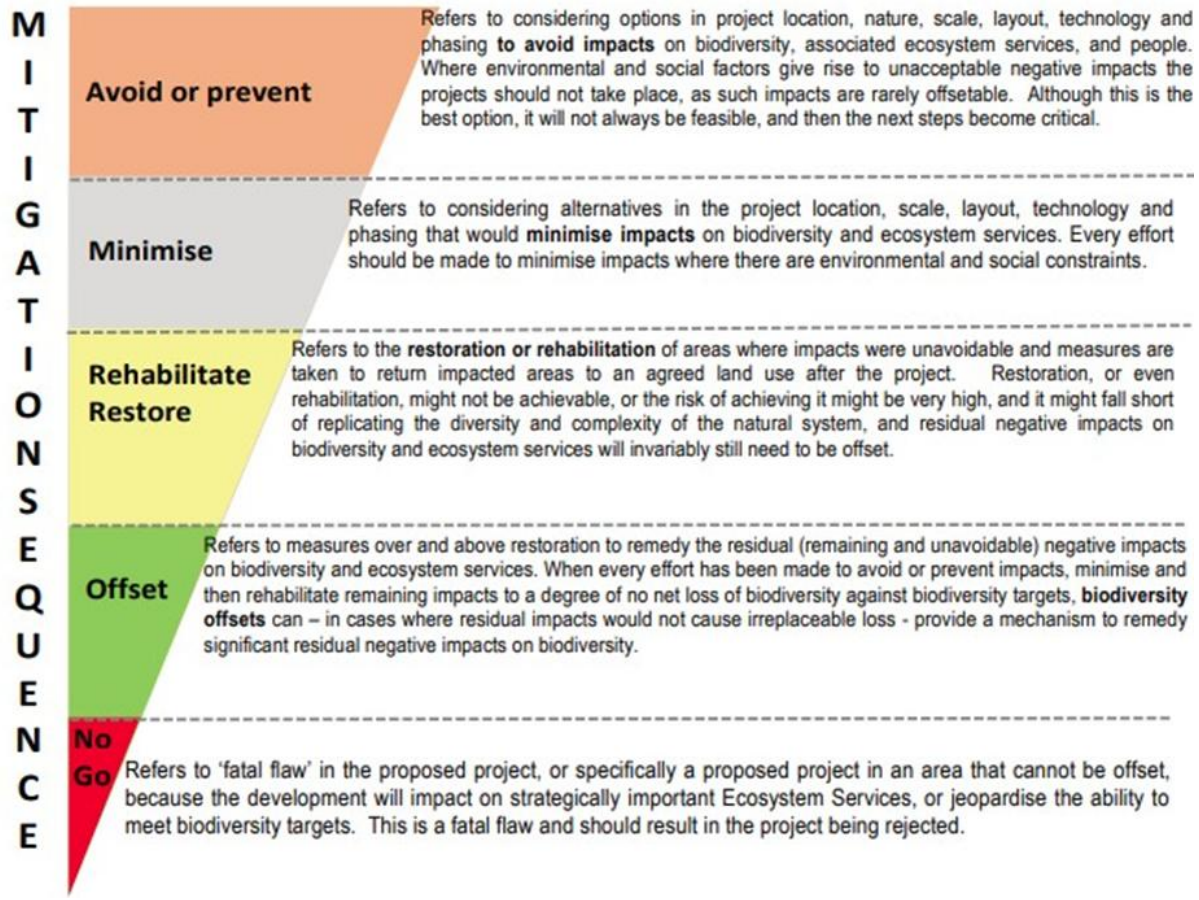

Figure 2: Mitigation hierarchy's application

6. TRADE OFFS AND BIODIVERSITY COMPENSATION

The NBOG (2023) defines 'ecological compensation' can as the outcome of measurable actions to protect, rehabilitate and manage priority biodiversity, aimed at compensating for residual negative impacts on biodiversity and ecological infrastructure but is not designed to counterbalance those impacts. Trade-offs should be approached with extreme caution in the context of environmental authorisation applications given that South African law demands a rational link between impacts on the environment and conditions of environmental authorisations directed at addressing those impacts.

The loss of irreplaceable biodiversity cannot be replaced by socio-economic benefits. The circumstances under which an activity, or activities, could be authorised when it is likely to have a negative impact on irreplaceable biodiversity – in other words, when it is fatally flawed from a biodiversity perspective-must be truly exceptional.

7. CONSIDERATION OF THE MITIGATION HIERARCHY

Taking the above findings into consideration, the proposed development was deemed necessary to explore the mitigation hierarchy to reduce impacts from the proposed

development. The way in which the mitigation hierarchy was approached for the project is summarised in the numbered list below:

- When residual negative biodiversity impacts are determined to be of medium or high significance, the implementation of a biodiversity offset becomes necessary. The Site Ecological Importance and sensitivity for the development areas was assessed to be high and medium so a biodiversity offset is applicable. The very high sensitive areas mapped will not be developed as they cannot be offset in terms of the mitigation hierarchy's. The offset area proposed is on a portion of portion 4 of farm no. 560, Yzerfontein.

8. BIODIVERSITY OFFSET REQUIREMENTS

Taking the above findings into consideration, the proposed development offset requirements were defined. Biodiversity offsets should be considered to compensate for residual negative impacts on biodiversity of 'medium' to 'high' significance (DFFE 2022).

8.1. Ecosystem Conservation

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 km2) 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%.

Langebaan Dune Strandveld is classified as Endangered B1(iii). 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).

Saldanha Limestone Strandveld is classified as 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% (this include the existing conservation

servitude of 26ha). The existing conservation servitude already in place contributed 0.45% to the conservation target of 24% = 1464.48ha

8.2. Species of Conservation Concern (SCC)

According to Keet (2025), a total of 156 plant species were recorded during the surveys of the study area. This is a significant amount for such a short period or surveying, given that iNaturalist (a popular online citizen science platform) records for the area total just under 320 species (when filtering "Research Grade" quality records). The most commonly recorded species were *Asparagus capensis var. litoralis, Euclea racemosa subsp. racemosa, Euphorbia burmannii, Limonium peregrinum, Nenax hirta subsp. calciphila, Osteospermum moniliferum subsp. moniliferum, Pteronia divaricata, Putterlickia pyracantha*, and *Searsia glauca*. Each of these species occurred in more than half of all the plots. Furthermore, a total of 19 Species of Conservation Concern (SCC) were recorded, 10 of which are threatened (i.e., have an IUCN redlist status of Critically Endangered, Endangered, or Vulnerable). Most of these SCC occur within Saldanha Limestone Strandveld vegetation or sand fynbos (specifically the Hopefield Sand Fynbos areas within the study area). Furthermore, while their general localities are given by figure 3, it should be noted that not every single individual of each plant SCC were recorded (which would be near impossible for those that occur in large abundances). Their localities are thus intended to serve as a general guide only.

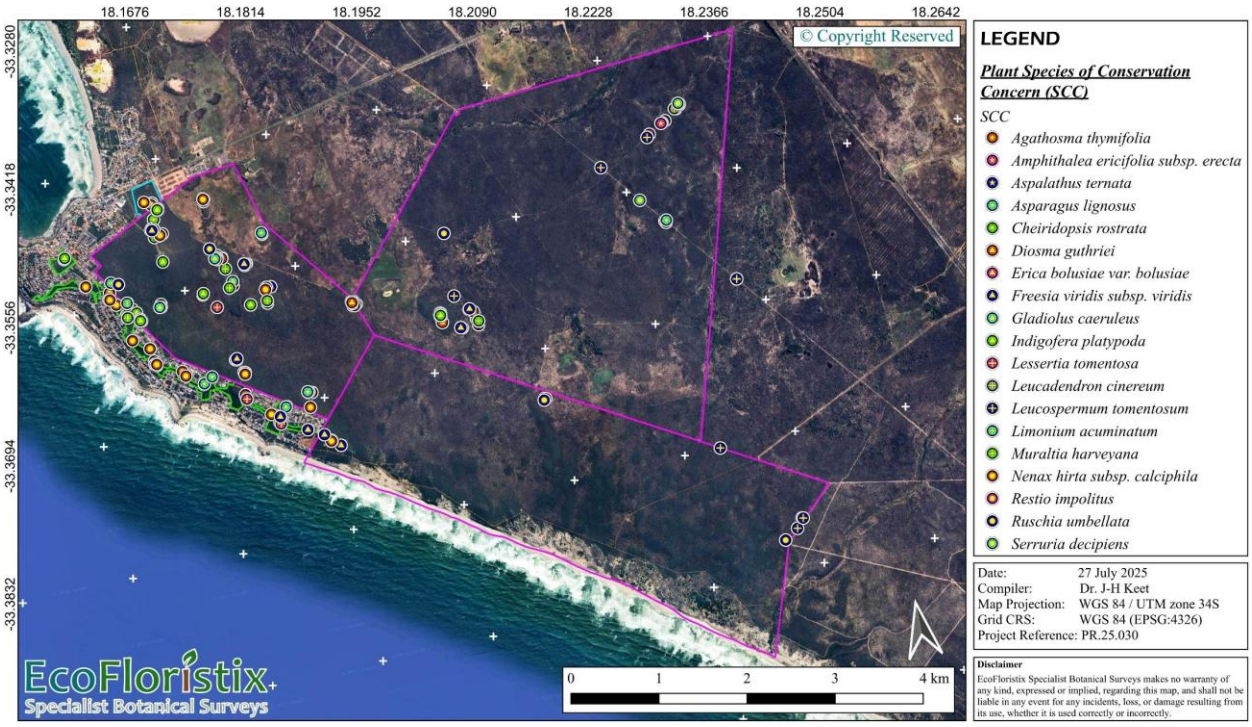

Figure 3: Plant Species of Conservation Concern Map

9. PRELIMINARY OFFSET ALTERNATIVES

With the identification of offset initiatives, it is important to identify alternatives that are the

most similar to habitats that will be lost, to ensure that the alternatives would eventually compensate for the ecoservices and ecosystem conservation value as determined above.

Monetary compensation can include contributions to an accredited biodiversity conservation fund, revolving land trust or dedicated offsets fund, for the purpose of acquiring and managing additional priority habitat, or provision of finance for the expansion or management of public protected areas. This type of offset is attractive and relatively simple for the developer and effectively removes any responsibility for identifying and securing appropriate offsets in the landscape. However, it does place an additional burden on those institutions and organisations responsible for biodiversity conservation in the province to undertake these tasks; a burden that – depending on the capacity of these bodies – may be inappropriate and thus undesirable and unsustainable. Additionally, challenges pertaining to the agreement on the quantum of financial contribution to compensate for loss on both an initial capital level as well as for ongoing management and maintenance may be experienced, as well as potential mismanagement of funds and wasteful expenditure by the target offset site management leading to no net gain or improvement in target habitats or CBAs. Thus, whilst funding alone may be an 'attractive' option to the party requiring the offset, and may have its advantages, it is largely not considered to be an appropriate offset mechanism in isolation, although the competent authority may require that such compensation takes place in addition to the biodiversity offset, given the significance of anticipated impacts associated with this project. This alternative is feasible but not considered.

To compensate and mitigate the loss of the approximately 72ha on site, an offset of 288.34ha (Saldanha Limestone strandveld ± 41.24ha, Saldanha flats strandveld ± 149.91ha and Langebaan Dune Strandveld ± 97.19ha) mapped as CBA and located on the edge of the development inside and outside the urban edge, which is a like for like offset and in terms of the NBOG (2023) and WCBOG (2015).

10. BIODIVERSITY OFFSET DETERMINATION

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[8]. 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

[8] Page 15 of the National Biodiversity Offset Guideline, 2023

activity, or activities, on biodiversity.[9] 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. 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%).

[9] Page 37 of the National Biodiversity Offset Guideline, 2023

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% (this include the existing conservation servitude of 26ha). The existing conservation servitude already in place contributed 0.45% to the conservation target of 24% = 1464.48ha.

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 cumulative impact of the authorized activity, including authorization to develop with a condition of the recommended offset will not:

- result in the loss of irreplaceable biodiversity or jeopardise the ability to meet biodiversity targets;
- lead to any ecosystem with a threat status of Endangered ecosystem becoming Critically Endangered;
- Cause irreversible decline in the conservation status of species and the presence of special habitats; and
- Cause significant loss in ecosystem services

10.1. Offset options for further investigation

No further offset options and investigations are required.

10.2. Offset target host sites

An offset area of 288.34ha (Saldanha Limestone strandveld ± 41.24ha, Saldanha flats strandveld ± 149.91ha and Langebaan Dune Strandveld ± 97.19ha) mapped as CBA and located on the edge of the development inside and outside the urban edge was identified.

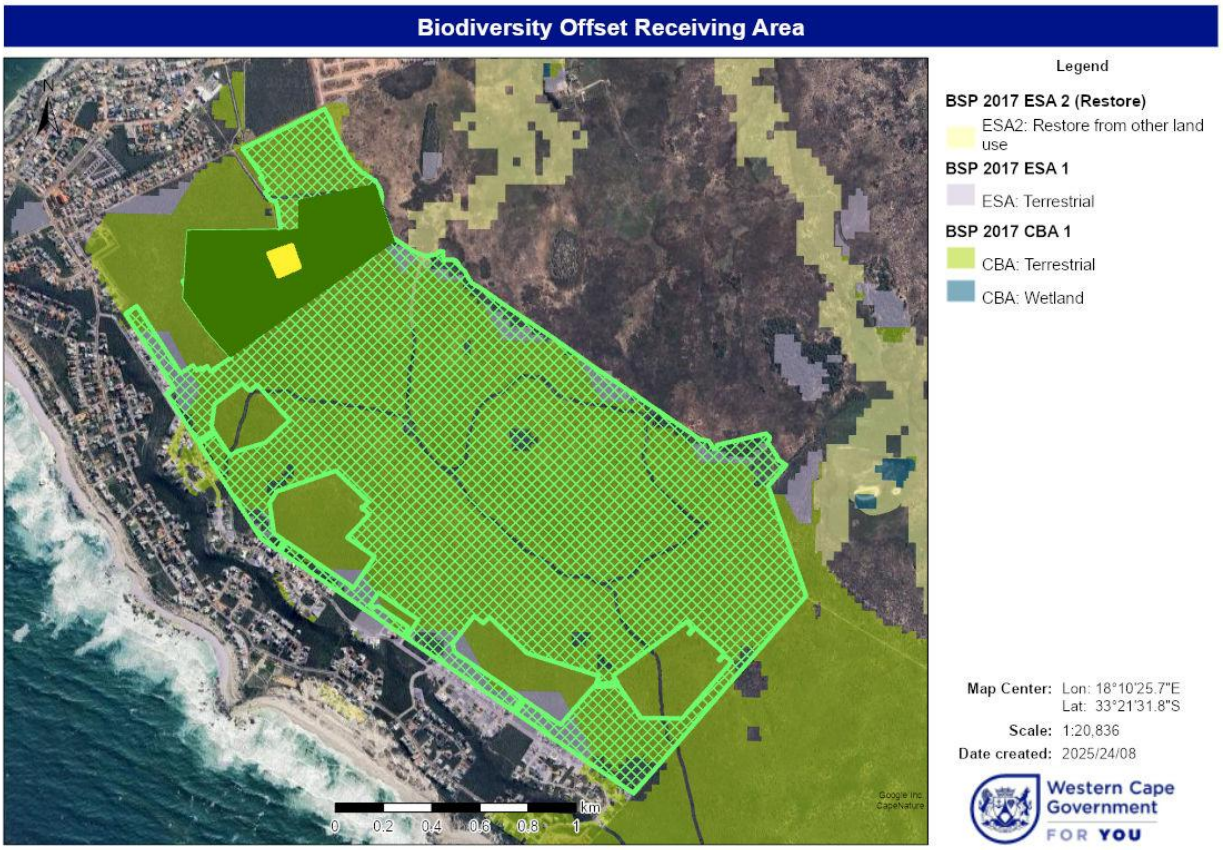

Figure 4: Visual representation of the proposed site to be offset indicated in light green polygon.

11. BIODIVERSITY OFFSET AND COMPENSATION INITIATIVE ASSESSMENT OF AVAILABILITY AND ADEQUACY OF ACHIEVED TARGETS

Approximately 0.0288m^2 of Saldanha Limestone Strandveld, 14ha of Saldanha Flats Strandveld and 58.4ha of Langebaan Dune Strandveld offset would be required.

Table 2 (a,b and c): Summary of critically endangered vegetation type, endangered vegetation type and vulnerable vegetation type, Critical Habitat losses, requirements, and achievements from the offset program.

ON SITE FOR WHICH OFFSET IS REQUIRED (AREA TO BE LOST AS A RESULT OF THE DEVELOPMENT)					
	Saldanha Limestone Strandveld	**CBA**	**ESA**	**Total Extent**	**Offset ratio**
Areas within development footprint	0.0144m^2	0.0144m^2	4.3ha	0.0144m^2	
Identified offset receiving area	41.24ha	41.24ha	0ha	41.24ha	±41:1

ON SITE FOR WHICH OFFSET IS REQUIRED (AREA TO BE LOST AS A RESULT OF THE DEVELOPMENT)					
	Saldanha Flats Strandveld	**CBA**	**ESA**	**Total Extent**	**Offset ratio**
Areas within development footprint	14ha	14ha	0ha	14ha	
Identified offset receiving area	149ha	149ha	0ha	149ha	±11:1

ON SITE FOR WHICH OFFSET IS REQUIRED (AREA TO BE LOST AS A RESULT OF THE DEVELOPMENT)					
	Langebaan Dune Strandveld	**CBA**	**ESA**	**Total Extent**	**Offset ratio**
Areas within development footprint	58ha	52ha	6ha	58ha	
Identified offset receiving area	97.19ha	97.19ha	0ha	97.19ha	±2.6:1

12. ADDITIONAL CONSERVATION ACTIONS

None additional conservation actions.

13. BIODIVERSITY OFFSET IMPLEMENTATION PLAN

The section below outlines the activities required for implementation of the biodiversity offset implementation plan.

13.1. General Management and guiding principles

Following on from the evaluation of the proposed recipient areas in terms of the ecological condition of the biodiversity areas therein, as well as determining the extent and suitability of these natural resources, an Implementation Plan must developed to guide the practical application of the Biodiversity Offset. This Implementation Plan is applicable to general area and veld management and includes alien and invasive plant (AIP) control measures. Budgets to implement the monitoring procedures, and auditing requirements have also been defined. This section thus aims to guide the practical roll out and implementation of the proposed Biodiversity Offset.

The Implementation Plan provides a technical framework to all parties involved in the roll-out, practical implementation and authorisation process of the proposed Biodiversity Offset.

13.2. Institutional Arrangements

Implementation of the offsets needs to take place within a well-structured governance framework that clearly defines roles, responsibilities, targets and outcomes, as well as the source and use of finances and processes for decision making and reporting. This section aims to define the most appropriate processes and mechanisms to facilitate and support the various role-players in undertaking their responsibilities in a transparent and efficient manner. The options discussed in this section therefore aim to utilize the most appropriate organizations in terms of their mandate, skills and capacity for undertaking specific aspects of offset implementation, building on existing initiatives and relationships.

CapeNature does not have the capacity to be the implementing agent. It is proposed that the conservation area appoint a suitably qualified conservation manager on a contract bases to ensure that the implementation of the conservation management in terms of the management plan be implemented.

13.3. Funding Model and Sources of Funding

The following framework for costing of offset liabilities, in line with the National Guideline were used. The cost of an offset in this instance will have four components:

- Declaration fees - to cover the costs of declaration. These costs are typically around R120 000.
- Contingency Management fees - covering the costs of unanticipated management events. This will be based on 5 years' worth of management costs. (see below).
- Upfront establishment costs, to get the site ready for incorporation into the stewardship agreement. This will be determined once the offset receiving area(s) has been finalised, and a property operational plan is drawn up (which serves the purpose of the biodiversity offset management plan, as per the National Guideline).
- Management costs. The 2025 management rate/fee of **R1258/ha** (**R 406 334/annual budget**) per year was used. This costing is based on the activities outlined in the management plan. It will need to be adjusted annually, for inflation, for the duration of the agreement (being 30 years).

13.4. Roles and Responsibilities on the Ground

The following roles and responsibilities are considered applicable to this Implementation Plan and associated management actions, and are provided for guidance:

13.4.1. Proponent

The proponent must ensure sufficient funding for the implementation and long-term management requirements as stipulated in this offset plan. These management fees were calculated using the management rate/fee for West Coast National Park as guidance, which is R1258/ha per year for 2025, plus yearly inflation escalation. The proponent will pay the management fees yearly into a dedicated fund specifically set up for this conservation area.

13.4.2. Implementing Agent

It is proposed that the conservation area appoint a suitably qualified conservation manager on a contract bases to ensure that the implementation of the conservation management in terms of the management plan be implemented. The collaboration with the Yzerfontein Urban conservancy and Yzerfontein Local Authority nature reserve is considered as an option.

13.4.3. Audit

Will be externally audited in terms of the conservation area management plan.

14. CONCLUSION

In June 2023, the NBOG were promulgated. The Applicant acknowledges that with the development there will be environmental losses and impacts on the environment. The basic offset ratios and the specific offset requirements set out within the NBOG (2023), and WCBOG (2015) were also considered as the target and starting point of 1:1 for endangered vegetation and 2:1 for critically endangered vegetation. Approximately 0.0288m^2 of Saldanha Limestone Strandveld, 14ha of Saldanha Flats Strandveld and 58.4ha of Langebaan Dune Strandveld offset would be required using the basic rate above.

A like for like offset receiving area of 288.34ha (Saldanha Limestone strandveld ± 41.24ha, Saldanha flats strandveld ± 149.91ha and Langebaan Dune Strandveld ± 97.19ha) mapped as CBA and located on the edge of the development inside and outside the urban edge was identified as offset receiving area which exceeds the basic offset ratios of 1:1 for endangered vegetation and 2:1 for critically endangered vegetation.

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.

15. REFERENCES

Keet J-H. (2025). Botanical survey to identify Saldanha Limestone Strandveld on farms Yzerfontein 560 (partly), Tygerfontein 564, Coffee Fontein 563, Plot 2717, and the green corridors within Yzerfontein, Western Cape