

Plants Species, Animal Species and Terrestrial Biodiversity Site Sensitivity Verification and Impact Assessment

prepared in accordance with the protocols for the specialist assessment and minimum report content requirements for environmental impacts on plant species, animal species, and terrestrial biodiversity.

Approximately 40 farm portions of the Farm Hoogekraal No. 238 near Glentana within the George Local Municipality, Western Cape



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Plant Species, Animal
Species and Terrestrial
Biodiversity Site Sensitivity
Verification and Impact
Assessment for
approximately 40 farm
portions of the Farm
Hoogekraal No. 238 near
Glentana within the
George Local
Municipality, Western
Cape

9 October 2026

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Specialist details and declaration

This report has been prepared in accordance with the protocol for the specialist assessment and minimum report content requirements, as promulgated in terms of Section 24 (5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), published in GN. No. 320, for environmental impacts on terrestrial plant and animal species (October 2020), and terrestrial biodiversity (March 2020). It has been prepared independently of influence or prejudice by any parties.

Details of the specialist:

Specialist	Qualification and accreditation
Dr David Hoare (Pr.Sci.Nat.)	• PhD Botany • SACNASP Reg. no. 400221/05 (Ecology, Botany)

Declaration of independence

David Hoare of BioCensus (Pty) Ltd is an independent consultant and hereby declares that he does not have any financial or other vested interest in the undertaking of the proposed activity, other than remuneration for the work performed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998). In addition, remuneration for services provided by BioCensus (Pty) Ltd is not subject to or based on approval of the proposed project by the relevant authorities responsible for authorising the project.

Disclosure

BioCensus (Pty) Ltd undertakes to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and will provide the

competent authority with access to all information at its disposal regarding the application, whether such information is favourable to the applicant or not.

Based on information provided to BioCensus (Pty) Ltd by the client and in addition to information obtained during the course of this study, BioCensus (Pty) Ltd presents the results and conclusion within the associated document to the best of the author's professional judgement and in accordance with best practice.

A handwritten signature in black ink, appearing to read 'D Hoare', is positioned above a horizontal line.

9 October 2026

Dr David Hoare

Date

Executive summary

The assessment of approximately 40 farm portions of the Farm Hoogekraal No. 238 near Glentana, within the George Local Municipality, Western Cape, identified multiple biodiversity sensitivities across the terrestrial environmental themes, including threatened plant and animal species, a Critically Endangered ecosystem, protected forests and Critical Biodiversity Areas (CBAs). Of the 82 proposed small farms, 34 have been allocated specific disturbance zone footprints in order to avoid sensitive features or restrict impacts to a designated area. These have been subsequently assessed against the mapped habitats and biodiversity sensitivities, supported by targeted field assessment of proposed development locations within natural vegetation. The field assessment confirmed variation in the ecological condition of the natural vegetation and identified a limited number of development locations where micro-siting adjustments are required to avoid specific terrestrial biodiversity sensitivities.

Confirmed Sensitivities

- The site contains habitat of HIGH sensitivity with respect to the Terrestrial Plant Species Theme. Field assessment confirmed the occurrence of the Vulnerable *Erica glandulosa* subsp. *fourcadei* at three development-associated sampling locations within Fynbos. The records confirm that natural Fynbos on the property provides habitat for threatened Plant Species of Conservation Concern (SCC). Other threatened Plant SCC considered potentially occurring were not recorded during the field assessment, although suitable habitat remains present within parts of the natural Fynbos.
- The site is confirmed to have MEDIUM sensitivity with respect to the Terrestrial Animal Species Theme. No Animal SCC were confirmed within the proposed development footprints during the field assessment, but suitable habitat for potentially occurring Animal SCC is present. Forest and Thicket represent particularly important habitat for some of the species considered, while Fynbos and other natural vegetation also provide potential habitat and contribute to ecological

connectivity. The site is confirmed to have MEDIUM sensitivity with respect to the Terrestrial Animal Species Theme. No Animal SCC were confirmed within the proposed development footprints during the field assessment, but suitable habitat for potentially occurring Animal SCC is present. Forest and Thicket represent particularly important habitat for some of the species considered, while Fynbos and other natural vegetation also provide potential habitat and contribute to ecological connectivity.

- The site is confirmed to have VERY HIGH sensitivity with respect to the Terrestrial Biodiversity Theme. The principal terrestrial biodiversity features relevant to the site are as follows:
 - CBAs of very high and high sensitivity occur on the site, principally within the southern part of the property, where they form part of an important coastal ecological corridor, and along the eastern side, where they contribute to a local corridor associated with the Maalgate River. These areas are important for meeting biodiversity conservation targets, maintaining ecological connectivity and providing habitat for SCC.
 - The site falls within Garden Route Granite Fynbos, which is listed as Critically Endangered. This ecosystem has undergone extensive historical transformation through cultivation and urban development, leaving relatively limited areas of natural vegetation. Remaining patches are additionally subject to pressures including inappropriate fire regimes and invasive alien plants and are consequently of high conservation importance.
 - Protected forest and associated forest-margin/ecotonal habitats have very high ecological sensitivity because of their biodiversity value and ecological functioning. Indigenous forests are protected in terms of the National Forests Act.
 - The site occurs within a Strategic Water Source Area, adding to the importance of maintaining ecological functioning within natural habitats and drainage systems.
- Remaining natural vegetation associated with these biodiversity features is therefore considered to have VERY HIGH sensitivity with respect to the Terrestrial

Biodiversity Theme. This includes natural vegetation of differing ecological condition and may also include historically disturbed or secondary vegetation where it meets the applicable definition of natural vegetation. The field assessment nevertheless demonstrates that ecological condition and biodiversity importance vary substantially within the broadly mapped natural vegetation, which is relevant to the fine-scale siting of development.

Proposed Development and Impact Assessment

The proposed layout comprises 31 agricultural farms, 32 spilt zoned farms and 19 conservation farms. Of these farms 34 specific development footprints are indicated where additional care in siting of a home is required. 11 are situated within currently cultivated areas with no impact on biodiversity, 7 within secondary vegetation on historically cultivated land, and 16 within mapped natural vegetation that require additional assessment. 13 of the footprints within natural vegetation occur in the southern part of the site, close to the coast, where some of the most sensitive remaining natural habitat and an important coastal ecological corridor occur.

Development within currently cultivated and historically transformed areas presents substantially fewer terrestrial biodiversity constraints than development within remaining natural vegetation. The assessment identified potential impacts associated with the direct loss of natural vegetation within the mapped Critically Endangered Garden Route Granite Fynbos ecosystem; loss, degradation and fragmentation of CBAs and ecological corridors; impacts on Plant SCC and potential impacts on Animal SCC and their habitats; indirect degradation of retained natural vegetation; and cumulative loss and fragmentation of terrestrial biodiversity.

Targeted field assessment of development locations within natural vegetation has now been completed. The assessment confirmed substantial variation in vegetation condition, ranging from relatively well-developed natural Fynbos to disturbed and alien-invaded vegetation. It also confirmed the Vulnerable *Erica glandulosa* subsp. *fourcadei* at three development-associated sampling locations. A limited number of development locations consequently require micro-siting adjustments to avoid good-quality natural Fynbos and/or

confirmed Plant SCC habitat. These locations are identified on the recommendation map, and the ecological constraints are sufficiently localised that relatively small positional adjustments are considered adequate to address the identified sensitivities without materially altering the overall development layout.

Avoidance remains the primary mitigation measure. Micro-siting adjustments are required at the development locations identified on the recommendation map. Where the identified constraint is good-quality natural Fynbos, the development position should be adjusted onto adjacent disturbed, degraded or otherwise lower-sensitivity vegetation. Where confirmed occurrences of *Erica glandulosa* subsp. *fourcadei* are present, the development position should be adjusted to avoid the recorded plants and their immediate surrounding habitat. The precise adjusted positions should be confirmed in the field jointly by the terrestrial biodiversity specialist and project surveyor, taking account of the complete development disturbance envelope, including the building footprint, construction working area, access and services.

Long-term ecological management should additionally include sustained control of invasive alien plants and appropriate management of retained natural vegetation. Opportunities should also be investigated for strategic rehabilitation of selected cultivated or degraded areas to functional indigenous vegetation, particularly where this could buffer sensitive habitats, reconnect natural vegetation or strengthen ecological corridors. Such rehabilitation should complement, rather than substitute for, avoidance of existing high-value natural habitat. Subject to implementation of the required micro-siting adjustments and the recommended avoidance, management and rehabilitation measures, the residual terrestrial biodiversity impacts of the proposed development are considered manageable within the context of the assessed layout.

Terms of reference

This initial baseline report is prepared in compliance with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity, terrestrial plant species and terrestrial animal species.

This assessment follows the requirements of The Environmental Impact Assessment Regulations, as promulgated in terms of Section 24 (5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), published in GN. No. 320 dated 20 March 2020 for Terrestrial Biodiversity, and in GN. No. 1150 dated 30 October 2020 for Terrestrial Plant Species and Terrestrial Animal Species. As per these Regulations, the approach for assessing sensitivity with respect to Terrestrial Plant Species and Terrestrial Animal Species is in accordance with guidelines described in the latest version of the "Species Environmental Assessment Guidelines," available at <https://bgis.sanbi.org/>.

The assessment and minimum reporting requirements of these protocols are associated with a level of environmental sensitivity identified by the Department of Forestry, Fisheries and the Environment (DFFE) national web based environmental screening tool (screening tool). The screening tool can be accessed at:

<https://screening.environment.gov.za/screeningtool>.

Introduction

Site location

The site of the proposed development is approximately 40 farm portions of the Farm Hoogekraal No. 238 near Glentana within the George Local Municipality, Western Cape (Figure 1). It is located about 2,5 km to the south-west of the George International Airport and is accessed from Morrison Road, which connects the N2 national road and Glentana.



Figure 1: Location of the site (property demarcated with red border).

Aerial imagery (Figure 2) shows the boundary of the property relative to surrounding areas. The northern boundary of the site is the N2 national road between George and Mossel Bay, just to the south-west of the George International Airport. The southern boundary is the coastline just to the east of Glentana. The western boundary is Morrison Road, which connects from the N2 national road to Glentana. The eastern boundary is the Maalgate River.



Figure 2: Aerial image of the property and surrounding areas.

The proposal is to consolidate the approximately 40 farm portions into cooperative agricultural units, including the establishment of an agri-village for the occupants (Figure 3).

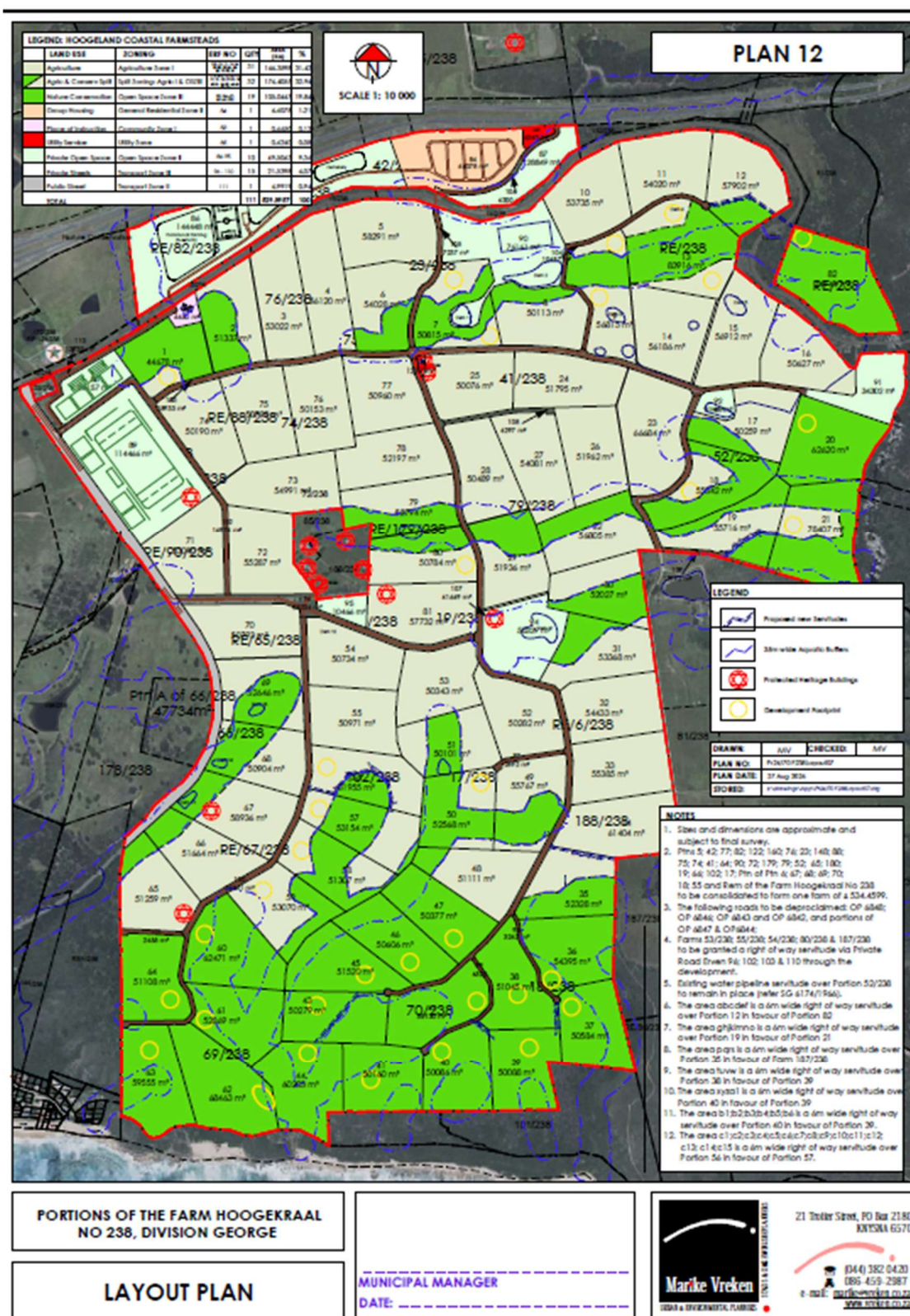


Figure 3: Development plan of the property.

Identified Theme Sensitivities

A sensitivity screening report from the DFFE screening tool was requested in the application category:

Transformation of land|Indigenous vegetation

The screening tool report for the area, dated 10/04/2025, indicates the following ecological sensitivities:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Plant Species Theme			X	
Animal Species Theme		X		
Terrestrial Biodiversity Theme	X			

Plant species theme

Areas of different sensitivity are shown in Figure 4. Plant SCC flagged for the site are as follows:

Sensitivity	Feature
Medium	Lampranthus pauciflorus
Medium	Euchaetis albertiniana
Medium	Sensitive species 18
Medium	Sensitive species 85
Medium	Sensitive species 264
Medium	Sensitive species 642
Medium	Sensitive species 1012
Medium	Sensitive species 1121

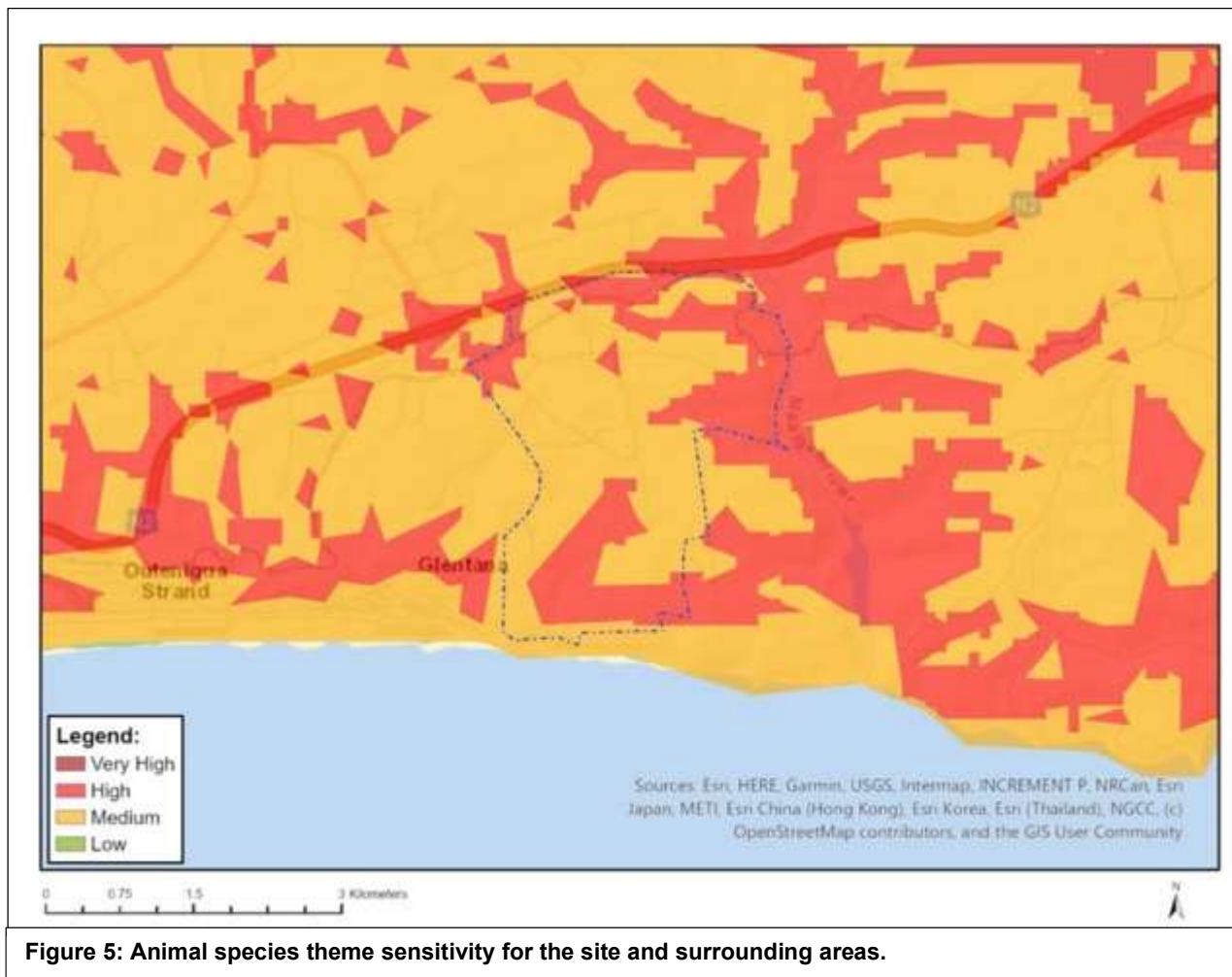


Figure 4: Plant species theme sensitivity for the site and surrounding areas.

Animal species theme

Areas of sensitivity are shown in Figure 5. Animal SCC are indicated as follows:

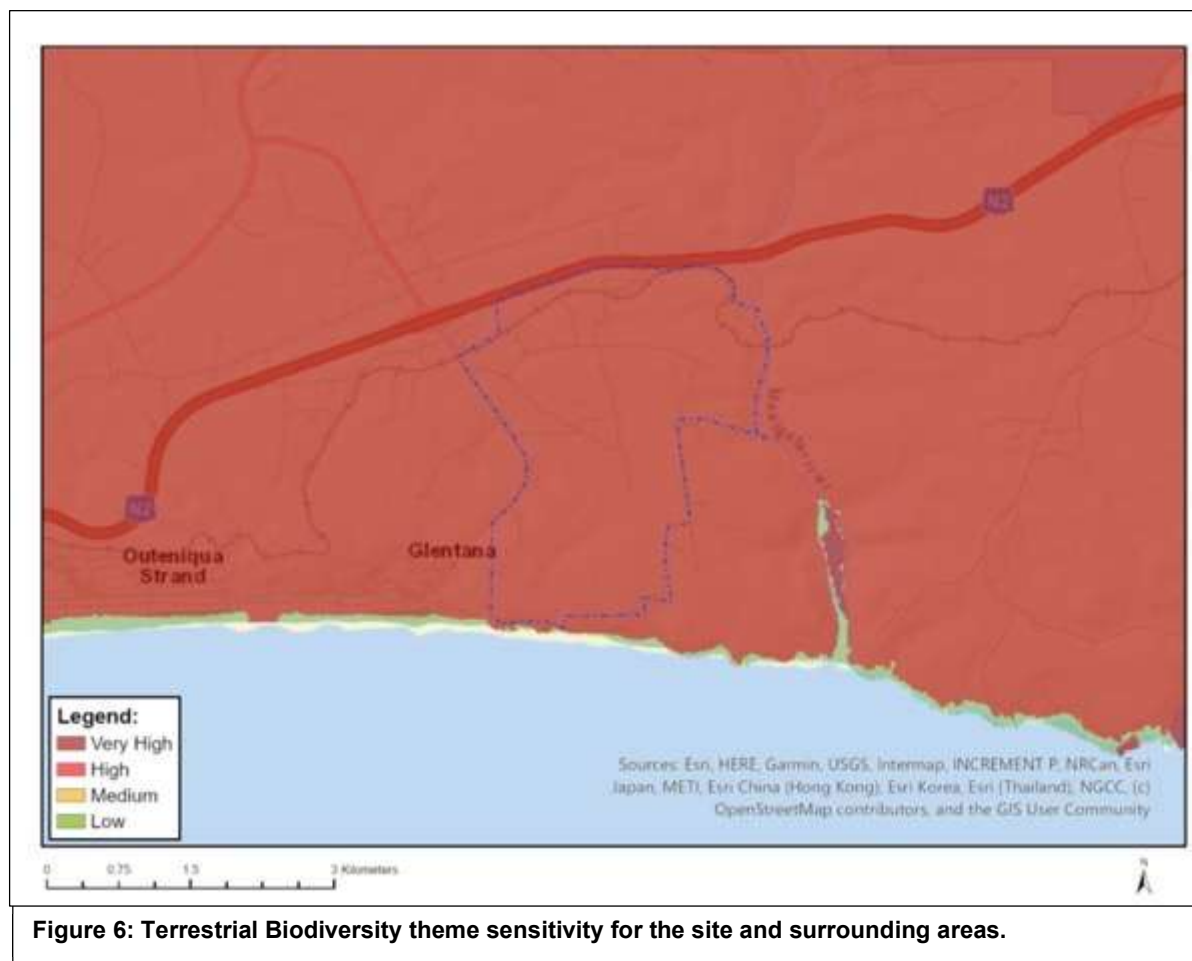
Sensitivity	Feature
High & Medium	Aves-Circus ranivorus
High	Aves-Circus maurus
High	Aves-Neotis denhami
High	Aves-Bradypterus sylvaticus
High	Aves-Polemaetus bellicosus
Medium	Aves-Stephanoaetus coronatus
Medium	Sensitive species 13
Medium	Invertebrate-Aneuryphymus montanus



Terrestrial Biodiversity theme

Areas of sensitivity are shown in Figure 6 and sensitive features are indicated as follows:

Sensitivity	Feature
Very High	CBA: Terrestrial
Very High	CBA2: Terrestrial
Very High	SWSA (sw)_Outeniqua
Very High	CR_Garden Route Granite Fynbos
Very High	EN_Cape Lowland Alluvial Vegetation

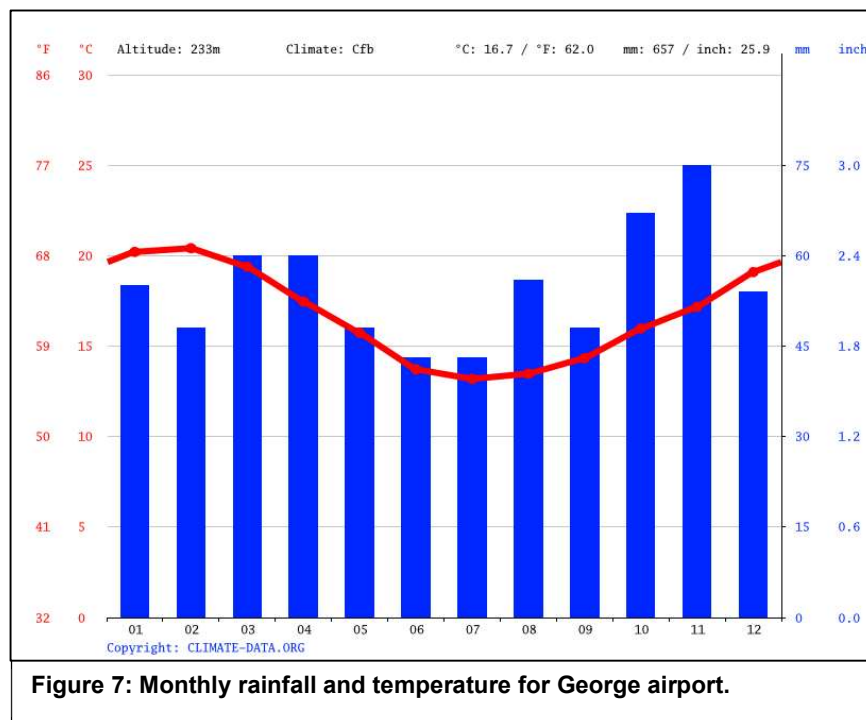


Assessment methodology

The detailed methodology followed as well as the sources of data and information used as part of this assessment are described below.

Survey timing

The study commenced as a desktop-study followed by site-specific field surveys on 24 January 2026 and 7 October 2026. Rainfall seasonality (Figure 7) drives most ecological processes. The site is within the Fynbos Biome of the southern Cape between George and Mossel Bay which has an all-year rainfall season. The timing of the survey in January and October is therefore optimal in terms of assessing the flora and vegetation of the site. It was therefore possible to determine the overall condition of the vegetation with a high degree of confidence.



Field survey approach

Field surveys of the site included meander searches of general areas and active searching in habitats considered suitable for particular species or groups. Where sensitive species were encountered, coordinates for individuals occurring on site were obtained as far as practicable. A hand-held Garmin GPSMap 64s was used to record survey tracks and locations of observations. Digital photographs were taken of habitats, ecological features and plant and animal species encountered. Selected species observations were uploaded to the iNaturalist website.

Aerial imagery from Google Earth was used to identify and assess habitats on site. Historical imagery was examined to identify previous land transformation, including areas that had formerly been cultivated or otherwise substantially modified. Current aerial imagery was used in conjunction with field observations to assess present vegetation patterns, including the distribution of indigenous vegetation and stands of invasive alien trees. Patterns identified from aerial imagery were subsequently verified in the field.

Particular attention was paid to vegetation within areas mapped as Critical Biodiversity Area 1 (CBA1). The purpose of the field assessment was not simply to determine whether indigenous vegetation remained, but also to assess its species composition, structure, ecological condition and degree of modification. Vegetation sampling was therefore undertaken using 10 × 10 m relevés distributed across the site, with particular emphasis on proposed development locations and the range of vegetation condition represented within the CBA1 areas. All vascular plant species observed within each relevé were recorded and assigned cover-abundance values. Additional species occurring in the immediate surrounding habitat, but outside the relevé, were recorded separately where relevant.

Species composition was used as an additional indicator of vegetation condition. This included consideration of the representation of characteristic indigenous fynbos species, species associated with disturbed or secondary vegetation, and the abundance and influence of invasive alien plants. The resulting floristic information was interpreted

together with vegetation structure, evidence of historical disturbance, current alien invasion and the spatial context of each sample.

The interpretation of species composition was also informed by the published phytosociological study of coastal fynbos and rocky headland vegetation south of George by Hoare et al. (2000). That study identified distinct coastal fynbos communities on the basis of species composition and demonstrated considerable floristic variation in relation to environmental gradients. Of particular relevance to the present assessment, characteristic coastal fynbos assemblages included species such as *Passerina vulgaris*, *Erica discolor*, *Phylica confusa*, *Tetraria cuspidata* [now treated differently taxonomically in some contexts], *Syncarpha paniculata*, *Agathosma ovata* and *Cliffortia* spp. The study also documented substantial alien invasion within otherwise recognisable fynbos communities and found that invasion could substantially reduce indigenous species richness; for example, mean richness of approximately 20 species in one subcommunity was reduced to eight species in an *Acacia mearnsii*-dominated facies. Alien plant invasion was identified as a major threat to the persistence of the coastal fynbos vegetation.

Accordingly, vegetation condition in the present study was assessed as a continuum rather than as a simple natural/transformed distinction. Areas retaining characteristic indigenous species assemblages were considered to retain greater ecological integrity, whereas areas showing substantial replacement or suppression of the indigenous assemblage by invasive alien plants or disturbance-associated species were interpreted as being in poorer condition. Importantly, alien invasion alone was not regarded as evidence that an area had been irreversibly transformed, particularly where characteristic fynbos species persisted and the area remained contiguous with functional indigenous vegetation.

Impact assessment methodology

The analysis of impact uses a detailed assessment methodology based on several factors. These factors assess the sensitivity and significance of impacts on biodiversity resources, integrating criteria for biodiversity value and impact magnitude. The following impact assessment factors were used:

- Resource Irreplaceability (I): Measures the uniqueness and rarity of the biodiversity resource. This ranges from widespread/common resources (Low) to critically rare resources with persistence thresholds exceeded (High).
- Threshold (T): The scale of impact relative to the total distribution of the resource, representing how much the impact contributes towards ecological thresholds. Scores range from negligible to impact on a significant proportion.
- Resource Condition (C): The integrity and quality of the biodiversity resource, from severely degraded to fully functional in a natural state.
- Reversibility of Impact (R): How reversible the impact is, from reversible without rehabilitation to irreversible despite mitigation.
- Extent of Impact (E): The geographic scale of the impact, from site-specific to regional or global.
- Duration of Impact (D): Time over which the impact persists, ranging from immediate (0-1 year) to permanent (indefinite).
- Intensity of Impact (M): Degree of alteration, from no impact on processes to permanent cessation.
- Probability of Occurrence (P): Likelihood of impact occurring without mitigation, from improbable to definite.
- Confidence (not always scored explicitly): Level of certainty in the data and assessment.
- Significance of Impact (S): A combined score reflecting the biodiversity value, magnitude, and probability of the impact, classified as very low, low, moderate, high, or very high.
- The significance calculation is a function combining biodiversity importance and impact magnitude, with detailed scoring for each factor allowing an objective and transparent rating of impacts.

The impact assessment methodology assists in evaluating the overall effect of a proposed activity on the environment. The impact assessment must take account of the nature, scale and duration of effects on the environment and whether such effects are positive (beneficial) or negative (detrimental). The rating system is applied to the potential impact on the receptor. The impact assessment methodology provided below explicitly takes into

account the value and condition of the biodiversity resources affected. In assessing the significance of each impact, the following criteria (including an allocated point system) are used:

CRITERIA	SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
BIODIVERSITY VALUE / SENSITIVITY CRITERIA					
Irreplaceability (I) The biodiversity value of the affected resource	Resource is widespread and common and /or regenerates itself (LC)	Resource is uncommon, endemic to a restricted area, moderately rare, or is already noticeably affected but still relatively widespread (e.g., NT, ESA)	Resource is naturally rare, restricted to limited localities, ephemeral, or is approaching a threshold of persistence (VU, CBA2)	Resource is highly localised / loss has already exceeded persistence thresholds (EN, CBA1)	Resource is critically rare / loss has already well exceeded persistence thresholds (CR, Protected)
Threshold (T) The scale of the impact relative to the overall distribution of a resource, therefore the degree to which the impact contributes towards exceeding an ecological threshold	Impact affects a negligible proportion of the overall biodiversity resource	Impact affects a proportion of the biodiversity resource that is within 6 orders of magnitude of the total extent / number of the resource (0.001-0.1%)	Impact affects a proportion of the biodiversity resource that is within 4 orders of magnitude of the total extent / number of the resource (0.1-1%)	Impact affects a proportion of the biodiversity resource that is within 2 orders of magnitude of the total extent / number of the resource (1-10%)	Impact affects a proportion of the biodiversity resource that is within 1 order of magnitude or more of the total extent / number of the resource ($\geq 10\%$)
Condition (C) The integrity of the resource in terms of its intactness and functionality, the coherence of its ecological structure and function	Resource in very poor condition, displaying advanced degradation		Moderately affected resource, functional but displaying obvious signs of minor degradation		Fully functional and in a state expected in a completely natural state, unaffected by human influence.
Reversibility (R) The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change	Reversible: Recovery without rehabilitation	Mostly reversible: requires minor mitigation	Partly reversible: Recoverable with more intense mitigation	Barely reversible: unlikely to be reversed, even with intense mitigation	Irreversible: Not possible despite action
IMPACT MAGNITUDE CRITERIA					

CRITERIA	SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
Extent (E) The geographical extent of the impact on a given environmental receptor	Site: Within site boundary only	Site & surroundings: Extends for a limited distance beyond site boundaries	Landscape: Outside activity area	Regional: Affects patterns at a regional or provincial scale	Global: Across borders or boundaries
Duration (D) The length of permanence of the impact on the environmental receptor	Immediate: On impact, 0-1 years	Short term: 1-5 years	Medium term: 5-10 years	Long term: Project life, 10-25 years	Permanent: Indefinite
Magnitude (M) The degree of alteration of the affected environmental receptor	Very low: No impact on processes	Low: Slight impact on processes	Medium: Processes continue but in a modified way	High: Processes temporarily cease or continue in a highly modified way	Very High: Permanent cessation of processes
Probability of Occurrence (P) The likelihood of an impact occurring in the absence of pertinent environmental management measures or mitigation	Improbable	Low Probability	Probable	Highly Probability	Definite
Significance (S) is determined by combining the above criteria in the following formula:	$S = [(E + D + M)/3 \times (R + I + T + C)/4]/5$ $Significance = (Extent + Duration + Magnitude)/3 \times (Reversibility + Irreplaceability + Threshold + Condition)/4$				
IMPACT SIGNIFICANCE RATING					
Total Score	0 - 1	1 - 2	2 - 3	3 - 4	4 - 5
Environmental Significance Rating (Negative (-))	Very low	Low	Moderate	High	Very High
Environmental Significance Rating (Positive (+))	Very low	Low	Moderate	High	Very High

Sources of information

Vegetation and threatened ecosystems

- South African National Biodiversity Institute (2006-2024). The Vegetation Map of South Africa, Lesotho and Swaziland, Mucina, L., Rutherford, M.C. and Powrie, L.W. (Editors), Online, <https://bgis.sanbi.org/Projects/Detail/2258>, Version 2024.
- The description of each vegetation type includes a list of plant species that may be expected to occur within the particular vegetation type.
- The conservation statuses of the vegetation types were obtained from the Revised National List of Ecosystems that are Threatened and in need of protection (GN1002 of 2011), published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004).

Conservation plans

- Information from the National Protected Areas Expansion Strategy (NPAES) was consulted for possible inclusion of the site into a protected area in future (available on <http://bgis.sanbi.org>).
- CapeNature 2024. 2023 Western Cape Biodiversity Spatial Plan and Guidelines Overview V2.0.
- South Africa Protected Areas Database (SAPAD_OR_2024_Q3) retrieved from the Department of Forestry, Fisheries and the Environment website (https://egis.environment.gov.za/data_egis/data_download/current).

Aerial imagery

- Recent satellite imagery (courtesy of Google Earth Pro). Google Earth Pro also provides historical imagery for a period up to 15 years ago, which aided in the determination of certain vegetation types and land use historically and currently present on site.
- Archive of historical aerial photography dating back to the 1930's accessed from the Department of Agriculture, Land Reform and Rural Development's (DALRRD)

National Geo-spatial Information (NGI) website
(<http://www.cdngiportal.co.za/cdngiportal/>).

Plant species

- Plant species information including taxonomy and distribution was obtained from the South African National Biodiversity Institute (SANBI) available on the Biodiversity Advisor website (<https://biodiversityadvisor.sanbi.org/>).
- The Red List assessments and supplementary information on habitats and distribution was obtained from SANBI's Red List (<http://redlist.sanbi.org>), World Flora Online (<https://www.worldfloraonline.org/>), Biodiversity Advisor (<https://biodiversityadvisor.sanbi.org/>), and published literature.
- Regulations published for the National Forests Act (Act 84 of 1998) (NFA) as amended, provide a list of protected tree species for South Africa. The distribution and habitat information of tree species were obtained from SANBI's Biodiversity Advisor website (<https://biodiversityadvisor.sanbi.org/>).

Animal species

- Lists of animal species that have a geographical range that includes the study area were obtained from literature sources (Bates et al., 2014 for reptiles, du Preez & Carruthers 2009 for frogs, Mills & Hes 1997 and Friedmann and Daly, 2004 for mammals). This was supplemented with information from the Animal Demography Unit website (adu.uct.ac.za) and literature searches for specific animals, where necessary.
- Threat status, distribution, and habitat information for threatened species was obtained from the IUCN Red List (<https://www.iucnredlist.org/>) as well as published literature.

Limitations

The following assumptions, limitations and uncertainties apply to the assessment:

- The assessment is based on field surveys as well as a desktop assessment of available information. The field survey effort was considered adequate to characterise the principal vegetation and habitat patterns across the study area and to assess vegetation composition and condition at the proposed development locations. Historical and current aerial imagery provided additional information on previous disturbance, vegetation patterns and current levels of alien plant invasion.
- Rare and threatened plant and animal species are, by their nature, often difficult to locate and may be overlooked during field surveys. This limitation was addressed, as far as practicable, through desktop assessment of species potentially occurring within the study area, consideration of habitat suitability, and targeted searching during field surveys. The Screening Tool output provides an additional indication of species potentially associated with the site based on available biodiversity information.

Results

Desktop description of vegetation

The site is mapped as occurring within Garden Route Granite Fynbos (Figure).

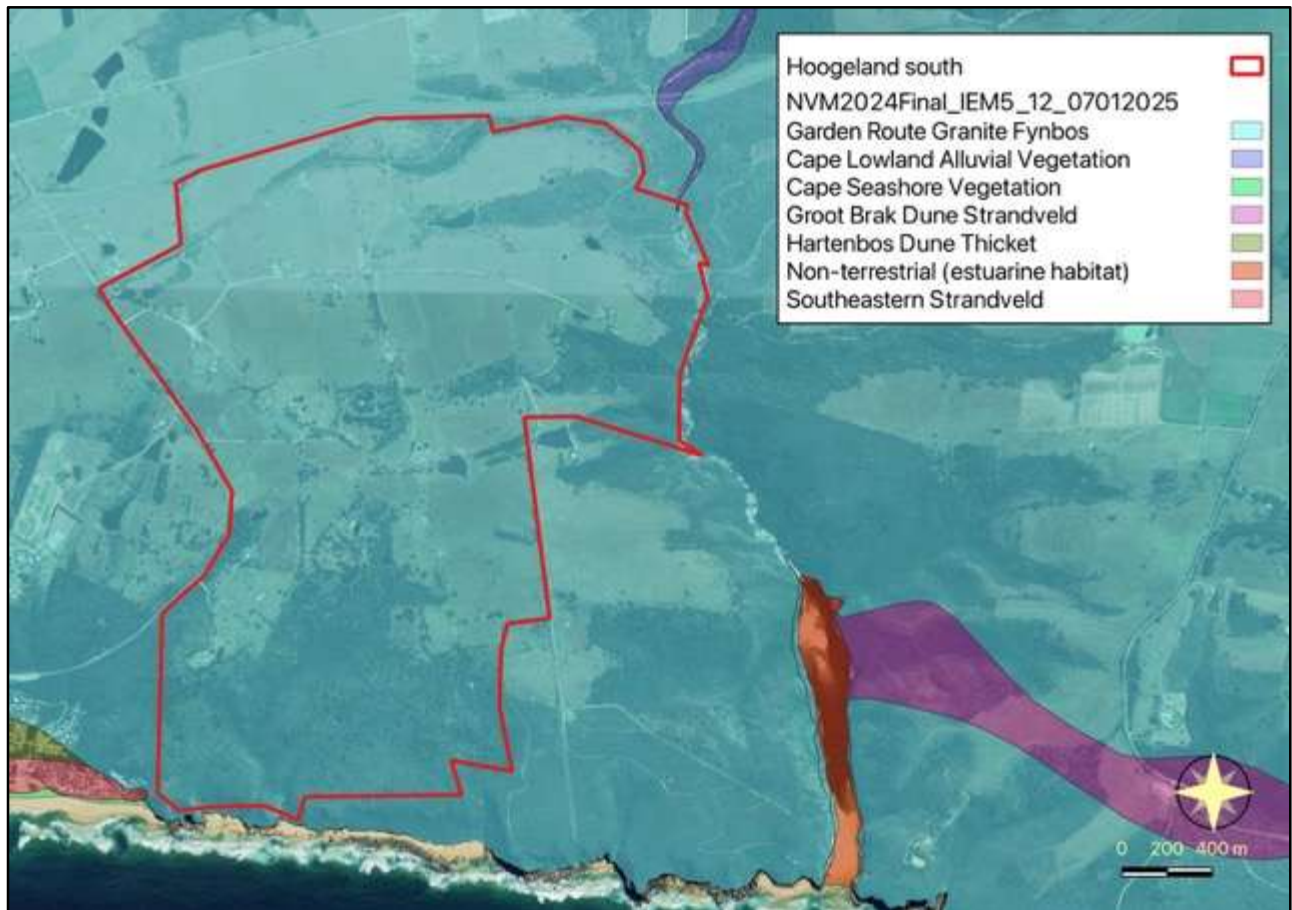


Figure 8: Regional vegetation types of the site and surrounding areas.

Garden Route Granite Fynbos

This vegetation type is found in the Western Cape Province: three main blocks south of the Outeniqua Mountains on the coastal plain from Botterberg west of Brandwaghoogte (south of Robinson Pass) to Groot Brak River; the largest block from Groot Brak River to Woodfield near the Wilderness (with a few strips along the coast from Bothastrand to the

Wilderness); lastly, north of the lakes from Woodville to Hoogekraal Pass, west of Karatara. Altitude 0–300 m.

Vegetation & Landscape Features

Moderately undulating plains and undulating hills on the coastal forelands. Dense proteoid and ericoid shrubby grassland. Proteoid and graminoid fynbos are dominant with ericaceous fynbos in seeps. In the west, most remnants of this type are dominated by proteas. Eastwards graminoid and ericaceous fynbos are dominant on the flat plateaus, with proteas confined to the steep slopes.

Geology & Soils

George Batholith of the Cape Granite Suite. Deep, prismacutanic- and pedocutanic-dominated soils typical of Db land types (mainly).

Climate

MAP 350–880 mm (mean: 600 mm), with a slight low in early winter. Mean daily maximum and minimum temperatures 27.8°C and 6.8°C for January–February and July, respectively. Frost incidence 2 or 3 days per year.

Important Taxa

Growth form	Species
Tall shrubs	<i>Passerina corymbosa</i> (d), <i>Cliffortia serpyllifolia</i> , <i>Protea coronata</i> , <i>P. lanceolata</i> , <i>P. neriifolia</i> .
Low shrubs	<i>Erica discolor</i> variant ‘ <i>speciosa</i> ’ (d), <i>E. peltata</i> (d), <i>Phyllica confusa</i> (d), <i>Syncarpha paniculata</i> (d), <i>Agathosma ovata</i> , <i>Anthospermum prostratum</i> , <i>Aspalathus asparagoides</i> , <i>Cliffortia falcata</i> , <i>Cullumia bisulca</i> , <i>Erica canaliculata</i> , <i>E. diaphana</i> , <i>E. formosa</i> , <i>Eriocephalus africanus</i> , <i>Hermannia angularis</i> , <i>Leucadendron salignum</i> , <i>Lobelia tomentosa</i> , <i>Metalasia pungens</i> , <i>Mimetes cucullatus</i> , <i>Pelargonium fruticosum</i> , <i>Relhania calycina</i> .
Succulent shrub	<i>Lampranthus sociorum</i> .
Semiparasitic shrubs	<i>Osyris compressa</i> , <i>Thesium virgatum</i> .
Semiparasitic epiphytic shrub	<i>Viscum capense</i> .
Geophytic herb	<i>Schizaea pectinata</i> .

Graminoid

Tetraria cuspidata (d), *Brachiaria serrata*, *Eragrostis capensis*, *Ficinia nigrescens*,
Heteropogon contortus, *Pentaschistis eriostoma*, *Restio triticeus*, *Themeda triandra*.

Conservation status of broad vegetation types

The threat status of the vegetation types in which the site is mapped is in accordance with the Revised National List of Ecosystems (Government Notice No 2747 of 18 November 2022) published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004), which lists national vegetation types that are afforded protection on the basis of rates of transformation.

Vegetation Type	Conservation status
	Revised National Ecosystem List (NEM:BA) (2022)
Garden Route Granite Fynbos	Critically Endangered

The characteristics of the vegetation found on site described in the on-site habitat assessment below, determine whether vegetation of a listed ecosystem occurs on site or not. If there is no natural habitat remaining on site then the sensitivity is LOW with respect to this attribute, or, if natural habitat occurs on site then those areas would have VERY HIGH sensitivity with respect to this attribute.

Ecosystem status in accordance with Section 52(2) of National Environmental Management: Biodiversity Act (Act No. 10 of 2004):

- i. **Critically endangered** ecosystems are ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention, and are subject to an extremely high risk of irreversible transformation;
- ii. **Endangered** ecosystems are ecosystems that have undergone degradation of ecological structure, function or composition as a result of human intervention, and are subject to a significant risk of irreversible transformation (although to a lower extent than critically endangered ecosystems;
- iii. **Vulnerable** ecosystems are ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention; their risk of irreversible transformation is less than for critically endangered or endangered ecosystems; and
- iv. **Protected** ecosystems are ecosystems of high conservation value or of high national or provincial importance, although they are not under immediate risk of irreversible transformation, such as critically endangered, endangered or vulnerable ecosystems; and.
- v. **Degraded**/sacrificial zones that could be used in support of sustainable development without impacting adversely on the environment.

Biodiversity Conservation Plans

The Western Cape Biodiversity Spatial Plan (WCBSP) classifies the habitats of the province according to conservation value in decreasing value, as follows:

1. Protected Areas (PA);
2. Critical Biodiversity Areas 1 (CBA1);
3. Critical Biodiversity Areas 2 (CBA2);
4. Ecological Support Area 1 (ESA1);
5. Ecological Support Area 2 (ESA2)

The WCBSP map shows that most of the uncultivated parts of the study area are within various designated conservation zones. These include "CBA1: Terrestrial" and "CBA2: Terrestrial" (Figure). The CBA1 and CBA2 areas are required for meeting biodiversity targets. The most important biodiversity areas are the natural areas in the southern part of the site that are within "CBA1: Terrestrial" areas. These are part of a larger coastal CBA1 corridor that extends from Wilderness all the way to Great Brak River. This is a critical landscape-level corridor that is essential to maintain in a natural state. The "CBA2:

Terrestrial" areas on site are fingers of valley vegetation that extend from the Maalgate River valley into the site. They are part of a coastal-inland corridor along the Maalgate River that is locally important for maintaining the ecosystem associated with this river valley.

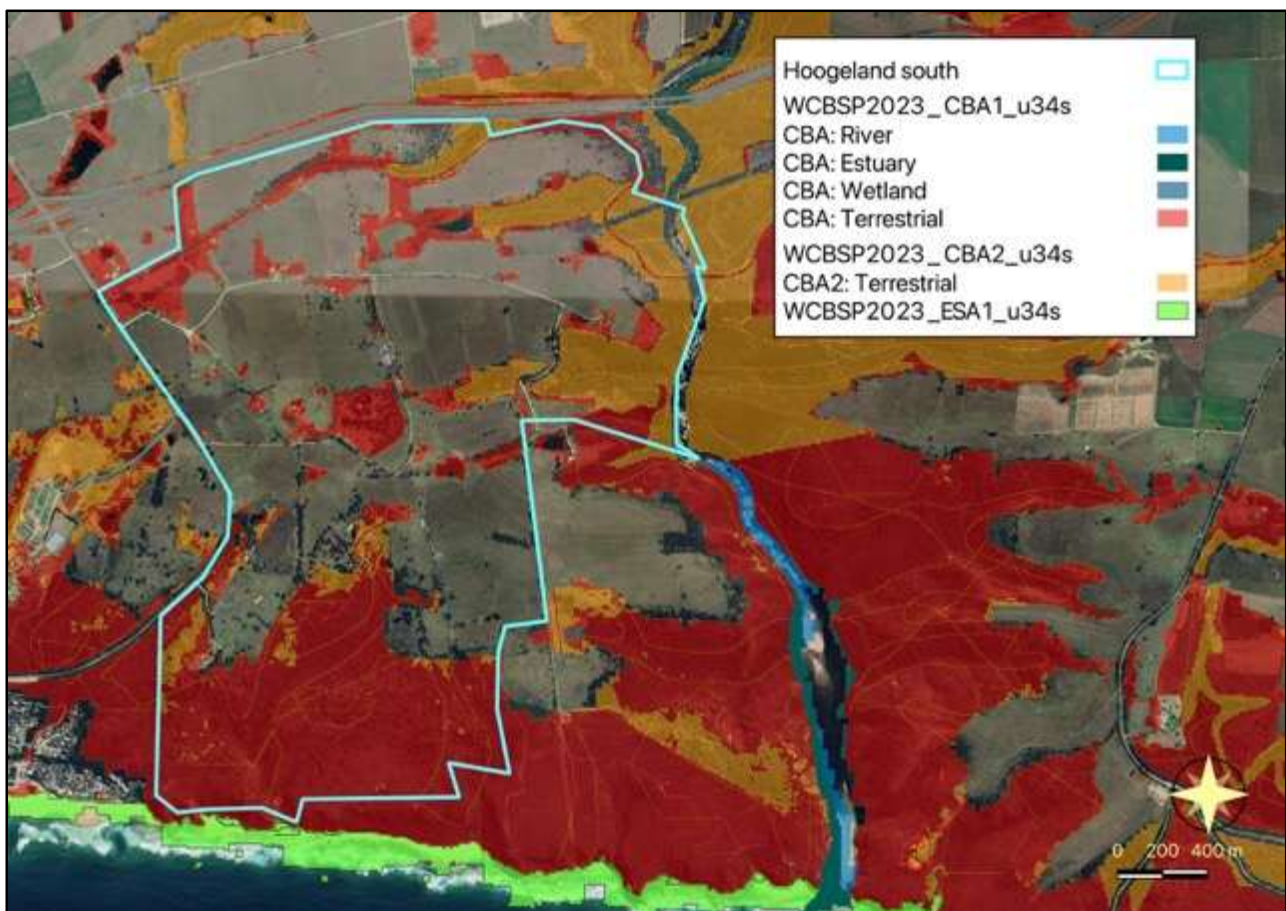


Figure 9: Western Cape Biodiversity Spatial Plan for the site.

Historical disturbance

An aerial photograph from 1958 show that the study area has been cultivated according to its current pattern for at least seventy years, probably a lot longer (see **Error! Reference source not found.**). The current extent of cultivation on site closely matches that for 1958, with the excewption that there are some small local patches that were cultivated that have been left to return to a more natural state. The extent of these areas is evident in an aerial photograph from 1939 (Figure 11). The river valley and the valleys extending in from the coast have always contained forest in the valley bottoms, thicket on the midslopes and fynbos on the upper, more exposed areas, although the extent in 1958 is slightly less than at the current date - this is interpreted as invasion of the forest ecotone areas on the upper slopes by alien invasive shrubs and trees over time, which are currently still present in this zone on site.



Figure 10: Aerial photograph from 1958 showing historical extent of cultivation.

Further observations from the 1958 aerial photograph are that the current location of houses, farm dams and internal roads have remained relatively stable over this period of time. The overall implication is that current patterns on site have been stable for a long period of time, with the exception of an increase in invasion by alien species, a pattern that has been observed throughout the country since the 1990s.

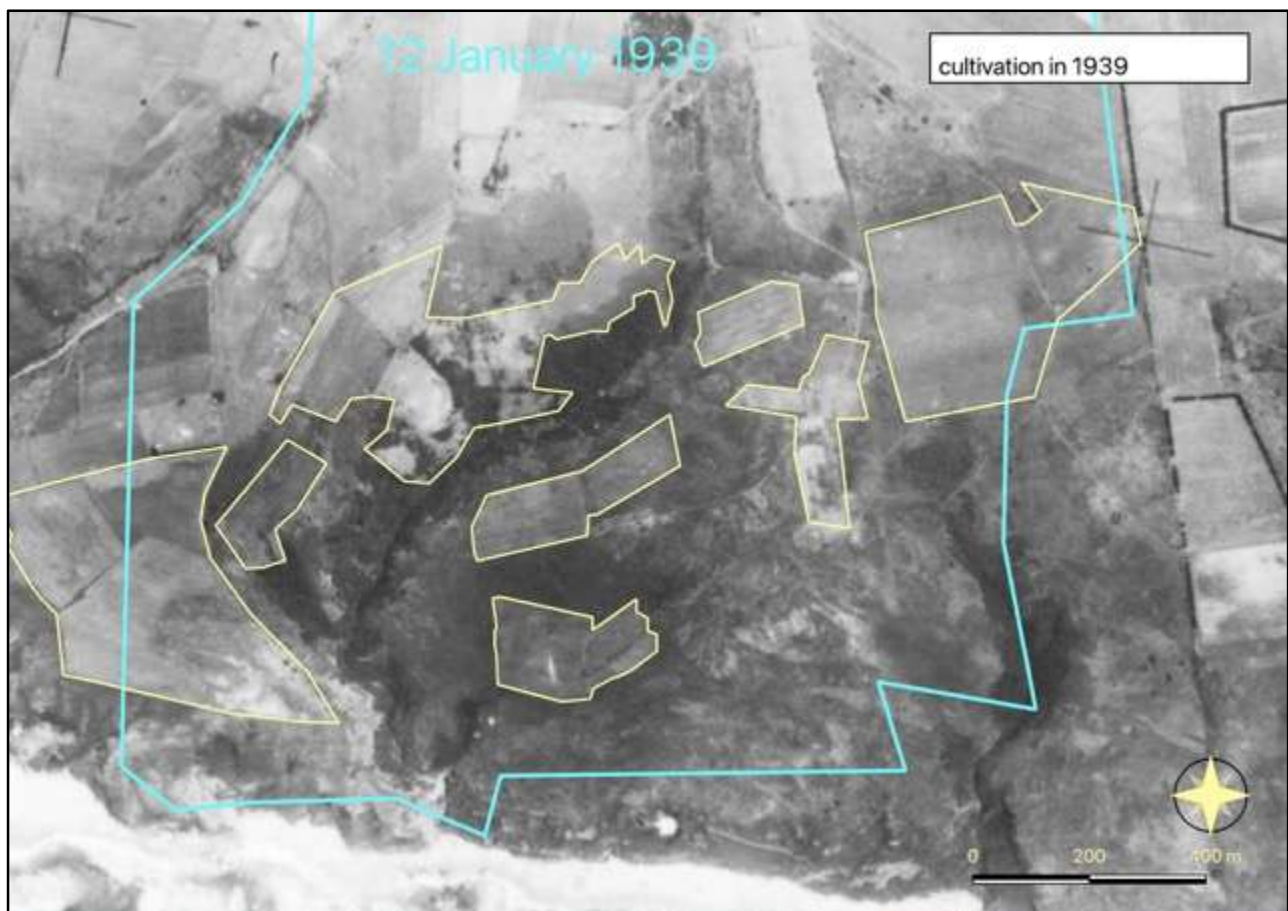


Figure 11: Aerial photograph from 1939 showing historical cultivation in the southern parts of the site. These areas now contain secondary vegetation.

Vegetation found on site

A map of habitats / landcover for the site is provided in Figure 12.

The general pattern on site is that all the upland, flatter parts of the site have been cultivated. These areas would historically have been covered by fynbos, probably with wetland vegetation in the bottom of any shallow drainage valleys. In some cases, the position of farm dams follows the line of these drainage valleys. The valley bottoms of the main valleys currently still contain intact forest, which transitions to thicket upslope, and eventually to fynbos on the summits. The only real remaining areas of fynbos are in the southern part of the site, but these are moderately to heavily invaded by alien invasive species, partly due to historical disturbance associated with cultivation.

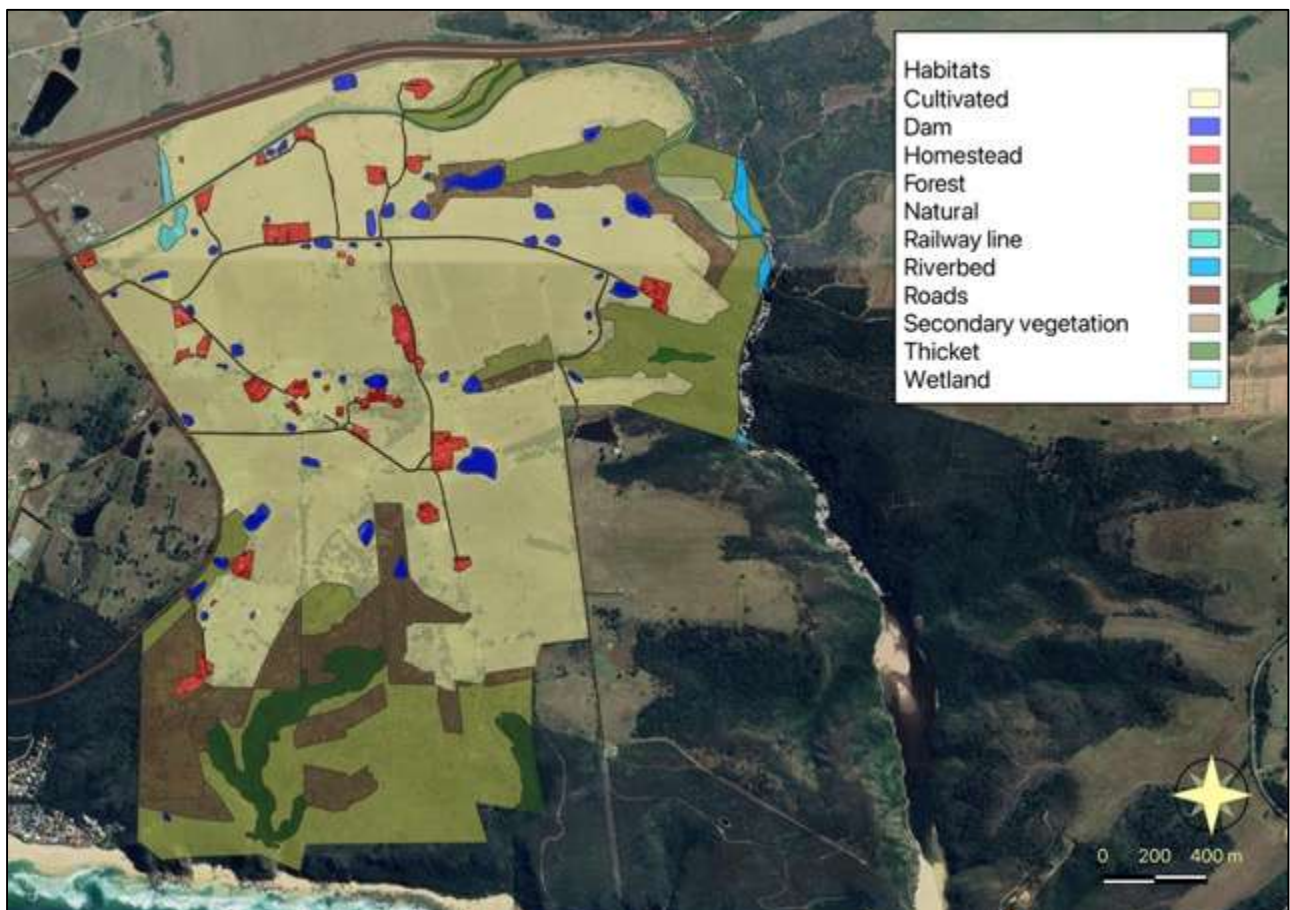


Figure 12: Habitats on site.

The definition of natural vegetation in NEMA is irrespective of the levels of alien vegetation, therefore these heavily invaded areas are also considered to be natural for the purposes of the assessment.

A full checklist of plant species found on site is provided in Appendix II. A total of 29 species were recorded in the general footprint area during the reconnaissance survey. The natural vegetation on site is expected to contain approximately 400 plant species. This is based on a checklist of plant species from a similar-sized area with similar vegetation west of Herolds Bay.

Seven of the species recorded on site are alien species. The declared alien invasive species found on site are *Acacia dealbata** (NEMBA Category 2), *Acacia decurrens** (NEMBA Category 2), *Acacia mearnsii* (Black Wattle, NEMBA Category 2), *Acacia melanoxylon* (Blackwood, NEMBA Category 2), *Agave americana** (NEMBA Category 3), *Phytolacca dioica** (NEMBA Category 3), and *Pyracantha angustifolia** (NEMBA Category 1b). It is expected that many more species are present and will be detected during detailed field surveys. It has been observed along this coastline more than 30 years ago (Hoare 1993) that *Acacia cyclops* (rooikrans) was already a persistent invasive species causing vegetation degradation, especially close to the coast.

It is confirmed that the site occurs within a Listed Ecosystem, as listed in the Revised National List of Ecosystems that are Threatened and need of protection (GN2747 of 2022) and therefore has VERY HIGH sensitivity with respect to this attribute.

Vegetation composition and condition

Field sampling showed considerable variation in the composition and condition of vegetation across the study area. This variation is not adequately represented by the broad habitat mapping alone. In particular, areas mapped as “Fynbos” include vegetation ranging from relatively diverse indigenous fynbos to substantially invaded and floristically impoverished vegetation. The field data therefore provide a finer-scale indication of current ecological condition within the mapped CBA1 areas.

The better-condition fynbos samples contain a suite of indigenous species characteristic of the coastal fynbos of this part of the southern Cape. Frequently recorded or locally prominent species include *Erica sparsa*, *Passerina corymbosa*, *Phylica axillaris*, *Searsia lucida*, *Helichrysum petiolare*, *H. cymosum*, *Metalasia trivialis*, *Agathosma apiculata*, *Aspalathus asparagoides*, *Cliffortia serpyllifolia*, *Leucadendron salignum*, *Syncarpha paniculata* and *Dicerothamnus rhinocerotis*. Other indigenous species recorded include *Erica discolor*, *Erica formosa*, *Oedera imbricata*, *Pelargonium capitatum*, *P. fruticosum*, *Pterocelastrus tricuspidatus*, *Colpoön compressum*, *Restio triticeus*, *Ficinia nigrescens*, *F. bulbosa*, *Eriospermum capense* and *Pseudoselago outeniquensis*.

Several of these taxa are also represented in the earlier phytosociological dataset from coastal fynbos south of George. That study described locally occurring fynbos assemblages containing, amongst others, *Leucadendron salignum*, *Syncarpha paniculata*, *Aspalathus asparagoides*, *Helichrysum cymosum*, *Erica discolor*, *Cliffortia serpyllifolia* and *Leucadendron salignum*, together with numerous less frequent indigenous species. The correspondence is not sufficient, nor is the present sampling intended, to assign the vegetation formally to the communities recognised in that study. It does, however, demonstrate persistence of a recognisable indigenous coastal-fynbos floristic component on the site.

The field data also demonstrate that indigenous vegetation condition is spatially heterogeneous. Some samples contain relatively diverse assemblages of characteristic fynbos species, whereas others have substantially reduced indigenous diversity or contain a greater proportion of species associated with disturbance and secondary vegetation. Species such as *Cynodon dactylon*, *Eragrostis curvula* and several indigenous colonising species occur in parts of the site that have experienced previous disturbance. This distinction is particularly relevant to historically cultivated areas and former plantation areas, where the presence of indigenous species does not necessarily indicate recovery of vegetation equivalent in composition or ecological function to relatively intact fynbos.

Alien woody plants are an important additional determinant of present condition. *Acacia cyclops* and *A. mearnsii* occur within and amongst the indigenous vegetation, while

extensive stands of pines and wattles are evident both in the field and from aerial imagery. Consequently, some areas that retain an indigenous fynbos component are nevertheless currently in poor condition because alien trees have altered vegetation structure and suppressed the indigenous understorey. This pattern is consistent with the earlier regional study, which found alien invasion within otherwise identifiable coastal-fynbos communities and recorded substantially lower species richness in heavily invaded stands.

Importantly, however, alien invasion should not automatically be equated with irreversible transformation. In several parts of the site, characteristic indigenous fynbos species persist amongst or adjacent to alien trees. These areas retain greater rehabilitation potential than historically cultivated or otherwise fundamentally transformed areas, particularly where they remain contiguous with better-condition fynbos. Removal of alien trees, followed by appropriate ecological management including an appropriate fire regime where feasible, could allow a substantially greater indigenous fynbos component to recover than is apparent from the present vegetation structure.

Interpretation in relation to CBA1

The field data support the ecological importance underlying the CBA1 designation, but demonstrate considerable variation in present condition within it. The occurrence of characteristic coastal-fynbos species and locally diverse indigenous assemblages confirms that substantial parts of the mapped CBA1 retain natural biodiversity value. These areas should be treated as sensitive.

Conversely, the CBA1 polygon should not be interpreted as representing vegetation of uniformly high current ecological condition. Field sampling identifies areas affected to varying degrees by historical cultivation, plantation activities, alien-tree invasion and other disturbance. Some proposed development locations consequently occur in vegetation of appreciably lower current ecological condition than nearby better-condition fynbos.

Plant Species of Conservation Concern

The SCC that potentially occur on site were specifically searched for and their habitat assessed to determine their probability of occurrence. The probability of occurrence was rated on a scale from NEGLIGIBLE (no probability), LOW (habitat suitable but of low quality; and/or a conspicuous plant was not found during field searches; or the site is outside the known distribution range), MODERATE (habitat suitable but the species may have been overlooked due to being inconspicuous or seasonal), HIGH (suitable natural habitat occurs on site and the species was not excluded by the field survey), to CONFIRMED (the species was recorded on site). The results of the species assessments, taking into account the field survey, are recorded in the following table.

Taxon	IUCN status*	Distribution	Habitat	Probability of occurrence
<i>Euchaetis albertiniana</i>	EN	Albertinia (possibly De Hoop) to George.	Deep sandy habitats associated with limestone.	LOW
<i>Lampranthus pauciflorus</i>	EN	Found in the Western Cape from De Hoop Cape Infanta to Keurbooms, Plettenberg Bay. Recorded frequently since the conservation status was assessed, therefore the status of this species is based on inaccurate data.	On rocky coastal slopes and clay hills.	HIGH (observed habitat)
<i>Sensitive species 18</i>	EN	Swellendam to Little Brak River, inland to Herbetsdale.	Renosterveld-thicket mosaic in gravelly clay soil on south-facing slopes. Well drained slopes, mainly amongst grass or under Fynbos where they form large clusters.	MODERATE
<i>Sensitive species 85</i>	EN	Cape Flats to Gqeberha.	Lowland sandy flats, stabilised dunes and coastal rock promontories.	MODERATE
<i>Sensitive species 264</i>	EN	Mossel Bay to Herbetsdale and Great Brak River.	Renosterveld, on slopes of low hills. Renosterveld and sparse grasslands in valley bushveld.	LOW / MODERATE Possibly out of range, small inconspicuous plant)
<i>Sensitive species 642</i>	CR	Western Cape near Great Brak River	It grows in Renosterveld with karroid elements, in sandy soil, completely under the protection of small shrubs, well hidden	LOW / MODERATE Possibly out of range, small

Taxon	IUCN status*	Distribution	Habitat	Probability of occurrence
			in fallen leaf debris or among moss and lichen.	inconspicuous plant)
<i>Sensitive species 1012</i>	EN	Riversdale to Knysna and northern slopes of Langeberg Mountains.	Relatively dry to moist slopes, up to 200 m.	HIGH (observed habitat)
<i>Sensitive species 1121</i>	VU	George to Port Alfred.	On stabilised (fixed) dunes close to the shoreline. 0-150 m.	LOW
<i>Erica glandulosa</i> subsp. <i>fourcadei</i>	VU	Southern Cape coastal region, including the study area	Coastal fynbos, including vegetation on coastal slopes	CONFIRMED

A plant species list from west of Herold's Bay (a similar-sized area containing similar habitats approximately 3 km from the study site) contains the following listed species. The records provide useful evidence of SCC occurring within the local coastal landscape and were therefore considered when assessing the likelihood of occurrence on the study site:

1. *Euchaetis albertiniana* (Endangered)
2. *Cullumia carlinoides* (Near threatened)
3. *Lampranthus pauciflorus* (Endangered)
4. *Muraltia knysnaensis* (Endangered)
5. *Oxalis pendulifolia* (Near threatened)
6. *Erica glandulosa* subsp. *fourcadei* (Vulnerable)
7. *Hermannia lavandulifolia* (Vulnerable)
8. *Gladiolus vaginatus* (Vulnerable)
9. *Freesia leichtlinii* ssp. *alba* (Near threatened)
10. *Asparagus lignosus* (Near threatened)
11. *Gnidia chrysophylla* (Near threatened)
12. *Acmadenia tetragona* (Near threatened)
13. *Agathosma muirii* (Vulnerable)
14. *Freesia caryophyllacea* (Near threatened)
15. *Freesia fergusoniae* (Vulnerable) (July-September)

Of particular relevance, *Erica glandulosa* subsp. *fourcadei* (Vulnerable), which is included in the Herold's Bay species list, was confirmed at three locations during the present field survey. The plants were recorded in the field as *Erica glandulosa*. Of the recognised subspecies, subsp. *fourcadei* has a geographical distribution that includes the coastal study area and the records are therefore treated as this taxon for purposes of the assessment. Subsp. *glandulosa* may occur within the broader geographical region but appears to be associated primarily with more inland and mountainous habitats.

Based on the field survey, the occurrence of *Erica glandulosa* subsp. *fourcadei* (Vulnerable) is CONFIRMED on the site. The survey also confirmed that vegetation condition varies considerably across the site. Some areas retain relatively diverse indigenous fynbos vegetation, whereas other areas have been affected by historical transformation, alien plant invasion and other disturbance. The potential habitat for plant SCC is therefore not uniformly distributed across the site.

The following applies to the site:

1. The occurrence of *Erica glandulosa* subsp. *fourcadei* (Vulnerable) is CONFIRMED, with the species recorded at three locations during the field survey.
2. The occurrence of a threatened plant SCC confirms the conservation importance of at least parts of the remaining indigenous fynbos on the site. Better-condition fynbos should also be regarded as potential habitat for additional SCC that were not detected during the survey.
3. No other threatened plant SCC identified during the desktop assessment were recorded during the field survey. Their absence from the field records does not necessarily demonstrate their absence from the site, particularly in the case of inconspicuous or seasonally detectable species.
4. Habitat suitability for SCC varies across the site. Better-condition indigenous fynbos has the greatest potential to support SCC, whereas historically transformed, floristically impoverished and heavily alien-invaded areas generally have lower habitat suitability.

5. The field results therefore provide a basis for distinguishing between confirmed SCC habitat, other potentially suitable indigenous habitat, and areas of substantially reduced habitat suitability when assessing the proposed development footprints.

Since a threatened plant SCC has been confirmed on the site, the assessment must address the potential impacts of the proposed development on this species and its habitat in accordance with the requirements of the Terrestrial Plant Species Protocol (GN 1150). The locations of confirmed SCC, together with the distribution and condition of potentially suitable habitat, must therefore be taken into account in the assessment of the proposed development layout and associated infrastructure.

Animal Species of Conservation Concern

According to the screening tool, six animal species are flagged for the site. These are described in more detail below, including an assessment of the likelihood of occurring on site. The probability of occurrence on site was rated on a scale from NEGLIGIBLE (no probability), LOW (habitat suitable but low quality and conspicuous but not found on site during search), MODERATE (habitat suitable but may be overlooked due to being inconspicuous or mobile), HIGH (habitat suitable and not transformed, distribution within wandering range) to CONFIRMED.

Taxon	IUCN Status	Distribution	Habitat	Probability of occurrence
<i>Aves-Circus maurus</i> (Black harrier)	EN	South Africa and Namibia	Cool, dry-country, frequenting coastal and montane fynbos, highland grasslands, Karoo subdesert scrub, open plains with low shrubs and croplands. It often breeds close to coastal and upland marshes with tall shrubs or reeds, occurring in dry steppe and grassland areas further north in the non-breeding season. In the Western Cape of South Africa it is most abundant in coastal and montane fynbos. It prefers open ground with low vegetation for hunting, where it feeds on a diet comprising mainly of small mammals and birds. Damp sites, near vleis, marshes or streams, are preferred for breeding, while south-facing slopes are preferred in montane areas.	MODERATE

<i>Aves-Circus ranivorus</i> (African marsh harrier)	EN	Widespread but sparsely distributed throughout central, eastern and southern Africa.	It is dependent on permanent wetlands for breeding, feeding and roosting, and is found in marshes and reedbeds. The main threat to this species is loss and degradation of wetlands. It also hunts over drier floodplains, grasslands, croplands, and Fynbos, where it preys mainly on small rodents, as well as birds, reptiles, frogs and insects.	LOW
<i>Aves-Polemaetus bellicosus</i> (Martial eagle)	EN	Extensive range across much of sub-Saharan Africa, and south to southern and South Africa.	They nest in large trees or pylons often located on hill sides. Spend most of the time hunting or soaring high above the ground (generally invisible to the naked eye). They often perch on dead branches and trees that give a wide view of the areas and generally return to these perches when resting.	MODERATE
<i>Aves-Neotis denhami</i> (Denham's bustard)	VU	Wide but fragmented Afrotropical range. It occurs widely but sparsely over much of the mesic eastern half of South Africa.	In the Western Cape, it can be locally numerous in mosaics of cultivated pastures, agricultural croplands and natural vegetation with seasonal differences in the use of each habitat.	HIGH
<i>Aves-Bradypterus sylvaticus</i> (Knysna warbler)	VU	Restricted and fragmented distribution in Eastern and Western Cape. One sub-population occurs in the Garden Route between Tsitsikamma and Stilbaai.	It occurs along the edges of Afrotropical forests and in thick, tangled vegetation along the banks of watercourses or drainage lines in forest patches in the Fynbos Biome.	HIGH, possibly confirmed
<i>Aves-Stephanoetus coronatus</i> (Crowned Eagle)	VU	Sub-Saharan Africa and eastern parts of southern Africa, as far west as Gqebehra. West of this there are only incidental records.	Riparian woodlands and forests.	MODERATE
<i>Invertebrate-Aneuryphymus montanus</i> (Yellow-winged agile grasshopper)	VU	Historically known from localities in the Cape, but recently from Betty's Bay to Swellendam. Type locality from Langkloof Valley west of Kareedouw.	Rocky arid environments with fynbos vegetation (Brown, 1960). It has been collected "amongst partly burnt stands of evergreen Sclerophyll in rocky foothills". It is a medium-sized, robust, active geophilous insect which readily flies off when disturbed and is easily distinguished in flight. When observed, occurs in obvious numbers. The type locality and two recent observations are all associated with major Cape Fold mountain ranges.	NEGLIGIBLE

Sensitive species 13	VU	Widely distributed across central, western and southern Africa. In South Africa ranges coastally and inland from Umfolozi River System in KwaZulu-Natal to the Eastern Cape to as far as George in the Western Cape.	Thrives in a wide range of forested and wooded habitats, including primary and secondary forests, gallery forests, dry forest patches, coastal scrub and farmlands. The South African population prefers coastal forest, thick coastal bushes and thicket where they can hide from predators and rest; the species requires permanent concealment. There are several records of the species in areas around George, all within thicket or forest areas.	HIGH
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Based on the high probability of occurrence of several SCC, the natural habitat on site has at least MEDIUM sensitivity with respect to the Animal Species Theme (suspected habitat for SCC listed as as Critically Endangered, Endangered or Vulnerable). The following applies to the site:

1. The "Medium" sensitivity of the site for the Terrestrial Animal Species Theme is confirmed (suspected habitat for SCC listed as as Critically Endangered, Endangered or Vulnerable).
2. Based on the desktop assessment and reconnaissance of the site, it is probable that the natural areas on site will be confirmed habitat for at least one of these species.

Where SCC are found on site or confirmed suitable habitat exists, a Terrestrial Animal Species Specialist Assessment must be submitted in accordance with the requirements specified for “very high” and “high” sensitivity (GN 1150: PROTOCOL FOR THE SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR ENVIRONMENTAL IMPACTS ON TERRESTRIAL ANIMAL SPECIES). Where no SCC are found on site during the site inspection or the habitat is confirmed to be unlikely to support SCC, a Terrestrial Animal Species Compliance Statement must be submitted.

Outcome of the assessment

Site ecological importance

The Species Environmental Assessment Guidelines require that Site Ecological Importance (SEI) is determined for habitats or receptors occurring within the study area. SEI integrates the biodiversity importance of a receptor with its resilience to impacts. Biodiversity Importance (BI) is derived from Conservation Importance (CI) and Functional Integrity (FI), while Receptor Resilience (RR) considers the capacity of the receptor to recover following disturbance.

The field survey provides considerably greater resolution of vegetation condition than was available during the initial desktop assessment. In particular, areas previously mapped broadly as fynbos or degraded ecotonal vegetation were found to differ substantially in indigenous species composition, degree of alien invasion and ecological condition. *Erica glandulosa* subsp. *fourcadei* (Vulnerable) was also confirmed at three locations. SEI has therefore been assessed with reference to the vegetation condition and SCC information obtained during the field survey rather than solely from the broad desktop habitat classes.

The site falls within the mapped extent of the Critically Endangered Garden Route Granite Fynbos ecosystem. The vegetation occurring within this mapped ecosystem boundary is heterogeneous and includes fynbos, forest and thicket, as well as historically transformed and secondary vegetation. For purposes of applying the Species Environmental Assessment Guidelines, remaining natural vegetation within the mapped ecosystem boundary is treated as part of the listed ecosystem. This reflects the manner in which mapped ecosystem boundaries are applied for regulatory assessment and does not imply that all natural vegetation within the boundary is floristically equivalent to Garden Route Granite Fynbos.

Habitat	Conservation importance (CI)	Functional integrity (FI)	Biodiversity Importance (BI = CI x FI)	Receptor resilience (RR)	Site Ecological Importance SEI = BI x RR)
Fynbos - including coastal cliff vegetation	High Confirmed occurrence of <i>Erica glandulosa</i> subsp. <i>fourcadei</i> (VU), together with suitable habitat for additional threatened SCC. All of the habitat is also within CBA1 and a listed CR ecosystem.	Very High Natural habitat within the mapped CR Garden Route Granite Fynbos ecosystem; >5 ha of natural habitat remains.	Very High	Very low Development results in complete vegetation removal and substantial soil disturbance. There is no reasonable basis for expecting the original fynbos species composition and functionality to recover following such major disturbance.	Very High
Forest and Thicket	High Natural habitat occurring within the mapped CR Garden Route Granite Fynbos ecosystem, within a remaining natural habitat unit exceeding 5 ha.	Very High Natural habitat within the mapped CR Garden Route Granite Fynbos ecosystem; >5 ha of natural habitat remains.	Very High	Very low Complete clearing and soil disturbance would remove both vegetation structure and the substrate supporting the woody community. Recovery of the original habitat following such a major impact is unlikely.	Very High
Secondary vegetation (historically transformed areas that have subsequently developed indigenous secondary vegetation)	Medium Historically transformed. No confirmed SCC occurrence.	Low Previously cultivated.	Low	High The current receptor comprises secondary vegetation on previously transformed land and is expected to recover to a comparable secondary state relatively quickly following removal of disturbance.	Very low
Altered areas (cultivated areas, homestead, railway line, roads and other substantially)	Very low Original natural habitat completely replaced by	Very low Several major current negative	Very low	Very High The receptor is already substantially transformed and	Very low

transformed areas)	cultivation, roads, buildings, railway infrastructure or equivalent transformation.	ecological impacts.		could return rapidly to an equivalent altered condition following disturbance.	
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The calculation of Site Ecological Importance includes an explicit recognition of the ability of each ecosystem to tolerate and recover from disturbance. Guidelines for development activities within different importance levels are given in the table below.

Site ecological importance	Interpretation in relation to proposed development activities
Very high	Avoidance mitigation – no destructive development activities should be considered. Offset mitigation not acceptable/ not possible (i.e. last remaining populations of species, last remaining good condition patches of ecosystems/ unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to limit the amount of habitat impacted; limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities
Very low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

Sensitivity

Terrestrial Biodiversity Theme

According to the "PROTOCOL FOR THE SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR ENVIRONMENTAL IMPACTS ON TERRESTRIAL BIODIVERSITY", there are two sensitivity classes for Terrestrial Biodiversity Theme: VERY HIGH or LOW. The VERY HIGH category includes any area of natural vegetation that falls within one of the following categories:

1. terrestrial Critical Biodiversity Areas (CBAs).
2. terrestrial Ecological Support Areas (ESAs).
3. protected areas as defined by the National Environmental Management: Protected Areas Act, 2004.
4. priority areas for protected area expansion.

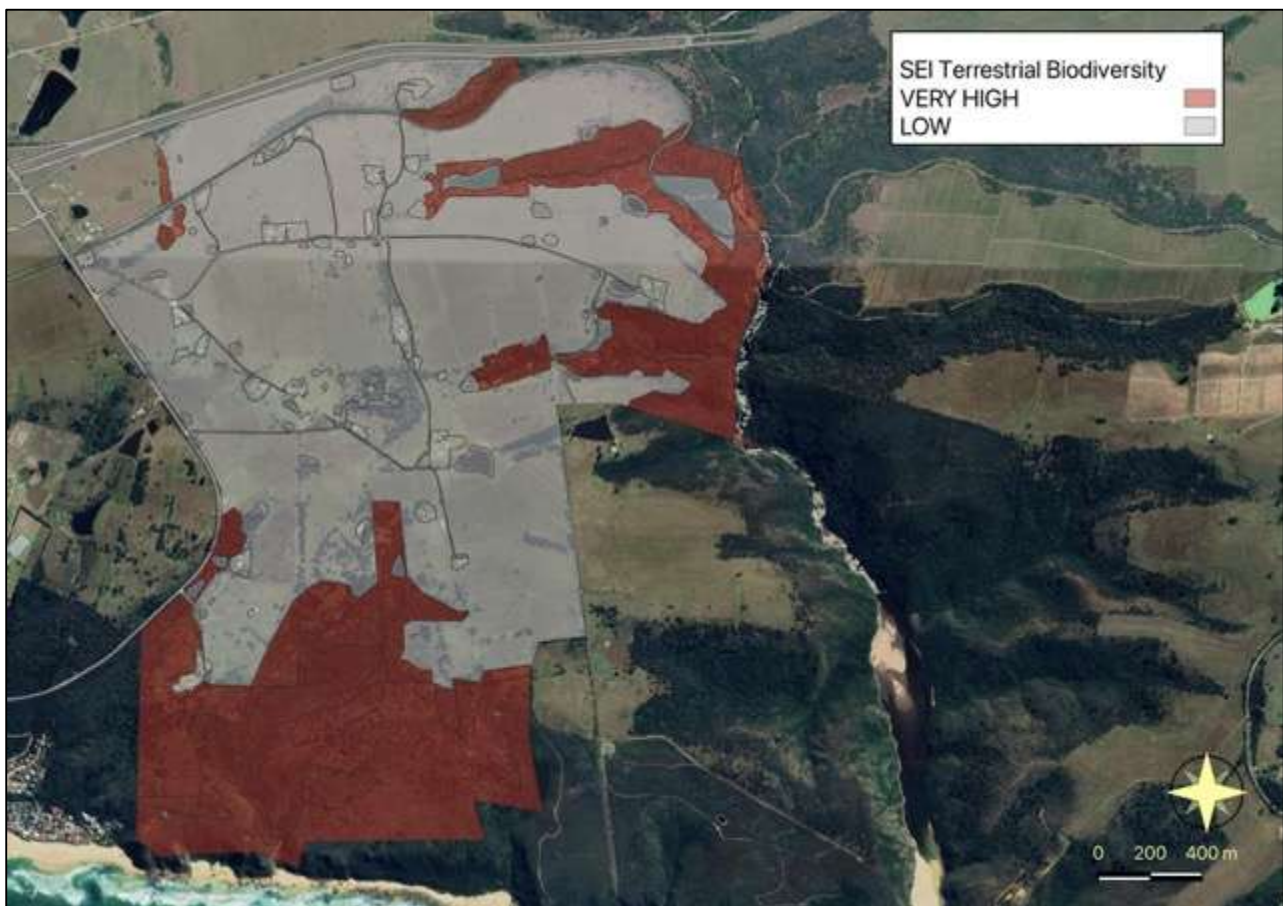


Figure 13: Site sensitivity for Terrestrial Biodiversity Theme.

5. Strategic Water Source Areas (SWSAs).
6. Freshwater Ecosystem Priority Areas (FEPA) subcatchments.
7. indigenous forests.

Any area that is in a natural state and that falls within one of these categories is therefore automatically assigned a sensitivity class of VERY HIGH and requires a Terrestrial Biodiversity Specialist Assessment. Natural areas that do not meet any of the criteria for VERY HIGH sensitivity are assigned LOW sensitivity under the Terrestrial Biodiversity Theme. For the current site, all natural areas are mapped within the VERY HIGH category.

The definition of natural vegetation, according to the National Environmental Management Act, 1998 (Act No. 107 of 1998) is "*vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding 10 years.*" According to this description, the vegetation on site (including secondary vegetation) is legally in a natural state.

The entire site is within a Strategic Water Source Area (SWSA). Significant parts of the site are within CBA1 or CBA2 areas, and there is natural forest on site. It is confirmed from the site visit that areas mapped as "Natural," comprising Fynbos, Forest and Ecotone areas, are in a natural state. They therefore have VERY HIGH sensitivity according to the Terrestrial Biodiversity Theme, which applies to all natural habitats on site, as well as secondary vegetation (Figure 13).

Terrestrial Plant Species Theme

Desktop assessment identified a number of terrestrial plant SCC whose geographical distributions include the study area and for which potentially suitable habitat occurs on site. Several of these species were also flagged for the site by the Screening Tool.

Additional plant SCC have previously been recorded from a site less than 3 km away containing similar coastal habitats. These records provide evidence of the diversity of

plant SCC occurring within the local landscape and were taken into consideration when assessing potential habitat on the study site.

Importantly, *Erica glandulosa* subsp. *fourcadei* (Vulnerable) was confirmed at three locations during the field survey, all within Fynbos. No other threatened plant SCC identified during the desktop assessment were recorded. The field results nevertheless indicate that better-condition Fynbos provides suitable potential habitat for additional SCC, including species that may be inconspicuous or seasonally detectable.

A map of sensitivity for the Plant Species Theme is provided in Figure 14. Fynbos is the most important habitat for plant SCC on site and contains all three confirmed records of *Erica glandulosa* subsp. *fourcadei*. Fynbos transitional to thicket may also provide suitable habitat for plant SCC. Historically transformed secondary vegetation is considered to have lower importance for plant SCC.

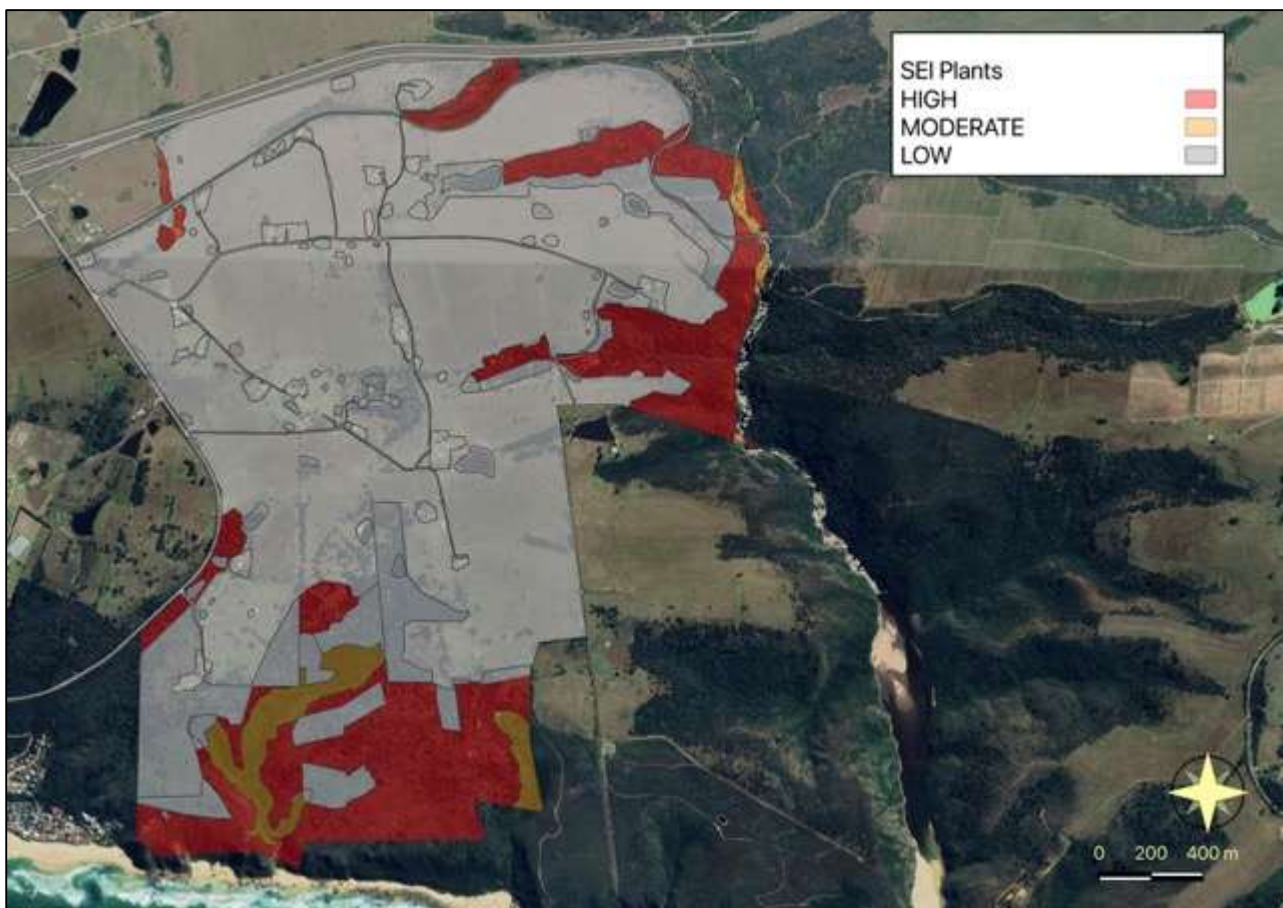


Figure 14: Site sensitivity for Terrestrial Plant Species Theme.

Terrestrial Animal Species Theme

A map of Site Ecological Importance (SEI) for the Animal Species Theme is provided in Figure 15. The most important habitat for animal SCC is forest and thicket. All remaining areas, including cultivated and fallow lands, are potential habitat for SCC that are foraging birds.

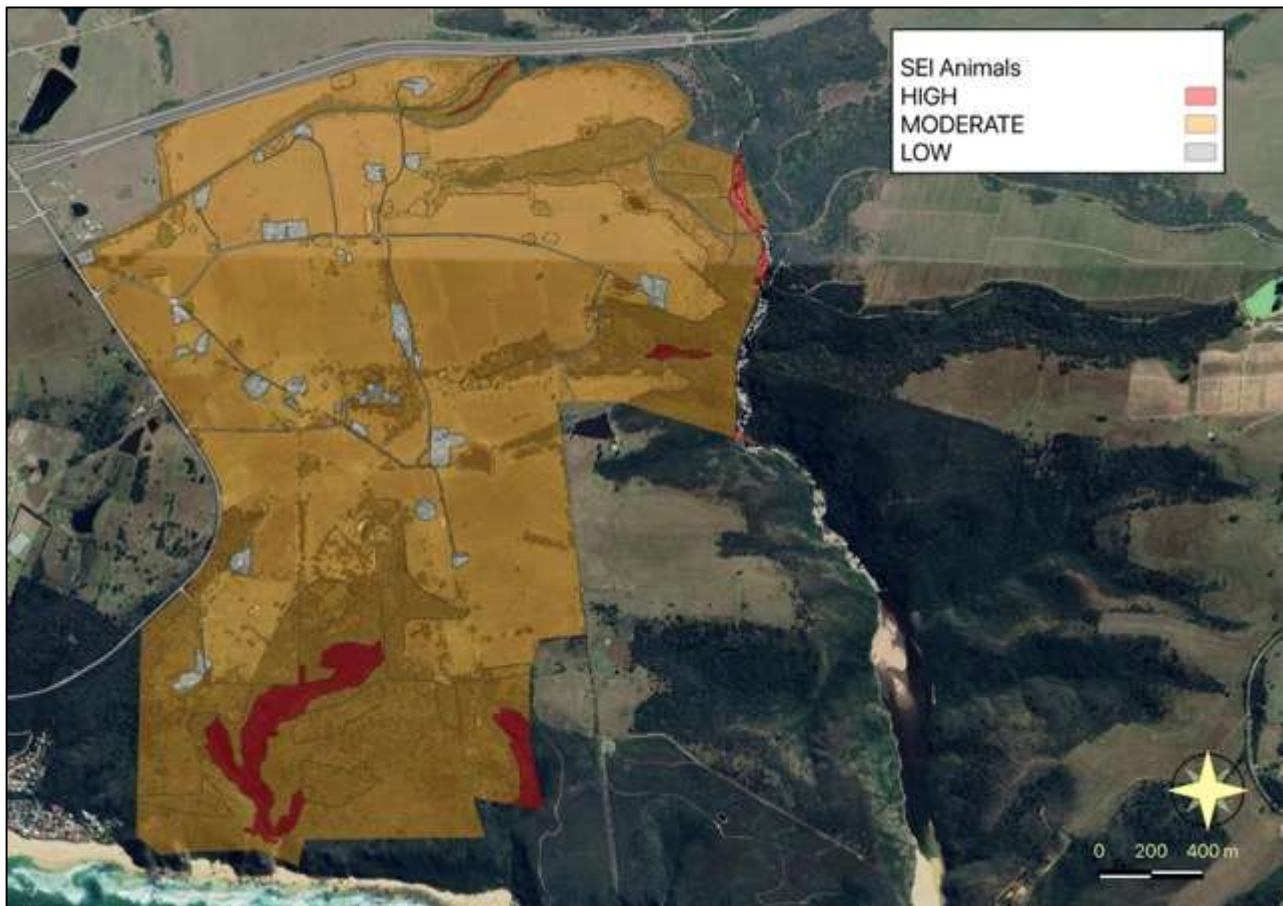


Figure 15: Site Ecological Importance for Terrestrial Animal Species Theme.

Proposed development

The proposed development consists of 34 relatively small, discrete development footprints distributed across the broader Hoogekraal property (**Figure 16**). The footprints are dispersed across the site and consequently occur within areas with substantially different historical land use, vegetation condition and ecological importance and sensitivity.

Of the 34 proposed footprints, 11 are located within currently cultivated areas, while a further seven occur within areas mapped as secondary vegetation. The secondary vegetation occurs on land that was historically cultivated but where vegetation has subsequently re-established to varying degrees. Together, these account for 18 of the proposed footprints and represent areas that have previously been subject to substantial modification through agricultural land use.

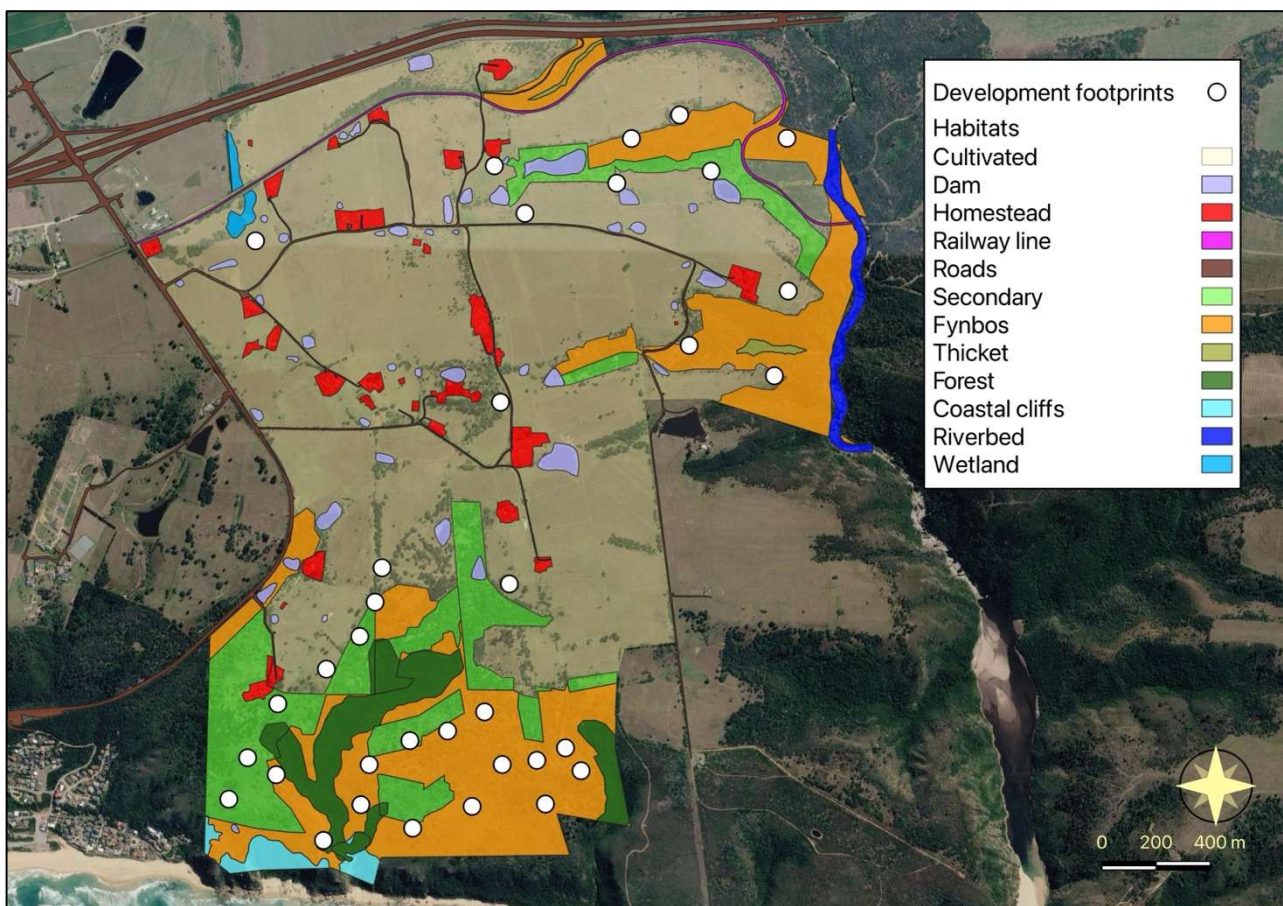


Figure 16: Proposed development footprints overlaid on the mapped habitats of the Hoogekraal study area.

The remaining 16 proposed footprints occur within areas mapped as natural vegetation. This is significant because the remaining natural vegetation is considerably less extensive than cultivated land across the broader property and includes fynbos, thicket and forest habitats identified as important in the initial biodiversity assessment.

There is also a strong spatial concentration of the proposed development within the most sensitive part of the study area. Thirteen of the 16 footprints occurring in natural vegetation are situated in the southern, coastal portion of the property. This area contains the largest remaining concentration of natural fynbos, thicket and forest habitat on the property and forms part of the CBA1 coastal ecological corridor identified in the initial assessment. The natural fynbos is also associated with Garden Route Granite Fynbos, which was identified as a Critically Endangered ecosystem and consequently assigned Very High sensitivity under the Terrestrial Biodiversity Theme.

The proposed layout therefore presents a mixed pattern from a terrestrial biodiversity perspective. Some footprints are situated within extensively modified agricultural areas where development would result in comparatively limited additional loss of natural habitat, while a substantial proportion occurs within remaining natural vegetation, including a concentration of footprints within the most sensitive southern part of the property. The assessment of the proposed layout therefore needs to consider the individual footprints according to their existing habitat condition and biodiversity sensitivity, with particular attention given to the 16 footprints within natural vegetation and especially the 13 situated in the southern coastal area.

Impact assessment

The proposal for a farm estate includes certain specified development footprints in order to avoid impacts. The proposed footprints occur within currently cultivated land, secondary vegetation and remaining natural vegetation. The ecological consequences of development therefore differ considerably between individual footprints, depending on the habitat affected, its current ecological condition and its biodiversity importance and sensitivity.

A general summary of the ecological sensitivities relevant to the proposed development is as follows:

- The remaining natural vegetation includes **Garden Route Granite Fynbos**, a **Critically Endangered** ecosystem, together with thicket and forest habitats.
- Parts of the site, particularly the natural vegetation in the southern coastal area, occur within **CBA1** and important ecological corridors identified in the Western Cape Biodiversity Spatial Plan.
- Remaining natural Fynbos has **Very High Site Ecological Importance** (SEI), whereas historically transformed secondary vegetation and altered areas have substantially lower SEI.
- The Vulnerable plant Species of Conservation Concern (SCC) *Erica glandulosa* subsp. *fourcadei* was confirmed within Fynbos during the field survey, and suitable habitat for additional Plant SCC occurs within the remaining natural vegetation.
- Natural vegetation provides habitat for potentially occurring Animal SCC, with forest and thicket being particularly important for some species.
- 16 of the proposed footprints occur within natural vegetation, of which 7 footprints within the sensitive southern coastal part of the property will require micro-siting.

Based on the nature and distribution of the proposed development and the sensitivities identified for the study area, the following potential impacts require assessment:

1. **Loss and degradation of natural vegetation within the threatened Garden Route Granite Fynbos ecosystem.** Direct loss, degradation or disturbance of remaining natural vegetation within the mapped extent of the Critically Endangered Garden Route Granite Fynbos ecosystem, particularly associated with development footprints in the southern portion of the property.
2. **Loss, degradation and fragmentation of Critical Biodiversity Areas and ecological corridors.** Direct and indirect effects on CBA1 and the ecological connectivity and function of the coastal and valley corridors.
3. **Potential loss of or impacts on confirmed and potentially occurring Plant SCC,** including individuals and habitat of *Erica glandulosa* subsp. *fourcadei*, and loss or degradation of suitable habitat for other potentially occurring Plant SCC.
4. **Impacts on Animal Species of Conservation Concern.** Potential loss or degradation of Animal SCC habitat, mortality or disturbance of individuals, and effects on movement through the landscape.
5. **Indirect degradation of remaining natural vegetation and habitat.** Edge effects, alien invasion, altered fire regimes, trampling, garden escapees, informal access and other effects associated with development and subsequent occupation.
6. **Cumulative impacts on terrestrial biodiversity.** Cumulative loss and fragmentation of the threatened ecosystem, CBAs, ecological corridors and SCC habitat in the context of existing transformation and development in the Hoogekraal–Glentana landscape.

In assessing the proposed development, the mitigation hierarchy is applied, with avoidance of impacts taking precedence over minimisation, rehabilitation/restoration and, where appropriate, offsetting of residual impacts. For the current development, avoidance is particularly important because some proposed footprints occur within natural vegetation of Very High SEI, including habitat supporting a confirmed threatened plant SCC.

The detailed field assessment provides a finer level of resolution than the broad habitat and sensitivity mapping and allows the ecological condition and importance of vegetation associated with individual development footprints to be considered. Avoidance does not therefore necessarily require the exclusion of every footprint occurring within broadly

mapped natural vegetation. Rather, the first priority is to avoid the most important and least disturbed natural vegetation, confirmed SCC localities and other particularly sensitive ecological features. Where impacts cannot be completely avoided, the location and extent of individual footprints and associated infrastructure should be adjusted, where practicable, to favour areas of lower ecological condition and importance.

The existing network of tracks should similarly be used as far as practicable for construction and permanent access, thereby avoiding unnecessary additional fragmentation and vegetation loss. New access routes should be limited to those required to connect individual development footprints to the existing access network.

Where impacts cannot be avoided through siting and design, they should be minimised through appropriate construction controls and subsequent management. Rehabilitation or restoration should be applied to temporary disturbance areas where feasible. Biodiversity offsets represent the final step in the mitigation hierarchy and would only be considered for significant residual impacts that remain after reasonable avoidance, minimisation and rehabilitation measures have been applied.

Impacts are assessed according to the impact assessment methodology described above, taking into account the ecological importance of the affected receptor, the nature and severity of the impact, its reversibility and the extent to which impacts can be avoided or reduced through mitigation.

The four steps of the mitigation hierarchy:

- **Avoid:** Prevent impacts from occurring. This is the most effective step and can involve avoiding sensitive habitats entirely.
- **Minimise:** Reduce the duration, intensity, or extent of impacts that cannot be avoided. This could involve modifying project design or phasing operations to lessen harm to species or ecosystems.
- **Rehabilitate/Restore:** Remediate or restore areas that have been affected by the project to a good condition. This can include replanting vegetation or repairing damaged habitats.

- **Offset:** Compensate for any remaining, unavoidable, residual impacts through actions in a different location. This step is only considered after the first three have been implemented and is often used to achieve a "no net loss" goal for biodiversity.

Impacts are assessed with this methodology considering their irreplaceability, reversibility, spatial and temporal extent, and intensity.

Loss and degradation of natural vegetation within Garden Route Granite Fynbos

The proposed layout includes a substantial number of development footprints within remaining natural vegetation. Thirteen of the 16 footprints mapped within natural vegetation occur in the southern part of Hoogekraal, where the largest concentration of remaining fynbos, thicket and forest occurs and where terrestrial biodiversity sensitivity is highest. The site falls within the mapped extent of Garden Route Granite Fynbos, which is listed as Critically Endangered and has been extensively transformed by cultivation and urban development.

Detailed field assessment confirmed that the remaining natural vegetation is heterogeneous in condition. Some areas support relatively well-developed indigenous fynbos, whereas others show varying degrees of disturbance and alien invasion. Importantly, the Vulnerable plant SCC *Erica glandulosa* subsp. *fourcadei* was recorded within the Fynbos habitat. The ecological consequences of individual development footprints therefore depend not simply on whether they fall within the mapped ecosystem boundary, but also on the vegetation and ecological condition present at each footprint.

Resource irreplaceability: Garden Route Granite Fynbos is a Critically Endangered ecosystem. Under the assessment methodology this corresponds to I = 5. Remaining natural vegetation within the mapped ecosystem is particularly important in the context of the extensive historical transformation of the ecosystem.

Threshold: Individual development footprints are relatively small and the total area of natural vegetation directly affected represents a limited proportion of the remaining

ecosystem. Nevertheless, the development comprises multiple discrete footprints and associated access and infrastructure, and some loss of remaining natural vegetation would occur under the proposed layout. T = 2.

Resource condition: Field assessment confirmed that the remaining natural vegetation varies in condition. Fynbos ranges from relatively well-developed indigenous vegetation to areas affected by disturbance and alien invasion, while forest and thicket habitats also occur within the mapped ecosystem. Despite this variation, substantial areas retain natural vegetation structure, composition and ecological function. C = 4.

Reversibility of impact: Development within natural vegetation would result in complete removal of vegetation and substantial disturbance of the underlying soil within permanent development footprints. Recovery of the original natural vegetation following such disturbance cannot reasonably be assumed. R = 5.

Extent of impact: The direct impact is confined to the proposed development footprints and immediately associated disturbance areas within the site. The extent of direct habitat loss is therefore assessed as site scale (E = 1). Broader effects associated with fragmentation and disruption of ecological connectivity are assessed separately under the impact on CBAs and ecological corridors.

Duration of impact: Loss beneath permanent development footprints would be permanent. D = 5.

Intensity of impact: Within development footprints occurring in natural vegetation, the existing vegetation and its ecological function would be completely removed and replaced by development. The intensity of the impact within the affected footprint is consequently considered Very High (M = 3).

Probability of occurrence: If development footprints within natural vegetation are constructed in their currently proposed positions, vegetation loss within those footprints is definite. P = 5.

Confidence: High. The vegetation associated with the proposed development area has been assessed in the field and its condition and composition are sufficiently understood for impact assessment. There remains some uncertainty regarding the precise extent of disturbance associated with individual houses and their ancillary infrastructure.

Mitigation: Avoidance is the principal mitigation measure. Development should preferentially be accommodated within cultivated and historically transformed areas and should avoid the best-condition remaining natural vegetation. Within the southern development area, the detailed field assessment should be used to refine individual footprint positions so that impacts are preferentially directed towards vegetation of lower ecological condition, while avoiding confirmed SCC localities and higher-integrity Fynbos, Forest and Thicket habitat. Existing tracks should be used for access wherever practicable, and the creation of additional roads and tracks through natural vegetation should be minimised. Disturbance outside approved development and access footprints should be strictly controlled.

Impact on EN ecosystem	Biodiversity value				Impact magnitude			Probability	Significance
	I	T	C	R	E	D	M		
Before mitigation	5	2	4	5	1	5	3	Definite	MEDIUM
After mitigation	5	1	3	5	1	5	2	High probability	LOW

Loss and fragmentation of CBAs and ecological corridors

A substantial part of the natural vegetation in the southern part of the study area is mapped as CBA1. The CBA designation is associated with the conservation of remaining natural habitat and ecological processes within a landscape that has experienced extensive historical transformation. The southern natural vegetation also forms part of a strong, approximately coast-parallel ecological corridor.

The proposed layout places a number of development footprints within CBA1 and associated natural vegetation. Development within these areas would result in direct loss

of portions of the CBA and could additionally affect its landscape function through increased fragmentation, edge effects and localised interruption of habitat continuity. The significance of these effects depends not only on the total area affected but also on the spatial position of individual footprints relative to the remaining natural habitat and the continuity of the coastal corridor.

Field assessment confirmed that the natural vegetation within the CBA is heterogeneous in condition. The proposed development consists of relatively small, discrete footprints rather than a continuous development barrier, and substantial areas of natural vegetation would remain between individual development footprints. Consequently, development would not completely sever the coastal ecological corridor. Nevertheless, development within CBA1 would result in incremental loss of natural habitat and an increase in fragmentation and edge effects within an area intended to maintain biodiversity pattern and ecological connectivity.

Resource irreplaceability: The affected resource is CBA1. Under the assessment methodology, CBA1 is assigned high biodiversity value because it represents biodiversity features required to meet biodiversity targets and maintain ecological processes, for which opportunities for achieving these objectives elsewhere are constrained. I = 4.

Threshold: The individual development footprints are relatively small and the total area of CBA1 directly affected is expected to represent a small proportion of the broader CBA resource. With appropriate avoidance and footprint refinement, the extent of direct loss can be further reduced. T = 2 before mitigation.

Resource condition: Field assessment confirmed that the affected CBA contains substantial areas of natural vegetation, although ecological condition varies as a result of historical disturbance and alien invasion. Despite this variation, the natural habitat remains substantially functional and contributes to the continuity of the coastal corridor. C = 4.

Reversibility of impact: Development would result in permanent conversion of natural CBA habitat within affected development footprints. Restoration of these areas to their existing ecological state following permanent development would be unlikely. R = 5.

Extent of impact: Unlike the direct loss of threatened vegetation considered separately, effects on CBA function and ecological connectivity potentially extend beyond individual development footprints. The affected CBA forms part of a broader coastal ecological corridor and the impact is therefore assessed at the landscape scale. E = 3.

Duration of impact: Loss of CBA habitat and any associated fragmentation resulting from permanent development would persist for the lifetime of the development and is effectively permanent. D = 5.

Intensity of impact: Development would remove portions of natural habitat within CBA1 and introduce multiple developed footprints within the remaining natural vegetation. However, the development consists of relatively small, discrete footprints and would not form a continuous barrier across the coastal corridor. Ecological connectivity is therefore expected to remain, although in a modified and incrementally more fragmented form. The intensity of the impact is consequently assessed as Medium. M = 3.

Probability of occurrence: Direct loss of CBA1 habitat is definite where development footprints remain within natural CBA vegetation. Some increase in fragmentation and edge effects is also expected. P = 5 (Definite).

Confidence: High. The distribution and condition of natural vegetation associated with the proposed development have been assessed in the field, and the spatial relationship between the development footprints, CBA1 and the coastal ecological corridor is sufficiently understood to assess the likely impact.

Mitigation: Avoidance remains the primary mitigation measure. Development should preferentially avoid natural CBA1 habitat and be directed towards cultivated, historically transformed or lower-importance areas wherever practicable. Where development within CBA1 cannot reasonably be avoided, individual footprints should be positioned to minimise loss of better-condition natural vegetation and to maintain the greatest practicable width and continuity of the coastal corridor. Development should avoid creating local constrictions or discontinuities in connected natural habitat. Existing tracks should be used for access wherever practicable and additional roads or other linear infrastructure

through the CBA should be minimised. Areas of natural vegetation between development footprints should be retained and managed as a connected ecological network.

	Biodiversity value				Impact magnitude			Probability	Significance
Impact on CBAs	I	T	C	R	E	D	M		
Before mitigation	4	2	4	5	3	5	3	Definite	2.75 MODERATE
After mitigation	4	1	3	5	2	5	2	Definite	1.95 LOW

Impacts on Plant Species of Conservation Concern

Field assessment confirmed the occurrence of the Vulnerable plant Species of Conservation Concern (SCC) *Erica glandulosa* subsp. *fourcadei* within the proposed development area. The species was recorded at three locations where housing units are planned to be located.

The occurrence of *Erica glandulosa* subsp. *fourcadei* at three development-associated sampling locations confirms that the proposed layout overlaps occupied habitat for a threatened plant SCC. The remaining Fynbos also provides potentially suitable habitat for additional Plant SCC identified during the desktop assessment, although no other threatened Plant SCC were recorded during the field survey.

Resource irreplaceability: *Erica glandulosa* subsp. *fourcadei* is listed as Vulnerable and is confirmed to occur within areas potentially directly affected by the proposed development. Other threatened Plant SCC could also occur within suitable natural habitat. The affected resource therefore has high conservation importance. I = 4.

Threshold: *Erica glandulosa* subsp. *fourcadei* was recorded within three proposed development areas. The number of individuals potentially affected is nevertheless small relative to the extent of apparently suitable Fynbos habitat remaining on the property, and

there is no evidence that the proposed development would affect a substantial proportion of the local or regional population of the species. T = 1.

Resource condition: The confirmed records occur within natural Fynbos. Although the Fynbos varies in ecological condition as a result of historical disturbance and alien invasion, it retains characteristic indigenous vegetation and provides occupied and potentially suitable habitat for threatened plant species. C = 4.

Reversibility of impact: Direct destruction of individual threatened plants and permanent loss of their habitat beneath development footprints would be effectively irreversible at the affected location. R = 5.

Extent of impact: Direct impacts on Plant SCC and their habitat would occur within development footprints and their immediately associated disturbance areas and are therefore assessed at site scale. E = 1.

Duration of impact: Loss of individual SCC and occupied habitat beneath permanent development would be permanent. D = 5.

Intensity of impact: Where development directly overlaps *Erica glandulosa* subsp. *fourcadei*, affected individuals and their immediate habitat would be permanently lost. However, the affected individuals represent only a small component of the known and potentially occurring population, additional suitable Fynbos habitat remains on the property, and there is no evidence that their loss would materially alter the ecological processes supporting persistence of the species in the local area. The impact on processes at the population level is therefore considered slight. M = 2 (Low).

Probability of occurrence: *Erica glandulosa* subsp. *fourcadei* was recorded at three sampling locations associated with proposed development footprints. Direct impacts on the confirmed SCC are therefore considered definite if the affected development footprints are implemented in their currently proposed positions. P = 5 (Definite).

Confidence: High. The remaining natural vegetation associated with the proposed development has been investigated in the field and *Erica glandulosa* subsp. *fourcadei* has

been confirmed at three development-associated sampling locations. Some uncertainty remains regarding the full distribution and abundance of this species, and potentially occurring additional SCC, within unsampled intervening habitat.

Mitigation: Avoidance is the primary mitigation measure. The confirmed records of *Erica glandulosa* subsp. *fourcadei* must be treated as directly threatened by the current layout. The associated development footprints should be relocated or adjusted sufficiently to avoid the recorded individuals and surrounding suitable habitat. Avoidance must take account of the entire area of disturbance associated with each development, including the house, construction working area, access and services. Confirmed SCC localities should be clearly identified and protected from construction disturbance. Development should also preferentially avoid better-condition Fynbos, which provides suitable habitat for this and potentially other Plant SCC. Rescue or translocation should not be regarded as a substitute for avoidance and should only be considered where avoidance is demonstrably not feasible and where such intervention is ecologically appropriate.

Impact on plant SCCs	Biodiversity value				Impact magnitude			Probability	Significance
	I	T	C	R	E	D	M		
Before mitigation	4	1	4	5	1	5	2	Definite	1.87
									LOW
After mitigation	4	1	3	5	1	5	1	Probable	1.52
									LOW

Impacts on Animal Species of Conservation Concern

The study area contains natural habitat potentially suitable for Animal Species of Conservation Concern (SCC). Forest and thicket provide the most important habitat for potentially occurring Animal SCC, while Fynbos and other natural vegetation may also provide habitat for particular species. Open and transformed areas may additionally be used as foraging habitat by mobile species such as birds of prey.

No Animal SCC was confirmed within the proposed development footprints during the field assessment. The potential impact is therefore primarily associated with loss and modification of suitable habitat rather than demonstrated direct impacts on a known population. The proposed development consists of relatively small, discrete footprints distributed within a larger area of retained habitat, and mobile species would remain capable of using surrounding natural vegetation.

Resource irreplaceability: No threatened Animal SCC population has been confirmed within the proposed development footprints. However, suitable habitat occurs for potentially occurring SCC and the natural vegetation has conservation value as animal habitat. I = 3.

Threshold: The development would affect a relatively small proportion of the available habitat for potentially occurring Animal SCC. Substantial areas of similar natural habitat would remain within the property and surrounding landscape, and there is no evidence that a substantial proportion of the habitat or population of any particular Animal SCC would be affected. T = 1.

Resource condition: Remaining natural habitats are functional and provide potentially suitable habitat for Animal SCC, although their ecological condition varies locally as a result of disturbance and alien invasion. C = 4.

Reversibility of impact: Habitat beneath permanent development footprints would be permanently lost. However, potentially occurring Animal SCC are mobile and would retain access to surrounding habitat. The habitat loss itself is nevertheless not readily reversible. R = 4.

Extent of impact: Direct habitat loss would be confined to individual development footprints, although disturbance and changes in habitat use by mobile animals could extend into immediately surrounding areas. The impact is therefore assessed as extending beyond the individual footprint but remaining localised. E = 2.

Duration of impact: Habitat loss beneath permanent development footprints and disturbance associated with subsequent occupation would persist for the life of the development and potentially indefinitely. D = 5.

Intensity of impact: Development would result in localised loss of potentially suitable habitat for Animal SCC. However, the individual development footprints are relatively small and discrete, substantial areas of natural habitat would remain, and there is no evidence that the development would substantially alter ecological processes supporting any Animal SCC population. The impact on processes is therefore considered slight. M = 2 (Low).

Probability of occurrence: No Animal SCC was confirmed within individual development footprints, but suitable habitat occurs and potentially occurring species may use these areas. Some loss or disturbance of potential Animal SCC habitat is therefore probable, although direct mortality or effects on a particular SCC are less certain. P = 3 (Probable).

Confidence: Moderate to High. The habitats associated with the proposed development have been assessed in the field and their suitability for potentially occurring Animal SCC can therefore be evaluated with reasonable confidence. Confidence is lower regarding effects on individual species because no Animal SCC was confirmed within the proposed development footprints.

Mitigation: Development should avoid the best-quality natural habitat for potentially occurring Animal SCC, particularly Forest and Thicket, and should maintain connectivity between retained natural habitat blocks. Development footprints and associated construction disturbance should be kept as small as practicable, and unnecessary disturbance of surrounding natural vegetation should be prevented. Existing tracks should be used for access wherever practicable and new roads through natural habitat should be minimised. Construction personnel should be instructed not to harm indigenous fauna encountered during construction, and animals encountered within construction areas should be allowed to move away or, where necessary, be appropriately relocated. External lighting should be minimised and designed to limit unnecessary illumination of surrounding natural habitat.

	Biodiversity value				Impact magnitude			Probability	Significance
Impact on animal SCCs	I	T	C	R	E	D	M		
Before mitigation	3	1	4	4	2	5	2	Probable	1.80
									LOW
After mitigation	3	1	4	4	1	5	2	Improbable	1.65
									LOW

Indirect degradation of remaining natural vegetation and habitat

Development footprints situated within or immediately adjacent to natural vegetation could result in ecological effects extending beyond the areas directly transformed. Potential effects include alien plant invasion, establishment of garden escapees, inappropriate fire management, informal vegetation clearing, trampling, dumping, increased access and other edge effects associated with development and subsequent occupation. These impacts are particularly relevant where residential development is embedded within or immediately adjacent to Fynbos, Forest and Thicket habitat.

Resource irreplaceability: The potentially affected natural habitat occurs within the mapped extent of Critically Endangered Garden Route Granite Fynbos and includes CBA1. The affected resource consequently has very high conservation importance. I = 5.

Threshold: Indirect impacts would principally affect natural vegetation immediately adjoining development footprints and access routes. The total area potentially affected is expected to represent a relatively small proportion of the remaining natural habitat on the property and the broader biodiversity resource. T = 2.

Resource condition: The remaining natural habitat is substantially functional, although its condition varies and some areas are already affected by disturbance and alien plant invasion. C = 4.

Reversibility of impact: Many indirect impacts, including alien plant invasion, trampling, dumping and some forms of vegetation disturbance, can be reduced or reversed through

active management. Other effects associated with the permanent presence of residential development may persist for as long as development remains adjacent to natural vegetation. The impact is therefore considered partly reversible. R = 3.

Extent of impact: Indirect effects may extend beyond individual development footprints into adjoining natural vegetation but are expected to remain localised within the site and its immediate surroundings. E = 2.

Duration of impact: Without active management, indirect effects could persist throughout occupation of the development and are therefore considered long term. D = 4.

Intensity of impact: In the absence of mitigation, development within and adjacent to natural vegetation could alter ecological processes through repeated disturbance, alien plant invasion, inappropriate fire management and other edge effects. Natural habitat would remain present, but ecological processes could continue in a modified form. The intensity is therefore assessed as Medium. M = 3.

Probability of occurrence: In the absence of appropriate management, some degree of edge-related degradation is highly probable where residential development occurs within or immediately adjacent to natural vegetation. P = 4 (Highly probable).

Confidence: High. The main pathways through which residential development can indirectly affect adjoining natural vegetation are sufficiently well understood, and the field assessment has established the distribution and condition of the natural habitat potentially exposed to these effects. The eventual severity of the impact will nevertheless depend on the effectiveness of long-term environmental management.

Mitigation: Avoidance remains the most effective mitigation because locating development within cultivated or previously transformed areas removes or reduces many of these impact pathways. Where development remains within or adjacent to natural vegetation, the development edge and approved disturbance footprint must be clearly defined and maintained. Clearing or progressive expansion into retained natural vegetation must be prohibited. Alien invasive plants and potentially invasive garden

escapees must be actively controlled, and landscaping adjoining natural vegetation should preferentially use locally appropriate indigenous species. Dumping and informal access into retained natural areas must be prevented. Existing tracks should be used wherever practicable and unnecessary tracks should be rehabilitated. Fire management must be undertaken in accordance with an ecologically appropriate management plan that recognises the ecological requirements of the remaining Fynbos and the constraints created by residential occupation. These measures should form part of the long-term environmental management requirements for the development rather than being limited to the construction phase.

	Biodiversity value				Impact magnitude			Probability	Significance
Indirect impacts	I	T	C	R	E	D	M		
Before mitigation	5	2	4	3	2	4	3	High probability	2.27 MODERATE
After mitigation	5	1	3	3	1	4	2	High probability	1.73 LOW

Cumulative loss, degradation and fragmentation of terrestrial biodiversity

The proposed development needs to be considered within the context of extensive historical transformation and ongoing development within the broader Glentana coastal landscape, with similar coastal habitat extending to Kaaiman's River. Garden Route Granite Fynbos has already undergone substantial habitat loss, while the remaining natural vegetation in the southern part of Hoogekraal contributes both to conservation of the Critically Endangered ecosystem and to the continuity of the coastal biodiversity network.

Development of multiple footprints within remaining natural vegetation would add incrementally to existing habitat loss, degradation and fragmentation. Although the individual development footprints are relatively small, cumulative effects arise through the

progressive loss and subdivision of remaining natural habitat across the landscape. The cumulative consequence of the development must therefore be considered in relation to the already transformed condition of the broader coastal landscape rather than solely according to the size of individual development footprints.

Resource irreplaceability: The cumulative impact affects remaining natural habitat within the mapped extent of a Critically Endangered ecosystem and includes CBA1 habitat forming part of the coastal ecological network. I = 5.

Threshold: The direct habitat loss associated with the proposed development represents a relatively small additional contribution to the total historical loss of natural habitat within the broader landscape. Nevertheless, because the affected ecosystem is already extensively transformed, further incremental losses contribute to cumulative pressure on the remaining resource. T = 2.

Resource condition: Remaining natural habitat retains substantial ecological function despite historical transformation of the surrounding landscape. The field assessment confirmed that condition varies locally, including areas affected by disturbance and alien invasion, but substantial areas of functional natural vegetation remain. C = 4.

Reversibility of impact: Incremental conversion of remaining natural vegetation to permanent development is effectively irreversible. Once natural habitat is replaced by permanent residential development and associated infrastructure, its contribution to cumulative habitat loss cannot realistically be reversed. R = 5.

Extent of impact: Cumulative effects are considered in the context of the broader coastal landscape rather than solely within the development site. E = 3 (Landscape).

Duration of impact: Incremental loss of natural habitat to permanent development would persist indefinitely. D = 5.

Intensity of impact: The proposed development would contribute additional habitat loss and fragmentation to an already transformed landscape. The project would not independently cause the cessation of ecological processes at landscape scale, but would

contribute incrementally to their progressive modification through further loss and subdivision of remaining natural habitat. M = 3 (Medium).

Probability of occurrence: If development proceeds within remaining natural vegetation, an additional contribution to cumulative habitat loss and fragmentation is definite. P = 5 (Definite).

Confidence: Moderate to High. There is high confidence that further development within natural vegetation would contribute incrementally to cumulative habitat loss and fragmentation. There is less certainty regarding the precise magnitude of the cumulative effect because a fully quantitative assessment would require reliable spatial information on historical habitat loss and other existing, approved and reasonably foreseeable developments within an ecologically meaningful surrounding area.

Mitigation: The most effective means of reducing the cumulative impact is to avoid further loss of remaining natural habitat. Development should preferentially be accommodated within cultivated and historically transformed areas, with individual footprints within natural vegetation adjusted or relocated to avoid better-condition Fynbos, Forest and Thicket, confirmed SCC localities and areas important for ecological connectivity. Existing tracks should be used for access wherever practicable to minimise additional fragmentation. Retained natural vegetation should be managed as a connected ecological network, including appropriate alien plant control, access management and ecological fire management. These measures would reduce the contribution of the proposed development to ongoing cumulative habitat loss and degradation within the broader coastal landscape.

	Biodiversity value				Impact magnitude			Probability	Significance
Cumulative impacts	I	T	C	R	E	D	M		
Before mitigation	5	2	4	5	3	5	3	Definite	2.93 MODERATE
After mitigation	5	1	3	5	3	5	2	Definite	2.33 MODERATE

No-Go alternative

Under the No-Go alternative, the proposed development would not proceed and there would be no control over ongoing activities on the farms other than individual applications in terms of the OSCA regulations for house building or NEMA applications if NEMA thresholds are exceeded.

However, the No-Go alternative does not necessarily imply that the property would remain in its present ecological condition. One of the principal existing ecological threats within the study area and surrounding landscape is invasion by alien plants, particularly invasive wattles and pines. Effective control requires sustained resources and management commitment. Appropriate fire management is also important for maintaining the ecological condition and functioning of the remaining Fynbos. In the absence of effective long-term ecological management, continued alien plant invasion and disruption of natural ecological processes could result in progressive degradation of natural habitats, with associated effects on habitat condition, ecological functioning, Species of Conservation Concern and the overall conservation value of the property.

The No-Go alternative would therefore avoid the known direct and indirect biodiversity impacts associated with the proposed development and, assuming equivalent ecological management under both alternatives, would represent the preferred alternative from a terrestrial biodiversity perspective. However, its long-term ecological outcome would depend on continued management of alien invasive plants, fire and other existing pressures on the remaining natural vegetation.

Conclusion

Desktop information, field data collection and mapping from aerial imagery provides the following verifications of patterns for the various themes:

PLANT SPECIES THEME:

1. The site was flagged as having **MEDIUM sensitivity** with respect to the Terrestrial Plant Species Theme.
2. Field assessment confirmed the occurrence of the Vulnerable *Erica glandulosa* subsp. *fourcadei* within Fynbos at three development-associated locations.
3. Fynbos represents the most important habitat for Plant Species of Conservation Concern (SCC). In addition to the confirmed SCC, suitable habitat occurs for other potentially occurring Plant SCC that were not recorded during the survey.
4. Proposed development at three locations consequently presents a direct risk to a confirmed Plant SCC. These footprints should be adjusted or relocated sufficiently to avoid the recorded plants and surrounding suitable habitat, including the full construction and operational disturbance envelope.

ANIMAL SPECIES THEME:

1. The site was flagged as having **MEDIUM sensitivity** with respect to the Terrestrial Animal Species Theme.
2. Field assessment confirmed the presence of suitable natural habitat for potentially occurring Animal SCC, although no Animal SCC was confirmed within the proposed development footprints.
3. Forest and associated Thicket represent the most important habitat for potentially occurring Animal SCC, while Fynbos and other natural vegetation may also provide habitat and contribute to ecological connectivity.
4. Impacts on Animal SCC are therefore primarily associated with loss or disturbance of potentially suitable habitat and should be minimised through avoidance of higher-

quality natural habitat and maintenance of connectivity between retained natural areas.

TERRESTRIAL BIODIVERSITY THEME:

1. The site consists of a mosaic of natural habitat, secondary vegetation on historically cultivated land and currently cultivated or otherwise transformed areas. The remaining natural habitats comprise Fynbos, Thicket and Forest.
2. The site was flagged as having **VERY HIGH sensitivity** with respect to the Terrestrial Biodiversity Theme. Field assessment confirms this sensitivity for the remaining natural vegetation and other areas meeting the applicable definition of natural vegetation.
3. The main terrestrial biodiversity sensitivities include natural vegetation within the mapped extent of the Critically Endangered Garden Route Granite Fynbos ecosystem, CBA1, the coastal ecological corridor, Forest and Thicket habitat, and habitat supporting or potentially supporting SCC.
4. The proposed layout includes 34 development footprints, of which 11 occur within currently cultivated areas, seven within secondary vegetation and 16 within mapped natural vegetation. Thirteen of the latter occur within the sensitive southern coastal part of the property.
5. Field assessment confirms that the natural vegetation associated with the proposed footprints is heterogeneous in condition. Fynbos ranges from relatively well-developed indigenous vegetation to disturbed and alien-invaded areas. Alien invasion does not, however, necessarily indicate irreversible transformation where characteristic indigenous vegetation persists.
6. Development within cultivated and historically transformed areas presents substantially fewer terrestrial biodiversity constraints than development within remaining natural vegetation. Development within natural vegetation would result in incremental loss of threatened ecosystem habitat and CBA1, contribute to fragmentation of the coastal ecological network, and potentially affect Plant and Animal SCC habitat.

7. Avoidance should be the primary mitigation measure. Development should preferentially be accommodated within cultivated, historically transformed and demonstrably lower-value areas. Footprints within natural vegetation should be adjusted where practicable to avoid better-condition Fynbos, Forest and Thicket, confirmed Plant SCC localities and areas important for ecological connectivity. Existing tracks should be used for access wherever practicable and additional fragmentation of natural habitat should be minimised.
8. Subject to implementation of the recommended avoidance and mitigation measures, the development can retain substantial areas of natural vegetation and ecological connectivity. Long-term management of retained natural habitat, including alien plant control, appropriate fire management and prevention of progressive disturbance, will be important in determining the ecological condition of the property following development.

Recommendations

Planning avoidance and minimisation measures

- The mapped natural habitats, CBAs, ecological corridor and habitat for Species of Conservation Concern (SCC) should be treated as biodiversity constraints during finalisation and implementation of the development layout. Avoidance of impacts should take precedence over mitigation of impacts within sensitive habitat.
- Where micro-siting adjustment is required, development should preferentially be shifted onto adjacent disturbed, degraded or historically transformed areas. Avoidance of better-condition Fynbos, Forest and Thicket should take precedence over mitigation of their loss.
- The confirmed localities of the Vulnerable *Erica glandulosa* subsp. *fourcadei* must be avoided. Layout refinement must consider the complete development disturbance envelope, including the house footprint, construction working area, access and services. Sufficient surrounding suitable habitat should be retained to maintain the ecological context of the plants. Rescue or translocation should not be regarded as a substitute for avoidance.
- Other areas of relatively well-developed Fynbos should be avoided as far as practicable because they provide suitable habitat for Plant SCC and contribute to the remaining natural habitat network. The absence of a threatened species from an individual site should not, on its own, be interpreted as demonstrating that the surrounding Fynbos has low biodiversity importance.
- Forest and associated Thicket should be avoided as far as practicable. These habitats contribute to terrestrial biodiversity value, habitat heterogeneity and ecological connectivity and provide the most important habitat on the property for potentially occurring Animal SCC.
- Micro-siting adjustments are required at the development locations identified on the accompanying recommendation map. The requirements for these adjustments are discussed in more detail below.

- Existing tracks should be used for construction and permanent access wherever practicable. New roads and tracks through natural vegetation should be minimised and should not create avoidable additional fragmentation of Fynbos, Forest, Thicket or the coastal ecological corridor.
- Construction footprints, access routes and working areas should be clearly demarcated before construction, and disturbance outside approved areas must be prohibited. Construction activities should minimise unnecessary vegetation clearing, soil disturbance, erosion, runoff and disturbance of adjoining natural habitat.
- Natural vegetation outside the approved development, access and service footprints should be treated as a no-go area during construction. Particular care should be taken to prevent unnecessary encroachment into retained Forest, Thicket and better-condition Fynbos. Any buffers or setbacks associated with wetlands and drainage features should be implemented in accordance with the requirements of the aquatic specialist.

Ecological management and rehabilitation

- A comprehensive Alien Invasive Species Management Plan should be compiled and implemented. Alien control should include invasive wattles, pines and other relevant species and should extend beyond construction-related disturbance to provide for sustained management of retained natural habitat.
- Remaining natural vegetation should be subject to long-term ecological management. This should include alien plant control, ecologically appropriate fire management where relevant, prevention of dumping and informal vegetation clearing, control of unnecessary access, and prevention of progressive expansion of gardens or other residential activities into retained natural habitat.
- Fire management should recognise the ecological requirements of the remaining Fynbos. Fire exclusion should not automatically be regarded as appropriate management simply because residential development is present, and the long-term management framework should address the practical interface between ecological burning requirements and protection of residential infrastructure.

- Landscaping adjoining natural vegetation should preferentially use locally appropriate indigenous species. Species with a known or plausible capacity to invade adjoining natural habitat should not be planted, and garden escapees should be controlled where detected.
- Opportunities should be investigated for rehabilitation of selected cultivated, historically transformed or degraded areas where this would provide a meaningful ecological benefit. Rehabilitation should be strategically targeted towards widening or strengthening ecological corridors, reconnecting natural habitat patches, buffering sensitive vegetation or improving ecological functioning. With this in mind the restoration areas are proposed to be zoned to Open Space III for conservation management purposes.
- Rehabilitation of transformed or degraded land should not be regarded as equivalent to retention of existing natural vegetation and should not be used to justify otherwise avoidable loss of higher-value Fynbos, Forest, Thicket or confirmed SCC habitat.
- Areas disturbed temporarily during construction should be rehabilitated using appropriate indigenous vegetation and monitored until an acceptable level of ecological stability and vegetation establishment has been achieved.
- Long-term ecological monitoring should assess alien plant control, rehabilitation success, condition of retained natural vegetation and compliance with restrictions intended to prevent progressive disturbance. The management programme should provide for corrective or adaptive management where ecological objectives are not being achieved.

Layout finalisation and implementation

The completed field assessment has identified a limited number of development locations where micro-siting adjustments are required to avoid specific terrestrial biodiversity sensitivities (Figure 17). In each case, the identified constraint is sufficiently localised that a relatively small adjustment to the proposed development position should be adequate, without materially altering the overall development layout.

The required adjustments relate principally to avoidance of good-quality natural Fynbos and confirmed occurrences of the Vulnerable *Erica glandulosa* subsp. *fourcadei*. The locations requiring adjustment are indicated on the accompanying recommendation map (Figure 17). Development positions affecting good-quality Fynbos should be shifted onto adjacent disturbed, degraded or otherwise lower-sensitivity vegetation. Where *Erica glandulosa* subsp. *fourcadei* occurs, the adjusted position should avoid the recorded plants and their immediate surrounding habitat to prevent direct disturbance during construction and subsequent occupation.

The precise adjusted positions should be determined and confirmed in the field jointly by the terrestrial biodiversity specialist and project surveyor before the final development positions are pegged. Micro-siting must consider the complete disturbance envelope



Figure 17: Development locations where micro-siting adjustments are required to avoid identified terrestrial biodiversity sensitivities.

associated with each development location, including the building footprint, construction working area, access and services.

Following micro-siting, the final development plan should be checked by the terrestrial biodiversity specialist to confirm that the required avoidance measures have been incorporated. The final approved layout, together with clearly defined development footprints, access routes, no-go areas and ecological management requirements, should then be incorporated into the EMPr and used as the basis for environmental control during construction and subsequent occupation.

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Appendix I

Plant species recorded on site

Acacia dealbata* (NEMBA Category 2)
Acacia decurrens* (NEMBA Category 2)
Acacia mearnsii* (NEMBA Category 2)
Achyranthemum paniculatum
Agathosma apiculata
Agave americana* (NEMBA Category 3)
Agave sisalana* (NEMBA Category 3)
Albuca cooperi
Aloe arborescens
Aloe arborescens × ferox
Aloe ferox
Aloe maculata
Anthospermum galioides
Apodytes dimidiata
Aponogeton distachyos
Arctotheca prostrata
Aspalathus asparagoides
Asparagus sp
Astephanus triflorus
Azima tetraacantha
Babiana fourcadei
Bobartia robusta
Canthium inerme
Carex clavata
Carpobrotus edulis
Carpobrotus mellei
Cassine peragua
Cenchrus clandestinus
Centella asiatica
Cerastium glomeratum
Cheilanthes viridis
Chenopodiastrum murale
Chloris gayana
Cirsium vulgare* (NEMBA Category 1b)
Cliffortia ilicifolia
Cliffortia linearifolia
Cliffortia serpyllifolia
Colpoon compressum
Cotoneaster sp
Cotula australis
Cotyledon orbiculata
Crassula nudicaulis
Crassula subulata
Cullumia aculeata
Cyanella lutea
Cyclospermum leptophyllum

Cynanchum ellipticum
 Cynodon dactylon
 Cyperus polystachyos
 Datura stramonium* (NEMBA Category 1b)
 Delosperma litorale
 Dicerotheramnus rhinocerotis
 Diospyros dichrophylla
 Diospyros whyteana
 Dipogon lignosus
 Disa bracteata
 Disa sagittalis
 Disparago anomala
 Drosanthemum sp
 Eragrostis capensis
 Eragrostis curvula
 Erica discolor
 Erica formosa
 Erica glandulosa
 Erica peltata
 Erica scabriuscula
 Erigeron bonariensis
 Eriocephalus africanus
 Eriospermum capense
 Euphorbia sp
 Eustachys paspaloides
 Exomis microphylla
 Family Cupressaceae
 Felicia filifolia
 Ficinia marginata
 Ficinia nigrescens
 Gaudium laevigatum
 Gazania rigens
 Gladiolus floribundus
 Gnidia laxa
 Gomphocarpus physocarpus
 Gymnosporia buxifolia
 Helichrysum cymosum
 Helichrysum felinum
 Helichrysum foetidum
 Helichrysum odoratissimum
 Helichrysum petiolare
 Heliophila subulata
 Hermannia salviifolia
 Heteropogon contortus
 Holothrix villosa
 Hypoxis sobolifera
 Juncus effusus
 Juncus imbricatus
 Knowltonia vesicatoria
 Lampranthus spectabilis
 Lauridia tetragona
 Lemna minor
 Lepidium africanum
 Lessertia canescens
 Leucadendron salignum

Lobelia erinus
Lotus subbiflorus
Lysimachia arvensis
Metalasia acuta
Metalasia pungens
Metalasia trivialis
Monopsis sp
Morella quercifolia
Myoporum insulare* (NEMBA Category 3)
Nicandra physalodes* (NEMBA Category 1b)
Nidorella ivifolia
Oedera calycina
Oedera imbricata
Oedera pungens
Oenothera indecora
Ornithogalum dubium
Ornithopus compressus
Osteospermum moniliferum
Oxalis sp
Paspalum urvillei
Passerina corymbosa
Pelargonium candicans
Pelargonium capitatum
Pelargonium dipetalum
Pelargonium fruticosum
Pelargonium lobatum
Phylica axillaris
Physalis peruviana
Phytolacca dioica* (NEMBA Category 3)
Phytolacca octandra* (NEMBA Category 1b)
Pinus radiata* (NEMBA Category 1b)
Plantago lanceolata
Prismatocarpus campanuloides
Pseudoselago outeniquensis
Psidium guajava* (NEMBA Category 2)
Psoralea sericea
Psoralea stachyera
Pyracantha angustifolia* (NEMBA Category 1b)
Rapanea melanophloeos
Restio triticeus
Rhoicissus digitata
Romulea flava
Rubus affinis
Scadoxus puniceus
Searsia chirindensis
Searsia lucida
Searsia pallens
Searsia rehmanniana
Searsia tomentosa
Selago corymbosa
Senecio burchellii
Senecio deltoideus
Senecio ilicifolius
Senecio purpureus
Seriphium plumosum

Silene gallica
Solanum linnaeanum
Sonchus oleraceus
Sporobolus africanus
Stenotaphrum secundatum
Struthiola ciliata
Struthiola hirsuta
Tarchonanthus littoralis
Tephrosia capensis
Thamnochortus rigidus
Tribolium uniolae
Ursinia scariosa
Verbena bonariensis* (NEMBA Category 1b)
Wolffia arrhiza