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BOTANICAL ASSESSMENT FOR SECTION 24G PROCESS, Ptn 7 OF FARM RIETFONTEIN 259, CALEDON, WESTERN CAPE.

Compiled for: Lornay Environmental Consulting

Applicant: Remkuil Boerdery Bpk., Caledon

4 Nov 2024

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.

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ABRIDGED CV:

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Since 1997 I have been based in Cape Town, and have been working as a specialist botanical consultant, specialising in the diverse flora of the south-western Cape. Since the end of 2001 I have been the Sole Proprietor of Nick Helme Botanical Surveys, and have undertaken over 1700 site assessments in this period.

A selection of relevant previous botanical work is as follows:

- Scoping and Constraints studies for Cape Winelands Airport (PHS Consulting 2022-2024)
- Macassar WWTW IA (Zutari 2023)
- Strandfontein Coastal Node IA (Infinity Environmental 2024)
- Hazendal Ptns 31 & 33 (Monique Sham 2024)
- N7 weighbridge IA (SES 2023)
- Botanical assessment of proposed development on Ptn 29 of Farm 410 Caledon (PHS Consulting 2022)
- Botanical assessment of proposed development on Ptn 10 of Broken Hill 88, Heidelberg (Isikhova 2021)

- Botanical assessment of Ptns 3 & 6 of Farm 563 Kleinmond (Lornay Environmental 2021)
- Botanical assessment of Ptn 9 of Farm 429 Gabrielskloof, Caledon (Infinity Environmental 2021)
- Baseline ecological assessment of Karwyderskraal 584, Caledon (Terramanzi 2021)
- Botanical impact assessment of proposed development of Ptn 29 of Farm 410, Caledon (PHS Consulting 2021)
- 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 Mooreesburg 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 Ptn of Rem of Erf 1 Caledon (Theewaterskloof Municipality 2019)
- 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 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)

CONDITIONS RELATING TO THIS REPORT:

The methodology, findings, results, conclusions and recommendations in this report are based on the author's best scientific and professional knowledge, and on referenced material and available knowledge. Nick Helme Botanical Surveys and its staff reserve the right to modify aspects of the report, including the recommendations and conclusions, if and when additional relevant information becomes available.

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1. INTRODUCTION

This botanical assessment was requested to inform the Section 24g environmental rectification and authorisation process being followed for the alleged unauthorised clearing of natural vegetation on Portion 7 of Farm Rietfontein 259 in the Caledon district of the Western Cape (Figure 1). This Portion is about 56ha in extent, and the cleared area is about 2ha (see Figure 1). The total extent of remaining natural vegetation on this portion is about 6.2ha, with all the rest being cultivated.

Curtis-Scott (of the ORCT, 2024) provided relevant background information to this issue in a letter to Lornay Environmental Consulting in April 2024, noting the following relevant points:

- In 2016 WWF-SA (with us, the ORCT, driving the process and later being the implementing agent) signed a Conservation Servitude with MG Lotter, then the owner of Remkuil/Klipfontein (Ptn 7/259) and several other adjacent land parcels. This agreement was registered on the title deeds. The site was signed up as an 'easement' (conservation servitude) due to the fact that it contains some of the last and 'largest' remaining patches of Critically Endangered Western Rûens Shale Renosterveld (WRSR). The entire original easement comprises over 370ha of WRSR, of which about 12% now falls under Mr du Toit's ownership. Mr Lotter also sold another cadastre to Mr Dreyer van Niekerk, thereby essentially splitting a single easement into three separate easements. This has made the management of the easement complicated for us as the 'management authority / implementing agent'.
- The ploughing of 1.67 ha of CR virgin renosterveld requires an 'offset' of a 1:30 ratio, meaning that 50 ha of the same vegetation type need to be secured elsewhere to 'balance the scales', according to SANBI's current offset guidelines. I have met with Mr du Toit on his other farm in order to explore possibilities there to secure these 50ha, but much of the veld there is degraded and rehabilitation costs would be substantial, making the viability of an easement a little uncertain. I would like to engage further on the issue, and I know Mr du Toit is open to this. I would also like to discuss the *possibility* of re-consolidating the 30ha purchased from Mr Lotter back into the neighbouring land portion still owned by Mr Lotter. This reduces the splitting of renosterveld remnants further and allows the continued management of this continuous portion of CR veld.
- We are happy to meet with Mr du Toit to discuss further. What is clear from my engagements with him is that Mr du Toit regrets what happened here and that he is open to finding a positive way forward for renosterveld.



Figure 1: Satellite image showing the area of natural vegetation that was cleared. Satellite image dated April 2023.

2. TERMS OF REFERENCE

The terms of reference for this study were as follows:

- Undertake a site visit to assess the vegetation in the study area, with a focus on and near the area allegedly cleared without authorisation (about 1.7ha)
- Identify and describe the vegetation in the study area and place it in a regional context, including its status in terms of the CapeNature Spatial Biodiversity Plan (CBA/ESA/ONA, etc)
- Identify and locate any (likely) plant Species of Conservation Concern in and around the study area, based on observation, literature and iNaturalist website review
- Provide an overview and map of the likely botanical conservation significance (sensitivity) of the site, and compare this to Screening Tool findings
- Identify and assess (according to standard IA methodology) the botanical impacts and significance of the unauthorised clearing, including impacts associated with the development and operational phases
- Recommend mitigation measures to minimise impacts and to help mitigate impacts associated with the ripping
- Discuss the need for an offset and assess whether this may be necessary, and provide comments on the possible quantum required.

3. LIMITATIONS, ASSUMPTIONS AND METHODOLOGY

The site was visited on 15 September 2024. This was at the peak of the optimal winter – spring flowering season in this winter rainfall area, and most (but not all) of the likely geophytes were thus flowering in the adjacent undisturbed areas of natural veld, and even some of the remnant species in the ripped areas were flowering. There were thus minimal seasonal constraints on the accuracy and detail of the botanical findings, and the primary constraint was that the area had already been ripped, with relatively little natural vegetation remaining evident (<2% cover). Given the constraints on the actual ripped site a habitat based approach was taken, where likely habitat diversity and quality in the ripped focus areas is inferred from the position in the landscape, adjacent remnant habitat, and time series satellite imagery. The author has undertaken extensive work within the region, which facilitates the making of local and regional comparisons and inferences of habitat quality and conservation value.

The ripped target areas were walked, and adjacent areas of natural vegetation were examined for comparison. Photographs of some of the key plant species were made using a Fuji mirrorless slr camera, and have been uploaded to the biodiversity website iNaturalist.org. Satellite imagery dated 18 April 2023 was used to inform this assessment, and for mapping. No Google Earth imagery of the site is available subsequent to the ripping, which took place after April 2023. Polygon areas were calculated using Google Earth.

The botanical sensitivity of a site is a product of plant species diversity, plant community composition, rarity of habitat, degree of habitat degradation, rarity of species, ecological viability and connectivity, restorability of habitat, vulnerability to impacts, and reversibility of threats.

The meaning of the No Go alternative in this case is difficult to define, and is not particularly relevant, as the focus areas are now essentially production lands, although not currently sown, but the applicant wishes to cultivate the ripped area.

4. **REGIONAL CONTEXT OF THE VEGETATION**

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).

The CapeNature Spatial Biodiversity Plan (2017) for the area (Figure 2) shows that most of the two ripped patches are mapped as high priority CBA1 (Critical Biodiversity Areas, terrestrial). There are some errors in the mapping – the adjacent CBA2 is in good condition and should be higher level CBA1 rather than CBA2, but apart from that it is generally fairly accurate and shows adequate congruence with my sensitivity mapping.



Figure 2: Extract of the CapeNature Spatial Biodiversity Plan (2017) for the area, showing that about half the two ripped patches (cleared areas) were mapped as high priority terrestrial CBA1 (Critical Biodiversity Areas).

5. THE VEGETATION

According to the SA Vegetation Map there is only one original natural vegetation type in the study area – Western Ruens Shale Renosterveld (Mucina & Rutherford 2018). Based on my ground-truthing I agree with this mapping, and no copy of this map is included as it adds little value.

Western Ruens Shale Renosterveld is gazetted as **Critically Endangered** on a national basis (Government of South Africa 2022), 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).

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).

The approximately 6ha of remaining natural vegetation in the study area shown in Figure 1 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. There are no woody or large herbaceous alien invasives in the higher quality patches of natural Renosterveld.

The patches of Renosterveld cleared in the study area during the last year have been ripped (see Plates 1-3), but not ploughed, sown or fertilized, and thus may have fairly good rehabilitation potential. Indigenous species observed alive in the ripped areas include *Drimia capensis*, *Dicerothamnus rhinocerotis*, *Oxalis purpurea*, *Oxalis obtusa*, *Asparagus capensis*, *Cyanella hyacinthoides*, *Pentameris eriostoma*, *Felicia filifolia*, *Eriocephalus africanus*, *Helichrysum patulum*, *Tenaxia stricta* and *Aspalathus angustifolius*. This is about 15-20% of what is still present in the adjacent undisturbed Renosterveld areas, and can be expected to increase to about 30-40% of the adjacent flora in the coming year, if left uncultivated. All Renosterveld areas in moderate to good condition are likely to be of High regional sensitivity (due mainly to the Critically Endangered status of the underlying vegetation types), in accordance with what the Screening Tool indicates.



Plate 1: View of the westernmost ripped patch, looking southeast. The rocky nature of the site is clearly seen, as are scattered, surviving indigenous plants.



Plate 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).



Plate 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.

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*.

5.1 Plant Species of Conservation Concern (SoCC)

No plant Species of Conservation Concern (SoCC) were recorded in the ripped areas during the survey. However, two SoCC were recorded within 200m 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.

6. IMPACT ASSESSMENT

6.1 Construction Phase (Direct) Botanical Impacts

The primary construction phase botanical impact of the cultivation (ripping) was loss and degradation of the existing natural and partly natural vegetation in the 2ha development area. The relevant vegetation type is gazetted as Critically Endangered on a national basis. As the applicant wishes to cultivate the ripped area the loss can be assumed to be of a permanent nature.

The presence or absence of plant Species of Conservation Concern in the cultivated areas has largely to be inferred from adjacent, currently natural areas. It is possible that between one and four plant SoCC may have occurred in the 2ha of ripped Renosterveld.

The botanical significance of this vegetation degradation and loss is <u>Medium to</u> <u>High negative</u> before mitigation (Medium negative after mitigation), given that this is a Critically Endangered vegetation type, and may have supported 1-4 SoCC.

The No Go alternative would clearly have had a lower direct (construction phase) botanical impact than the cultivation - presumably best rated as Neutral.

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.

Impact	<u>Extent of</u> impact	<u>Duration of</u> impact	<u>Intensity</u>	<u>Probability</u> of impact	<u>Irreplaceable</u> loss of biodiversity	<u>Significance</u> <u>before</u> <u>mitigation</u>	Significance after mitigation *
Loss of 2ha of Renosterveld (Critically Endangered)	Local & regional	Permanent	High	Definite	High	Medium to High <mark>-ve</mark>	Medium -ve
No Go	Local	Unknown and variable	Neutral to low negative	Not likely	Low	Neutral	Neutral

Table A: Summary table for construction phase botanical impacts associated with the unauthorised loss of natural vegetation in the study area in 2023. The primary construction phase impacts are long term and permanent loss of natural vegetation in the study area, including possible loss of an estimated 1-4 plant SoCC. *Mitigation in this case has not yet been implemented, and includes all steps required in Section 7 of this report.

6.2 Operational Phase Botanical Impacts

Operational phase impacts will take effect as soon as the natural vegetation in the focus areas is lost or disturbed – which has already partly occurred - and will persist in perpetuity, or as long as the area is not fully rehabilitated (unlikely, as applicant wishes to cultivate this). Operational phase impacts include loss of previous levels of ecological connectivity across the area, and associated habitat fragmentation, plus some reduction in overall viability of the Critically Endangered vegetation types at a local (site) and regional scale.

Overall the operational phase botanical impact of the new cultivation in the 2ha area is likely to have been **Low negative** (prior to mitigation), and **Low negative** after mitigation.

The No Go alternative would clearly have a lower indirect (operational phase) botanical impact than the ripping of the study area.

Positive ecological impacts could be realised in the future only if the applicant implements all required mitigation, but given the landowner complexity in this case even the confidence level associated with this is only moderate.

<u>Development</u> <u>Area</u>	<u>Extent of</u> impact	<u>Duration of</u> impact	<u>Intensity</u>	<u>Probability</u> of impact	Irreplaceable loss of biodiversity function	<u>Significance</u> <u>before</u> <u>mitigation</u>	Significance after mitigation *
Loss of 2ha of Renosterveld (Critically Endangered)	Local & regional	Permanent	Low to Medium	Medium	Medium	Low -ve	Low -ve
No Go	Local	Unknown and variable	Neutral	Likely	Low	Neutral	Neutral

Table B: Summary table for operational phase botanical impacts associated withthe cultivation of 2ha ripped in 2023. The main operational phase impacts wouldbe loss of previous ecological connectivity across the ripped area and associatedhabitat fragmentation. *Mitigation in this case has not yet been implemented,and includes all steps required in Section 7 of this report.

6.3 The No Go Alternative

The No Go alternative (continuation of the *status quo*) on this site would have clearly had lower construction and operational phase botanical impacts (Neutral) than the new cultivation, and would thus technically have been the preferred alternative from a botanical perspective, but in this case is purely academic, as the impact has already occurred.

6.4 Cumulative Impacts

The cumulative ecological impacts are in many ways equivalent to the regional ecological impacts, in that the vegetation type/s impacted by the new cultivation have been, and will continue to be, impacted by numerous developments and other factors (the cumulative impacts) within the region. The primary cumulative impacts in the region are loss of natural vegetation and threatened plant species to ongoing agriculture, urban development and alien plant invasion (Mucina & Rutherford 2012; Helme *et al* 2016).

The overall cumulative ecological impact of the 2ha of new cultivation in the study area at the regional scale is likely to have been Low negative.

6.5 **Positive Impacts**

No significant positive ecological impacts of the new cultivation have been recorded, and these would only manifest if the applicant does indeed undertake all the required mitigation (see Section 7).

7. REQUIRED MITIGATION

The following mitigation for the unauthorised 2ha of new cultivation undertaken in the study area in 2023 is deemed feasible, reasonable and mandatory:

- 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.

8. CONCLUSIONS

- The natural vegetation on site is confirmed as Western Ruens Shale Renosterveld, which is gazetted as Critically Endangered on a national basis.
- About half the ripped vegetation was mapped as CBA1 in the CapeNature Spatial Biodiversity Plan, and the ripped area is about 2ha in extent. The area was ripped, but not ploughed, sown or fertilised.

- Most of the approximately 2ha lost to unauthorised cultivation (ripping) was probably of High botanical conservation value, and may have supported between one and four plant SoCC (Species of Conservation Concern), although none were noted there now.
- The overall botanical impact of the loss and degradation of the approximately 2ha of Renosterveld on site is deemed to have had a Medium to High negative impact before mitigation, and Medium negative after mitigation (see Section 7 for all required mitigation).
- All mitigation outlined in Section 7 is considered feasible, reasonable and essential, and must be implemented timeously and correctly.
- As per the DEA Biodiversity Offset Guidelines (DEA 2022) a conservation contribution (easement) of at least 60ha of Renosterveld is required as the primary mitigation for loss of 2ha of Critically Endangered Western Ruens Shale Renosterveld. A commitment of this nature would not impede existing farming activities in any substantive way, but will require a solid commitment by the landowner to abide by the NEMA laws in future. A conservation easement or contract reserve for the relevant, chosen offset area should be accompanied by an Integrated Management Plan for the conservation area which would focus on the most important management principles related to fire, alien clearing, livestock management and erosion control.

9. **REFERENCES**

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