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BOTANICAL ASSESSMENT OF PROPOSED RESIDENTIAL DEVELOPMENT ON PORTION 36 OF 708, FRANSKRAAL, WESTERN CAPE.

Version 1

Client:
Michelle Naylor
Lornay Environmental Consulting
Hermanus

28 February 2024

DECLARATION OF INDEPENDENCE AND EXPERIENCE

I, Sean David John Privett, declare myself to be independent in the specialist botanical assessment for this application and that all opinions and recommendations expressed are my own.

Abridged CV

Surname: Privett
First Names: Sean David John Privett
Date of Birth: 19 November 1970
Formal Qualifications: MSc – Botany (UCT).
SACNASP registered scientist: 133063
A range of conservation and social development projects with a focus on fynbos conservation. Owner of Fynbos Ecoscapes cc since 1995, which focuses on botanical assessments, conservation management planning, fynbos landscaping, restoration and an indigenous plant nursery. Author of various scientific and popular publications including Field guide to Grootbos Nature Reserve and the Walker Bay region (2010).

Recent Botanical Consultancies.

2023 Botanical assessment of proposed mining extension, Stanford quarry.
2022 Botanical assessment of proposed sand mine extension on portion 3 of the farm Sand Down Estate No 220, District Bredasdorp.
2022 Botanical assessment of proposed mine site for the removal of Dwyka tillite through drill and blast operation on Remainder of Farm 227, Laingsburg, Western Cape.
2022 Botanical assessment for proposed extension of the sand mine on the farm Kleinkrans, Remainder 5 of 191, Wilderness, Western Cape.
2022 Botanical impact assessment for proposed development of eco-tourism infrastructure on Farm 144, Riversdale, Western Cape.
2022 Botanical assessment of proposed mine site for the removal of Dwyka Tillite through drill and blast operation on remainder of Farm 277, Laingsburg, Western Cape.
2020 Landscape plan for Coot Club, Mosai Farm, Klein River Estuary, Western Cape.
2020 Environmental audit of sand mine on Erf 335 and portion of erf 210, Gansbaai, Western Cape.
2020 Botanical assessment of proposed cultivation areas on Boskloof (Farms Rem 4/138, 138, Rem 244, 1/244, 1/202 & 17/202), north east of Elim, Western Cape.
2020 Botanical assessment for proposed development of tourism infrastructure on farms 169 & Rem 144, Riversdale, Western Cape.
2020 Botanical assessment for proposed development of a retirement complex on 196/220, Vyf Brakke Fonteinen, Hartenbos, Western Cape.
2020 Specialist botanical assessment for the agricultural and infrastructure development application on portion 4 of 493, Inhoek Farm, Malgas, Western Cape.
2020 Botanical assessment for proposed abalone farm on the remainder of Farm 385, Pearly Beach, Caledon District.
2020 Botanical Assessment of Portion 10 and Remaining Extent of Farm Pietercielies Kloof No. 202, near Elim, Western Cape.
2019 Botanical impact assessment for proposed extension of Steyns Quarry, Rem Farm 474, Bot River, Western Cape.
2019 Specialist botanical assessment for ploughing application at Melkhoute Bosch 3/497, Malgas, Western Cape.
2019 Botanical assessment of Erf 12199 and 10963, Hermanus, Western Cape. 2018 Botanical report on Plot 178, Benguela Cove, Western Cape.

EXECUTIVE SUMMARY

This report considers the botanical impact of the proposed residential development on Remainder 36 of Farm 708, Uilkraalsmond, Gansbaai, Western Cape. The property is 31.38 hectares in extent and situated off the R43 Between Gansbaai and Pearly Beach. It borders onto the Uilkraalsmond estuary to the east and the Gansbaai Elim road to the west (see Figure 1 for location).

The proposal includes the construction of an entrance gate area, a network of roads, 55 residential units, a boat house, boma and a network of hiking trails. The total direct impact will be the loss of 7,4 hectares of natural vegetation. The site proposed for the new residential estate is characterised by Agulhas sand fynbos vegetation. This vegetation type is classified as critically endangered in terms of the NSBA. Three Red Data species (*Leucadendron coniferum* – vulnerable, *Leucadendron linifolium* – vulnerable and *Leucospermum prostratum* - vulnerable), were recorded on the property and there is a high probability that additional red data species could be present should a more extensive botanical survey of the site be undertaken. The natural vegetation on site varies in condition from open, natural fynbos to heavily infested areas that are totally infested. The overall density of alien invasive species across the site is approximately 70% cover. Although a costly exercise, this alien vegetation could be removed and the natural vegetation could be largely restored through a comprehensive and long-term alien clearing program. The property includes terrestrial and aquatic Critical Biodiversity Areas and has high local and regional conservation value.

Mitigation measures proposed include a comprehensive alien vegetation clearing project and associated establishment of a site conservation management fund, inclusion of a estuary to inland corridor in the site layout, conservation stewardship/servitude for the remaining natural vegetation, search and rescue of translocatable species, and additional recommendations around reducing impact during construction activities. The loss of the 7,4 hectares of Agulhas sand fynbos can to some extent be mitigated by the removal of alien vegetation, restoration and securing for long term conservation of the remaining 75% of the site, however an offset project will need to be explored as even after mitigation the overall impact remains medium-high negative from a botanical perspective.

Contents

Table of Contents

1. INTRODUCTION AND STUDY AREA

This report was commissioned as part of a development application that is being undertaken by Lornay Environmental Consulting on Remainder 36 of Farm 708, Uilkraalsmond, Gansbaai, Western Cape. The property is 31.38 hectares in extent and situated off the R43 Between Gansbaai and Pearly Beach. It borders onto the Uilkraalsmond estuary to the east and the Gansbaai Elim road to the west (see Figure 1 for location). This report covers the direct potential impacts on the natural vegetation of the proposed development as well as the potential impact in terms of the broader ecological process of the region. The site is undeveloped and situated in a highly sensitive area on the edge of the Uilkraalsmond wetland. The site was surveyed during October and November 2023.

2. TERMS OF REFERENCE

- Identify, map (vegetation and conservation value / sensitivity map) and describe the flora present that would be affected by the proposed housing development, based on a field survey and available literature.
- Identify any species of special concern, namely species with conservation status, endemic to the areas or threatened species that exist or may exist at these locations.
- Investigate ecological / biodiversity processes that could be affected by the proposed development and consider current Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs), protected areas and important biodiversity corridors.
- Assess the significance of the loss of vegetation and impact on ecological / biodiversity processes as a result of the implementation of the proposed development.
- Identify practicable mitigation measures to reduce any negative impacts to the indigenous vegetation (including species and techniques that could potentially be used for rehabilitation purposes) and indicate how these could be implemented in the construction and management of the proposed project.

3. ASSUMPTIONS AND LIMITATIONS

One of the primary assumptions of this study is that sufficient botanical information could be gathered during the site visit to make accurate conclusions regarding the conservation value of the site. Fynbos Ecoscapes (Sean Privett) has undertaken previous surveys in the region of this proposed development including portion 3 of 220, Sandown in 2022, portion 29 of 708 in 2011 and again in 2015. As such I have a good knowledge of the local flora of this area. Although some species could not be identified as a result of a lack of flowering material, the majority of species present could be identified. From previous experience of undertaking plant surveys in this region during autumn and spring it is known that there is a variety of geophytes, graminoids and annuals that will have been missed in the current survey. A rapid survey such as this provides only a short window in the flowering season and as a result species are missed. Continual sampling over all seasons and including post rainfall visits would be the only way of determining the true botanical diversity of a site such as this. Due to the highly regulated timeframes stipulated within the EIA Regulations 2014 (as amended), it was not possible to sample over all seasons or the ideal peak flowering season. However, Fynbos Ecoscapes Botanical Consulting (Sean Privett) is confident that given its experience, as well as by using a habitat-based approach (where habitat type, condition and irreplaceability) rather than species are used to inform decision making, sufficient information of the vegetation (e.g., diversity, sensitivity) was attained in order to provide an accurate assessment of the potential botanical impacts. Another assumption of this planning process is that the natural vegetation is acting as a surrogate for a whole host of other animal species (insect, spiders, molluscs, birds, mammals, etc.), none of which has been surveyed as part of this overall study, and thus the best way to conserve the rich small animal community is to conserve the natural vegetation that supports them.

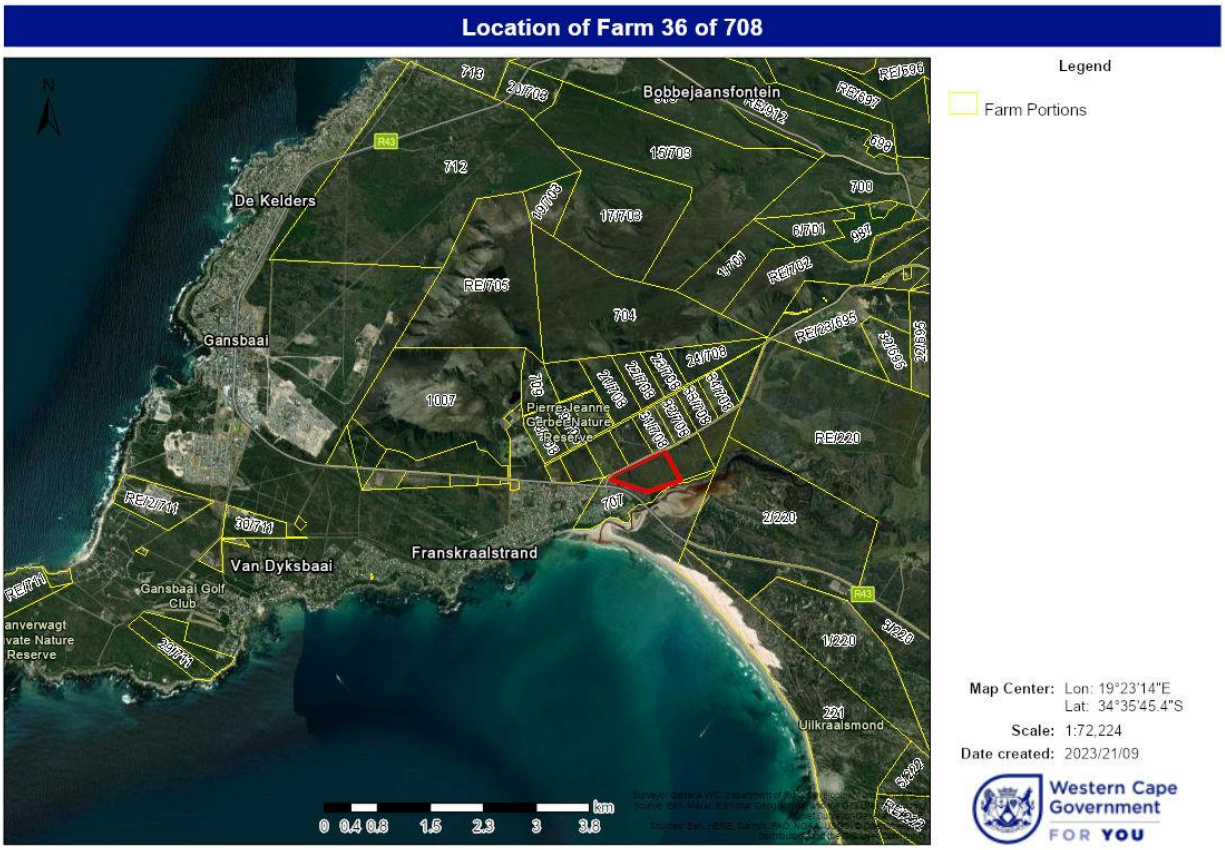

Figure 1. Locality of portion 36 of 708 (red polygon), north east of the village of Franskraal in the Overberg region of the Western Cape (source Cape Farm mapper).

4. METHODOLOGY

Prior to the site visits a desktop analysis was undertaken to determine the likely vegetation type, its conservation status, the sites conservation context and biodiversity conservation network information. This information was verified on site during the site visit in October 2023.

During the site visit the full extent of the property was walked and the entire area of the proposed development was criss-crossed and plants and vegetation condition recorded during the survey. Specimens of species that could not be identified on site were collected, photographed and pressed and then identified later for inclusion in the report.

5. SCREENING TOOL REPORT RESULTS

As per the National Environmental Management Act (NEMA) (Act No. 107 of 1998) Regulations of 2020 (as amended) (GN R. 320 of 2020), prior to initiation of specialist assessments, the current land use, and the potential environmental sensitivity of the site as identified by the national web-based environmental screening tool must be confirmed by undertaking an initial site sensitivity verification. This verification aims to confirm or dispute the current use of the land and environmental sensitivity as identified by the national we based environmental screening tool.

According to the national web-based environmental screening tool report generated for the site, the plant species combined sensitivity is classified as medium, the animal species combined sensitivity as high and the terrestrial biodiversity theme as very high (DFFE, 2023). The classification trigger is the presence of mapped critically endangered Agulhas sand fynbos, as well as the terrestrial and aquatic CBA.

The initial site sensitivity verification was undertaken by a desktop assessment and a field assessment. The development area was deemed to be of "Very High" terrestrial sensitivity.

Should the specialist agree that the sensitivity of the site is very high then a full botanical impact assessment must be compiled during the Basic Assessment process. However, if the specialist determines that the sensitivity of the site is low then a Biodiversity Compliance Statement can be compiled.

6. BIODIVERSITY CONTEXT

6.1 Topography

The area is characterised by a flat sandy landscape, sloping slightly downhill from the tar road towards the estuary. The topography is relatively flat and characterised by deep sands. The maximum altitude is 12 masl near the tar road dropping down to around 2 masl at the estuary.

6.2 Geology

The general vicinity of the site is characterised by Bredasdorp Group sands. Calcarenite and calcareous sandstone with gravel, pebble and coquinite layers, calcareous aeolianite, dunes of sand and calcareous sand (code N-Qb).

6.3 Climate

The site falls within a winter rainfall region with an average rainfall of approximately 462 mm per year. Rainfall is highest in the winter months, peaking in June, July and August and lowest in the summer months. The mean annual temperature for the area is 16.2 ^{0}C with the warmest temperatures in mid-summer and the coolest in the middle of winter.

6.4 Hydrology

The site is located in Quaternary Drainage basin G40M which is within the Breede Gouritz Catchment Management Agency's area of jurisdiction. There is no perennial or nonperennial streams on the property.

6.5 Vegetation characteristics

According to the SANB vegetation map (2018), the majority of the property is characterised by Agulhas sand fynbos (Figure 2).

According to the NFEPA (Anonymous 2011) spatial dataset, this area corresponds to the South Coast Sand Fynbos wetland vegetation type, where floodplain wetlands are present, is listed as Endangered (EN) and Poorly Protection (PP) and where seep wetlands are present, also listed as Critically Endangered (CR) and with Zero Protection (ZP).

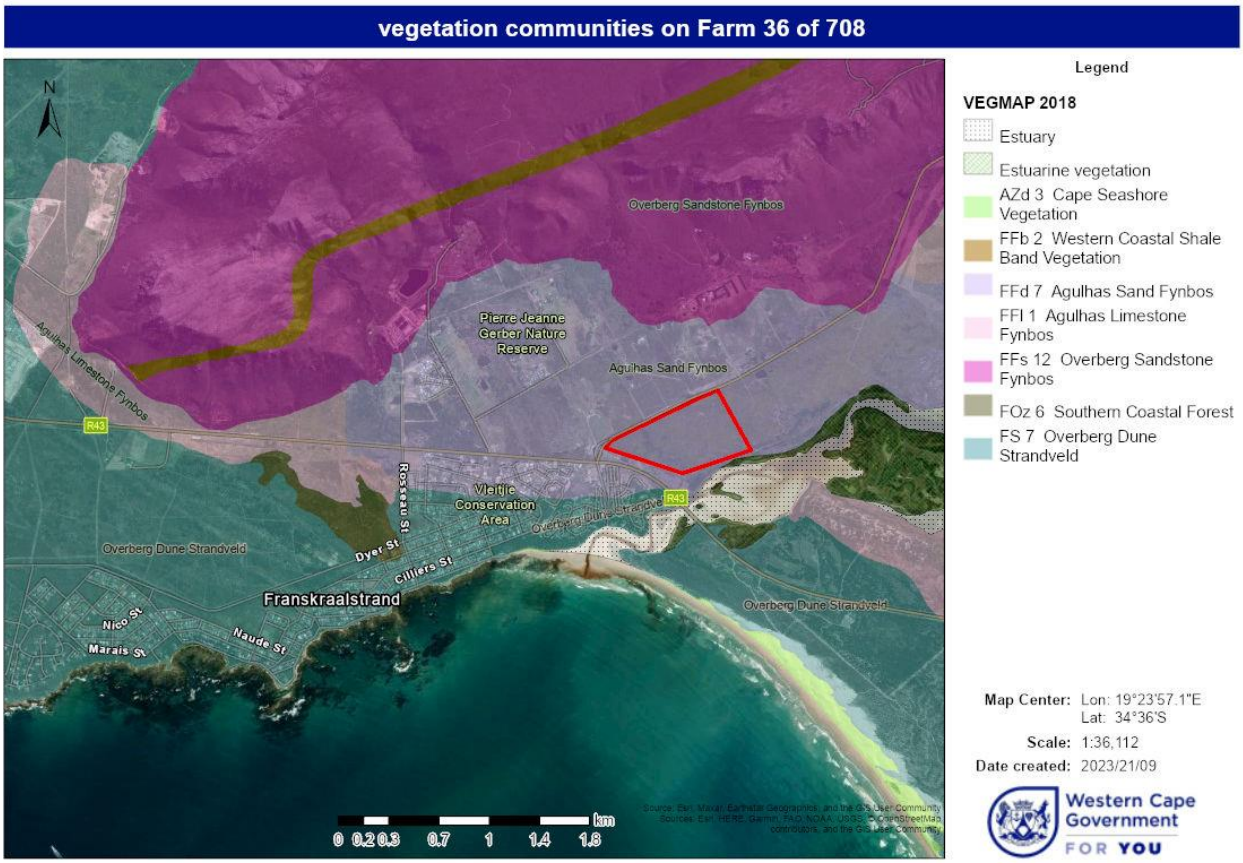

Figure 2. The vegetation on Rem 36 of 708 is characterised by Agulhas sand fynbos. (source: Cape Farm mapper).

6.5.1 Agulhas sand fynbos

This vegetation unit has a very fragmented distribution on the Agulhas forelands from around the lower Uilkraalsrivier near Gansbaai (this study site), Hagelkraal, flats west of the Soetanysberg, small patches east of Elim to the largest patch northwest of Struisbaai, west of Arniston and south of Bredasdorp, with unmapped patches to Hermanus in the west, and De Hoop Vlei in the east. It occurs in an altitude range from 2–100 m on low-lying coastal plains that support dense moderately tall, ericoid shrubland or tall, medium dense shrubland, with some emergent tall shrubs. Communities of this fynbos unit are structurally defined either as restioid or proteoid fynbos. It occurs on older Pleistocene sands immediately inland of the strandveld, where the neutral to acid sands are mostly weathered yellow to reddish brown. The older sands supporting sand fynbos are neutral to acidic, more weathered, finer-grained, more water retentive and less fertile than the strandveld sands. This is a consequence of nutrients leaching from these older sediments. The sand fynbos vegetation on Rem 36 of 708 is dominated by *Leucadendron coniferum* (dune conebush), *Leucadendron linifolium*, *Erica plukenetii subsp. lineata* (cats tail erica), *Thamnochortus erectus* (wyfieriet) and *Phylica dodii* (edelweiss hardleaf).

Plate 1. Agulhas sand fynbos on rem 36 of 708 showing open, low shrubland interspersed with scattered *Acacia saligna* (taller trees in background).

6.6 Conservation value

Agulhas sand fynbos has been classified as critically endangered (Anonymous 2021) and moderately protected. Agulhas Sand Fynbos is narrowly distributed with evidence of ongoing biotic disruption from invasive species and agricultural expansion. The conservation target for this vegetation unit is 32%, however only about 7% is statutorily conserved in the Agulhas National Park, with a further 1% found in private conservation areas such as Walker Bay Protected Environment, Brandfontein, Groot Hagelkraal, Heunings River and Andrewsfield. About 27 % is transformed, mainly for cultivation, but alien plants (*Acacia cyclops, A. saligna* and *Leptospermum laevigatum*) have caused a much larger transformed area.

According to the NFEPA (CSIR, 2011) spatial dataset, this area corresponds to the South Coast Sand Fynbos wetland vegetation type, where floodplain wetlands are present and is listed as Endangered (EN) and Poorly Protection (PP) and where seep wetlands are present is also listed as Critically Endangered (CR) and with Zero Protection (ZP) (Anonymous 2011).

The conservation value of the vegetation in the study area is high in local (Gansbaai) and regional (Agulhas plain) terms.

6.7 Ecological drivers and process

Spatial components and ecological drivers are seen as important components of good conservation planning (De Villiers *et al.* 2005). Fragmentation of natural vegetation should be avoided at all costs. Although little information is available on minimum patch sizes and the degree of connectivity required to retain species richness in fynbos vegetation, it is generally agreed that small fragments (<100 hectares)

are likely to be vulnerable to a loss of species due to altered ecological processes e.g., loss of pollinators, edge effects and alien invasions. One concern of this project from a botanical and ecological perspective is that the proposed development will fragment the site and potentially cut off islands of natural vegetation from surrounding natural landscapes. Another concern is that once the housing infrastructure is constructed, fire will be excluded impacting on the long-term structural integrity and viability of natural flora and fauna on the property.

6.8 Critical Biodiversity Area

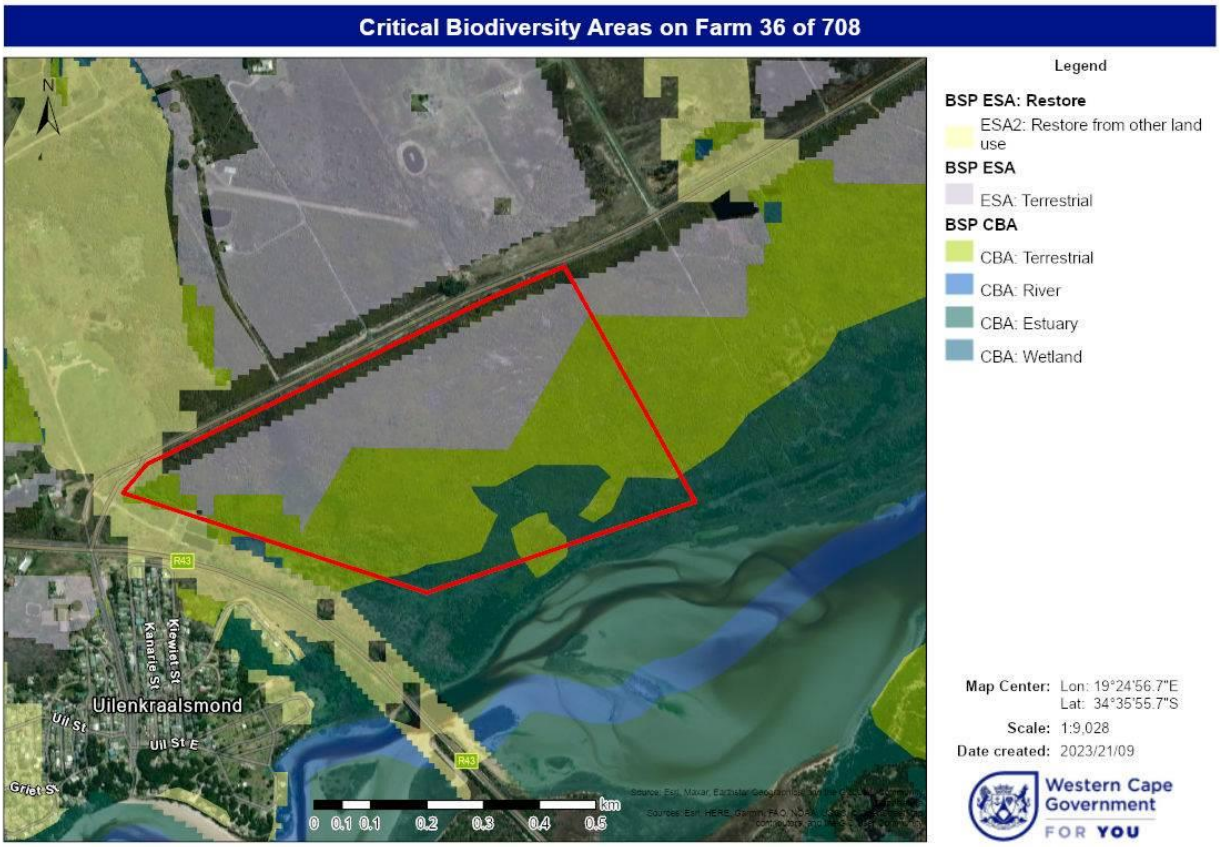

Figure 3. The property includes areas defined as terrestrial and estuary Critical Biodiversity areas as well as ecological support area. (source Cape Farm Mapper).

The WCBSP dataset indicates that the westerly area closest to the tar road is defined as Ecological Support Area (grey in Figure 3), while the middle area of the property is defined as terrestrial Critical Biodiversity Area (CBA, green in figure 3.) and the lower section bordering on the lagoon as aquatic CBA1 (estuary - blue in figure 3). The CBA's are based on high species diversity and high number of rare and endangered species in the Agulhas Sand Fynbos, as well as the buffer role that this area plays towards the estuarine habitat. The WCBSP also indicates an aquatic CBA 1 (river and estuary) surrounding the site to the south. There is also a Protected Area (the Cape Nature managed Uilkraalsmond Nature Reserve) within the 500 m regulated proximity. These all indicate that the site is of high value in terms of conserving biodiversity and maintaining ecosystem functioning.

7. RESULTS

The site survey confirmed the presence of Agulhas sand fynbos across the majority of the site. The composition of the natural vegetation does vary across the site as a result of differing drainage and soil moisture conditions - but all the vegetation, with exception of the fringe along the estuary can be broadly defined as Agulhas sand fynbos. Diagnostic species in terms of defining these moisture gradients are

Leucadendron coniferum and *Erica imbricata* in the better drained areas and *Leucadendron linifolium* and *Berzelia abrotanoides* in wetter areas.

Plates 2 & 3. The Agulhas sand fynbos with light infestation of Port jackson (*Acacia saligna*) on portion 36 of 708, Franskraal.

Plate 4. *Typha capensis* (bulrush) dominates on the edge of the estuary.

A major threat to the biodiversity of the site is alien invasive species, mostly *Acacia saligna* (Port jackson). Other invasive species recorded on the property included *Acacia cyclops* (rooikrans), *Myoporum insulare* (manatoka) and *Cenchrus clandestinum* (Kikuyu grass). The major invasive species present on the property is *Acacia saligna,* which varies in density across the site from low infestations <5% (Plate 2) to completely

closed (Plates 5 and 6). The only other disturbance on the site is the access jeep track that runs through the property and a few small areas impacted by rubble near the tar road.

Plates 5 & 6. Areas heaviliy infested (>80% cover) with *Acacia saligna* (Port jackson) on portion 36 of 708.

7.1 Plant species recorded on site

The most abundant species recorded on site were:

Shrubs and Herbs:
Anthospermum aethiopicum, Aspalathus microphylla, Asparagus asparagoides, Asparagus rubicundus, Berzelia abrotanoides, Cliffortia falcata, Clutia alaternoides, Edmondia sesamoides, Erica imbricata Erica plukenetii ssp. lineata, Erica sessiliflora, Euclea racemosa, Helichrysum dasyanthum, Hermannia joubertiana, ***Leucadendron coniferum****,* ***Leucadendron linifolium****, Leucadendron salignum,* ***Leucospermum prostratum****, Linum africanum, Metalasia brevifolia, Metalasia muricata, Mimetes cucullatus, Muraltia filiformis, Oedera imbricata, Olea exasperata, Otholobium bracteolatum, Passerina corymbosa, Passerina sp. Pelargonium capitatum, Pelargonium elegans, Schizaea pectinata, Searsia glauca, Searsia laevigata, Stoebe cf incana, Struthiola striata, Struthiola sp., Thesium fragile, Tricocephalus stipularis* and *Ursinia anthemoides.*

Graminoids:
Briza maxima, Cynodon dactylon, Elegia tectorum, Ficinia ramossisima, Hellmuthia membranacea, Hypodiscus willdenowiana, Restio bifurcus, Restio triticeus, Staberoha distachyos, Stenotaphrum secundatum, Thamnochortus erectus, Thamnochortus fruticosus and *Tribolium uniolae.*

Geophytes:
Aristea glauca, Bobartia indica, Brunsvigia orientalis, Haemanthus sanguineus, Haemanthus coccineus, Disa bracteata, Drosera trinervia and *Wachendorfia paniculata.*

Owing to the time of year of the survey, most of the geophytes and annuals were dormant or not flowering and could not be identified. By adding autumn, winter and spring surveys significantly more geophyte and annual species would be recorded, including a high likelihood of species of conservation concern. However, owing to the time constraints of this project it was not feasible to survey the different seasons or post-fire stages.

7.2 Species of Conservation Concern

Three species of conservation concern; *Leucadendron coniferum* (vulnerable), *Leucadendron linifolium* (vulnerable) and *Leucospermum prostratum* (vulnerable), were identified during the survey.

Leucadendron coniferum (Proteaceae: vulnerable)

A local Fynbos endemic that is restricted to deep alkaline sands along the coast between the Cape Peninsula and the Soetanysberg. The once extensive population on the Cape Flats has been lost due to urban expansion. A past population reduction of 30% is estimated based on a 33% reduction in range size and 31% habitat loss to urban and coastal development, crop cultivation and alien plant invasion in the past 60 years

Leucadendron linifolium (Proteaceae: vulnerable)

A fynbos endemic confined to an area near the coast from the Cape Flats to Riversdale. A population reduction of >30% is estimated based on a 34% reduction in range size and 43% habitat loss in the past 60 years. Threatened by urban expansion, alien plant invasion, agriculture, wetland drainage, groundwater extraction and wildflower harvesting

Leucospermum prostratum (Proteaceae: vulnerable)

Another regional endemic with a restricted distribution on acid sands from Groenlandberg to Elim Flats. It is estimated that roughly a quarter of this species' habitat is already transformed. A population reduction of at least 30% is therefore estimated to be reached within the next 20 years (generation length >100 years). The western populations (Rooiels to Hermanus) are under severe threat from urban expansion.

Owing to the time of the survey (summer), there is a reasonable probability that some other species of conservation concern are present (particularly geophytes), but could not be identified during this survey.

7.3 Geographically restricted species

Some of the species recorded on site, while not being listed as species of conservation concern, are endemic to the region, or have localised distributions.

Erica plukenetii ssp. lineata – this subspecies is restricted to the Agulhas Plain between Hermanus and Witsand.

7.4 Connectivity

The proposed estate development will impact on connectivity between the lagoon and Franskraal mountains.

Figure. 4 The position of the proposed development in terms of existing ecological processes and connectivity between the Uilkraals Estuary and Franskraal mountains.

Despite the heavily invaded nature of the portion 36 of 708 as well as surrounding properties there is currently good connectivity through the property from the lagoon to the mountains to the north west. The properties across the tar road are already partly forming barriers to connectivity with high levels of transformation and high alien vegetation densities. There has been a development proposal for the property to the north-west (portion 29 of 708) which if granted will also result in fragmentation and impact on connectivity in this area. Fynbos Ecoscapes was involved in the biodiversity study of this site and proposed an ecological corridor through the property for connectivity. The status of this development is not currently known. The portion 30 of 708 is a small holding with largely intact vegetation, although heavily infested with alien invasive species, most notably *Acacia saligna* (Port jackson). As such, natural ecological and evolutionary processes at the landscape scale are still functional and planning around this development should take connectivity and natural corridors in to account. Ultimately, the retention of natural corridors will require participation and buy-in from surrounding property owners.

8. IMPACT ASSESSMENT

The proposed project entails the development of an eco-estate on Portion 36 of Farm Franche Kraal 708. The proposed site development plan is shown in Figure 5 below and includes an entrance gate area, a network of roads, 55 residential units, a boat house, boma and a network of hiking trails. The impact relates to the clearing of approximately 7,4 hectares of the natural vegetation on site (see Figure 5 and Table 1).

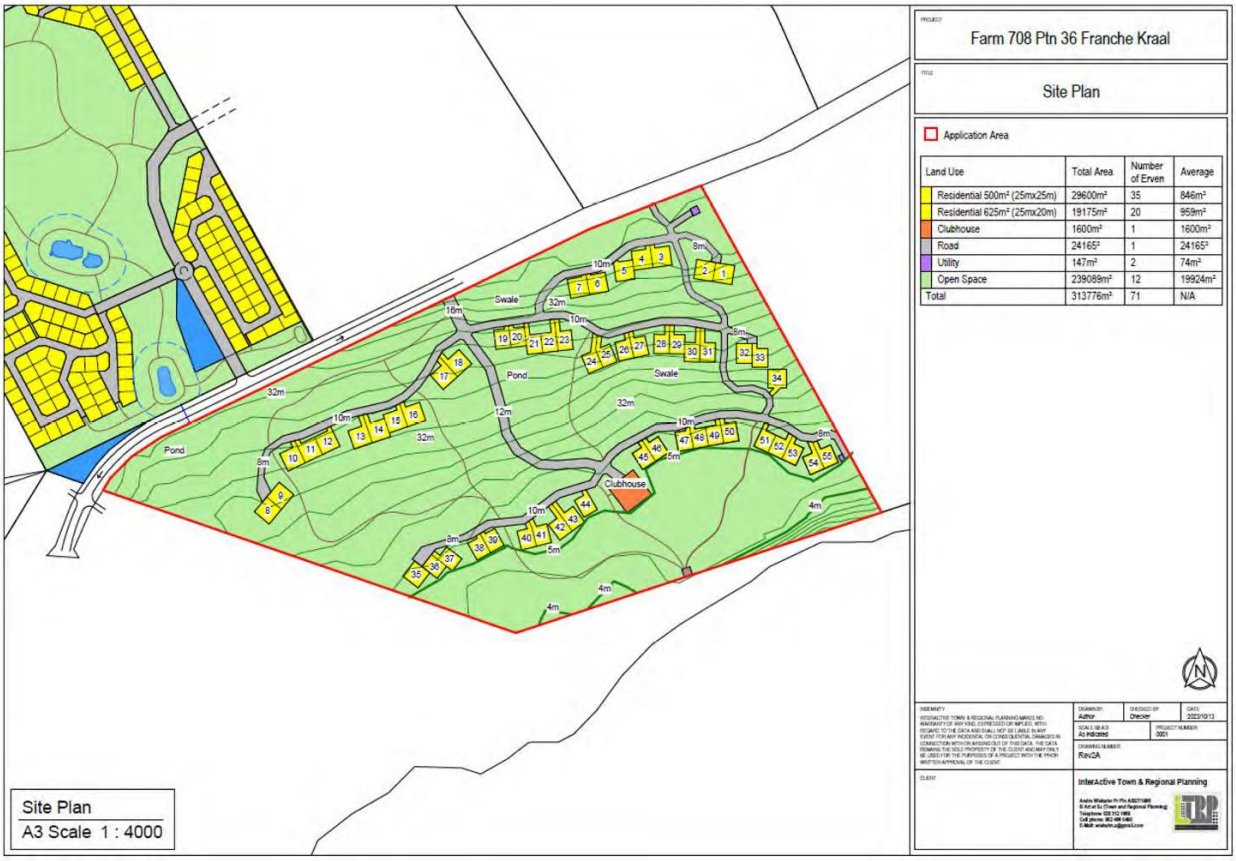

Figure 5. Draft site plan showing proposed lay out of road network, housing units, boat house (source: Lornay Environmental Consulting)

The proposed development area is characterised by critically endangered Agulhas sand fynbos, invaded with *Acacia saligna*. The Gazebo and path to the water's edge would impact on the estuarine edge flora. The vegetation over much of the area is currently in poor condition, owing to the invasion by *Acacia saligna* but has a high conservation value, based on the possibility of removing the invasive species and restoring the site to its near-natural state.

The cumulative impact of all the proposed components of this application is the disturbance of 7,4 hectares (approximately 24 %) of Agulhas sand fynbos vegetation. Currently approximately 75% of this property is already impacted as a result of heavy alien plant infestation. This current alien invasive impact could however be reduced through a comprehensive (but expensive) alien vegetation clearing program. As a rough guideline at least 60 % of an area's natural vegetation should be left intact and in good condition to ensure maintenance of basic ecological processes such as pollination and seed dispersal, and to minimise fragmentation effects, such as the edge effect (De Villiers et al 2005).

Botanical impacts will occur at both the construction (site clearing) and operational phases, with the former being the source of most of the direct impacts, and the latter being the source of some indirect longer-term impacts.

Most construction phase impacts are direct impacts which involve loss of natural habitat and species as a result of clearing of vegetation and associated biota for the development. From a botanical impact perspective, the loss of 7,4 hectares of alien infested Agulhas sand fynbos will result in the total loss of plant species and associated biota from these areas.

Operational phase impacts are less obvious and more difficult to define but at this site would include potential secondary invasion by alien species including the introduction of new invasive species to the site, impact on pollination and dispersal, impact on faunal movement, fire suppression with associated negative long-term impact on fynbos regeneration and ecological functioning, impacts associated with residential activities such as the introduction of domestic animals to the site.

The impact of the proposed development is considered high and mostly irreversible over the medium to long term.

Summary Table 1: Plant species and terrestrial biodiversity impact assessment for impacts for the proposed residential estate on portion 38 of 708.

	IMPACT ON PLANT SPECIES	IMPACT ON TERRESTRIAL BIODIVERSITY
	Road network and residential dwellings	Road network and residential dwellings
Extent & duration of impact	Local & long term	local & long term
Probability of occurrence	Definite	Definite
Degree to which the impact can be reversed	Irreversible	Irreversible
Degree to which the impact may cause irreplaceable loss of resources	Moderate loss	Moderate loss
Significance rating of impact prior to mitigation	High	Medium-high
Degree to which impact can be mitigated	Low	Medium
Significance rating of impact after mitigation	Medium-high	Medium

9. MITIGATION

The following mitigation measures are proposed if the residential development is to be considered for approval

- An initial alien clearing program should be implemented by a qualified local team of alien vegetation clearers prior to any development happening on site. The entire property should be cleared of all alien invasive species. An alien vegetation management plan must be drawn up and sufficient funding should be set aside to allow for effective long-term follow up clearing.
- Once initial alien vegetation clearing has been implemented, search and rescue of all transplantable plant material must take place prior to clearing of vegetation and topsoil from any development areas (bulbs, succulents, and any others deemed translocatable). A suitably qualified botanist/horticulturalist should be appointed to undertake this work, which if it is to be done successfully should be carried out in late winter/early spring. If the search and rescue cannot be performed in the period July-October, a large proportion of the bulbs will not be located, and this is unacceptable and incomplete search and rescue. No vegetation clearing should commence until search and rescue has been completed. Once removed, bulbs can either be transplanted directly to surrounding natural areas or be stored in a dry, pathogen free storage facility, for replanting in post construction rehabilitation or gardening on the property.
- All construction areas need to be clearly demarcated to ensure that no damage occurs to the vegetation outside of the minimum areas needed to create the construction footprint. A sturdy temporary fence must be erected around the proposed construction areas.
- Roads should be kept to a minimum width.
- Only one access route for machinery and cartage should be used and this should be aligned with the future road network of the estate. The footpath network should be carefully laid out and no additional roads, tracks or footpaths should be permitted on the property.
- The appointment of an Environmental Control Officer for the duration of the construction phase is essential. The ECO should be responsible for enforcing no-go areas, environmental induction for all staff and making sure that search and rescue is done.
- Following vegetation clearing, all available top soil should be removed and stockpiled prior to construction commencing. This material should be used to rehabilitate road verges and for rehabilitation landscaping around dwellings.
- No formal gardening should be allowed on any private erven, and the natural vegetation should be retained. Where rehabilitation is required, only an approved selection of locally indigenous species should be allowed. A large percentage of the material required for rehabilitation must be rescued from development footprints prior to development, and maintained in a dedicated nursery until needed.

10. CONCLUSIONS AND RECOMMENDATIONS

- The proposed development areas on portion 36 of 708 Uilkraalsmond are characterised by Agulhas sand fynbos vegetation.
- Agulhas sand fynbos vegetation is regarded as critically endangered in terms of the NSBA. Three species of conservation concern (*Leucadendron coniferum* - vulnerable, *L. linifolium* – vulnerable and *Leucospermum prostratum* - vulnerable) were recorded on site during this survey. It is however important to mention that there is a high likelihood that other red data species (especially bulbs) may be present but could not be identified owing to them not being apparent or not flowering at the time of sampling.
- The development of a residential estate in this area will undoubtedly have long term negative consequences for the ecological processes, on site, and hence the probable long-term health of all the elements of the natural system. The degree to which this can be mitigated depends on the number and layout of the dwellings as well as the management of the remaining natural areas on the property.
- The property has never been ploughed but is heavily infested with alien invasive species, most notably *Acacia saligna*. About 80% of the property is heavily infested (>75% cover, while the remaining 20% is characterised by light to medium infestation. However, it would be possible to restore this site to a near natural condition through a comprehensive alien clearing program.
- Overall, the natural vegetation has high conservation value (even though it is currently in a heavily infested state).
- A total area of 7,4 ha of this vegetation will be impacted by the proposed development. This would leave approximately 75% of the site in a natural state that could be fully rehabilitated through a comprehensive alien vegetation clearing program.
- The 'no go' scenario was assessed and found to be of "Low" impact significance as this scenario would result in continuation of existing impacts to the vegetation and Uilkraals Estuary. The dense alien vegetation would remain as a major threat to the ecological functioning of the site.
- It is proposed that the development layout includes an estuary to Franskraal mountain corridor that is at least 60m wide. This will however only be effective in the long term if properties directly to the east include natural corridors linked to that proposed on portion 36 of 708.
- No invasive aliens (as listed in CARA) must be allowed anywhere on site.
- Roads should be kept to a minimum width.
- No formal gardening should be allowed on any private erven, and the natural vegetation should be retained. Where rehabilitation is required, only an approved selection of locally indigenous species should be allowed. A large percentage of the material required for rehabilitation must be rescued from development footprints prior to development, and maintained in a dedicated nursery until needed.
- An ECO must be present on site full-time during construction.
- An EMP must be drawn up for both the construction and operational phase, incorporating all specialist recommendations.
- Key elements to address in this EMP will be alien vegetation control and fire management.
- The developers should investigate the possibility of amalgamating conservation areas on the site with those on adjacent properties.
- The developers must establish an Environmental Management Trust Fund to finance the ongoing environmental management of the open space.
- All remaining natural areas must be conserved through a conservation servitude or formal

conservation stewardship agreement, and possibly become part of the Stewardship Program of CapeNature, if the latter agrees.

- In terms of the development approval, an offset option should be explored as the impact remains medium-high after mitigation.
- From a botanical perspective it is proposed that that the development application be approved based on: 1. the economic and social benefits related to the development application; 2. the potential of restoring the remaining natural fynbos on site from its currently heavily invaded state; 3. the potential to secure the remaining critically endangered Agulhas sand fynbos on the property for conservation, 4; the potential offset benefits and 5. the potential to create a key conservation node in this area that will positively influence conservation land use in future.

S D J Privett
28 February 2024

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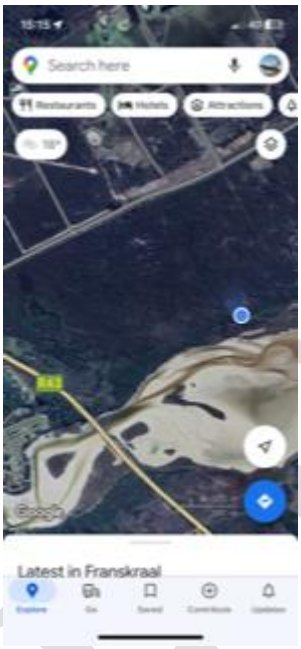
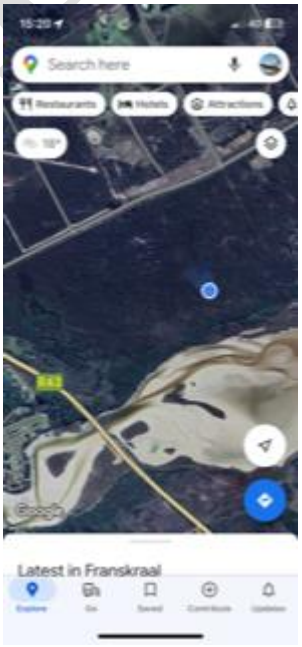
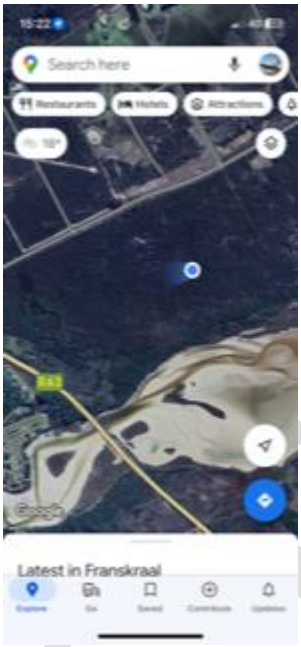
APPENDIX 1. SITE PHOTOS



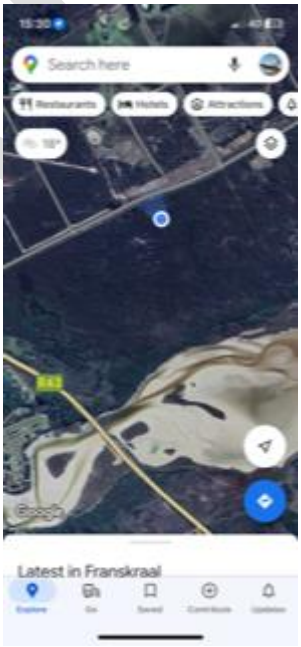
1. Typical vegetation along the estuary edge dominated by a *Typha capensis* fringe infested with large *Acacia saligna.*



2. Dense young *Acacia saligna* with heavily impacted fynbos understory being outcompeted for light and space.



3. Good condition open Agulhas sand fynbos near the middle of the property with scattered Acacia saligna in the background.



4. Good condition Agulhas sand fynbos with light infestation of *Acacia saligna* near the tar road on the western side of the site.