LORNAY
ENVIRONMENTAL CONSULTING

BIODIVERSITY OFFSET APPLICABILITY ASSESSMENT

Portion 7 of the Farm Remkuil No. 259, Caledon

May 2025

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EAPASA. 2019/698

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1. INTRODUCTION

1.1. Background to the project

Lornay Environmental Consulting has been appointed as the Environmental Assessment Practitioner (EAP) by Mr Johannes du Toit (hereafter referred to as the applicant) to facilitate a Section 24G Application in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended). The Section 24G Application seeks to retrospectively apply for Environmental Authorisation for the unauthorized clearance of indigenous vegetation on Portion 7 of Farm Remkuil No. 259, Caledon.

Location and Context

Portion 7 of the Farm 259 is located within the Theewaterskloof Municipality the largest local municipality in the Overberg District municipality (Theewaterskloof IDP, 2023). The municipality is predominantly rural, characterized by expansive open spaces and diverse farming activities that include agriculture, smallholdings, and other land uses. As the recognized "gateway to the Overberg," the area is bordered by significant natural assets such as the Theewaterskloof Dam, the Kogelberg Biosphere, vineyards, fruit fields, fynbos, wildflowers, and habitats for blue cranes. Agriculture is a key economic driver in the region, contributing around 24.8% to the local Gross Value Added (GVA).

Project Details

Approximately 1.7 ha of indigenous vegetation was cleared without Environmental Authorisation. This cleared area, characterized by uneven farming edges adjacent to existing fields, was intended to accommodate increasing agricultural demands and to facilitate improved movement of large-scale farming machinery challenges previously imposed by the irregular terrain and narrow field margins.

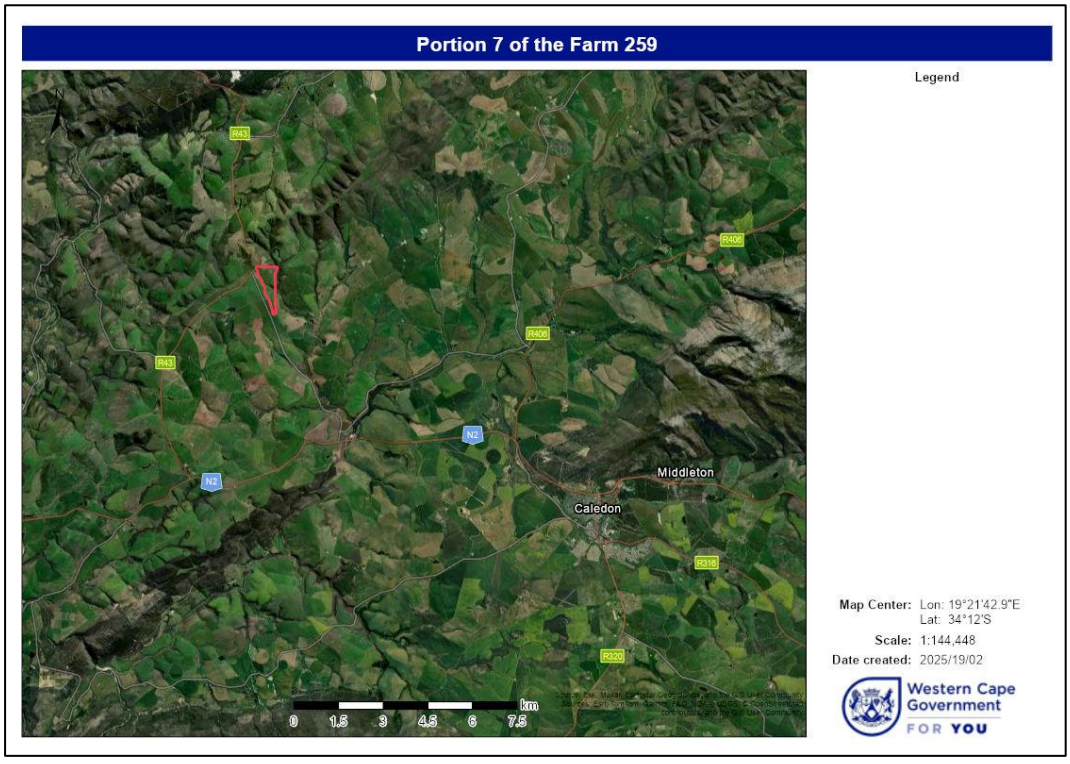


Figure 1: Location of the study area

The preferred alternative (Alternative 2) entails continuing with farming activities in the disturbed area through retrospective Environmental Authorisation. The impact has already occurred and was concluded.

The farm is located within a region characterised by intensive agricultural activities. It contributes to the local economy through job creation and municipal tax revenue. The applicant acknowledges the unauthorised activity and is committed to addressing the issue by finding a positive way forward for renosterveld conservation. The impacted area, which is located on the fringe of actively farmed land, is intended to be used for ongoing farming activities on the property. The main reason why the area was cleared, was so that clear and straight farmed lines could be established as opposed to the previous curved edge of the farmed fields. The more uniform areas allow for more efficient land use practices and use of machinery. The subject property is subject to conservation servitude incorporated and signed in the title deed. The applicant has confirmed that he was unaware of this servitude prior to the clearing activity. Nevertheless, he is now actively engaging with Overberg Renosterveld Conservation Trust (ORCT) to explore the potential establishment of a Conservation Easement across parts of his property as a remedial and forward-looking conservation strategy. A signed Memorandum of Understanding between the applicant and the ORCT is attached under **Appendix N** of the 24G report.

It is important to note that the property is situated on the fringe of existing operational agricultural land, within an area characterised by extensive dryland farming. The surrounding landscape is dominated by agricultural activities, which have already contributed significantly to the fragmentation of the Western Ruens Shale Renosterveld vegetation type. According to the botanical specialist, the vegetation appears not to have been burnt for at least 15 years. It was further argued that for the good ecological functioning of this vegetation type, fire is required at intervals of approximately 8 to 12 years. However, due to the extent of fragmentation and the prolonged absence of fire, as well as being located directly alongside farmed field, the current ecological condition of the impacted area was likely, significantly compromised.

As per recommendation by Cape Nature, the Applicability of the National Biodiversity Offset Regulations, to this application must be investigated.

This Biodiversity Offset Applicability Assessment has been compiled in accordance with the National Biodiversity Offset Regulations (2023) and provides a detailed information regarding the Regulations, 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 unauthorised clearance of indigenous vegetation on Portion 7 of the Farm Remkuil No. 257.

2. SITE SPECIFICS

Portion 7 of the Farm Remkuil No. 257 is situated outside the urban edge of Caledon in the Overberg Region of the Western Cape. The property is zoned Agriculture Zone 1: Agriculture and has historically been used for agricultural activities, contributing to the region's farming industry as a well-established and successful operation.

The vegetation within the property falls within the Western Rûens Shale Strandveld vegetation type, which is classified as Critically Endangered according to the National Environmental Management: Biodiversity Act (NEMBA, Act No. 10 of 2004) Revised National List of Ecosystems that are Threatened and in Need of Protection.

This classification highlights the significant conservation value of the affected vegetation due to its limited remaining extent and the high level of biodiversity associated with it. The Western Rûens Shale Strandveld is known for its unique assemblage of plant species, many of which are endemic and vulnerable to habitat loss. The unauthorized clearance of 1.7 ha of this critically endangered ecosystem has resulted in the disturbance of a sensitive ecological area.

The site is predominantly agricultural in nature, bordered by existing cultivated lands. The cleared area contained of previously untouched vegetation along uneven cultivated edges, which were cleared using the machinery to improve operational efficiency and facilitate the movement of large farming machinery. While agricultural expansion is a vital aspect of the region's economy. The site's location outside the urban edge ensures that future land-use considerations remain aligned with agricultural practices while balancing the need for environmental protection and compliance with relevant legislation.

Figure 2. Proposed site development plan.

2.1. Screening Tool Report

A Screening Tool Report was generated for Portion 7 of the Farm Remkuil No. 257 in accordance with the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended). The Screening Tool serves as a preliminary assessment to identify potential environmental sensitivities on the site and guide the scope of specialist investigations required for the Environmental Authorisation process. The Screening Tool Report identified several key environmental sensitivities across different themes. The environmental sensitivities identified for the site are summarised in **Table 1** below.

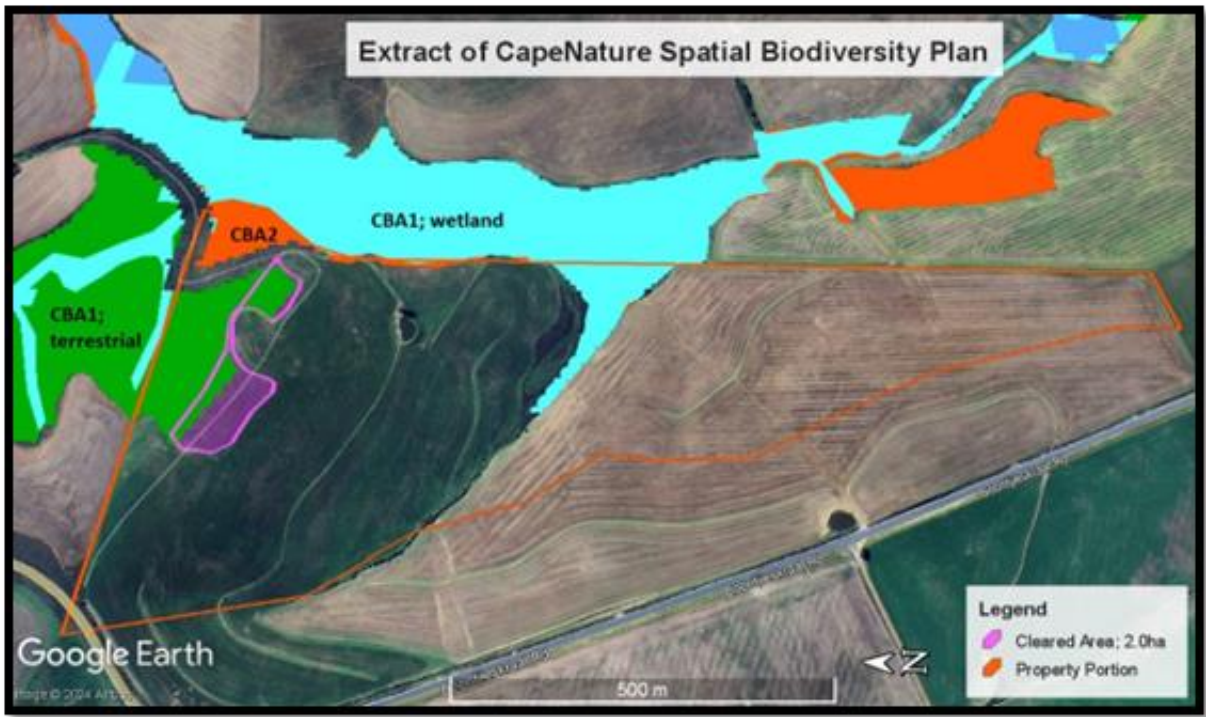
Table 1: Summary of environmental sensitivities

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:

- → Terrestrial / Plant species Impact Assessment – Nick Helme
- → Aquatic Biodiversity Compliance Statement – Delta Ecology

The Western Cape Spatial Biodiversity Plan (2017) shows that most of the two ripped patches are mapped as Critical Biodiversity Area 1 (Critical Biodiversity Areas, terrestrial). It is important to note that the clearance only affected the edge of the mapped CBA1 shown on site. The vegetation on site is classified as Western Rûens Shale Renosterveld, a critically endangered vegetation type. This classification is due to its severely limited remaining extent, with about 14% of its total original extent remaining intact, less than 1% conserved, and a national conservation target of 27% (Rouget et al 2004). The unit supports a fairly high number of endemic plant species, many threatened species, and occurs on nutrient rich, shale derived soils in the Western Overberg, and the vegetation type needs fire for optimal ecological functioning (Helme et al 2016).



Assessment of the Alternatives:

Two alternatives have been identified and assessed, Alternative 1 and Alternative 2 (preferred). These alternatives are based on the current state of the site and the outcomes of the specialist assessments conducted.

Alternative 1

This alternative entails no further activity on the disturbed site, allowing the affected area to rehabilitate naturally over time. While this option may reduce further environmental impacts, it would result in the loss of potential agricultural productivity on the property. The long recovery period for the fragmented Western Ruens Shale Renosterveld vegetation, combined with the extent of past and future disturbance, presents challenges for successful natural rehabilitation. The Western Ruens Shale Renosterveld vegetation type is critically endangered, and due to the extent of historical fragmentation and current disturbance, natural recovery would take decades, if not longer. Specialist input indicates that this vegetation requires periodic fire cycles every 8–12 years for optimal ecological functioning. However, the absence of fire for at least 15 years may have compromised the ecological integrity of the site. Allowing the area to rehabilitate passively without active intervention would result in slow and potentially incomplete recovery.

This alternative would also limit the applicant's ability to optimize the agricultural potential of the property. The subject property is located within a productive agricultural landscape, with dryland farming forming a critical component of the regional economy. The alternative would permanently prevent the applicant from optimizing the agricultural potential of the property, thereby limiting opportunities for economic growth, job creation, and long-term sustainability.

Alternative 2 (Preferred)

This alternative allows the applicant to continue using the site for productive agricultural purposes while ensuring compliance with environmental regulations and adopting operation mitigation measures for operating on the already disturbed land, to not further cultivate or disturb areas of partly and natural vegetation on adjacent

undisturbed areas. This approach involves continuing with the current agricultural activities on the disturbed area through retrospective Environmental authorisation. The Terrestrial Assessment identified that the approximately 6 ha of remaining natural vegetation in the study area ranges from poor to pristine condition, with degradation caused by proximity to production lands and associated high levels of fertiliser and pesticide runoff, which encourages invasion of alien grasses (Helme, 2024). This further highlights that, the cleared area might have contained natural or partly natural vegetation, which is in this case cannot be determined since the impact had already occurred. In addition to this, Helme (2024) pointed out that, even though there are no plant species of conservation concern that have been observed or recorded on the ripped area during the site survey, two SoCC have been recorded within 200m in the remaining Renosterveld areas. The distinction in the availability of Species of Conservation Concern, which might or may not have occurred in the site remains unknown and would otherwise cannot be quantified.

While the clearance has resulted in the loss of ±1.7 ha of a vegetation type which is classified as Critically Endangered and affected the edge of a Critical Biodiversity Area (CBA1), the mitigation measures recommended by the specialist will be implemented to manage and minimise further impacts on the property. Given the extensive disturbance and ongoing exposure to agricultural runoff, passive rehabilitation would likely fail without significant intervention. Even with active restoration efforts, the natural recovery of this vegetation type would take many years and may not achieve full ecological functioning due to fragmentation and isolation from larger intact patches.

2.2. National Vegetation Mapping

According to the Terrestrial and Plant Species Assessment conducted by Nick Helme, the site is originally classified as Western Rûens Shale Renosterveld listed as Critically Endangered ecosystem. It is highlighted that this vegetation type with about 14 % total of the remaining vegetation is intact, less than 1 % is conservation target of 27 % (Rouget *et al* 2004). The unit typically would support a fairly high number of endemic plant species, many threatened species, and occurs on nutrient rich, shale derived soils in the western Overberg, and the vegetation type needs fire for optimal ecological functioning (Helme *et al* 2016).

The ripped areas are essentially northeast facing, and are part of a subtle ridgetop, which accounts for the relatively shallow, rocky soils in the area. Helme, (2024) highlights that the adjacent natural vegetation has not been burnt in the last 5-8 years, and perhaps for as long as 15 years. This type of Renosterveld should burn once every 8-12 years for optimal ecological functioning (Helme *et al* 2016).

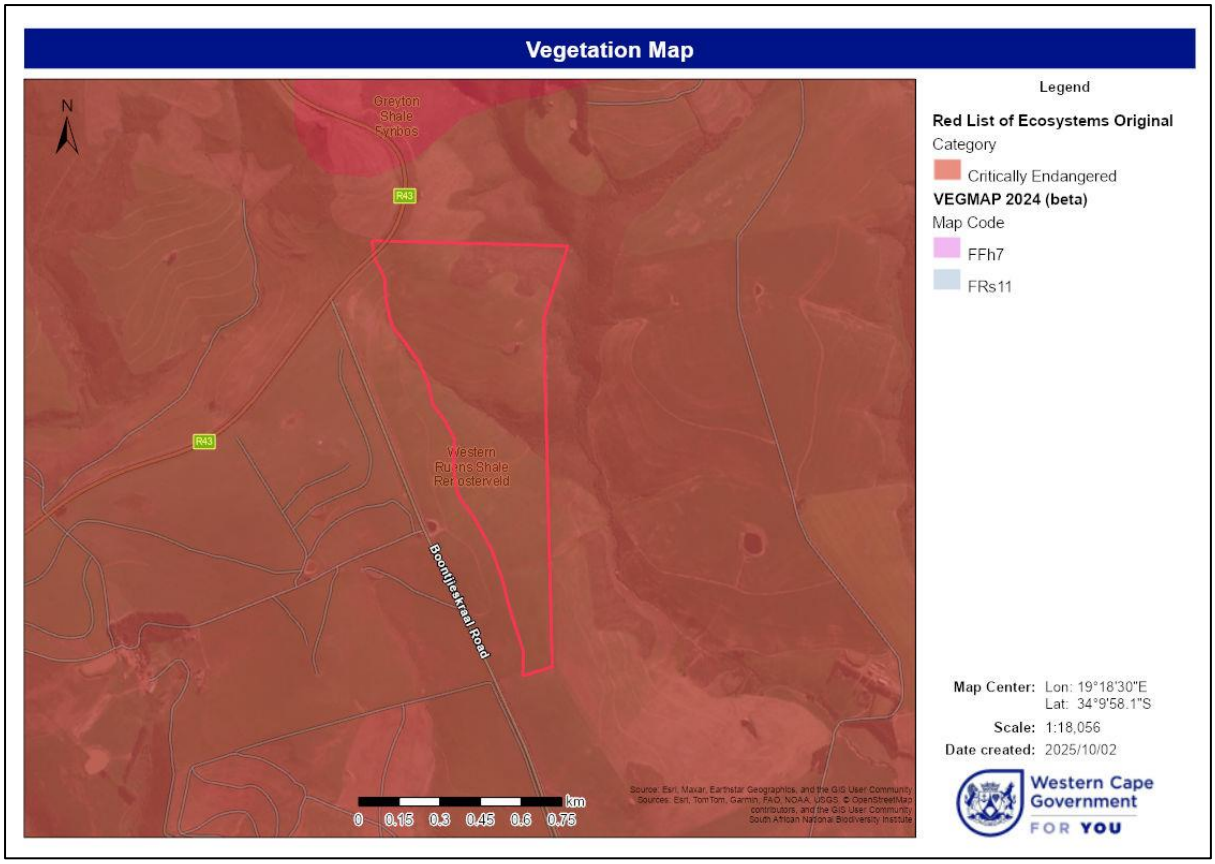


Figure 3: Vegetation map.

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.

The CapeNature Spatial Biodiversity Plan (2017) for the area shows that most of the two ripped patches are mapped as high priority CBA1 (Critical Biodiversity Areas, terrestrial). The clearance extended to the edge of the mapped CBAs.

Although not promulgated at the time of the Terrestrial Assessment, the 2023 BSP shows a similar finding:

Figure 4: 2023 BSP CBA Mapping.

2.3.1. National Threatened Ecosystems

The study area is part of the East Coast Renosterveld 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). The GCFR is one of only six Floristic Regions in the world and is the only one largely confined to a single country (the Succulent Karoo component extends into southern Namibia). It is also by far the smallest floristic region, occupying only 0.2% of the world's land surface, and supporting about 11500 plant species, over half of all the plant species in South Africa (on 12% of the land area). At least 70% of all the species in the Cape region do not occur elsewhere, and many have very small home ranges (these are known as narrow endemics). Many of the lowland habitats are under pressure from agriculture, urbanisation and alien plants, and thus many of the range restricted species are also under severe threat of extinction, as habitat is reduced to extremely small fragments. Data from the nationwide plant Red Listing project indicate that 67% of the threatened plant species in the country occur only in the southwestern Cape, and these total over 1800 species (Raimondo et al 2009). It should thus be clear that the southwestern Cape is a major national and global conservation priority and is quite unlike anywhere else in the country in terms of the number of threatened plant species.

The East Coast Renosterveld bioregion is characterised by relatively high rainfall (mostly in winter), moderate rainfall gradients, rich, loamy soils, moderate topographic diversity, and very extensive cultivation (mostly for cereals) and sheep farming. Due to this combination of factors the loss of natural vegetation in this bioregion has been severe (>60% of original extent lost within the region), and the bioregion has a very high number of threatened plant species (Raimondo et al 2009).

3. SPECIALIST ASSESSMENT

3.1. Terrestrial Biodiversity / Botanical Assessment

The assessment involved the survey of the site with specific focus on the cleared 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 Western Ruens Shale Renosterveld (Mucina & Rutherford 2018). Nationally, the vegetation is listed as endangered, with about 14% of its total original extent remining intact, less than 1% conserved, and a national conservation target of 27% (Rouget *et al* 2004). The unit supports a fairly high number of endemic plant species, many threatened species, and occurs on nutrient rich, shale derived soils in the western Overberg, and the vegetation type needs fire for optimal ecological functioning (Helme et al 2016). *Note that the 2024 Veg Map still indicates the site to be classified as Western Ruens Shale Renosterveld.*

The ripped areas are essentially northeast facing, and are part of a subtle ridgetop, which accounts for the relatively shallow, rocky soils in the area. The adjacent natural vegetation has not been burnt in the last 5-8 years, and perhaps for as long as 15 years. This type of Renosterveld should burn once every 8-12 years for optimal ecological functioning (Helme et al 2016).

As per specialist findings, approximately 6ha of remaining natural vegetation in the study area ranges from poor to pristine conditions, with degradation caused by proximity to production lands associated high levels of fertiliser and pesticide runoff, which encourages invasion of alien grasses. There are no woody or large herbaceous alien invasives in the higher quality patches of natural Renosterveld.

Photo 1: View of the westernmost ripped patch, looking southeast. The rocky nature of the site is clearly seen, as are scattered, surviving indigenous plants. (*source:* Helme, 2024)

Photo 2: View of intact Renosterveld (on left) and northern edge of one of the ripped patches, looking east. Scattered indigenous plants can still be seen alive in the ripped areas, including *Drimia capensis bulbs* (maerman).

Photo 3: One of the ripped patches, looking west. Current natural vegetation cover is about 5% of what it was prior to ripping, and the areas have not been sown. (*source:* Helme, 2024)

Indigenous species noted in the adjacent, undisturbed Renosterveld include the above noted species, as well as *Oedera genistifolia, Chrysocoma ciliata, Cotula turbinata, C. ceniifolia, Geissorhiza parva, Tribolium obtusum, Helichrysum rosum, Selago glutinosa, Restio multiflorus, Selaginella pygmaea, Pentameris airoides, Ornithogalum thyrsoides, Wachendorfia paniculata, Aizoon pubescens, Heliophila pendula, Clutia tomentosa, Drosanthemum hispidum, Anthospermum galioides, Gnaphalium sp., Ehrharta calycina, Arctopus echinatus, Searsia pallens, Crossyne guttata, Hermannia diversistipula, H. confusa and Gnidia laxa*.
It must be noted that by virtue of the proximity of the impacted areas to active agricultural fields, means that the impacted areas contained vegetation with parts of it being in a near-natural state due to agricultural runoff.

No Plant Species of Conservation Concern (SoCC) were recorded in the ripped areas during the survey. However, two SoCC were recorded within 200 m in the remaining Renosterveld areas, and the first could reasonably have been expected to have occurred on site prior to ripping.

Babiana purpurea is a geophyte Redlisted as Endangered, and a few scattered plants were found nearby. *Aspalathus barbigera* is a large shrub found on the south facing slopes (not found on north slopes) some 200m north of the site and is Redlisted as Vulnerable.

Other SoCC that may have occurred on site include *Watsonia aletroides* (Near Threatened), *Freesia caryophyllacea* (Near Threatened), *Elegia squamosa* (Endangered) and *Gladiolus abbreviatus* (Vulnerable). The Screening Tool indicates that upwards of 50 other plant SoCC are known to occur in the general area, but none of these are likely to have been present in the impacted area.

Recommended Mitigation measures by the Botanical specialist:

- No further areas of natural or partly natural vegetation should be disturbed or cultivated outside the currently ripped/cultivated areas on the property (as per the 2024 satellite imagery (not yet available on Google Earth), unless authorised via a formal environmental application process.
- In lieu of a Biodiversity Offset, the owner must negotiate the previously discussed easement with Overberg Renosterveld Conservation Trust (ORCT) which ensures that at least 60ha of good quality Western Ruens Shale Renosterveld is formally conserved. As per the letter from the ORCT (dated 23 April 2024) a key goal should be re-consolidating the 30ha purchased by the applicant from Mr Lotter back into the neighbouring land portion still owned by Mr Lotter. An additional 30ha of Renosterveld will also need to be found and secured for conservation by means of a similar easement/contract with the applicant.
- All costs associated with this must be carried by the landowner/applicant. This process should be completed within 18 months of any S24G application being authorised.
- If the Department deems a fine appropriate in addition to the above the most appropriate recipient would be the Overberg Renosterveld Conservation Trust (ORCT), a licensed conservation NGO operating in this area.

3.2. Aquatic Biodiversity Compliance Statement

The Aquatic Biodiversity Compliance Statement was undertaken by Delta Ecology. During the desktop assessment, it was determined that there were no rivers, or natural / artificial wetlands within the cleared area. Surrounding the area cleared of vegetation are various watercourses located downstream; a northern drainage line is located 51 m away, with an associated CVB wetland, which lies 90 m away. Both watercourses are separated by dense natural terrestrial vegetation. To the east, a CVB wetland is located 100 m from the cleared area, with a buffer comprising an agricultural field and natural vegetation. A southwestern drainage line and associated CVB wetland is located 217 m away and buffered by an agricultural field. To the south, the farm dam, and associated drainage line, and CVB wetland are situated at distances of 177 m, 214 m, and 270 m, respectively, all buffered by an agricultural field and / or natural vegetation.

These watercourses are all located more than 50 m away and are buffered by dense natural vegetation, and/or agricultural fields with associated furrows and associated vegetation. According to the specialist opinion, the surrounding watercourses were not impacted by the upstream clearance of vegetation; and will not be impacted by the proposed cultivation within this area.

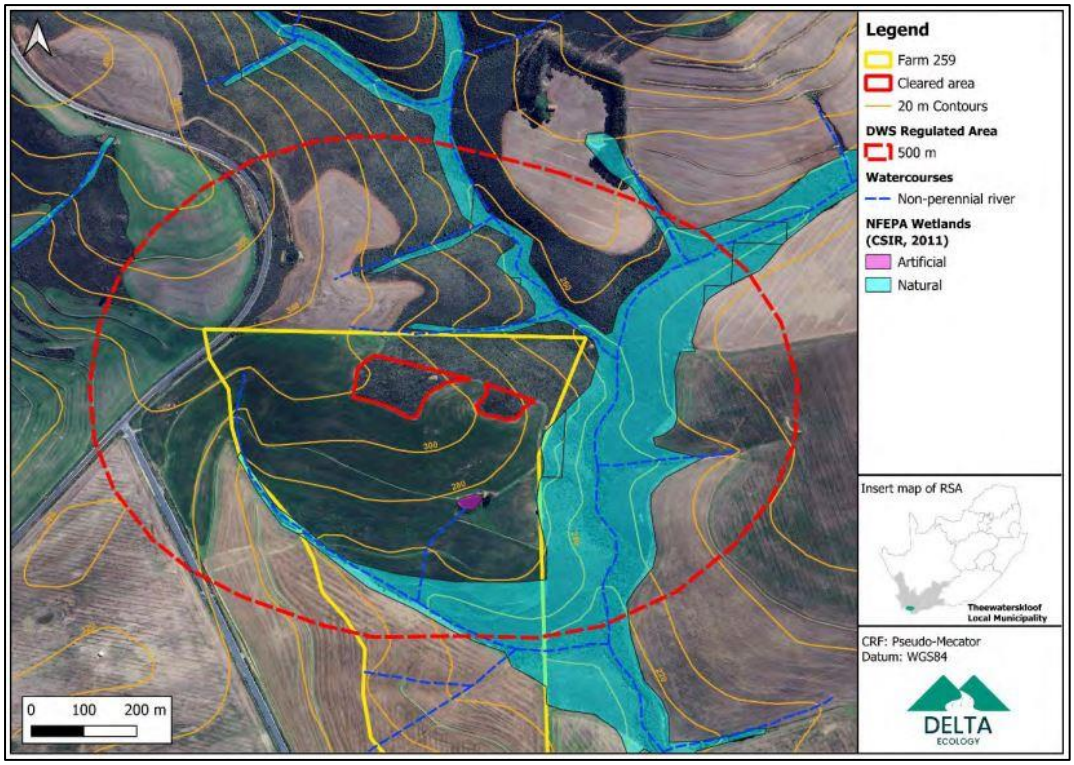


Figure 5: Map showing watercourses and wetlands.

Recommended Mitigation measures by the Freshwater specialist:

- Of importance is that the 50 m buffer of natural vegetation which surrounds the northern watercourses located closest to the activity, must be maintained as dense undisturbed indigenous vegetation for the lifecycle of the farming activities.
- Although no erosion or sedimentation was noted during the site visit, the surrounding watercourses, and particularly the northern 50 m buffer area, should be monitored for any potential erosion on a regular basis. Should erosion be observed, appropriate measures should be taken such as:
    - Covering steep/unstable/erosion prone areas with geotextiles.
    - Covering areas prone to erosion with brush packing, straw bales, mulch.
    - Stabilizing cleared/disturbed areas susceptible to erosion with sandbags
    - Constructing silt fences / traps in areas prone to erosion, to retain sediment-laden runoff. Silt fences must be adequately maintained. Furthermore, the farm manager must monitor sediment fences / traps after every heavy rainfall event and any sediment that has accumulated must be removed by hand.
- Alien Invasive Plant Species (AIS), which might colonize disturbed areas and outcompete natural vegetation, should be monitored for and removed during ongoing management of the farm.
- Dumping and littering within any surrounding watercourses is strictly prohibited.
- All farming machinery and vehicles used must be regularly serviced, fuel must be stored more than 15 m away from any watercourse in a bunded area.

NOTE: The ORCT has issued the memorandum of understanding (MOU) for the required Conservation Easement, see **Appendix N**.

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

A Biodiversity Offset Applicability Assessment is required if a particular project triggers the requirement of Biodiversity Offset Regulations. The Biodiversity Offset Guidelines 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.

It should be noted that the National Biodiversity Offset Guidelines indicate that a Biodiversity Offset is required if the residual impact after following the **mitigation hierarchy** is medium negative or higher. In the instance where the impact has already occurred, the application of the mitigation hierarchy is constrained. It is no possible to as avoid or minimise a particular impact and therefore the determination of the applicability of the BO is limited. Typically, the BO guidelines are aimed primarily at NEMA applications **prior** to the commencement of activities, not after they have commenced.

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?

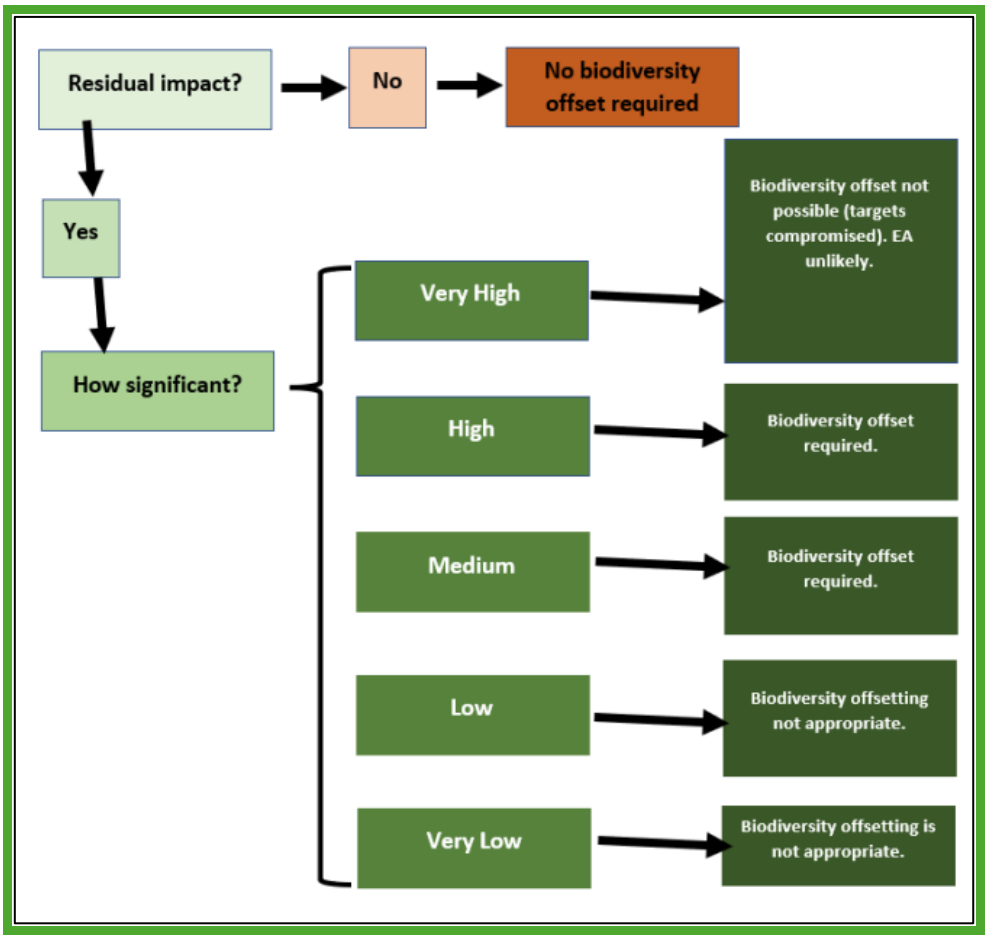


Figure 6: Flow diagram: When is a Biodiversity Offset required? Source: (National Environmental Management: National Biodiversity Offset Guidelines 2023).

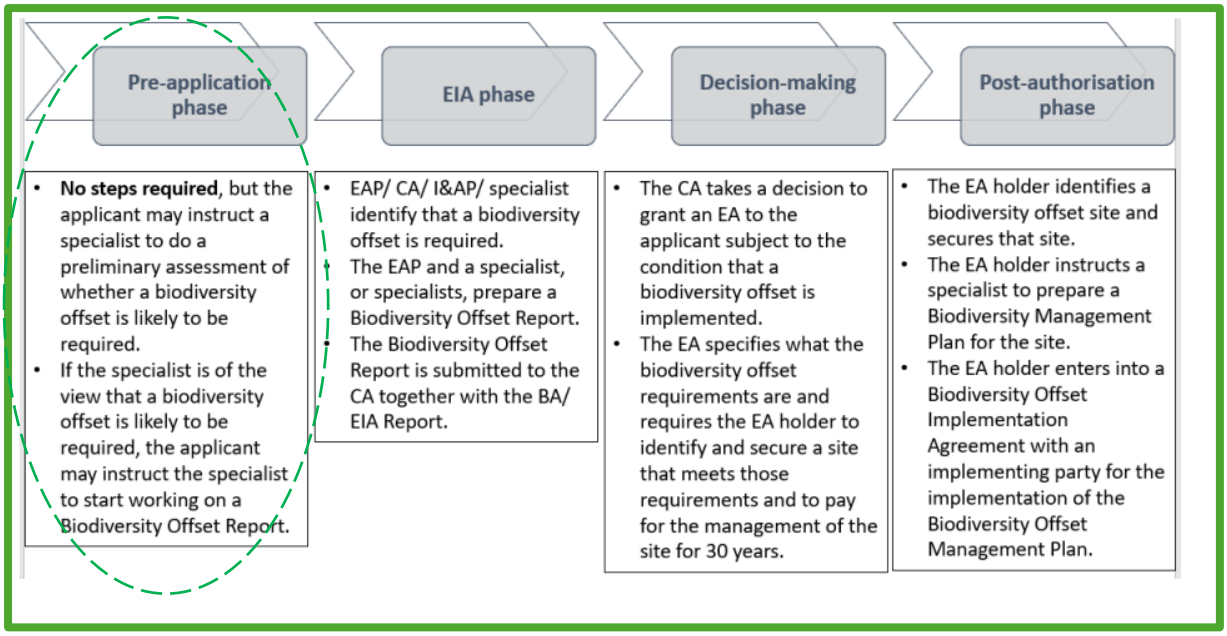


Figure 7: Overview of steps involved in the Biodiversity Offsetting process (Source: National Environmental Management: National Biodiversity Offset Guidelines 2023)

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 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 Guideline. 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 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 the receiving environment:

Avoidance – not possible in a 24G scenario

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. 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 – not possible in a 24G scenario

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 PORTION 7 OF THE FARM 259

6.1. Need and Desirability of the proposed activity

The proposed activity involves the retrospective Environmental Authorisation for the clearance of indigenous vegetation on Portion 7 of Farm 259, Caledon.

The farming operation on this property is well-established and supports both the local economy and the livelihoods of many unskilled and semi-skilled workers in the surrounding area. The applicant will optimize land management practices to utilise the disturbed area and improve operational efficiency with modern large-scale agricultural machinery to enhance productivity. This will enable the farming enterprise to remain competitive within an increasingly challenging agricultural sector due to climate variability and economic pressures. The activity responds to a need for more productive and efficient agricultural practices. The Province of the Western

Cape is known to be a great contributor to national agricultural production, wherein 11.5 million hectares of land is under cultivation (WCSDP, 2014). According to the Western Cape Spatial Development Framework of 2014, the region contributes a total of 21% of the country's agricultural production. The local economies rely heavily on the continued growth and sustainability of the sector (WCSDF, 2014). This regional and national imperative will be reinforced by the proposed development through enabling more intensified use of the land, without detracting from the economic value of the asset.

Desirability of this activity is further reinforced in the existing condition of the site and the context within which it is situated. The site forms part of an active farmland, remnants of natural vegetation are impacted by adjacent agricultural activities.

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. As outlined above, the full application of the mitigation hierarchy is constrained in scenarios where retrospective Environmental Authorisation is sought and typically the National Biodiversity Offset Guidelines are aimed at regular applications where Environmental Authorisation is sought prior to commencement.

It is important to note that this application is submitted retrospectively, addressing impacts that have already occurred on-site as a result of the proposed agricultural activity.

In addition, at the time of the impact, the property was subject to a Conservation Easement (Conservation Servitude). The original servitude encompassed an area exceeding 370 hectares, of which approximately 12 % (44.4 hectares) is owned by the applicant (refer to **Figure 8** below). Consequently, approximately 42.7 hectares of the property remain under the conservation servitude following the clearance of indigenous vegetation. Furthermore, the applicant has indicated a willingness to pursue the future acquisition of the property with conservation potential and is in ongoing discussions with the Overberg Renosterveld Conservation Trust to secure an easement.

6.2.1 Avoidance of impacts

Avoidance is not possible as the impact of clearing vegetation has already taken place.

6.2.2. Minimisation of impacts

Although the impact of clearing vegetation has already occurred, significant efforts which includes the mitigation measures recommended by specialist will be made to minimize the ongoing environmental effects associated with the agricultural activities on-site. The clearance of 1.7 ha of indigenous vegetation on site has contributed to its transformation from its natural state into an agricultural landscape. This transformation altered the structure and functionality of the site ecosystem, further reducing habitat availability for native species and increasing vulnerability to soil erosion, invasive species proliferation, and loss of biodiversity on site. However, with the implementation of carefully planned mitigation measures, it is possible to minimise these negative impacts and promote more sustainable land-use practices. Efforts will include the establishment of ecological buffer zones to protect remaining natural vegetation and sensitive habitats. Minimisation can also be sought through potential future conservation agreements with this particular owner, who has been proactive and willing throughout the 24G process.

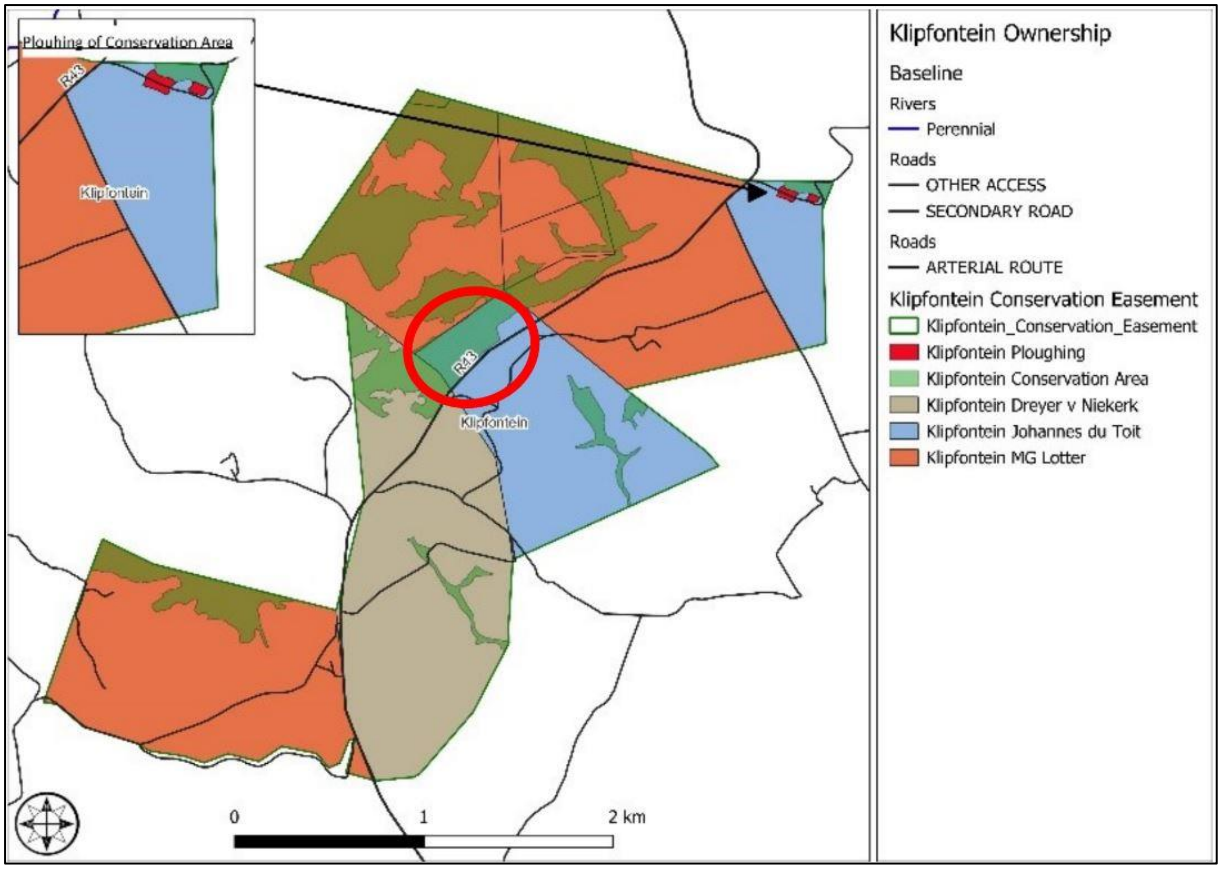


Figure 8: Map denoting the original Klipfontein easement and new ownership by the applicant (Mr du Toit).

6.2.3. Rehabilitation

Rehabilitation of the site is not considered applicable in this instance, as the applicant is applying for the retrospective rectification of an activity that has already been completed — namely, the clearing of approximately 1.7 hectares of Critically Endangered Western Ruens Shale Renosterveld. The cleared area has since been integrated into the existing cultivated lands for continued agricultural use. As such, the re-establishment of the original vegetation type is not feasible without significant disruption to ongoing operations. Instead, the applicant is focusing on proactive conservation measures elsewhere on the property to address the residual biodiversity loss through formal offset arrangements.

6.2.4. Offsetting

In lieu of direct rehabilitation and in consideration of the biodiversity offset, the residual loss of biodiversity has been rated as Medium and will be addressed through an easement. The applicant is already in engagement with the Overberg Renosterveld Conservation Trust (ORCT), and a Memorandum of Understanding (MoU), attached as **Appendix N**, has been signed to formalise this collaboration. The process will be implemented in the form of a conservation servitude registered over portions of the applicant's remaining properties which are shown in **Figure 8** above, that still contain intact areas of indigenous Renosterveld vegetation. These areas are currently being assessed in partnership with the ORCT to determine their suitability for long-term conservation.

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 occurred and that are yet to still occur on site. Despite the implementation of mitigation measures, the clearance of indigenous vegetation has resulted in the loss of habitat that once supported a variety of species. This loss of critically endangered Western Ruens Shale Renosterveld vegetation is irreversible, and the disturbance to the natural habitat, although limited to the disturbed areas, remains a residual impact. While restoration efforts are planned to enhance ecological function and rehabilitate the disturbed areas, the loss of biodiversity in the cleared areas cannot be fully recovered within a short timeframe.

To further mitigate the impact, the applicant has demonstrated a willingness to pursue long-term conservation outcomes. A Memorandum of Understanding (MoU) has been signed with the Overberg Renosterveld Conservation Trust (ORCT) to establish Conservation Servitudes on other portions of the applicant's properties which are illustrated in **Figure 8**, that still support intact Renosterveld vegetation.

7. CONCLUSION

Pursuing an official Biodiversity Offset in this scenario, is not recommended. The reasons for this can be summarised as follows:

- The findings of the Terrestrial Biodiversity Assessment and the state of the vegetation on the property and impacted areas was not consistent with the CR vegetation type due to operational impacts associated with the active farming.
- It is not possible to fully apply the mitigation hierarchy to retrospective applications as the impact has already occurred.
- The clearance was done in error, in small pockets of vegetation within the farmland. The clearance aimed to create straight lines to more effectively operate the farming equipment.
- The landowner already has existing Conservation Servitude agreements with the Overberg Renosterveld Conservation Trust (ORCT) and has shown willingness to not only rectify his NEMA infringement but engage with the ORCT for new and future conservation opportunities. The value of the existing partnership between these two parties is significant.
- As per the MoU under **Appendix N**, consultation and site visits will be undertaken towards the end of May 2025 for the establishment of a Conservation Easement (servitude) to secure at least 30 ha of renosterveld habitat.

7.1. Recommended way forward

Given the scale of the impact and the context of the site, it is recommended instead that the applicant be required to actively pursue the establishment of a Conservation Servitude (Easement) in partnership with the Overberg Renosterveld Conservation Trust (ORCT). This approach provides a practical and context-sensitive alternative for securing long-term conservation outcomes on ecologically valuable land within the applicant's broader landholding. The ORCT has confirmed its willingness and capacity to engage with the applicant in this regard and has already signed a Memorandum of Understanding (MoU) to this effect, refer to **Appendix N**. This serves as a credible commitment from both parties to advance the conservation of remaining Western Ruens Shale Renosterveld in the region.