LORNAY
ENVIRONMENTAL CONSULTING

# BIODIVERSITY OFFSET APPLICABILITY ASSESSMENT

Portion 2 of the Farm 711, Gansbaai

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# 1. INTRODUCTION

## 1.1. Background to the project

Lornay Environmental Consulting has been appointed by Aqunion (Pty) Ltd, hereafter referred to as "the applicant," to apply for Environmental Authorisation in accordance with the National Environmental Management Act (NEMA, Act 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations (2014), as amended. The application pertains to the proposed expansion of an abalone farm located on Portion 2 of Farm 711 in Gansbaai.

The proposed expansion is approximately 6.9 ha within the larger 57.5 ha property. The proposed development will entail the construction of an additional production area, which will include additional abalone grow-out tanks, a seawater reservoir, four additional pipelines, and the establishment of a ground mounted solar power array. This expansion aims to increase the farm's annual abalone production by an additional 150 tons (wet weight), thereby enhancing its operational capacity to meet growing market demand. It is important to note that because the application is for the expansion of the existing operation, many of the locations for the expansion aspects are confined to specific areas on the farm in order to link into existing infrastructure and operational requirements. In addition to this, there are specific constraints relating to topography, where the design and placement of the expansion areas need to be specific in order to allow for the gravity feed of seawater across the farm.


**Figure 1**: Location of the study area

The preferred alternative layout design (Alternative 4) has evolved during the environmental impact assessment process and sees a reduction in footprint size, amongst others, to avoid and reduce impacts of the proposal. Compared to previous layout alternatives (Alternatives 1 and 2), Alternative 4 significantly reduces the proposed development footprint, thereby better addressing site-specific ecological constraints such as milkwood trees, CBAs and areas of high botanical sensitivity. This approach reflects a commitment to sustainable development and environmental stewardship.

The applicant already operates a successful abalone farm and is a significant revenue and job creator for the Overstrand area. In addition to this, Romansbaai Abalone Farm, as part of the Terrasan Group, is GLOBAL G.A.P accredited. This accreditation means that they conform to world-leading standards and advocate for safer and more sustainable farming worldwide. As a result of this accreditation, they undergo regular assessments and audits to ensure compliance with the various certification levels. Romansbaai and Aqunion's commitment to improved operations from social, environmental and economic perspectives, are evident in their day-to-day operations and performance indicators in their regular external audit regime.

In response to the findings of the Environmental Impact Assessment process, the Applicability of the National Biodiversity Offset Regulations and the implementation and mechanism thereof, requires investigation and is discussed herein.

This Biodiversity Offset Applicability Assessment has been compiled in accordance with the National Biodiversity Offset Regulations and provides a detailed information regarding the Regulations and consideration and or implementation thereof.

### 1.2. Role of this report

The aim of this report is to provide information regarding the applicability of the National Biodiversity Offset Regulations and the need for the implementation of a Biodiversity Offset in response to the proposed expansion on Portion 2 of the Farm No. 711, Gansbaai.

# 2. SITE SPECIFICS

Portion 2 of the Farm 711 is located within the demarcated urban edge of Gansbaai and is zoned for Agricultural Zone 1: Agriculture. It is currently operating as a successful and longstanding Abalone Farm in the area. The property is characterized by Overberg Dune Strandveld (EN) and lies within the broader Overberg Region. The proposed development, with the proposed footprint of approximately 6.9 ha, aims to minimise the impact of the proposed expansion as far as possible with an intent of operating in an environmentally sustainable manner. The site is classified as a greenfield area, with areas alongside the existing operations being disturbed by day-to-day operations. The botanical assessment highlights that the site has not been burnt for at least twenty years, the vegetation is grazed and fairly lightly trampled (in places) by game (eland, bontebok, springbok and zebra), and has a low density of invasive alien species (<0.5% cover of rooikrans and manitoka; *Acacia cyclops* and *Myoporum sp*.).


| | Description | Volume | Size (m²) |
|---|---|---|---|
| 1. | New production area / grow out | 150 tons / annum | 20000 |
| 2. | Lined seawater reservoir | 41 000 m³ | 8000 |
| 3. | Solar array | 4 MW | 40000 |
| 4. | Pumphouse expansion | | 140 |
| 5. | 4 additional pipelines | | 1200 |
| | | Total size | 69 340 (6.9 ha) |

**Figure 2**. Proposed site development plan.

## 2.1. Screening Tool Report

The Screening Tool Report has been generated in compliance with the Environmental Impact Assessment Regulations of 2014 (as amended) to assess the environmental sensitivity of the subject property and proposed development. The environmental sensitivities identified for the site are summarised in **Table 1** below.

**Table 1**: Summary of environmental sensitivities

| Theme | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|---|---|---|---|---|
| Agriculture Theme | | X | | |
| Animal Species Theme | | X | | |
| Aquatic Biodiversity Theme | X | | | |
| Archaeological and Cultural Heritage Theme | X | | | |
| Civil Aviation Theme | | X | | |
| Defence Theme | | | | X |
| Paleontology Theme | X | | | |
| Plant Species Theme | | | X | |
| Terrestrial Biodiversity Theme | X | | | |

In response to the above, the following specialists were appointed to assess the impacts associated with the proposed development:

- → Faunal Impact Assessment – Jan Venter
- → Heritage Impact Assessment (HIA) – Jonathan Kaplan
- → Visual Impact Assessment – Megan Anderson
- → Archaeological Impact Assessment – Jonathan Kaplan
- → Paleontological Impact Assessment – John Pether
- → Terrestrial / Plant species Impact Assessment – Nick Helme

The Cape Nature Spatial Biodiversity Plan (2017) indicates that the majority of the site is mapped as Other Natural Area (ONA) with a patch CBA and ESA. The botanist confirmed that the vegetation on site is classed as Overberg Dune Strandveld (En) and has not been burnt for at least twenty years. The area has been grazed and trampled in some places by game as well as day to day operations taking place on the property. About 90% of the total original extent of Overberg Dune Strandveld remains intact, approximately 36 % is conserved. The national conservation target for this vegetation type is also 36 % (Rouget et al 2004) and therefore is considered well conserved. The unit is known to support relatively few plants Species of Conservation Concern (Raimondo et al 2009). It is important to note that the most recent SANBI 2024 map, the vegetation type for the property has been updated and is now classified as Southwestern Strandveld, however, threat statuses have not been determined for the new vegetation types and therefore it is not possible to determine the offset ratios and calculation relative to the 2024 vegetation status. Note. The 2023 BSP came into effect in December 2024 after extensive project planning and public participation had been undertaken and as such the 2017 BSP is under herein.

**Assessment of the Alternatives:**

Three layout Alternatives and the No Go option were assessed in the Basic Assessment process, being Alternative 1, Alternative 2, Alternative 3 – No Go where the status quo remains, and Alternative 4 (preferred). The evolution of the alternatives occurred in response to the site constraints highlighted in the specialists' report. This further resulted to the refinement of the new preferred layout (Alternative 4). The mitigation hierarchy was also applied in the process of selecting the viable alternative option for the proposed development.

***Alternative 1***

This alternative layout proposes a larger development footprint of 9.6 ha with the significant loss of vegetation within CBA areas and areas considered as having high botanical sensitivity. Alternative 1 layout involves the phased construction of the expanded production area over 2 phases and 2 areas. The production area will cover an area of 3 ha in total divided into 1.5 ha for each phase with the targeted total production increase of 300 tons (wet weight) per annum. This layout was found to extend into areas which are marked as high botanical sensitivity areas.

This Alternative also included a seawater reservoir covering an area of 2 ha. The location of the proposed sea water reservoir is within the identified high botanical sensitivity zone. However, by virtue of its purpose, cannot be relocated elsewhere.

The proposal also includes the installation of a ground mounted solar array covering a total area of 4 ha. The installation of the solar array would not require full vegetation removal as it will be elevated off the ground approximately 1 m and therefore the impacts of this were not considered to be significant by the Terrestrial specialist.

To accommodate the expansion, four additional seawater pipelines are required. The pipelines will be located within the existing pipeline corridor and therefore anticipated impacts will be minimal as the area has already been impacted by existing operations and existing pipelines. This also applies to the proposed expansion of the existing pumphouse. The pumphouse will be expanded by 140 $m^2$ to accommodate the additional pumps and pipelines. It is important to note that the location of the expansion activities is not only guided by biophysical parameters, but considerations such as site topography and linking into existing operations, play a critical role in placement of the expansion areas. Together, these informed the evolution of the alternative layouts.

***Alternative 2***

Alternative 2 was previously preferred design layout for the proposed expansion, but due to identified site constraints and biophysical factors, this is no longer considered to be the preferred alternative. This layout option involves the same components along with the exact development footprint sizes, but different locations for the grow out platforms and solar array.

The construction of the sea water reservoir is as per Alternative 1 and will cover an area of 2 ha for the temporary storage of sea water during power outages or peak tariff periods. The location of the sea water reservoir is within highly botanical sensitive area. As provided by the specialist, the impact associated with the construction of the reservoir on 2 ha will contribute to total loss of vegetation and highest density of SoCC, being the most significant. The location of the reservoir, however, is constrained by topography and in order to operate, needs to be located at the highest point on the farm in order to allow for the gravity feed of water to the rest of the farm.

The location of the solar array in Alternative 2 is moved further south to reduce possible visual impacts and in an attempt to avoid some of the CBA area.

The additional pipelines and pumphouse and sump expansion areas are restricted to one area as outlined under Alternative 1.

***Alternative 3: No-go***

This alternative includes the assessment of the no development, no expansion option, where the status quo is maintained. While this option eliminates any negative environmental impacts, it also prevents the farm from the planned expansion and production increase, which could limit the business growth and long-term viability. The

applicant has identified the need for the expansion in response to market demand. It is important to note that the abalone sector is a significant, if not top, job creator and investor into the area and has a significant positive effect on the community.

***Alternative 4 (Preferred)***

Alternative 4 is the final preferred alternative, which evolved through a comprehensive assessment of the site conditions, site constraints and specialist input. Practical and existing conditions on site also inform this layout, as with the previous layouts. The key environmental considerations which influenced the layout design include the presence of sensitive botanical areas, the milkwood forest, and Critical Biodiversity Areas (CBAs). These factors played a pivotal role in shaping the layout and ensuring there is minimal disturbance on site.

Alternative 4 minimises expansion footprint from the previously proposed 9.6 ha to 6.9 ha. The footprint reduction comes about due to a significantly reduced reservoir size as well as a consolidated and smaller grow-out platform. The production output is also reduced from 300 tons to 150 tons into one production area.

## 2.2. National Vegetation Mapping

According to the Terrestrial and Plant species assessment conducted by Nick Helme, the site is originally classified as Overberg Dune Strandveld, now amended to Southwestern Strandveld. The botanist has confirmed that this new classification does not influence the assessment in any way. Since there is no conservation assessment data available on this vegetation type, the assessment follows the status in line with the Overberg Dune Strandveld.

Another important fact that must be taken into account for the Overberg Dune Strandveld is that almost 90 % of its total original extent remains intact and approximately 36 % is conserved, with the National Conservation target being 36 %. Therefore, it is evident that this vegetation is well protected and well represented in the area. In addition, it was noted that the unit is known to support relatively few plant Species of Conservation Concern (Raimondo et al. 2009).

The botanical sensitivity of the site is as shown in **Figure 3**. Two patches of High sensitivity have been mapped, which are mainly in the proposed PV area and the new reservoir footprint.

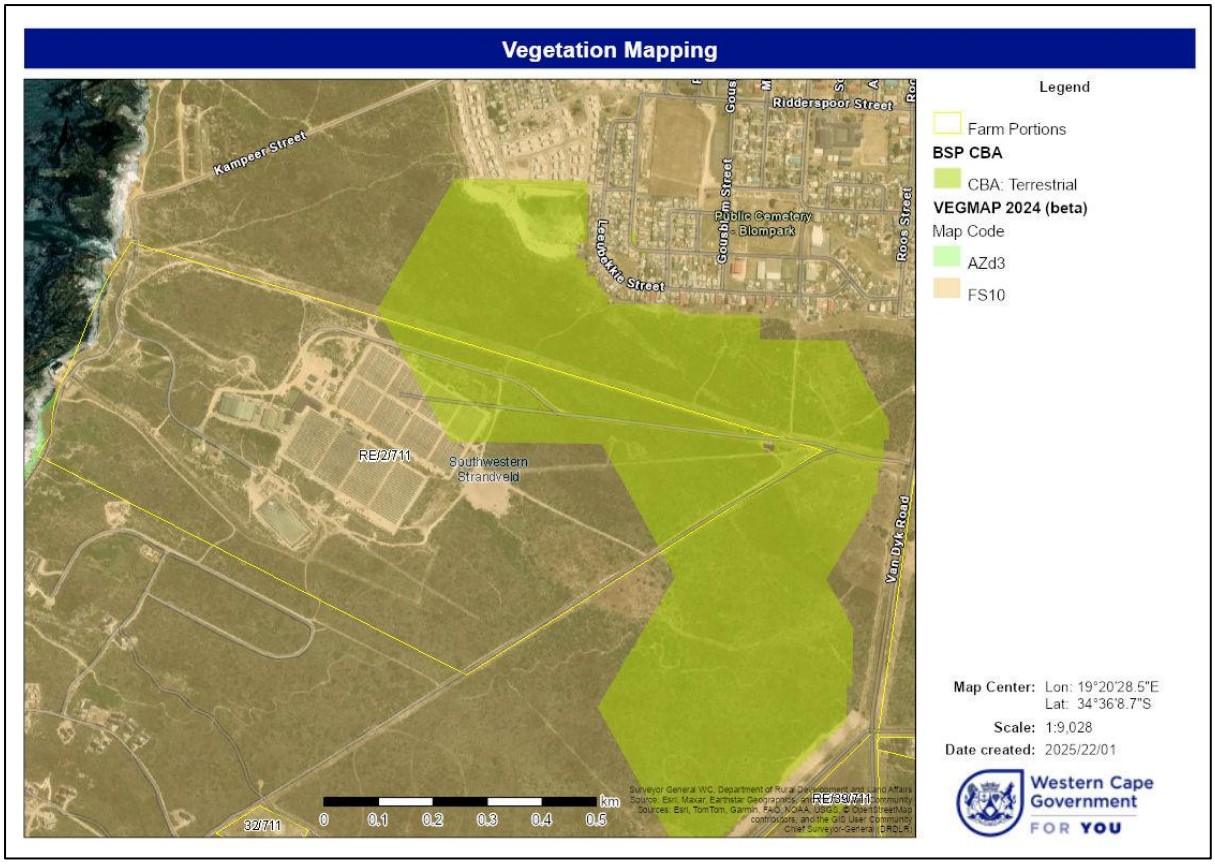


**Figure 3:** The vegetation composition and distribution on the property.

## 2.3. Western Cape Biodiversity Spatial Planning

The Western Cape Biodiversity Spatial Plan (WCBSP), 2017 serves as a crucial tool for guiding sustainable development and conservation efforts in the Western Cape. This plan is underpinned by a systematic biodiversity assessment that incorporates spatial data and ecological analysis to identify and prioritize areas essential for biodiversity conservation. The boundaries of the WCBSP align with administrative boundaries such as municipal and provincial jurisdictions, ensuring integration with spatial planning frameworks.

The primary purpose of the WCBSP is to provide a spatial representation of terrestrial and freshwater areas that are critical for preserving biodiversity patterns and maintaining ecological processes. These priority areas are categorized into two main types:

- Critical Biodiversity Areas (CBAs): These are areas that are essential for meeting biodiversity targets and maintaining ecosystem functioning. CBAs often include intact natural habitats that support unique species, rare ecosystems, or important ecological processes. Their conservation is a high priority to prevent biodiversity loss.

- Ecological Support Areas (ESAs): These areas play a vital role in supporting the ecological functioning of CBAs and maintaining landscape connectivity. While ESAs may not always contain high biodiversity value themselves, they are indispensable for enabling species movement, ensuring hydrological integrity, and mitigating the impacts of development on ecosystems.

*2.3.1. National Threatened Ecosystems*

The study area is part of the South Coast Fynbos bioregion (Mucina & Rutherford 2006), and is part of the Fynbos biome, located within what is now known as the Core Region of the Greater Cape Floristic Region (GCFR; Manning & Goldblatt 2012). According to the SA Vegetation Map the original natural vegetation in Portion 2 of the Farm No. 711 is all Overberg Dune Strandveld (Mucina & Rutherford 2018). This vegetation type is now gazetted as endangered. About 90% of its total original extent remains intact, about 36% is conserved, and the national conservation target is also 36%. Helme, (2024) argues that the vegetation type is known to support relatively few plant Species of Conservation Concern, most of which are threatened by habitat loss to urban development and alien invasive vegetation.

# 3. Specialist Investigation

## 3.1. Terrestrial Biodiversity / Botanical Assessment

The assessment involved the survey of the site with specific focus on the expansion areas. The assessment utilised National Vegetation map 2018 to identify the vegetation type on site. According to the SA Vegetation Map the original natural vegetation in the study area is all Overberg Dune Strandveld (Mucina & Rutherford 2018), recently renamed to Southwestern Strandveld. The Overberg Dune Strandveld vegetation is now gazetted as endangered on a national basis, however the newly named Southwestern Strandveld

The specialist assessment confirmed that the site has not been burnt for at least twenty years. In addition to this, it was noted that the vegetation is grazed and fairly lightly trampled (in places) by game (eland, bontebok, springbok and zebra), and has a low density of invasive alien species (<0.5% cover of rooikrans and manitoka; *Acacia cyclops* and *Myoporum sp*.), and most of it can thus be regarded as being in good condition.

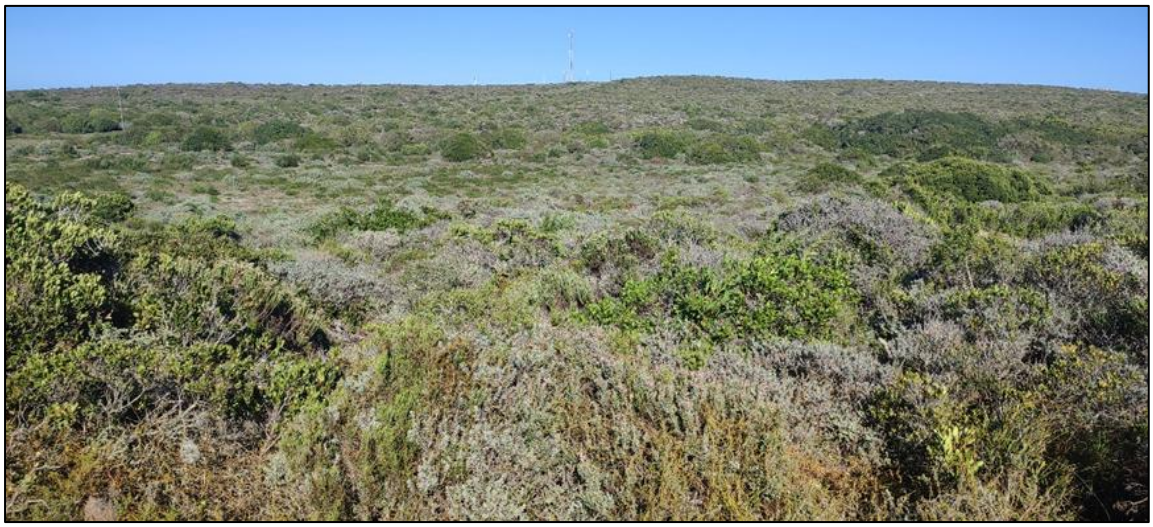

**Photo 1**: View of natural Strandveld vegetation in the area proposed for the PV facility, looking southwest. (***source*;** Helme, 2024).

**Photo 2:** View of disturbed, Low sensitivity Overberg Dune Strandveld in the proposed Phase 1 facility area, looking north towards the existing infrastructure. (***source***: Helme, 2024)

**Photo 3:** View of High sensitivity Strandveld vegetation in proposed dam area, looking west. (***source***: Helme, 2024).

**Photo 4:** View west along proposed pipeline route to existing pumpstation, with brushcut area to the right (north) of the fence.

According to Helme, (2024) the site photos reveal that the natural vegetation across most areas exhibit significant structural diversity, comprising a variety of tall shrubs, small trees, grasses, restios, and herbs. In addition to this, autumn-flowering geophytes such as *Brunsvigia, Oxalis*, and *Haemanthus* are present.

Indigenous species noted in the natural vegetation in most of the study areas include *Searsia glauca, S. laevigata, S. lucida, Anthospermum spathulatum, A. galiodes, Euclea racemosa, Pterocelastrus tricuspidatus, Thamnochortus insignis, Cynodon dactylon, Carpobrotus acinaciformis, Otholobium bracteolatum, Jordaaniella dubia, Ruschia sarmentosa, Restio eleocharis, R. calcicola, Helichrysum niveum, H. patulum, H. dasyanthum, Cassine peragua, Maytenus lucida, Lachenalia rubida, Ficinia ramosissima, F. indica, F. secunda, Schoenus arenicola, Chaenostoma subspicatum, Phylica ericoides, Metalasia muricata, Salvia aurea, Brunsvigia orientalis, Passerina paleacea, Satyrium carneum, Osteospermum moniliferum, Eriocephalus racemosus, Tetragonia fruticosa, Sideroxylon inerme, Roepera flexuosa, Geranium incanum, Muraltia satureoides, M. pappeana, Haemanthus coccineus, Brunsvigia orientalis, Chironia baccifera, Olea exasperata, Ehrharta villosa, Cineraria geifolia, Asparagus asparagoides, Rumex sagittatus, Oncosiphon suffruticosum, Pentameris pallida, Arctotheca calendula, Athanasia quinqedentata ssp. rigescens, Cassine peragua, Aspalathus hispida, Cotula pruinosa, Tephrosia capensis, Agathosma geniculata, Pelargonium betulinum, Massonia depressa, Solanum guineense, Ifloga repens, Babiana nana, Myrsine africana, Zaluzianskya villosa, Oxalis depressa and Trachyandra ciliata*.

Amongst the indigenous species of vegetation identified on site, there are at least five plant Species of Conservation Concern (SoCC) recorded on site, including *Athanasia quinquedentata ssp*. *Rigens* (VU), *Cynanchum zeyheri* (VU), *Muraltia pappeana* (NT), *Agathosma geniculate* (NT), *Lampranthus fergusoniae* (VU). The specialist further highlighted that all these species distribution around the property they have substantial and viable populations on the greater property, but their distribution and abundance vary from footprint to footprint. In addition to this, the specialist also notes that there is a moderate likelihood of one or two other plant SoCC being present on the various footprints. Rare local endemic species such as *Cliffortia anthospermoides* (Endangered) do not appear to be present on site and were actively searched for. *Erica irregularis* (Endangered) does not occur south of Gansbaai, although it is common at Grootbos. *Dasispermum grandicarpum* is an inconspicuous, low herb that grows annually from a rootstock (especially now, early in the season), and was until recently known only from Grootbos NR, but has now been recorded from Stanford to Gansbaai (pers. obs.). The species is Redlisted as Data Deficient, but it was not seen in the study areas.

**Table 1:** Distribution of the plant SOCC in the study areas. No SoCC were recorded in the pumpstation or pipeline areas. (***source***: Helme, 2024).

| **Species** | **Redlist Status** |
|---|---|
| *Athanasia quinquedentata* ssp. *rigens* | VU |
| *Cynanchum zeyheri* | VU |
| *Muraltia pappeana* | Near Threatened |
| *Agathosma geniculata* | Near Threatened |
| *Lampranthus fergusoniae* | VU |

*Athanasia quinquedenta ssp. rigens* is a shrub Redlisted as Vulnerable, and occurs in coastal sands over limestone from Gansbaai to Stilbaai. Scattered plants occur in three of the study areas.

*Agathosma geniculata* is a shrub Redlisted as Near Threatened, and occurs in coastal sands from De Kelders to Arniston. The species is common on three of the study areas.

*Muraltia pappeana* is a shrub Redlisted as Near Threatened, and occurs in coastal sands from De Kelders to Riversdale. The species is common throughout most of the study areas.

*Cyanchum zeyheri* (not flowering, provisional id) is a creeping shrub Redlisted as Vulnerable, and occurs in coastal sands and rocky areas from Saldanha to Agulhas, and is probably very overlooked. Scattered plants occur in three of the study areas.

*Lampranthus fergusoniae* is a vygie Redlisted as Vulnerable, and is found from Kleinmond to Knysna on coastal sands. Scattered plants occur in three of the study areas.

The botanical sensitivity of the site is as shown in **Figure 5** below. Two patches of High sensitivity have been mapped, which are mainly in the proposed PV area and the new dam footprint. Most of Phase 1 facility area is of Low sensitivity, and most of the Phase 2 facility area is of Medium sensitivity.

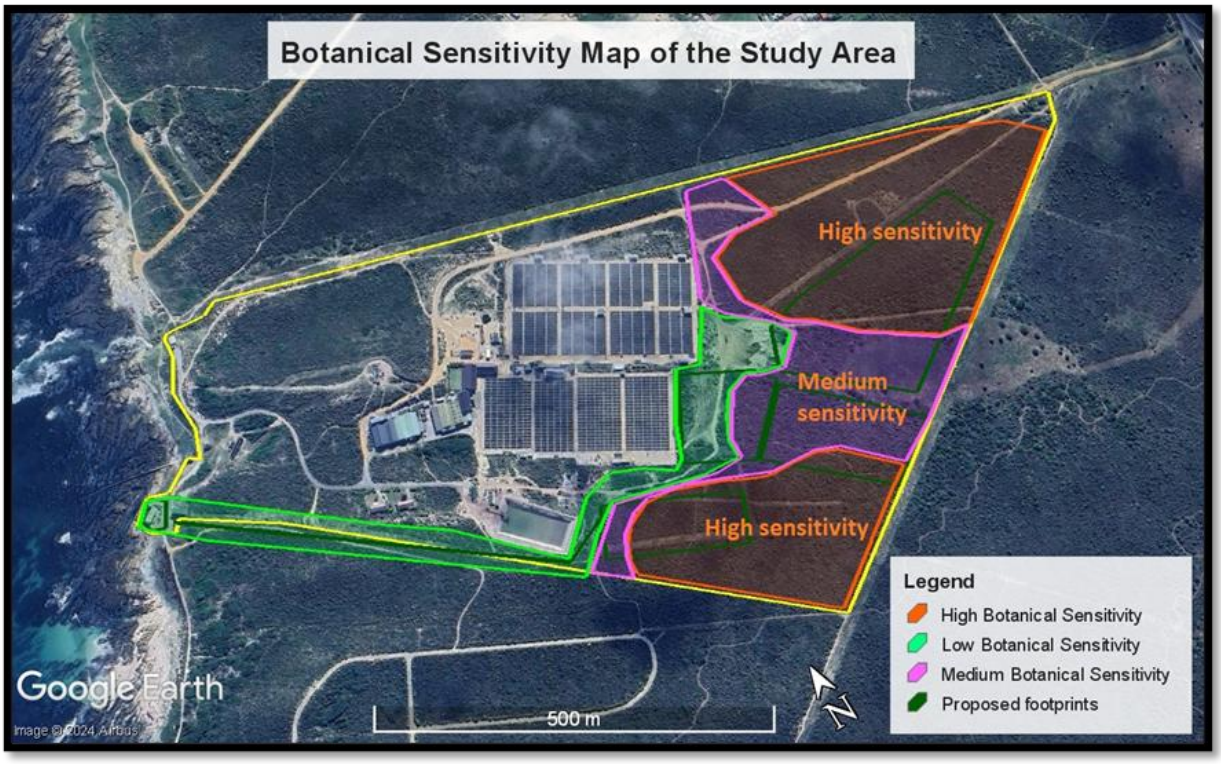


**Figure 5**: Botanical sensitivity map for the portion of the property with proposed development footprints (property outline in yellow).

The primary construction phase ecological impact of the proposed development would be loss of all Low, Medium and High sensitivity vegetation (gazetted as an Endangered vegetation type) in three of the five footprints, along with associated loss of the site populations of the five recorded plant Species of Conservation Concern in these areas. The areas which are identified to have a total loss of indigenous vegetation is the sea water reservoir and production phase areas. However, the significance of this impact has been reduced with the evolution of Alternative 4 and the reduced footprint, and the extent of the vegetation removal is significant less.

The specialist also highlights the impact of the proposed expansion that it will result in temporary loss and disturbance of vegetation in the Solar PV area and the pipeline corridor. In the PV area vegetation loss will be most significant for the larger, taller woody species, which will need to be brushcut down to less than 1m, whilst the lower growing species will actually benefit from the reduced canopy cover. Total vegetation loss in the PV area is not likely, as the applicant will ensure that vegetation cover is retained. The solar array, although ground mounted, will be raised, at least 1 m about ground level.

No vegetation loss is likely as a result of the pumphouse expansion.

### *3.1.2. Botanical comment re applicability of BO*

**The botanist provided the following concluding statement regarding the applicability of the Biodiversity Offset Regulations:**

The overall reduced botanical impact (Low to Medium negative, with the seawater reservoir being Medium negative) reduces the quantum of the possible biodiversity offset that may be required. The following section is adapted and updated from my November 2024 report:

This level of post mitigation botanical impact does potentially trigger a biodiversity offset requirement (Department of Forestry, Fisheries & the Environment. 2023), notably for the Phase 2 grow out area (Low to Medium negative impact) and the dam area (Medium negative impact) – a total footprint area of about 1.5ha (for Alternative 4). However, given that the vegetation type is relatively well conserved (100% of national target already set aside), at least on paper, no further land additions to the conservation of Overberg Dune Strandveld are advised, especially given CapeNature's management constraints.

Given that even the formally conserved areas of this vegetation type are under severe threat from invasive vegetation, such as in the nearby Walker Bay Nature Reserve (CapeNature), it is suggested that any biodiversity offset be in the form of funding for alien invasive plant management in these already declared but poorly managed conservation areas. A biodiversity offset specialist should calculate the appropriate quantum of the contribution, and this should ideally be enough to fund alien clearing operations in at least a 15ha area (Alt 4) in perpetuity (based on approx. 1.5ha footprint of Medium and High significance, at an offset ratio of 10:1 for Endangered habitats, as per offset guidelines, Department of Forestry, Fisheries & the Environment 2023).

## 3.2. Faunal Assessment

A Terrestrial Animal Site Sensitivity Verification Report and Compliance Statement was undertaken. Three broad habitat types were identified e.g. natural fynbos, short, disturbed fynbos 'pasture', and built-up areas.

***Habitat descriptions***

**Natural fynbos**

These areas are classified by natural Overberg Dune Strandveld in relatively good condition .Some areas associated with roads and farm infrastructure are degraded. Vegetation areas of high sensitivity have been identified by the botanist (Helme 2024). This habitat type could be considered ideal habitat for faunal species as its condition is relatively good. (See **Photo 5** of sites 1,2,3,4,5,6,7,8,10 &11 below).

**Short disturbed fynbos 'pasture'**

This habitat type is characterised by Degraded Overberg Dune Strandveld which seems to have been converted into pasture for utilisation of the Burchell zebra and bontebok that are present on the site .). This created open habitat with the presence of forbs and grasses not commonly associated with the surrounding natural vegetation. This habitat only covers about 2 ha of the property. See **Photo 9** below.

**Built up areas**

This is the habitat that is covered in existing operational infrastructure (buildings, roads, fences, abalone rearing ponds etc) associated with the abalone farming activities. These areas are kept clean of vegetation and pest control takes place. See **Photo 7** below.

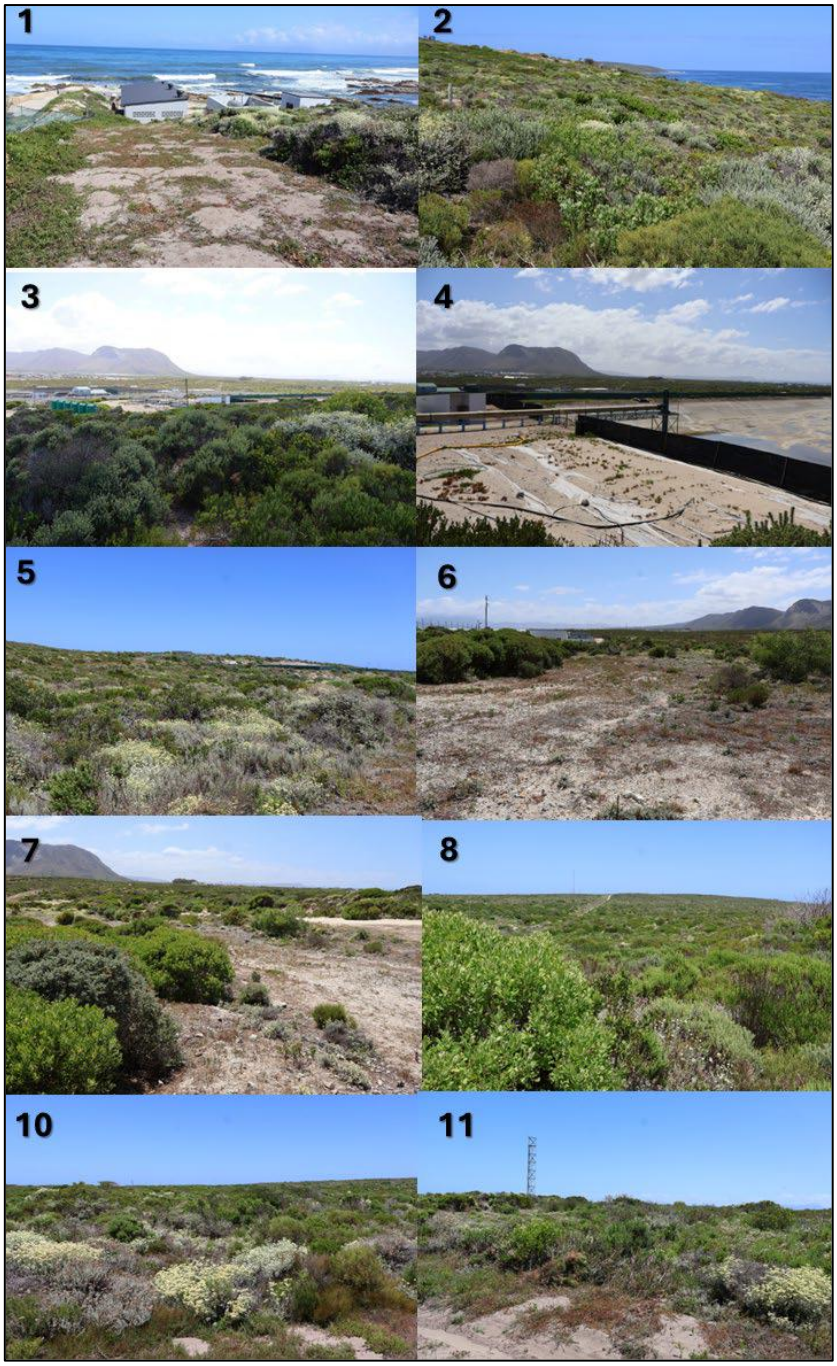


**Photo 5**: The habitats as described by the Faunal specialist . (***source***: Venter, 2024).

**Table 2:** Animal species observed during the field site visit. (**source**: Venter, 2024).

| | Common Name | Scientific name | Status | Built-up areas | Disturbed fynbos | Natural fynbos |
|---|---|---|---|---|---|---|
| **Birds** | African Pipit | *Anthus cinnamomeus* | LC | X | | |
| | Bokmakierie | *Telophorus zeylonus* | LC | X | | |
| | Cape Bulbul | *Pycnonotus capensis* | LC | X | | |
| | Cape Robin-Chat | *Cossypha caffra* | LC | | | X |
| | Cape Sparrow | *Passer melanurus* | LC | X | | |
| | Cape Spurfowl | *Pternistis capensis* | LC | X | X | X |
| | Cape Wagtail | *Motacilla capensis* | LC | X | | |
| | Cape Weaver | *Ploceus capensis* | LC | X | | |
| | Cape White-eye | *Zosterops virens* | LC | X | | |
| | Common Starling | *Sturnus vulgaris* | LC | X | | X |
| | Cape Turtle Dove | *Streptopelia capicola* | LC | | | X |
| | Familiar Chat | *Oenanthe familiaris* | LC | | | X |
| | Grey-headed Gull | *Chroicocephalus cirrocephalus* | LC | X | | |
| | Karoo Prinia | *Prinia maculosa* | LC | | | X |
| | Pearl-breasted Swallow | *Hirundo dimidiata* | LC | X | | |
| | Pied Crow | *Corvus albus* | LC | | | X |
| | Southern Fiscal Speckled | *Lanius collaris* | LC | | | X |
| | Mousebird | *Colius striatus* | LC | | | X |
| | Speckled Pigeon | *Columba guinea* | LC | X | | |
| | Spotted Thick-knee | *Burhinus capensis* | LC | | X | X |
| | Three-banded Plover | *Charadrius tricollaris* | LC | X | | |
| | Zitting Cisticola | *Cisticola juncidis* | LC | | | X |
| **Reptiles** | Angulate tortoise | *Chersina angulata* | LC | | | X |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Mammals** | Cape grysbok | *Raphicerus melanotis* | LC | | X | X |
| | Bontebok | *Damaliscus pygargus* | VU | | X | |
| | Burchell's zebra | *Equus quagga burchellii* | LC | | X | X |
| | Large grey mongoose | *Herpestes ichneumon* | LC | | | X |
| | Vlei rat | *Otomys irroratus* | LC | X | | |
| | Cape dune molerat | *Bathyergus suillus* | LC | | X | X |
| **Invertebrates** | Common opal | *Chrysoritis thysbe* | LC | | | X |
| | Grasshopper | *Euloryma sp. 1* | N/A | | | X |
| | Garden Locust | *Acanthacris ruficornis* | LC | X | X | X |
| | Black Cocktail ant | *Crematogaster peringueyi* | LC | | | X |

**Photo 6:** Degraded Overberg Dune Strandveld which seems to have been converted into pasture for utilisation of the Burchell zebra and bontebok that are present on the site (Photo site 9). (***source;*** Venter, 2024)

**Photo 7:** This is habitat that are covered in infrastructure (buildings, roads, fences, abalone rearing ponds etc) associated with the abalone farming activities. (***source***; Venter, 2024)

**Animal Species of Conservation Concern**

The screening tool report identified a total of 7 animal species of concern that may potentially utilise the site as their habitat. One additional animal species, Cape dwarf chameleon was also identified and added during the desktop study.

*Black harrier (Circus maurus)*

Specialist findings indicate a reasonable likelihood that the Black Harrier (*Circus maurus*) frequents the property for foraging purposes. However, the species was not observed during the site visit. The assessment concludes that the proposed development will result in an irreplaceable loss of foraging habitat for this species. The species range widely, and the minor loss of forage habitat could be tolerated. Furthermore, the development site does not significantly influence potential breeding sites for the species. The Black harrier *Circus maurus*, will therefore be negatively affected by loss of forage habitat but the development footprint is small. The proposed development and potential impact are therefore classified as 'low'.

*African marsh harrier (Circus ranivorus)*

The African Marsh Harrier (*Circus ranivorus*) was neither observed nor detected during the site survey. Specialists have concluded that the site is not suitable for this species, and there is a very low likelihood of its frequent use of the area. The African marsh harrier *Circus ranivorus*, will therefore not likely be significantly impacted by the proposed development and potential impact are therefore classified as 'very low'.

*Southern black korhaan (Afrotis afra)*

Most iNaturalist and GBIF records indicates several records in the open plain Renosterveld areas of the Overberg >60 km east of the property. The species was not observed during field visit and the habitat is considered not to be suitable for this species kind. The impact of the development on Southern Black Korhaan *Afrotis afra* by the proposed development is therefore considered to be 'very low'.

*Denham's bustard (Neotis denhami)*

Most iNaturalist and GBIF records indicates several records to the east of the property but more in the open plain areas of the Overberg where they frequent the more open agricultural fields. During site survey, the species was not observed on site. The habitat in the development site is not suitable for the species. The impact of the development on Denham's bustard*, Neotis denhami*, by the proposed development is therefore considered to be 'very low'.

*Southern Adder (Bitis armata)*

The species was not observed on site during site survey. the habitat is considered to be only marginally suitable habitat for this species because of a lack of any rocky substrate. There is a low likelihood that this species would occur at the site. The impact of the development on Southern Adder *Bitis armata*, by the proposed development will therefore likely be 'low'.

*Cape dwarf chameleon (Bradypodion pumilum)*

According to Venter (2024), several iNaturalist and GBIF records indicate the presence of *Bradypodion pumilum* near the development site, suggesting a likelihood of its occurrence within the area. However, the species was not observed during the site survey. Based on this, it is concluded that the habitat at the site is not considered optimal for the species' breeding and foraging requirements. It is likely that some of their habitat will be lost permanently and the disturbance during construction phase will have a negative impact. The adjacent land, that will remain undeveloped, do however provide adequate space for this species to escape and persist. The potential impact on Cape dwarf chameleon, *Bradypodion pumilum* is classified as 'low'.

*Mute Winter Katydid (Brinckiella aptera)*

No specimens were seen during a field visit. The proposed developments are classified as 'low' impact on *B. aptera*, due to 1) an absence of species data from this area, 2) no host plant records being available to link present vegetation to possible insect species occurrence, 3) no direct evidence of occurrence, 4) the limited size of the development relative to the surrounding vegetation and the species' regional occurrence and 5) the intactness of large areas of the type of vegetation that will remain unaffected by the developments (i.e., permitting movement through the landscape).

*Yellow-winged Agile Grasshopper (Aneuryphymus montanus)*

No specimens were seen during a field visit. The proposed developments are classified as 'low' impact on *A. montanus*, due to 1) an absence of species data from this area, 2) no host plant records being available to link present vegetation to possible insect species occurrence, 3) no direct evidence of occurrence, 4) the limited size of the development relative to the surrounding vegetation and the species' regional occurrence, 5) the intactness of large areas of the type of vegetation that will be unaffected by the developments permitting movement through the landscape and 6) the wide extent of occupancy of *A. montanus*.

# 4. BIODIVERSITY OFFSET POLICIES AND GUIDELINES

## 4.1 National Biodiversity Offset Guidelines

The National Biodiversity Offset Guideline has been published in terms of section 24J of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and must therefore be read together with the provisions of NEMA, including the national environmental management principles in section 2 of NEMA, as well as the Environmental Impact Assessment Regulations, 2014 (EIA Regulations).

The National Biodiversity Offset Guidelines must be used to determine the need for and the design of Biodiversity Offsets, as required. In this regard, a Biodiversity Offset is required if the residual impact after following the mitigation hierarchy is of medium significance or higher. The significance ratings should be determined in the specialist assessments.

The concept of Biodiversity Offsets has emerged as a critical tool in South Africa's approach to environmental management, especially in the context of sustainable development and conservation. Introduced over the past decade, Biodiversity Offsets aim to balance the impacts of development on natural ecosystems by providing a mechanism to compensate for biodiversity loss. The urgency for this approach arises from the increasing recognition of the need to protect natural environments that are increasingly threatened by contemporary development patterns.

According to SANBI (2019), South Africa is renowned for its exceptional biodiversity, characterized by high levels of endemism. The country is home to a remarkable array of plant and animal species found nowhere else on Earth, with nearly two-thirds of its plant species being endemic, largely linked to the unique Cape Floristic Region. This region, along with the country’s three recognized biodiversity hotspots, underscores South Africa's significance in global biodiversity conservation efforts (SANBI, 2019). Given this context, the implementation of biodiversity offsets becomes essential to mitigate the impacts of land-use changes and other anthropogenic activities that threaten these unique ecosystems.

According to the National Biodiversity Offset Guideline (2018), biodiversity is foundational not only to the health and well-being of people but also to economic activity and socio-economic upliftment. Biodiversity supports essential ecosystem services, such as clean water, air quality, food production, and climate regulation, which are crucial for human survival and development. The guidelines emphasize that maintaining biodiversity and ecological integrity is vital for sustainable economic growth and social equity.

Furthermore, the guideline highlights that biodiversity and ecological infrastructure elements play a significant role in fulfilling national development priorities. By integrating biodiversity considerations into development planning, South Africa can ensure that economic growth does not come at the expense of its unique natural heritage. The framework encourages developers to adopt a proactive approach to biodiversity management, involving rigorous assessments of potential impacts and the implementation of effective offset strategies when impacts are unavoidable.

Biodiversity Offsets serve as a mechanism to achieve “no net loss” of biodiversity by compensating for habitat destruction and species loss through the restoration, enhancement, or protection of biodiversity elsewhere. This can involve activities such as habitat restoration, the establishment of conservation areas, or the funding of biodiversity conservation initiatives that benefit the affected ecosystems.

## 4.2. Overview of Western Cape Biodiversity Offset Guidelines

The Western Cape Province has taken a leading role in biodiversity conservation by developing its own biodiversity offset schemes and guidelines, one of only two provinces in South Africa to do so, with the initiative launched in 2005 (Jenner & Balmforth, 2015). This progressive approach underscores the province's dedication to preserving its exceptional biodiversity, particularly its rich and unique flora, much of which exists outside formally protected areas. The region is renowned for its exceptional plant diversity, being part of the Cape Floristic Region, a global biodiversity hotspot that contains numerous endemic species. These species are not only unique to the Western Cape but also face threats from habitat loss, making the province a critical area for biodiversity conservation. However, the biodiversity in the province faces considerable threats due to extensive land-use practices. Agriculture, urban expansion, and mining activities have led to significant habitat loss and ecosystem degradation. According to the Western Cape Biodiversity Spatial Plan (2017), land conversion for these purposes has severely impacted many of the province's ecosystems, reducing their resilience and threatening the survival of numerous species, particularly those within ecosystems that are not formally protected. The Western Cape Biodiversity Spatial Plan (2017) highlights that many of these species and ecosystems are now confined to small, fragmented patches of natural habitat, which exacerbates their vulnerability.

To address these challenges, the Western Cape Biodiversity Offset Guidelines were established. These guidelines provide a structured framework for compensating biodiversity losses resulting from development activities, particularly when such losses are unavoidable despite efforts to prevent or mitigate environmental impacts. The objective of the biodiversity offsetting scheme is to ensure that development can occur in a sustainable manner while protecting critical biodiversity areas (CBAs) and ecological support areas (ESAs), which are essential for maintaining ecological processes and species movement across the landscape. The guidelines are rooted in the principle of no net loss of biodiversity, meaning that any residual impacts on biodiversity that cannot be avoided, minimised, or rehabilitated must be offset by conservation measures elsewhere. According to the Western Cape Biodiversity Offset Guidelines, offsets are only considered when all feasible measures to avoid and minimise impacts have been exhausted, and they should be implemented in areas of comparable biodiversity value, focusing on securing or restoring habitat that is of equal or greater conservation importance. The goal is to offset impacts in a way that not only compensates for the loss of biodiversity but contributes to the overall conservation objectives for the province.

WCBSP (2017) also emphasizes the importance of offsetting in areas that support critically endangered ecosystems, such as those found within the Western Cape, including lowland fynbos, renosterveld, and coastal dune systems. These ecosystems have experienced significant degradation and require urgent conservation action. The biodiversity offset guidelines require developers to account for the irreplaceability of these ecosystems and aim to ensure that offsetting contributes to the long-term protection and restoration of these vital areas.

Moreover, the guidelines encourage offsets to support broader ecological connectivity by linking existing protected areas or creating corridors that facilitate species migration and adaptation in response to environmental changes, such as climate change. This is particularly important for species in fragmented habitats that rely on connectivity for their survival.

The Western Cape's proactive use of biodiversity offsetting as part of its conservation strategy is crucial in balancing the pressures of development with the need to preserve the region's unique ecological heritage. The guidelines emphasize that offsets should not be seen as a license to destroy biodiversity but rather as a last resort measure to ensure that biodiversity conservation is not sacrificed for economic development. By integrating biodiversity offsets into planning processes, the province has set a standard for sustainable development that considers both human needs and environmental integrity.

The Western Cape Biodiversity Offset Guidelines represent a vital tool in the effort to ensure the conservation of the province's biodiversity while allowing for responsible and sustainable development. These guidelines contribute significantly to the protection of threatened ecosystems, the restoration of degraded areas, and the maintenance of ecological processes critical for the long-term survival of the region's flora and fauna. The adoption of these guidelines is a testament to the Western Cape's commitment to safeguarding its natural resources for future generations while fostering sustainable economic growth.

# 5. Biodiversity Offset Applicability Assessment

The Biodiversity Offset Applicability Assessment is often required if a particular project triggers the requirement of Biodiversity Offset Regulations. The following steps are involved in the Biodiversity Offsetting Process:

- → Identifying the need for Biodiversity Offset
- → Determining the requirements of a Biodiversity Offset and Compilation of a Biodiversity Offset Report
- → Preparing
- → Preparing biodiversity offset conditions for an EA.
- → Selecting the biodiversity offset site.
- → Securing the biodiversity offset site.
- → Preparing a Biodiversity Offset Management Plan.
- → Concluding a Biodiversity Offset Implementation Agreement.

## 5.1. Need for Biodiversity Offset

Determining the need for a Biodiversity Offset falls within the Environmental Authorisation process conducted in terms of the National Environmental Management Act (Act 107 of 1998).

The requirement for a Biodiversity Offset is determined after specialist and EAP input, when the proposed activities and associated impacts thereof, are found to have **Residual Negative impact on biodiversity of medium or high** significance after mitigation.

**What is a residual impact?**

> A residual biodiversity impact is the impact of an activity, or activities, on biodiversity, that remains after all efforts have been made to avoid and minimise the impacts of the activity, or activities, and to rehabilitate the affected area to the fullest extent possible

**When is a Biodiversity Offset required?**

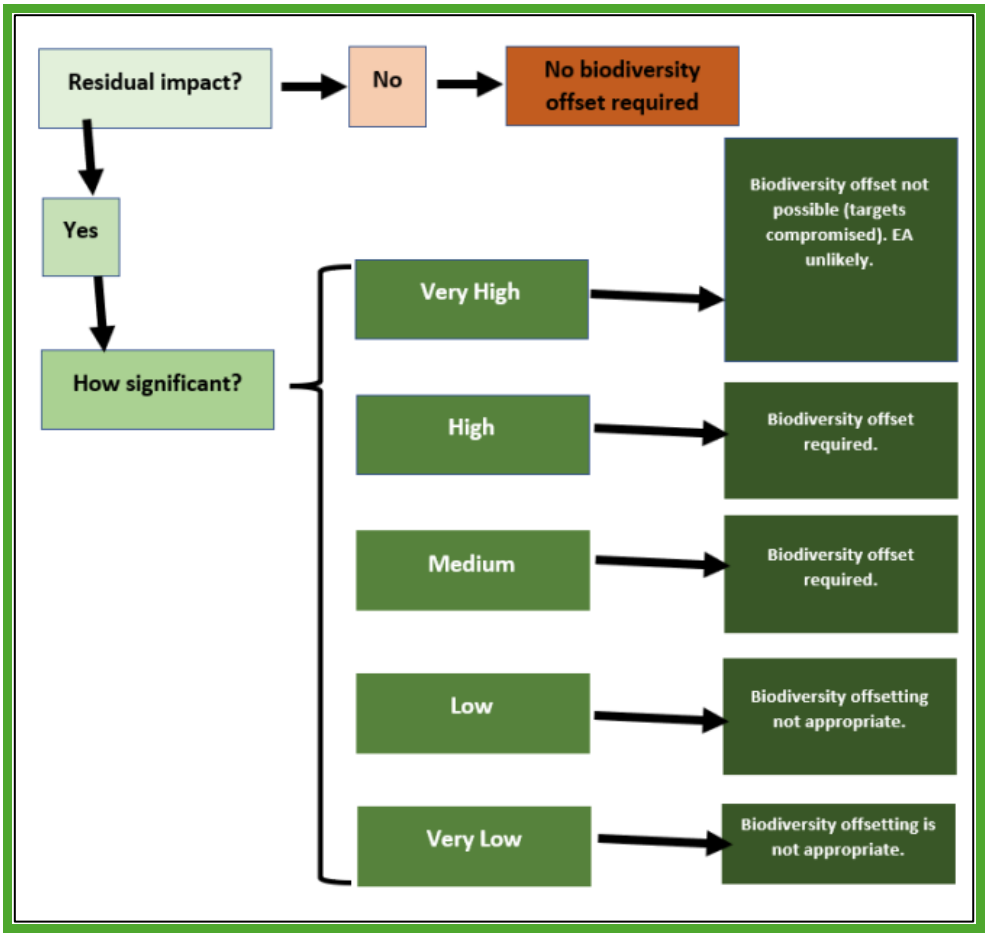


**Figure 6:** Flow diagram: When is a Biodiversity Offset required? Source: (National Environmental Management: National Biodiversity Offset Guidelines 2023)

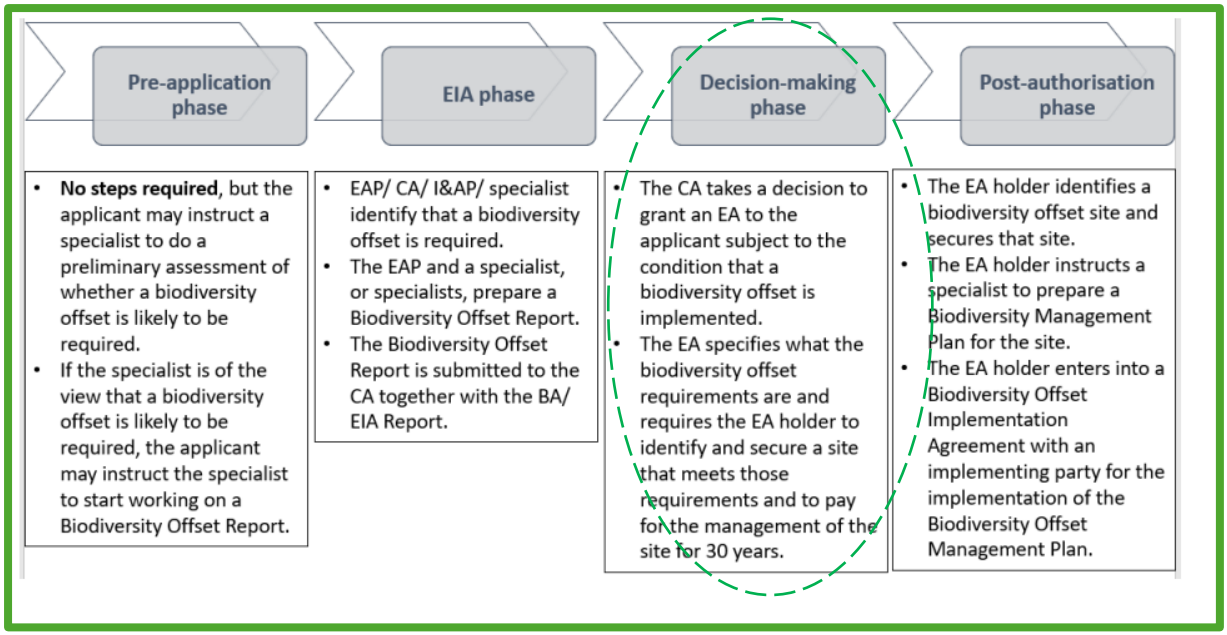


**Figure 7:** Overview of steps involved in the Biodiversity Offsetting process (Source: National Environmental Management: National Biodiversity Offset Guidelines 2023)

## 5.2. Mitigation hierarchy

According to EIAMS, (2014) mitigation hierarchy is a structured approach used in Environmental Impact Assessments (EIAs) to systematically manage and minimise the negative effects of development projects on natural ecosystems. It is recognised as a best practice, particularly for promoting biodiversity and ecosystem, it also serves as a decision-making framework that helps mitigate impacts on ecosystems while promoting sustainable development. The application of the mitigation hierarchy is essential for reducing the cumulative impacts of development on biodiversity, ensuring that unavoidable impacts are compensated for, when necessary, often through the use of Biodiversity Offsets.

On a National level, the application of the mitigation hierarchy is mandated by the National Environmental Management Act (NEMA) and supported by the National Biodiversity Offset Guidelines. The hierarchy aligns with the principles of sustainable development by emphasizing the avoidance of impacts, reducing the severity of those impacts that cannot be avoided, rehabilitating ecosystems where possible, and finally offsetting residual impacts to ensure no net loss of biodiversity. This is critical in managing developments that could otherwise lead to irreversible biodiversity loss, particularly in areas of high conservation value such as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), as outlined by the SANBI Western Cape Biodiversity Spatial Plan (WCBSP, 2017).

The mitigation hierarchy consists of four sequential steps, each designed to progressively reduce the ecological footprint of development on biodiversity:

***Avoidance***

The first and most important step in the mitigation hierarchy is to avoid impacts altogether by selecting development sites or designing projects in a way that avoids harm to important biodiversity areas. For example, siting a project outside a sensitive habitat or designing infrastructure that bypasses key ecological corridors can prevent negative impacts from occurring. This step is particularly relevant to areas that are classified as CBAs or contain endangered vegetation types, such as the Overberg Dune Strandveld found in the Western Cape.

Avoidance is emphasized as the most cost-effective and environmentally sustainable form of mitigation, as it prevents the need for more intensive interventions later in the process.

***Minimisation***

If complete avoidance is not feasible, the next step is to minimise the severity of the impact through careful project design and implementation strategies. This could involve reducing the project footprint, modifying construction methods, or scheduling activities to minimise disturbance to wildlife. For example, in areas where development may disturb sensitive species or ecosystems, measures such as restricting construction during breeding seasons or creating buffer zones around sensitive habitats can significantly reduce the ecological impact. According to SANBI's "Guidelines for Biodiversity Management in Environmental Assessment" (2016), minimising disturbances also extends to the careful planning of infrastructure like roads and stormwater management systems, ensuring they do not disrupt natural hydrological processes or degrade habitat connectivity.

***Rehabilitation/Restoration***

Where impacts cannot be fully avoided or minimised, the next priority is to rehabilitate or restore ecosystems that have been degraded or disturbed by the development. This may include the removal of invasive species, re-vegetation with indigenous flora, or the restoration of natural hydrological systems. Rehabilitation is particularly important in areas that fall within degraded CBAs, where restoring ecological integrity can help meet regional biodiversity targets (WCBSP, 2017).

***Offset***

The final step, to be used only as a last resort, is the use of biodiversity offsets to compensate for any residual impacts that cannot be avoided, minimised, or rehabilitated. Offsets involve protecting or enhancing biodiversity in another location to ensure no net loss of biodiversity. The Western Cape Guidelines on Biodiversity Offsets (2015) highlight that offsets should target areas of equivalent conservation value and must contribute to national and provincial biodiversity priorities. They should also be implemented in perpetuity to ensure long-term conservation gains. For instance, if a development project results in the unavoidable loss of endangered vegetation, a biodiversity offset could involve securing and rehabilitating an area of the same vegetation type elsewhere. However, offsets should not be seen as a substitute for early mitigation measures and must only be considered after all efforts to avoid and minimise impacts have been exhausted.

# 6. BIODIVERSITY OFFSET – APPLICABILITY TO ROMANSBAAI ABALONE FARM EXPANSION

## 6.1. Need and Desirability of the Proposed Project

The need and desirability of this development application originates from the need of the existing Romansbaai Abalone Farm to expand their current operations and increase their annual production output. This expansion is necessary to meet the global market demand for South African abalone, *Haliotis midae*, and maintain the current demand and quality.

The global aquaculture industry has experienced significant growth, with local abalone production playing a vital role in generating foreign exchange through exports and creating significant local employment opportunities and investment.

In addition to addressing market demands, the project also presents an opportunity to improve operational sustainability. With carefully planned infrastructure upgrades and resource management systems, the expansion will incorporate measures to reduce reliance on the municipal electrical grid by supplanting with solar power. In addition, the design of the sea water reservoirs allows for gravity feed of the water at peak tariff periods or times of loadshedding.

The expansion of an existing site is preferred over the development of a new greenfield site, as impacts and requirements associated with complete redevelopment on a new site are more extensive compared to the expansion of existing, particularly when the expansion activities are located directly alongside the existing operations.

## 6.2. Application of the Mitigation Hierarchy

The mitigation hierarchy has been applied during the assessment and evolution of alternatives for the application. Various specialists were appointed to identify sensitive features, assess impacts and provide management and mitigation measures. Specific measures have been integrated into the project planning and design to reduce the significance of the identified impacts. These measures are designed to avoid impacts, minimise harm and restore habitats, before pursuing any potential Biodiversity Offsets.

It is however important to note that the application at hand is for the expansion of an existing operation, this coupled with the inherent nature of abalone farms and their reliance on a constant supply of seawater, meaning that there are certain aspects of the development layout that cannot be moved. For example, the expansion site of the pumphouse and sump can only be located directly adjacent to the existing pumphouse. Expanding away from these existing areas is not possible or practical. In addition, because the farm requires continual movement of water, topography and the location of the grow out platforms are critical in the design and provide a limiting factor in terms of placement. The reservoir needs to be located at the highest point on the farm, in order to allow for the gravity feed of water from this point, down onto the grow out platforms, between tanks, and back to the sea.

Lastly, because the application is for the expansion of an existing operation, there are fixed, practical aspects that need to be taken into account in terms of layout and design. For example, the new production areas, need to be alongside and linked to existing platforms in order to tie in with existing services as well as allow for effective day to day operations, such as tank cleaning, movement of stock, feeding etc. These practical factors, along with

specialist input have been used to find the best layout alternative with the least impacts, as far as possible. Taking cognisance of the above, the mitigation hierarchy has been applied to the application as follows:

### *6.2.1 Avoidance of impacts*

The proposed abalone farm expansion acknowledges the presence of sensitive botanical areas and the Critical Biodiversity Area (CBA). Four Alternatives have been included in the investigation, with Alternative 4 being the preferred alternative. In Alternative 4, the following avoidance actions have been implemented:

- Reduction of the footprint of the seawater reservoir. The area flagged for the reservoir is fixed due to topography and the requirement to gravity feed the water from the reservoir to the rest of the farm, however the alternatives have evolved in such a way that there has been a reduction in footprint from 2 ha to 8000 $m^2$. This means that a significantly smaller portion of the identified high botanical sensitivity area, has been completely avoided.
- The grow out platform and production area has been moved out of high sensitivity areas to medium and low sensitivity areas and also reduced in size from 3 ha to 2 ha, thereby avoiding sensitive vegetation and reducing extent and impact significance.
- The platforms are also located alongside existing operations and therefore in areas which have been more exposed to disturbances relating to day-to-day operations.
- The proposed solar array has been shifted southwards to avoid more of the CBA area, as far as possible. However, further shifting of the array is constrained by the presence of the milkwood forest to the south. It is crucial to emphasize that this encroachment has been reduced significantly through design modifications aimed at avoiding ecological impacts.
- The Solar array and production area completely avoid the Milkwood thicket area.

### *6.2.2. Minimisation of impacts*

The preferred layout represents a responsible approach to minimizing environmental impacts while achieving project objectives. Key revisions on the new preferred layout (Alternative 4) include reducing the total development footprint from 9.6 ha to 6.9 ha, which significantly lessens the impact on sensitive botanical areas. The production area for grow-out tanks has been reduced from 3 ha to 2 ha and relocated to low-medium sensitivity areas, reducing vegetation loss to an acceptable level.

The design of the seawater reservoir was also refined, reducing its footprint from 2 ha to 0.8 ha. This adjustment considerably reduces vegetation loss in the identified high sensitivity areas. The ground mounted solar array will be raised off the ground therefore complete vegetation clearance is not required, allowing for persistence of species and ecological connectivity as well as natural habitat. Vegetation will be brush cut only, to a height of 1 m and therefore minimise the impact on both vegetation type and the CBA as confirmed by the Terrestrial specialist.

## 6.3. Residual impacts of the proposed development

Biodiversity Offsets are considered the last option in the mitigation hierarchy and are only pursued after all feasible measures to avoid, minimise, and rehabilitate impacts have been implemented. Offsets are evaluated based on the residual impact rating, which ranges from medium to very high negative, particularly in terms of biodiversity and ecology. This assessment takes into account the direct, indirect, and cumulative impacts that persist despite mitigation efforts. The evaluation primarily focuses on the impacts to endangered Overberg Dune Strandveld and the associated biodiversity on site.

*Residual Impacts on Vegetation Loss*

The updated preferred development layout (Alternative 4) significantly reduces the overall development footprint to 6.9 hectares, compared to the 9.6 hectares proposed in earlier versions presented in Alternative 1 and 2. Notable changes include a reduction in production area from 3 ha to 2 ha (located in areas of low to medium ecological sensitivity) and a reduction in the seawater reservoir footprint from 2 ha to 0.8 ha (in a high-sensitivity area). These adjustments, as highlighted by the botanical findings of Helme (2024), represent a meaningful reduction in the scale and intensity of ecological impacts.

Helme (2024) indicates that the revised layout reduces the significance of impacts on the Phase 2 production area from medium negative to low - medium negative, while the seawater reservoirs area impact rating decreases from medium - high negative to medium negative in Alternative 4. This demonstrates a tangible improvement in the overall botanical impact of the development in an area marked as high sensitivity, with the new overall footprint having a low - medium negative impact. **In addition, Helme concludes in his report that a Biodiversity Offset is not supported due to the protection status of the vegetation, and that rather a contribution to alien vegetation management elsewhere, should be implemented.**

Although the reservoir area remains the most sensitive, the reduced footprint minimises the need for a biodiversity offset by lowering the impact on vegetation.

The residual impacts of the development primarily involve the permanent loss of Overberg Dune Strandveld (now referred to Southwestern Strandveld) vegetation associated with the construction of the grow-out tanks and the seawater reservoir. This residual impact needs to be considered relative to the unavoidable practical requirements of the expansion.

Moreover, the conservation targets for Overberg Dune Strandveld have already been met at a national level, with 36 % of the target area conserved. This achievement, coupled with the lack of defined Threat Status for this vegetation type, complicates the identification and securing of offset areas of comparable ecological value.

Given the information above, pursuing biodiversity offsets would not provide meaningful conservation benefits and is therefore not recommended. Instead, resources could be more effectively directed towards addressing existing conservation challenges, such as invasive alien vegetation management in nearby protected areas like the Walker Bay Nature Reserve.

# 7. Conclusion

Given the findings of the specialist team and the Environmental Impact Assessment process, as well as the actions taken to implement the mitigation hierarchy and the evolution of Alternative 4, the practical constraints associated with the expansion layout relative to the existing operation and the topographic and operational constraints, as well as the positive impacts associated with the proposal, we hereby motivate that the Biodiversity Offset is ***not*** applicable to this site. This finding is also supported by the Botanical specialist.

Although Biodiversity Offsets are typically considered for developments that impact critical ecosystems where residual impacts remain at medium or high levels, it is concluded that such an offset should not be applied to this proposal. The impact level anticipated on site, in relation to the newly refined layout (Alternative 4), has been significantly minimised. Specialist assessments, including those by Venter (2024), have concluded that the proposed development expansion will have a generally low impact on the local fauna, particularly regarding

threatened species. While some species, such as the Black Harrier and Cape Dwarf Chameleon, may experience limited habitat loss, the overall effects are minimal and can be effectively mitigated.

Additionally, the site's ecological context supports the argument against applying a biodiversity offset. While the site supports Overberg Dune Strandveld vegetation, classified as an endangered vegetation type, the vegetation is relatively well-conserved nationally. Approximately 90 % of its original extent remains intact, with 36 % already under formal protection. This matches the national conservation target for this vegetation type (Rouget *et al*., 2004). Given that the conservation target has been achieved, requiring further land to be set aside as part of a biodiversity offset is unwarranted.

Furthermore, areas proposed for expansion include portions of land already impacted by existing operations, reducing the additional ecological burden. The refined layout ensures that the most sensitive habitats, such as the milkwood forest, remain untouched and protected. By concentrating development in previously disturbed areas, the project avoids further fragmentation of intact vegetation.

Based on standard biodiversity offset policies, the 6.9 ha impacted by the development would theoretically require an offset of 69 ha, applying a 1:10 ratio for endangered habitats of this kind, in line with the ratio provided by Nick Helme. However, this ratio is neither practical nor necessary in this specific context. The proposed development, through its minimised footprint and mitigation measures, demonstrates a balanced approach to maintaining ecological integrity while achieving operational goals for the expansion. The botanical specialist suggested that any biodiversity offset be in the form of funding for alien invasive plant management in areas that are already declared poorly managed conservation areas. This approach targeted approach will provide greater long-term ecological benefits than a conventional offset, addressing the most pressing threats to the vegetation type.

The Romansbaai Abalone Farm plays a pivotal role in providing employment opportunities in the Overstrand region as well as significant local investment. The expansion will not only enhance the farm's operational capacity but also create additional job opportunities, further contributing to the socio-economic development of the area.

## 7.1. Recommended site impact management measures

The following actions will take place on site:

- → Any approved development footprints should be clearly demarcated on site prior to any development. No disturbance of natural vegetation outside of these demarcated areas should be allowed, during construction and operation and clear operational areas must be put in place to prevent sprawl.
- → All listed invasive alien plant species should be removed from the site within one year of any project authorisation, using approved methodology (see Martens et al 2021). The main invasive species are rooikrans (*Acacia cyclops*) and manitoka (*Myoporum serratum* and *M. tenuifolium*).
- → Search and Rescue of all translocatable bulbs (geophytes) and succulents (including *Lampranthus fergusonaiae*) should be undertaken from the approved development footprints for Phases 1 & 2 and the new dam prior to construction. This should be done at the end of the flowering season for the relevant species (ranges from April to October). Material should be translocated to other parts of the property where it will not be disturbed in future, and which is ecologically similar.
- → No large-scale soil disturbance or site clearing should happen in the proposed PV area, and instead vegetation can be trimmed to a maximum height of 1m, maintaining the bulk of the plant cover, whilst allowing for the solar panels to be positioned at a minimum of 1m above ground level. If the vegetation grows above the panels, it may be trimmed on a regular basis, as needed, but should never be cut below 300mm above the ground. Cut material can be used as mulch to stabilise and cover any loose sand nearby.

→ Any biodiversity contribution to be applied should be in the form of funding for alien invasive plant management and not the official Biodiversity Offset Regulation process.