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SITE SENSITIVITY VERIFICATION REPORT

For

PROPOSED RESIDENTIAL HOUSING DEVELOPMENT ON ERF 2925, WELBEDAGHT KNYSNA, WESTERN CAPE.

PREPARED FOR:	**Mr. Piet van Niekerk**
PREPARED BY:	Eco Route Environmental Practitioners Joclyn Marshall (EAPASA 2022/5006), assisted by Justin Brittion (Can. EAPASA 2023/6648)
DOCUMENT REFERENCE:	2025.02.1.03 – Erf 2925 Site Sensitivity Verification Report
DEPARTMENT OF FORESTRY, FISHERIES, AND THE ENVIRONMENT REF:	TBC
DATE:	2025/03/24
SUBMITTED TO:	**I&AP's** **Competent Authority** **Mr. Piet van Niekerk**

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STATEMENT OF INDEPENDENCE

I, **Joclyn Marshall**, of Eco Route Environmental Consultancy, in terms of section 33 of the NEMA, 1998 (Act No. 107 of 1998), as amended, hereby declare that I provide services as an independent Environmental Assessment Practitioner (**EAPASA Reg: 2022/5006**) and receive remuneration for services rendered for undertaking tasks required in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, 2014 (as amended). I have no financial or other vested interest in the project.

EAP SIGNATURE:_____ 

1. INTRODUCTION

Eco Route Environmental Consultancy has been appointed by the applicant **Mr. Piet van Niekerk** to ensure compliance with regulations contained in the National Environmental Management Act (NEMA Act No. 107 of 1998) and the Environmental Impact Assessment Regulations (2014), as amended, for the proposed construction of a primary dwelling and cottage on Erf 2925, Welbedacht, Knysna (hereafter referred to as "the property".

1.1. Location Information

Erf 2925, Welbedacht, Knysna (referred to as "the property"), borders the N2 Highway. Whereby the N2 separates the property from the Knysna Estuary. The property extends approximately 2.5 hectares (as per title dead).

SG Region:	KNYSNA
Erf Nr:	2925
Area (Sqm):	25268.00
SG Code:	C03900050000292500000

Figure 1: Locality Map of Erf 2925

The property is bordered by erven set for dwelling development. Its eastern boundary ends at Cherry Lane, while its western boundary meets the N2 Highway. Currently, access to the property is via a dirt road extending from Cherry Lane through Erf 7594 and Erf 2924, which is also owned by the Van Niekerk family.

FEATURE	LATITUDE (S)			LONGITUDE (E)		
	DEG	MIN	SEC	DEG	MIN	SEC
Western Boundary	34°	02'	10.30˝	23°	00'	40.81˝
Southern Boundary	34°	02'	11.09˝	23°	00'	45.12˝

Eastern Boundary	34°	02'	07.09˝	23°	00'	48.06˝
Northern Boundary	34°	02'	08.36˝	23°	00'	43.77˝

Figure 2: Locality Map of Erf 2925 (smaller extent)

2. ENVIRONMENTAL CONSIDERATIONS

The following section presents the environmental sensitivities associated with the property, based on the available information and specialist input. In instances where specialist input provides a more accurate representation than desktop data, the specialist findings have been included. This approach ensures that the assessment reflects actual on-site conditions, as environmental sensitivities identified through desktop data may not always align with the realities observed on the ground.

Please note that the property in reference is Erf 2925. The adjacent properties, Erf 2924 and Erf 7594, are also owned by the proponent's family. While these properties are not part of this assessment, the contracted specialists have conducted investigations on all properties simultaneously to reduce costs.

2.1. VEGETATION

According to the spatial data layer Vegetation Type (Vegmap 2018) from SANBI, the entire property was mapped to contain Garden Route Shale Fynbos.

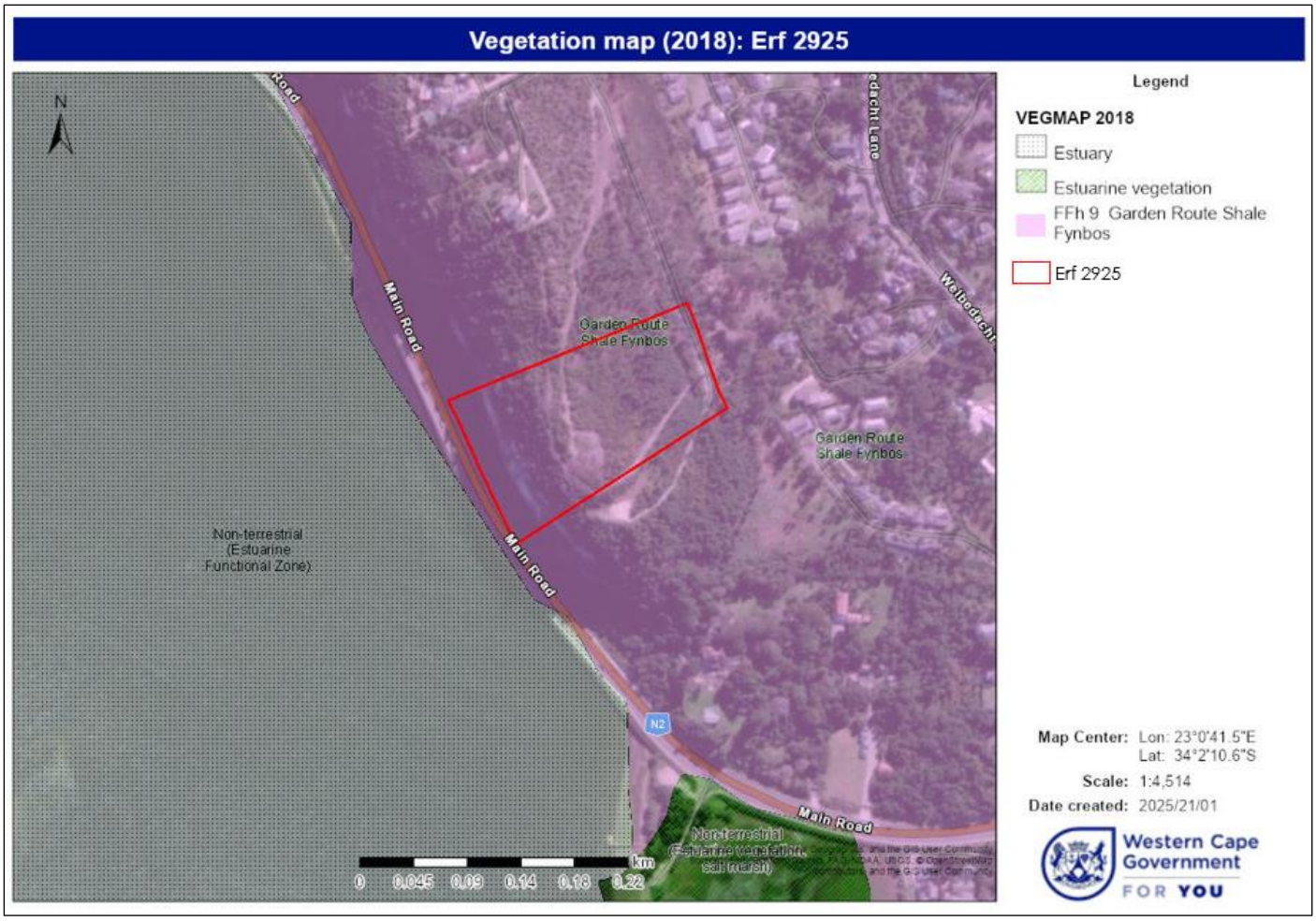

Figure 3: Vegetation Types present on Erf 2925 as represented by SANBI (2018)

Further information from SANBI provides details applicable to the mapped Garden Route Shale Fynbos -

Table 1: Important Information Regarding Garden Route Shale Fynbos (SANBI)

FFh 9 Garden Route Shale Fynbos	VT 4 Knysna Forest (58%) (Acocks 1953). Mesic Mountain Fynbos (17%), South Coast Renosterveld (17%), Afro-Montane Forest (16%) (Moll & Bossi 1983). LR 2 Afromontane Forest (46%), LR 64 Mountain Fynbos (27%) (Low & Rebelo 1996). BHU 100 Knysna Afromontane Forest (41%), BHU 28 Blanco Fynbos/Renosterveld Mosaic (21%) (Cowling et al. 1999b, Cowling & Heijnis 2001).
Distribution	Western and Eastern Cape Provinces: Patches along the coastal foothills of the Langeberg at Grootberg (northeast of Heidelberg), the Outeniqua Mountains from Cloete's Pass via the Groot Brak River Valley, Hoekwil, Karatara, Barrington and Knysna to Plettenberg Bay. Patches from the Bloukrans Pass along coastal platform shale bands south of the Tsitsikamma Mountains via Kleinbos and Fynboshoek to south of both Clarkson and the Kareedouw Mountains. Altitude 0–500 m.
Vegetation & Landscape Features	Undulating hills and moderately undulating plains on the coastal forelands. Structurally this is tall, dense proteoid and ericaceous fynbos in wetter areas, and graminoid fynbos (or shrubby grassland) in drier areas. Fynbos appears confined to flatter more extensive landscapes that are exposed to frequent

	fires—most of the shales are covered with afrotemperate forest. Fairly wide belts of *Virgilia oroboides* occur on the interface between fynbos and forest. Fire-safe habitats nearer the coast have small clumps of thicket, and valley floors have scrub forest (Vlok & Euston-Brown 2002).
Geology & Soils	Acidic, moist clay-loam, prismacutanic and pedocutanic soils derived from Caimans Group and Ecca (in the east) shales. Land types mainly Db and Fa.
Climate	MAP 310–1 120 mm (mean: 700 mm), relatively even throughout the year, but with a slight low in winter. Mean daily maximum and minimum temperatures 27.6°C and 6.5°C for January and July, respectively. Frost incidence 2 or 3 days per year. See also climate diagram for FFh 9 Garden Route Shale Fynbos (Figure 4.68).
Important Taxa	([T]Cape thickets) Tall Shrubs: *Leucadendron eucalyptifolium* (d), *Protea aurea* subsp. *aurea* (d), *P. coronata* (d), *Leucospermum formosum*, *Metalasia densa*, *Passerina corymbosa*, *Protea neriifolia*, *Rhus lucida*[T]. Low Shrubs: *Acmadenia alternifolia*, *A. tetragona*, *Anthospermum aethiopicum*, *Cliffortia ruscifolia*, *Elytropappus rhinocerotis*, *Erica hispidula*, *Helichrysum cymosum*, *Leucadendron salignum*, *Pelargonium cordifolium*, *Phylica axillaris*, *P. pinea*, *Psoralea monophylla*, *Selago corymbosa*. Herb: *Helichrysum felinum*. Geophytic Herbs: *Pteridium aquilinum* (d), *Eriospermum vermiforme*. Succulent Herb: *Crassula orbicularis*. Herbaceous Succulent Climber: *Crassula roggeveldii*. Graminoids: *Ischyrolepis sieberi* (d), *Aristida junciformis* subsp. *galpinii*, *Brachiaria serrata*, *Cymbopogon marginatus*, *Elegia juncea*, *Eragrostis capensis*, *Ischyrolepis gaudichaudiana*, *Restio triticeus*, *Themeda triandra*, *Tristachya leucothrix*.
Endemic Taxa	Geophytic Herbs: *Cyphia georgica*, *Disa newdigateae*, *Gladiolus roseovenosus*.
Conservation	Endangered. Target 23%. Statutorily conserved in the proposed Garden Route National Park (4%) and Boosmansbos Wilderness Area (1%). A further 3% are protected in other (mainly private) conservation areas such as the Robbe Hoek Forest Reserve. More than half of the area has already been transformed for cultivation and pine plantations. Much of the remaining veld has been converted to pasture. Remnants are found largely on steep inclines and in areas unsuitable for agriculture. Alien plants such as *Hakea sericea* and various species of *Acacia* locally infest natural remnants. Erosion very low and moderate.
Remarks	This is a poorly studied vegetation type. Rebelo et al. (1991) have incorrectly placed this unit on sandstone in the Riversdale area.

* **References** Taylor (1970b), Drews (1980a, b), Rebelo et al. (1991), Vlok & Euston-Brown (2002).

While desktop data identifies the entire property as being covered by Garden Route Shale Fynbos, specialists from Capensis have conducted ground-truthing and determined that fynbos does not extend across the entire property. Instead, fynbos is confined to the upper ridge and northern slope, The southern portion of the property is characterized by Southern Cape Afrotemperate Forest. A habitat map (Figure 4) was also included as part of their findings to understand the division and state of the vegetation conditions.

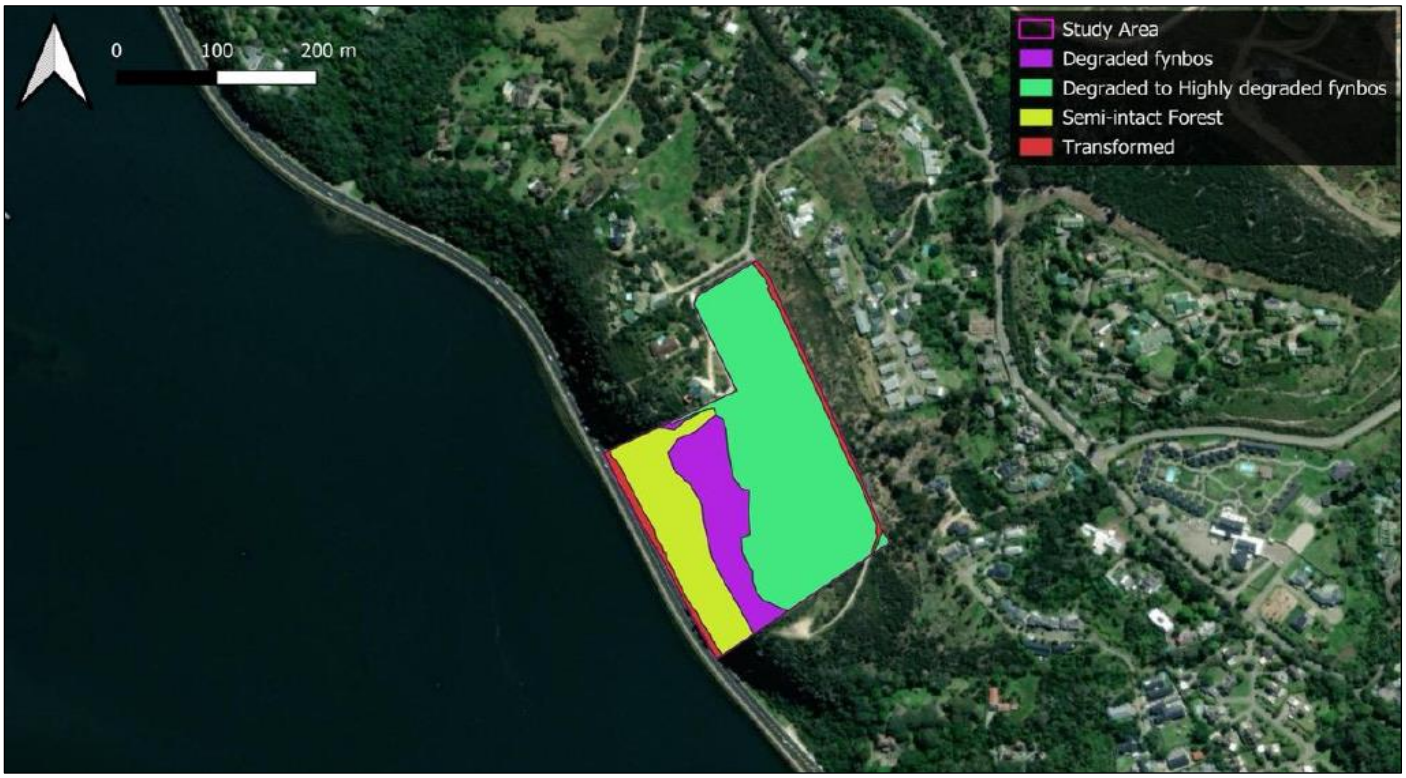

Figure 4: Habitat Map - The habitats identified in the screened areas, overlaid on a Google™ aerial image (Capensis, 2024)

2.1.1. Degraded fynbos

The fynbos species found on the site are listed in Table 2. These species include typical fynbos species and some thicket species, which often occur along the margins of forest habitats or in fire-safe areas. Some of these thicket elements are resprouting and hardy species that have persisted and possibly become more dominant under the influence of Invasive Alien Plants (IAPs). No species of conservation concern (SCC) were identified in this habitat. The ecological functioning of this habitat is likely moderately altered, with plant species diversity affected by the presence of IAPs, impacting the available habitat for another biota.

Table 2: Plant Species List for Degraded Fynbos Habitat (Capensis, 2024)

Name	**Common name**	**Scientific name**	**Common name**
Anthospermum cf. prostratum	creeping flowerseed	*Lampranthus sp.*	Brightfigs
Anthospermum aethiopicum	common flowerseed	*Leucadendron eucalyptifolium*	Gumleaf Conebush
Agathosma apiculata	Garlic Buchu	*Colchicum eucomoides*	Green men in a boat
Agathosma ovata	False Buchu	*Metalasia cf. trivialis*	Eastern Blombush
Anginon difforme	Common Finkel	*Metalasia pungens*	Stink Blombush
Aspalathus ericifolia	Heathleaf Capegorse	*Metalasia trivialis*	Eastern Blombush

Aspalathus opaca	Shady Capegorse	*Muraltia alopecuroides*	Foxy Purplegorse
Asparagus africanus	Bush Asparagus	*Oedera calycina*	
Centella virgata	Branching Capepurse	*Osteospermum moniliferum*	Bitou
Chaenostoma revolutum	Fineleaf Skunkbush	*Oxalis sp.*	Sorrels
Chironia baccifera	Christmas Berry	*Oxalis imbricata*	Tile Sorrel
Delostemon sp.	Twobract Lobelias	*Phylica cf axillaris*	Hardleaves
Erica discolor	Discolorous Heath	*Restio triflorus*	
Erica peltata	Shield Heath	*Restio triticeus*	Wheat Capereed
Eulophia cochlearis	Spoon Cinderella Orchid	*Rhynchosia leucoscias*	Shiny Snoutbean
Euryops virgineus	Virgin True-Eye	*Schoenus sp.*	Veldrushes
Ficinia lateralis	Side Clubrush	*Selago cf. glomerata*	Eden Bitterbush
Ficinia nigrescens	Black Clubrush	*Selago corymbosa*	Stiff Bitterbush
Helichrysum petiolare	Kooigoed	*Senecio ilicifolius*	Kowanna Ragwort

2.1.2. Degraded to highly degraded fynbos

The greater part of the site contains Degraded to Highly degraded fynbos. This area has a long history of IAPs (Table 3) and it is likely that the soil chemistry has changed over this time. There are low number of indigenous species under the IAPs. In areas where the IAPs have been cleared, there is a slightly higher diversity of indigenous species, suggesting that there may be some seeds still present in the topsoil in at least parts of the site. The species found in this habitat are the same as the ones listed above in Table 2 , however mostly far less abundant. Many parts of this habitat appear to be devoid of any indigenous species other than the most common and hardy species such as bitou (*Osteospermum moniliferum*), coastal camphor (*Tarchonanthus camphoratus*), and sour fig (*Carpobrotus edulis*). The areas bordering on adjacent developed properties have been impacted by dumping of garden waste, and some plants have established themselves within the study area, presumably from the adjacent cultivated gardens (e.g. *Coleus neochilus* and *Crassula sarmentosa*).

Table 3: Alien Invasive Plants identified on the property (Capensis, 2024)

Scientific name	**Common name**	**NEMBA Category**
Acacia baileyana	Baileys Wattle	3
Acacia cyclops	Rooikrans	1b
Acacia mearnsii	Black Wattle	2
Acacia melanoxylon	Blackwood	2
Acacia podalyriifolia	Pearl Wattle	1b
Acacia saligna	Port Jackson Willow	1b
Coleus neochilus	Mosquito Spurflower	N/A
Crassula sarmentosa	Trailing Stonecrop	N/A
Eucalyptus cladocalyx	sugar gum	N/A
Lantana camara	Lantana	1b
Melaleuca linearis	Narrow-leaved Bottlebrush	1b
Pinus radiata	Monterey pine	1b

2.1.3. Semi-Intact Forest

The forest habitat shows some erosion and low levels of Invasive Alien Plants (IAPs) and experiences edge effects from the road, but it is otherwise in good condition. The species noted in this habitat are a mix of thicket and true forest species, which are listed in Table 4. No species of conservation concern (SCC) were identified in this habitat.

Table 4: Plant Species List for Semi-intact Forest Habitat (Capensis, 2024)

Name	**Common Name**
Clausena anisata	Samandua
Cussonia thyrsiflora	Cape Coast Cabbagetree
Cynanchum ellipticum	Monkeyrope Buckhorn
Delairea odorata	Cape-ivy
Diospyros dichrophylla	
Elaeodendron croceum	Forest saffron
Euclea daphnoides	
Lauridia tetragona	Climbing Saffron
Olea capensis	Black Ironwood
Pterocelastrus tricuspidatus	Candlewood
Scutia myrtina	cat-thorn
Searsia cf. pyroides	Karees
Searsia cf. rehmanniana	Karees
Searsia pterota	Wing Currantrhus
Searsia chirindensis	Forest currant
Sideroxylon inerme	White Milkwood (Protected tree)
Trimeria grandifolia	Wild Mulberry

2.1.4. Photographic record of vegetation on the property

Table 5: Photographic record of vegetation on the property (Capensis, 2024)

Degraded Fynbos	
	
Degraded to highly degraded Fynbos	

Semi intact forest

3. ECOSYSTEM THREAT STATUS

According to SANBI red list of ecosystem status, the property containing Garden Route Shale Fynbos was originally mapped to be ENDANGERED (EN).

Figure 5: SANBI Original Ecosystem Status indicating Garden Route Shale Fynbos

The ecosystem was reviewed to still include the potential for Garden Route Shale Fynbos, which has retained its status, being of ENDANGERED (EN).

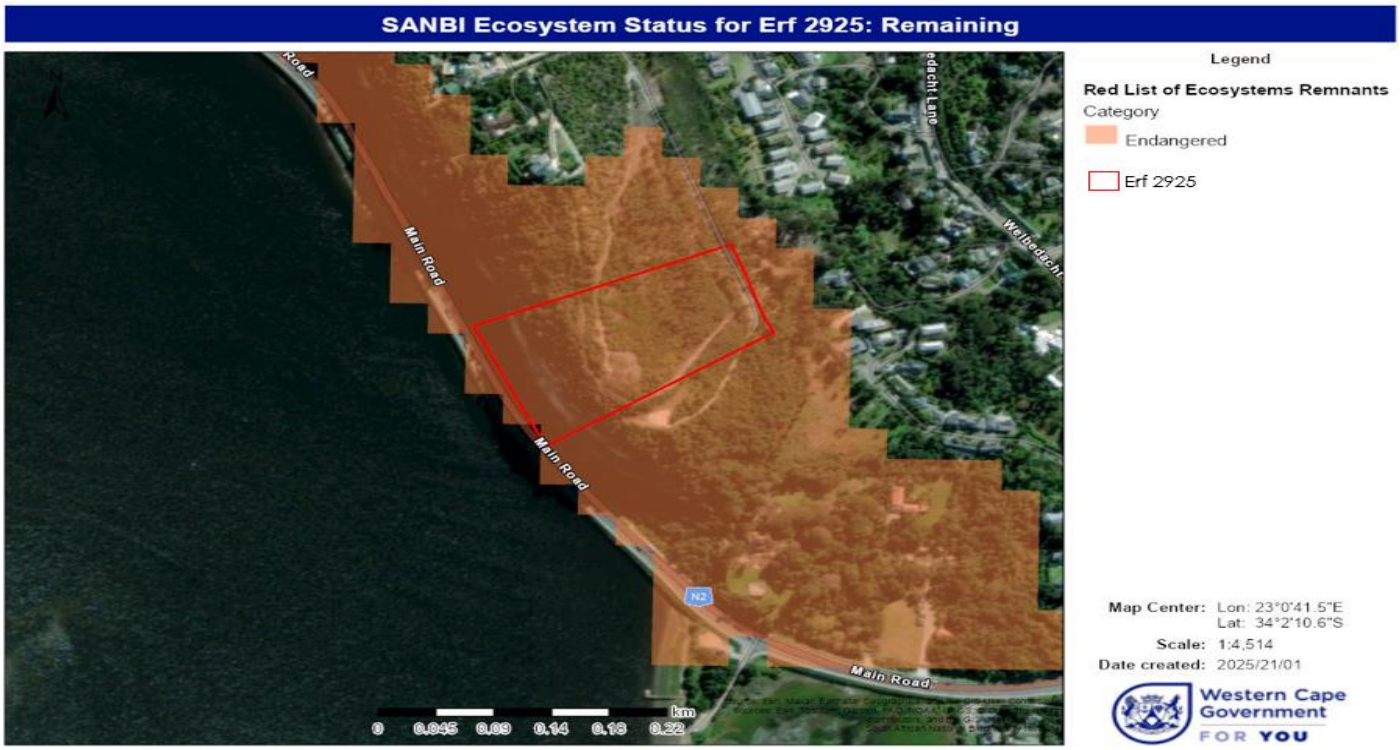

Figure 6: SANBI Remaining Ecosystem Status indicating Garden Route Shale Fynbos

As the vegetation type was found to be highly degraded (Capensis, 2024), no plants listed as Species of Conservation Concern (SCC) have been identified on the property, and therefore a Plant Species Compliance Statement was provided (Appendix D1).

The specialist specifically states that no SCC were identified on the site during the site visit, and none are likely to have been missed. The seasonality of the study was not optimal, however, geophytic

plants were still visible from their leaves or dried flowering plants and none of the SCC predicated by the screening tool are likely to be present on the site in its current condition.

4. SENSITIVE AREAS (CBA, ESA, and PA)

The Western Cape Biodiversity Spatial Plan (WCBSP, 2017) designates the property as situated within a Critical Biodiversity Area (CBA:1 – to maintain), divided between aquatic and terrestrial features.

The following applies to both aquatic and terrestrial features -

Definition:	Areas in a natural condition that are 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 natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

Figure 7: Western Cape Biodiversity Spatial Plan (WCBSP 2017) Sensitive areas

The specialists (Capensis, 2024) confirmed that the proposed development was indicated to occur within CBA 1, however, stated that this classification is questionable as the sites are not intact. It was specified that it would be more accurate to classify the property as CBA 2 or ESA 2 due to the poor condition.

The Knysna Estuary, situated across the N2 road on the property's western boundary, forms part of the Garden Route National Park, a designated protected area. While Cape Farm Mapper indicates that part of the protected area layer overlaps with the property, the proposed development will not impact the protected area, as the estuary itself lies across the N2 national road.

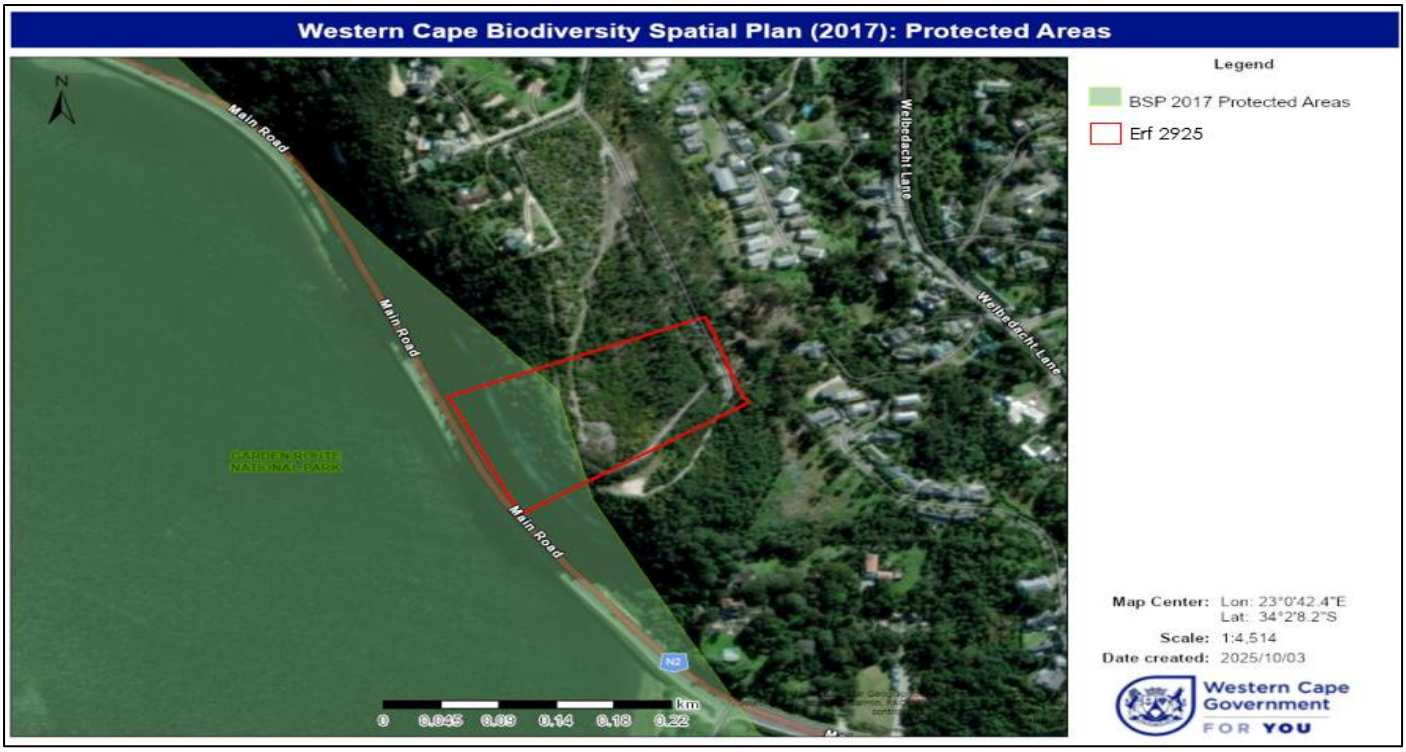

Figure 8: Western Cape Biodiversity Spatial Plan (WCBSP 2017) Protected Areas

5. FRESHWATER SENSITIVITIES

There are neither perennial, nor non-perennial rivers indicated on the property. Additionally, no wetlands have been noted on the property.

Figure 9: Freshwater Resources on / and in proximity of Erf 2925

Although no freshwater resources were identified, the adjacent Knysna Estuary adds sensitivity to the proposed development property, whereby part of the proposed development will fall within the 100-meter water mark from the Knysna Estuary (Figure 10). Therefore, mitigations measures proposed (Section D) by the specialist (Confluent, 2024) must be strictly adhered to.

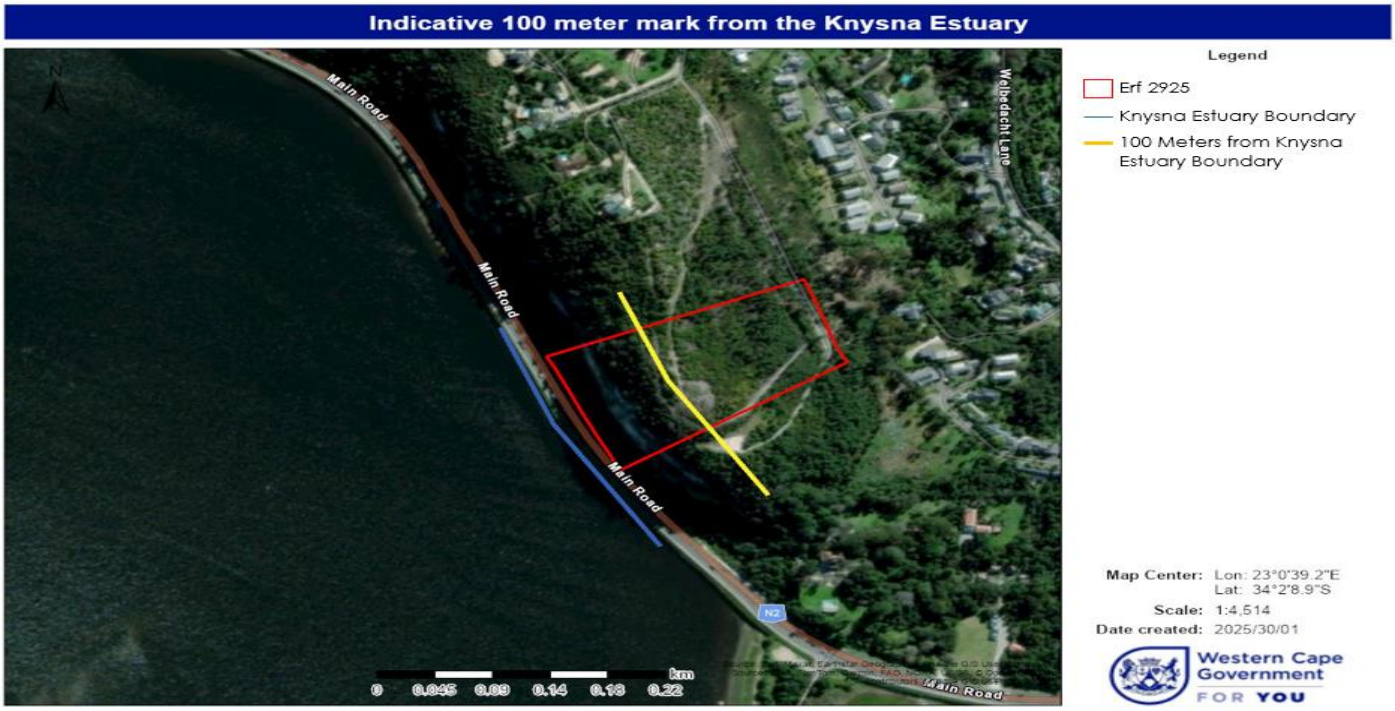

Figure 10: Indicative position of the proposed development to the 100-meter mark from the Knysna Estuary

6. FAUNA

Faunal Specialists (Confluent, 2024) were consulted to provide feedback on the faunal sensitivities relevant to the proposed development property. The GPS tracking gives indication to the extent of a site visit done in April 2024.

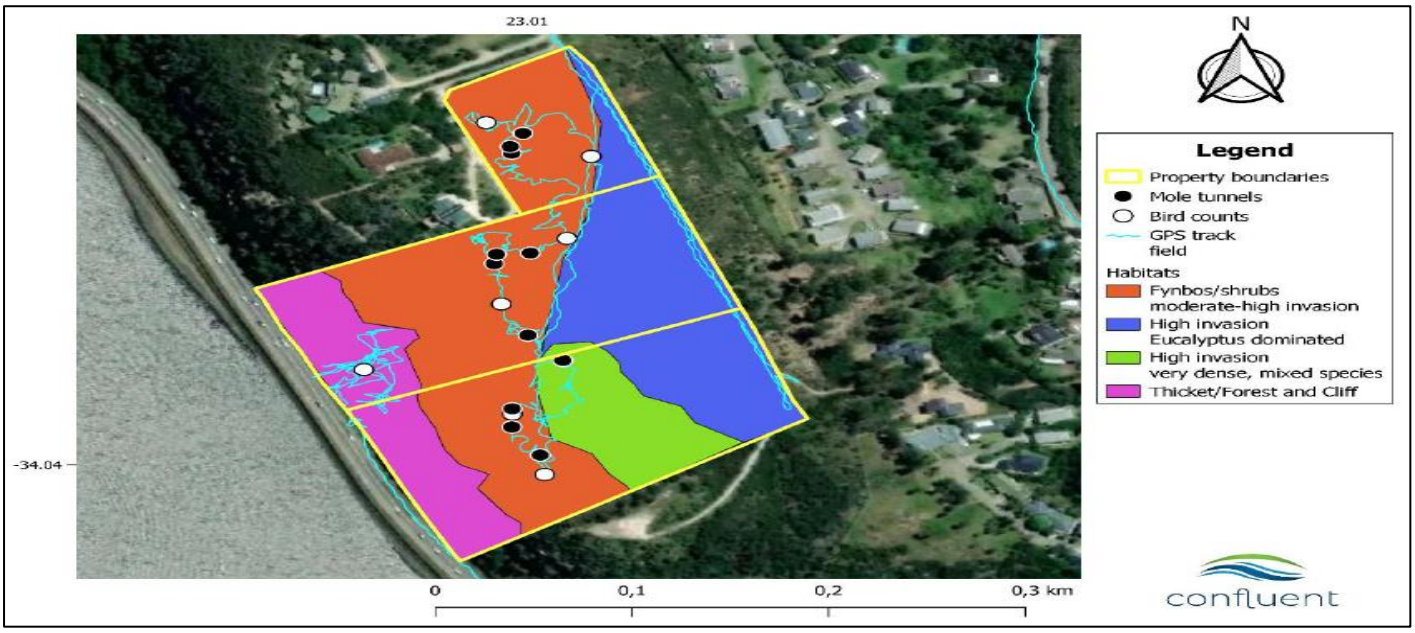

Figure 11: Habitats, GPS track and field work (Confluent, 2024)

6.1. Avifauna

No SCC were encountered during the site visit. Seven bird counts were conducted across the properties, in addition to opportunistic sightings noted throughout the meander and searching for

nests/roosting sites in suspected habitat. A total of 10 bird species (Table 6) were identified during the site visit.

Table 6: Avifauna species observed during site visit

Common name	Scientific name
African Firefinch	Lagonosticta rubricata
Cape Robin-Chat	*Cossypha caffra*
Hadada Ibis	*Bostrychia hagedash*
Karoo Prinia	*Prinia maculosa*
Kelp Gull	*Larus dominicanus*
Red-winged Starling	*Onychognathus morio*
Sombre Greenbul	*Andropadus importunus*
Southern Double-collared Sunbird	*Cinnyris chalybeus*
Southern Grey-headed Sparrow	*Passer diffusus*
Speckled Mousebird	*Colius striatus*

6.2. Mammals

Subterranean tunnels typical for the Golden Mole SCC were found on the hilltop areas of the property during the site visit. While not possible to identify the species present based on the tunnels alone, the habitat suggests the more likely occurrence of the Fynbos Golden Mole (*A. corriae*) rather than Duthie's Golden Mole (*C. duthieae*, Vulnerable) which is typically associated with more forested habitat. However, the DFFE Screening Tool predicted suitable habitat for Duthie's Golden Mole on all three properties and therefore the precautionary approach is followed for this SCC as well. Mole tunnels were found in all vegetation/habitats in the hilltop and northern sections of the properties regardless of the level of alien plant invasion. One mole tunnel was also observed to cross beneath the fence of the north-western neighbouring property, indicating their movement across the entire hilltop landscape (Figure 12).

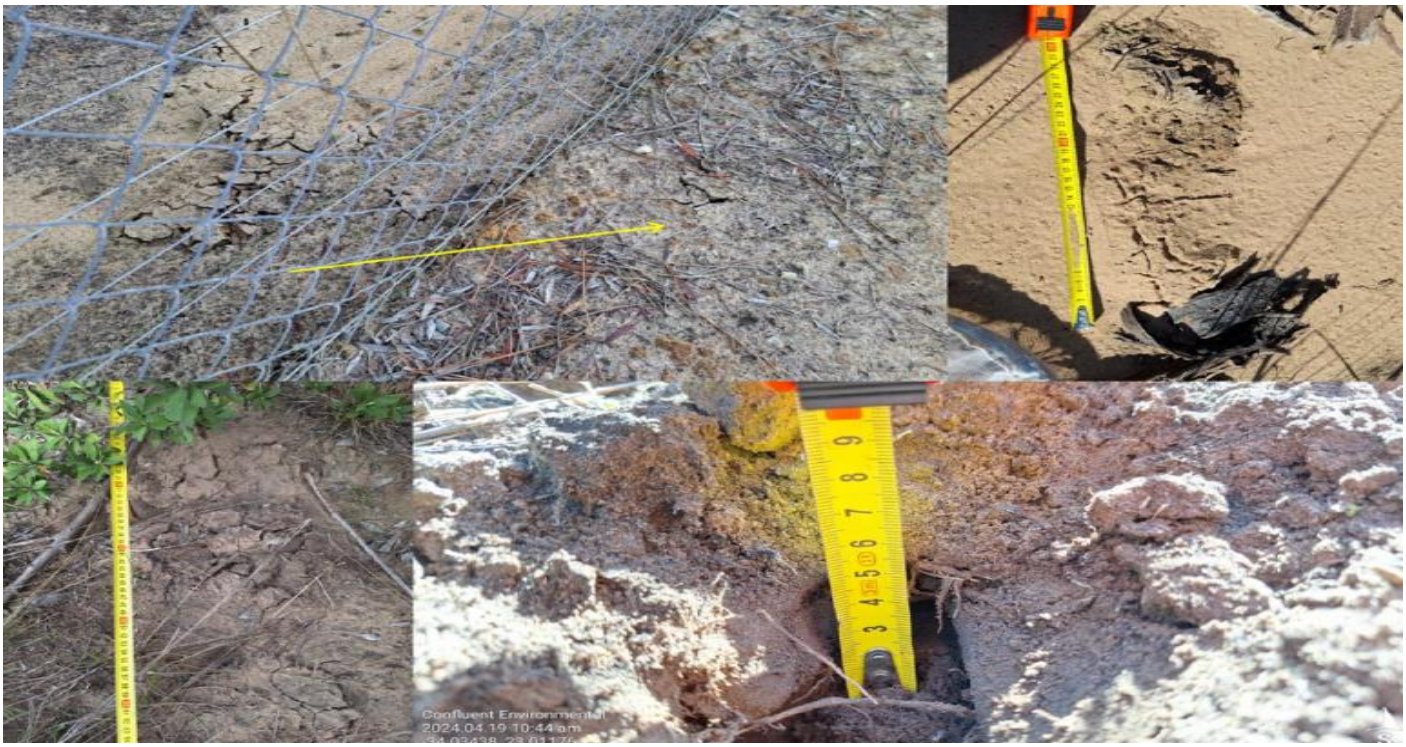

Figure 12: Golden mole tunnels seen on Erven 7594, 2924 and 2925. Top left image shows tunnel crossing a fence line (yellow arrow shows the crossing). Lengths of the tunnels seen are indicated by tape measure, as is the height (size) of one excavated tunnel in the bottom right image.

Antelope dung was found in the thicket section near the N2 highway and Bushbuck are suspected to be using this as a corridor. Some Mole-rat activity was also seen adjacent to the N2 highway along the mowed edges of the roads. Table 7 provides a summary of all mammals observed during the specialist's site visit.

Table 7: Mammal species observed during site visits to erven 7594, 2924, 2925 Knysna

Order	Family	Common Name	Scientific Name	Notes
Afrosoricida	Chrysochloridae	Golden mole	*Amblysomus corriae* OR *Chlorotalpa duthieae*	Typical sub-terranean tunnels seen on all three properties
Artiodactyla	Bovidae	Cape Bushbuck	*Tragelaphus sylvaticus*	Suspected from dung

6.3. Terrestrial invertebrates

No Species of Conservation Concern (SCC) were found during the site inspection. The limited fynbos elements combined with moderate to high levels of alien plant invasion generally reduce the habitat quality and suitability for most invertebrate SCC. However, the site did contain plants in the genus Aspalathus, which is the host plant genus for the Near Threatened butterfly, *Aloeides pallida littoralis*. In total, invertebrates from 6 Families were photographed and identified from site (Table 8).

Table 8: Invertebrate species observed during site visits

Order	Family	Common name	Scientific name
Araneae	Salticidae	Jumping Spider	-
Coleoptera	Lampyridae	Fireflies & Glowworms	-
Hymenoptera	Formicidae	Big-headed Ants	*Pheidole sp.*
Hymenoptera	Formicidae	Sugar Ants	*Camponotus sp.*
Lepidoptera	Nymphalidae	Cape Autumn Widow	*Dira clytus*
Orthoptera	Acrididae	Short-horned Grasshoppers	-
Orthoptera	Acrididae	Bandwing grasshoppers	*Acrotylus subfamily*
Stylommatophora	Achatinidae	Zebra Agate Snail	*Cochlitoma zebra*

7. GEOTECHNICAL

A geotechnical assessment for Erf 2924, conducted by Outeniqua Geotechnical Services in May 2022, identified moderate geotechnical constraints, including moderate to steep slopes and loose sandy soil requiring engineering consideration. The site featured aeolian Knysna cover sands overlying deeper siltstone, sandstone, and conglomerate of the Enon Formation, with no groundwater seepage at the time but potential for seepage in wet conditions. Soil tests indicated silty fine sands with low plasticity, requiring densification for adequate bearing capacity to prevent differential settlement. Despite these constraints, the site was deemed suitable for development. Given this assessment, it is not anticipated that a geotechnical study will be required for the current property in question, Erf 2925.

8. COASTAL ENVIRONMENT

Abbass et al. (2022)[1] describes in short that climate change is a long-lasting change in the weather arrays that include the shift in temperature and rainfall. This will ultimately pose risks to coastal areas stemming from rising sea levels, increased storm intensity, and altered precipitation patterns, which can lead to frequent flooding, erosion, and habitat loss. The influence of this risk on the property has been considered due to the proximity of the Knysna Estuary.

However, the property is well-protected from these impacts due to its strategic location. The property is buffered by the N2 highway and a steep cliff, providing a significant barrier against direct flooding and tidal surges from the Knysna Estuary. The elevation of the property further reduces its vulnerability to the effects of sea level rise and storm surges (Figure *13*).

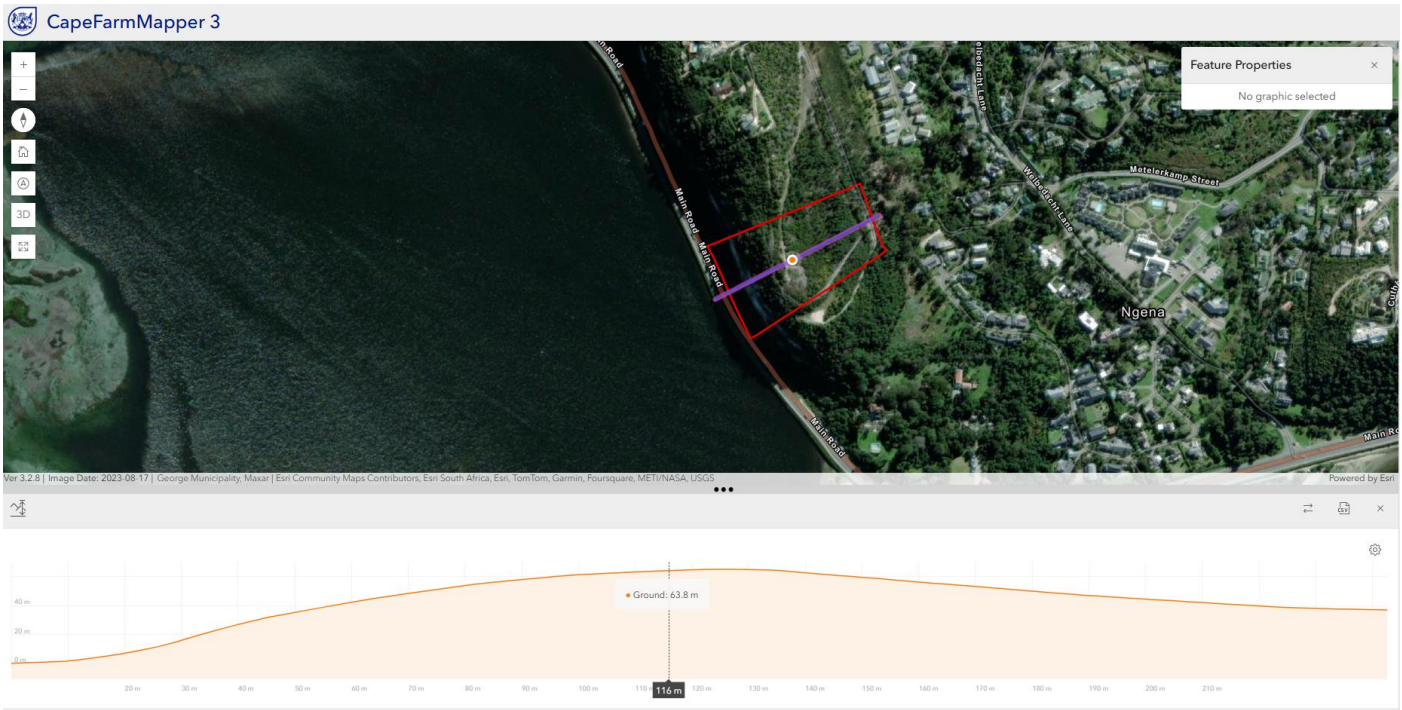

Figure 13: Cross section of Erf 2925 from the southern boundary

Consequently, while the Knysna Estuary may experience changes in its ecological dynamics due to climate change, the elevated position and natural buffers of the property ensure that it remains minimally impacted by these environmental changes, making it a viable option for development with minimal risk.

9. HERITAGE

A Notice of Intent to Develop (NID) under Section 38(1) and (8) of the NHR Act will be submitted to Heritage Western Cape. Heritage Western Cape will determine whether the proposed development might have an impact on heritage resources. Comment will be included in the final Basic Assessment Report.

[1] K. Abbass et al. 2022. A review of the global climate change impacts, adaptation, and sustainable mitigation measures. Environmental Science and Pollution Research. 29(42539–42559). https://doi.org/10.1007/s11356-022-19718-6

10. PROPOSED PROPERTY DEVELOPMENT

The preferred alternative entails the construction of a primary dwelling and associated infrastructure on Erf 2925, Knysna. Additionally, the current site development plan includes a proposed cottage on the property.

- Primary Dwelling Structure

The primary dwelling structure is the central focus of the proposed development and includes the following features:

- Floor Plan and Layout:

  Ground Floor Plan: Consist of main living areas, bedrooms, kitchen, and other essential spaces.

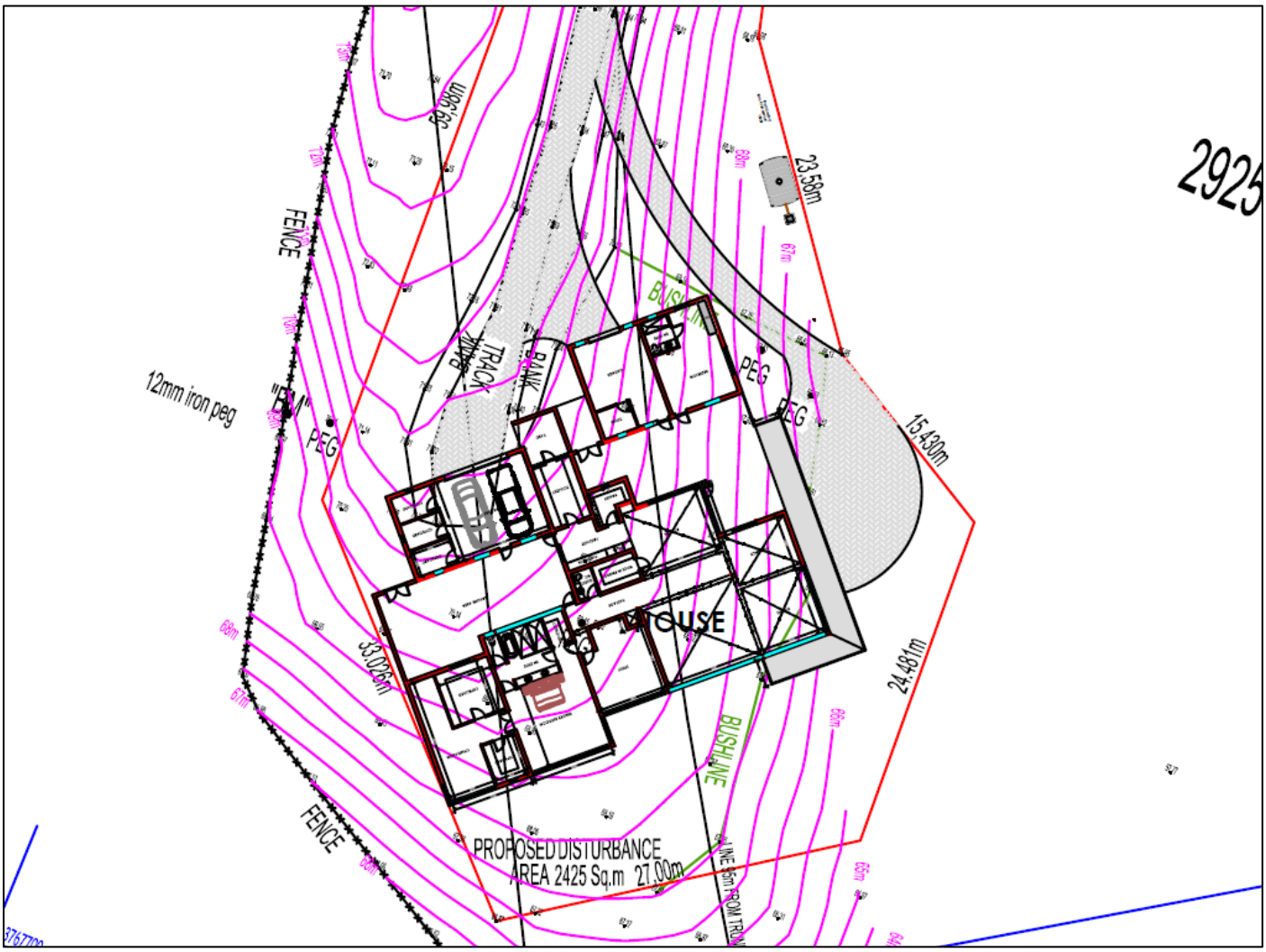

Figure 14: Site Development Plan (Eden Geomatics, 2025)

- Architectural and Design Features

Note that no specific architectural features have been provided in the current Site Development Plan. However, recommendations will be made to ensure that the exterior features are designed to minimise environmental impact. These recommendations will focus on aspects such as visual mitigation, light pollution control, and promoting stormwater permeability to reduce surface runoff.

- Services

The applicant has outlined the provision of municipal services to the property, including water, electricity, and sewage services. Water and electricity municipal services will be connected. However, a 6000 L conservancy tank will be installed to prevent sewage connection to the municipal system.

Sustainable alternatives to mitigate the impact on municipal water and electrical services is proposed.

- Water

  Rainwater harvesting: Involves collecting water from rooftops, which is stored in dedicated tanks. Gutters will be installed along the access road and driveway to maximize collection efficiency. Filters will also be incorporated to ensure the harvested water is suitable for reuse.

- Electricity

  Solar and Gas: To relieve the usage of electricity, solar panels will be installed on the roof at designated points. Geysers will also be fitted with solar driven heating elements. Gas will be utilized for cooking purposes.

- Site Layout and Landscaping

- Boundary and Access:

Boundary Lines: Clearly marked boundary lines define the extent of the property, whereby all development will be restricted within the boundary lines.

Fence line: A fence will be erected for security purposes along the western side of the proposed driveway, curving around the south of the proposed dwelling infrastructure.

Access Roads: The layout includes an access road that stems from Erf 7594 and continues through Erf 2924 and towards Erf 2925. **All the property owners have agreed on the construction of the road**.

- Cottage

No designs for the cottage have been proposed for the pre-application basic assessment phase, however the intent for an additional cottage should be noted. Designs will be finalised before the Final Basic Assessment Report.

At this stage the site development plan as proposed by Eden Geomatics state that the proposed development disturbance area (including working space around the primary dwelling, driveway construction area, cottage, and conservation tank) will amount to 2425 square meters.

Table 9: Disturbance area as presented by Eden Geomatics (2025)

Site	24 121
Total disturbance	2 425
Percentage disturbed	10 %
Percentage retained	90 %

Impact of proposed development:

The following table will serve as a summary of the impacts of proposed development during the construction phase of alternative A.

Table 10: Summary of impacts of proposed development associated with alternative A - proposed development

Impact	**Without Mitigation**	**With Mitigation**
	Significance of Impact	Significance of Impact
Loss of terrestrial biodiversity	**Low – negative (-)**	**Negligible – negative (-)**
Loss of species of conservation concern	**Low – negative (-)**	**Negligible – positive (+)**
Disturbance / loss of faunal habitat	**Medium – negative (-)**	**Low – negative (-)**
Fatality to faunal species	**Low – negative (-)**	**Negligible – negative (-)**
Disturbance / removal of topsoil and subsoil	**Medium - negative (-)**	**Low – negative (-)**
Stormwater runoff and erosion	**Low- negative**	**Negligible – negative (-)**
Waste Pollution	**Low- negative (-)**	**Negligible – negative (-)**
Construction Vehicles Pollution	**Low- negative (-)**	**Negligible – negative (-)**
Noise Pollution	**Low- negative (-)**	**Negligible – negative (-)**
Visual Impact	**Low – negative (-)**	**Negligible – negative (-)**
Employment	**Low – negative (-)**	**Negligible – positive (+)**

The DFFE Environmental Screening Tool Report indicates certain recommended specialist assessments to be done regarding selected classifications (Transformation of land | Indigenous vegetation) and (Infrastructure / Localised infrastructure / Infrastructure in the Sea-Estuary-Littoral Active Zone-Development Setback_100M Inland or coastal public property) with respect to the corelating listed activities.

Site sensitivity verification was done to explain why Terrestrial Biodiversity Impact Assessments, Plant Species Compliance Statement, Aquatic Compliance Statement, Animal Species Assessment, and a Geotechnical Report should be provided. Each report mentions certain mitigation measures to mitigate the impact of certain activities throughout the construction and operational phase.

Summary of Terrestrial Biodiversity Impact mitigations:

- The vegetation from the fynbos habitat that is not developed must be rehabilitated to a state where it is at least partially representative of the original fynbos ecosystem and supports ecological functioning to a moderate or high level.
- The rehabilitation must be undertaken in a phased approach, according to a rehabilitation plan and undertaken by a qualified botanist or restoration ecologist.
- The initial step will require the removal and control of all IAPs on the property and erosion control if necessary. Passive rehabilitation on the parts of the site where no earthworks have taken place can be allowed for one winter season following the removal of IAPs. Thereafter the site must be assessed by the restoration contractor to determine the level of active rehabilitation input. Active rehabilitation will be required for areas where topsoil has been removed.
- Follow-up clearing of all exotic and listed IAPs is required every 6 months for the first three years, and annually thereafter to ensure that the IAPs do not dominate the fynbos.

Best practise mitigation

- Mark off the areas that are not going to be developed prior to undertaking any works and ensure that no unnecessary loss of adjacent vegetation occurs.
- Sites for building material stocks, vehicles, toilets etc must be clearly marked and restricted to the building footprint, exiting roads or existing disturbed areas.

Summary of Aquatic Biodiversity Impact mitigations

- Implement measures to control erosion, with particular focus on the southwestern cliffs.
- Adhere to the principles for best management practice of stormwater management.
- Strategically place rainwater harvesting tanks.
- Use swales and detention ponds to manage stormwater runoff.

Summary of Animal Species Impact mitigations

- Phased Construction: Conduct construction in phases, confining activities to one area at a time. Communicate the construction phase plan to all staff.
- Pre-Construction Checks: Before earthworks, an ECO should walk through the demarcated footprint to check for and remove animals with limited mobility.

- Erosion Control Measures: Implement erosion control measures downslope where vegetation will be cleared.
- Topsoil Management: Treat and store topsoil removed during construction for future rehabilitation purposes.
- Staff Orientation: Regularly conduct staff orientation and information sessions.
- Vehicle Checks: Check construction vehicles daily for leaks and faults.
- Waste Management: Implement proper waste management, storage, and disposal to minimize pollution.
- Ablution Facilities: Provide, clean, and maintain adequate ablution facilities on-site.
- Pollution Prevention: Manage activities involving concrete, cement, plastering, and painting to prevent contamination of the environment.
- Material Storage: Cover stockpiles of building materials and soils with geotextiles or plastic coverings when not in use, and store small items and building materials in containers or designated areas to prevent animal interference.
- Food Waste Disposal: Dispose of food waste in designated bins and remove it from the site daily.
- Construction Hours: Restrict construction to daylight hours to ensure adequate monitoring for fauna and to prevent the use of artificial lighting.
- Speed Limits: Implement and enforce speed limits on all roads, with signs to warn drivers of wildlife.
- Site Cleanup: Regularly clear the site of waste material, rubble, and debris during and at the conclusion of the construction phase.

11. ENVIRONMENTALSCREENING RESULTS AND ASSESSMENT OUTCOMES

A Department of Forestry, Fisheries, and the Environment (DFFE) national web-based screening tool was regenerated (30 January 2025) to review the environmental sensitivities for *Transformation of land / Indigenous vegetation*. It was generated once more to review the environmental sensitivities for *Infrastructure / Localised infrastructure / Infrastructure in the Sea-Estuary-Littoral Active Zone-Development Setback_100M Inland or coastal public property*

The screening reports both list a variety of specialist studies to be undertaken based on the data informants of the tool at the study area.

The application classifications selected for the screening report was –

- *Transformation of land | Indigenous vegetation.*
- *Infrastructure / Localised infrastructure / Infrastructure in the Sea-Estuary-Littoral Active Zone-Development Setback_100M Inland or coastal public property*

11.1. ENVIRONMENTAL MANAGEMENT FRAMEWORKS RELEVANT TO THE APPLICATION

The Garden Route Environmental Management Framework is applicable to the proposed development.
(https://screening.environment.gov.za/ScreeningDownloads/EMF/gardenroute_finalreport.pdf)

In alignment with this management framework This Basic Assessment Report will evaluate potential impacts on biodiversity, water resources, soil stability, air quality, and noise. It will also consider socio-economic factors, including effects on the local community and cultural significance, while ensuring compliance with the National Environmental Management Act (Act 107 of 1998) and local zoning regulations. Mitigation measures will be outlined in an Environmental Management Plan (EMP), accompanied by continuous monitoring requirements. Additionally, public participation will play a crucial role in engaging stakeholders and addressing community concerns.

11.2. RELEVANT DEVELOPMENT INCENTIVES, RESTRICTIONS, EXCLUSIONS OR PROHIBITIONS

The proposed site is within both a South African Conservation Area (SACAD) and a South African Protected Area (SAPAD). Conservation Areas are currently not regulated through national or provincial legislation. However, Protected Areas are.

In consideration of this governance and the proposed development, the property is within the Garden Route National Park, which is declared a Protected Area under Section 9 of the National Environmental Management Protected Areas Act (Act 57 of 2003).
In Section 50(5) it further states that –

- No **development**, construction or farming may be permitted in a national park, nature reserve or world heritage site without the prior written approval of the management authority.

In which case South African National Parks (SANParks) is the management authority. SANParks will be consulted throughout the environmental assessment process.

11.3. PROPOSED DEVELOPMENT AREA ENVIRONMENTAL SENSITIVITY

The Screening Tool Report generated for *Transformation of land | Indigenous vegetation* identifies the following summary of environmental sensitivities related to the property, highlighting only the highest sensitivity areas. These identified environmental sensitivities for the proposed development footprint are indicative and have been verified on-site by suitably qualified specialists.

Table 11: Environmental Sensitivities according to the DFFE screening tool report (05 Feb 2024)

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture			X	
Animal Species			X	
Aquatic Biodiversity	X			
Archaeological & Cultural Heritage	X			
Civil Aviation			X	
Defence				X
Palaeontology	X			
Plant Species			X	
Terrestrial Biodiversity	X			

The Screening Tool Report generated for *Infrastructure / Localised infrastructure / Infrastructure in the Sea-Estuary-Littoral Active Zone-Development Setback_100M Inland or coastal public property* identified the environmental sensitivities similar to *Transformation of land | Indigenous vegetation.*

11.4. IDENTIFIED SPECIALIST INPUT REQUIRED

Based on both the selected classifications (*Transformation of land | Indigenous vegetation*) as well as (*Infrastructure / Localised infrastructure / Infrastructure in the Sea-Estuary-Littoral Active Zone-Development Setback_100M Inland or coastal public property*). Including considerations of the environmental sensitivities of the proposed development footprint). The following specialist assessments have been identified for inclusion in the assessment report.

Before starting a specialist assessment, the current use of the land and the environmental sensitivity of the site, as identified by the national web-based environmental screening tool, must be confirmed or disputed through a site sensitivity verification report. During this verification process (APPENDIX E), the reasons for not conducting certain specialist impact assessments were explained.

Table 12: Combined identified specialist assessments for (Transformation of land | Indigenous vegetation) as well as (Infrastructure / Localised infrastructure / Infrastructure in the Sea-Estuary-Littoral Active Zone-Development Setback_100M Inland or coastal public property).

No:	Specialist Assessment	Assessment Protocol
1	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf

4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Marine Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
7	Avian Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Avifauna_Assessment_Protocols.pdf
8	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
9	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
10	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
11	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

12. SITE SENSITIVITY VERIFICATION METHODOLOGY

According to the protocols, the Site Sensitivity Verification must be conducted by the Environmental Assessment Practitioner (EAP), or in some cases, by a specialist. This verification process includes:

- Desktop analysis
- Site inspection

In this instance, satellite imagery from sources such as Google Earth Pro, Google Maps, Cape Farm Mapper, and QGIS was utilised to develop a clear understanding of the site's conditions prior to the proposal for the development. Additionally, site inspections were performed to validate and "ground-truth" the data collected through the desktop analysis.

13. SITE SENSITIVITY VERIFICATION

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture			X (incorrectly reported – should be lower)	X
Animal Species			X	
Aquatic Biodiversity	X			
Archaeological & Cultural Heritage	X			
Civil Aviation			X (incorrectly reported – should be lower)	X
Defence				X
Palaeontology	X			
Plant Species			X	
Terrestrial Biodiversity	X			

- Landscape / Visual - **Disputed**

The site is positioned atop a hill, flanked by the N2 road leading towards Knysna on the west and Cherry Lane on the east. Surrounding properties feature houses of comparable size, which are not visible from either adjacent road. Steep terrain along the N2 side and dense vegetation on the opposite side obscure sightlines, ensuring the proposed development remains in context with its surroundings. The proposed development will be visible from Erf 2923 (the direct neighbour to the north). However, it remains the primary right of the owner to develop a primary dwelling on this property. Given that the character of the area will not be influenced, and that no development parameters will be breached, the need for an external visual assessment is disputed.

- Agriculture – **Disputed**

According to the Protocols for Agricultural Assessments, a compliance statement is required when the agricultural theme is rated as either medium or low sensitivity. In this case, following the verification of the agricultural theme, theoretically, such a statement is necessary. However, based on previous experiences where an agricultural assessment was required, the primary objective was to address the following key question:

Will the proposed development cause a significant reduction in agricultural production potential, and most importantly, will it result in a loss of arable land?

The assessment of the agricultural production potential for the proposed development site concluded that the property is too small to support economically viable agricultural activities. Additionally, the property is zoned for development of a Single Residential Property.

Based on this understanding, an agricultural specialist was not consulted for an assessment of the property.

- Animal Species - **Commenced (May 2024)**

According to the specialist Animal Species impact assessment the natural faunal habitat has been degraded by the infestation of alien invasive plant species since the Knysna veld fire 2017. However, three fauna SCC were likely to occur on all three properties (Golden Moles and a Butterfly), and a medium SEI rating was applied to all. As per the guidelines for developing in medium SEI areas, minimizing footprints and restoring natural habitat should be a priority.

After receiving this recommendation, the applicant decided to propose the development considering the existing access road.

Provided the mitigation measures are adhered to, the proposed developments are considered favourable by the specialist in terms of fauna. By mitigating the current negative impacts caused by the high levels of alien plant invasions on the properties, the habitat quality will be improved (ultimately increasing indigenous biodiversity) and fire-risk will be minimized on the erven and the greater surrounding areas.

- Aquatic Biodiversity – **Compliance Statement (Commenced April 2024)**

The generated screening report indicated that the aquatic biodiversity of Erf 2925 has a very high sensitivity rating. Therefore, Confluent Environmental Pty (Ltd) has been engaged by Eco Route to provide aquatic specialist inputs for proposed residential developments.

In summary of the aquatic Biodiversity Site Sensitivity Verification and Compliance Statement –

While challenges exist due to the site's proximity to vertical cliffs above the estuary, following the recommended management strategies in the report can reduce the risk to aquatic biodiversity and water resources. By implementing the proposed measures, the sensitivity of aquatic biodiversity on the property can be regarded as **low**, ensuring sustainable development within the Knysna region while preserving the integrity of the local ecosystem. The assessment therefore serves as a **Compliance Statement** that Aquatic Biodiversity at all three erven is rated as Low in contrast to the Screening Tool.

- Archaeological & Cultural Heritage – **Still to commence (Following first round Public Participation)**

The screening report indicates that the receiving environment has a VERY HIGH Relative Archaeological & Cultural Heritage Sensitivity

A Notice of Intent to Develop (NID) under Section 38(1) and (8) of the National Heritage Resources Act will be submitted to Heritage Western Cape. Heritage Western Cape will assess whether the proposed residential development on Erf 2925, Knysna, has potential impacts on heritage resources. Based on this submission, they will determine the need for an external Archaeological and Cultural Heritage assessment.

- Civil Aviation - **Disputed**

The DFFE screening tool's medium sensitivity rating for the civil aviation theme, based on the presence of an aerodrome between 8 and 15 km from Erf 2925, may be overly cautious considering the specifics of the proposed development. Given the significant distance between the aerodrome and the project site, there is minimal likelihood of interference with civil aviation operations. The proposed development is unlikely to involve structures or activities that could impact aviation safety or navigation. Therefore, a low sensitivity rating is more appropriate, as the civil aviation theme would remain unaffected by the nature and scale of the development at this distance.

- Geotechnical Assessment – **DISPUTED**

A geotechnical assessment for Erf 2924, conducted by Outeniqua Geotechnical Services in May 2022, identified moderate geotechnical constraints, including moderate to steep slopes and loose sandy soil requiring engineering consideration. The site featured aeolian Knysna cover sands overlying deeper siltstone, sandstone, and conglomerate of the Enon Formation, with no groundwater seepage at the time but potential for seepage in wet conditions. Soil tests indicated silty fine sands with low plasticity, requiring densification for adequate bearing capacity to prevent differential settlement. Despite these constraints, the site was deemed suitable for development. Given this assessment, it is not anticipated that a geotechnical study will be required for the current property in question, Erf 2925.

- Socio – Economic - **DISPUTED**

The site is located in the Welbedaght neighbourhood, primarily residential with various tourist accommodations and a few amenities like restaurants and coffee shops. Given the existing socio-

economic landscape, the proposed development is unlikely to alter the neighbourhood's socio-economic dynamics.

- Terrestrial Biodiversity and Plant Species Impact Assessment - **Commenced March 2024**

The generated screening report indicated that the terrestrial biodiversity of Erf 2925 has a high sensitivity rating, and that plant species has a medium sensitivity rating. Therefore, Eco Route Environmental Consultants appointed Greg Nicolson and Adam Labuschagne from Capensis Ecological Consulting (Pty) Ltd to provide specialist terrestrial biodiversity impact assessment and plant species compliance statement services for the proposed development on Erf 2925.

It was determined that the area contains different habitat areas. These areas where identified as degraded fynbos, degraded to highly degraded fynbos, semi – intact forest, and transformed land.

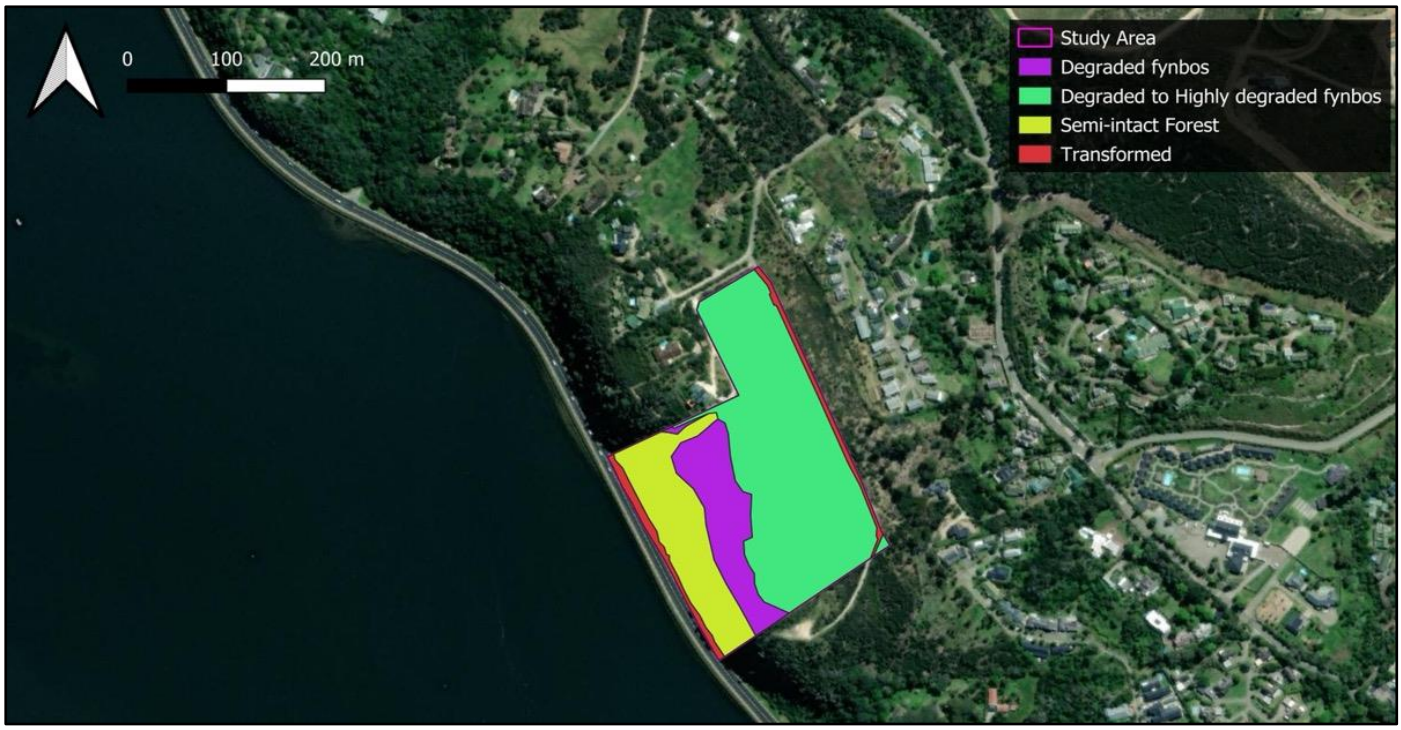

Figure 15: Identified habitats according to the specialist input (Capensis, 2024)

According to the VEGMAP, the study area contains only the Endangered Garden Route Shale Fynbos, however, it also supports one Least Concern ecosystem, namely Southern Afrotemperate Forest. According to the Vegetation Map for the Garden Route the site only supports Groenvlei Coastal Forest, an Endangered ecosystem, however, it also supports Knysna Enon Fynbos, a Vulnerable Ecosystem. The mapping of both resources is not completely accurate for the site, however, the threat status of both resources suggest that any remaining natural fynbos habitat is threatened and sensitive.

The WCBSP 2017 assigns parts of the site as Protected Area and CBA 1. The proposed developments occur within CBA 1 sites on Erf 2925. This classification is questionable as the site is not intact. A classification of CBA 2 would have been more appropriate. The part of the site that has been classified as a Protected Area (and NPAES focus area) will not be impacted.

The areas proposed for development are not intact (Degraded or Degraded to Highly degraded) and only partially representative of the original fynbos ecosystem in some parts of the site. The sensitivity of the Degraded habitat is Medium and the rest of Degraded to Highly degraded to habitat is rated as Low sensitivity. The high sensitivity Forest habitat that contains one protected tree species, the white milkwood Sideroxylon inerme will not be impacted.

The proposed development will result in the permanent loss of habitat which is currently Degraded to Highly degraded. The mitigation of rehabilitation will result in the remaining habitat on the site improving in condition. This will improve the overall ecological functioning of the Erf 2925 by ensuring that the dominant vegetation is locally occurring indigenous vegetation. This will allow for better habitat for faunal species, improving plant animal interactions such as pollination. The connectivity between the upper and lower elevations on the site will allow for better faunal movement between the site and surrounding areas. The occurrence of fires which are an important ecological driver for fynbos ecosystems may be reduced by increasing density of urban developments. Fire suppression will be practised in the urban environment, however, as evident in 2017 fires may still occur in the urban environment.

The proposed developments will have a Low negative cumulative impact, and no change to the ecosystem threat status will occur as a result of the proposed development. This is seen as acceptable in the context of the areas that will remain undeveloped and rehabilitated on the subject properties. The application is thus supported from a Terrestrial Biodiversity perspective, provided that the mitigation measures are adhered to (Nicolson and Labuschagne, 2024).

No plants listed as Species of Conservation Concern (SCC) have been identified at the site or within close proximity to the Study area and therefore a **Plant Species Compliance Statement** is included in as Appendix B.

In summary of the plant species compliance statement –

The impact on SCC of the proposed development is rated as Very Low negative and no SCC are likely to be impacted (Nicolson and Labuschagne, 2024)

14. CONCLUSION

After consideration of the identified environmental sensitivities and the identified specialist that need to provide input according to the generated screening tool report. This report supplements reason for inclusion and exclusion of studies that support the Pre-Application Basic Assessment Report.

The following table is a summary of specialist input gained during the Pre-Application Basic Assessment –

No:	Specialist Assessment	Assessment Protocol
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
10	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
11	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf