Compliance Statement for the Gwaing Biosolids Beneficiation Facility on Erf 73, George.

Specialist Botanical and Terrestrial Biodiversity Assessment

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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 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)

08 April 2025

BIANKE FOUCHE 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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ABBREVIATIONS

BBF	Biosolids Beneficiation Facility
CD:NGI	Chief Directorate: National Geo-spatial Information
CR	Critically Endangered
DFFE	Department of Forestry, Fisheries, and the Environment
GRI	Garden route Initiative
NEMBA	National Environmental Management: Biodiversity Act
NVM	National Vegetation Map
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDP	Site Development Plan
SEI	Site Ecological Importance
SSV	Site Sensitivity Verification
WC BSP	Western Cape Biodiversity Spatial Plan
WCBA	Western Cape Biodiversity Act 6 of 2021
WWTW	Wate Water Treatment Works

1. INTRODUCTION

Confluent Environmental was appointed to undertake a Terrestrial Biodiversity and Plant Species site sensitivity verification (SSV) assessment of the proposed Gwaing biosolids beneficiation facility (BBF), which will form part of an extension of the existing Wastewater Treatment Works (WWTW). This facility is planned as part of the wider mixed-use Gwayang Precinct Plan (outlined in yellow in Fig. 1), as proposed by the George Municipality. The proposed BBF area, as presented by the orange outline in Fig. 1, amounts to 5.9 ha. The 5.9 ha is divided between four proposed erven, numbered 57, 59, 61, and 63 on the Gwayang Mixed Development Layout. The project area is highly transformed, within a municipal service zone, and is adjacent to the existing WWTW and landfill.

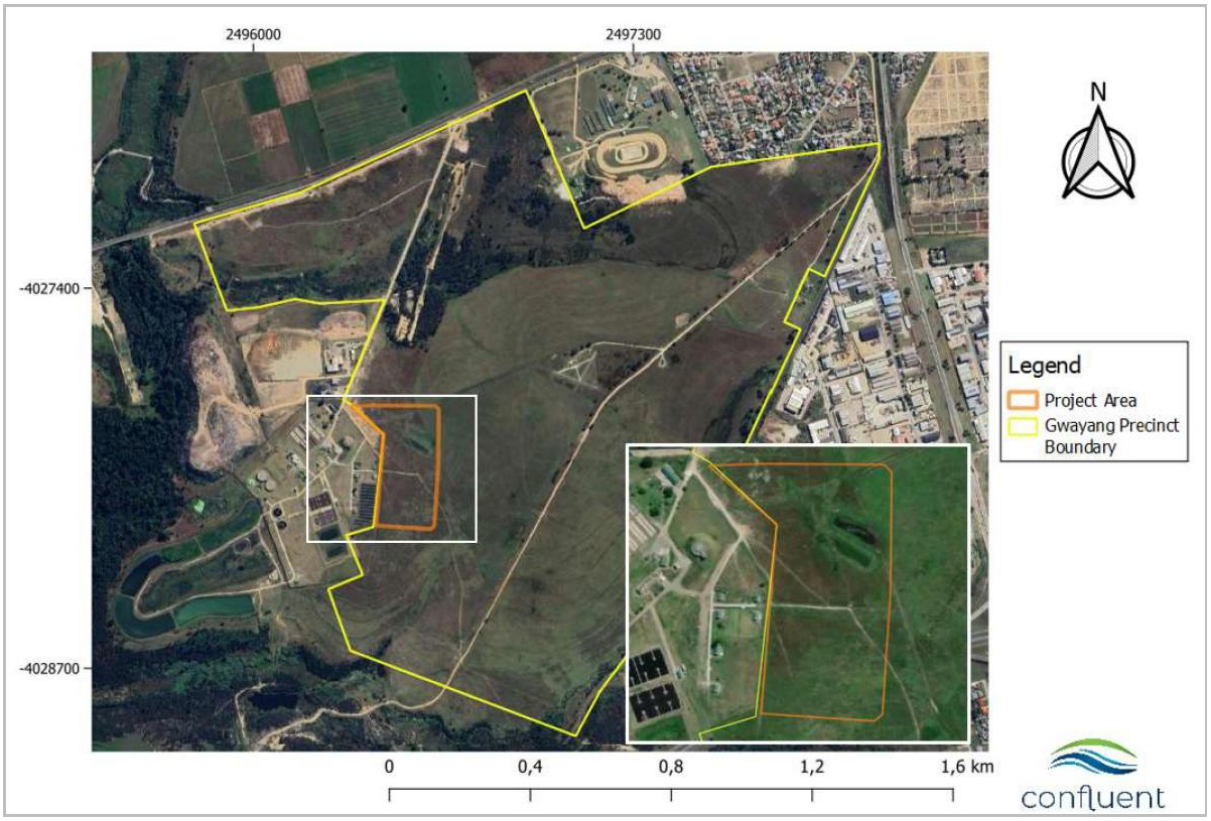

Figure 1: The location of the proposed biosolids development is outlined in orange. The Gwayang Precinct development area is outlined in yellow.

1.1 The Proposed Development

Currently, George Municipality's current sludge disposal method is not compliant with sludge management guidelines. The proposal for a BBF is necessary under the Water Services Act (WSA) 108 of 1997, as well as the National Environmental Management: Waste Act (Act no. 59 of 2008). The preferred option for the disposal of sludge at Gwaing WWTW is to do solar drying of the sludge including composting and granulation whereafter it can be sold as a fertilizer. Reducing the moisture content of sludge via solar drying leads to a reduction in the mass and volume of the sludge.

Ideally, dewatered sludge should be transported to the solar drying facility by conveyor belts, although this can also be done with dedicated sludge moving plant (vehicles). The top right image in Fig. 2 indicates three potential areas for the BBF facility, with the pink area being the

least preferred option of the three due to un-ideal geotechnical conditions that are caused by the historical stockpiling of sludge there. The pink area in the top-tight of Fig. 2 has been earmarked for potential future effluent reuse infrastructure. The blue and yellow areas are advantageous as they are less constrained than the pink area, and can easily be accessed via a road. Initially, the blue area was the chosen area for the site development plan (SDP). Recently, this has shifted to the yellow area as the footprint of the actual platform on proposed Erf 91 is too small due to the cut and fill. The new site location for the beds was therefore shifted to the yellow area (i.e., Erven 57, 59, 61, and 63 on the Gwayang Mixed-development layout plan). The infrastructure that will be required as part of the Gwaing BBF facility includes:

- Guard House
- Perimeter fencing and access gate
- Approximately 30 000 m2 of concrete slabs for the various stages of sludge stockpiling, solar drying, composing, and sludge handling. This includes the areas under translucent roof sheeting for solar drying.
- Approximately 13 000 m2 in plan view of translucent roof sheeting (‘greenhouse’) structures.
- One 18m x 36m shed with a clear height of 4.5m and without any columns inside the building for the sludge granulation plant.
- A second building of similar footprint for the packaging plant and distribution depot. This building is to include offices, ablution, and a canteen for the operating staff of approximately 6 people.
- Movable precast concrete walls placed on slabs to demarcate separated process areas and to prevent contamination of treated sludge by raw sludge.
- Access Roads
- Rainwater collection and storage from all roof structures
- Stormwater collection and drainage from concrete slabs with pipeline to Gwaing WWTW inlet works.

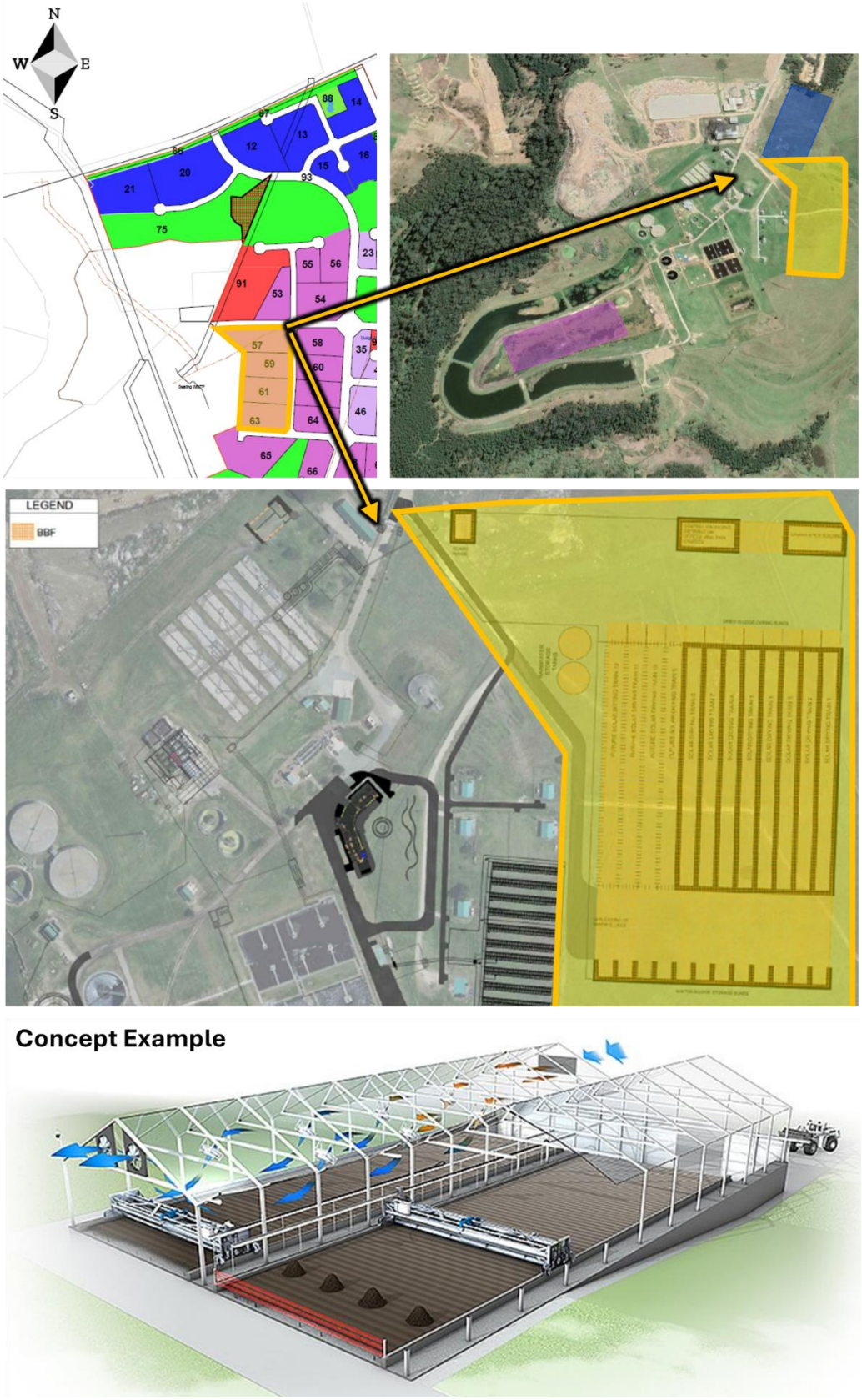

Figure 2: The proposed site development. The top-left image shows the location of the area overlaid with the wider Gwayang Precinct mixed-development layout, with the top-right image indicating three areas that were considered for the BBF facility (the yellow area is the chosen area). The middle image is the site development plan (SDP), and the bottom image is an example of an advanced solar drying facility with translucent roof sheeting, ventilation and a sludge turner and spreader.

2. TERMS OF REFERENCE

This screening tool report provides information on Terrestrial and Botanical diversity and sensitivity of 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 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).
    - 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).
- 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).

2.1 Online Screening Tool

The Department of Forestry, Fisheries, and the Environment (DFFE) Online Screening Tool was used to create an initial screening report for the site. The report was created in the category of “Transformation of land”, with a sub-category “From open space or conservation”. The terrestrial sensitivity rating was given as **Very High**, and the plant species theme as **Low and Medium** (Fig. 3). Species identified under the plant theme of the screening tool may be present at the site, according to the desktop-level screening tool report (i.e., not ground-truthed).

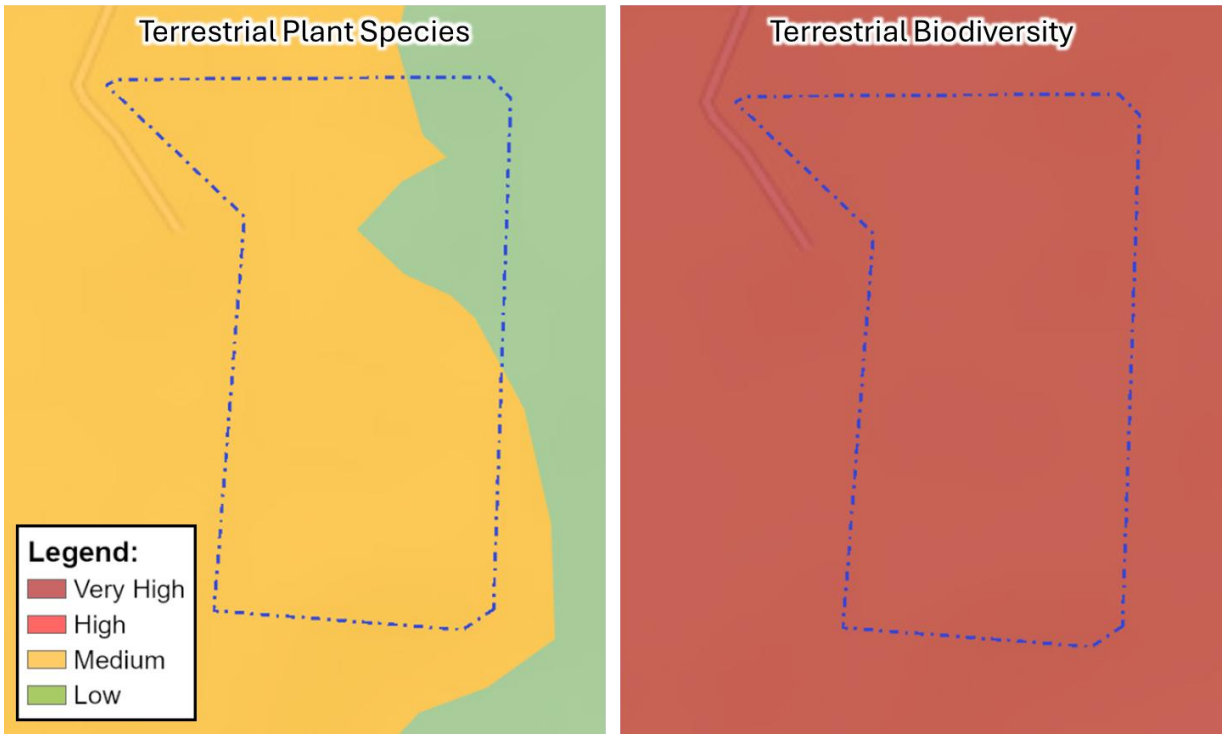

Figure 3: The Screening Tool generated sensitivities for the plant species and terrestrial biodiversity themes within the proposed Gwaing BBF.

3. METHODOLOGY

This botanical and terrestrial biodiversity assessment was conducted in accordance with best practice guidelines for specialist studies under the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended. The following methods were used:

3.1 Desktop Assessment

The desktop assessment was performed using Cape Farm Mapper and QGIS version 3.36.0 “Maidenhead.” Vegetation data was sourced from the following:

- The 2018 updated South African National Vegetation Map from SANBIs Biodiversity GIS (BGIS) database.
- A composite vegetation map of the Riversdale and Garden Route regions of the Southern Cape as classified by Jan Vlok and mapped at a scale of 1:50 000 for various projects.
- Information on plant occurrence prior to the site visit was sourced from SANBIs Botanical Research And Herbarium Management System (BRAHMS) for the Plants of Southern Africa (POSA) database.
- iNaturalist observations of the Farm and surrounding areas, including Custodians of Rare and Endangered Wildflowers (CREW) observations.

Ecosystem data was sourced from:

- Shapefiles for the Western Cape Biodiversity Spatial Plan, i.e., information on PAs, CBAs, ESAs, and ONAs were downloaded from BGIS database.

- The Western Cape Biodiversity Spatial Plan (WC-BSP) of 2017 provides information on CBA and ESAs.
- Cape Farm Mapper layers on the geology, soil, and SWSAs.
- 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 National List of Ecosystems that are Threatened and in need of protection (GN1002 of 2011), published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004), and also using Mucina & Rutherford (2006) The Vegetation of South Africa, Lesotho, and Swaziland.

3.2 Field Assessment

Field work for the Solar BBF was undertaken on 13 March, and 25 March 2025. The second field assessment date was required as the development layout position shifted southwards. 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 rare, threatened species, invasive species, and the general level of transformation of the site. This survey method is an attempt to account for the short and single survey period. Observations of individual species and environmental characteristics were documented using a Nikon Coolpix camera, and was updated to iNaturalist.

3.3 Assumptions & Limitations

This assessment is subject to a few assumptions, uncertainties, and limitations. These are listed below:

- Seasonal and time constraints always play a role in limiting the findings of a terrestrial specialist report.
- Rare and threatened plant species are difficult to locate and easily overlooked in the field.
- The current state of the site is transformed. While some idea of the original ecosystem here is apparent, the results of this assessment cannot accurately convey what the conditions might have been like prior to transformation, nor is that the purpose of this assessment.
- The species observed is limited to those present on the site in its current form, which is to say no-natural-remaining vegetation.
- Effort was made to identify no-go areas and possible impacts for the layout and design phase of the project, especially given the studies that have taken place for the Gwayang mixed-use development. Despite this, it is always possible that some impacts were missed or neglected that relate specifically to a BBF. The exclusion of important impacts does not mean that they do not exist, and the development team always has a duty of care to mitigate negative impacts to the environment.

4. RESULTS: DESKTOP ASSESSMENT

4.1 Terrestrial Biodiversity

The critically endangered (CR) ecosystem identified by the screening tool is **Garden Route Granite Fynbos (FFg5)**, which is part of the Fynbos Biome. The Garden Route Granite Fynbos historically covered an approximate area of 43 000 ha, according to the NEMBA Act 10 of 2004 (as amended in 2011) schedule on Threatened Terrestrial Ecosystems in South Africa. Today less than 30% of this area remains in three local municipalities (George, Mossel Bay, and Knysna), with only 1% of the original area protected. Most of the remaining portions of this vegetation type is dominated by the Proteaceae, and at least four Red Listed plant species occur in this vegetation type. Sensitive Terrestrial Biodiversity features according to the screening tool are presented in Table 1, and these features form the basis of the desktop investigation for the terrestrial biodiversity theme for the site .

Table 1: Terrestrial landscape level sensitivity provided by the screening tool of the DFFE.

Sensitivity	Features
Very High	Ecological support area 2 (trigger based on the old 2017 BSP)
Very High	Critically Endangered Garden Route Granite Fynbos

4.1.1 Geology & Soil

The geology under the site is part of the Cape Granite Suite (CGS), which is composed of granites from the late Precambrian. The Maalgaten Granite, considered the main part of the George Pluton (i.e., a body if 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. 4. Soil in the area of the proposed development is categorised as highly erodible (having a high soil k-factor), as described in Cape Farm Mapper.

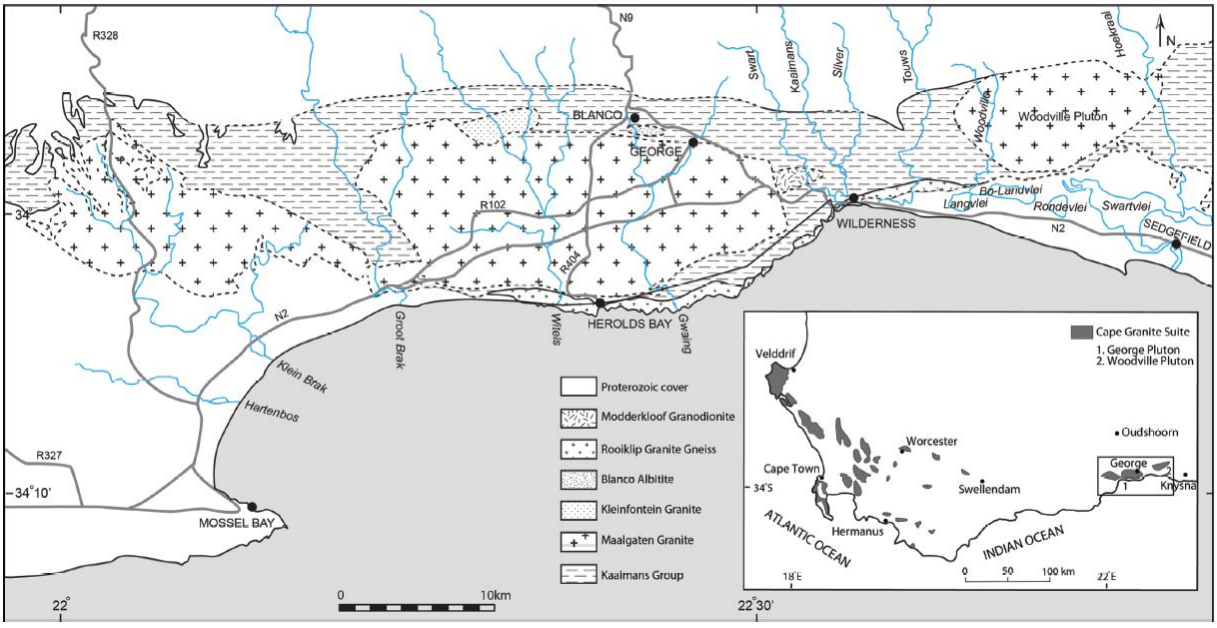

Figure 4: A map taken from the Browning & Macey (2015) paper showing the distribution of the George and Woodville Pluton granitoids. The inset illustrates additional areas where outcrops of the Cape Granite Suite occur.

4.1.2 Climate

The proposed development is in the West of George in the Western Cape. The warmest months of the year are January and February, and the coldest month is August. Rainfall in this area does not follow a clear seasonal pattern, though minor peaks occur in the winter months and springtime. There is also far more annual variation in rainfall patterns compared to the more predictable annual temperature patterns. All graphs in Fig. 5 were provided by worldweatheronline.com.

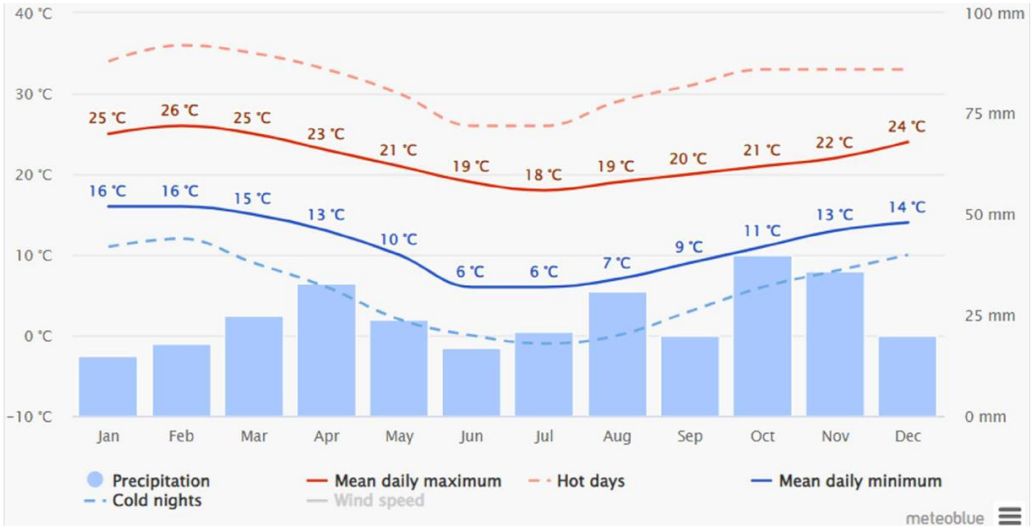

Figure 5: Climate charts for George in the Western Cape as sourced from Meteoblue.

4.1.3 Western Cape Biodiversity Spatial Plan

The Western Cape Biodiversity Act 6 of 2021 (WCBA) recognises the unique and biodiverse nature of the Western Cape. It also clearly states that the Western Cape must adhere to international obligations and recognises our dependence on ecosystem services and the need for benefit sharing. Section 35 of the WCBA defines that the purpose of a Biodiversity Spatial Plan (BSP) is to:

- Set biodiversity targets.
- Spatially identify one or more categories of biodiversity priority areas that will ensure the continued existence and functioning of biodiversity and ecosystems, including the delivery of ecosystem services.
- Provide guidelines that set out the desired management objectives for land and resource use in each category of biodiversity priority areas.
- Provide spatial planning and land-use decision-making guidelines to ensure environmentally sustainable development and resource use, as well as ecological and spatial resilience in the province.
- Ensure that the ecological infrastructure in the province is maintained, ecosystem fragmentation and loss are avoided, and the resilience of ecosystems and human communities to the impacts of climate change is strengthened.

The area identified for the BBF does not fall into any area flagged by the WC BSP on either the old 2017 or revised 2023 version of the plan (See Fig. 6). In the 2023 version some critical biodiversity areas (CBA 1) are mapped nearby.

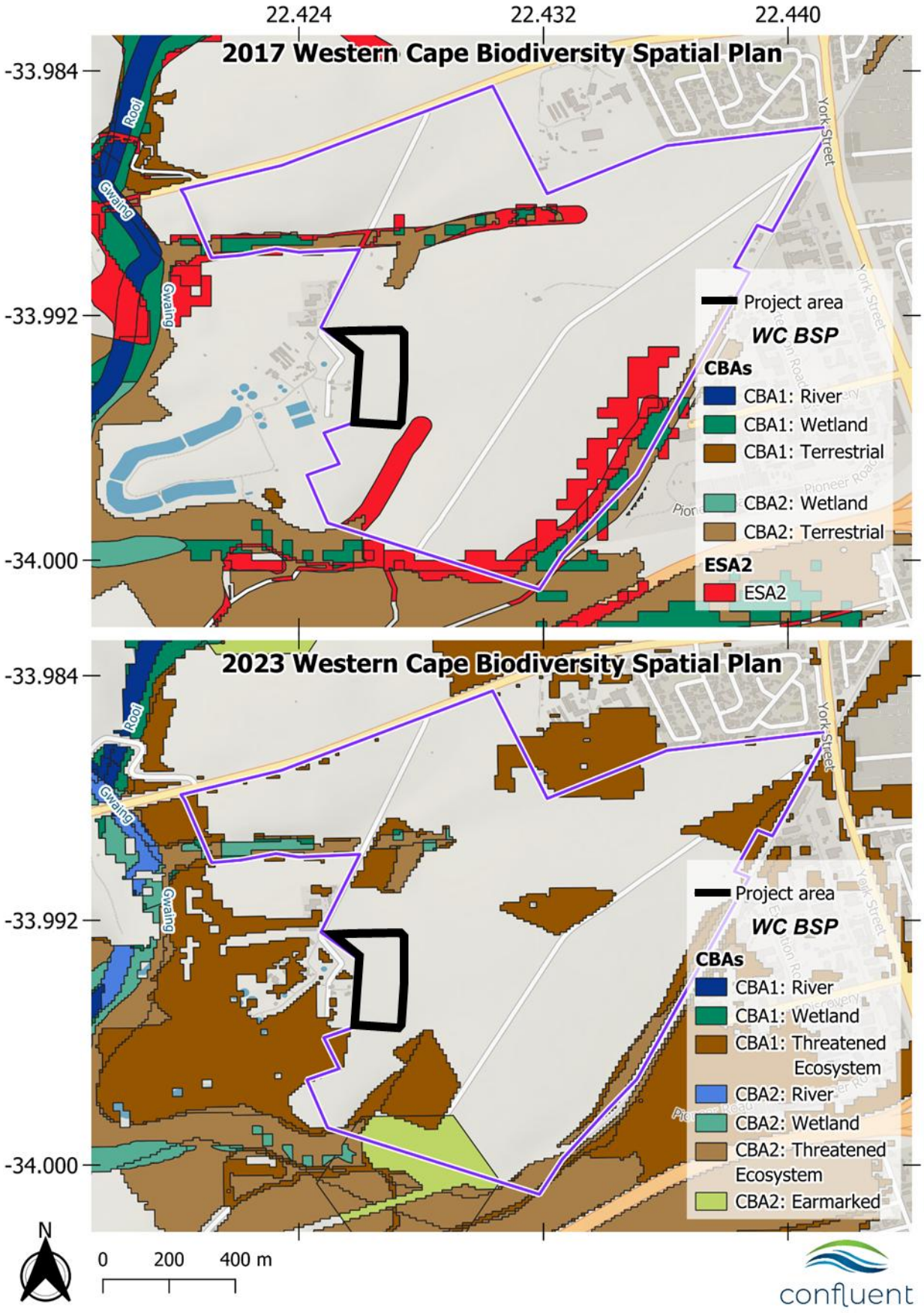

Figure 6: The CBA and ESA areas for the site and immediate surroundings are illustrated according to the old 2017 (top) and updated 2023 (bottom) versions of the WC BSP.

4.1.4 Mapped Vegetation Types

The old 2018 and updated 2024 versions of the National Vegetation Map (NVM) of South Africa identifies the proposed BBF site mostly as critically endangered (CR) Garden Route Granite Fynbos (Fig. 7). The Garden Route Initiative (GRI) vegetation map identifies the equivalent of Garden Route Granite Fynbos as Wolwedans Grassy Fynbos (Vlok & de Villiers 2007). The GRI vegmap version includes Moordkuils Perennial Stream, which extends drainage lines a bit further than the NVM does (i.e., the drainage lines mapped are slightly more granular).

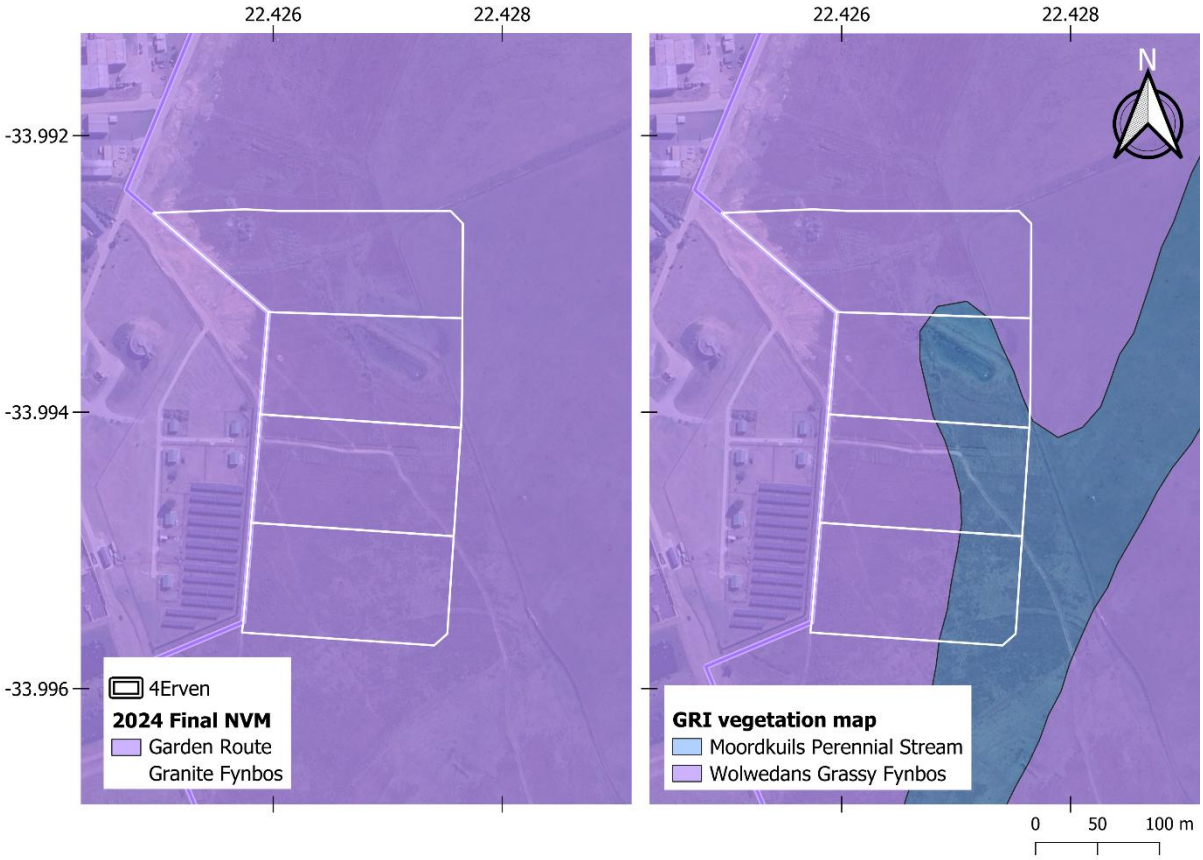

Figure 7: The left map illustrates the national Vegmap, and the right map represents the GRI vegetation communities.

4.1.5 Historical Photographs

Historical imagery available from the Chief Directorate: National Geo-spatial Information (CD: NGI) Geospatial Portal dates back to 1936 for the proposed development site (Fig. 8). More recent imagery (2003 onwards) was sourced from Google Earth. The current state of the chosen area for the proposed BBF is completely transformed, with no natural vegetation remaining. This appears to remain the case going back all the way to 1989. Although the 1936 and 1957 imagery seem as though the site may still have supported some fynbos elements despite being mostly transformed for agricultural purposes. In the 1936 & 1957 imagery two waterbodies are clearly visible in the proposed BBF area, however these have been modified anthropogenically by 1989. It is also around 1989 that infrastructure associated with the WWTW appears in the imagery. In 2003 and 2011 there is some evidence of the pasture east of the project area being irrigated with wastewater although this practice is ceased by 2025.

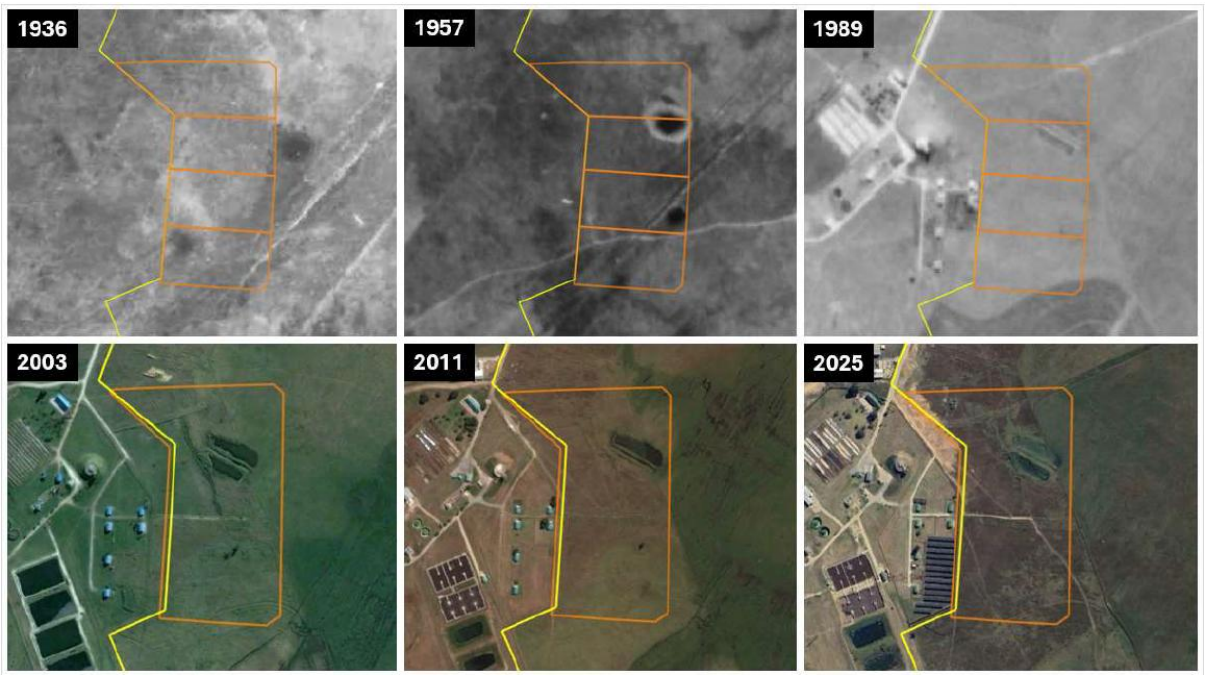

Figure 8: A series of historical imagery of the project area.

4.2 Plant Species

The SCC flagged for the site were identified by the screening tool report. The plant species theme sensitivity of Medium is dependent on the presence, or likely presence, of several plant species of conservation concern (SCC). These species are listed in Table 2 below

Table 2: The plant species of conservation concern (SCC) flagged for the site, with additional SCC not in the screening tool report highlighted in grey. The right column is for species that may not be named in the report due to their sensitive nature (the numbers for these species are given by SANBI).

Species of conservation concern	Sensitive species
Diosma passerinoides	500
Erica glandulosa subsp. *fourcadei*	800
Erica unicolor subsp. *georgensis*	1024
Erica unicolor subsp. *mutica*	1032
Euchaetis albertiniana	
Lampranthus pauciflorus	
Leucospermum glabrum	

5. FIELD ASSESSMENT RESULTS

This section serves as a description of vegetation patterns and taxa that were found on the site, as determined during the field surveys. Most of the site's vegetation is of a very poor quality, with heavy invasions by Invasive and Alien Plants (IAPs), most notably, *Cenchrus clandestinus* (kikuyu grass). The vegetation was dominated by a mixture of IAPs, exotic and indigenous weeds, and was dominated by grasses. No SCC were found during the site visit, **and no SCC are likely to occur here**.

5.1 Observations & Plant Species

The mapping and sensitivity mapping of the proposed BBF area was already completed as part of the larger scale Gwayang mixed-use development environmental process. The site assessments conducted for the BBF facility therefore simply served to ensure that all the mapping to date is still relevant and up to date, in accordance with field observations. As expected, the site is transformed and is currently being utilised as fields for grazing animals like cows (Fig. 9). Cows grazing and the maintenance of pasture fields on the site has contributed largely to the complete transformation of the flora here to no natural vegetation remaining. This has also led to the dominance of numerous IAPs, such as kikuyu grass. Fields currently used for grazing seem to have been disturbed since at least the 1950s. A species list is not provided in this report, due to the highly transformed nature of the site and dominance by alien and invasive plants. Because of this, important or dominant taxa observed are listed and discussed below.

The grasses observed in the proposed BBF area included mostly invasive kikuyu (*Cenchrus clandestinus*), but also included *Paspalum dilatatum, Cynodon dactylon, Eragrostis plana*, & *Sporobolus africanus*. *Juncus imbricatus* cf. *capillaceous* is also very common in the fields but is not necessarily associated with wetland features on the site.

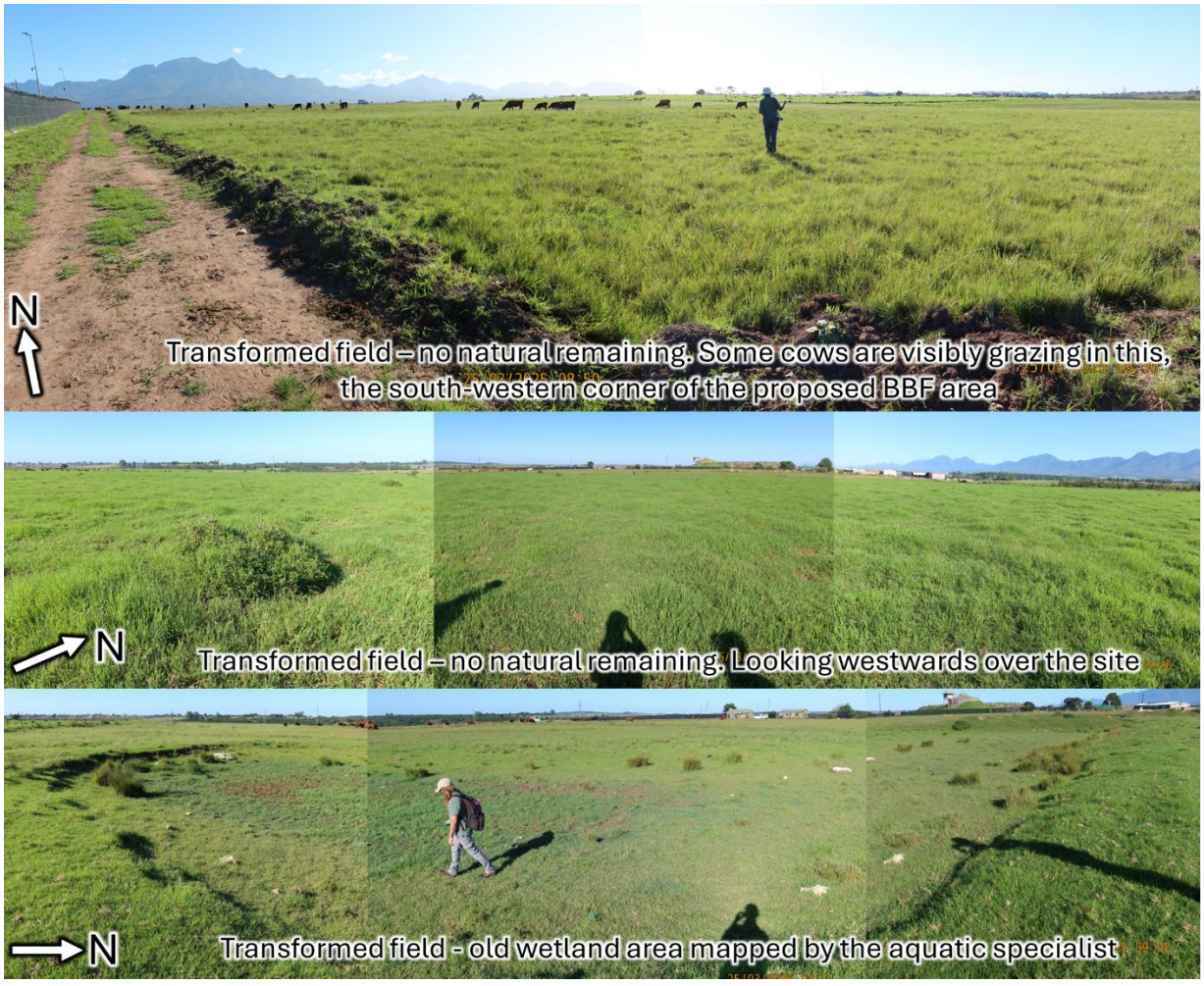

Figure 9: Photos taken of the transformed proposed BBF area during a site assessment.

Black wattle (*Acacia mearnsii*) seedlings were also seen in places, with patches of thistle (*Cirsium vulgare*), jimsonweed (*Datura stramonium*), spiny cockleburs (*Xanthium spinosum*), horseweed (*Erigeron sumatrensis*), vervains (*Verbena bonariensis*), bitter apples (*Solanum linnaeanum*), *Lantana camara*, and brakbos (*Exomis microphylla*) characterising the invaded fields. Species like *Lobelia flaccida, Monopsis unidentata unidentata, Felicia muricata*, and *Selago corymbosa* were also found, however they were few and depauperate. In the old wetland area typical wetland species were observed in small patches and included mostly *Juncus effusus*. The wetland areas also included smaller patches of *Eleocharis limosa, Cyperus congestus, Persicaria decipiens*, and *Cyclospermum leptophyllum*, which were absent over the remainder of the proposed BBF area.

The mapping and sensitivity mapping of the proposed BBF area was already completed as part of the larger scale Gwayang mixed-use development environmental process. The site assessments conducted for the BBF facility therefore simply served to ensure that all the mapping to date is still relevant and up to date, in accordance with field observations. This was confirmed to be the case, and the mapping in this area is presented in Fig. 10. Note that the combined sensitivity here refers to the highest sensitivity ratings assigned by a botanical specialist (B. Fouche), aquatic specialist (Dr. J. Dabrowski), and a faunal specialist (M. Leitner & K. Daniels). The site ecological importance calculated only for the plant species theme is presented in the next section.

Figure 10: The refined / observed vegetation map made following the specialist site visits. The combined specialist sensitivity map (for aquatic, botanical, and faunal assessments) is presented to the right of the observed vegetation map.

6. SITE ECOLOGICAL IMPORTANCE (SEI)

6.1 SEI Assessment

The site ecological importance (SEI) for the different vegetation units identified on the site are calculated in this section. The site ecological importance (SEI) assessment is a function of biodiversity importance (BI) and receptor resilience (RR), which is defined as:

"The intrinsic capacity of the receptor (i.e., habitat type in question) to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention."

The function is as follows: SEI = BI + RR. BI is a function of conservation importance (CI) and habitat functional integrity (FI), so that BI = CI + FI. The definition of CI given by the Species Environmental Assessment Guideline of 2022 is:

"The importance of a site for supporting biodiversity features of conservation concern present, e.g., populations of IUCN threatened and Near Threatened species (CR, EN, VU and NT), Rare species, range-restricted species, globally significant populations of congregatory species, and areas of threatened ecosystem types, through predominantly natural processes."

Most features included in CI are provided by the screening tool but needs to be evaluated at a finer scale from the field work assessment. FI is defined as:

"A measure of the ecological condition of the impact receptor as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts."

The criteria for defining RR, CI and FI are provided in the Species Environmental Assessment Guidelines of 2022. BI can be derived from a simple matrix of CI and FI, as illustrated in Table 3 below.

Table 3: The matrix that defines the biodiversity importance (BI) of a given habitat type, as identified from a desktop and field assessment.

Biodiversity Importance		Conservation Importance				
		Very High	High	Medium	Low	Very Low
Functional Integrity	Very High	Very High	Very High	High	Medium	Low
	High	Very High	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very Low
	Low	Medium	Medium	Low	Low	Very Low
	Very Low	Medium	Low	Very Low	Very Low	Very Low

SEI can then be derived from a second matrix, as depicted in Table 4. SEI is specific to the proposed development and can therefore only be compared between alternative layouts for the same proposed development, but not between developments.

Table 4: The matrix that defines the site ecological importance (SEI) of a given habitat type, as identified from a desktop and field assessment.

Site Ecological Importance		Biodiversity Importance				
		Very High	High	Medium	Low	Very Low
Receptor Resilience	Very High	Very High	Very High	High	Medium	Low
	High	Very High	Very High	High	Medium	Very Low
	Medium	Very High	High	Medium	Low	Very Low
	Low	High	Medium	Low	Very Low	Very Low
	Very Low	Medium	Low	Very Low	Very Low	Very Low

The overall SEI score is intended to provide a more refined overview of the sensitivity of the various habitats that have been identified on the site. Each of the identified SEI categories in this report has an associated recommended level of mitigation, which relates back to the mitigation hierarchy, as presented in Table 5.

Table 5: Mitigation guidelines for interpreting the SEI in the context of botanical and terrestrial themes for the proposed development activities.

Site Ecological Importance	Recommended mitigation measures
High	Avoidance mitigation wherever possible. Minimisation mitigation, so that changes to the project design are made to limit the amount of habitat impacted. Limited, low impact development activities acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation, where development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation, where development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very Low	Minimisation mitigation, where development activities of medium to high impact acceptable and restoration activities may not be required.

No SCC or rare species were recorded on the site, nor are any suspected to occur on the site. Several IAPs were recorded during the field assessments here. According to the SEI calculation here (which is the same as that presented in the Gwayang mixed-development project), the site has a Very Low botanical SEI rating (Table 6). The methods used to calculate the SEI is presented in the appendix.

Table 6: An extract of the Site Ecological Importance (SEI) for various vegetation units observed on and around the proposed BBF area.

Habitat	Conservation Importance	Functional Integrity	Receptor Resilience	Site Ecological Importance (Botanical)	Combined sensitivity
Fields & Invaded & Litter	**Very Low** No natural habitat remaining, and highly unlikely populations of SCC.	**Low** Almost no connectivity with cows frequently grazing. and a very busy used road network surrounds the area. Low rehabilitation potential.	**High** Species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring. Most species will remain even if irrigation is removed.	**Very Low** BI = Very Low RR = High Faunal SEI is Low No aquatic sensitivity	**LOW**
Fields – old wetland area	**Very Low** No natural habitat remaining, and highly unlikely populations of SCC.	**Low** Almost no connectivity with cows frequently grazing. and a very busy used road network surrounds the area. Low rehabilitation potential.	**High** Species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring. Most species will remain even if irrigation is removed.	**Very Low** BI = Very Low RR = High Faunal SEI is Low Medium aquatic sensitivity	**MEDIUM**
Invaded – transformed / modified vegetation	**Low** Limited potential to support SCC, with no confirmed populations.	**Low** Almost no habitat connectivity, with cows frequently grazing. Several minor and major ecological impacts.	**Medium** Will recover slowly to restore > 75% of the original species composition and functionality of the receptor. Species with a moderate likelihood of returning once the disturbance or impact has been removed.	**Low** BI = Low RR = Medium Saunal SEI is Very Low No aquatic sensitivity	**LOW**

Despite the Very Low SEI rating given to the site in this SEI evaluation presented, the relevant SEI and sensitivities of other specialists must also be considered in order to present a final terrestrial biodiversity sensitivity for the site. The final sensitivity assigned by specialists resulted in the map presented in Fig. 10.

7. SENSITIVITY VERIFICATION

The screening tool identified medium plant sensitivity for portions of the site and identified the terrestrial sensitivity for the whole site as having a very high sensitivity. The following conclusions are made given the evidence presented in this report both from a desktop and ground-truthed assessment.

7.1 Terrestrial Biodiversity

As stated at the beginning of this report, the proposed BBF location is highly transformed, within a municipal service zone and directly adjacent to the WWTW and landfill of George. Taking the BSP priority areas, and SEI into consideration, the terrestrial **sensitivity is Low**. The historical imagery, evidence of past and ongoing disturbance, and long-term degradation of the site supports this finding.

7.2 Botanical Diversity

The botanical theme sensitivity is confirmed to be **Low**. No SCC are expected to occur in this footprint. Furthermore, no habitat for SCC are expected here in the future either (i.e., this site does not have the potential to act as a potential range expansion for some species under climate change, given the transformed state where no natural habitat remains).

8. COMPLIANCE STATEMENT

Given that both the Plant species theme, as well as the Terrestrial Biodiversity theme of this report has a Low sensitivity confirmed, a compliance statement can be issued for the BBF facility proposed. In accordance with the EIA Regulations, 2014 (as amended), and specifically Listing Notice 3 (GN R.324), the proposed development is not expected to result in the loss of indigenous vegetation or significant impact on biodiversity and therefore does not trigger the need for a full environmental impact assessment under botanical sensitivity criteria.

Based on field observations, the project site comprises primarily disturbed or previously cultivated land, with no significant presence of threatened, endemic, or protected plant species. Minor ecological concerns such as soil compaction, temporary vegetation clearance, or introduction of non-native species can be effectively managed through standard mitigation measures, and ensuring the project remains within the defined footprint only. Some best practice recommendations are listed below as they relate to the themes presented in this report:

- Define access routes and restrict vehicle movement to designated areas using temporary track mats or gravel paths.
- Use light-footprint machinery for construction and maintenance if and where possible.
- Avoid operations during wet conditions to minimize soil deformation.

- Minimize clearance zones to what's absolutely necessary for construction and operation.
- Implement erosion control measures (e.g., jute netting) in cleared areas.
- Rapidly revegetate disturbed areas using fast-establishing pioneer species (do not use NEMBA or CARA listed invasive species like kikuyu).
- Consider establishing a low-maintenance green belt around the facility with hardy, pollution-tolerant native species,
    - e.g., Shrubs like *Searsia lucida, Diospyros dichrophylla, Leonotus leonurus, Osteospermum moniliferum, Passerina falcifolia, Salvia africana-lutea, Agathosma ovata*, and *Leucadendron salignum*.
    - Groundcovers like *Carpobrotus edulis, Pelargonium capitatum, Helichrysum cymosum*, and *H. petiolare*,
    - Graminoids like *Eragrostis curvula* and *Cyperus textilis* in wetter areas.

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