

BOTANICAL ASSESSMENT OF THE SITES CLEARED OF INDIGENOUS VEGETATION WITHOUT ENVIRONMENTAL AUTHORISATION: VOLMOED FARM NO 586, PORTION 1, HERMANUS

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1. INTRODUCTION

Members of the Hermanus Botanical Society were asked to conduct a botanical assessment in support of the Site Sensitivity Verification Report (SSVR attached) for the clearance of indigenous vegetation without Environmental Authorisation on portion 1 of Farm Volmoed, 586, Hermanus. Reference: SSVR/1/586 Report Date: August 2024

Retrospective Environmental Authorisation will be applied for from the Department of Environmental Affairs and Development Planning, for the clearance on Site 1 of approximately 133 m² for an office and Site 2 of 543 m² for a single residential dwelling. The areas were previously comprised of indigenous fynbos vegetation, being Elim Ferricrete Fynbos, with a small portion of Overberg Sandstone Fynbos (Fig 1 Vegetation map, site 2, larger site). Consequently, the developed areas would probably originally have consisted of an ecotone of both types of fynbos.

Site 1 and Site 2 were approximately 200m apart, separated by Elim Ferricrete Fynbos, with some housing development closer to Site 1. Both sites were included in the botanical assessment.

The desktop screening tool analysis in the above SSV report determined the terrestrial biodiversity theme to be of very high sensitivity, due to the presence of the critically

endangered vegetation type, Elim Ferricrete Fynbos. The potential sensitivity of the plant species in the report was determined to be of medium sensitivity. The screening report notes that the development was of relatively small size (543 m² and 133 m²) and took place in areas where other development activities had taken place.

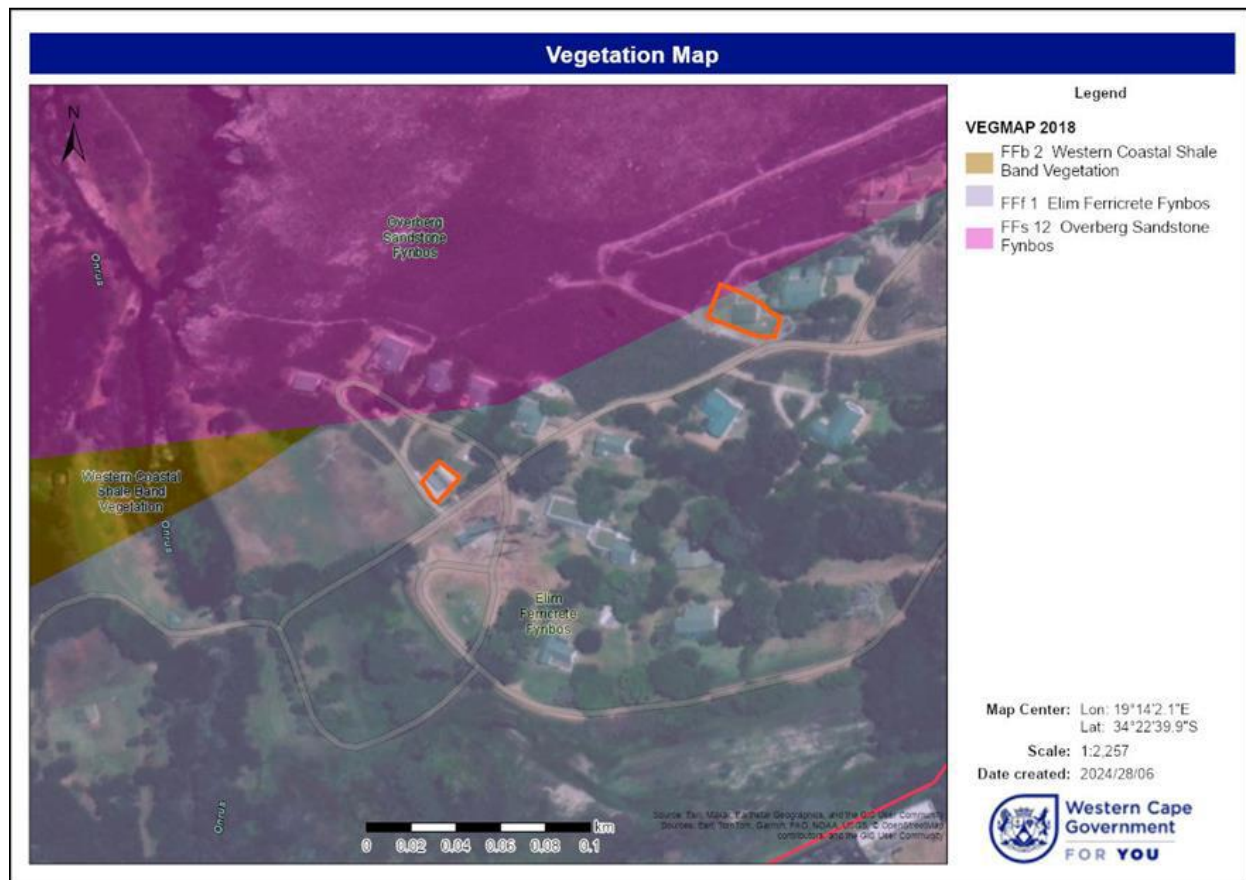


Figure 1 Site 1 and Site 2 (larger site) are the sites in question and characterized by Elim Ferricrete Fynbos vegetation with a very small portion of Overberg Sandstone Fynbos in Site 2

2. METHODS

Botanical surveys were undertaken by three Hermanus Botanical Society members photographing all plants species seen adjacent to the development site 2, between it and Site 1. The initial survey was conducted on 12 November 2024 on the upper, western side of the development site, site 2. Here, the vegetation was predominately Overberg Sandstone Fynbos. A month later, on 13 December 2024 a further botanical assessment was conducted, south of the development site. This was deemed necessary after viewing the vegetation map (above)

showing the predominance of Elim Ferricrete fynbos to the south of and thus more relevant to, the vegetation on the development sites. To the east and north of site 2 there are buildings, roads and gardens. Site 1 is surrounded by development.

Images of plants found were loaded onto iNaturalist and appear on the Volmoed Trust Project <https://www.inaturalist.org/projects/volmoed-trust>

It must be noted that the botanical assessments were undertaken on two days over two months only and should be repeated, especially when more geophytes are flowering, to obtain a more accurate reflection of plants present and those of conservation concern. Elim Ferricrete Fynbos is known for its large number of bulb species.

3. RESULTS

Plant species recorded

There were more than 70 fynbos species identified in the area adjacent to and west of the development site 1 which was indicated to be Overberg Sandstone Fynbos (vegetation map, Figure 1.)

Plants found in the Overberg Sandstone Fynbos

Shrubs and Herbs. *Agathosma bifida*, *Anaxeton asperum*, *Arctotis acaulis*, *Arctotis scabra*, *Aristea juncifolia*, *Aspalathus aspalathoides*, *Aspalathis serpens*, *Aspalathus ramulosa*, *Aulax umbellata*, *Berzelia lanuginosa*, *Cliffortia atrata*, *Cliffortia polygonifolia*, *Diospyros glabra*, *Disperago laxifolia*, *Erica placentifolia*, *Erica corifolia*, *Erica globiceps*, *Erica muscosa*, *Erica labialis*, *Erica ericoides*, *Euclea polyandra*, *Felicia aethiopica*, *Helichrysum pandurifolium*, *Hermas villosa*, *Hippia pilosa*, *Indigofera alopecuroides*, *Lanaria lanata*, *Laurenbergia repens*, *Leucadendron salignum*, *Laucadendron xanthoconus*, *Leucospermum conocarpodendron viridum*, *Leucospermum gracile*, *Lobelia pinifolia*, *Lysimacchia loefligi*, *Metalasia densa*, *Metalasia erubescens*, *Microdon dubius*, *Mimetes cucullatus*, *Morella krausiana*, *Muraltia heisteria*, *Osteospermum moniliferum*, *Passerina corymbose*, *Passerina rigida*, *Pelargonium capitatum*, *Pelargonium cucullatum*, *Phaenocoma prolifera*, *Phylica lasiocarpa*, *Pillansia templemanii*, *Plantago lanceolata*, *Protea cynaroides*, *Pseudoselago spuria*, *Pteridium aquilinum*, *Rumex acetosella*, *Saltera sarcocola*, *Searsia cuneifolia*, *Searsia tomentosa*,

Seriphium spirale, *Serruria elongata*, *Spatalla curvifolia*, *Syncarpha vestita*, *Thesium ericifolia*, *Ursinia palaeceae*, *Wimmerella borbonica*.

Graminoides *Briza minor*, *Briza maxima*, *Elegia racemosa*, *Hypodiscus aristatus*, *Schoenus compar*, *Staberoha cernua*, *Thamnochortus species*, *Thamnochortus lucens*,

Geophytes *Watsonia borbonica*

Of these, there were 4 species of Proteaceae of conservation concern, *Leucospermum gracile*, *Leucospermum conocarpodendron visidum*, *Serruria elongata* and *Spatalla curvifolia*. All are designated Near Threatened. The Proteaceae were found on the nearby upper slopes of the mountain in an area burnt in a fire in January 2019. Young plants of each of the 4 Proteaceae species was evident. The development site 2 was not burnt in the fire of 2019.

More relevant to the development site assessment, in the Elim Ferricrete Fynbos area to the south, less than 40 species were found. This area was characterised by lush, somewhat senescent growth and densely packed plant species making access and identification of especially small plants, difficult. Prominent in this area were Ericas, bracken (*Pteridium aquilinum*) and tall *Berzelia lanuginosa*.

Plants found in Elim Ferricrete fynbos area:

Shrubs and Herbs: *Agathosma capensis*, *Athanasia trifurcata*, ***Aulax umbellata***, ***Berzelia lanuginosa***, *Cliffortia feruginea*, ***Cliffortia atrata***, *Cliffortia stricta*, *Dicerotheramnus rhinocerotis*, ***Diospyrus glabra***, *Erica hispidula*, ***Erica ericoides***, ***Erica muscosa***, *Gnidia squarrosa*, *Helichrysum cymosum*, *Leucadendron salicifolium*, ***Lobelia pinifolia***, ***Metalasia densa***, ***Mimetes cucullatus***, *Monopsis lutea*, *Muraltia heisteria*, *Osteospermum moniliferum*, ***Pelargonium capitatum***, ***Pelargonium cucullatum***, *Penaea cneorum*, *Podalyria calyptrata*, *Pseudoselago spuria*, *Psoralea ivumba*, *Pteridium aquilinum capense*, ***Searsia cuneifolia***, ***Searsia lucida***, *Senecio burchellii*, *Seriphium plumosum*.

Graminoides: *Restio hyalinus*, ***Thamnochortus lucens***, *Tribolium uniola*

Geophytes: ***Watsonia borbonica***

Species in bold indicate these 15 species were also seen in the Overberg Sandstone site. This could indicate an ecotone or overlapping in this location of both fynbos types

There were no plants of any conservation concern found in the Elim Ferricrete Fynbos area adjacent to and on the southern side of the development site. Some *Erica* species were seen but which could not be identified as they were not flowering. The most prevalent *Erica* was found to be *Erica ericoides*.

Almost the entire developed area of Volmoed is located on Elim Ferricrete Fynbos. (See vegetation map Fig 1). A few other plant species in other locations close to the development sites were photographed for completeness. No plants of conservation concern were found.

Neither Site 1 nor Site 2 appears within CapeNature's Critical Biodiversity Areas.

4. IMPACT ASSESSMENT

1. Construction Phase Botanical Impacts

The construction phase botanical impact was the loss of the Elim Ferricrete Fynbos in the development sites which is listed as Critically Endangered nationally. The presence or not of any species of conservation concern can thus only be inferred from adjacent natural areas. No species of conservation concern (SoCC) could be found but many bulb species might appear at other times of the year. The botanical significance of the vegetation degradation and loss would be Medium to Low.

How is biodiversity affected going forward, by this destruction of the vegetation? Any loss of critically endangered vegetation which is poorly protected has a high impact on biodiversity. There will be no attempt to rehabilitate any of the destroyed fynbos as Site 1 and Site 2 have been developed so the > 660 m² fynbos is permanently lost. The impacts are deemed local, regional and national as threatened species are assessed at national level.

Table A. Summary of the construction phase botanical impacts associated with the unauthorized loss of Elim Ferricrete Fynbos

Impact	Extent of Impact	Duration of Impact	Intensity	Probability of impact	Irreplaceable loss of biodiversity	Significance
Loss of 660m ² Elim Ferricrete Fynbos	Local, regional and national	Permanent	Low to Medium	Medium	Medium	Low -ive

2. Operational Phase Botanical Impacts

Operational phase impacts have already occurred as the loss of natural vegetation has already taken place and will persist. There will be no rehabilitation as development has occurred. Some loss of ecological connectivity has occurred with habitat fragmentation at both sites. These

impacts become effective once the natural vegetation is lost. Here the botanical significance should be high as the operational phase destroyed it all. However, the stated intention is to put the entire natural of Volmoed area under a stewardship agreement.

Table B. Summary of operational phase botanical impacts associated with destruction of 660m² Elin Ferricrete Fynbos and associated with habitat fragmentation

Development area	Extent of impact	Duration of Impact	Intensity	Probability of Impact	Irreplaceable loss of biodiversity function	Significance
Loss of 660m ² Elin Ferricrete Fynbos	Local and regional	Permanent	Low to Medium	Medium	Medium	Low -ve

5. CONCLUSIONS

Elim Ferricrete Fynbos is a low-lying fynbos, growing in soils with great agricultural potential due to its fertile, rich composition, not common in other fynbos soil types. Consequently, much has been lost to agriculture and it has become a critically endangered veld type with little protection. There is now less than 5% remaining anywhere. It is known for its great diversity in bulb varieties and cone bushes (Leucadendron species).

<https://www.grootbosfoundation.org/conservation/2021/10/13/grootbos-foundation-elim-ferricrete-fynbos/>

Overberg Sandstone Fynbos is described as endangered for conservation purposes. (DFFE November 2022). The 4 plant species of conservation concern were found to be well represented in this study area. There was a very small, insignificant portion of this fynbos type lost in the development.

There has been loss of some critically endangered Elim Ferricrete Fynbos with the development of both site 1 and 2 activities on Volmoed. It cannot be deduced from studying the area next to the development sites whether the fynbos was in a senescent and overgrown state before removal. We would concur with the SSVR medium sensitivity rating for the plant species.

The sizes of the development were relatively small (133m² and 543 m²) and were within the development zone where, other activities exist such as roads and buildings. No plants of conservation concern could be found in the Elim Ferricrete Fynbos within 30-40m of the development site. A visit in the Spring would reveal more of the geophyte population which might indicate some species of conservation concern.

3. Cumulative Impacts.

Cumulative impacts are equivalent to regional ecological impacts. The main cumulative impacts are the many developments in the region and the present vegetation loss and threatened plant species loss to agriculture, alien vegetation invasion, and development. The overall cumulative ecological impact of 660 m² of development at regional level is likely to be Low but it is vital that no further loss is caused. If any further development is planned, it is essential that a correct environmental impact assessment is undertaken beforehand.

5. MITIGATING FACTORS:

These mitigating measures should be put in place on Volmoed

1. Create awareness amongst the residents so that they will understand the relevance of the natural environment and of rare plants which may be found in the Elim Ferricrete areas
2. Clear alien invasive plants. This needs to be on-going and special focus could be made within the area of Elim Ferricrete Fynbos.
3. Protect remaining areas of Elim Ferricrete Fynbos. Make sure no more development activities occur within this fynbos type without first undergoing the necessary environmental impact assessment.
4. Look for bulb species in the Fynbos and record these on iNaturalist. Protect the areas where new plants appear.
5. Instigate a stewardship agreement with CapeNature for the natural areas of Volmoed.

SAMPLE SITE PHOTOGRAPHS



Photo 1: Overberg Sandstone Fynbos to the west of the development on Site 2.



Photo 2: Area of Elim Ferricrete Fynbos to the south of the development on Site 2. This was characterized by dense stands of *Erica ericoides*, *Pteridium aquilinum* and *Berzelia lanuginosa*.

In the foreground is *Metalasia densa* on the roadside next to development on Site 2



Photo 3: Elim Ferricrete Fynbos sample site adjacent to Site 2. Foreground *Erica ericoides*. Senescent and tall *Berzelia lanuginosa* in centre of picture. Flat leaves of *Watsonia borbonica* seen upper centre, left.