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Pri.Sci.Nat # 400045/08

BOTANICAL ASSESSMENT FOR PROPOSED HOUSE AND SECTION 24G PROCESS – PORTION 1 OF FARM FARUFERN 974, MISTY CLIFFS, WESTERN CAPE.

Compiled for: Infinity Environmental, Mowbray

Applicant: A. Joseph & M. Samuels

24 October 2025

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

ABRIDGED CV:

Contact details as per letterhead.
Surname : HELME
First names : NICHOLAS ALEXANDER
Date of birth : 29 January 1969
University of Cape Town, South Africa. BSc (Honours) – Botany (Ecology & Systematics), 1990.

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 2000 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)
- Strandfontein Coastal Node IA (Infinity Environmental 2024)
- Hazendal Ptns 31 & 33 (Monique Sham 2024)
- N7 weighbridge IA (SES 2023)
- Macassar WWTW IA (Zutari 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 proposed construction of a private dwelling and access road, and the alleged unauthorised clearing of Endangered natural vegetation on Portion 1 of Farm Farufern 974 in the Misty Cliffs area of the Cape Peninsula, Western Cape (Figure 1). The proposed dwelling coverage is about 750m^2, with the overall disturbed area likely to be about 2200m^2 (including access road and gabion retaining walls; see Figure 2). The total property is 15.28ha in extent, and extends from about 10masl to about 326masl.

An area of about 431m^2 was brushcut and cleared of vegetation by a mechanical digger immediately above the M65 in February 2025, due to a misunderstanding by the contractor, who was authorised to clear just the new road access off the M65, and this vegetation clearing is the subject of the 24g application. An area of about 193m^2 was brushcut on the adjacent TMNP portion to the south.

The proposed house would be located between the 36m and the 48m contours. An iterative process has been followed in terms of siting the house, and the preferred location has been moved down from the initially proposed 55m contour, to accommodate botanical concerns.

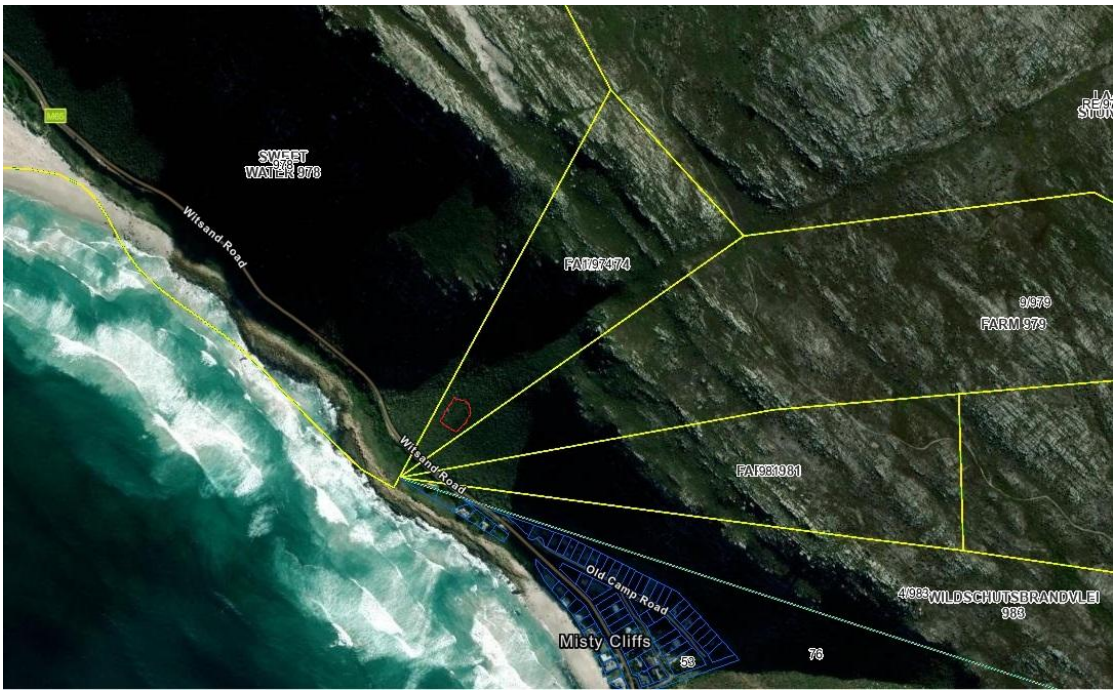

Figure 1: Extract from Cape Farm Mapper, showing Farm 974 Ptn 1, with approximate house position indicated in red outline.

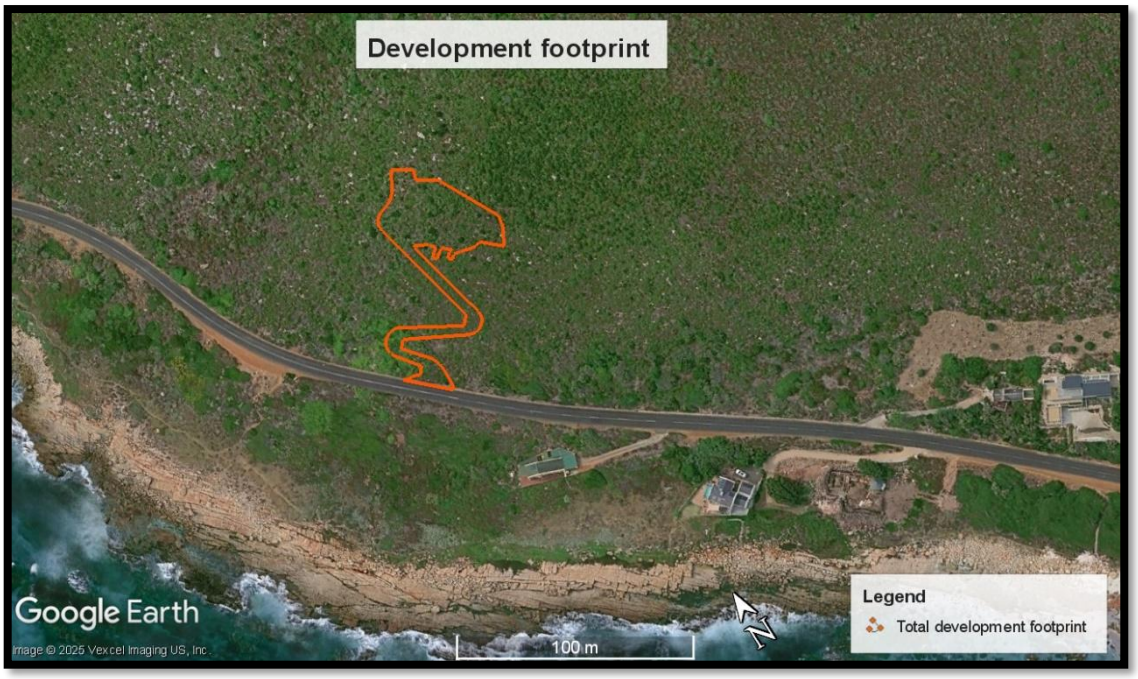

Figure 2: Overlay showing proposed location and extent of total footprint.

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, focussing on the possible dwelling and road access location, and including the area allegedly cleared without authorisation
- Identify and describe the vegetation in the study area and place it in a regional context, including its status in terms of the City of Cape Town Biodiversity Network (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 and the proposed construction of the dwelling and access road, including impacts associated with the development and operational phases
- Recommend mitigation measures to minimise impacts and to help mitigate impacts associated with the clearing and the proposed construction.

3. LIMITATIONS, ASSUMPTIONS AND METHODOLOGY

The site was first visited on 25 July 2024. This was within the optimal winter – spring flowering season in this mostly winter rainfall area, which helped minimise constraints in terms of plant seasonality (evidence of annuals and geophytes), but given the nature of the study area and the Strandveld/Fynbos vegetation the seasonality was in any case not considered an important constraint. The absence of fire from most of the study area for more than 20 years is actually more of a constraint in terms of observation of annual and geophytes, as these are largely dormant and not evident in such old veld. The author has undertaken extensive work within the region, including on this and various adjacent and nearby properties (Helme 2007, Helme 2023), which facilitates the making of local and regional comparisons and inferences of habitat quality and conservation value.

The study area and surrounding parts of Portion 1 were walked. Photographs of some of the key plant species were made using a Fuji mirrorless slr camera and a gps enabled Xiaomi cellphone, and have been uploaded to the biodiversity website iNaturalist.org. On site mapping was done using the Field Area Measure app, and the resultant polygons exported for use in Google Earth. Google Earth satellite imagery and time series from 2006 to 2024 were used to inform this assessment, and for mapping. No Google Earth imagery of the site is available subsequent to the clearing of the 431m^2 area, which only took place in early February 2025, but this area was inspected subsequently and photographs were taken. Recommendations were also made to the client and architect at this point in terms of rehabilitation of the cleared area, and this was implemented by early March 2025. Another brief site visit was undertaken in September 2025, specifically to look at the rehabilitation areas.

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 would presumably mean no further vegetation loss or dwelling construction on the property. However, the zoning in place does allow for a dwelling (and other buildings) of up to a total of 1500m^2, and hence one presumably needs to assume this is a possibility in this scenario.

4. REGIONAL CONTEXT OF THE VEGETATION

The study area is located near the western edge of the Overberg Ruens region, and is within the Core Cape Subregion (CCR) of the Greater Cape Floristic Region (GCFR; Manning & Goldblatt 2012). The study area is part of the Fynbos biome. The GCFR is one of only six Floristic Regions in the world, and it is also by far the smallest floristic region. The Core Cape Subregion occupies only 0.1% of the world's land surface, and supports about 9400 plant species, almost half of all the plant species in southern Africa, and some 20% of the plant species in sub-Saharan Africa. About 68% of all the species in the CCR do not occur elsewhere, and many have very small home ranges (these are known as narrow endemics). Most 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 Red Data Book listing process undertaken for South Africa is that 67% of the threatened plant species in the country occur only in the Fynbos biome, 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. Developments in this area thus need to take this into account.

The study area is best considered to be part of the Southwest Fynbos bioregion (Mucina & Rutherford 2006). This bioregion is renowned as one of the most biodiverse regions in the country, but is under heavy development pressure and pressure from invasive alien plants, and most intact examples support large numbers of threatened plant species, especially in the remaining lowland areas (Raimondo *et al* 2009).

The City of Cape Town Biodiversity Network (2023) for the area (Figure 3) shows that Portion 1 of Farm 947 is mapped as high priority CBA1a (good condition). CBAs are Critical Biodiversity Areas, and should not be developed, lost or impacted, as they support critical habitat and species; appropriate land uses should be low impact and biodiversity sensitive (Holmes *et al* 2018 and 2024). The area is bordered by land contracted into the Table Mountain National Park (TMNP) and as yet unproclaimed conservation land managed by the City of Cape Town (see Figure 3).

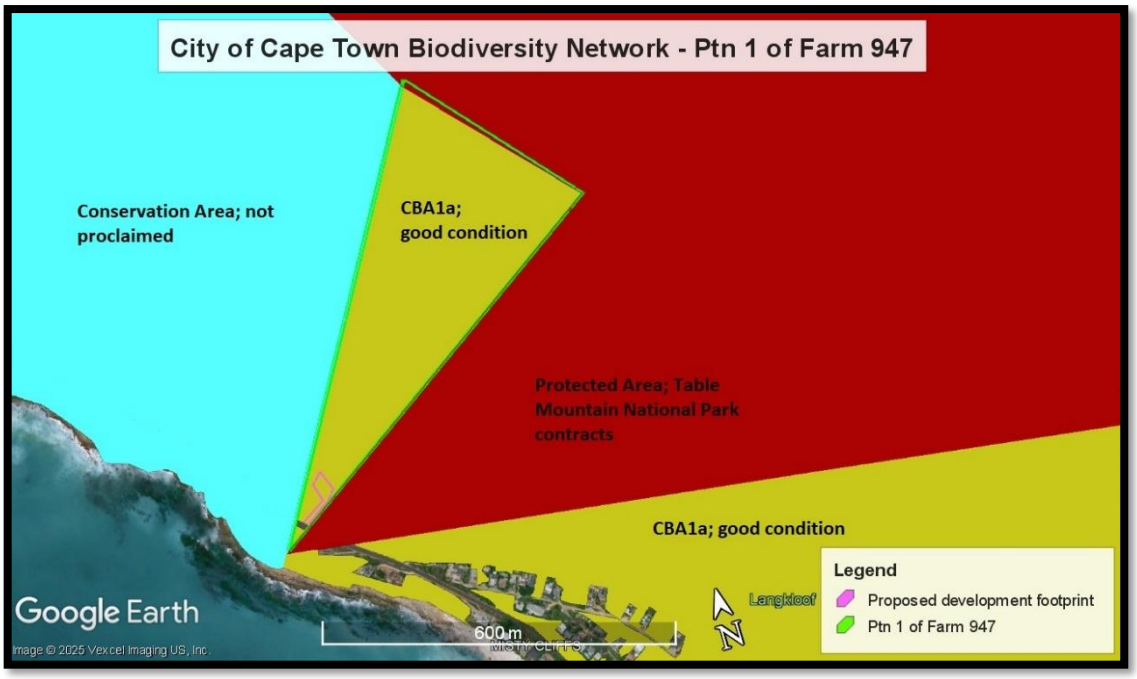

Figure 3: Extract of the City of Cape Town BioNet (Holmes *et al* 2024), showing that the entire property is mapped as CBA1a, a high level of conservation priority.

5. THE VEGETATION

5.1 Description of the Study Area

For purposes of this report the study area is defined as the portion of the property above the M65 coastal road (at about 20masl), and up to the 50m contour.

The overall property rises from only 10masl to about 346m on the plateau east of the sea facing cliffs and slopes. Most of the property faces west, with the steepest gradients being in the eastern half, above the 120m contour. The Varingkloof is a prominent drainage line that follows the east – west oriented fault running across the central part of the property (north of the study area), and is the source of the perennial water in the high sensitivity seepage areas below the M65. The Varingkloof itself also supports a perennial wetland plant community.

Soils on site are acid to neutral sands, with substantial colluvial sandstone at the surface and under the surface. Bare Table Mountain Group sandstone covers about 10% of the site, which is well drained and is not located in the Varingkloof wetland or drainage line. The proposed house footprint (at 35-42masl) burnt in the fire of January 2008, but the area below that has not burnt for more than 20 years, and can be considered senescent with a lot of dead, dry plant material. Indigenous vegetation covers over 90% of the site, with the rest made up of

rocks and open space. No invasive alien vegetation is present, and the study area (and greater property) can be considered essentially pristine, apart from the recent clearing of 372m^2 (see Plate 3) just above the M65.

Plate 1: Photo of the site taken from about the 25m contour looking east up towards Varingkloof (upper left). The lower portion of this (up to about the 30m contour) is what was accidentally cleared in February 2025.

Plate 2: View down towards the M65, taken from about the 50m contour. The dominant plants in the foreground are *Protea lepidocarpodendron* (Near Threatened).

Plate 3: View of the 431m^2 cleared area, immediately after rehabilitation. Photo taken from the M65 (April 2025).

5.2 The vegetation

The vegetation on the property is mapped as **Peninsula Sandstone Fynbos** - in the areas above 120m, and **Cape Flats Dune Strandveld** below this level (see Figure 4; Mucina & Rutherford 2012 and online updates).

Cape Flats Dune Strandveld is listed as Endangered on a national basis (DEA 2011), due to its restricted global distribution and high rate of loss. This unit has a national conservation target of 24% of its total remaining extent, less than 60% of its original extent remains and about 5% of this remaining extent is formally conserved (mostly in the Table Mountain National Park, TMNP; Rouget *et al* 2004).

Peninsula Sandstone Fynbos is listed as Critically Endangered on a national basis (DEA 2011), but this is a listing based on restricted global distribution and the presence of threatening processes (such as alien invasion vegetation, Argentine ant impact and inappropriate fire regimes), rather than total loss. This unit has a national conservation target of 30% of its total remaining extent, 93% of original extent remains and almost 100% of this remaining extent is formally conserved (mostly in the Table Mountain National Park, TMNP; Rouget *et al* 2004).

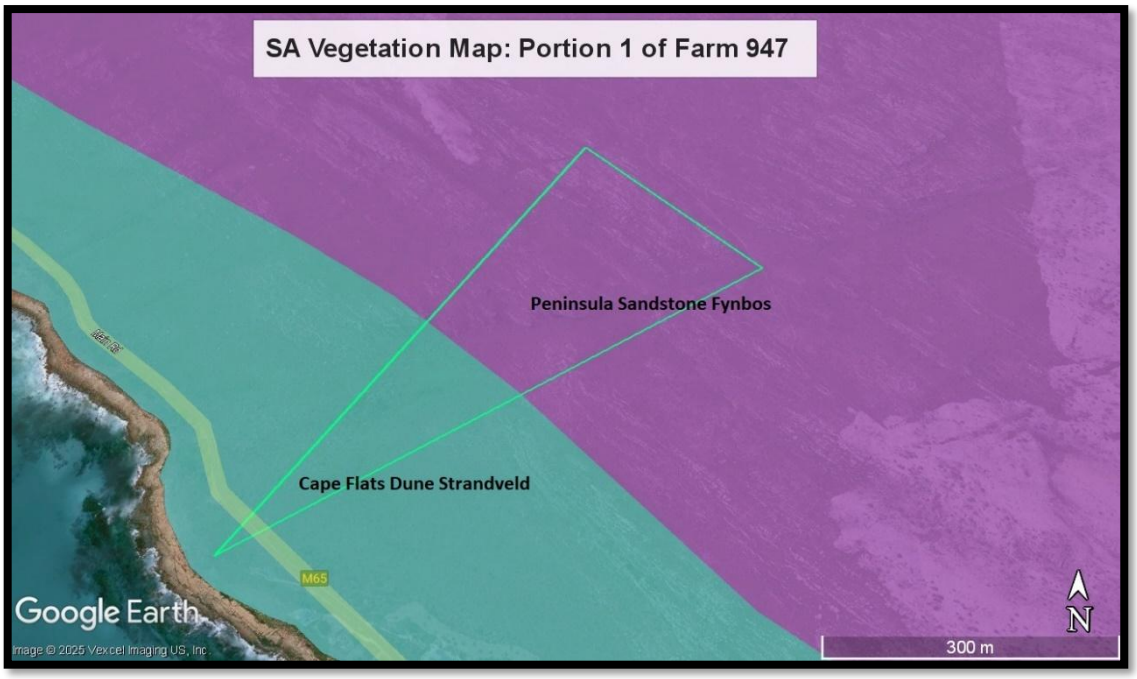

Figure 4: Extract of the SA Vegetation Map (Mucina & Rutherford) showing the two vegetation types on the property, and that the lower half (where the proposed dwelling would be located) is mapped as Cape Flats Dune Strandveld.

I am broadly in agreement with the vegetation mapping, but note that the boundary between the two vegetation units should be closer to the 50masl contour rather than the current 120masl. However, this makes little difference to the assessment, as the entire development footprint is still within what would be classified as Cape Flats Dune Strandveld, albeit with many elements of the nearby Peninsula Sandstone Fynbos (such as *Protea lepidocarpodendron*, shown in Plate 2). In reality there is a gradual transition as one moves up the slope from 20masl to 60masl, with increasing elements of Peninsula Sandstone Fynbos the higher one goes.

Indigenous plant diversity in the road and house footprint is fairly high (at a regional level), with no previous soil disturbance other than in the recently cleared area just above the M65. Indigenous species noted include *Searsia lucida, S. glauca. S. laevigata, S. rosmarinifolia, Osteospermum moniliferum, Erica plukenetii, E. abietina, Chionanthus foveolatus, Tarchonanthus littoralis, Olea exasperata, Olea capensis* ssp. *capensis, Protea lepidocarpodendron, Protea nitida, Leucadendron laureolum, L. salignum, L. xanthoconus, Phylica stipularis, Bobartia indica, Asparagus lignosus, Drimia capensis, Pelargonium cucullatum, Pseudopentameris macrantha, Restio capensis, Capelio tabularis, Othonna quinquedentata, Agathosma imbricata, Metalasia densa, Aspalathus chenopoda*

ssp. *chenopoda, Leucospermum conocarpodendron* ssp*. viridum, Chironia baccifera, Euryops abrotanifolius, Passerina corymbosa, Elytropappus scaber, Oxalis versicolor, O. luteola, Tetraria compar, Lobostemon montanus, Polygala myrtifolia, Cullumia reticulata, Aspalathus hispida, Cassytha ciliolata, Phylica imberbis, Knowltonia vesicatoria, Cassine peragua, Colpoon compressum, Helichrysum dasyanthum, Cineraria geifolia, Carpobrotus acinaciformis, Cliffortia obcordata, Myrsine africana* and *Cissampelos capensis.*

Dominant species in the study area, comprising about 65% of the plant cover, are *Metalasia densa, Tarchonanthus littoralis, Protea lepidocarpodendron, Pseudopentameris macrantha* and *Erica plukenetii*.

Four **plant Species of Conservation Concern** (SoCC) were observed on site, and no others are expected to occur. The high number of SoCC listed by the screening tool for the general area is largely accurate, but is based on a much wider target radius (2-3km), and none of these occur in the actual footprint area. No milkwoods *(Sideroxylon inerme)* are found on site (but are present on the property below the M65), but many of the other recorded species are also technically Protected in terms of the Provincial Nature Conservation Ordinance (not that this means much in reality).

Protea lepidocarpodendron is Redlisted as Near Threatened (Rebelo *et al* 2020 2006), with the main threats being urban development, alien invasive vegetation and inappropriate fire regimes, and is restricted to the Cape Peninsula and Hermanus area, and may be locally common in places. At least 100 plants fell within the original proposed house footprint at 55masl, which is part of a much larger population higher up the slope. Few plants occur below the 40m contour, and only about twelve in the revised development footprint, which is not considered regionally significant. The population of over 600 plants of this species on the property above the development area is considered regionally significant.

Aspalathus chenopoda ssp. *chenopoda* (Redlisted as Rare; von Staden 2007) is a common shrub on this property and within the proposed footprint (>50 plants), but is only alive for the first six or seven years after a fire, and thereafter sits in the seedbank waiting for the next fire, as is currently the case (no living plants, as most of the area not burned for >20years). The species is confined to the Cape Peninsula, but is very common in many places within the TMNP (thousands

of plants in many burnt patches of only 2-3ha), and its presence on site is not deemed regionally significant.

Asparagus lignosus is Redlisted as Near Threatened (Burrows & von Staden 2018), but is very widespread, from Vanrhynsdorp to George, but is threatened by habitat loss, even though the total population is still large. The few plants on this site do not constitute a significant part of the regional population of this species (<1%).

Cliffortia carinata is Redlisted as Rare (Whitehouse & Victor 2006), with no recorded threats, but is known from fewer than 20 subpopulations, and is restricted to the Cape Peninsula to Caledon area. The six plants on this site do not constitute a significant part of the regional population of this species (<1%). The species is quite common on west facing rocky mountain slopes between Kommetjie and Scarborough.

Leucospermum conocarpodendron ssp. *viridum* (Near Threatened) is present in low numbers just above the revised development footprint, and is common higher up on the greater property (and adjacent properties), as are various other SoCC, such as *Mimetes fimbriifolius* (Rare).

5.3 Botanical Sensitivity

In a regional (South Peninsula) context the vegetation in the proposed footprint is of Medium sensitivity or importance (see Figure 5), as it is of fairly high plant diversity, with four recorded SoCC, and the actual plant community is well conserved within the TMNP, although the vegetation type (Cape Flats Dune Strandveld) is under-conserved, and severely threatened outside the TMNP.

High sensitivity areas are found on the property below the M65 (rare seepage areas), and above the proposed development area (high density of Near Threatened *Protea lepidocarpodendron* and other SoCC).

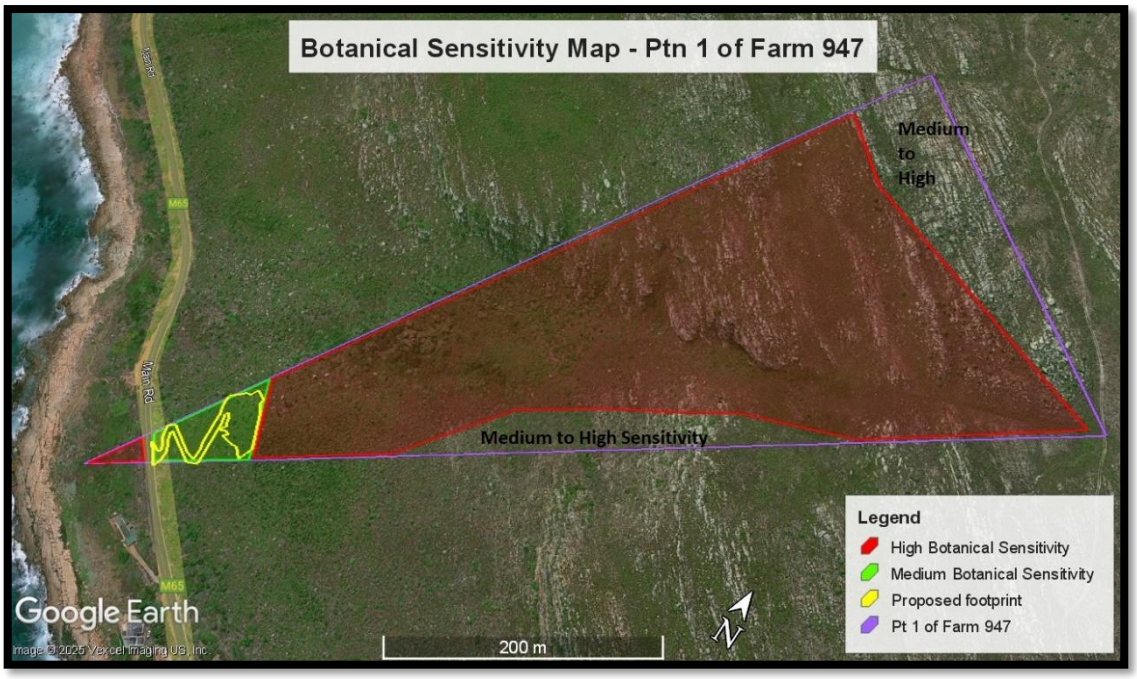

Figure 5: Botanical sensitivity map of the property, with the proposed development footprint overlaid.

6. IMPACT ASSESSMENT

6.1 Construction Phase (Direct) Botanical Impacts

The primary construction phase botanical impact would be loss and degradation of the pre-existing natural vegetation in the approximately 2200m^2 total development disturbance area (including access road). An additional impact that has already occurred is the clearing of the 431m^2 area shown in Plate 3, plus a small area of 193m^2 on TMNP land, which was essentially brushcut, but no topsoil degradation or removal was caused. The vegetation loss in this area is temporary, and should largely recover within a few years, except in the portion (about 300m^2) that will be within the new access road.

The mapped vegetation type (Cape Flats Dune Strandveld) in the footprint area is gazetted as Endangered on a national basis (Government of South Africa 2022). The sensitivity of the vegetation in the impacted area is deemed to be Medium at a regional scale.

Four recorded plant Species of Conservation Concern (SoCC) will be impacted in the footprint area, but none of these is a regionally significant population, and all four have much larger populations on the remainder of the property that will remain undisturbed. The percentage of the population on the greater property of each SoCC that will be lost is less than 5% for all four species.

The overall botanical significance of the loss of vegetation in the development footprint area is deemed to be **Low negative** (before and after mitigation), as the extent and scale is relatively small (compared to for example a housing development, hotel, quarry or cultivation), and none of the four SoCC will suffer regionally significant losses. Standard mitigation will be outlined and required, but it will not significantly reduce the impact.

Assessed on its own the recent clearing of 431m^2 of natural vegetation on the property (plus the 193m^2 on the adjacent TMNP land) has a **Low negative botanical impact** (before mitigation) and **Very Low negative botanical impact** (after mitigation), as the impact is mostly temporary, the area is very small, and mitigation (rehabilitation steps) has already been implemented. It is likely that only two plant SoCC maybe have been in the impacted area (*Cliffortia carinata* and *Asparagus lignosus*), and in both cases the portions of the property level populations would have been less than 3%.

The No Go alternative would clearly have had a lower direct (construction phase) botanical impact than the clearing and/or the proposed development - presumably best rated as Neutral.

Impact	Extent of impact	Duration of impact	Intensity	Probability of impact	Irreplaceable loss of biodiversity	Significance before mitigation	Significance after mitigation
Loss of 0.12ha and disturbance of 0.05ha of Medium sensitivity vegetation	Local & regional	Mostly permanent	Medium to High	Definite	Low to Medium	Low -ve	Low -ve
Clearing of 431m^2 of vegetation on site, and of 193m^2 on adjacent TMNP	Local & regional	Mostly temporary	Low to Medium	Definite	Low	Low -ve	Very Low -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 clearing and the proposed development footprint. The primary construction phase impacts are loss of natural vegetation in the footprints, including loss of small subpopulations of 4 plant SoCC in the main development footprint.

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

6.2 Operational Phase Botanical Impacts

Operational phase impacts will take effect as soon as the natural vegetation in the footprint area is lost or disturbed – which has already occurred in the case of the 431m^2 cleared area and the 193m^2 on the adjacent TMNP land. In the hard footprint areas these impacts are likely to be permanent, but in most of the 431m^2 and 193m^2 already cleared areas it will be temporary, as natural rehabilitation will occur.

Operational phase impacts include loss of previous levels of good ecological connectivity across the area, and associated habitat fragmentation, likely disruption of natural fire cycles in close proximity to the house, plus the difficult to measure impacts of indigenous seed dispersal disruption by invasive alien Argentine ants (*Linepithema humile*).

Disruption of ecological connectivity is likely to be of **Low negative** significance, as there is still plenty of adjacent natural habitat on the property.

Fire suppression is likely within 30-50m of any new development, and in a fire driven ecosystem like this this means that many species do not get much of an opportunity to regenerate in the absence of fire, which can lead to changes in plant population structure and abundance. Often what happens is that fuel load (dead plant matter) then continues to build up and eventually an uncontrollable wildfire moves through after a longer than optimal interval (typically under strong wind conditions), but also burns hotter than optimal, due to the higher fuel load, and this can lead to seeds being burnt or sterilised, instead of triggered to germinate. The significance of this is difficult to rate, but may be **Low to Medium negative** in the immediate vicinity of the house. This may be partly mitigated by the recommended brushcutting of a 5-10m wide firebreak around the house, which partly (but not fully) mimics the fire effect, and allows for regeneration of annuals and bulbs.

Argentine ants are associated with human settlement (typically foraging up to 50m away from their nests) and outcompete the indigenous ants, which are adapted to distributing and burying the seeds of up to 35% of the Fynbos plant

species. Not only do they outcompete the indigenous ants, but they do not bury the seeds (like the indigenous ants do), and leave them at the surface to get predated by rodents, leading to near total collapse of ant based seed dispersal in these areas. This can be a subtle and difficult to measure impact, as it happens over an extended period (typically a few fire cycles), and is thus often overlooked in assessments, but it should not be discounted. The significance of this is also difficult to rate, but may be **Low to Medium negative** up to 50m from the house. It is also difficult to mitigate, but if monitored and Argentine ants are detected they can be effectively poisoned with Fipronil (Buczkowski and Wossler 2019). However, the likelihood of this mitigation happening is low.

Overall the operational phase botanical impact of the proposed development (2200m^2) is likely to be **Low to Medium negative** (before and after mitigation), driven mainly by the Argentine ant impact on seed dispersal.

Overall the operational phase botanical impact of the clearing of the 431m^2 area and of the 193m^2 on the adjacent TMNP is likely to be **Very Low negative** (after mitigation, which has already been undertaken).

The No Go alternative would clearly have a lower indirect (operational phase) botanical impact than the clearing of the development area, although given its agricultural zoning there are a variety of theoretical impacts that could take place (such as heavy grazing, cultivation) but which are unlikely in this area.

Positive ecological impacts as a result of the proposed development are not likely to be a feature of this project. The property is already essentially alien plant free, so alien vegetation removal is not a relevant positive impact.

Impact	Extent of impact	Duration of impact	Intensity	Probability of impact	Irreplaceable loss of biodiversity	Significance before mitigation	Significance after mitigation
Development of house and access road	Local & regional	Mostly permanent	Medium	Probable	Low	Low to Medium -ve	Low to Medium -ve
Clearing of 431m^2 of vegetation on site and of 193m^2 on adjacent TMNP	Local & regional	Mostly temporary	Low	Probable	Very Low	Low -ve	Very Low -ve
No Go	Local	Unknown and variable	Neutral	Not likely	None	Neutral	Neutral

Table B: Summary table for operational phase botanical impacts associated with the unauthorised clearing and the proposed development footprint. The primary construction phase impacts are loss of ecological connectivity, fire suppression and invasion of alien Argentine ants and their negative impact on seed dispersal up to 50m from the house.

6.3 The No Go Alternative

The No Go alternative is usually considered to mean a continuation of the status quo, which in this case is taken to mean no further habitat loss to development, no alien plant invasion, some fire suppression in parts due to proximity of Misty Cliffs houses, and no grazing or trampling by livestock. Confidence in the likelihood (or absence) of impacts is moderate to high, and the No Go alternative would on balance be the environmentally preferred alternative, with perhaps a Neutral botanical impact.

6.4 Cumulative Impacts

The cumulative ecological impacts are in many ways equivalent to the regional ecological impacts, in that the vegetation type impacted by the new 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 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 proposed new dwelling and the 431m^2 of prior clearing in the study area at the regional scale is likely to be Very Low negative.

6.5 Positive Impacts

No positive ecological impacts of the proposed development are expected.

7. REQUIRED MITIGATION

The following mitigation for the unauthorised clearing of about 431m^2 of vegetation in the study area in 2025 and the proposed dwelling and access road is deemed feasible, reasonable and mandatory:

- The mitigation already undertaken for the clearing of the 431m^2 has already been undertaken, and should prove adequate, with new growth already coming through in May 2025, and substantial growth noted in September 2025. The steepest parts have been covered with staked biodegradeable biddum cloth (to control wind and water erosion), loose rock has been stacked on the slope along the M65, and the cut branches have been stacked along the contours at 4m intervals (to break and prevent significant surface flow runoff), with seed shaken out onto the bare surfaces between the stacked vegetation.
- All approved development footprints must be surveyed and staked out prior to any site development. Once this has been done a temporary fence (2 strand rope or wire, and/or with 1m high black shadecloth) must be erected at a reasonable 3m distance from the approved footprints, to allow for working space, and no disturbance of the vegetation beyond this fence may be allowed. No material may be dumped or stored beyond the fence.
- Search and Rescue for all useable plant material from the development footprint (probably mostly the few bulbs and succulents on site) must be undertaken prior to site development, and the rescued plants kept in a nursery for re-use on site once construction is complete.
- Only locally indigenous Fynbos/Strandveld plant species should be planted on site, and the planting list is to be approved by the botanist.
- No soil should be brought onto site, to minimise the likelihood of Argentine ant invasion.
- A professional entomologist or ant control expert should be brought in a year after construction is complete to monitor and survey for Argentine ants (*Linepithema humile*). If detected they should be poisoned using 9% Fipronil (see Buczkowski, G. and T. Wossler. 2019), which the workers will disperse to their nest sites.

8. CONCLUSIONS AND RECOMMENDATIONS

- The vegetation on the site, and in the cleared areas, is best classified as Cape Flats Dune Strandveld (Endangered), with elements of Peninsula Sandstone Fynbos more common as one moves upslope.
- The cleared area and the proposed dwelling and access road are in areas deemed to be of Medium botanical sensitivity, with High sensitivity areas both above and below the target areas, and the dwelling has been located in what is deemed to be the least botanically sensitive part of the entire property.
- The overall botanical significance of the clearing of the 431m^2 area is deemed to be Very Low negative.
- The overall botanical significance of the accidental damage to the 193m^2 area on the adjacent TMNP is deemed to be Very Low negative. Vegetation in this area is already rehabilitating naturally and no further intervention is required.
- The overall botanical significance of the proposed development (2200m^2) is deemed to be Low to Medium negative, driven mainly by operational phase impacts such as Argentine ant impact (seed dispersal failure) and fire suppression impacts.
- A firebreak around the dwelling would be advisable, particularly on the south, east and north sides. This firebreak should be brushcut (no soil disturbance) every second year in November, and should be at least 5m wide, and ideally as much as 10m wide.
- A roof sprinkler system would be strongly recommended, to reduce fire danger.
- Care should be taken to avoid or minimise organic waste, rubble, construction related disturbance and dumping, as these all attract and provide nest sites for alien invasive Argentine ants. Compost should also ideally not be brought onto site, for the same reason, and thus compost should be made only from locally sourced organic matter, such as that generated by the required firebreak clearance.
- Gutters should be metal, not plastic, also to reduce the risk of flying embers setting alight the gutters.
- All mitigation noted in Section 7 is considered feasible, reasonable and essential, and must be timeously and properly implemented, in which case the post mitigation impact of the unauthorised clearing could be reduced to Low negative, from Low to Medium negative prior to mitigation.

- No additional mitigation or fine is deemed necessary if the mitigation outlined in Section 7 is properly and timeously implemented.
- The habitat in the study area, and particularly in the marshy section about 200m above the study area, is potentially good Black Harrier habitat (*Circus maurus*; flagged by Screening Tool for the general area). However, there are no records of Black Harrier for the Peninsula on iNaturalist, and only a few (<2) records for the Peninsula in the SA Bird Atlas Project, so the balance of evidence would suggest that this species does not breed on site nor on the property. In 35 years of living in the area I have never seen this bird on the South Peninsula.

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