
PROPOSED RIVERBANK MAINTENANCE ON REMAINDER 1 of FARM 305 HANGLIP, PLETTENBERG BAY.

Terrestrial Biodiversity – Compliance Statement



Prepared For: Eco Route
Author: Bianke Fouce (MSc)
Confluent Environmental Pty (Ltd)
7 St. Johns Street,
Dormehlsdrift,
George, 6529
SACNASP: 141757 (Cand.Sci.Nat. In Botanical and
Ecological Science)
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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 study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done in an objective manner. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being members of the general public;
- I declare that there are no circumstances that may compromise my objectivity in performing this specialist investigation. I do not necessarily object to or endorse any proposed developments, but aim to present facts, findings and recommendations based on relevant professional experience and scientific data;
- 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.
- I confirm that this report contains all the necessary information required by GN 320 of 20 March 2020 (Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in Terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998, when Applying for Environmental Authorisation).
- All the particulars furnished by me in this document are true and correct.



Specialist: Bianke Fouche (MSc, Cand.Sci.Nat. In Ecology & Botany)

Date: 15 April 2024

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1. INTRODUCTION

1.1 Background

Confluent Environmental (Pty) Ltd was requested by the Plettenberg Bay Angling Club (PBAC) to conduct an animal species assessment for the proposed stabilisation of the banks of a section of the Keurbooms Estuary on the Remainder 1 of Farm 305 Hanglip, Plettenberg Bay. The bank is currently eroding and is placing existing infrastructure at risk (*Figure 1*).



Figure 1: Photograph showing erosion of the bank.

1.2 Key Legislative Requirements

1.2.1 National Environmental Management Act (NEMA, 1998)

According to the protocols specified in GN 320 of 20 March 2020 (Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in Terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998, when Applying for Environmental Authorisation), assessment and reporting requirements for aquatic biodiversity are associated with a level of environmental sensitivity identified by the national web-based environmental screening tool (screening tool). An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of:

- **Very High** sensitivity for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment; or
- **Low** sensitivity for terrestrial biodiversity, must submit a Terrestrial Biodiversity Compliance Statement.

According to the protocol, prior to commencing with a specialist assessment a site sensitivity verification must be undertaken to confirm the sensitivity of the site as indicated by the screening tool:

- Where the information gathered from the site sensitivity verification differs from the screening tool designation of **Very High** terrestrial biodiversity sensitivity, and it is found to be of a **Low** sensitivity, a Terrestrial Biodiversity Compliance Statement must be submitted.
- Similarly, where the information gathered from the site sensitivity verification differs from the screening tool designation of **Low** terrestrial biodiversity sensitivity, and it is found to be of a **Very High** sensitivity, a Terrestrial Biodiversity Specialist Assessment must be submitted.

1.3 Terrestrial Biodiversity Theme

The screening tool identified the site as **Very High** as the site occurs in several Biodiversity Priority Areas (BPAs) as listed in Table 1.

Table 1: Biodiversity Priority Areas that overlap with the project location/

Sensitivity layer	Description
National Priority Areas for Protected Areas Expansion	The latest priority expansion areas for each province, as well as the expansion footprint for national parks as per the approved management plan for national parks.
SAN Parks Buffer Areas	A buffer area for the Garden Route National Park - as defined in the February 2012 schedule on Biodiversity Policy and Strategy for South Africa's Strategy on Buffer Zones of National Parks.
Strategic Water Source Areas (SWSAs) (terrestrial)	Outeniqua SWSA.
Freshwater Ecosystem Priority Area (FEPA) (terrestrial)	Sub-quaternary catchment 9097
Red Listed Ecosystems	Garden Route Shale Fynbos (Endangered)

2. PROJECT DESIGN

Three alternative options have been proposed and will be assessed in this report. All three options require the construction of a 3 m reno mattress that will be placed approximately 1 m below the existing bed profile of the estuary and will extend approximately 3 m into the estuary. This will prevent undermining of the embankment.

- Option 1: Construction of stepped gabions over a geotextile layer (*Figure 2*).
- Option 2: Reprofilling the bank (1.3 m horizontal to 1 m vertical) using sandbags (800 mm x 500 mm x 170 mm) and covering these with a 0.3 m x 3.0 m reno mattress (*Figure 3*).
- Option 3: Reprofilling the bank (1.3 m horizontal to 1 m vertical) using larger, heavy duty geotextile sandbags (2 m x 1.9 m x 0.65m) which will remain uncovered (*Figure 4*).

For all options, the stabilisation will be restricted to the steeply eroded section of the embankment and will stop at the point where the gradient of the embankment flattens out and is not actively eroding (Figure 6 and Figure 5).

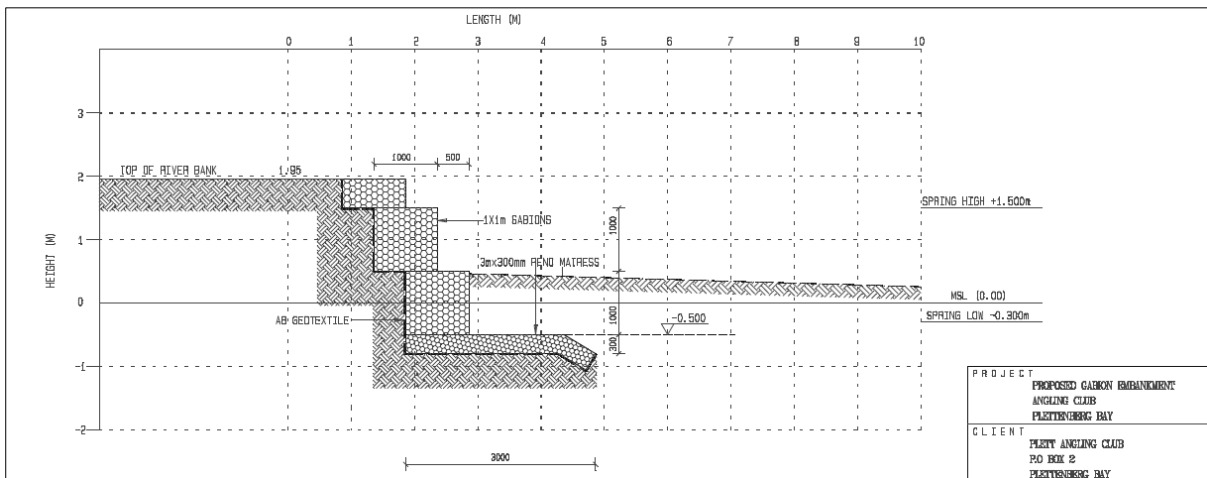


Figure 2: Section for Option 1.

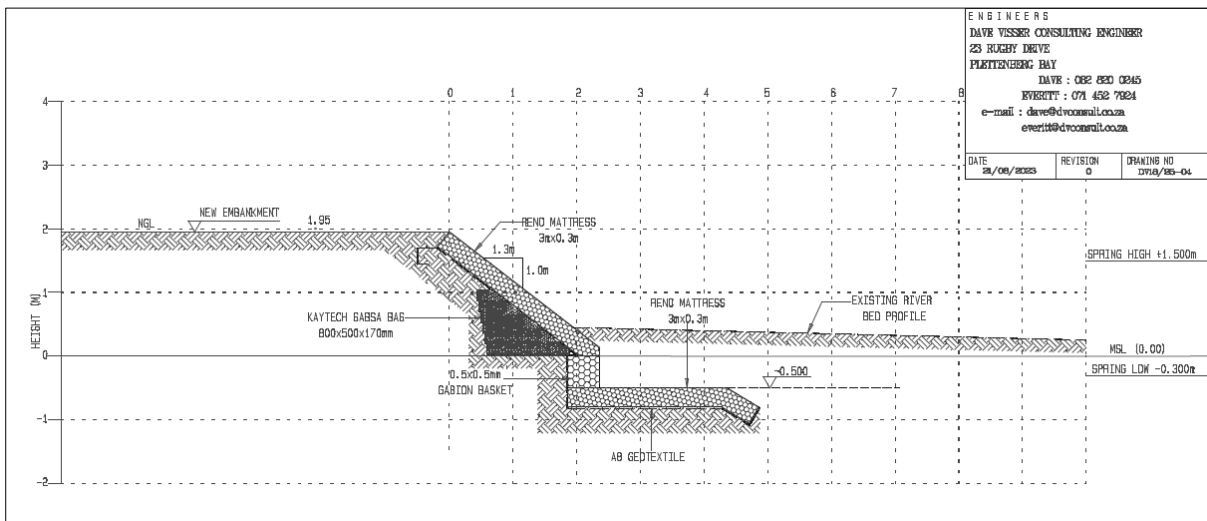


Figure 3: Section for Option 2.

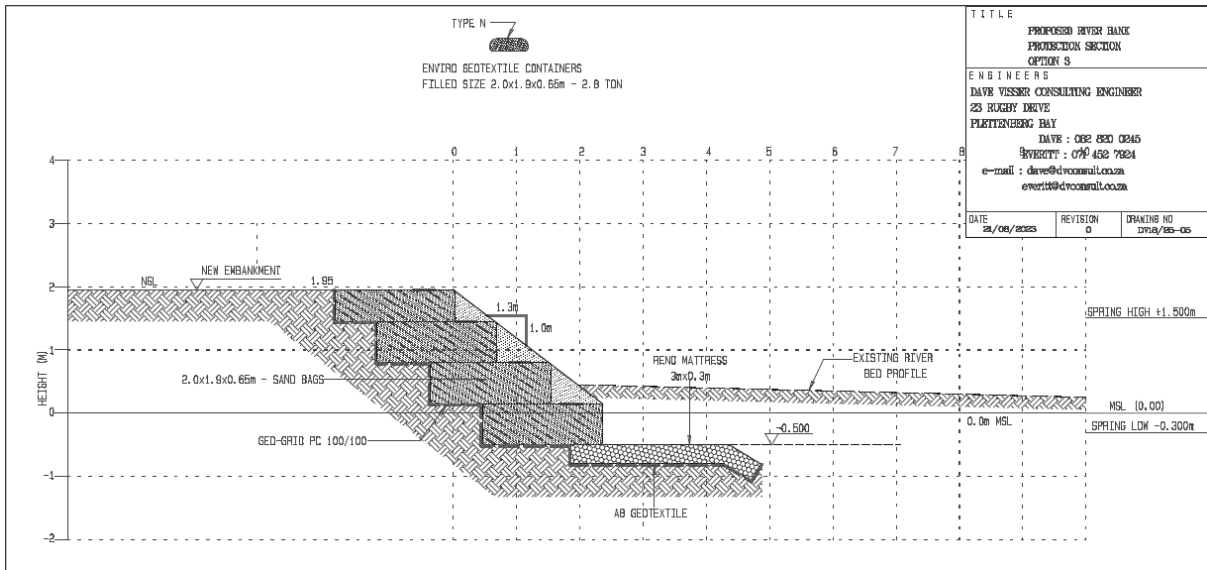


Figure 4: Section for Option 3.

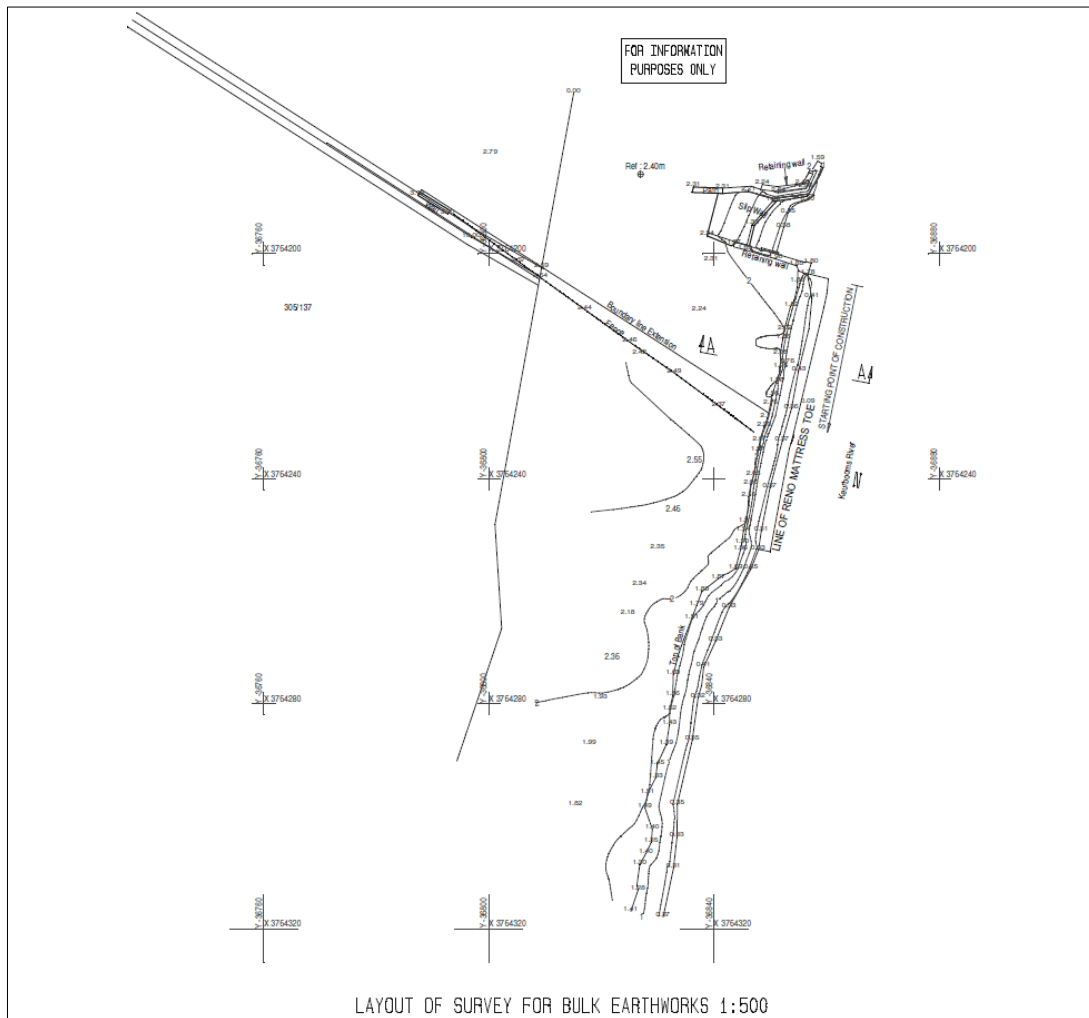


Figure 5: Proposed bank stabilisation layout.

3. METHODOLOGY

3.1 Desktop Assessment

- Existing biodiversity spatial layers and recent aerial imagery for the site were consulted.

3.2 Site Visit

- The site was visited on the 22nd of March for a period of two hours, during which time the Project Area of Influence (PAOI) was determined based on the spatial location of the project (footprint) and the potential extent of the impacts of the anticipated activities of the project.
- Terrestrial vegetation within the PAOI was assessed with a view to determining whether it representative of the mapped vegetation type for the area.

4. STUDY AREA

The PBAC is situated on the western bank of the Keurbooms Estuary, just east of Plettenberg Bay (Figure 6). The proposed stabilisation will take place along an approximately 50 m stretch of the riverbank and associated intertidal zone. The Keurbooms Estuary is prone to episodic flooding that has significant consequences for landowners and infrastructure. Floodwaters cause extensive erosion, particularly in the lower reaches of the estuary where extensive urbanisation and surface hardening has taken place and natural vegetation and riparian zones have been cleared to make way for residential developments and resorts (CAPE Estuaries Programme, 2010). In particular, the removal of riparian vegetation destabilises the bank, resulting in undercutting and ultimately collapse into the estuary. As such, various bank stabilisation interventions have been implemented along the banks of the estuary over time. These range from vertical retaining walls to sloping banks constructed from a reno mattress over lying a stepped sandbag foundation.

The site is confirmed to occur within the BPAs listed in Table 1, although the overlap with the Garden Route Shale Fynbos vegetation type and the Outeniqua SWSA is marginal Figure 7 and Figure 8.

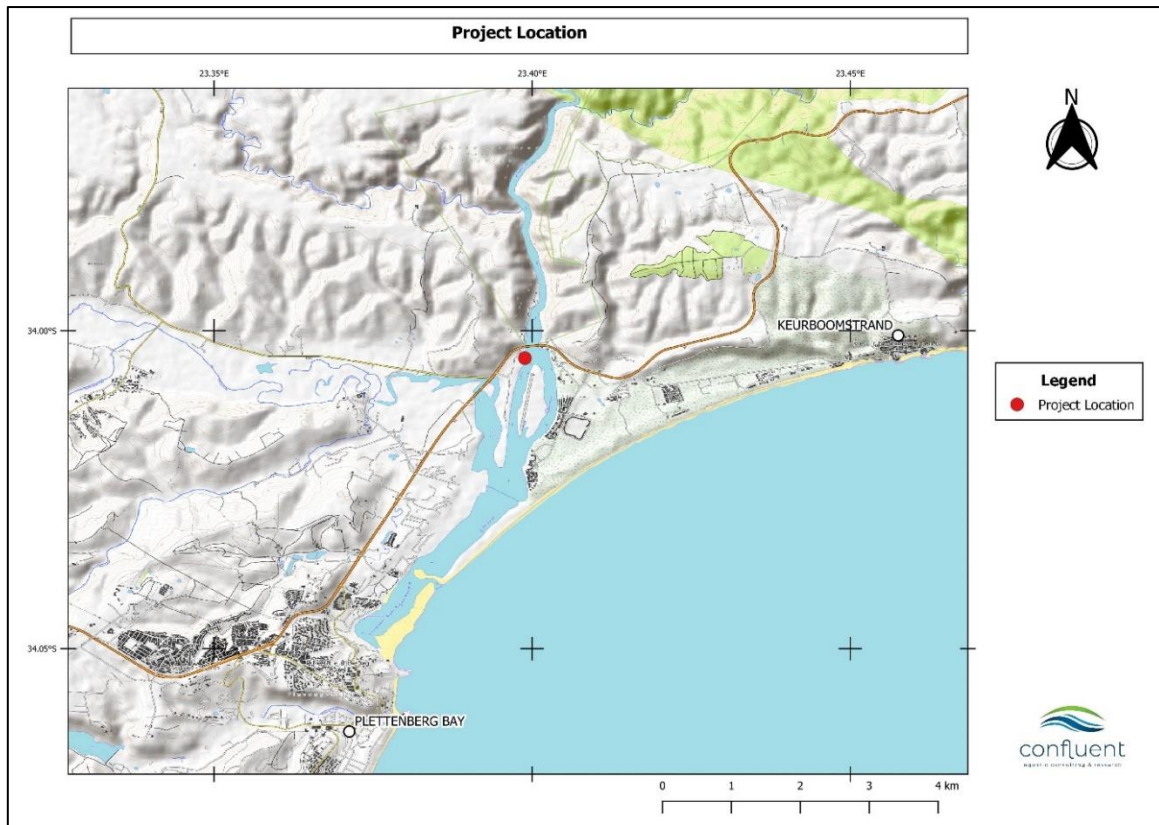


Figure 6: Map indicating the location of the proposed bank stabilisation.

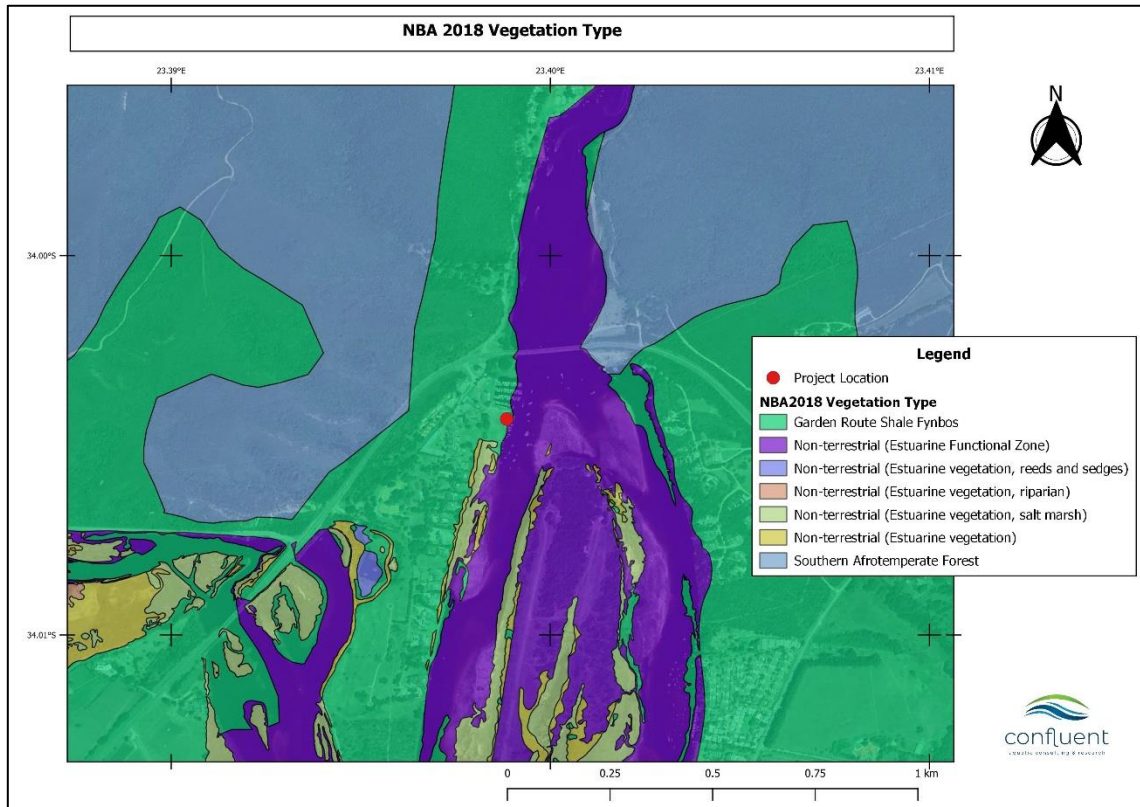


Figure 7: Map indicating the project location relative to mapped vegetation types.

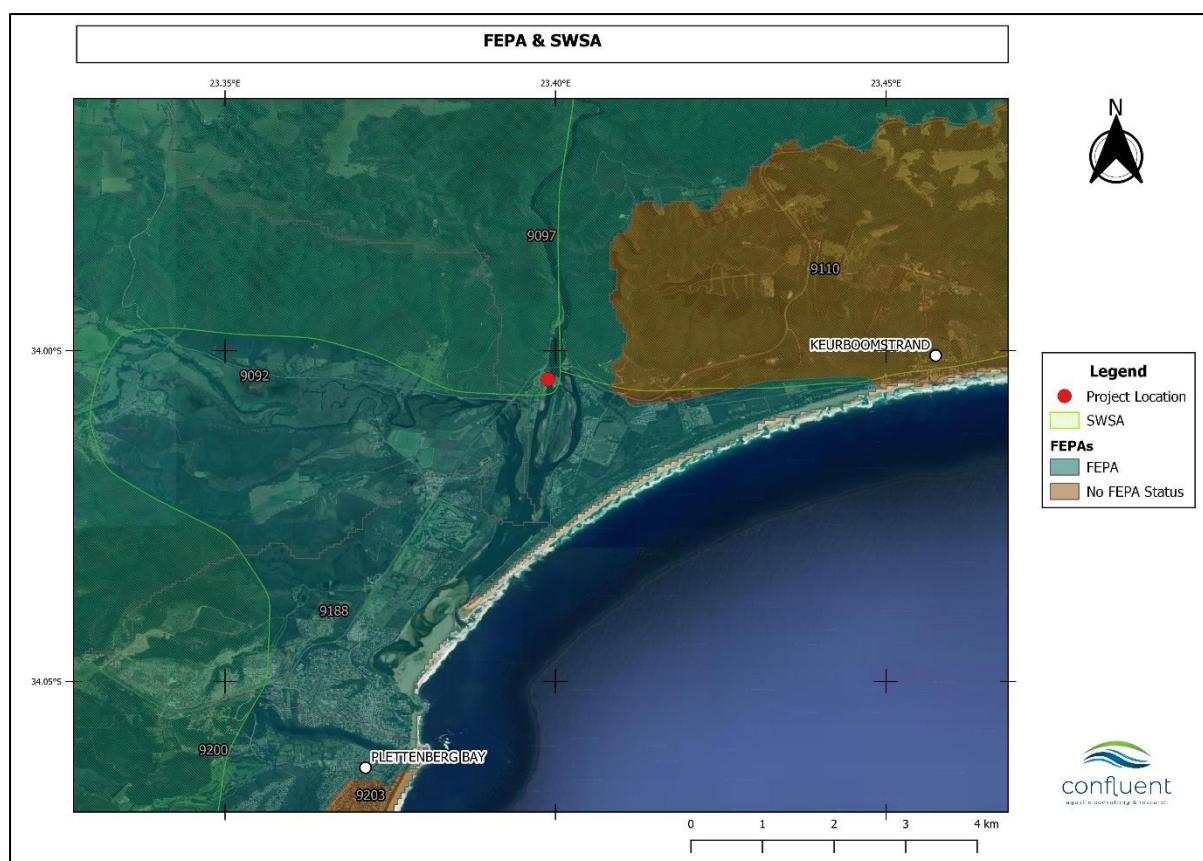


Figure 8: Map indicating the location of the project relative to the Outeniqua SWSA and the Freshwater Ecosystem Priority Areas.

5. VEGETATION TYPE

The mapped vegetation along the bank of the estuary is Garden Route Shale Fynbos Fynbos (FFh 9), which is an endangered (EN) vegetation type (NEM:BA Act, 2022). Garden Route Shale Fynbos occurs in the Western and Eastern Cape provinces along coastal foothills. This vegetation type is associated with undulating hills and coastal forelands (Mucina & Rutherford, 2006). The most important taxa for this vegetation type according to Mucina & Rutherford (2006) is (species found during the site assessment are green, and if the genus was found during the assessment, the species name below is highlighted in blue):

- **Tall shrubs:** *Leucadendron eucalyptifolium*, *Leucospermum formosum*, *Metalasia densa*, *P. coronata*, *Passerina corymbosa*, *Protea aurea* subsp. *Aurea*, *Protea neriifolia*, *Searsia lucida*
- **Low Shrubs:** *Acmadenia alternifolia*, *A. Tetragona*, *Anthospermum aethiopicum*, *Cliffortia ruscifolia*, *Elytropappus rhinocerotis*, *Erica hispidula*, *Helichrysum cymosum*, *Leucadendron salignum*, *Pelargonium cordifolium*, *Phyllica axillaris*, *P. pinea*, *Psoralea monophylla*, *Selago corymbosa*
- **Herbaceous:** *Crassula orbicularis*, *Crassula roggeveldii*, *Eriospermum vermiforme*, *Helichrysum felinum*, *Pteridium aquilinum*
- **Graminoids:** *Aristida junciformis* subsp. *Galpinii*, *Brachiaria serrata*, *Cymbopogon marginatus*, *Elegia juncea*, *Eragrostis capensis*, *Ischyrolepis gaudichaudiana*, *Ischyrolepis sieberi*, *Restio triticeus*, *Themeda triandra*, *Tristachya leucothrix*.

6. RESULTS

- The expectation of broader impacts occurring outside of the footprint of the streambank stabilisation structure is expected to be very low. Consequently, the PAOI is limited to an approximately 50 m length of the eroded bank of the estuary (where the bank stabilisation structure will be constructed) and, a distance of approximately 10 m inland from the banks and 5 m into the inter-tidal zone of the estuary (where habitat may be disturbed due to the construction activities and vehicles). The total surface area of the footprint of the PAOI is less than 1 000 m² (Figure 9).
- The site visit confirmed the presence of a heavily eroded bank along the edge of the estuary (Figure 1).
- Inland of the bank vegetation has been entirely transformed to a large open grass lawn that is comprised predominantly of a mixture of low growing grass species (invasive kikuyu grass, *Cenchrus clandestinus*, and indigenous bermuda grass, *Cynodon dactylon*). No trees or shrubs were present, and no fynbos vegetation was present (Figure 10). Boats on trailers are currently parked along the edge of the embankment. A small section of the PAOI is covered under tar.
- The inter-tidal zone habitat is very narrow (exposed sand banks at low tide are less than 3 m in width) and is used to moor boats along the shoreline. Vegetation is limited, consisting of *Zostera capensis* within the inundated subtidal zone of the estuary and isolated patches of salt marsh species along the outer edge of the inter-tidal zone (Figure 11).

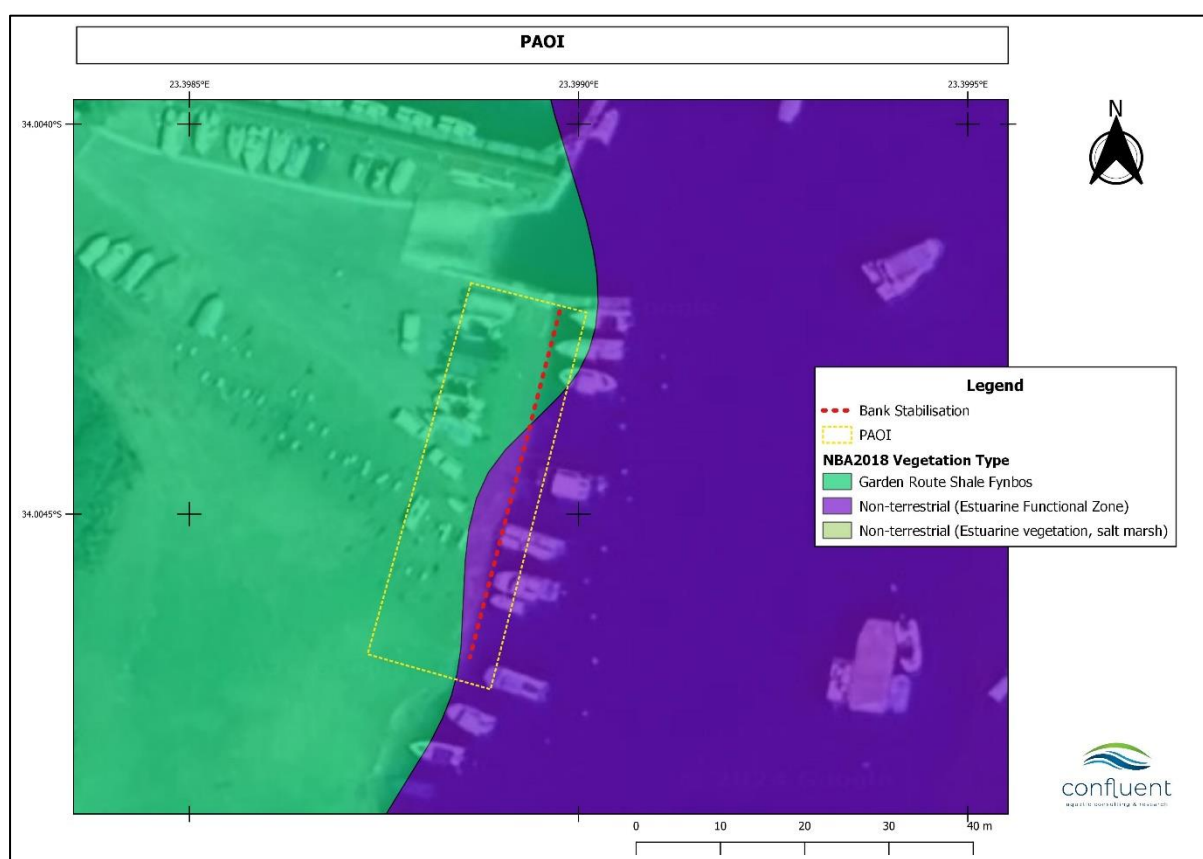


Figure 9: Map illustrating the extent of the streambank stabilisation and the associated PAOI.



Figure 10: Photographs illustrating the existing the expansive lawn (comprised predominantly of *C. clandestinus* and *C. dactylon*) that falls within the PAOI.



Figure 11: Photograph illustrating isolated patches of salt marsh vegetation along the inter-tidal zone.

7. CONCLUSION

The sensitivity of the terrestrial biodiversity theme for the site is confirmed as **Low** for the following reasons:

- Terrestrial vegetation has been completely transformed and no fynbos representing the Garden Route Shale Fynbos vegetation type persists here, nor does any other naturally occurring vegetation type.
- The proposed activity will not affect terrestrial vegetation that is integral to maintaining ecological function and integrity of the FEPA sub-catchment.
- The project area is located in the outer-most extent of the Outeniqua SWSA and no modifications to natural vegetation will occur that will affect the ability of the area to continue to produce high volumes of good quality water.

- The streambank stabilisation is unlikely to have any detrimental consequences or effects for the Garden Route National Park buffer within which it falls.
- The site is included in the National Protected Area Expansion Strategy (NPAES), and this is likely because the site is part of a critical biodiversity area (CBA 1: Estuaries) and is located just south of the Keurbooms River Nature Reserve. However, the proposed stabilisation of the banks does not compromise the NPAES strategy, nor does it negatively impact the nearby existing protected areas. In fact, the stabilisation of the banks will prevent the degradation of the mapped CBA area and will also promote the natural function of the bank as further degradation will be prevented.

8. REFERENCES

Mucina, L., & Rutherford, M. C. (2006). The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia.