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Terrestrial Biodiversity & Terrestrial Plant Species Report

Specialist Site Sensitivity Verification for Erf 2074 in Keurbooms, part of the Bietou Local Municipality.

Terrestrial Biodiversity & Terrestrial Plant Species Report



Erica discolor on a sandstone outcrop

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plan



DECLARATION OF SPECIALIST INDEPENDENCE

- I consider myself bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP);
- At the time of conducting the study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done in an objective manner. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being members of the general public;
- I declare that there are no circumstances that may compromise my objectivity in performing this specialist investigation. I do not necessarily object to or endorse any proposed developments, but aim to present facts, findings and recommendations based on relevant professional experience and scientific data;
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- All the particulars furnished by me in this document are true and correct.



Bianke Fouche (MSc)

February 2024

BIANKE FOUCHE ABRIDGED CV

Qualifications

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- B.Sc. Honours in Botany (Nelson Mandela University),
- M.Sc. Conservation Biology (University of Cape Town)

SACNASP Registration No: 141757 (Candidate Botanical Scientist)

Skills and Core Competencies

- My MSc research will add to our understanding of plant community niche construction and Alternative Stable State (ASS) theory. The knowledge gained will be used to advise landscape stewardship practices, especially regarding reforestation initiatives in the Overstrand.
- I have worked closely with the conservation team of the Grootbos Foundation, where I assisted with vegetation surveys, mounting voucher specimens in the Grootbos herbarium, and taken part in controlled fynbos fires in the Overberg.
- Postgraduate studies of mine included assessing the allelopathic effects of *Eucalyptus* leaves on garden peas and leeks and assessing the accuracy of the climate leaf analysis multivariate programme (CLAMP) in predicting the climate of fynbos vegetation.
- In Cape Town I regularly took part in alien clearing activities and helped to identify relevant listed invasive plants.
- I am currently a member of SACNASP, the International Association for Impact Assessment (IAIA) in South Africa, Botanical Society of South Africa, and the custodians for rare and endangered wildflowers (CREW-Outramps) in George.

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ABBREVIATIONS

BPA	Biodiversity Priority Area
BSP	Biodiversity Spatial Plan
CBA	Critical Biodiversity Area
CD:NGI	Chief Directorate: National Geo-spatial Information
DFFE	Department of Forestry, Fisheries, and the Environment
EMP	Ecological Management Plan
ESA	Ecological Support Area
NEM:BA	National Environmental Management: Biodiversity Act
ONA	Other Natural Areas
PAOI	Project Area of Influence
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDP	Site Development Plan

1. INTRODUCTION

1.1 Background

Confluent Environmental was contracted by Eco Route to undertake a specialist assessment for botanical and terrestrial sensitivity of Erf 2074, in Plettenberg Bay. The size of the Erf is ca. 6.25 ha. According to the Department of Forestry, Fisheries, and the Environment (DFFE) Screening Tool, this SSVR is required because the terrestrial plant species theme has been highlighted as having a **Medium & Low** sensitivity, and the terrestrial biodiversity has a **Very High** sensitivity. Erf 2074 is located south of the N2 highway, and can be accessed from Marine Way (Fig. 1). The site is located in an established urban residential area, with open space associated with the valley bordering the property's southern edge. The Piesang River also flows in the valley south of Erf 2074.



Figure 1: The general location of Erf 2074 in Plettenberg Bay. Dotted blue lines illustrate non-perennial drainage lines, and the solid blue line is the Piesang River.

1.2 Site Development Plan

The current site development plan will be updated after the site sensitivity verification process for the various biodiversity themes have been completed on the site. The plan indicated in Fig. 2 highlights existing structures on the site (Fig. 2). These structures are the Olive grove, planted tree rows in the northern half of the site adjacent to the dirt roads, store/garage, out building, the existing house, other residential dwellings, chicken coop, shed, shade structure, old non-functional protea plantation, reservoir, and telephone line. Although the SDP for the site is not yet complete, a housing development is being proposed.

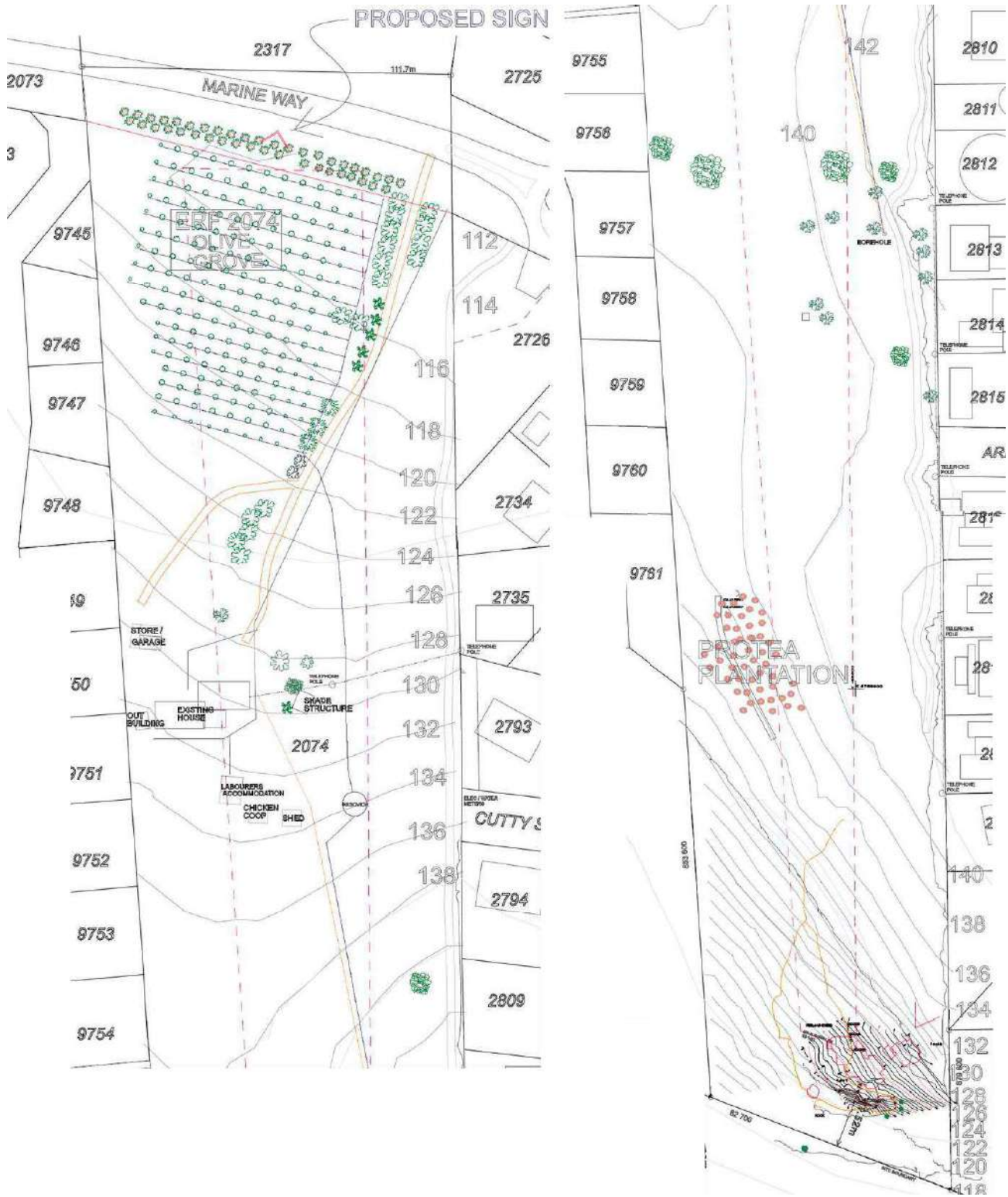


Figure 2: The current layout of Erf 2074 in February 2024.

2. TERMS OF REFERENCE

This site sensitivity verification report provides information on Terrestrial and Botanical diversity and sensitivity of the site. The results presented are based on a desktop and field assessment, which includes a consideration of historical photographic records of the site. The assessment presented in this report follows the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity, and Terrestrial Plant Species themes.

This site sensitivity 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), which includes:
 - The protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial plant species (28 July 2023). A checklist for minimum report requirements according to this theme is presented below in table 1:

Table 1: Reporting requirements as per the Terrestrial Biodiversity Protocol for a site sensitivity verification report.

No.	Site sensitivity verification (the basis of a compliance statement):	Check
4.2.1	Be applicable to the preferred site and proposed development footprint;	X
4.2.2	Confirm that the site is of “low” sensitivity for terrestrial biodiversity;	X
4.2.3.	Indicate whether or not the proposed development will have any impact on the biodiversity feature.	X
4.3.1.	The contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	X
4.3.2.	A signed statement of independence by the specialist;	X
4.3.3.	A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	X
4.3.4.	A baseline profile description of biodiversity and ecosystems of the site;	X
4.3.5.	The methodology used to verify the sensitivities of the terrestrial biodiversity features on the site, including equipment and modelling used, where relevant;	X
4.3.6.	In the case of a linear activity, confirmation from the terrestrial biodiversity specialist that, in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase;	NA

- The protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity (20 March 2020). A checklist for minimum report requirements is presented in table 2:

Table 2: Reporting requirements as per the Terrestrial Plant Species Protocol Protocol for a site sensitivity verification report.

No.	Site sensitivity verification (the basis of a compliance statement):	Check
5.3.1	Contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae;	X

5.3.2	A signed statement of independence by the specialist;	X
5.3.3	A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	X
5.3.4	A description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant;	X
5.3.6	A description of the assumptions made and any uncertainties or gaps in knowledge or data;	X
5.3.7	The mean density of observations/ number of samples sites per unit area.	X

- Additional guidelines for the terrestrial biodiversity theme:
 - Ecosystem Guidelines for Environmental Assessment in the Western Cape (de Villiers et al., 2016).
 - The Western Cape Biodiversity Spatial Plan Handbook and summary booklet (CapeNature, 2017; Pool-Sandvliet et al., 2017).
 - The Subtropical Thicket Ecosystem Programme Handbook: Integrating the natural environment into land-use decisions at the municipal level: towards sustainable development (Pierce & Mader, 2006).
- Additional guidelines for the terrestrial plant species theme:
 - Species Environmental Assessment Guideline: Guidelines for the implementation of the Terrestrial Flora (3c) & Terrestrial Fauna (3d) Species Protocols for environmental impact assessments in South Africa (Verburgt et al., 2020).

The assessment was undertaken by a specialist registered with the South African Council for Natural Scientific Professionals (SACNASP) with relevant expertise in the field of Botanical and/or Ecological science.

2.1 Online Screening Tool

The Department of Forestry, Fisheries, and the Environment (DFFE) screening tool report for the development footprint has identified the **terrestrial plant species theme as having a Low & Medium sensitivity**, and the **terrestrial biodiversity theme as having a Very High sensitivity** (Fig. 3). Note that the Screening Tool plant species theme does not take Near Threatened plant populations into account.

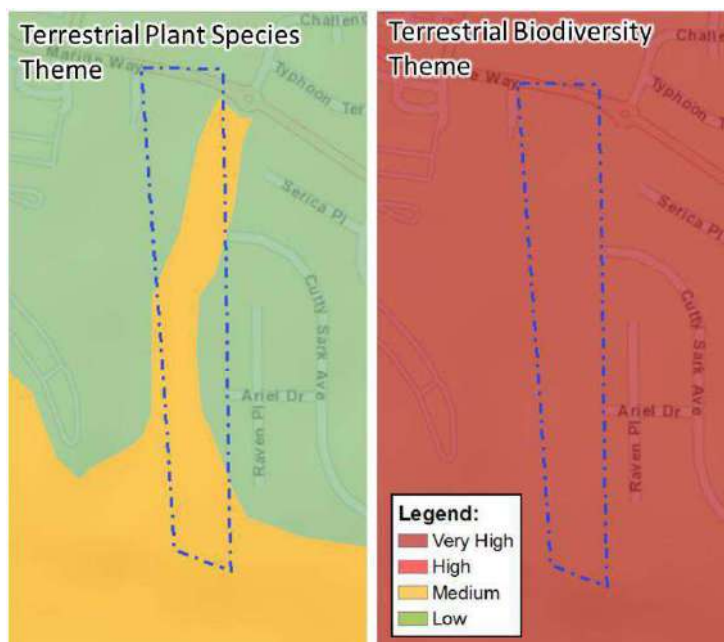


Figure 3: The screening tool generated site sensitivities for the two themes included in this report.

A Very High sensitivity rating for terrestrial biodiversity according to the screening tool is triggered for all Biodiversity Priority Areas (BPAs) and other sensitive features (Stewart et al., 2021). BPAs include the various management layers of the Western Cape Biodiversity Spatial Plan (WC BSP), as well as the other sensitive features in Table 3 below. The highlighted rows of Table 3 were triggered for the proposed development on Erf 2074.

Table 3: Sources of BPA data for the Terrestrial Biodiversity Theme sensitivity (Stewart et al., 2021). Only BPAs that have been triggered for Erf 2074 by the screening tool are listed.

Sensitivity layer	Data included and source
Critical Biodiversity Areas (CBAs)	Most recent terrestrial CBA spatial footprint for metros, provinces, or bioregional plans, combined to create a national data set.
Ecological Support Areas (ESAs)	Most recent ESA spatial footprint for metros, provinces, or bioregional plans, combined to create a national data set.
SAN Parks Buffer Areas	A buffer area for a National Park is defined in the February 2012 schedule on Biodiversity Policy and Strategy for South Africa's Strategy on Buffer Zones of National Parks. The buffer applicable here is the 10km wide buffer for the Garden Route National Park.
Freshwater Ecosystem Catchments (terrestrial)	Freshwater ecosystem catchments, determined through the National Freshwater Ecosystem Priority Area (NFEPA) process.

3. METHODOLOGY

3.1 Desktop Assessment

The desktop assessment was performed using Cape Farm Mapper and QGIS version 3.28.3 "Firenze". Plant species data was sourced from the following sources:

- The DFFE screening tool listed SCC.

- Information on plant occurrence prior to the site visit was sourced from SANBI's Botanical Research and Herbarium Management System (BRAHMS) for the Plants of Southern Africa (POSA) database.
- iNaturalist observations of the property and surrounding areas.

Ecosystem/ vegetation type data was sourced from:

- The 2018 updated South African National Vegetation Map from SANBI's Biodiversity GIS (BGIS) database, and the National Biodiversity Assessment report of 2018 (Skowno et al., 2018).
- Shapefiles for the Western Cape Biodiversity Spatial Plan (WC-BSP) i.e., information on PAs, CBAs, ESAs, and ONAs were downloaded from BGIS database (CapeNature, 2017; Pool-Sandvliet et al., 2017).
- Cape Farm Mapper for additional spatial information required for the site.
- Chief Directorate: National Geo-spatial Information (CD: NGI) Geospatial Portal and Google Earth for the acquisition of historical aerial imagery of the site.
- The conservation status of ecosystems was found in the Revised National List of Ecosystems that are Threatened and in need of protection, published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004, as revised in Nov. 2022), and also using the Vegetation of South Africa, Lesotho, and Swaziland.

3.2 Field Assessment

Field work was undertaken on the 16th & 17th of January 2024. The method for identifying species was similar to a BioBlitz, also described as a "timed meander", where the specialist especially keeps an eye out for rarer and threatened species. Some Red Listed Plant species are found more easily during a site survey than other species. This survey method is an attempt to account for the short and single survey period, where detection probability of some rare and threatened species (e.g., geophytes, small succulents, small perennials etc.) are low (Garrard et al., 2008; Wintle et al., 2012). Observations of individual species and environmental characteristics were documented using a Nikon Coolpix camera. A provisional species list and plant species accumulation curve is provided in Appendix 9.1.

3.3 Assumptions & Limitations

This assessment is subject to a few assumptions, uncertainties, and limitations, as listed below:

- Only one survey took place during the summer over two days on the 16th & 17th of January 2024. The species list is therefore limited to the findings of the one field assessment, as well as past records on iNaturalist and the Plants of Southern Africa (POSA) database for the proposed development site and its surrounding areas.
- The species list and SCC reported are not exhaustive, and more species will be added to the list should more sampling effort, and sampling in different seasons occur (Perret et al., 2023).

- Many plant species flower seasonally and are therefore difficult / not likely to be identified outside of their flowering season.
- Some rare and threatened plant species are difficult to locate and easily overlooked in the field (e.g., geophytes, small succulents, small shrubs, and cryptic spp.). Furthermore, some species may not have been visible at all during the time of the site assessment (e.g., some geophytes, annuals, and parasitic plants).
- Environmental factors such as the prevailing fire regime, successional stage of the vegetation present, previous cultivation of the land, and the level of alien infestation at the site affects the species visible at the time of assessment (Cowling et al., 2010; Privett et al., 2001).
- The dense invaded sections on the site (mostly blackwood wattles, *Acacia melanoxylon*) and in the surrounding environment made it hard to gain access to some sections of the site. It is possible that focus on “bundu bashing” and getting access to some parts of the site may have caused a lapse in concentration so that an SCC could have been missed on the site.
- Effort was made to geotag all protected trees on the site, however it is very likely that some have been missed, especially in densely vegetated areas away from the waleked track on the site.

4. RESULTS: DESKTOP ASSESSMENT

4.1 Terrestrial Biodiversity

4.1.1 Climate, geology, and soil

The climate of Plettenberg Bay is described as warm and temperate. The rainfall pattern is aseasonal, with rain typically occurring even in the driest months of the year (Fig 4). Two seasonal rainfall peaks during the spring and winter. The mean annual temperature (MAT) for this area is around 18°C.

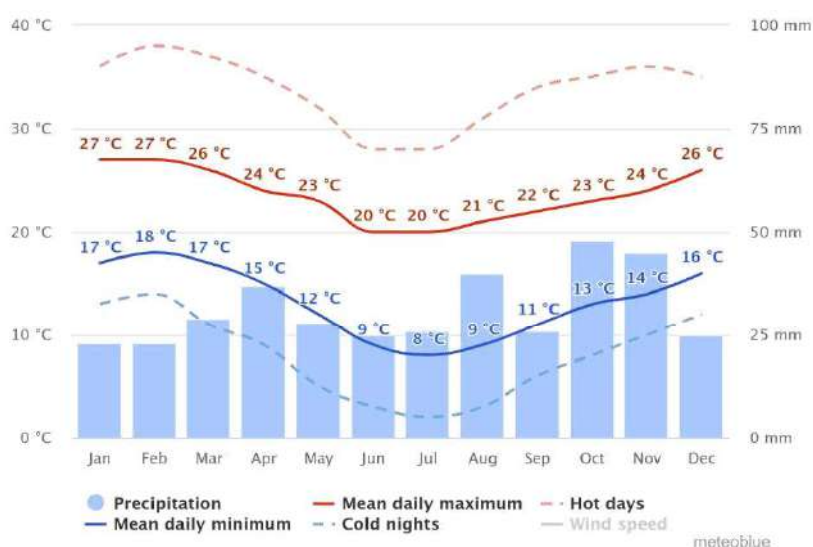


Figure 4: Summary of the climate data for Plettenberg Bay. The graph was sourced from [meteoblue](#).

The geology of the site was mostly sandstone with relatively nutrient poor sandy soil (Fig. 5). The origin of the geology and soil in this area is from aeolian (i.e., windblown) origin that is from the Quaternary (Paton, 2023). The topsoil on the site had a sandy texture, and clay content in the soil is likely very low throughout the soil profile.



Figure 5: Images of the geology and substrate on Erf 2074.

4.1.2 Vegetation Type(s)

The mapped vegetation type on Erf 2074 is the least threatened (LT; Government gazette no. 2747, NEMBA Act no 10 of 2004, updated 18 November 2022) South Outeniqua Sandstone Fynbos (FFs 19; Fig. 6). This vegetation type occurs along the southern slopes of the Outeniqua mountains from Cloetesburg to the Keurbooms River. It includes sandstone outcrops on the lowlands near Knysna and Natures Valley (Dayaram et al., 2019; Mucina & Rutherford, 2006). Usually, landscapes with South Outeniqua Sandstone Fynbos have moderately undulating slopes, and the fynbos vegetation can be quite tall and dense, with a relatively open understorey. Important and endemic taxa to this vegetation type can be found in the vegetation type description of Mucina & Rutherford (2006). According to the 2021 updated ecosystem details, about 67% of the original area (historically ca. 157 123 ha) of the vegetation type is still intact, with 32.2% formally conserved. The Vlok vegetation map includes two vegetation variants on the site, splitting Erf 2074 approximately in half. The southern half is mapped as Piesang River Fynbos-Forest, and the northern half is mapped as Roodefontein Grassy Fynbos (Fig. 6).



Figure 6: The mapped vegetation type according to the Vlok vegetation map (left) and the 2018 National Vegetation Map of South Africa (right; Dayaram et al., 2019; Mucina & Ruthfarmord, 2006) for Erf 2074.

4.1.3 Western Cape Biodiversity Spatial Plan

The Biodiversity Spatial Plan for the Western Cape (WC BSP) excludes the majority of Erf 2074 from the conservation planning areas (Fig. 7). Only the southernmost section of the site, i.e., the valley and a section of the fynbos habitat on the site, is mapped as a terrestrial critical biodiversity area (CBA1). ESA 1 & 2 areas are mapped along the south-western boundary of Erf 2074. Explanations of the BSP categories on the site are in Box 1. The reasons for the BSP layers mapped here are (grey entries either do not apply to the site or are outside of the scope of this report to provide comment on):

- **FEPA (Freshwater Ecosystem Priority Areas) River Corridor** – The valley below Erf 2074, which includes the Piesang River, could be considered a FEPA. However, Erf 2074 itself falls outside of this area. Refer to the aquatic specialist report for the site.
- **Piesang (Core) Estuary** – Erf 2074 is not within an estuary.
- **South Eastern Coastal Belt Permanent Lower Foothill River** – This is likely referring to the Piesang River south of Erf 2074. Refer to the aquatic specialist report for the site.
- **Watercourse protection- South Eastern Coastal Belt** - Refer to the aquatic specialist report for the site.
- **South Outeniqua Sandstone Fynbos (VU)** – According to the 2022 updated list of threatened ecosystems, South Outeniqua Sandstone Fynbos is now considered least threatened (LT), and is no longer vulnerable (VU).



Figure 7: The mapped Western Cape Biodiversity Spatial Plan (WC BSP) categories that have been mapped for Erf 2074.

BOX 1: The Biodiversity Spatial Plan

Critical Biodiversity Area 1

Definition: Areas in a natural condition. Required to meet biodiversity targets for species, ecosystems or ecological processes and infrastructure.

Objective: Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

Ecological Support Area 1

Definition: Not essential for meeting biodiversity targets. An important role in supporting the functioning of PAs or CBAs. Often vital for ecosystem services.

Objective: Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided underlying biodiversity objectives/ecological functioning are not compromised.

Ecological Support Area 2

Definition: Not essential for meeting biodiversity targets. Important in supporting functioning of PAs or CBAs. Often vital for ecosystem services.

Objective: Restore/minimise impact on ecological infrastructure functioning, especially soil and water-related services.

4.1.4 SAN Parks buffer area

SAN Parks buffer areas are areas around National Parks that have been made to mitigate and reduce activities with negative ecological impacts taking place in close proximity to Parks, and to integrate National Parks into them into the landscape a little better. This concept has been widely recommended, including in the operational guidelines of UNESCO's World Heritage Convention 1. The purpose of these buffer zones are to:

- Protect the purpose and values of the national park, which is to be explicitly defined in the management plan submitted in terms of section 39(2) of the Act;
- Protect important areas of high value for biodiversity and/or to society where these extend beyond the boundary of the Protected Area;
- Assist adjacent and affected communities to secure appropriate and sustainable benefits from the national park and buffer zone area itself by promoting a conservation economy, ecotourism and its supporting infrastructure and services, and sustainability through properly planned harvesting.

According to the screening tool, the buffer that the proposed development site falls within is for Garden Route National Park (Fig. 8). This buffer is 10km wide. However, the Garden Route National Park is ca. 9 km away from the proposed development site, and the proposed development site is separated from the Garden Route National Park mainly by existing disturbed areas and privately owned erven in Plettenberg Bay. Even though the screening tool identified the buffer area as one of the reasons for the site sensitivity, the proposed development is highly unlikely to negatively affect corridor connectivity and the buffer area for the Garden Route National Park.



Figure 8: The Protected Areas Register (PAR) map around Erf 2074 (indicated by the yellow flag). This interactive map can be accessed from [the DFFE PAR website](#).

4.1.5 Historical Aerial Imagery

High resolution historical imagery (Fig. 9) can be sourced upon request from the CD: NGI Geospatial portal, or from their offices in Mowbray, Cape Town. Google Earth is also a

repository of more recent historical images. The descriptions below are also presented in the animal species theme report for Erf 2074 (Leitner, 2024).

1938: The majority of the property and surrounding areas were in a natural state with limited development. Only one building was present in the northern half of the Erf. Modified vegetation was visible in the north-western corner on the site, likely for agricultural use. An access road extended to the building from the north-eastern corner of Erf 2074. Two small structures are visible at the start of this access road.

1960: A lot of vegetation clearing / habitat modification had occurred in the north-western section of Erf 2074. The neighbouring property west of Erf 2074 was also highly modified by this time. A new tree row is also visible on the north-western boundary of Erf 2074. The access road from 1938 had been altered, so that two roads split soon after entering the property; one still extended to the existing building, and another road extended further south to a patch of cleared vegetation along the western boundary of Erf 2074. For more detail on the section where the road ended in the 1960s, higher resolution imagery will need to be requested for the site from the Department of Agriculture, Land Reform, & Rural Development in Cape Town.

1974: More road networks crossed Erf 2074; however, the roads were limited to the northern half of the Erf. The field in the north-east was actively maintained for agricultural purposes. Apart from the modified section in the north-western section of Erf 2074, the majority of the vegetation was undisturbed, and did not seem to represent thicket / forest. However, in order to verify this observation of a lack of thicket and forest, higher resolution imagery will need to be requested for the site.

1990: The previously well-maintained north-western section of Erf 2074 was not being maintained by 1990, with invasive and secondary vegetation visible growing here in an adventive manner. The woody trees likely spread from the previously neat tree rows that were planted on the site and surrounding erven. The residential development east of Erf 2074 had started.

2004: Many trees in the north of the property have been cleared, including the older planted tree row (windbreak) along the north-western boundary. Invasive trees were present in the middle of the site. The southern portion of the property appears to be fynbos. All roads across the south of the site linking the neighbouring properties have been revegetated. Vegetation clearing was visible west of Erf 2074. This clearing was mainly for new roads and residential developments. The residential development east of Erf 2074 was already well established in 2004.

2010: A densification of woody vegetation occurred along the access road in the northeast of the site and around the houses. The agricultural area in the north-west had been cleared and was again being actively maintained. Woody vegetation surrounded the field by 2010. Overall, tree density in the middle of the site increased. The fynbos in the southern half of Erf 2074 seems to be split into two parts: a more open section with exposed sandstone transitioning abruptly into an older, denser section near the valley in the southern section of the site. The housing developments on both western and eastern neighbouring properties were well established.

2013: The agricultural field in the north-east had been converted to an Olive tree (*Olea europaea europaea*) orchard and was still surrounded by dense vegetation/trees. Vegetation

densification was also occurring along the access road and around the buildings on site. Many of the trees in the middle of the property had been cleared. A dirt road was visible along the entire eastern boundary of Erf 2074.

2016: Invasive woody vegetation returned to previously invaded areas relatively rapidly (within 3 years), notably around the access road, agricultural land, and houses in the north. The northern and middle sections of Erf 2074 are full of adventive vegetation, which has essentially led to the modification and transformation of vegetation there. The southern half of the site is still fynbos and seems to be relatively uninvaded. A new road was made off from the eastern boundary road, leading to a small clearing and new structure that had been constructed before the rocky steep area in the south-eastern section of the site.

2021: Increased vegetation cover across the whole site, with the sandstone outcrops in the southern half also obscured by the increased growth. The only roads are the access roads to the houses, the eastern boundary clearing/road, and the road to the structure on the southern boundary. No progress has occurred with the development/structure in the south of the property, with no change in size or shape of the structure since 2016. This is also the current state of the vegetation and land cover of Erf 2074.

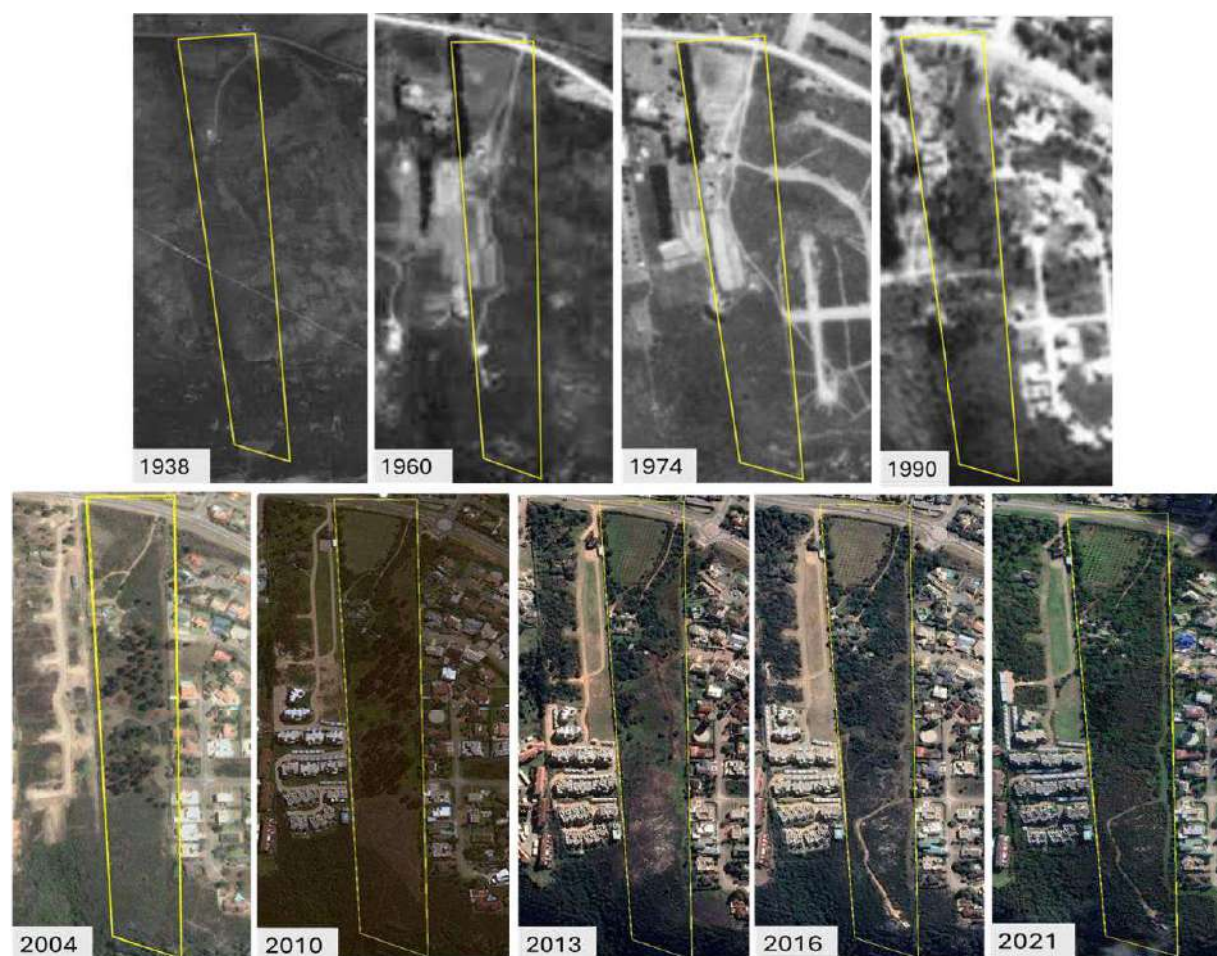


Figure 9: A series of historical imagery sourced from the CD: NGI geospatial portal (top two rows) and Google Earth (bottom two rows).

4.2 Plant Species

The plant species theme sensitivity of Medium is dependent on the presence, or likely presence, of several plant species of conservation concern (SCC). The Red List categories are discussed later in the report.

4.2.1 Species of conservation concern (SCC) listed in the screening tool.

Several SCC have the potential to occur on the site and include the following:

- *Acmadenia alternifolia*
- *Acrolophia lunata*
- *Erica glandulosa fourcadei*
- *Erica glumiflora*
- *Felicia westae*
- *Leucospermum glabrum*
- *Mimetes pauciflorus*
- *Muraltia knysnaensis*
- *Osteospermum pterigoideum*
- *Pterygodium cleistogamum*
- *Pterygodium newdigiteae*
- Sensitive species 131

4.2.2 Additional SCC that have been observed nearby on iNaturalist

- *Bartholina etheliae*
- *Brunsvigia josephinae*
- *Erica onusta*
- *Ficinia fastigiata*
- *Freesia leichtlinii*
- *Glia decidua*
- *Gnidia chrusophylla*
- *Hyobanche robusta*
- *Lampranthus pauciflorus*
- *Moraea australis*
- *Ocotea bullata*
- *Oxalis pendulifolia*
- *Protea obtusifolia*
- *Psoralea venberkelae*
- *Ruschia duthiae*
- *Selago burchellii*
- *Selago villicaulis*
- Sensitive species (unknown number #01)
- Sensitive species (unknown number #02)
- Sensitive species 1032
- Sensitive species 419
- Sensitive species 500
- Sensitive species 800

5. RESULTS: FIELD ASSESSMENT

5.1 Refined Vegetation Map & species observed

The current state of the vegetation on Erf 2074 is somewhat complex, with some sections being heavily invaded, while other sections are near pristine fynbos (Fig. 10 & 11). Historically it seems that the entire site was likely an open-canopy vegetation type – which is consistent with the South Outeniqua Sandstone Fynbos that is mapped here. The north-western section of the site has been in a transformed state for decades, and does not represent sensitive vegetation, nor are any SCCs likely to be found in highly invaded areas, like the mapped

“Dwellings & non-natural gardens” and “Invasion – mainly *Acacia melanoxylon*” (Fig. 11). Some of the senescent fynbos on the site contained thicket elements and was also somewhat invaded by wattles (*Acacia cyclops*, *A. mearnsii*, *A. melanoxylon*, *A. saligna*), pines (*Pinus radiata*), cotoneaster (*Cotoneaster glaucophyllus*), and purpletop vervains (*Verbena bonariensis*).



Figure 10: Images of the vegetation / ecosystems observed on the site.

Three species of protected trees were found on the site, and it is very likely that all three species have been planted on Erf 2074 by humans in the past (Figs. 11 & 12). The protected trees are:

- *Afrocarpus falcatus* (The Outeniqua yellowwood tree; protected tree no. 16)
- *Podocarpus latifolius* (The real yellowwood tree; protected tree no. 18)
- *Sideroxylon inerme inerme* (Milkwood tree ; protected tree no. 579)

None of the protected trees are also on the SANBI National Red List, i.e., they are all least concern (LC). One possible SCC was observed on the steep rocky outcrops along the south of the site, extending into the valley, namely the endangered (EN) *Lampranthus cf. pauciflorus* (Fig. 12). Two, likely planted, *Protea* bushes were found on the site, namely the king protea (*Protea cynaroides*) and a possible hybrid / cultivar of the grey-leaf protea (*P. cf. laurifolia*). The location of all of these plants are illustrated in Fig. 11, while images of them are in Fig. 12. Numerous invasive plant species were also observed on the site, and these are listed in the species list on Appendix 9.1. The different NEMBA categories of invasive plant species are summarised in Box 2

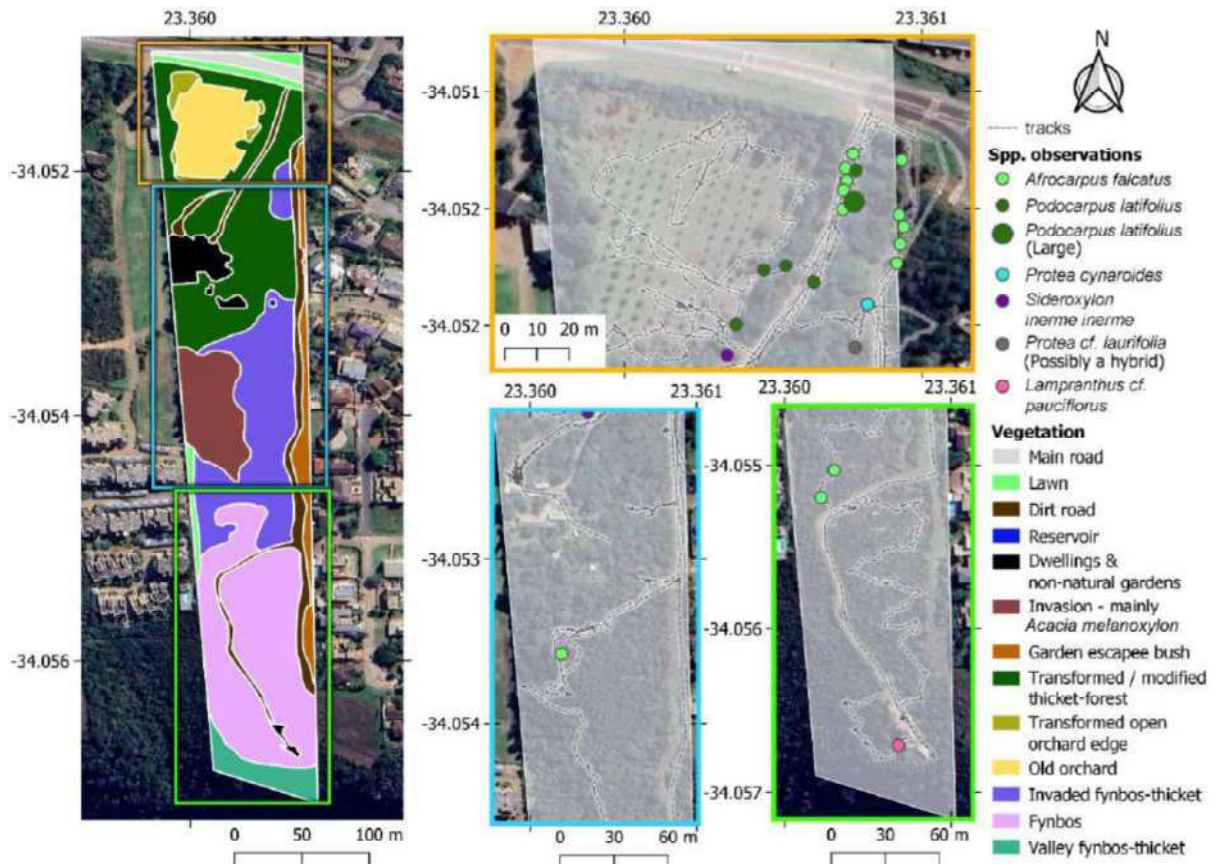


Figure 11: A revised vegetation map for Erf 2074, with the track walked and the protected trees, SCC, and planted proteas observed indicated as dots.



Figure 12: An image illustrating the three protected trees found on the site, the King protea (*P. cynaroides*), a grey-leaf protea (*P. cf. laurifolia*, likely planted), Garden Route keurbroom (*Virgilia divaricata*), and possible SCC *Lampranthus cf. pauciflorus* on the site. The photo of *A. falcatus* was not taken on the site.

BOX 2: NEMBA categories for listed invasive alien plants.

Category 1a

Species which must be combatted or eradicated.

- Immediate steps must be taken to eradicate and combat or eradicate.
- Authorised officials must be permitted to enter properties to monitor, assist with or implement the combatting or eradication.
- If an Invasive Species Management Programme has been developed, a person must combat or eradicate the listed invasive species in accordance with such programme.

Category 1b

Species which must be controlled.

- Property owners and organs of state must control the listed invasive species within their properties.
- If an Invasive Species Management Programme has been developed, a person must control the listed invasive species in accordance with such programme.
- Authorised officials must be permitted to enter properties to monitor, assist with or implement the control of listed species.
- Any Category 2 listed species (where permits are applicable) which fall outside of containment and control, revert to Category 1b and must be controlled.
- Any Category 3 listed species which occur within a Protected Area or Riparian (wetland) revert to Category 1b and must be controlled.
- The Minister may require any person to develop a Category 1b Control Plan for one or more Category 1b species occurring on a property.

Category 2

Any species listed under Category 2 requires a permit issued by the Department of Forestry, Fisheries and the Environment (DFFE) to carry out a restricted activity (See Permit Applications.)

- A permit is required to carry out any restricted activity.
- No person may carry out a restricted activity in respect of a Category 2 listed invasive species without a permit.
- A person in control of a Category 2 listed species must take all necessary measures to ensure that specimens of the species do not spread outside of the land or area, such as an aviary) specified in the permit.

Category 3

Category 3 listed invasive species are subject to certain exemptions in terms of section 70(1)(a) of the NEMBA Act, which applies to the listing of alien invasive species.

- Any category 3 listed plant species that occurs in riparian areas must be considered as category 1b and the appropriate control measures instituted.

5.2 Additional SCC that may be found

All SCC that may be present on the site have been identified using the screening tool report for the site, iNaturalist nearby observations, and the POSA database (Table 4).

Table 4: All plant SCC and protected species flagged for the site and nearby surroundings, and their probability of occurrence on the site.

Species	Common name	Family	Growth form	Source	Status	Probability of occurrence
<i>Afrocarpus falcatus</i>	Outeniqua yellowwood	Podocarpaceae	Tree	Specialist inclusion	Protected tree no. 16	Confirmed This species was on the site. Most trees were likely planted.
<i>Podocarpus latifolius</i>	Broad-leaved yellowwood	Podocarpaceae	Tree	Specialist inclusion	Protected tree no. 18	Confirmed This species was on the site. Most trees were likely planted.
<i>Sideroxylon inerme inerme</i>	Milkwood tree	Sapotaceae	Tree	Specialist inclusion	Protected tree no. 579	Confirmed This species was on the site. Most trees were likely planted.
<i>Lampranthus pauciflorus</i>	Beach brightfig	Aizoaceae	Succulent	iNaturalist	Endangered B1ab(ii,iii,iv,v)	Likely confirmed One of the <i>Lampranthus</i> species was provisionally identified as <i>L. pauciflorus</i> on the site.
<i>Acmadenia alternifolia</i>	Harkerville porcelainflower	Rutaceae	Dwarf shrub	DFFE Screening tool	Vulnerable B1ab(ii,iii,iv)+2ab(ii,iii,iv)"	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Acrolophia lunata</i>	Pale Cinderella Orchid	Orchidaceae	Geophyte	DFFE Screening tool	Endangered B1ab(ii,iii,v); D	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Erica glandulosa subsp. fourcadei</i>	Ridges glandular heath	Ericaceae	Shrub	DFFE Screening tool	Vulnerable B1ab(ii,iii,iv,v)	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Erica glumiflora</i>	Gloomy heath	Ericaceae	Shrub	DFFE Screening tool	Vulnerable B1ab(i,ii,iii,iv,v)	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Freesia leichtlinii</i>	Dune kammetjie	Iridaceae	Geophyte	iNaturalist	Near Threatened B1ab(ii,iii,iv,v)	High This species is common in coastal sand and limestone fynbos, preferring rocky areas. Rocky outcrops were abundant on the site.
<i>Gnidia chrysophylla</i>	Gold capesaffron	Thymelaceae	Perennial	iNaturalist	Near Threatened B1ab(i,ii,iii,iv,v)	High Found in coastal flats in fynbos. It is possible that this species could occur in the fynbos on Erf 2074
<i>Muraltia knysnaensis</i>	Garden Route purplegorse	Polygalaceae	Perennial	DFFE Screening tool	Endangered B1ab(ii,iii,iv,v)	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Osteospermum pterigoideum</i>	Boneseed daisies	Asteraceae	Shrub	DFFE Screening tool	Endangered B1ab(ii,iii,v)+2ab(ii,iii,v)	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Oxalis pendulifolia</i>	Hangleaf sorrel	Oxalidaceae	Herbaceous perennial	iNaturalist	Near Threatened B1ab(ii,iii,iv,v)	High This species could be present in the fynbos sections of Erf 2074

					v)+2ab(ii,iii,iv,v)	
<i>Protea obtusifolia</i>	Limestone Sugarbush	Proteaceae	Shrub	iNaturalist	Near Threatened A2c+3c+4c	High Limestone pavements and outcrops on coastal forelands, 0-200 m. This species could be present on the site.
<i>Psoralea venberkelae</i>	Nicky's Fountainbush	Fabaceae	Large shrub	iNaturalist	Vulnerable D2	High This species is restricted to a narrow strip of sandstone fynbos remaining above coastal cliffs. It could be present in the southern fynbos on Erf 2074.
<i>Pterygodium cleistogamum</i>	Blind bonnet	Orchidaceae	Geophyte	DFFE Screening tool	Vulnerable B1ab(ii,iii)	High This species occurs in South Outeniqua Sandstone Fynbos and could likely be on the site.
<i>Bartholina etheliae</i>	Club spider orchid	Orchidaceae	Geophytic ground orchid	iNaturalist	Global IUCN: Vulnerable D2; SANBI regional listing: LC	Medium Following the precautionary principle, it is conceivable that this species could occur in the fynbos in the southern half of the property.
<i>Curtisia dentata</i>	Assegai tree	Curtisiaceae	Tree	Specialist inclusion	Protected tree 570; Near Threatened A2d	Medium This species could be present in the forest / thicket vegetation on the site.
<i>Erica onusta</i>	Heath species	Ericaceae	Shrub	iNaturalist	Critically Endangered B1ab(iii,v)	Medium This species has a highly restricted range and is found between coastal fynbos and forest. Following the precautionary principle, it is conceivable that it may be on the site.
<i>Hyobanche robusta</i>	Garden Route Cat's Nails	Orobanchaceae	Root parasite	iNaturalist	Endangered B1ab(ii,iii,v)	Medium Found in deep coastal dune systems. Following the precautionary principle, it is conceivable that this species might be on the site.
<i>Moraea australis</i>	Southern glassstulp	Iridaceae	Geophyte	iNaturalist	Near Threatened B1b(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)	Medium Found in coastal dunes in fynbos. Following the precautionary principle, it is conceivable that this species might be on the site.
<i>Ocotea bullata</i>	Stinkwood	Lauraceae	Tree	DFFE Screening tool	Protected tree 118; Endangered A2bd	Medium It is conceivable that this tree species might be present in the thicket-forest sections of the site.
<i>Pterygodium newdigiteae</i>	Bonnet species	Orchidaceae	Geophyte	DFFE Screening tool	Critically Endangered (Possibly Extinct)	Medium Following the precautionary principle, this species could be present on the site.
<i>Ruschia duthiae</i>	Tentfigs	Aizoaceae	Succulent	iNaturalist	Vulnerable B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v)	Medium Gentle north-facing sandstone or shale slopes with grassy fynbos. Following the precautionary principle, it is conceivable that this species might be on the site.
<i>Selago burchellii</i>	Garden route bitterbush	Scrophulariaceae	Herbaceous perennial	DFFE Screening tool	Vulnerable B1ab(ii,iii,iv,v)	Medium Gentle north-facing sandstone or shale slopes with grassy fynbos. Following the precautionary principle, it is conceivable that this species might be on the site.

<i>Selago villicaulis</i>	Dune bitterbush	Scrophulariaceae	Herbaceous perennial	iNaturalist	Vulnerable B1ab(ii,iii,iv,v)	Medium This species is in coastal fynbos and thicket. Following the precautionary principle, it is conceivable that this species might be on the site.
Sensitive species (unknown number #01)	-	-	-	iNaturalist	Near Threatened B1ab(ii,iii,iv,v)	Medium Found in coastal & Afromontane forest. This species could be on the site.
Sensitive species (unknown number #02)	-	-	-	iNaturalist	Vulnerable A2cd	Medium Found in coastal & Afromontane forest. This species could be on the site.
Sensitive species 1032	-	-	-	iNaturalist	Vulnerable C2a(i)	Medium Found close to the shoreline. Following the precautionary principle, it is conceivable that this species might be on the site.
Sensitive species 131				DFFE Screening tool	Critically Endangered (Possibly Extinct)	Medium This species is found in South Outeniqua Sandstone Fynbos, but it is possibly extinct.
Sensitive species 419	-	-	-	iNaturalist	Vulnerable B1ab(iii,v)+2ab(iii,v)	Medium Found in coastal & Afromontane forest. This species could be on the site.
Sensitive species 500	-	-	-	DFFE Screening tool	Endangered C2a(i)	Medium Found in lowland sandy flats. Following the precautionary principle, it is conceivable that this species might be on the site.
Sensitive species 800	-	-	-	DFFE Screening tool	Vulnerable B1ab(iii)	Medium Following the precautionary principle, it is conceivable that this species might be on the site.
<i>Felicia westae</i>	River felicia	Asteraceae	Perennial	DFFE Screening tool	Endangered B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)	Low Found near streambanks near the coast
Sensitive species (unknown number #03)	Josephines Candelabra	Amaryllidaceae	Geophyte	iNaturalist	Vulnerable A2c; C2a(i)	Low This species is associated with renosterveld more than fynbos. The likelihood of its presence on Erf 2074 is relatively low.
<i>Ficinia fastigiata</i>	Vlei clubrush	Cyperaceae	Graminoid	iNaturalist	Vulnerable D2	Very Low Erf 2074 is far outside of the range for this species
<i>Glia decidua</i>	Swartland gli	Apiaceae	Perennial	iNaturalist	Near Threatened B1ab(i,ii,iii,iv,v)	Very Low Erf 2074 is far outside of the range for this species
<i>Leucospermum glabrum</i>	Outeniqua pincushion	Proteaceae	Shrub	DFFE Screening tool	Endangered B1ab(iii,v)c(iv)+2ab(iii,v)c(iv); C2a(i)	Very Low Usually found in the mountains
<i>Mimetes pauciflorus</i>	Treeflower pagoda	Proteaceae	Shrub	DFFE Screening tool	Vulnerable A2c+3c+4c	Very Low Usually found in the mountains

6. SITE SENSITIVITY VERIFICATION

6.1 Terrestrial Biodiversity

The terrestrial biodiversity theme sensitivity is confirmed to be (Fig. 13):

- **Low** for the northern half of Erf 2074 (i.e., sections not classified as “fynbos” or “valley fynbos-thicket”), and
- **Very High** for the southern half (the sections classified as “fynbos” or “valley fynbos-thicket”).

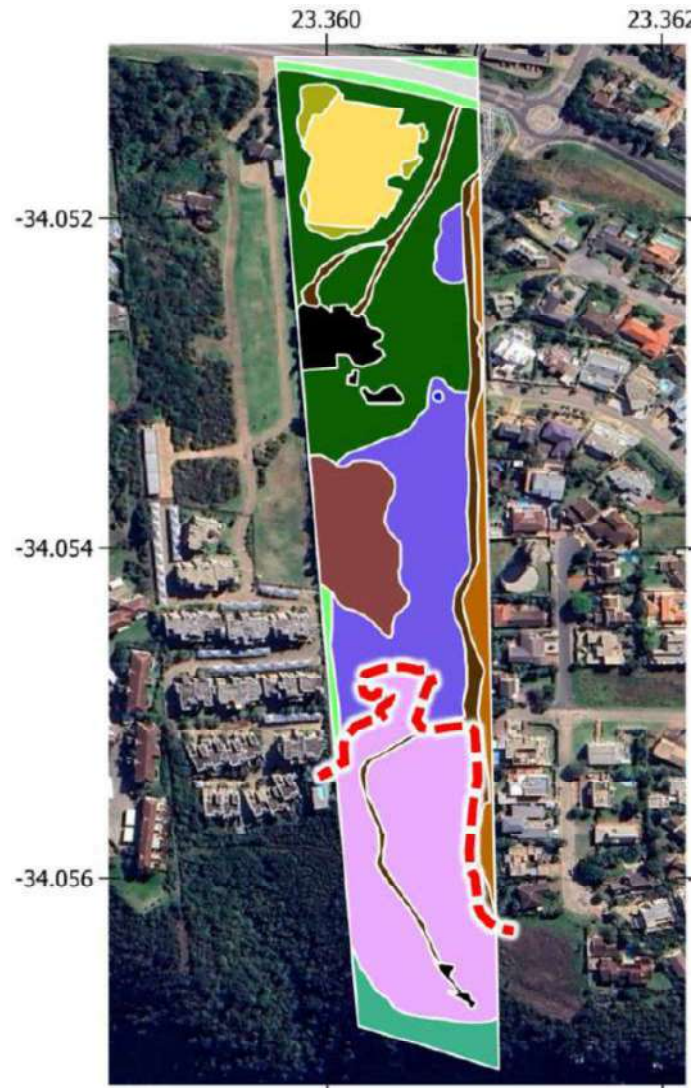


Figure 13: The site sensitivity is divided into a northern and southern half, which is divided based on the vegetation mapped on the site. The division of the site is illustrated here by the red dotted line.

Table 5 summarises the reason for the sensitivity assigned to the site:

Table 5: The original triggers for the terrestrial biodiversity theme sensitivity provided in the Screening tool report evaluated for the northern and southern halves of Erf 2074 respectively. Grey entries represent reasons that do not apply to the site, and green entries do apply to the site.

Sensitivity layer	Northern Half of Erf 2074	Southern half of Erf 2074
Critical Biodiversity Areas (CBAs)	None mapped	The southernmost section on fynbos and steep valley are past of a terrestrial CBA 1 area.
Ecological Support Areas (ESAs)	A thin section of ESA 1 & 2 is mapped along the western boundary of the site, but this is on a transformed lawn that borders an established, permanent, residential development.	A thin section of ESA 1 & 2 is mapped along the western boundary of the site, and this coincides with the valley below the residential development west of Erf 2074. The valley should remain protected and represents more sensitive habitat.
SAN Parks Buffer Areas	The buffer is 10km wide, and the site is almost 10km away from the Garden Route National Park. The northern half of the site is highly modified and has limited connectivity to the surrounding landscape & habitats.	The buffer is 10km wide, and the site is almost 10km away from the Garden Route National Park. However, the southern half of the site is connected to the larger natural valley below, which is a functional ecological corridor.
Freshwater Ecosystem Catchments (terrestrial)	The only water resource here is the artificial reservoir. Erf 2074 does not have areas that directly add to FEPA. Refer to the aquatic specialist report.	The Piesang River is south of Erf 2074 in the valley. Erf 2074 does not have areas that directly add to FEPA. Refer to the aquatic specialist report.

6.2 Botanical Diversity

- No SCC were observed in the northern half of the site, nor are any highly likely to occur there, mainly due to the adventive nature of the vegetation growing there. The protected tree species observed here area all likely planted. The northern half (i.e., sections not classified as “fynbos” or “valley fynbos-thicket”) of the site has a **Low** botanical theme sensitivity, provided that the relevant forestry license is obtained to trim, remove, or alter these protected trees if necessary.
- One SCC is confirmed in the fynbos habitat on the site (i.e., *Lampranthus cf. pauciflorus*), and several other SCC have been evaluated to have a high likelihood of occurrence in the fynbos habitat. The southern half (i.e., sections classified as “fynbos” or “valley fynbos-thicket”) of the site is therefore confirmed to have a **High** plant species theme sensitivity.

7. CONCLUSION & RECOMMENDATIONS

Erf 2074 contains a complex mixture of vegetation and ecosystems, ranging from highly modified and transformed, to near natural fynbos. Some recommendations to consider for the future site development plan would be:

1. Alien and invasive vegetation on the site needs to be strategically cleared according to an alien management and eradication plan. The most serious invasion on the site is Blackwood wattles (*A. melanoxyton*), and although focus should be paid to clearing the dense invasion on the site, the first priority should be ensuring the fynbos on the site is clear of encroaching invasive and alien species.
2. Erf 2074 is a narrow strip of vegetation left in a wider residential area. The only connectivity to a wider natural area is along the southern boundary of the site where it connects to the valley below. Development should therefore be avoided in the southern half of the site – which also contains the most pristine vegetation on the site.
3. The northern boundary of the site could be fenced to reduce issues with vagrants making use of and living on the site. The southern boundary of Erf 2074 should preferably remain unfenced.
4. The proposed residential development should be concentrated in the northern half of the Erf, away from the relatively natural fynbos in the southern half of the site. This development should try to conserve indigenous and protected trees by marking them off during construction (Fig. 14). The residential development should preferably also not be high density, with minimal to no lawns permitted between houses.



Figure 14: Images of a construction site where protected and indigenous trees were marked and protected on the site.

5. The remaining fynbos remnant on this erf is relatively unique, given that all the surrounding erven have been developed, resulting in a loss of habitat outside of the valley below. The fynbos on the site provides some ecosystem heterogeneity and may be an important habitat for some species (see the animal specialist report). Although the fynbos in the site is least threatened (LT).
6. Planted gardens should be avoided, especially in the fynbos section in the southern half of the site.

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9. APPENDIX

9.1 Provisional Plant Species List

A species accumulation curve for all the species recorded on the site during the assessment are presented in Fig. 15. All species that were observed during the site visit are in Table 6. The site assessment species list is not exhaustive. Species that were not identified to species level on the site are illustrated in Fig. 16.

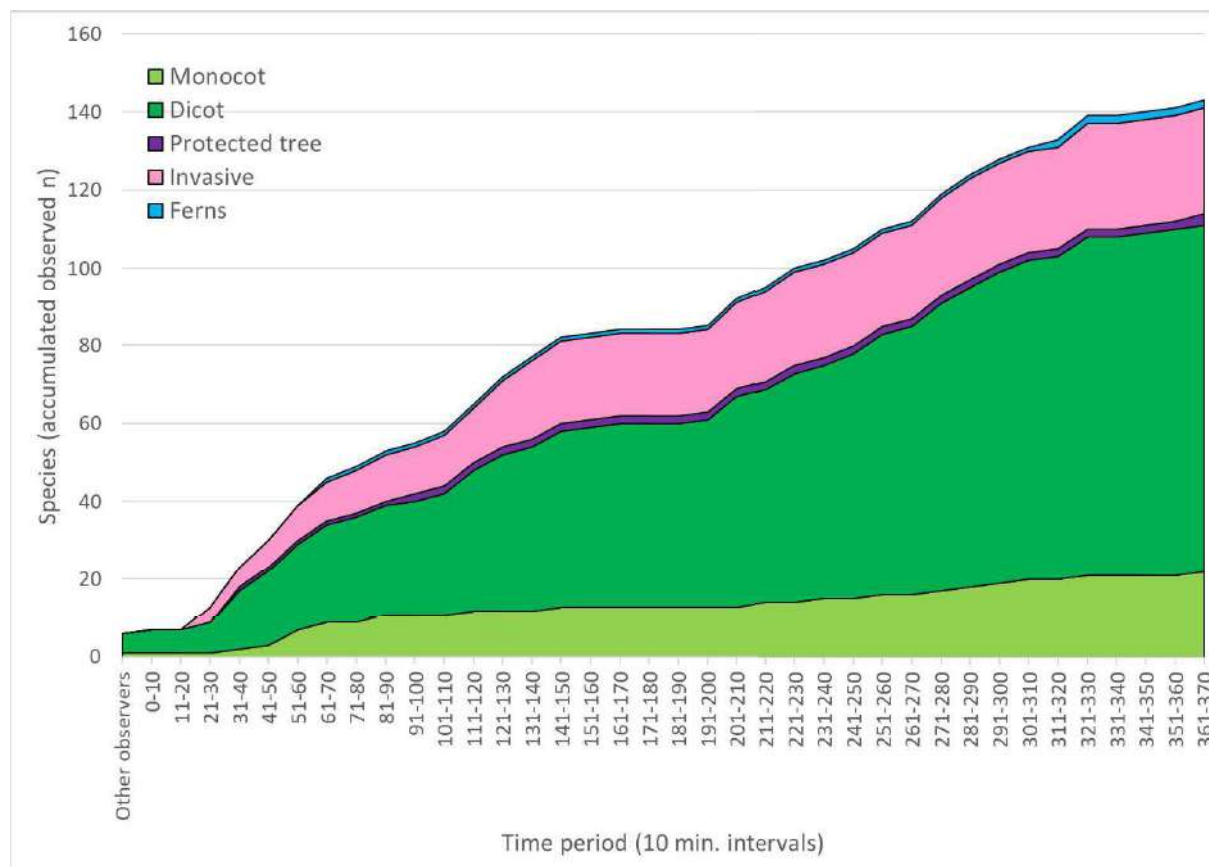


Figure 15: A plant species accumulation curve for the site assessment.

Table 6: A provisional species list made for plants found during the site assessment on Erf 2074. The orange species are naturalised exotic plants, and red rows are listed invasive species. In green are the protected tree species, and the purple entry is the potential SCC on the site.

Family	Species	Common name	Found in fynbos in Southern half of site? & Information
Liliopsida (Monocots)			
Amaryllidaceae	<i>Agapanthus praecox</i>	blue lily	Yes
Amaryllidaceae	<i>Tulbaghia violacea</i>	Society Garlic	No
Asparagaceae	<i>Agave angustifolia</i>	Caribbean Agave	No. Naturalised exotic from central & south America. <i>A. sisiana</i> is an invasive species
Asparagaceae	<i>Albuca sp.</i>	Slimelilies	Yes
Asparagaceae	<i>Asparagus aethiopicus</i>	African Asparagus	No
Asphodelaceae	<i>Bulbine latifolia</i>	Waterglass Kopieva	No
Commelinaceae	<i>Commelina africana</i>	African Yellow Dayflower	No Naturalised exotic from sub-saharan Africa & Madagascar.
Commelinaceae	<i>Commelina benghalensis</i>	tropical spiderwort	Yes Naturalised exotic from Bangladesh & India
Cyperaceae	<i>Cyperus albostrigatus</i>	Dwarf striped umbrella sedge	No
Cyperaceae	<i>Cyperus congestus</i>	Purple Umbrella Sedge	No
Cyperaceae	<i>Cyperus erectus</i>	Cyperus species	Yes
Cyperaceae	<i>Epischoenus sp.</i>	Schoenus "Epischoenus" Group	No
Hypoxidaceae	<i>Hypoxis cf. argentea</i>	Stargrasses	Yes
Iridaceae	<i>Bobartia aphylla</i>	Garden Route Rushiris	No
Iridaceae	<i>Gladiolus maculatus</i>	Speckle-brown Afrikaner	No
Orchidaceae	<i>Monadenia</i>	Monadisas	Yes
Poaceae	<i>Cenchrus clandestinus</i>	Kikuyu Grass	No Invasive plant from North Africa NEMBA cat. 1b CARA cat. 1
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	No
Poaceae	<i>Eragrostis curvula</i>	African love grass	Yes
Poaceae	<i>Lagurus ovatus</i>	Hare's Tail Grass	Yes Naturalised exotic from The Mediterranean
Poaceae	<i>Megathyrsus maximus</i>	guinea grass	No
Poaceae	<i>Melinis repens</i>	Natal grass	Yes
Poaceae	<i>Sporobolus africanus</i>	Parramatta Grass	No
Poaceae	<i>Stenotaphrum secundatum</i>	Saint Augustine grass	No
Restionaceae	<i>Restio eleocharis</i>	Beach Pegreed	Yes
Restionaceae	<i>Restio triticeus</i>	Wheat Capereed	No
Thurniaceae	<i>Prionium serratum</i>	Palmiet	No

Magnoliopsida (Dicots)			
Aizoaceae	<i>Carpobrotus sp.</i>	sea figs	No
Aizoaceae	<i>Delosperma neethlingiae</i>	Sheepfig species	No
Aizoaceae	<i>Lampranthus cf. pauciflorus</i>	dewplants	Yes
Aizoaceae	<i>Mesembryanthemum aitonis</i>	Coast Solfig	No
Anacardiaceae	<i>Searsia chirindensis</i>	Red Currant-rhus	Yes
Anacardiaceae	<i>Searsia glauca</i>	Blue Kunibush	No
Anacardiaceae	<i>Searsia lucida</i>	Glossy Curranthus	No
Anacardiaceae	<i>Searsia pallens</i>	Ribbed Kunirhus	No
Anacardiaceae	<i>Searsia refracta</i>	Roughleaf Curranthus	Yes
Anacardiaceae	<i>Searsia rehmanniana</i>	Bluntleaf Curranthus	Yes
Apiaceae	<i>Anginon difforme</i>	Common Finkel	No
Apiaceae	<i>Centella asiatica</i>	Gotu Cola	No Naturalised exotic from Asia
Apiaceae	<i>Centella virgata</i>	Branching Capepurse	No
Apiaceae	<i>Lichtensteinia interrupta</i>	Kalmoes species	Yes
Apocynaceae	<i>Carissa macrocarpa</i>	Natal Plum	No
Apocynaceae	<i>Cynanchum obtusifolium</i>	Roundleaf Buckhorn	No
Asteraceae	<i>Arctotheca prostrata</i>	Prostrate Capeweed	No
Asteraceae	<i>Bidens pilosa</i>	Hairy Beggarticks	No Naturalised exotic from South America
Asteraceae	<i>Cirsium vulgare</i>	Bull Thistle	No Invasive plant from Europe, Asia, & North Africa NEMBA cat. 1b CARA cat. 1
Asteraceae	<i>Curio crassulifolius</i>	Blue Fingers	No
Asteraceae	<i>Delairea odorata</i>	Cape-ivy	No
Asteraceae	<i>Euryops virgineus</i>	Virgin True-Eye	Yes
Asteraceae	<i>Gerbera serrata</i>	Strap Gerbera	No
Asteraceae	<i>Helichrysum cymosum</i>	Fume Everlasting	No
Asteraceae	<i>Helichrysum felinum</i>	Strawberry Everlasting	No
Asteraceae	<i>Helichrysum nudifolium</i>	Icholocholo	Yes
Asteraceae	<i>Helichrysum odoratissimum</i>	Kooigoed Everlasting	No
Asteraceae	<i>Helichrysum petiolare</i>	Licorice plant	No
Asteraceae	<i>Helichrysum rugulosum</i>	Wrinkly Everlasting	Yes
Asteraceae	<i>Metalasia densa</i>	Fynbos Blombush	No
Asteraceae	<i>Metalasia muricata</i>	White bristle bush	No
Asteraceae	<i>Metalasia pungens</i>	Stink Blombush	Yes
Asteraceae	<i>Metalasia trivialis</i>	Eastern Blombush	Yes
Asteraceae	<i>Nidorella ivifolia</i>	Ivy Vleiweed	No
Asteraceae	<i>Oedera calycina</i>	Perdekaroo species	No
Asteraceae	<i>Osteospermum moniliferum</i>	Bietou	Yes
Asteraceae	<i>Senecio crenatus</i>	Langeberg Ragwort	No
Asteraceae	<i>Senecio ilicifolius</i>	Kowanna Ragwort	Yes
Asteraceae	<i>Taraxacum officinale</i>	common dandelion	Yes

			Naturalised exotic from Eurasia & North America
Asteraceae	<i>Tarchoanthus littoralis</i>	Coastal Camphorbush	No
Asteraceae	<i>Ursinia sp.</i>	Paraseeds	No
Bignoniaceae	<i>Tecomaria capensis</i>	Cape Honeysuckle	No
Campanulaceae	<i>Lobelia tomentosa</i>	Woolly Lobelia	No
Campanulaceae	<i>Wahlenbergia desmantha</i>	Capebell species	No
Celastraceae	<i>Gymnosporia nemorosa</i>	White Forest Spikethorn	No
Celastraceae	<i>Pterocelastrus tricuspidatus</i>	Candlewood	Yes
Convolvulaceae	<i>Dichondra repens</i>	kidney weed	Yes Naturalised exotic from Australis & New Zealand
Crassulaceae	<i>Crassula cf. cultrata</i>	Subgenus Crassula	No
Crassulaceae	<i>Crassula rubricaulis</i>	Redstem Stonecrop	No
Ebenaceae	<i>Diospyros dichrophylla</i>	Poison Starapple	No
Ebenaceae	<i>Euclea crispa</i>	Blue Gwarrie	No
Ericaceae	<i>Erica discolor</i>	Discolorous Heath	Yes
Ericaceae	<i>Erica peltata</i>	Shield Heath	No
Euphorbiaceae	<i>Acalypha ecklonii</i>	Copperleaf species	Yes
Fabaceae	<i>Acacia cyclops</i>	western coastal wattle	No Invasive plant from Australia NEMBA cat. 1b CARA cat. 2
Fabaceae	<i>Acacia mearnsii</i>	black wattle	No Invasive plant from Australia NEMBA cat. 2 CARA cat. 2
Fabaceae	<i>Acacia melanoxylon</i>	blackwood	No Invasive plant from Australia NEMBA cat. 2 CARA cat. 2
Fabaceae	<i>Acacia saligna</i>	golden wreath wattle	No Invasive plant from Australia NEMBA cat. 1b CARA cat. 2
Fabaceae	<i>Argyrolobium molle</i>	Soft Silverpod	No
Fabaceae	<i>Argyrolobium tomentosum</i>	Velvet Silverpod	Yes
Fabaceae	<i>Aspalathus alopecurus</i>	Foxtail Capegorse	Yes
Fabaceae	<i>Dipogon lignosus</i>	Okie bean	Yes
Fabaceae	<i>Indigofera heterophylla</i>	Diverse Indigo	Yes
Fabaceae	<i>Indigofera pappi</i>	Slender Indigo	No
Fabaceae	<i>Podalyria myrtillifolia</i>	Myrtle Capesweetpea	No
Fabaceae	<i>Psoralea stachyera</i>	Spike Dottypea	No
Fabaceae	<i>Schizolobium parahyba</i>	Brazilian fern tree	No
Fabaceae	<i>Tephrosia capensis</i>	Cape Hoarypea	No
Fabaceae	<i>Virgilia divaricata</i>	Gardenroute Keurboom	Yes

Gentianaceae	<i>Chironia baccifera</i>	Christmas Berry	Yes
Geraniaceae	<i>Pelargonium alchemilloides</i>	Mantle Storksbill	No
Geraniaceae	<i>Pelargonium candicans</i>	Velvet Storksbill	No
Geraniaceae	<i>Pelargonium zonale</i>	horseshoe geranium	No
Lamiaceae	<i>Coleus barbatus</i>	Woolly Plectranthus	No Naturalised exotic from The Caribbean
Lamiaceae	<i>Leonotis ocymifolia</i>	Rock Lionspaw	No
Lamiaceae	<i>Mentha arvensis</i>	corn mint	No
Lamiaceae	<i>Salvia chamelaeagnea</i>	Rough blue sage	Yes
Malvaceae	<i>Grewia occidentalis</i>	Crossberry	No
Malvaceae	<i>Hermannia flammea</i>	Flaming Dollsrose	No
Malvaceae	<i>Hibiscus trionum</i>	flower-of-an-hour	No Naturalised exotic from Europe
Meliaceae	<i>Ekebergia capensis</i>	Cape Ash	No
Moraceae	<i>Ficus sp.</i>	Figs	Yes
Phytolaccaceae	<i>Phytolacca octandra</i>	Inkweed	No Invasive plant from The Americas NEMBA cat. 1b Not on CARA
Pittosporaceae	<i>Pittosporum undulatum</i>	Australian Cheesewood	No Invasive plant from NEMBA cat. CARA cat.
Polygalaceae	<i>Polygala myrtifolia</i>	Sweet Pea Shrub	Yes
Primulaceae	<i>Lysimachia arvensis</i>	scarlet pimpernel	No Naturalised exotic from Europe
Primulaceae	<i>Myrsine africana</i>	African Boxwood	No
Primulaceae	<i>Rapanea melanophloeos</i>	Cape beech	Yes
Proteaceae	<i>Leucadendron salignum</i>	Common Sunshine Conebush	No
Proteaceae	<i>Protea cf. laurifolia</i> (hybrid)	Sugarbushes	Yes
Proteaceae	<i>Protea cynaroides</i>	King Protea	No
Rosaceae	<i>Cliffortia linearifolia</i>	Stream Caperose	Yes
Rosaceae	<i>Cliffortia serpyllifolia</i>	Tangle Caperose	No
Rosaceae	<i>Cotoneaster glaucophyllus</i>	Bright bead cotoneaster	No Invasive plant from NEMBA cat. 1b Not on CARA
Rosaceae	<i>Eriobotrya japonica</i>	Loquat	No Invasive plant from NEMBA cat. CARA cat.
Rosaceae	<i>Rubus rigidus</i>	White Bramble	No
Rubiaceae	<i>Anthospermum aethiopicum</i>	Tall Flowerseed	No
Rutaceae	<i>Agathosma ovata</i>	False Buchu	No
Rutaceae	<i>Vepris lanceolata</i>	white-ironwood	No

Salicaceae	<i>Trimeria grandifolia</i>	Roundleaf Wild-Mulberry	Yes
Santalaceae	<i>Colpoon compressum</i>	Cape Sumach	No
Santalaceae	<i>Hagnothesium sp.</i>	Fours Rootthugs	Yes
Sapotaceae	<i>Sideroxylon inerme inerme</i>	Southern White Milkwood	No Protected tree no.
Scrophulariaceae	<i>Myoporum laetum</i>	Ngaio	No Invasive plant from NEMBA cat. CARA cat.
Scrophulariaceae	<i>Selago canescens</i>	Skinny Bitterbush	No
Scrophulariaceae	<i>Selago corymbosa</i>	Stiff Bitterbush	No
Solanaceae	<i>Datura stramonium</i>	jimsonweed	No Invasive plant from NEMBA cat. CARA cat.
Thymelaeaceae	<i>Passerina corymbosa</i>	Common Gonna	No
Thymelaeaceae	<i>Passerina falcifolia</i>	Weeping Gonna	No
Verbenaceae	<i>Lantana camara</i>	common lantana	Yes Invasive plant from NEMBA cat. CARA cat.
Verbenaceae	<i>Verbena bonariensis</i>	purpletop vervain	No Invasive plant from NEMBA cat. CARA cat.
Pinopsida			
Pinaceae	<i>Pinus radiata</i>	Monterey pine	No Invasive plant from NEMBA cat. CARA cat.
Podocarpaceae	<i>Afrocarpus falcatus</i>	Outeniqua yellowwood	Yes Protected tree no.
Podocarpaceae	<i>Podocarpus latifolius</i>	real yellowwood	No Protected tree no.
Polypodiopsida			
Nephrolepidaceae	<i>Nephrolepis cordifolia</i>	Fishbone Fern	No Invasive plant from NEMBA cat. CARA cat.
Pteridaceae	<i>Cheilanthes viridis</i>	Green Cliff Brake	Yes
Schizaeaceae	<i>Schizaea pectinata</i>	Toothbrush Fern	No



Figure 16: Photos of the unidentified / uncertain species identifications on Erf 2074.