

Compliance Statement for Erf 7379 in Pacaltsdorp, George

Specialist Plant Species and Terrestrial Biodiversity Report



Prepared For: Cape EAPrac

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ABBREVIATIONS

BPA	Biodiversity Priority Area
WC BSP	Western Cape Biodiversity Spatial Plan
CBA	Critical Biodiversity Area
CD:NGI	Chief Directorate: National Geo-spatial Information
DFFE	Department of Forestry, Fisheries and the Environment
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
GRI	Garden Route Initiative
NEM:BA	National Environmental Management: Biodiversity Act
NVM	National Vegetation Map
POSA	Plants of Southern Africa
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SEI	Site Ecological Importance
SWSA	Strategic Water Source Area

DECLARATION OF SPECIALIST INDEPENDENCE

The consulting services comprise an assessment of the potential sensitivity of the ecosystems and flora that fall within the development footprint for the site. The following declaration is given by the appointed specialist:

- 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 field assessment and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this report has reference to, except for financial compensation for work done in a professional capacity.
- Work performed for this site was done in an objective manner. Even if this 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.
- I do not have any influence over decisions made by the governing authorities.
- I undertake to disclose all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by a competent authority to such a relevant authority and the applicant.
- I have the necessary qualifications and guidance from professional experts in conducting specialist reports relevant to this application, including knowledge of the relevant Act, regulations and any guidelines that have relevance to the proposed activity.
- This document and all information contained herein is and will remain the intellectual property of Confluent Environmental. This document, in its entirety or any portion thereof, may not be altered in any manner or form, for any purpose without the specific and written consent of the specialist investigators.
- All the particulars furnished by me in this document are true and correct.



Bianke Fouche (MSc Conservation Biology)

Signed: 25 November 2024

BIANKE FOUCHÉ ABRIDGED CV

Qualifications

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

SACNASP Registration No: 141757 (Professional Botanical; Candidate Ecological)

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.

References

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1. INTRODUCTION

1.1 Background

Confluent Environmental was appointed by Cape EAPrac on behalf of the applicant to provide Botanical and Terrestrial Biodiversity specialist inputs for the proposed development on Erf 7379 in Pacaltsdorp, George. The Terrestrial Plant Species and Terrestrial Biodiversity Themes in this report are assessed according to the environmental protocols (Protocols for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impact Assessments, 2020). The scope of work for this report is guided by the legislative requirements of the National Environmental Management Act (NEMA; Act No. 108 of 1998).

Erf 7379 is located south of the N2 highway, bordered on the northern side by Church Street. It is bordered on the east by Erf 2558. Mission Road forms the southern boundary. The site is bordered on the west by the Beach Road. The property area is ca. 4664 sqm. The location of the Erf is illustrated in Fig. 1 alongside SANBI ecosystem remnants. The red critically endangered (CR) vegetation in Fig. 1 represents Garden Route Granite Fynbos remnants.

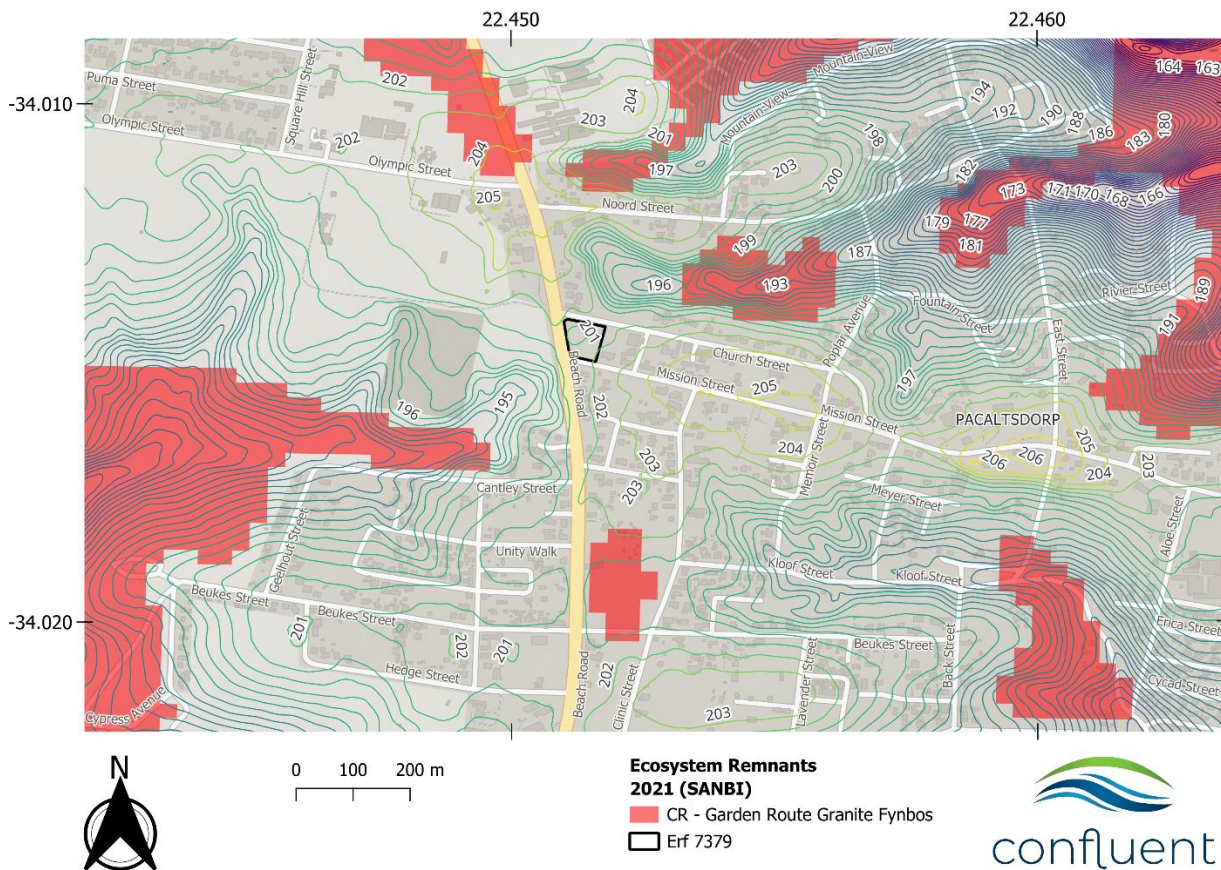


Figure 1: The location of Erf 7379 in relation to mapped 2021 ecosystem remnants (produced by SANBI).

1.2 Screening Tool

According to the Department of Forestry, Fisheries, and the Environment (DFFE) Screening Tool, this report is required because the Terrestrial Plant Species theme has been highlighted as having a **Medium** sensitivity, and the terrestrial biodiversity has an overall **Very High** sensitivity (Fig. 2).



Figure 2: The Screening Tool sensitivity maps produced for the terrestrial plant species theme and terrestrial biodiversity theme.

For plant species, a Medium sensitivity indicates that models predict the occurrence of some species of conservation concern (SCC), although there are no confirmed populations. In this case, the plant SCC that were highlighted by the Screening Tool were:

- *Diosma passerinoides*
- *Euchaetis albertiniana*
- *Lampranthus pauciflorus*
- *Leucospermum glabrum*
- Sensitive species 500
- Sensitive species 800
- Sensitive species 1024
- Sensitive species 1032

The following definition is given in the Species Environmental Assessment Guideline (Verburgt et al., 2020) for a Medium plant species theme sensitivity:

“Model-derived suitable habitat areas for threatened and/or rare species are included in the medium sensitivity level. Two types of spatial models have been included. The first is a simple rule-based habitat suitability model where habitat attributes such as vegetation type and altitude are selected for all areas where a species has been recorded to occur. The second is a species distribution model which uses species occurrence records combined with multiple environmental variables to quantify and predict areas of suitable habitat. The models provide a probability-based distribution indicating a continuous range of habitat suitability across areas that have not been previously surveyed. A probability threshold of 75% for suitable habitat has been used to convert the modelled probability surface and reduce it into a single spatial area which defines areas that fall within the medium sensitivity level.”

A Very High sensitivity rating for Terrestrial Biodiversity 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 1.

Table 1: Sources of BPA data for the Terrestrial Biodiversity Theme sensitivity (Stewart et al., 2021).

Sensitivity layer	Data included and source
Strategic Water Source Areas for surface water	Surface strategic water source areas, delineated by Mervyn Lotter in October 2020 with substantial input from the SWSA spatial task team as part of the SWSA spatial task team. Note that the protocol only applies to the terrestrial parts of the SWSAs. Mapped within the proposed development footprint is the Outeniqua SWSA-sw.
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. Mapped within the proposed development footprint is the Garden Route National Park 10km wide buffer.
Red Listed Ecosystems	Any ecosystem that is listed as Vulnerable, Endangered, or Critically Endangered according to the “Revised National List of Ecosystems that are Threatened and in Need of Protection (NEM:BA Act no.10 of 2004, as amended in November 2022). Mapped within the proposed development footprint is critically endangered (CR) Garden Route Granite Fynbos.

1.3 Development Description

The proposed development on Erf 7379 is for a filling station combined with a drive through and a line shop. The details of the development planned is presented in Fig. 3. The current zoning of the site is Single Residential Zone 1. The topography of the site is defined by the existing stormwater furrow creating a valley terrain. The north-western section (i.e., the majority of the Erf) of the Erf falls from north-west to south-east, and the south-eastern section from south-east to north-west.

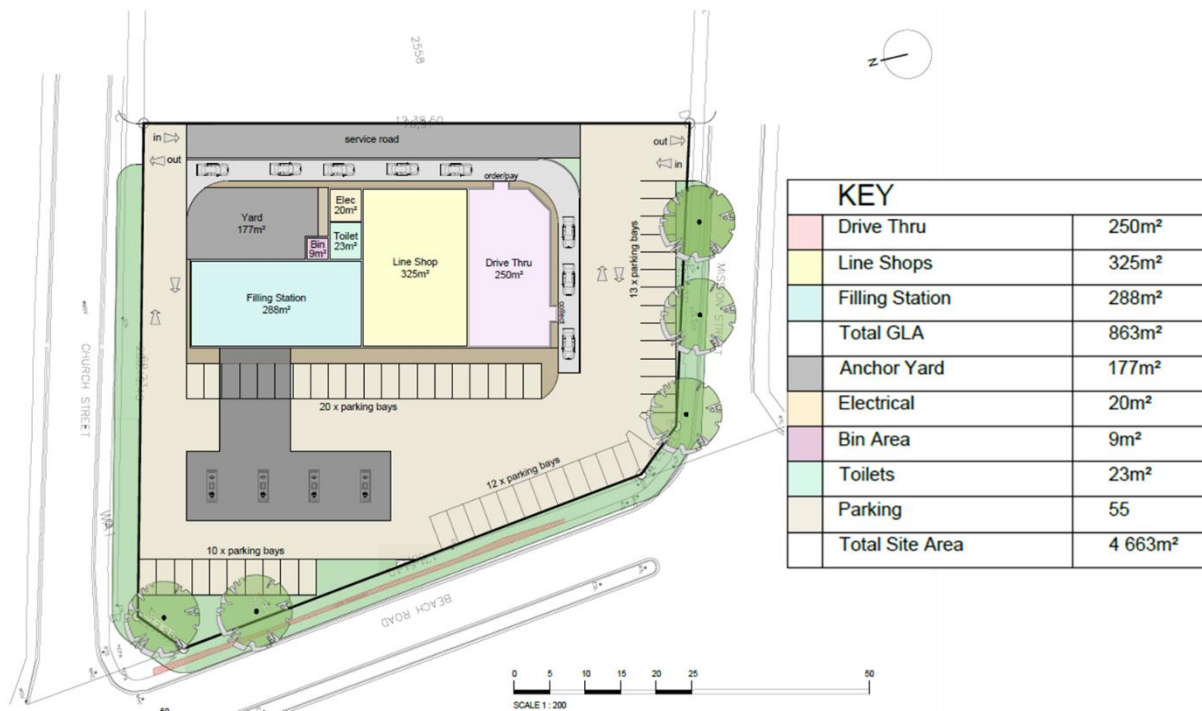


Figure 3: The preferred site development plan (SDP) for Erf 7379 in George.

2. TERMS OF REFERENCE

This report provides information on Terrestrial and Botanical diversity and sensitivity in relation to the proposed development. 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 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).
 - The protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity (20 March 2020).
- 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).
 - Ecosystem Guidelines for the Albany Thicket Biome (SANBI & CEN Integrated Environmental Management Unit, 2021)
- 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 Ecological science.

3. METHODOLOGY

3.1 Desktop Assessment

The desktop assessment was performed using Cape Farm Mapper and QGIS version 3.36 called “Maidenhead”. Plant species data was sourced from the following sources:

- The DFFE screening tool listed SCC.
- Plant occurrence data 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.
- Past specialist reports and insight into the species likely present in the area.

Ecosystem/ vegetation type data was sourced from:

- The 2018 and 2024 updated South African Beta version of the National Vegetation Map (NVM) from SANBI's Biodiversity Geospatial Information System (BGIS) database, and the National Biodiversity Assessment report of 2018 (Skowno et al., 2018).
- Shapefiles for the Western Cape Biodiversity Spatial Plan (WC BSP) 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 Revised National List of Ecosystems that are Threatened and in need of protection, National Environmental Management: Biodiversity Act (Act No. 10, 2004, as revised in Nov. 2022), and the Vegetation of South Africa, Lesotho, and Swaziland (Mucina & Rutherford, 2006).

3.2 Field Assessment

Field work was undertaken on the 22nd of November 2024. The method for identifying species was similar to a BioBlitz, also described as a “timed meander”, where the specialist records plant species composition of the site, and actively searches 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.) may be low (Garrard et al., 2008; Wintle et al., 2012). Observations of individual species and environmental characteristics were photographed and then uploaded to iNaturalist, an open-source online platform.

3.3 Assumptions & Limitations

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

- Only one survey took place within the proposed development footprint on Erf 7379.
- The season of the assessment and survey timing always play a role in limiting the findings of a terrestrial habitat and plant species specialist report. Although spring is

generally a good time for a survey, it is not a guarantee that all species were flowering or visible.

- The long-term transformed state of the site in the urban areas of George means that the original vegetation type and species composition can only be inferred.
- The species list reported is not exhaustive (Cowling et al., 2010; Perret et al., 2023).

4. RESULTS: DESKTOP ASSESSMENT

4.1 Terrestrial Biodiversity

4.1.1 Climate

The climate of George is described as warm and temperate. The rainfall pattern is a-seasonal, with rain typically occurring even in the driest months of the year. Mean annual precipitation (MAP) is over ca. 700 mm, with two seasonal peaks during the spring and winter. The mean annual temperature (MAT) for this area is around 21°C. There is also far more annual variation in rainfall patterns compared to the more predictable annual temperature patterns. All graphs in Fig. 4 were provided by worldweatheronline.com.

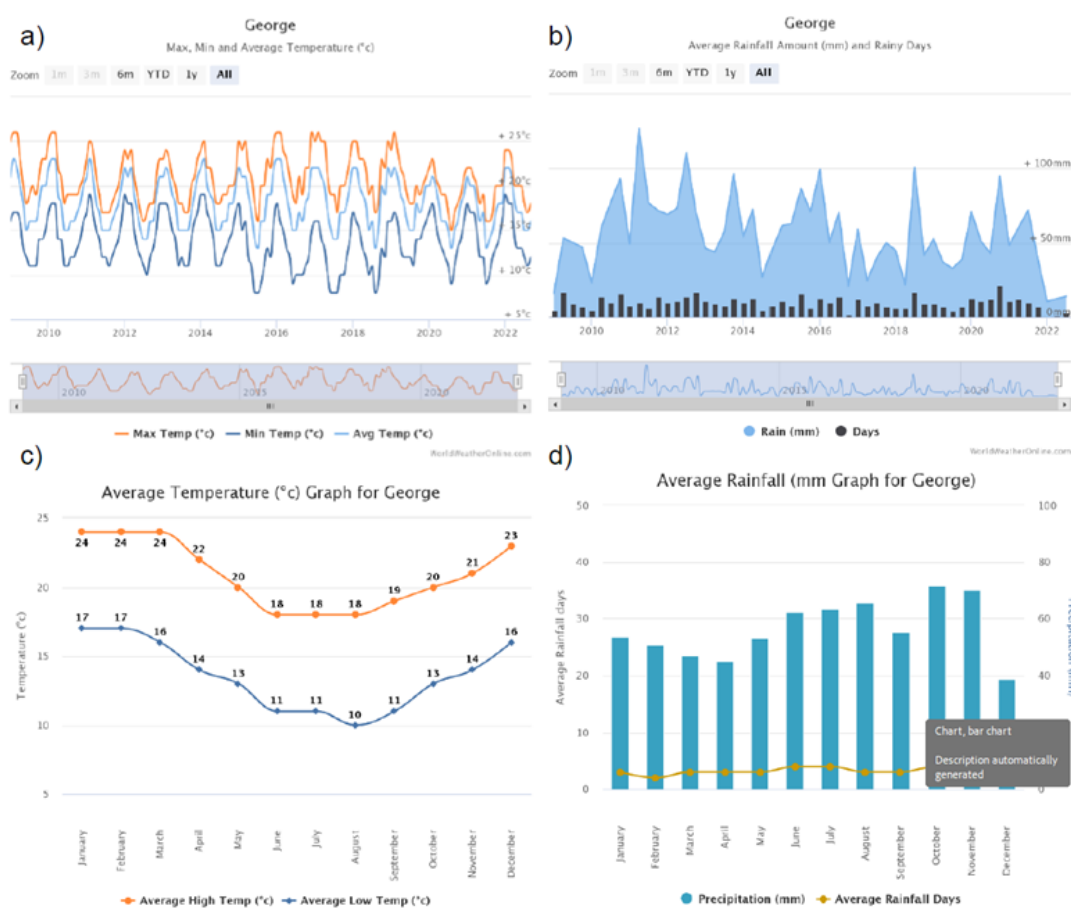


Figure 4: Climate charts for George in the Western Cape showing a) temperature ranges from 2010 to 2022, b) precipitation trends over the period 2010 to 2022, c) monthly minimum and maximum temperatures, and d) monthly average rainfall (mm) and days of rain.

4.1.2 Geology and Soil

The geology of the site is described as being part of the Cape Granite Suite (Browning & Macey, 2015). These granites are from the late Precambrian. The Maalgaten Granite, considered the main part of the George Pluton (i.e., a body of intrusive igneous rock), is likely present at the site and stretches from Wilderness in the East to the Klein Brak River in the West (Browning & Macey, 2015) as shown in Fig. 5. It is thought that this granite covers an approximate area of 248 km². Soil in the area of the proposed development is categorised as highly erodible (with an erodibility factor of 0.74), as described in Cape Farm Mapper. The soils in this area have strong textural contrasts in the soil profile, and therefore diagnostic horizons are usually clearly visible in the soil profile.

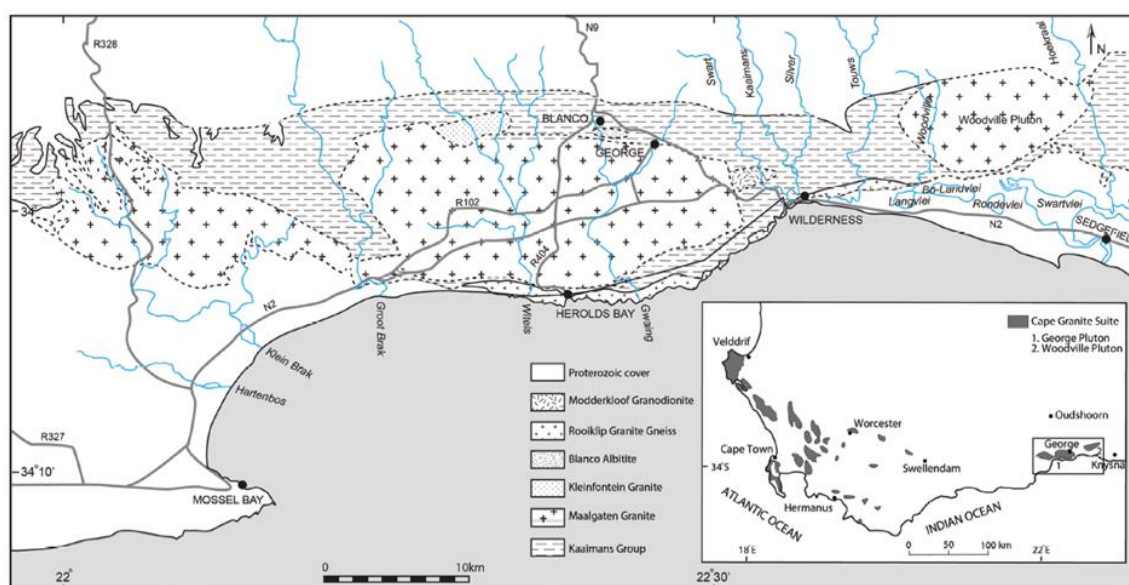


Figure 5: A map taken from the (Browning & Macey, 2015) paper showing the distribution of the George and Woodville Pluton granitoids. The inset illustrates additional areas where outcrops of the Cape Granite Suite occur.

4.1.3 Vegetation Type(s)

The mapped vegetation for the proposed development area is critically endangered (CR) Garden Route Granite Fynbos (FFg 5; Fig. 6). The beta 2024 National Vegetation Map (NVM) matches the 2018 vegetation types mapped in the assessment area (Dayaram et al., 2019; Mucina & Rutherford, 2006). The Garden Route Initiative (GRI) map (Vlok et al., 2008) was produced at a regional scale and may therefore indicate a more refined layer of detail, which might be missing in the NVM. The GRI vegetation communities highlighted for the site is “Wolwedans Grassy Fynbos” and beyond Erf 7379 “Groot Brak River Floodplain” is mapped along drainage lines. The Wolwedans Grassy Fynbos in this case is the equivalent vegetation type to the CR Garden Route Granite Fynbos of the NVM.

Garden Route Granite Fynbos occurs in three main blocks along the coastal plain south of the Outeniqua Mountains, from Botterberg near Brandwaghoogte to Groot Brak River, and eastwards to Woodville and Hoogekraal Pass (Mucina & Rutherford, 2006). It is found at altitudes between 0 and 300 meters. The landscape consists of moderately undulating plains and hills, with dense proteoid and graminoid fynbos, and ericaceous fynbos in seeps. Proteas dominate in the west, while graminoid and ericaceous fynbos are more prominent in the east,

especially on flat plateaus. The vegetation is supported by deep, well-drained soils. This vegetation type has only around 1% conserved in the Garden Route National Park. Well over 70% of the area has been transformed for agriculture, pine plantations, and urban development, leading to moderate to high erosion in many areas around George. Remnants of the fynbos are confined to isolated pockets, primarily on steeper slopes. Historically this vegetation type was dominated by proteoid fynbos, much of the area has been converted to graminoid fynbos through regular fires, competing invasive plants, and the introduction of pasture grasses.

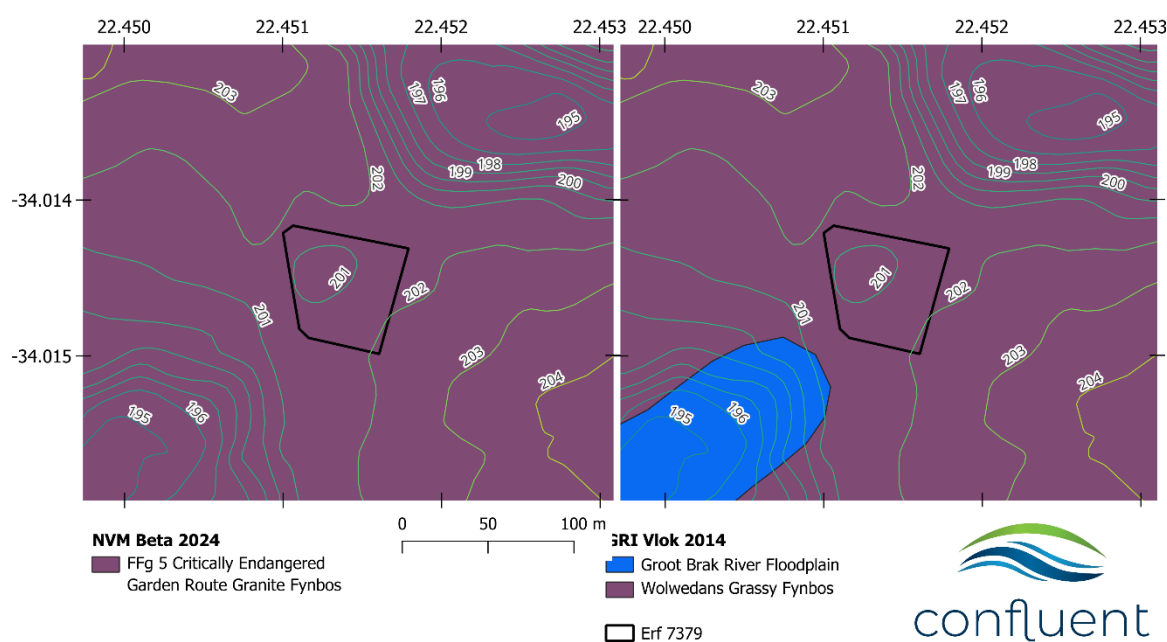


Figure 6: The mapped 2024 National Vegetation Map (NVM) vegetation types and Garden Route Initiative vegetation communities on Erf 7379. The 2024 and 2018 versions of the NVM match in this area.

4.1.4 Western Cape Biodiversity Spatial Plan

The Biodiversity Spatial Plan for the Western Cape (WC BSP) contains several conservation planning layers that are used to set priority areas for conserving biodiversity. The definition and objectives of the WC BSP layers mapped nearby Erf 7379 is given in BOX 1. Appendix 9.1 illustrates the recommended land-uses associated with the various BSP layers. Erf 7379 does not fall within any mapped BSP layer (Fig. 7). West of the Erf is a mapped CBA 2 terrestrial biodiversity area, and this area is separated from Erf 7379 by Beach Road.

The reasons provided for the assignment of BSP layers in this area are listed below. Note that none of the BSP reason hexagons mention the trigger for threatened vegetation relating to threatened ecosystems like CR Garden Route Granite Fynbos.

- **Watercourse protection- Southern Coastal Belt:** These zones are designated to protect the ecological integrity and functioning of watercourses within the Southern Coastal Belt. These areas are vital for maintaining hydrological processes, biodiversity corridors and water quality. Refer to the aquatic specialist report for more detail on these BSP reasons.
- **Water source protection- Gwaing & Kaaimans.** Protection of these catchments ensures sustained water supply, ecological health, and climate resilience. These BSP

triggers fall mostly outside of the scope of this study. Refer to the aquatic specialist study for comment.

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.

Critical Biodiversity Area 2

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

Objective: Maintain in a functional, 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 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.

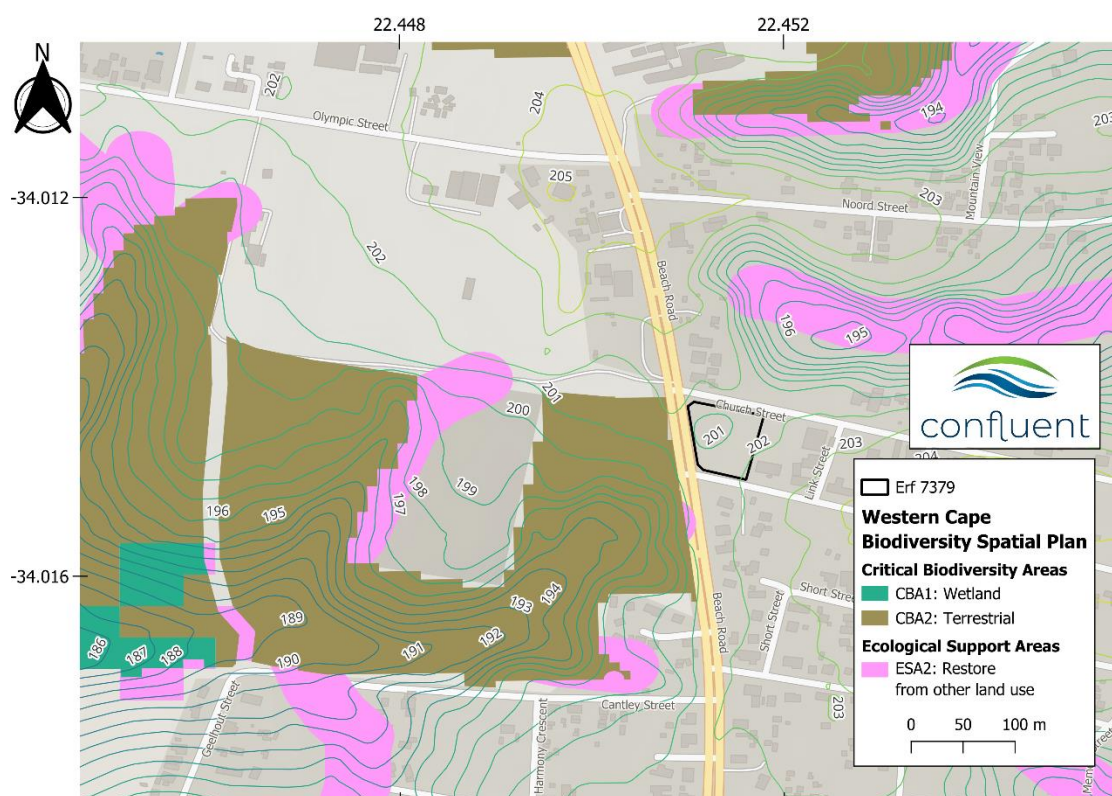


Figure 7: The mapped Western Cape Biodiversity Spatial Plan (WC BSP) categories that have been mapped in the vicinity of the property.

4.1.5 Historical Aerial Imagery

Erf 7379 has been in a transformed state for at least the past two decades, with a lawn visible on the site since 2003 (Fig. 8). No natural vegetation was likely to have survived on this site

for the past to decades, and the site is located in the middle of the urban area of George. There used to be a built structure on the Erf prior to 2006, but this structure was removed by 2011. The area where the structures were removed was consequently also covered by lawn.



Figure 8: A series of historical images on Erf 7379 dating back to August 2003.

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 SCC likelihood of occurrence is assessed later in the report. A species list for the important taxa of Garden Route Granite Fynbos is presented in Table 2. Note that no important taxa for Garden Route Granite Fynbos were found during the site assessment.

Table 2: Garden Route Granite Fynbos (CR; FFg 5) Important Taxa. Dominant species are indicated with a [d].

Family	Growth Form	Species	Information
FFg 5 Garden Route Granite Fynbos (CR)			
ASTERACEAE	Low Shrubs	<i>Cullumia bisulca</i>	
ASTERACEAE	Low Shrubs	<i>Eriocephalus africanus</i>	
ASTERACEAE	Low Shrubs	<i>Metalasia pungens</i>	
ASTERACEAE	Low Shrubs	<i>Relhania calycina</i>	
ASTERACEAE	Low Shrubs	<i>Syncarpha paniculata</i>	[d]
CYPERACEAE	Graminoids	<i>Ficinia nigrescens</i>	
CYPERACEAE	Graminoids	<i>Tetraria cuspidata</i>	[d]
ERICACEAE	Low Shrubs	<i>Erica canaliculata</i>	
ERICACEAE	Low Shrubs	<i>Erica diaphana</i>	
ERICACEAE	Low Shrubs	<i>Erica discolor</i>	[d]
ERICACEAE	Low Shrubs	<i>Erica formosa</i>	
ERICACEAE	Low Shrubs	<i>Erica peltata</i>	[d]
FABACEAE	Low Shrubs	<i>Aspalathus asparagoides</i>	
GERANIACEAE	Low Shrubs	<i>Pelargonium fruticosum</i>	
LOBELIACEAE	Low Shrubs	<i>Lobelia tomentosa</i>	
MALVACEAE	Low Shrubs	<i>Hermannia angularis</i>	
AIZOACEAE	Succulent Shrub	<i>Lampranthus sociorum</i>	
POACEAE	Graminoids	<i>Brachiaria serrata</i>	
POACEAE	Graminoids	<i>Eragrostis capensis</i>	
POACEAE	Graminoids	<i>Heteropogon contortus</i>	
POACEAE	Graminoids	<i>Pentaschistis eriostoma</i>	
POACEAE	Graminoids	<i>Themeda triandra</i>	
PROTEACEAE	Low Shrubs	<i>Leucadendron salignum</i>	
PROTEACEAE	Low Shrubs	<i>Mimetes cucullatus</i>	
PROTEACEAE	Tall Shrubs	<i>Protea coronata</i>	
PROTEACEAE	Tall Shrubs	<i>Protea lanceolata</i>	
PROTEACEAE	Tall Shrubs	<i>Protea neriifolia</i>	
RESTIONACEAE	Graminoids	<i>Restio triticeus</i>	
RHAMNACEAE	Low Shrubs	<i>Phylica confusa</i>	[d]
ROSACEAE	Low Shrubs	<i>Cliffortia falcata</i>	
ROSACEAE	Tall Shrubs	<i>Cliffortia serpyllifolia</i>	
RUBIACEAE	Low Shrubs	<i>Anthospermum prostratum</i>	
RUTACEAE	Low Shrubs	<i>Agathosma ovata</i>	
SANTALACEAE	Semiparasitic Shrubs	<i>Colpoon compressum</i>	
SANTALACEAE	Semiparasitic Shrubs	<i>Thesium virgatum</i>	
SCHIZAEACEAE	Geophytic Herb	<i>Schizaea pectinata</i>	
THYMELAEACEAE	Tall Shrubs	<i>Passerina corymbosa</i>	[d]
VISCACEAE	Semiparasitic Epiphytic Shrub	<i>Viscum capense</i>	

5. RESULTS

5.1 Ecosystems and Vegetation Observed

The vegetation observed within the proposed development footprint is mostly in a transformed state. The Erf is a lawn, and it does not represent fynbos vegetation, nor does it contain any fynbos elements. There is also some evidence of illegal dumping on the site. The track walked

during the site assessment is also illustrated in Fig. 9. Images taken on the site to illustrate the state of the vegetation are presented in Table 3.



Figure 9: The track walked on Erf 7379 illustrated on satellite imagery and with 1m contours visible.

Table 3: Images taken of the landscape during the site assessment.

No	Site features
1	 <p data-bbox="327 616 1348 683">A composite photo showing the site from the north-eastern corner. A transformed lawn dominated by kikuyu (<i>Cenchrus clandestinus</i>) is visible.</p>
2	 <p data-bbox="287 996 1388 1064">A view of the site from the south-eastern corner. Here a transformed lawn is also visible over the site.</p>
3	 <p data-bbox="287 1411 1388 1512">The site view from the north-west next to Beach Road. This is the section of the site where a structure was visible in the 2006 and 2003 imagery presented in the historical analysis in this report. This area is also covered in grasses.</p>
4	 <p data-bbox="287 1870 1372 1937">A view of the Erf from the south-west. Once again, the site is visibly dominated by grass, especially kikuyu grass. The furrow bisecting the property is also visible in the image here.</p>

No	Site features	
5		<p>A view of the furrow in the site. Some past dumping of solid waste was visible along the northern boundary of the site where the furrow intersects the site. The furrow currently supports a host of wetland vegetation such as <i>Juncus effusus</i> and <i>Zantedeschia aethiopica</i>.</p>
6		<p>A view of the culvert adjacent to Erf 7379, leading westwards under Beach Road. The vegetation opposite the road is a thicket, and the culverts here were polluted with solid waste, as indicated in the photo.</p>

5.2 Plant Species

A species accumulation curve for the site assessment is in Fig. 10 below. The curve starts to flatten out very quickly after the beginning of the survey, and the vast majority of the plant species observed on the site are introduced species that are growing adventively. Most of the biomass on the site was from graminoids.

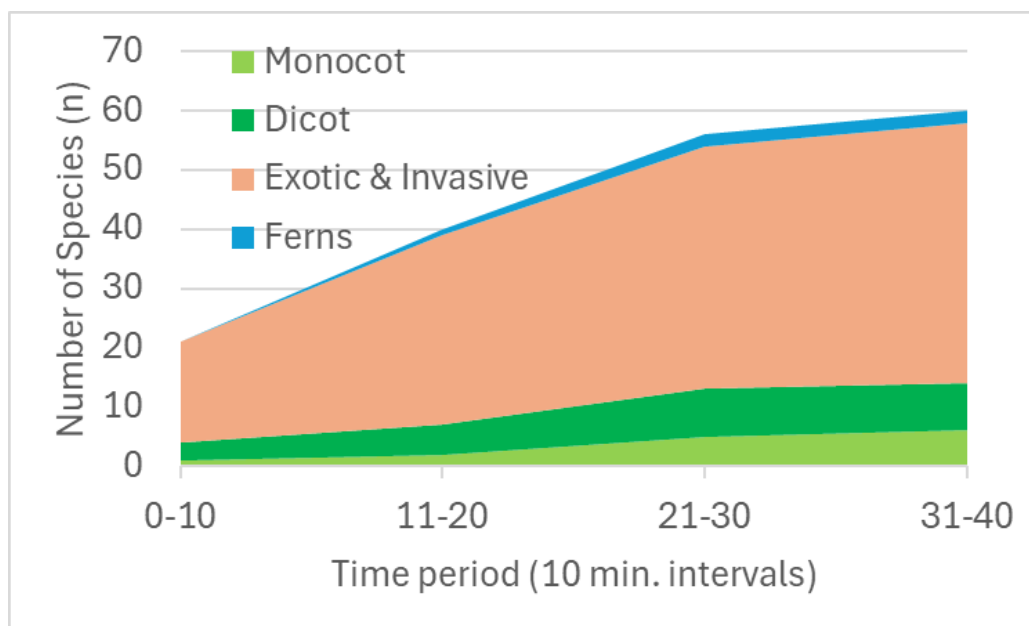


Figure 10: Species accumulation curve for the site assessment on the 22nd of November 2024.

The NEMBA (National Environmental Management: Biodiversity Act, Act No. 10 of 2004) and CARA (Conservation of Agricultural Resources Act, Act No. 43 of 1983) categories for the listed invasive species observed are listed in the species list in Table 4. In short, NEMBA categorizes invasive species into the following groups (Rooikrans is in category 1b):

- Category 1a: Species that must be eradicated and prevented from being introduced or spread.
- Category 1b: Species that must be controlled to prevent further spread and impact.
- Category 2: Species that can be grown only in specific, controlled conditions, with a focus on prevention of escape.
- Category 3: Species that are already widely spread but must not be introduced or propagated further.

CARA focuses on controlling invasive plants that affect agricultural resources, categorizing them into (here Rooikrans is category 2):

- Category 1: Species that must be eradicated from land.
- Category 2: Species that must be controlled to prevent spread, with restrictions on planting.
- Category 3: Species that must be managed to avoid negative impacts on land use, with restrictions on their spread.

No species of conservation concern (SCC) were found on the site, nor are any suspected to occur on the site.

Table 4: Species list for Erf 7379. Orange entries are exotic plants, red are invasive, and light blue rows indicate wetland plants observed along the artificial furrow.

Family	Species	Common name	Information
Liliopsida (Monocots)			
AMARYLLIDACEAE	<i>Agapanthus praecox</i>	blue lily	Exotic - from other parts of South Africa.
ARACEAE	<i>Zantedeschia aethiopica</i>	calla lily	Wet areas.
CANNACEAE	<i>Canna indica</i>	Indian shot	Wet areas. Invasive - NEMBA 1b; CARA 1
CYPERACEAE	<i>Carex capensis</i>	Cape Sedge	Wet areas.
CYPERACEAE	<i>Carex glomerata</i>	Sedges	Wet areas.
CYPERACEAE	<i>Cyperus congestus</i>	Purple Umbrella Sedge	Wet areas.
CYPERACEAE	<i>Cyperus esculentus</i>	yellow nutsedge	Wet areas. Exotic
CYPERACEAE	<i>Cyperus polystachyos</i>	Bunchy flat-sedge	Wet areas. Exotic
JUNCEAE	<i>Juncus effusus</i>		Wet areas. Exotic
JUNCEAE	<i>Juncus tenuis</i>	Slender Path Rush	Exotic
POACEAE	<i>Arundo donax</i>	giant reed	Wet areas. Invasive - NEMBA 1b; CARA 1
POACEAE	<i>Briza maxima</i>	Greater Quaking Grass	Exotic
POACEAE	<i>Briza minor</i>	Little quaking-grass	Exotic
POACEAE	<i>Bromus catharticus</i>	Rescue Brome	Exotic
POACEAE	<i>Cenchrus clandestinus</i>	Kikuyu Grass	Invasive - NEMBA 1b in Protected Areas and wetlands in which it does not already occur; not on CARA
POACEAE	<i>Cynodon dactylon</i>	Bermuda grass	
POACEAE	<i>Festuca bromoides</i>	brome fescue	Exotic
POACEAE	<i>Lolium multiflorum</i>	Italian Ryegrass	Exotic
POACEAE	<i>Paspalum dilatatum</i>	Dallis grass	Exotic
POACEAE	<i>Sporobolus africanus</i>	Parramatta Grass	
POACEAE	<i>Stenotaphrum secundatum</i>	Saint Augustine grass	Exotic
Magnoliopsida (Dicots)			
ANACARDIACEAE	<i>Searsia rehmanniana</i>	Bluntleaf Curranthrus	
APIACEAE	<i>Centella asiatica</i>	Gotu Cola	Exotic
APIACEAE	<i>Foeniculum vulgare</i>	fennel	Exotic
APIACEAE	<i>Torilis africana</i>	African Hedgeparsley	Exotic
ARALIACEAE	<i>Hedera helix</i>	common ivy	Exotic
ASTERACEAE	<i>Arctotheca prostrata</i>	Prostrate Capeweed	
ASTERACEAE	<i>Erigeron sumatrensis</i>	tropical horseweed	Exotic
ASTERACEAE	<i>Helichrysum odoratissimum</i>	Kooigoed Everlasting	
ASTERACEAE	<i>Helminthotheca echioides</i>	bristly oxtongue	Exotic
ASTERACEAE	<i>Hypochaeris radicata</i>	Common Cat's-ear	Exotic
ASTERACEAE	<i>Hypochaeris sp.</i>	Cat's-Ears	Exotic
ASTERACEAE	<i>Nidorella ivifolia</i>	Ivy Vleiweed	

Family	Species	Common name	Information
ASTERACEAE	<i>Senecio ilicifolius</i>	Kowanna Ragwort	
ASTERACEAE	<i>Senecio purpureus</i>	Purple Ragwort	Exotic - not native to the natural fynbos vegetation here.
BRASSICACEAE	<i>Raphanus raphanistrum</i>	Wild radish	Exotic
BRASSICACEAE	<i>Sisymbrium officinale</i>	Hedge mustard	Exotic
CAMPANULACEAE	<i>Monopsis unidentata unidentata</i>		
CONVOLVULACEAE	<i>Dichondra repens</i>	kidney weed	Exotic
CONVOLVULACEAE	<i>Ipomoea cairica</i>	Mile-a-minute vine	Invasive - NEMBA 1b; CARA 3
FABACEAE	<i>Lotus subbiflorus</i>	Hairy Bird's-foot-trefoil	Exotic
FABACEAE	<i>Melilotus indicus</i>	small melilot	Exotic
FABACEAE	<i>Trifolium repens</i>	white clover	Exotic
FABACEAE	<i>Vicia sativa</i>	Common Vetch	Exotic
FABACEAE	<i>Vicia tetrasperma</i>	Smooth tare	Exotic
FAGACEAE	<i>Quercus robur</i>	English oak	Cultivated tree along eastern boundary. Exotic
MORACEAE	<i>Ficus elastica</i>	rubber plant	Cultivated tree along eastern boundary. Exotic
PAPAVERACEAE	<i>Fumaria muralis</i>	common ramping-fumitory	Exotic
PLANTAGINACEAE	<i>Plantago lanceolata</i>	ribwort plantain	Exotic
POLYGONACEAE	<i>Rumex acetosella</i>	Sheep's sorrel	Exotic
POLYGONACEAE	<i>Rumex crispus</i>	curled dock	Exotic
PRIMULACEAE	<i>Lysimachia arvensis</i>	scarlet pimpernel	Exotic
RANUNCULACEAE	<i>Ranunculus multifidus</i>	African buttercup	
ROSACEAE	<i>Rubus rigidus</i>	White Bramble	Exotic - can become invasive if left uncontrolled, despite not being on the official NEMBA list
SALICACEAE	<i>Populus alba</i>	white poplar	Invasive - NEMBA 2; CARA 2
SALICACEAE	<i>Scolopia zeyheri</i>	Thorn Pear	
SOLANACEAE	<i>Solanum nigrum</i>	black nightshade	Exotic
VERBENACEAE	<i>Verbena bonariensis</i>	purpletop vervain	Invasive - NEMBA 1b; not on CARA
Polypodiopsida (Ferns)			
PTERIDACEAE	<i>Cheilanthes viridis</i>	Green Cliff Brake	

5.3 Additional SCC that may be Found

Due to the transformed nature of the site and the long-term evidence of the Erf essentially being a lawn, all flagged SCC have a Very Low likelihood of occurrence here. There is no natural vegetation remaining on Erf 7379.

6. SITE SENSITIVITY VERIFICATION

6.1 Terrestrial Biodiversity

The terrestrial biodiversity sensitivity for the site is conformed to be **Low**. Table 5 below discusses the various triggered biodiversity priority areas (BPAs) on the site.

Table 5: Sources of BPA data for the Terrestrial Biodiversity Theme sensitivity (Stewart et al., 2021).

Sensitivity layer	Data included and source
Strategic Water Source Areas for surface water	The transformed grassy park does have some wetland plants on it due to artificial structures on the site. Artificial drainage systems on the site are also blocked. The Outeniqua SWSA-sw is best assessed by an aquatic specialist. The site is vegetated, and the removal of the grassy vegetation must be done in a way to minimise the likelihood of erosion & sedimentation of the already polluted culverts.
SAN Parks Buffer Areas	The Garden Route National Park buffer is 10km wide. The proposed development area is surrounded by residential and commercial urban areas of George. It is located adjacent to a CBA 2 area west of the site via a culvert which extends under York Road, however this culvert is blocked. The Erf is isolated from the national park by the town. This trigger should not lead to a high terrestrial biodiversity sensitivity for the site.
Red Listed Ecosystems	The transformed adventive grassy park on the site does not represent fynbos.

6.2 Botanical Diversity

No SCC or important fynbos taxa were conformed on the site, and none are likely to occur on Erf 7379. The Erf has also been transformed for over two decades. The botanical sensitivity of the site is confirmed as **Low**.

7. COMPLIANCE STATEMENT

The vegetation of Erf 7379 is transformed with no natural fynbos remaining. This has been the case on the site for at least the past two decades. Several invasive plant species were observed, such as a relatively young stand of poplars (*Populus alba*), and the dominant graminoid on the site, kikuyu grass (*Cenchrus clandestinus*). The majority of the species observed on the site were exotic, and do not represent naturally occurring plant taxa. The vegetation on the site is not Garden Route Granite Fynbos and is rather an adventive lawn with an artificial furrow that is overgrown with wetland species. In conclusion, the proposed development of a filling station combined with a drive through and a line shop will not negatively affect the terrestrial biodiversity or plant species of the area. The following recommendations apply to this compliance statement:

1. Kikuyu grass may not be used in landscaping around the filling station or any of the associated proposed developments on Erf 7379. Indigenous lawn varieties such as *Cyndodon dactylon* or *Stenotaphrum secundatum* are rather recommended.
2. The Poplar trees must be removed.
3. The stormwater systems and culverts connected to the site must be cleaned. This is urgent and includes cleaning out the culverts on the opposite side of beach road prior

to the commencement of any construction on the site. Refer to the aquatic specialist for more details.

4. Ongoing effort must be made to avoid solid waste accumulating in drainage systems.
5. Native plant species should be used in landscaping if any landscaping is planned.
6. If trees are going to be planted anywhere on the site, ensure that these are planted in a hollow to allow for better capturing of surface water, preventing excess runoff (see Fig 11). Where paving is made where no heavy vehicles are expected (e.g., just for pedestrians), make use of permeable surfaces.



Figure 11: An image illustrating some ideas for more sustainable urban drainage systems (SuDS), as illustrated in the SuDS handbook (Graham, 2016).

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9. APPENDICES

9.1 Land-Use Recommendations According to the WC BSP

The recommended land-uses for each of the different BSP layers are outlined in Table 6.

Table 6: The land-use planning proposed by the Western Cape Biodiversity Spatial Plan. IUCN Red Listing Criteria for species

LAND USE CATEGORIES		Conservation		Agriculture		Tourism and Recreational Facilities		Rural Accomodation		Urban			Business & Industrial			Infrastructure Installations				
LAND USE SUB-CATEGORIES (Refer to table 4.7 for descriptions)		Proclaimed Protected Areas	Other Nature Areas	Intensive Agriculture	Extensive Agriculture	Low Impact Facilities	High Impact Facilities	Agri-worker Accommodation	Small Holdings	Urban Development & Expansion	Community Facilities & Institutions	New Settlements	Rural Business	Non-place-bound Industry (low-moderate impact)	Non-place-bound Industry (high impact)	Extractive Industry (incl. Prospecting)	Linear - roads & rail	Linear - pipelines & canals	Linear - powerlines	Other Utilities
MAP CATEGORY	DESIRED MANAGEMENT OBJECTIVE	Y = Yes: Permissible land uses that are not likely to compromise the biodiversity objective						R = Restricted: Land uses that may compromise the biodiversity objective are only permissible under certain conditions (refer to Table 4.7 for conditions)						N = No: Land uses that will compromise the biodiversity objective and are not permissible						
Protected Area	Must be kept in a natural state, with a management plan focused on maintaining or improving the state of biodiversity.	Land use within proclaimed protected areas are subject to management plan drawn up for that specific protected area.																		
Critical Biodiversity Area 1	Keep natural, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.	Y	Y	N	R	N	N	N	N	N	N	N	N	N	N	N	N	N	R	N
Critical Biodiversity Area 2	Keep natural, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.	Y	Y	N	R	R	N	N	N	N	N	N	N	N	N	N	R	R	R	N
Ecological Support Area 1: Terrestrial	Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.	Y	Y	N	R	R	N	N	N	N	N	N	R	R	N	N	R	R	R	R
Ecological Support Area 1: Aquatic	Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.	Y	Y	N	R	R	N	N	N	N	N	N	N	N	N	N	R	R	R	N
Ecological Support Area 2	Restore and/or manage to minimise impact on ecological infrastructure functioning; especially soil and water-related services.	Y	Y	N	R	R	N	N	R	N	N	N	N	N	N	N	R	R	R	R
ONA: Natural to Near-Natural	Minimise habitat and species loss and ensure ecosystem functionality through strategic landscape planning. Offers flexibility in permissible land uses, but some authorisation may still be required for high impact land uses.	Y	Y	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
ONA: Degraded	Minimise habitat and species loss and ensure ecosystem functionality through strategic landscape planning. Offers flexibility in permissible land uses, but some authorisation may still be required for high impact land uses.	R	R	R	Y	Y	R	R	Y	R	R	R	R	R	R	R	Y	Y	Y	Y
No Natural Remaining	These areas are suitable for development but may still provide limited biodiversity and ecological infrastructure functions and should be managed in a way that minimises impacts on biodiversity and ecological infrastructure.	R	R	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y