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**BOTANICAL ASSESSMENT FOR SECTION 24G  
PROCESS FOR UNAUTHORISED LOSS OF  
NATURAL VEGETATION ON PORTION 10 OF  
AVONTUUR 429 (GABRIELSKLOOF),  
CALEDON.**

**Prepared for: Infinity Environmental, Cape Town**

**Client: Botriver Hills Trading (Pty) Ltd**

**31 May 2021**

## DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence and include an abbreviated Curriculum Vitae.

I, N.A. Helme, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own.



NA Helme (Sole Proprietor: Nick Helme Botanical Surveys)

**The author believes that the information presented in this report complies with the PROTOCOL FOR THE SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR ENVIRONMENTAL IMPACTS ON TERRESTRIAL PLANT SPECIES (Government Gazette No. 43855 of 30 October 2020).**

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### ABRIDGED CV:

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University of Cape Town, South Africa. BSc (Honours) – Botany (Ecology & Systematics). 1990.

Since the end of 2001 I have been the Sole Proprietor of Nick Helme Botanical Surveys, and have undertaken over 1800 site assessments, specialising in the diverse flora of the south-western Cape.

A selection of relevant previous botanical work is as follows:

- Botanical assessment of proposed new cultivation on Welbedacht farm, Tra Tra Mountains (Footprint Environmental 2020)
- Biodiversity Compliance Statement - Philippi erf 1/1460 (Infinity Environmental 2020)
- Botanical assessment of Kleinmond WWTW expansion (Aurecon 2020)

- Botanical assessment of Mooresburg WWTW expansion (Aurecon 2020)
- Botanical assessment of Struisbaai cemetery sites (Infinity Environmental 2020)
- Botanical assessment of MoPama development site, Swellendam (Landscape Dynamics 2020)
- Botanical assessment of proposed new cultivation on Portion of Wittewater 148, Piketberg (Cornerstone Environmental 2019)
- Botanical assessment of Droogerivier farm Leipoldtville (Footprint Environmental 2018)
- Botanical assessment of Sebulon farm, Redelinghuys (Natura Libra Environmental Services 2018)
- Botanical assessment of proposed new cultivation on Ptn 2 of farm Groenevalley 155, Piketberg (Cederberg Environmental Assessment Practise 2017)
- Botanical assessment of proposed new cultivation on Groot Patrysvlei, Clanwilliam (Cederberg Environmental Assessment Practise 2017)
- Botanical assessment of proposed new cultivation on farm Rosendal, Koue Bokkeveld (Cederberg Environmental Assessment Practise 2016)
- Botanical assessment of proposed cultivation on farm Kransvlei, Clanwilliam (Cederberg Environmental Assessment Practise 2016)
- Botanical assessment of proposed cultivation on farm Erfdeel, Bo-Swaarmoed, Ceres (Cederberg Environmental Assessment Practise 2016)
- Botanical assessment of proposed cultivation on farm Kransvlei and Kriedouberg, Clanwilliam (Cederberg Environmental Assessment Practise 2016)
- Botanical assessment of proposed prospecting areas on Raskraal 255, Vanrhynsdorp (Venatouch 2016)
- Botanical assessment of proposed dam expansion on farm De Vlei, De Doorns (Cederberg Environmental Assessment Practise 2015)
- Botanical assessment of proposed cultivation on Rem. Andriesgrond 204, Clanwilliam (Cederberg Environmental Assessment Practise 2015)
- Botanical assessment of proposed dam on Modderfontein farm, Citrusdal (Cederberg Environmental Assessment Practise 2015)
- Botanical assessment of proposed cultivation on farms Laastedrif & Kleinvlakte, Bo Swaarmoed, Ceres (Cederberg Environmental Assessment Practise 2014)
- Botanical assessment of Remainder of Farm Rietfontein 244, Piketberg (Cederberg Environmental Assessment Practise 2014)

- Botanical Assessment of farm Draaihoek 293, Vredendal (Cederberg Environmental Assessment Practise 2013)
- Botanical Assessment of farm Gideonsoord 303, Klawer (Cederberg Environmental Assessment Practise 2013)
- Botanical assessment of proposed agricultural expansion on Remainder of Farm Chilton 160, Piketberg (Cederberg Environmental Assessment Practise 2013)
- Botanical assessment of proposed Namakwa Sands expansion area, Brand se Baai (SRK Consulting 2013)
- Botanical scoping study of proposed Wind Energy Facility near Brand se Baai (Savannah Environmental 2010)
- Botanical assessment of a portion of Sandrug farm, Leipoldtville (Footprint Environmental 2010)
- Best practise guidelines for Potato Farming in the Sandveld (CapeNature & Potatoes South Africa 2007)

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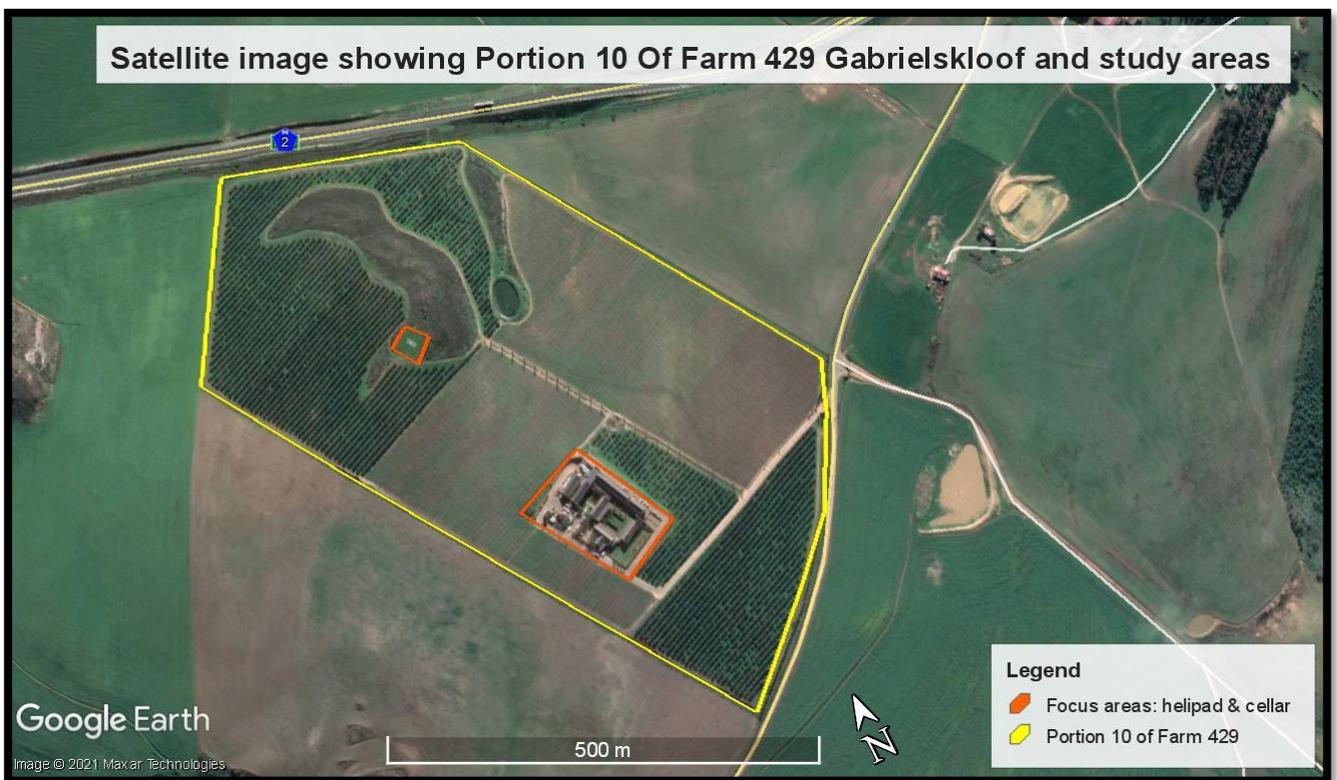
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## 1. INTRODUCTION

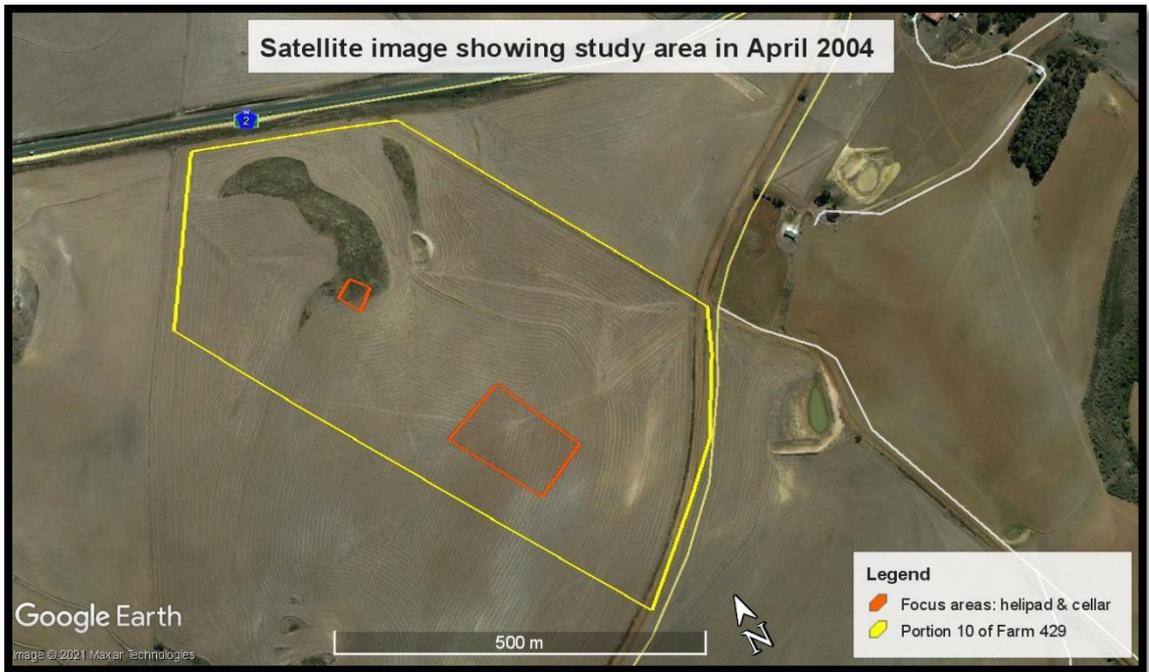
This botanical assessment was commissioned to inform the NEMA Section 24G Rectification process being undertaken for potentially unauthorised development on Portion 10 of Farm Avontuur 429 (known as Gabrielskloof) in the Caledon district. Portion 10 of Avontuur 429 is 29.4ha in extent, and is about 9km east of Botriver, in the Western Cape. The client purchased Portion 10 in 2003.

The activities and areas of interest on site area:

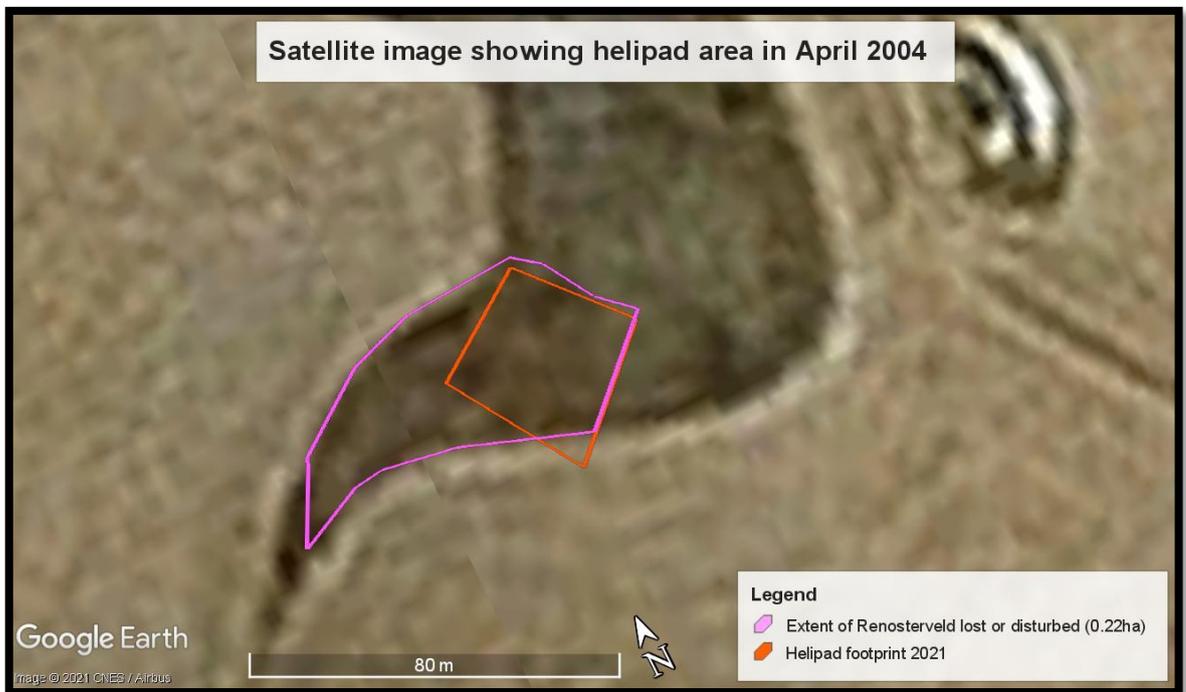
- Construction of a helipad near the main cellar, measuring approximately 1050m<sup>2</sup> in extent (but with total loss of Renosterveld in and around helipad being about 2200m<sup>2</sup>), undertaken between 2006 and 2009.
- Construction of the main cellar complex measuring approximately 13 150m<sup>2</sup> in extent.
- Construction of access and internal roads on farm 10/429.



**Figure 1:** Satellite image (May 2021) showing areas assessed on Portion 10 of Gabrielskloof 429.



**Figure 2:** Satellite image from April 2004 showing areas assessed on Portion 10 of Gabrielskloof 429, prior to any development. It is clear from this imagery that the helipad was built in an area of largely natural Renosterveld, whilst the cellar area was built on cultivated land.



**Figure 3:** Satellite imagery from 2004, prior to helipad development, with pink polygon showing total disturbed area of Renosterveld (about 0.22ha), and orange area being the primary helipad footprint.

## 2. TERMS OF REFERENCE

The terms of reference for this study were to:

- Identify and describe the vegetation in the study area (prior to disturbance) and place it in a regional context, including its status in terms of the relevant Spatial Biodiversity Plans (CBA / ESA / ONA, etc)
- Identify and locate any (likely) plant Species of Conservation Concern in the study areas
- Provide an overview of the likely botanical conservation significance (sensitivity) of the study areas, using time series imagery (GE) and comparison with adjacent natural vegetation
- Identify all likely botanical impacts of the cellar development and the helipad development
- Assess the significance of the botanical impacts of the above
- Provide feasible and reasonable recommendations to mitigate and minimise the botanical impacts identified.

## 3. LIMITATIONS, ASSUMPTIONS AND METHODOLOGY

No specific site visit was undertaken, but the adjacent property was surveyed on 30 November 2020, as part of a 24G study for Portion 7 of Farm 429 (Helme 2021), and the author is thus familiar with the vegetation types in the area, and deemed it sufficient to do this report as a desktop report, given the clear satellite imagery and small areas involved. The composition of the vegetation lost within the helipad is inferred from a combination of the available satellite imagery and from familiarity and extensive experience with the same Renosterveld vegetation type over the last twenty years. The lack of data from the helipad area prior to vegetation loss, and because no specific site visit was undertaken in 2021 means that the author has used more of a habitat-based approach, rather than a species-based approach. Conservation value and sensitivity of habitats are a product of species diversity, plant community composition, rarity of habitat, degree of habitat degradation, rarity of species, ecological viability and connectivity, vulnerability to impacts, and reversibility of threats (which in this case generally refers to the rehabilitation potential of the habitat; high sensitivity habitats having low rehabilitation potential).

References include the biodiversity website iNaturalist.org, the GIS based South African National Biodiversity Institute (SANBI) vegetation map for South Africa (Mucina & Rutherford 2012 and online updates), the CapeNature Spatial Biodiversity Plan (Pence 2017), along with the National Spatial Biodiversity Assessment (NSBA; Rouget *et al* 2004; Skowno *et al* 2019), and the National List of Threatened Ecosystems (DEA 2011). Conclusions were drawn based on this documentation and twenty-five years of professional experience in the area and the region.

Google Earth satellite imagery dated May 2021 (and earlier time series going back to April 2004) was used to verify prior vegetation patterns, and for mapping purposes. Google Earth was used to measure polygon areas. It is evident from the time series imagery that the helipad was constructed between 2006 and 2009.

The No Go alternative is assumed to be a continuation of the *status quo*, i.e. no further cultivation of currently virgin land in the study area, with no livestock grazing or trampling, some degree of alien invasive vegetation management, and no expansion of the helipad area. Ongoing cultivation of the currently cultivated areas is assumed.

It is calculated and assumed that about 0.22ha of previously natural or partly natural vegetation was lost to the helipad development, as shown in Figure 3. It is clear from time series satellite imagery that the winery, cellar and associated roads were built within cultivated lands, clearly visible as such in imagery from April 2004 (see Figure 2). These are thus not further assessed, as no natural vegetation would have been lost due to this part of the development.

It is assumed that all required mitigation as noted in this report will be correctly and timeously implemented.

#### **4. STUDY AREA AND REGIONAL CONTEXT**

The study area is within a winter rainfall area, with moderate total annual rainfall (350-450mm/yr), and moderate to hot temperatures in the summer. Soils in the study area are stony loamy clays, derived from shales, with extensive surface stone in places. There are no wetlands within either of the focus areas.

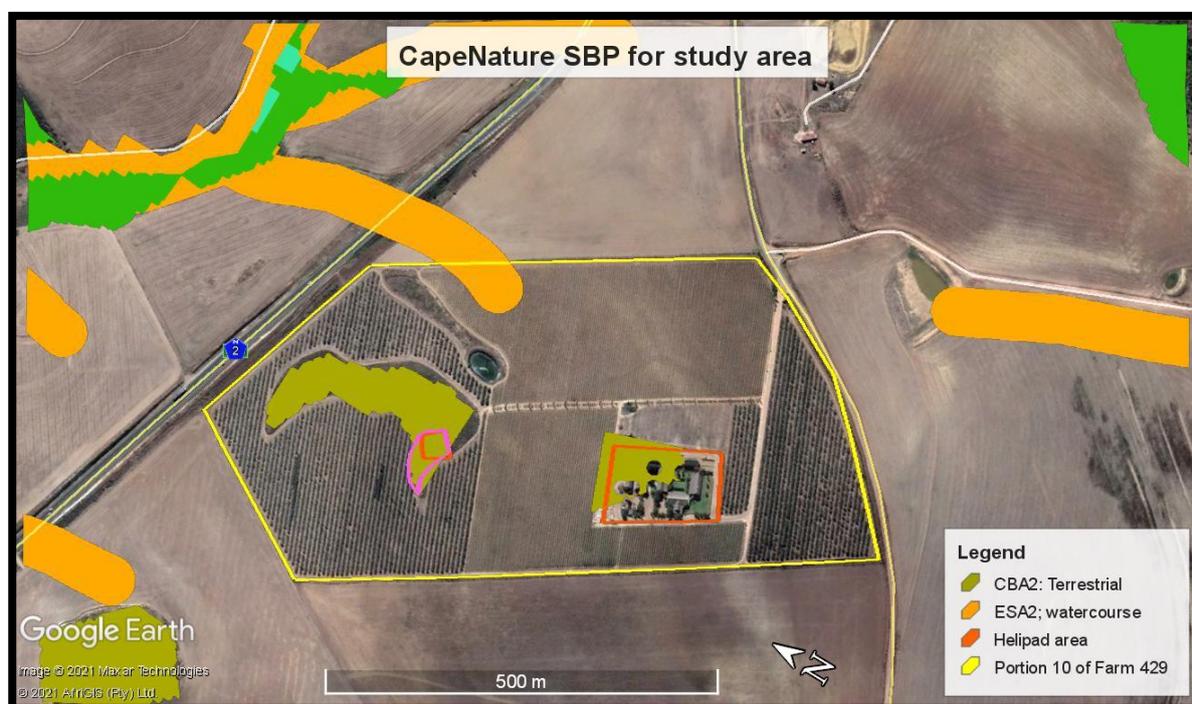
##### **4.1 National and Regional Context**

The site is part of the South Coast Renosterveld bioregion (Mucina & Rutherford 2006), which is within 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 (typically the biggest habitat threat nationally), 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 process undertaken is 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 study area lies near the western edge of the Overberg Ruens, a major crop and livestock producing region. The Ruens is one of the most heavily cultivated regions in the country (mostly for cereals and fodder), and less than 50% of the original various natural vegetation types (notably three types of Shale Renosterveld) remain intact, and many of these areas are under intense development pressure (pers. obs.). The area is consequently home to a great number of threatened plant species (well over 200 species), many of which are also very localised.

The CapeNature Spatial Biodiversity Plan (Pence 2017) has identified both aquatic and terrestrial Critical Biodiversity Areas (CBAs) throughout the province, plus other categories such as Ecological Support Areas (ESAs). Figure 4 shows the relevant section for the study area, and the map indicates that the helipad and associated disturbance is all within what was mapped as CBA2, as is part of the winery area, although the latter is clearly an error, in my view. The mapped CBAs are selected because the areas support moderate to good quality, representative portions of threatened habitat, and because the areas may support plant Species of Conservation Concern. The mapping in the helipad area is largely supported, but the CBA2 mapping for part of the winery is not supported, as this area was clearly all a cultivated land in 2004 (see Figure 2).



**Figure 4:** Extract of CapeNature's Spatial Biodiversity Plan for the area. The helipad and associated disturbance is all within what was mapped as CBA2, as is part of the winery area (incorrectly so, in my view).

## 5. THE VEGETATION ON SITE

### 5.1 Background

According to the SA Vegetation map (Mucina & Rutherford, 2018 update) **Western Ruens Shale Renosterveld** is the only vegetation type in the study area, and this mapping is supported, but no copy of this map is provided as it adds no real value.

**Western Ruens Shale Renosterveld** is gazetted as a **Critically Endangered** habitat on a national basis (DEA 2011) and the latest study, not yet gazetted, indicates that it should remain at this highest level (Skowno *et al* 2019). The unit has less than 14% of its original total extent still remaining (as of 2004; probably down to about 13% now), less than 1% is conserved, with a national conservation target of 27% (Rouget *et al* 2004). This vegetation type is species rich, and because it occurs on nutrient rich, lowland soils is very vulnerable to further loss to agriculture, in particular.

Fire is an important driver of Fynbos and Renosterveld dynamics and is necessary perhaps once every ten to fifteen years in most Renosterveld and Fynbos in order to maintain optimal ecological functioning (Helme & Rebelo 2016). However, the natural habitat remnants in most of the Cape lowlands are now so fragmented that fire cycles are no longer natural and are entirely at the whims of the landowners, with the result that many areas are not burnt often enough, and others too often. In the absence of fire, grazing, soil moisture, soil depth, and soil type are instead often the primary plant community drivers. The remaining natural veld in the study area is probably very old (>20yrs) and can be regarded as senescent (long lived plants dying of old age), and thus well overdue for a fire.

### 5.2. The vegetation on site

Soils in the area are generally loamy clays, with extensive outcropping shale, which is why the ridge in the vicinity of the helipad was never cultivated. Deeper soils on the entire property were all cultivated by 2004, with the exception of a second thin lens of Renosterveld on a small rocky ridge to the northeast of the helipad ridge (see Figure 2).

The remnant Renosterveld on the rocky ridge in the vicinity of the helipad is likely to support the following indigenous species: *Eriocephalus africanus*, *Elytropappus rhinocerotis*, *Cliffortia ruscifolia*, *Pentameris eriostoma*, *Tenaxia stricta*, *Glottiphyllum depressum*, *Drimia capensis*, *Diosma hirsuta*, *Oedera imbricata*, *Athanasia trifurcata*, *Muraltia heisteria*, *Ehrharta calycina*, *Chaenostoma aethiopicum*, *Passerina corymbosa*, *Anthospermum aethiopicum*, *Metalasia acuta*, *Lycium afrum*, *Felicia filifolia*, *Drosanthemum asperulum*, *Capeochloa arundinacea*, *Babiana purpurea*, *Oedera squarrosa*, *Colpoon compressum*, *Albuca cooperi*, *Ornithogalum thyrsoides*, *Berkheya armata*, *Ficinia nigrescens*, *Chrysocoma ciliata*, *Restio capensis*, *Heliophila* sp. and *Helichrysum patulum*.

The vegetation within what is now the helipad footprint is likely to have included many of the species noted above, and may have included one or all of the five plant Species of Conservation Concern (SCC) noted in Table 1. All five of these SCC have been recorded from within 1km of the study area, in similar habitat (pers. obs.).

Species	Redlist Status	Likelihood of previously occurring in helipad focus area
<i>Babiana purpurea</i>	Endangered	High
<i>Acrodon subulatus</i>	Endangered	Medium
<i>Drosanthemum striatum</i>	Vulnerable	Medium
<i>Drosanthemum flavum</i>	Endangered	Medium
<i>Aloe brevifolia</i>	Endangered	Medium

**Table 1:** List of plant Species of Conservation Concern recorded in similar Renosterveld habitat, within 1km of the helipad site.

## 6. BOTANICAL SENSITIVITY

The natural vegetation in the helipad footprint, prior to disturbance and loss, is likely to have been of Medium to High botanical sensitivity.

Medium - High sensitivity areas support largely intact and viable examples of a nationally threatened vegetation type – Western Ruens Shale Renosterveld. Additionally, these areas support regionally significant populations of between one and five plant Species of Conservation Concern, which are typically indicative of a threatened habitat or plant community. These areas are mapped as ESAs or CBAs (see Figure 4). Medium - High sensitivity areas should generally be considered No Go areas for development.

## 7. IMPACT ASSESSMENT

Any development usually has both direct and indirect impacts on the vegetation and ecology, and this would be the case with the unauthorised development. Direct impacts usually occur as a result of the development phase, whilst the indirect impacts may occur at this stage but can also take place at the post development (operational) phase. Indirect impacts are often hard to observe and measure, but may in many cases be more significant than the direct impacts, although this is not usually the case in a partly natural agricultural landscape.

### 7.1 Construction Phase (Direct) Botanical Impacts

Construction phase impacts for the new helipad are primarily loss of natural and partly natural vegetation in the development footprint (about 0.22ha in extent), and associated loss of site subpopulations of up to 5 different plant Species of Conservation Concern (see Table 1).

On this property the key botanical impact was loss of Medium – High sensitivity vegetation, within Western Ruens Shale Renosterveld. The vegetation unit is gazetted as **Critically Endangered** habitat on a national basis (DEA 2011), and Skowno *et al* (2019) have maintained it at this level (not yet gazetted).

An important secondary impact may have been the loss of site subpopulations (probably fairly small) of up to five plant Species of Conservation Concern (see Table 1).

The helipad also resulted in the loss of areas subsequently mapped as CBA2 (see Figure 4).

Botanical significance of the loss of habitat in the helipad footprint would be Medium – High negative before mitigation, and Medium negative after mitigation. This is driven by the loss of Medium - High sensitivity vegetation and of potentially as many as 5 plant SCC.

The extent of the impacts are deemed to be local and regional, but also national, in that the vegetation types and threatened species are also assessed at a national level.

<u>Development Component</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of impact</u>	<u>Irreplaceable loss of biodiversity</u>	<u>Significance before mitigation</u>	<u>Significance after mitigation</u>
0.22 helipad area	Local & regional	Permanent & longterm	High	Definite	Medium to High	Medium to High -ve	Medium -ve
Winery & cellar	Local & regional	Permanent & longterm	Very Low	No impact on natural vegetation	None	Neutral	Neutral
No Go	Local	Unknown and variable	Neutral	Unlikely	Very Low	Neutral	Neutral

**Table A:** Summary table for construction phase botanical impacts associated with the development components. The primary construction phase impacts would be loss of Medium to High sensitivity vegetation in the helipad footprint, associated with loss of populations of up to 5 plant Species of Conservation Concern. Primary mitigation would be a biodiversity offset, in the form of a suitable donation to the Overberg Lowland Renosterveld Conservation Trust.

## 7.2 Operational Phase Botanical Impacts

Operational phase impacts would take effect as soon as the natural or partly natural vegetation on the site was lost, and will persist in perpetuity, or as long as the areas remain disturbed and unrehabilitated. The primary operational phase impact of the helipad is habitat fragmentation,

and reduction of overall viability due to size reduction. This is likely to be of low to medium negative significance before and after mitigation.

Fire at ecologically appropriate intervals (every 8 – 15 years) is necessary in Renosterveld and Fynbos for optimal ecological functioning of this fire dependant vegetation type (Helme & Rebelo 2016). The disruption of natural fire regimes in natural habitat bordering cultivation is worth noting, and is a common problem. The natural vegetation on the adjacent patch is probably now largely senescent, having not been burnt for at least 15 years. Senescence leads to gradual species loss. On balance the increased likelihood of longer fire return intervals (versus what would occur naturally in untransformed veld), way beyond what is ecologically optimal, is likely to have a Medium negative botanical impact before mitigation, and Neutral after mitigation (management burns of the natural veld could technically be undertaken, and are proposed as mitigation).

Some positive impacts may materialise during the operational phase post mitigation, in the form of invasive alien plant management of the Renosterveld patches, and fire management of these areas, but the likelihood of these being implemented is unknown in the absence of formalised mitigation requirements (although an approve management program is understood to be likely to be an outcome of this process, which should enhance the likelihood of action). The significance of these impacts could be Medium positive over time, but the likelihood of these both being fully implemented is only moderate, with fairly low confidence levels.

<u>Development Component</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of impact</u>	<u>Irreplaceable loss of biodiversity</u>	<u>Significance before mitigation</u>	<u>Significance after mitigation</u>
0.22 helipad area	Local & regional	Permanent & longterm	Medium	Likely	Medium	Medium -ve	Low to Medium -ve
Winery & cellar	Local & regional	Permanent & longterm	Very Low	No impact on natural vegetation	None	Neutral	Neutral
No Go	Local	Unknown and variable	Neutral	Unlikely	Very Low	Neutral	Neutral

**Table B:** Summary table for operational phase botanical impacts associated with unauthorised existing development components. The primary operational phase impacts were loss of previous ecological connectivity and associated habitat fragmentation. \*Operational phase mitigation is here assumed to include appropriate fire management and alien invasive plant management of all remaining natural vegetation areas on the property.

### 7.3 The No Go Alternative

The No Go alternative (continuation of the *status quo*) is not easily assessed in this instance, as the development has happened, and the No Go would thus be purely theoretical. Given this constraint it is not further discussed.

### 7.4 Cumulative Impacts

The cumulative botanical impacts are in many ways equivalent to the regional botanical impacts, in that the vegetation type impacted by the development has been, and will continue to be, impacted by numerous developments and other factors (the cumulative impacts) within the region. The primary cumulative impacts are loss of natural vegetation and threatened plant species to ongoing cultivation and expansion of agriculture, plus alien plant invasion (Mucina & Rutherford 2012; Helme & Rebelo 2016).

The overall cumulative botanical impact at the regional scale is Low to Medium negative before and Low negative after mitigation (alien invasive vegetation management and ecologically appropriate fire management in all natural areas on the property, plus a biodiversity offset contribution).

### 7.5 Positive Impacts

The primary positive botanical impact expected in the case of this project would arise only from implementation of the required mitigation – notably no further cultivation of natural vegetation, ongoing alien invasive vegetation management on all the remaining natural areas on site, ecologically appropriate fire management of these natural areas, plus a biodiversity offset contribution, with regular auditing of these actions. These all taken together will have a **Low positive** botanical impact on their own, which is what helps reduce the overall botanical impact of the operational phase down to Low to Medium negative (after mitigation).

## 8. MITIGATION REQUIREMENTS

Rehabilitation of the already disturbed areas (the subject of the 24G application) is pointless, in that it is practically very difficult, will take many years and a great deal of expert input, and will in any event never come close to replicating the diversity of faunal and flora on the site prior to development.

All required mitigation that is considered feasible, essential and mandatory, and is thus factored into the assessment is as follows:

- No further cultivation or disturbance of natural vegetation may be authorised on the property.
- All woody invasive alien plant species (notably Pines, Port Jackson wattle, rooikrans, stinkbean, *Hakea* and black wattle) should be removed from the natural portions of the

property within one year of any EA, using appropriate CapeNature approved methodology (felling at ground level followed by immediate herbicide painting of cut stems for species that resprout (wattles), simple felling of those that do not resprout, like pines and stinkbean). All pines taller than 2m should be felled, and smaller ones can be burnt in the management burns. Ongoing alien invasive plant management should be undertaken annually for at least five years after all areas are burnt, to deal with any soil stored seed that germinates after the fires.

- All natural areas on the property must be burnt in an ecologically appropriate autumn (March – April) management burn. The burns should only take place once all invasive alien vegetation has been felled and/or treated, and should be fully undertaken by May 2023, and should probably be undertaken with the help of the local FPA and a professional veld fire management crew.
- Ecological auditing of the above requirements must be undertaken annually for at least four years after any authorisation or 24G decision. This is to ensure that the required management actions are being undertaken. The audit report must highlight any changes that need to be made by the landowner to comply with the management requirements.
- The approximately 0.22ha of Critically Endangered Renosterveld vegetation that was lost to the helipad development should be offset by means of a suitable cash donation to the Overberg Renosterveld Conservation Trust. This is the only organisation entirely dedicated to conservation of the vegetation and fauna in this region (see <https://overbergrenosterveld.org.za/about-us/>). The national Offsets Policy (DEA 2017) notes that Critically Endangered ecosystems should not be offset (impacts should rather be avoided), but where the damage and loss has already occurred a ratio of 30:1 should be used. This means that the applicant should donate funds which will allow for purchase and ongoing ecological management costs of at least 6.6ha of Renosterveld (30 times 0.22ha). This offset donation should be made within one year of any Section 24g decision.

## **9. CONCLUSIONS AND RECOMMENDATIONS**

- The winery/cellar and associated access roads were clearly cultivated land in 2004, and development of these features during the period 2006 – 2009 therefore did not contribute to the loss of any Western Ruens Shale Renosterveld.
- The helipad area was evidently mostly natural or near natural vegetation when it was developed during the same period, and thus resulted in the loss of about 0.22ha of Critically Endangered Western Ruens Shale Renosterveld, and possibly caused the loss of portions of the site subpopulations of up to 5 plant Species of Conservation Concern.
- Loss of the vegetation in the helipad area is likely to have had a Medium to High negative botanical impact before mitigation. If properly mitigated the impact could be reduced to Medium negative.

- All mitigation outlined in Section 8 must be timeously implemented. No rehabilitation in the helipad area is recommended as mitigation, as it is not likely to succeed in replacing lost diversity or ecological function.

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