APPENDIX H2 - FRESHWATER ASSESSMENT

Prepared by: EverWater

FRESHWATER ASSESSMENT FOR THE ALLEGED UNLAWFUL ACTIVITIES ON PORTION 54 OF THE FARM POTTEBERG ESTATES NO 516,INFANTA, WESTERN CAPE

NOVEMBER 2025

(Updated March 2026)

Compiled by: Ms. Jeanne Snyman (M.Sc. Env Water Sciences, Pr. Sci. Nat)

EXECUTIVE SUMMARY

The client, WABD Investments (Pty) Ltd, has cleared approximately 0.3 hectares of indigenous vegetation on Portion 54 of Farm Potteberg Estates, No 516, Infanta, without obtaining an Environmental Authorisation. As a result, the client has been issued a Section 24G directive.

This freshwater assessment was commissioned as input into the 24G process to evaluate the impacts of the unauthorised clearing on any freshwater features present on-site. The objectives of this report are to:

- Describe the previous and current ecological state of freshwater features surrounding the development site;
- Assess the significance of the unauthorised activities on the freshwater ecosystem; and
- Provide appropriate rehabilitation and mitigation measures to reduce potential impacts.

The property is accessed via the dirt road between Malgas and Infanta, approximately 16 km northwest of Infanta. The site is located on the southern bank of the Breede River and slopes gently from south to north. The Breede River forms the northern boundary, with the Potteberg situated to the south and the Atlantic Ocean to the far east. The surrounding landscape largely comprises natural vegetation. The project area falls within the Breede River catchment (Quaternary Catchment H70K), part of the Breede-Gouritz Water Management Area (BGWMA).

The alleged unauthorised activities occurred within a Floodplain Saltmarsh and within 32 metres of the Breede River and its associated Estuarine Functional Zone. Table 1 below summarises the key findings of the freshwater assessment for the features located on and surrounding the disturbed areas:

TABLE C-1: SUMMARY OF FRESHWATER IMPACT ASSESSMENT FINDINGS

	Floodplain Saltmarsh	**Breede River Estuarine Functional Zone**
DWA catchment	H70K	
Vegetation type	Potberg Ferricrete Fynbos (FFf2)	
Rainfall region	Winter	
CBA and FEPA status	Aquatic CBA: Estuary	Aquatic CBA: Estuary; CBA: Southwest Ferricrete Fynbos Channelled valley bottom wetland
PES	B/C	B/C
EIS	Moderate	Very High
RMO and REC	RMO – B/C: Maintain; REC – C	RMO – B/C: Maintain; REC – B/C

Buffer Zone	20m	30m

According to the Screening report for an Environmental Authorisation as required by the 2014 EIA regulations (PHS Consulting, 2025), the environmental sensitivity for the Aquatic Biodiversity Theme was found to be of High sensitivity.

The following unauthorised activities have affected the surrounding wetland areas, either directly or indirectly (as indicated in Figure 2):

- Clearance of vegetation within the floodplain marsh (direct impact);
- Clearing and levelling activities within the broader Breede River Estuarine Functional Zone buffer (indirect impact).

In addition, the client proposes to undertake the following activities within the proposed 30 m buffer zone:

- Additions to the existing main dwelling within Cleared Area 2, including the construction of a roofed deck on the north-western side of the dwelling. This activity will fall within the proposed 30 m buffer zone;
- Landscaping using primarily indigenous vegetation within all remaining disturbed portions of Cleared Areas 2 and 3 not occupied by structures or access roads;
- Rehabilitation of the floodplain salt marsh within Cleared Area 1, where unauthorised clearing has occurred and where no development is proposed.

Both the existing and proposed activities will result in impacts during the construction and operational phases and are expected to affect the following aspects:

- Loss of biodiversity within both the floodplain salt marsh and the Breede River Estuarine Functional Zone;
- Potential water quality impacts on the Breede River Estuarine Functional Zone.

In order to mitigate the existing impacts, a list of mitigation measures has been set out under the Impact Assessment.

CONCLUSION:

The impact assessment concluded that with full implementation of the mitigation measures, the above-mentioned activities have had a **Low negative impact on the Floodplain Saltmarsh wetland, and negligible negative cumulative impact on the broader freshwater system.** Furthermore, following the Risk Assessment Matrix, which assumes the full implementation of proposed mitigation measures, the risk of impact would be considered to be **Low**

In terms of legislative compliance:

- The Floodplain Saltmarsh and Breede River Estuarine Functional Zone are classified as *watercourses* under NEMA, and any activities within 32 metres thereof require Environmental Authorisation.
- Under the National Water Act, 1998 (Act No. 36 of 1998), Section 21 and Government Notice No. 1199 of 2009 apply to activities within the Floodplain Saltmarsh, while the Estuarine Functional Zone is classified as a *water resource*.
- Any development within 500 metres of a delineated wetland boundary requires a Water Use Licence (WUL), unless the activity is covered by a General Authorisation issued by the Department of Water and Sanitation.

DOCUMENT GUIDE

The table below provides the specialist report requirements for the assessment and reporting of impacts on aquatic biodiversity in terms of Government Notice 320 as promulgated in Government Gazette 43110 of 20 March 2020 in line with the Department of Environmental Affairs screening tool requirements, as it relates to the National Environmental Management Act, 1998 (Act No. 107 of 1998).

No.	Requirements	Section in report/Notes
2.1	Assessment must be undertaken by a suitably qualified SACNASP-registered specialist	Declaration Of Independence – pg. x and Annexure E.
2.2	Description of the preferred development site, including the following aspects-	
2.2.1	a. Aquatic ecosystem type b. Presence of aquatic species and composition of aquatic species communities, their habitat, distribution and movement patterns	Vegetation and Fauna: pg. 23-24; Aquatic Assessment: pg. 30
2.2.2	Threat status, according to the national web-based environmental screening tool of the species and ecosystems, including listed ecosystems as well as locally important habitat types identified	Conservational value: pg.26-28
2.2.3	National and Provincial priority status of the aquatic ecosystem (i.e. is this a wetland or river Freshwater Ecosystem Priority Area (FEPA), a FEPA sub-catchment, a Strategic Water Source Area (SWSA), a priority estuary, whether or not they are free-flowing rivers, wetland clusters, etc., a CBA or an ESA; including for all a description of the criteria for their given status	Conservational value: pg.26-28
2.2.4	A description of the Ecological Importance and Sensitivity of the aquatic ecosystem including: a. The description (spatially, if possible) of the ecosystem processes that operate in relation to the aquatic ecosystems on and immediately adjacent to the site (e.g. movement of surface and subsurface water, recharge, discharge, sediment transport, etc.); b. The historic ecological condition (reference) as well as Present Ecological State (PES) of rivers (in-stream, riparian and floodplain habitat), wetlands and/or estuaries in terms of possible changes to the channel, flow regime (surface and groundwater)	Conservational value: pg.26-28 Aquatic Assessment: pg. 30
2.3	Identify any alternative development footprints within the preferred development site which would be of a "low" sensitivity as identified by the national web-based environmental screening tool and verified through the Initial Site Sensitivity Verification	As this activity entails an existing activity, this is not applicable.

2.4	Assessment of impacts – a detailed assessment of the potential impact(s) of the proposed development on the following very high sensitivity areas/ features:	Impact Assessment: pg. 37-38
2.4.1	Is the development consistent with maintaining the priority aquatic ecosystem in its current state and according to the stated goal?	Yes, if all mitigation measures are implemented, including the repositioning of the access road, all the RMO's (pg. 60) and the RQO's as stated in Table 1 (pg. 15) will be met.
2.4.2	Is the development consistent with maintaining the Resource Quality Objectives for the aquatic ecosystems present?	
2.4.3	How will the development impact on fixed and dynamic ecological processes that operate within or across the site, including: a. Impacts on hydrological functioning at a landscape level and across the site which can arise from changes to flood regime (e.g. suppression of floods, loss of flood attenuation capacity, unseasonal flooding or destruction of floodplain processes); b. Change in the sediment regime (e.g. sand movement, meandering river mouth/estuary, changing flooding or sedimentation patterns) of the aquatic ecosystem and its sub-catchment; c. The extent of the modification in relation to the overall aquatic ecosystem (i.e. at the source, upstream or downstream portion, in the temporary / seasonal / permanent zone of a wetland, in the riparian zone or within the channel of a watercourse, etc.) and d. Assessment of the risks associated with water use/s and related activities.	Impact Assessment: pg. 37-38
2.4.4	How will the development impact on the functionality of the aquatic feature including: a. Base flows (e.g. too little/too much water in terms of characteristics and requirements of system); b. Quantity of water including change in the hydrological regime or hydroperiod of the aquatic ecosystem (e.g. seasonal to temporary or permanent; impact of over abstraction or instream or off-stream impoundment of a wetland or river); c. Change in the hydrogeomorphic typing of the aquatic ecosystem (e.g. change from an unchanneled valley-bottom wetland to a channelled valley-bottom wetland); d. Quality of water (e.g. due to increased sediment load, contamination by chemical and/or organic effluent, and/or eutrophication); e. Fragmentation (e.g. road or pipeline crossing a wetland) and loss of ecological connectivity (lateral and longitudinal); and f. Loss or degradation of all or part of any unique or important features associated with or within the aquatic ecosystem (e.g. waterfalls, springs, oxbow lakes, meandering or braided channels, peat soil, etc).	Impact Assessment: pg. 37-38

2.4.5	How will the development impact on key ecosystem regulating and supporting services especially Flood attenuation; Streamflow regulation; Sediment trapping; Phosphate assimilation; Nitrate assimilation; Toxicant assimilation; Erosion control; and Carbon storage.	Impact Assessment: pg. 37-38
2.4.6	How will the development impact community composition (numbers and density of species) and integrity (condition, viability, predator-prey ratios, dispersal rates, etc.) of the faunal and vegetation communities inhabiting the site?	Discussed under Aquatic Assessment: pg. 30 and Impact Assessment: pg. 36738
2.4.7	In addition to the above, where applicable, impacts to the frequency of estuary mouth closure should be considered, in relation to: size of the estuary; availability of sediment; wave action in the mouth; protection of the mouth; beach slope; volume of mean annual runoff; and extent of saline intrusion (especially relevant to permanently open systems).	N/A
3.	The report must contain as a minimum the following information:	
3.1	Contact detail of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae.	Annexure E
3.2	A signed statement of independence by the specialist.	Declaration Of Independence – pg.ix
3.3	A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment.	Aquatic Assessment: pg. 30
3.4	The methodology used to undertake the site inspection and the specialist assessment, including equipment and modelling used, where relevant.	Annexure A
3.5	A description of the assumptions made, any uncertainties or gaps in knowledge or data.	Pg. 12
3.6	The location of areas not suitable for development, which are to be avoided during construction and operation, where relevant.	Impact Assessment: pg. 37-38
3.7	Additional environmental impacts expected from the proposed development.	Impact Assessment: pg. 37-38
3.8	Any direct, indirect and cumulative impacts of the proposed development on site.	Summary of the expected impacts: pg. 40
3.9	The degree to which impacts and risks can be mitigated.	Summary of the expected impacts: pg. 40
3.10	The degree to which impacts and risks can be reversed.	Summary of the expected impacts: pg. 40
3.11	The degree to which the impacts and risks can cause loss of irreplaceable resources.	Summary of the expected impacts: pg. 40
3.12	A suitable construction and operational buffer for the aquatic ecosystem, using the accepted methodologies.	Aquatic Assessment: pg. 30
3.13	Proposed impact management actions and impact management outcomes for inclusion in the Environmental Management Programme (EMPr).	Impact Assessment: pg. 37-38
3.14	A motivation must be provided if there were development footprints identified as per paragraph 2.3 for reporting in terms of Section 24(5)(a) and (h) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) that were identified as having a "low" aquatic biodiversity and sensitivity and that were not considered appropriate.	None

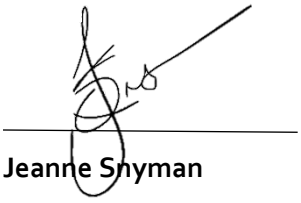
3.15	A substantiated statement, based on the findings of the specialist assessment, regarding the acceptability or not of the proposed development and if the proposed development should receive approval or not.	Conclusion – pg.44
3.16	Any conditions to which this statement is subjected.	Included in mitigation measures set out under the Impact Assessment: pg. 37-38, and Risk Matrix – Annexure C.

Table of Contents

DECLARATION OF INDEPENDENCE

I, **Jeanne Snyman,** declare that -

- I am subcontracted as a specialist consultant by PHS Environmental Consultants Pty Ltd, for input in the 24G process for the alleged unauthorised activities that took place on Portion 54 of Farm Potteberg Estates, No 516, Infanta, Western Cape.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the National Environmental Management Act, 1998 (Act No. 107 of 1998), regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in Regulation 8;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority 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 the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.



Jeanne Snyman

SACNASP Reg. No: 400091/17

COPYRIGHT

Glossary of Terms

Alien vegetation Plants that do not occur naturally within the area but have been introduced either intentionally or unintentionally. Vegetation species that originate from outside of the borders of the biome -usually international in origin.

Biodiversity The number and variety of living organisms on earth, the millions of plants, animals and micro-organisms, the genes they contain, the evolutionary history and potential they encompass and the ecosystems, ecological processes and landscape of which they are integral parts.

Buffer A strip of land surrounding a wetland or riparian area in which activities are controlled or restricted, in order to reduce the impact of adjacent land uses on the wetland or riparian area.

Catchment The area where water is collected by the natural landscape, where all rain and run-off water ultimately flows into a river, wetland, lake, and ocean or contributes to the groundwater system.

Delineation (of a wetland) To determine the boundary of a wetland based on soil, vegetation and/or hydrological indicators.

Ecoregion An ecoregion is a "recurring pattern of ecosystems associated with characteristic combinations of soil and landform that characterise that region".

Facultative species Species usually found in wetlands (76%-99% of occurrences) but occasionally found in non-wetland areas

Groundwater Subsurface water in the saturated zone below the water table.

Herbaceous A plant having little or no woody tissue and persisting usually for a single growing season

Hydrology The scientific study of the distribution and properties of water on the Earth's surface

Hydrophyte A plant that grows in water or in conditions that are at least periodically deficient in oxygen as a result of saturation by water – these are typically wetland plants

Indigenous vegetation Vegetation occurring naturally within a defined area.

Marginal Plants and habitat on the edge of water bodies

Obligate Hydrophyte A plant species that almost always occurs in wetlands (>99% of the time)

Perennial Flows all year round.

Pediment(ation) A gentle slope, cut into bedrock, occurring below a much steeper slope, extending at a flatter gradient down to a valley bottom.

Reach/ section A portion/stretch of a river

Riparian Zone The physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas

Abbreviations

CBA –Critical biodiversity areas

DWS - Department of Water and Sanitation

EIS – Ecological Importance and Sensitivity

ELU – Existing Lawful Use

ESA – Ecological Support Areas

HGM (zone) – Hydrogeomorphological zone

NAEHMP – National Aquatic Ecosystem Health Monitoring Programme

NEMA – National Environmental Management Act

NFEPA – National Freshwater Ecosystem Priority Area

NWA – National Water Act

PES – Present Ecological State

REC – Recommended Ecological Class

RHP – River Health Programme

WCBSP – Western Cape Biodiversity Spatial Plan

WMA – Water Management Area

Introduction

The client, WABD Investments (Pty) Ltd, has cleared approximately 0.3 hectares of indigenous vegetation on Portion 54 of Farm Potteberg Estates, No 516, Infanta, without obtaining an Environmental Authorisation. As a result, the client has been issued a Section 24G directive. The freshwater assessment was commissioned as input into the 24G process to evaluate the impact of the unauthorised clearing on any potential freshwater features present on-site. The objective of this report is to describe the previous and current ecological state of the freshwater features surrounding the development site and to assess any potential impacts on the surrounding freshwater ecosystem. This report will also include rehabilitation recommendations.

Assumptions and limitations

Limitations and uncertainties often exist within the various techniques adopted to assess the condition of ecosystems. The following limitations apply to the techniques and methodology utilised to undertake this study:

- The purpose of this report is to comment on the PES and EIS of the freshwater features on site as well as determine any freshwater constraints posed to future development of the property.
- Analysis of the freshwater ecosystems was undertaken at a rapid level and did not involve detailed habitat and biota assessments (Ecosystem level III);
- The project deliverables, including the reported results, comments, recommendations and conclusions, are based on the author's professional knowledge as well as available information. Even though every care was taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time, and budget. Discussions and proposed mitigations are to some extent made on reasonable and informed assumptions built on *bona fide* information sources, as well as deductive reasoning. No biomonitoring or physical-chemical aspects of the water found in the study were conducted.
- The author reserves the right to modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field, or pertaining to this investigation.
- The author has exercised reasonable skill, care and diligence in the provision of services; however, accepts no liability or consequential liability for the use of the supplied project deliverables and any information or material contained therein. The client, including their agents, by receiving these deliverables indemnifies EverWater Freshwater Consulting

(including its members, employees and sub-consultants) against any actions, claims, demands, losses, liabilities, costs, damages and expenses arising directly or indirectly from or in connection with services rendered, directly or indirectly by EverWater Freshwater Consulting.

Key Legislative Requirements

National Water Act (Act No. 36 of 1998)

The Department of Water & Sanitation (DWS) is the custodian of South Africa's water resources and therefore assumes public trusteeship of water resources, which includes watercourses, surface water, estuaries, or aquifers. The National Water Act (NWA) (Act No. 36 of 1998) allows for the protection of water resources, which include:

- The maintenance of the quality of the water resource to the extent that the water resources may be used in an ecologically sustainable way;
- The prevention of the degradation of the water resource; and
- The rehabilitation of the water resource.

A watercourse means:

- A river or spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland, lake or dam into which, or from which, water flows; and
- Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

The NWA recognises that the entire ecosystem, and not just the water itself, and any given water resource constitutes the resource and as such needs to be conserved. No activity may therefore take place within a watercourse unless it is authorised by the DWS. For this project, a wetland area is defined according to the NWA (Act No. 36 of 1998): "Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil".

Wetlands have one or more of the following attributes to meet the NWA wetland definition (DWAF, 2005):

- A high water table that results in the saturation at or near the surface, leading to anaerobic conditions developing in the top 50 cm of the soil;

- Wetland or hydromorphic soils that display characteristics resulting from prolonged saturation, i.e. mottling or grey soils; and
- The presence of, at least occasionally, hydrophilic plants, i.e. hydrophytes (water-loving plants).

According to the latest guideline for General Authorisations under Section 39 of the National Water Act (Act 36 of 1998) for Water Uses as Defined in Sections 21(c) and 21(i), the **"Regulated area of a watercourse"** can be defined as follows**:**

a) The furthest boundary of either the 1-in-100-year flood line **or** the officially delineated riparian habitat—whichever lies farther from the watercourse—measured from the centre of a river, spring, natural channel, dam, or lake;
b) Where no 1-in-100-year flood line or riparian area has been determined as described in (a), the area extending **100 metres** from the edge of the watercourse. For this purpose, the edge of the watercourse (excluding floodplains) is defined as the first identifiable annual bank-full flood bench, subject to compliance with section 144 of the National Water Act, 1998 (Act 36 of 1998);
c) In the case of a wetland (including pans), an area within a **500-metre radius** measured from the delineated boundary (extent) of the wetland.

Proposed Classes Of Water Resource And Resource Quality Objectives For The Breede-Gouritz Catchment

In addition to the above legislation, the Department of Water and Sanitation has also released the proposed classes of water resources and Resource Quality Objectives for the Breede-Gouritz Water Management Area in Government Notice 1298 of Gazette 42053 published on 23 November 2018 in terms of section 13(4) of the NWA (1998). From this, general RQO's pertain to the Quaternary Catchment H70K falling within the Lower Breede Renosterveld zone:

TABLE 1: **SUMMARY OF WATER RESOURCE CLASSES PER INTEGRATED UNIT OF ANALYSIS AND ECOLOGICAL CATEGORIES**

Integrated Unit of Analysis (IUA)	Water Resource Class for IUA	Quaternary Catchment	RU	Resource Name	Biophysical Node Name	TEC	Natural MAR (million m^3/a)
F11 Lower Breede Renosterveld	II	H70A		Leeu River	Niv24	E	5.80
		H70B		Klip River	Niv24a	E	24.50
		H70B		Breede River	Nv2	C	1701.40
		H70C		Huis River	Nvii14	C	3.20
		H70C		Tradouw River	Nii3	B	19.40
		H70F		Buffeljags River	Niv25	E	119.40
		H70G	F11-R17	Breede River	Niii4	C	1832.70
		H70H		Breede River	Nviii3	B	1841.20
		H70J		Slang River	Niv26	E	10.00
		H70K	F11-E11	Breede Estuary	Nxi2	B	1022.56

Furthermore, only Resource Quality Objectives for ESTUARIES were identified for this quaternary catchment.

TABLE 2: RESOURCE QUALITY OBJECTIVES FOR ESTUARIES IN PRIORITY RESOURCE UNITS IN THE INTEGRATED UNIT OF ANALYSIS F11 LOWER BREEDE RENOSTERVELD

IUA	Class	Quaternary Catchment	RU	Resource Name	Biophysical Node Name	TEC	Component	Sub-component	Indicator	RQO Narrative	RQO Numeric
F11 Lower Breede Renosterveld	II	H70K	F11-E11	Breede Estuary	nxi2	B	Quantity	Flow	MMR/MAR (% Nat)	Maintain flow regime as per recommended ecological flow	Months: Oct 57.6, Nov 50.1, Dec 34.0, Jan 33.0, Feb 34.6, Mar 41.7, Apr 59.7, May 56.6, Jun 61.2, Jul 47.6, Aug 51.3, Sep 27.3, Annual 47.2
							Quality	Nutrients	DIN	Inorganic nutrient concentrations not to exceed TPCs for macrophytes and microalgae	Entire estuary and river inflow: DIN <300µg/ℓ
									DIP		Entire estuary and river inflow: DIP <25 µg/ℓ
								Salinity	Salinity	Salinity distribution not to exceed TPCs for fish, invertebrates, macrophytes and microalgae	Zone A (0-15 km upstream of mouth): 40> Salinity >20, Zone B (15-30 km): 30> Salinity >10, Zone C (30-40 km): 20> Salinity >5, Zone D (40-50 km): <10

IUA	Class	Quaternary Catchment	RU	Resource Name	Biophysical Node Name	TEC	Component	Sub-component	Indicator	RQO Narrative	RQO Numeric
								System variables	Dissolved oxygen	System variables not to exceed TPCs for biota	Entire estuary and river inflow: DO >5 mg/ℓ
								Pathogens	Enterococci	Concentrations of waterborne pathogens should be maintained in an Acceptable category for full contact recreation	≤185 Enterococci/100 ml (90th percentile)
									Escherichia coli		≤500 E. coli/100 ml (90th percentile)
							Habitat	Hydrodynamics	Mouth state		Estuary mouth permanently open
									Tidal variation	Maintain connectivity with marine environment	Average tidal amplitude near the mouth during low flows (summer) must not change by >10% from established baseline.
								Sediments	Sediment characteristics, Channel shape/size	Flood regime to maintain natural bathymetry and the sediment characteristics	Channel shape/size, sediment grain size and organic matter must not change by >30% from established baseline
							Biota	Microalgae	Biomass and community composition of phytoplankton and benthic microalgae community	Maintain the composition and richness of phytoplankton and benthic microalgae groups and medium-low biomass	Median phytoplankton chlorophyll *a* (minimum 5 sites) not to exceed 3.5 µg/ℓ; prevent formation of localised phytoplankton blooms; maintain a high median intertidal benthic microalgal biomass; median intertidal benthic chlorophyll a (minimum 5 sites) not to exceed 42 mg/m^2; site specific chlorophyll a concentration not to exceed 20 µg/ℓ and cell density not to exceed 10 000 cells/ℓ.
								Macrophytes	Extent, distribution and richness of macrophytes	Maintain extent, distribution and richness of macrophyte groups, limit colonisation/spread of the EFZ by alien species	Maintain the present area (2014) covered by the macrophyte habitats: intertidal salt marsh: 20.5 ha, supratidal salt marsh: 29.55 ha, submerged macrophytes: 6 ha, reeds & sedges: 4.8 ha, sand/mud banks: 136 ha; maintain the integrity of the remaining supratidal salt marsh; maintain the reed and sedge stands in the upper reaches of the estuary; rehabilitate 20% of the floodplain habitat by removing any agricultural berms and invasive plants; maintain the integrity of the riparian zone.; invasive plants (e.g. *Eucalyptus*, prickly pear, *Tamarix*) cover not to exceed 5% of total floodplain area
								Invertebrates	Macrofauna community composition, abundance and richness	Maintain composition, richness and abundance of different groups of benthic macrofauna and zooplankton	Maintain rich populations of the mudprawn *Upogebia africana* on mudbanks in the middle estuary (Zone B); maintain rich invertebrate communities associated with the REI zone in the upper estuary (zooplankton and benthos); mudprawn density should not deviate from average baseline levels by more than 25% in each season; dominant species in the zone (zooplankton and benthos) should not deviate from average baseline levels by more than 40% in each season
								Fish	Fish community composition, abundance and richness	Maintain composition, richness and abundance of different groups of fish, prevent colonisation/increase of alien species	Fish assemblage should comprise the 5 estuarine association categories in similar proportions (diversity and abundance) to that under the reference (see 2015 EWR report); numerically assemblage should comprise: Ia estuarine residents (50-80% of total abundance), Ib marine and estuarine breeders (10-20%), IIa obligate estuarine-dependent (10-20%), IIb estuarine associated species (5-15%), IIc marine opportunists (20-80%), III marine vagrants (not more than 5%), IV indigenous fish (1-5%), V catadromous species (1-5%); Category Ia species should contain viable populations of at least 4 species; Category IIa obligate dependents should be well represented by large exploited species
								Birds	Avifauna community composition, abundance and richness	Maintain composition, richness and abundance of different avifauna groups	The estuary should contain a diverse avifaunal community that includes representatives of all the original taxonomic groups (see 2015 EWR report).; tern roosts should be seen at the estuary on a regular basis; apart from gulls, terns and regionally increasing species such as Egyptian Goose, the estuary should generally support more than 200 birds; numbers of birds other than gulls, terns and regionally increasing species should not fall below 120 for three consecutive counts; numbers of waterbird species drop should not below 15 for 3 consecutive counts

National Environmental Management Act (Act No. 107 of 1998)

The National Environmental Management Act (NEMA) (Act 107 of 1998) and the associated Regulations as amended in April 2017, state that prior to any development taking place within a wetland or riparian area, an environmental authorisation process needs to be followed. This could follow either the Basic Assessment Report (BAR) process or the Environmental Impact Assessment (EIA) process depending on the scale of the impact.

Background

Site location and regional description

The property is accessible via the dirt road running from Malgas to Infanta, approximately 16 km northwest of Infanta. The project site is located on the banks of the Breede River and features a general south-to-north slope. Apart from the Breede River forming the northern boundary of the property, other notable landscape features in the broader area include the Potteberg, situated to the south of the site, and the Atlantic Ocean, located to the far east. The surrounding landscape largely consists of natural vegetation. The project area forms part of the greater Breede River catchment, specifically within Quaternary Catchment H70K, which falls under the Breede-Gouritz Water Management Area (BGWMA).

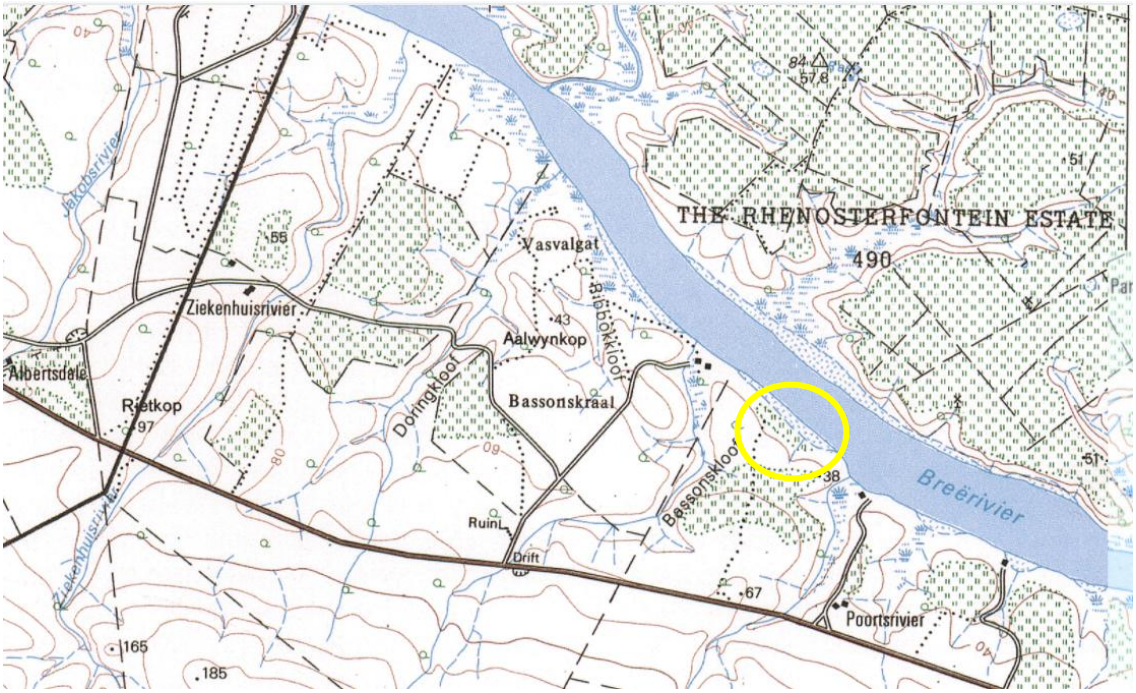


Figure 1: 1:50 000 Topographical map of the area with the property location (3420BC).

Project Scope

As mentioned above, unlawful clearing of indigenous vegetation, excavation, and development within 100 m of the estuary have occurred on the property, without the required Environmental Authorisation. In total, approximately 0.4 ha of vegetation was removed across three disturbance footprints, as described below:

- **Cleared area 1:** Approximately 0.12 ha cleared within a floodplain saltmarsh located south-west of the main dwelling.
- **Cleared area 2:** Approximately 0.24 ha cleared around the existing main dwelling in the north-eastern portion of the property.
- **Cleared area 3:** Approximately 0.02 ha cleared in the southern portion of the property adjacent to the access road.

According to the National Wetlands Map (NWM5; SANBI, 2024), both eastern cleared areas are mapped within wetland and/or estuarine zones. These areas were subsequently identified as ecologically sensitive environments likely to provide important ecosystem functions associated with the broader Breede River system. Cleared area 3 is indicated to fall within 100m of a watercourse.

Prior to the unlawful clearing, the property contained an existing main dwelling, terraced structures, and an associated access road network. The total disturbance footprint associated with the existing main dwelling was approximately 1,443 m².

The following activities have already taken place on site and form part of this Section 24G application:

- Unlawful clearing and levelling of approximately 0.24 ha (2,362 m²) around the existing main dwelling (Cleared area 2) – to be retained.
- Unlawful clearing and soil removal of approximately 0.12 ha (1,206 m²) within the floodplain saltmarsh (Cleared area 1) – to be rehabilitated.
- Unlawful clearing of approximately 0.02 ha (267 m²) in the southern portion of the property adjacent to the access road (Cleared area 3) – 200 m² to be retained.
- Construction of an approximately 64 m² double garage within Footprint 1 – to be retained.
- Construction of an approximately 8 m² pump room within Footprint 1 – to be retained.
- Construction of an approximately 36 m² caretaker's cottage within Footprint 3 – to be retained.

The following activities are linked to the unlawful works on site and are included as part of this Section 24G application:

- Proposed additions of approximately 237 m² to the existing main dwelling within Cleared Area 2. This will include the construction of a roofed deck on the north-western side of the dwelling, which will be located within the 30 m buffer zone.
- Landscaping with primarily indigenous vegetation within all remaining disturbed portions of Cleared areas 2 and 3 not occupied by structures or access roads.
- Rehabilitation of the floodplain salt marsh within Cleared area 1, where unauthorised clearing occurred and where no development is proposed.

Considering that only Cleared Area 1 and 2 directly impacted surrounding freshwater features, the freshwater assessment will focus on these areas. Cleared Area 3 falls outside the 1:100 year flood line and riparian zone of the small Unnamed stream, and is therefore not considered to fall within the regulated area of the watercourse.

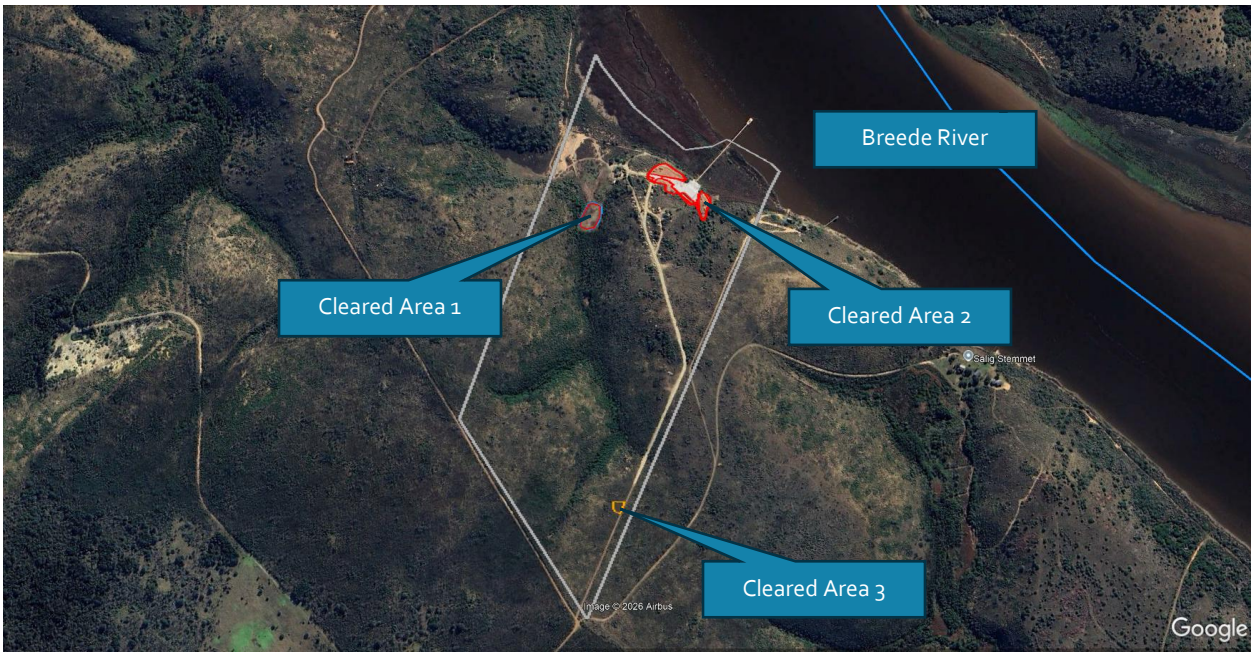


Figure 2: A satellite image showing the property boundary (grey polygon), as well as the cleared areas(red and orange polygons). (Google Earth, 2025)

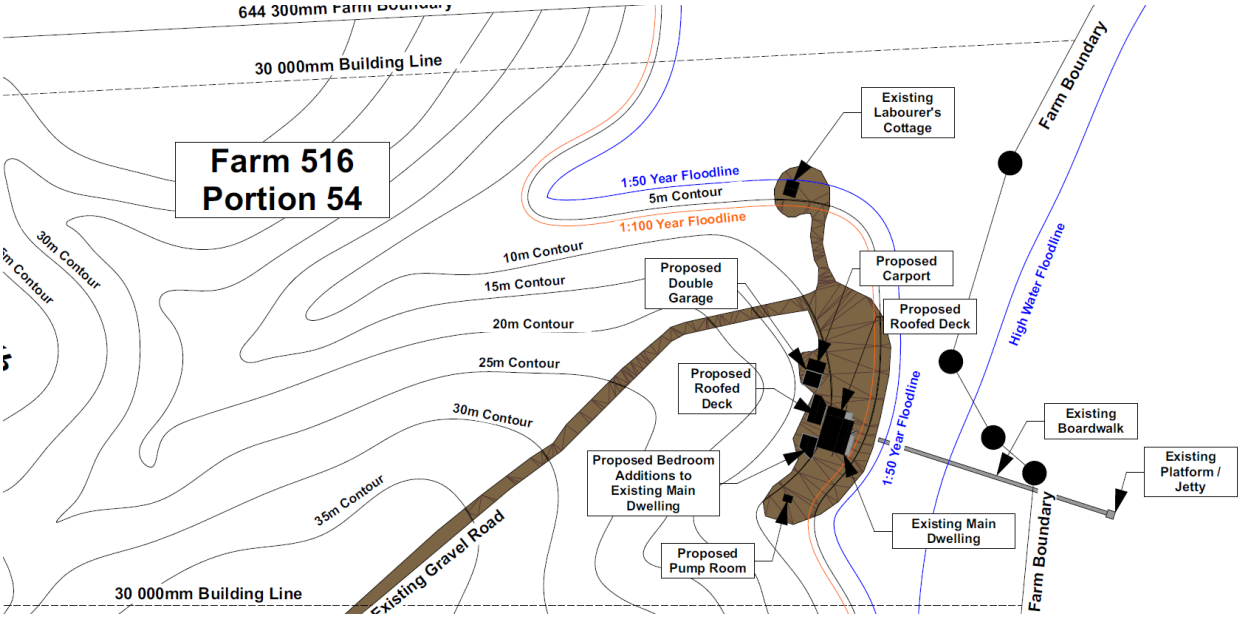


Figure 3: Enlarged section of the site layout plan, indicating existing cleared areas and proposed additions to the main dwelling.

Historical and current land use

The 2022 National Land Cover Map (DEA) represents the most recent land cover dataset and was used to assess general current land use within the project area. According to this map, the project area is predominantly covered by low shrubland (fynbos) (Figure 4 – green areas), with smaller patches of dense forest and woodland (Figure 4 – dark green areas). Scattered Built-up areas, classified as village scattered (comprising bare ground and sparse vegetation/grass), are indicated in yellow (Figure 4). Herbaceous wetlands, as currently mapped, occur in the northwestern section of the property (Figure 4 – turquoise areas).

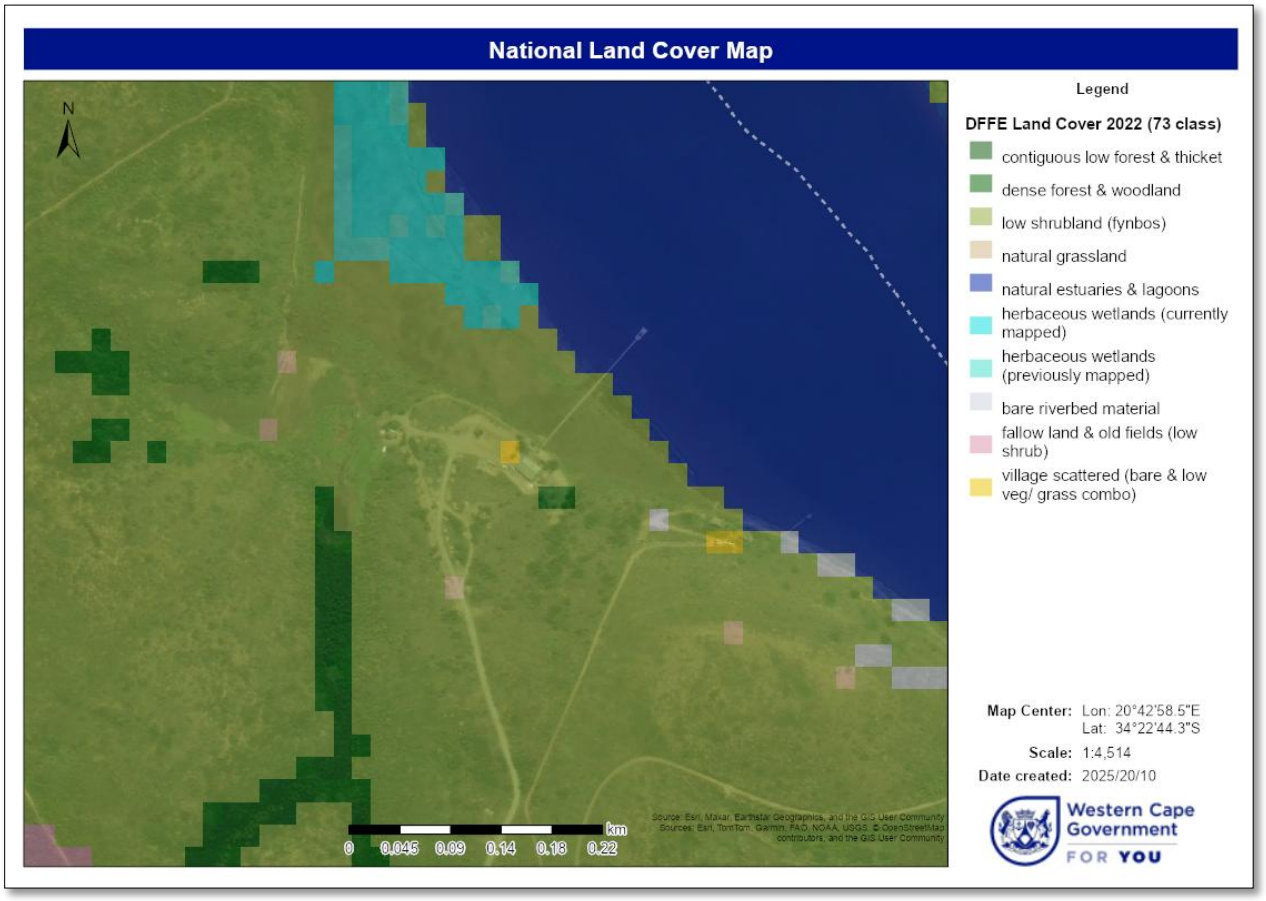


Figure 4: National land cover map (2022) covering the proposed project area (Orange polygon) (CFM, 2024).

Google Earth's Timeline function was used as a reference (accessed in October 2025) to analyse historical land use and identify any wet areas. The earliest available clear imagery covering the affected areas is from August 2009, and approximately 19 images spanning the period between 2009 and 2024 were reviewed to assess historical land use and determine whether the site had been extensively altered or if significant changes in the catchment's land use occurred. The maps were also used to identify areas where aquatic ecosystems may exist or may have existed.

From these images, it is evident that land use around the property has remained largely consistent over the observed period, being predominantly natural. The property itself has historically been used only for residential purposes. With respect to freshwater features, the Breede River and its associated estuarine wetland areas are situated directly to the north of Disturbed Area 2, while Disturbed Area 1 falls within an unchanneled valley-bottom wetland associated with a small drainage line.

Figure 5: Google Earth imagery of the project site from 2009 (top) and 2024 (bottom). The estuarine wetland area is indicated by the turquoise polygon, while the unchanneled valley-bottom wetland is shown by the green polygon (Google Earth, 2025).

Climatic conditions of the site

Malgas's climate is classified as warm and temperate. The area typically receives about 503mm of rain per year. Although it falls within a winter-rainfall region, rain is spread throughout the year. The chart below shows the average rainfall and temperature values for Malgas by month for the previous year. The lowest rainfall (14.1 mm) occurred in February, while the highest (62.9 mm) was recorded in June. The monthly distribution of average daily maximum temperatures indicates that midday temperatures ranged from 16°C in July and August to 23°C in January and February. July is the coldest month, with average nighttime temperatures dropping to 11°C.

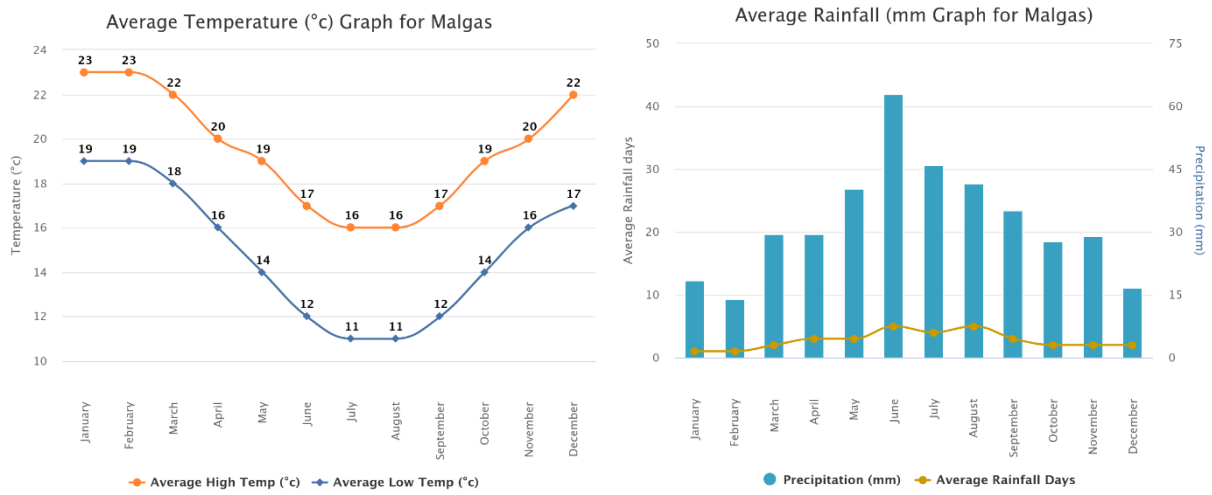


Figure 6: Climate graphs for the Malgas area (World Weather Online, 2025)

Vegetation and Fauna

Vegetation:

The natural vegetation type mapped for the entire property is broadly classified as Potberg Ferricrete Fynbos (FFf2 – purple area in Figure 7). This endangered vegetation type occurs in the Western Cape Province, along the Northern and western lowermost slopes of Potberg Mountain from Potberg to Poortsrivier and bordered on the north by the Breede River from Diepkloof eastwards (Mucina & Rutherford, 2006).

From the Botanical Assessment (Helme, 2025), this vegetation type has been wrongly applied to this area, which in fact hosts estuarine saltmarsh vegetation, being within the 1:100 year flood level of the Breede River.

This vegetation type still occupies most of the site, with only the existing and newly cleared areas showing signs of vegetation loss. The majority of the original vegetation matrix remains intact, with very limited historical modification. Vegetation surrounding Cleared Area 1—and that which likely covered this area prior to clearing—largely consists of *Salicornia perennis, Atriplex semibaccata* and *Disphyma crassifolium*. The broader area is, however, heavily infested with rooikrans *(Acacia cyclops) and* Port Jackson *(Acacia saligna)*.

Cleared Area 2 no longer supports any natural vegetation and is currently dominated by Buffalo grass (*Stenotaphrum secundatum*), interspersed with several indigenous trees and aloes, as well as a large Milkwood tree (*Sideroxylon inerme*) located just below the house.

Below Cleared Area 2, within the Breede River Estuarine Functional Zone, the vegetation is generally characterised by a mix of *Phragmites australis*, *Juncus kraussii*, *Sarcocornia quinqueflora*, and possibly *Ascolepis capensis*. None of the vegetation associated with this wetland area has been impacted by Cleared area 2.

Fauna:

No fauna specifically dependent on the freshwater features was observed around Cleared Areas 1 or 2. However, due to their proximity and ecological connectivity to the Breede River Estuary—particularly in the case of Cleared Area 1—these areas are expected to provide habitat for a diverse range of faunal species. Marshy wetlands associated with the Breede River Estuary are generally known to support a rich assemblage of wader and shorebird species, function as nursery and refuge habitats for estuarine-dependent fish species, and sustain a high diversity of aquatic invertebrates that form the base of the estuarine food web (supporting fish and bird communities). Such invertebrates could include Fiddler crabs (*Uca spp.*), Polychaete worms and Amphipods. In addition, marsh-associated amphibians, wetland reptiles, and semi-aquatic mammals such as otters and mongooses could also occur within and around these wetland habitats.

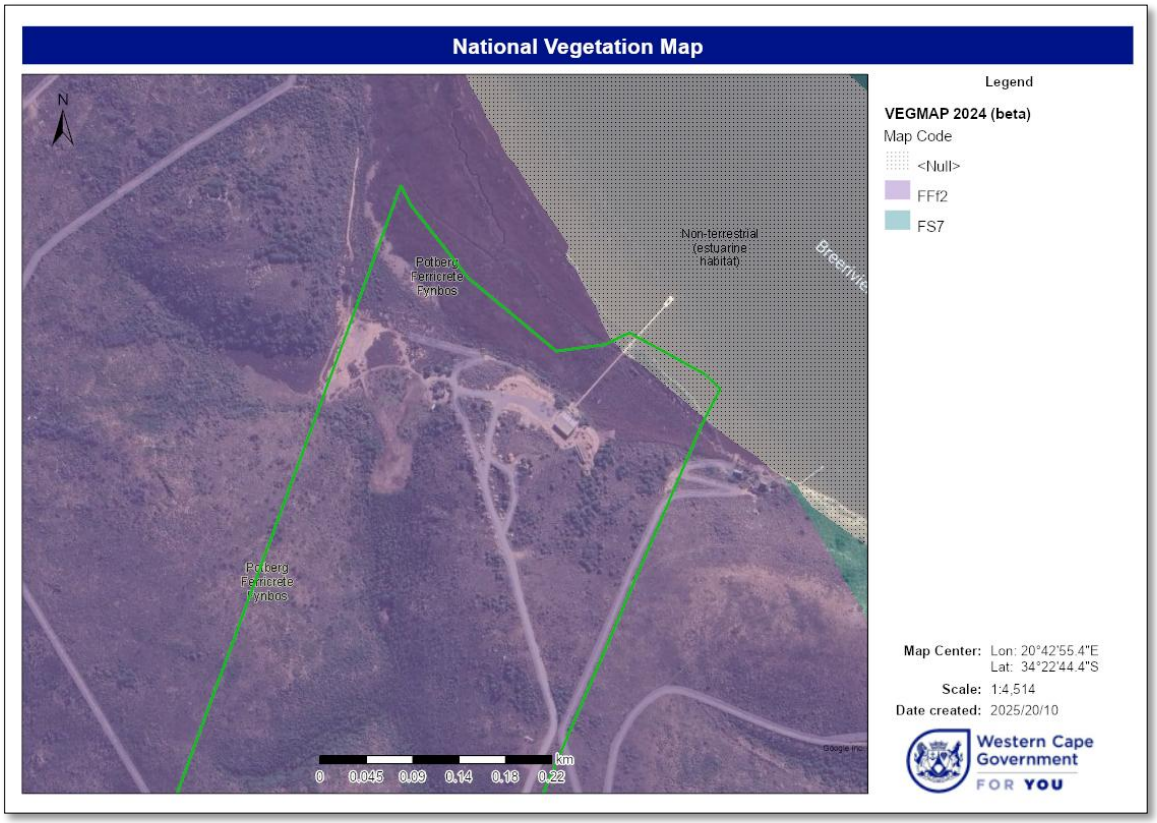


Figure 7: National vegetation map for the area (CFM, 2025).

Figure 8: *Vegetation found at Cleared Area 1.*

Figure 9: General view over Cleared Area 2.

Conservation Value

The 2023 Western Cape Biodiversity Spatial Plan (WCBSP) and the National Freshwater Ecosystem Priority Areas Map provide information regarding the conservation value and ecological importance of the freshwater features studied.

2023 Western Cape Biodiversity Spatial Plan

The 2023 Western Cape Biodiversity Spatial Plan (WCBSP) was formally adopted into law on 13 December 2024 (Gazette Extraordinary No. 9017), in terms of the Western Cape Biodiversity Act (Act No. 6 of 2021). This plan supersedes the 2017 WCBSP and now serves as the official spatial framework for biodiversity conservation and land-use decision-making in the province. This map was utilised to provide information on important biodiversity areas within the investigation zone.

From the 2023 WCBSP (Figure 10), it is the largest part of the wetland areas is indicated as aquatic CBA: Estuary, with the house and Cleared Area 2 being located on a Valley-bottom Wetland (CBA: Southwest Ferricrete Fynbos Channelled valley bottom wetland). Most of the remainder of the property is indicated as Terrestrial CBA: Threatened Ecosystem.

CBAs are areas in a natural condition that are required to meet biodiversity targets for species, ecosystems, or ecological processes and infrastructure. These areas must be maintained in a natural or

near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated, and only low-impact, biodiversity-sensitive land uses are considered appropriate.

During the field verification, the valley-bottom wetland indicated at Cleared Area 2 was found invalid, with no wetland features found at or around the site

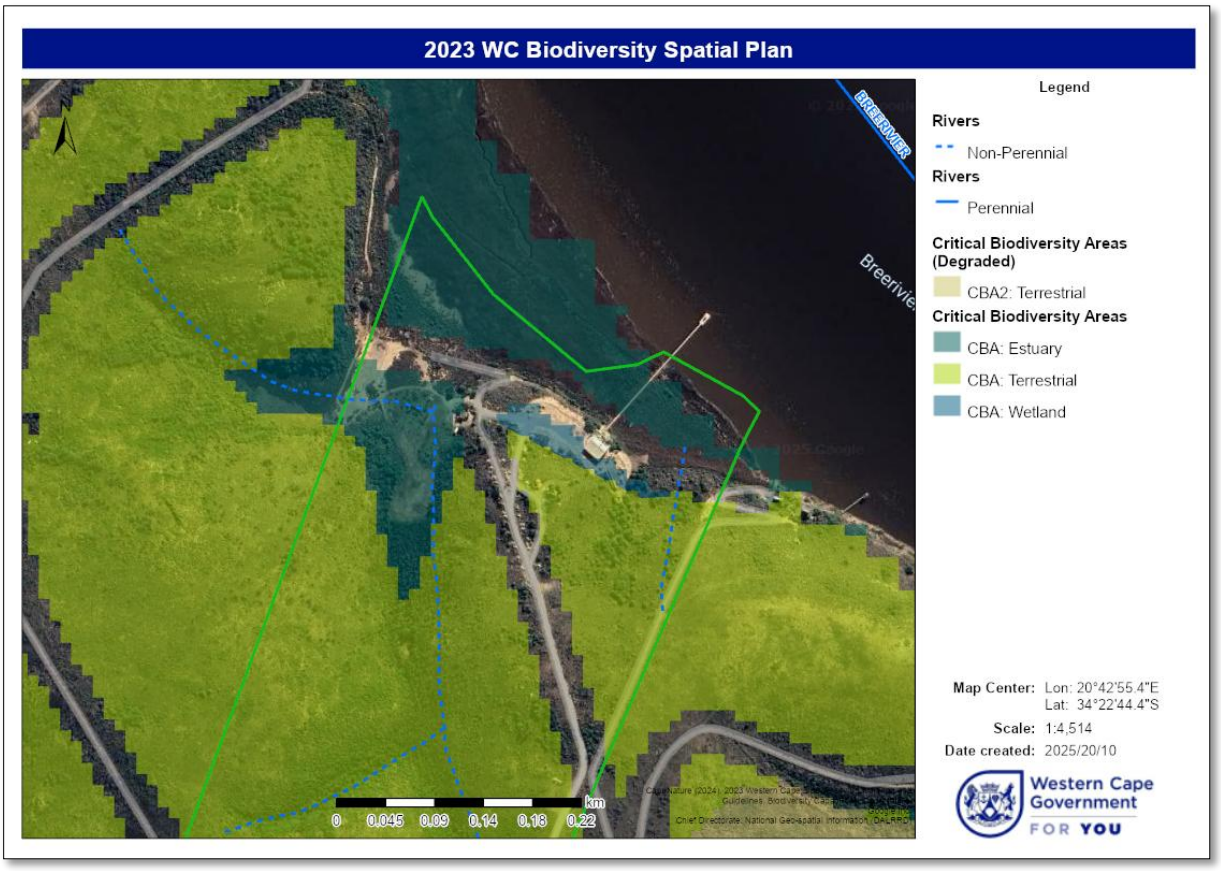


Figure 10: The 2023 Western Cape Biodiversity Spatial Plan (WCBSP) map (CFM, 2025)

NFEPA and National Wetlands map

Freshwater Ecosystem Priority Areas (FEPAs) are strategic spatial priorities aimed at conserving freshwater ecosystems and supporting the sustainable use of water resources. According to the NFEPA and the National Wetlands Map (NWM5) (Figure 11), the larger catchment encompassing the project area is classified as an FISH-FEPA. These sub-quaternary catchments are designated to meet specific fish population targets. Fish sanctuaries in good ecological condition (Category A or B) were selected as FEPAs, while the remaining sanctuaries were designated as Fish Support Areas. On FEPA maps, fish sanctuaries are represented by a fish symbol; a black fish indicates rivers within the catchment that are known to support vulnerable or near-threatened fish populations.

Within the project area, Cleared Area 2 falls within a FEPA wetland classified as Southwest Ferricrete Fynbos – Channelled Valley-Bottom Wetland (Condition C; FEPA Rank 2). The remainder of the disturbed

areas is located within an estuarine wetland. According to the National Wetlands Map, both disturbed areas fall within either the estuarine functional zone, which is considered vulnerable and poorly protected and a floodplain wetland (critically endangered).

During the field visit, it was once again confirmed that Cleared Area 2 does not fall within any wetland areas.

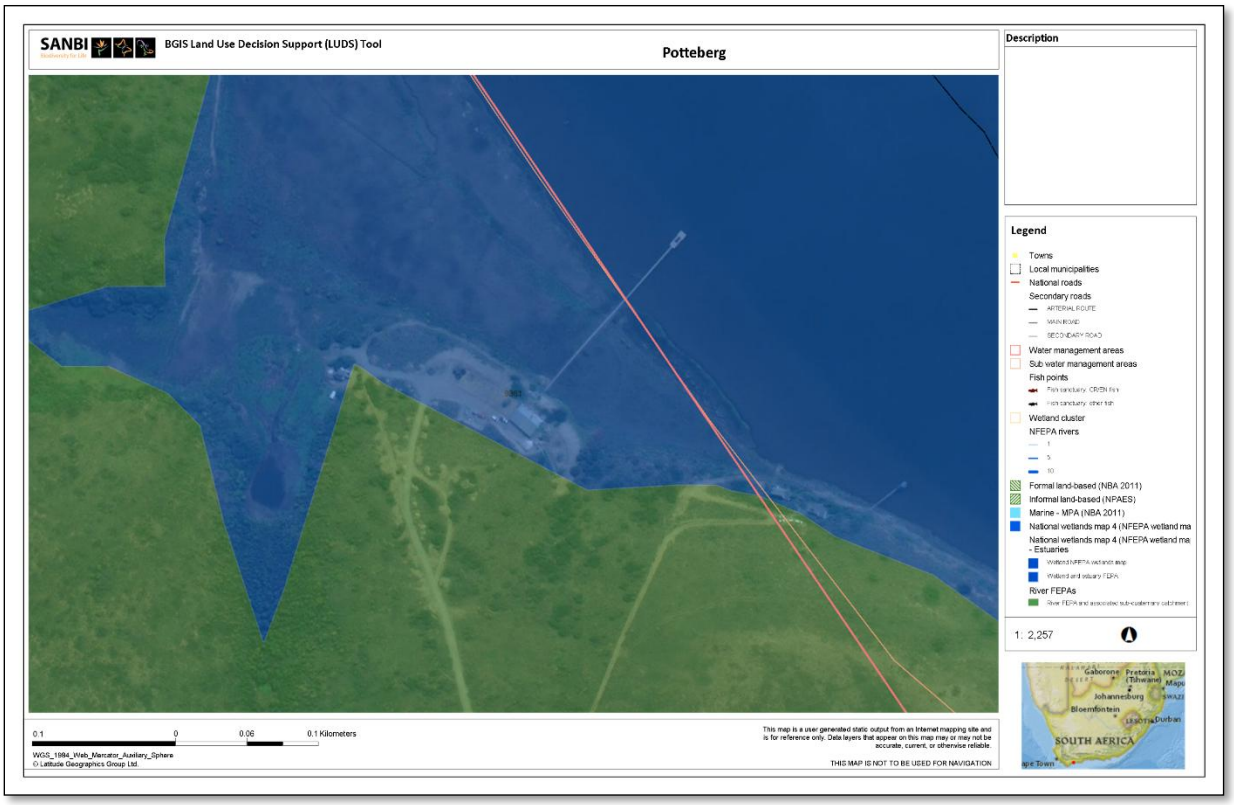


Figure 11: NFEPA and NWM5 map for the area (CFM, 2025)

Screening Report For An Environmental Authorisation

According to the Screening Report For An Environmental Authorisation (PHS Consulting, 2025), the Aquatic Biodiversity Theme indicated the project area to be of Very High Sensitivity.

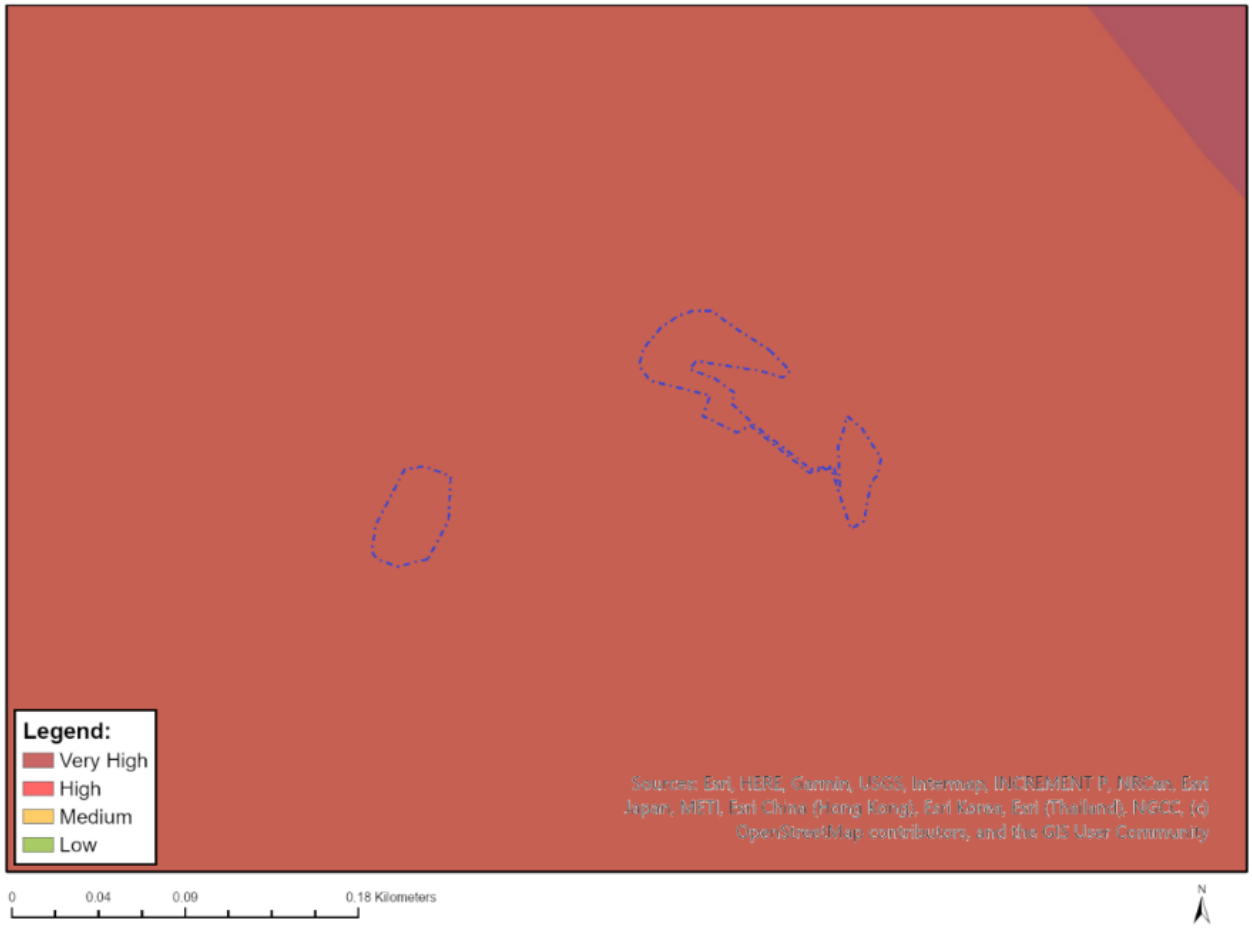


Figure 12: Aquatic Biodiversity Theme (PHS Consulting, 2025)

Aquatic assessment

Classification of Aquatic Systems and Present Ecological State Calculation

The ecosystem and vegetation of the study area were assessed in their present, as well as their likely pre-expanded and historical composition. It is described in the context of the freshwater systems of the area as assessed at the beginning of the dry season, with the site visit done on 25 October 2025. Freshwater features identified in and around the affected areas include a Floodplain Saltmarsh adjacent to Cleared Area 1 and the estuarine wetlands associated with the Breede River Estuary below Cleared Area 2. Only the Floodplain Saltmarsh was directly impacted by the unauthorised activities.

Although Cleared Area 3 lies within 100 m of an Unnamed stream, it is not located within the 1:100year flood line, or associated riparian zone, and thus is not considered to fall within the regulated area of the stream. The Unnamed stream was thus excluded from the freshwater and impact assessment.

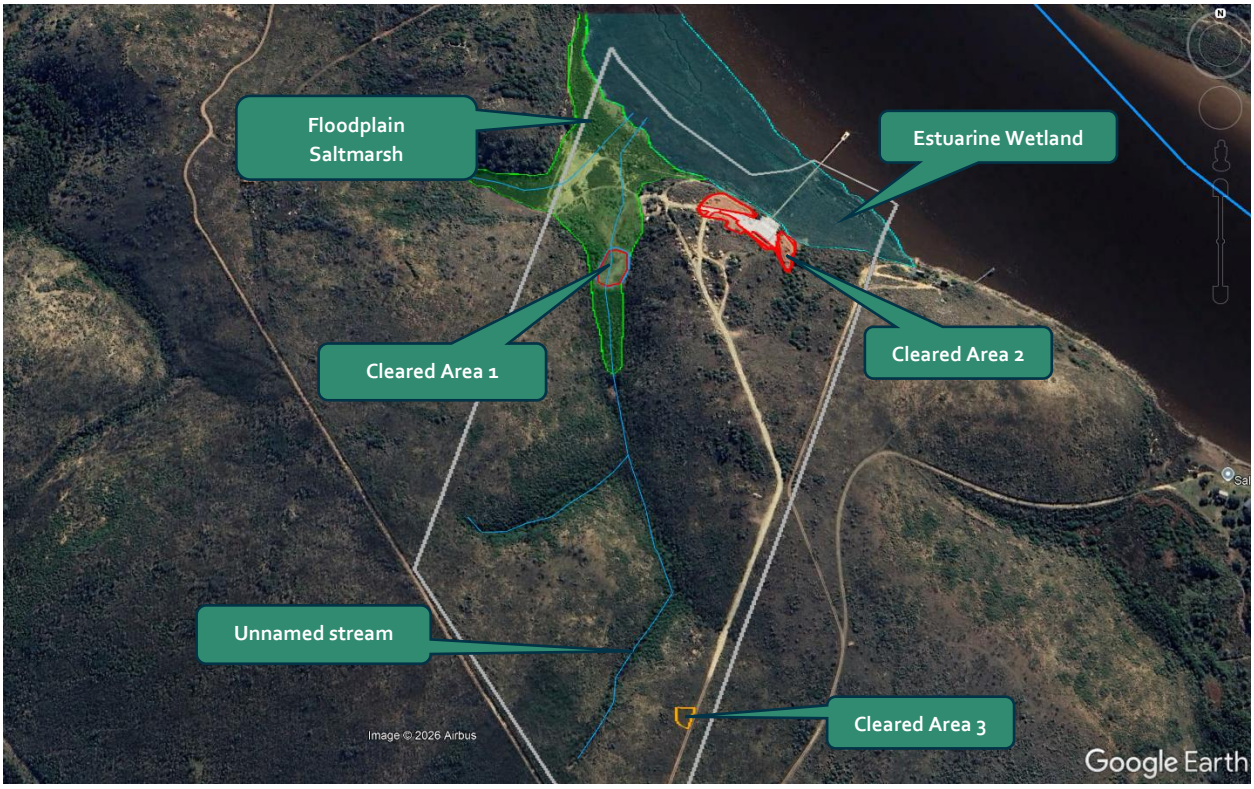


Figure 13: Satellite image of the broader area showing surrounding freshwater features, including the Floodplain Saltmarsh (green polygon), the estuarine wetland (turquoise polygon) with the Breede River to the north-east, the Unnamed stream and the three cleared areas(Google Earth, 2025).

Geomorphological and Ecological Assessment

The freshwater features mentioned above were assessed using the Classification System for Wetlands and Other Aquatic Ecosystems in South Africa (Ollis et al., 2013). Additionally, the Wetland Index of Habitat Integrity (IHI) were utilised to determine the Present Ecological State (PES) of the affected freshwater features. Together with the Ecological Importance and Sensitivity (EIS) method, these tools were employed to evaluate the ecological condition, functional performance, and overall importance of the rivers, streams or wetlands on site.

Based on the above assessments, the Recommended Management Objective (RMO) and Recommended Ecological Class (REC) were determined. These approaches provide a comprehensive understanding of the freshwater features' current state, their ecological roles, and their significance in terms of biodiversity and resilience. They also offer valuable insights into the key ecological drivers influencing these systems. Each freshwater feature has been evaluated using the methodology outlined in Annexure 1, and detailed results of these assessments are provided in Annexure B.

Floodplain Saltmarsh:

The Floodplain Saltmarsh in which Cleared Area 1 occurs is located at the confluence of two small ephemeral streams, just upstream of their entry into the Breede River Estuary. This wetland represents a typical brackish marsh, likely influenced by both seasonal groundwater inputs and estuarine connectivity, being generally inundated only when the river is in flood. Dominant vegetation includes *Salicornia perennis, Atriplex semibaccata* and *Disphyma crassifolium*.

The wetland has experienced progressive vegetation removal over many years, preceding the clearing of Cleared Area 1, which has resulted in significant degradation and the loss of substantial portions of its original extent. The broader area remains heavily infested with *Acacia cyclops* (Rooikrans) and *Acacia saligna* (Port Jackson). A small dam is located upstream of the wetland area within the one drainage line, altering some of the surface flow that might have contributed to a small degree to the health and function of the wetland. These habitats are considered critical for the maintenance of bait organism populations.

Figure 14: Satellite imagery showing the Floodplain Saltmarsh (filled green polygon) with the cleared areas (red polygon) (Google Earth, 2025)

Figure 15: Views over Cleared Area 1 showing the open patches (top) and the remainder of the wetland towards the Breede River (bottom).

TABLE 3. SUMMARY OF THE WETLAND ASSESSMENT FOR THE FLOODPLAIN SALTMARSH

Floodplain Saltmarsh			
DWA catchment		H70K	
Vegetation type		Estuarine Saltmarsh Vegetation	
Rainfall region		Winter	
System		Inland to Estuarine System	
Regional Setting		Southern Coastal Belt	
Landscape unit		Valley floor	
Level 4: Hydrogeomorphic Unit		Floodplain Saltmarsh	
Level 4: Drainage outflow		With diffuse outflow	
Level 5: Hydrological Regime	Inundation periodicity	Seasonally to ephemerally inundated	
	Saturation periodicity (up to 0.5m below ground level)	Seasonally saturated zones.	
Level 6: Wetland Characteristics	Natural vs Artificial	Natural	
	Vegetation cover type	Mostly herbaceous (Grasses, Sedges, Herbs) and large scattered Shrubs – indigenous.	
	Substratum type	Sand/Mud	
Special conservational features (from desktop study)		**WCSBP (2017)**	From the 2023 WCBSP, it is the largest part of the wetland areas is indicated as aquatic CBA: Estuary, with the house and Cleared Area 2 being located on a Valley-bottom Wetland (CBA: Southwest Ferricrete Fynbos Channelled valley bottom wetland). Most of the remainder of the property is indicated as Terrestrial CBA: Threatened Ecosystem. **During the field verification, the valley-bottom wetland indicated at Cleared Area 2 was found invalid, with no wetland features found at this site.**
		NFEPA and National Wetlands Map	According to the NFEPA and the National Wetlands Map (NWM5) (Figure 10), the larger catchment encompassing the project area is classified as an FISH-FEPA. Within the project area, Cleared Area 2 falls within a FEPA wetland classified as Southwest Ferricrete Fynbos – Channelled Valley-Bottom Wetland (Condition C; FEPA Rank 2). The remainder of the disturbed areas is located within an estuarine wetland. According to the National Wetlands Map, both disturbed areas fall within either the estuarine functional zone, which is considered vulnerable and poorly protected or a floodplain wetland (critically endangered). **During the field visit, it was once again confirmed that Cleared Area 2 does not fall within any wetland areas.**
PES		B/C	
EIS		Moderate	
RMO and REC		**RMO – B/C: Maintain; REC – C**	
Proposed Buffer Zone		20m	

Breede River Estuarine Functional Zone

In addition to the wetland described above, other freshwater features located within 500 m of the disturbed areas include the Breede River Estuarine Functional Zone and the Breede River itself. The Breede River, approximately 322 km in length from its source near Ceres to its mouth at Sebastian Bay, drains a catchment of about 12,600 km². Its estuary extends roughly 52 km from the mouth at Witsand to the upstream limit of tidal influence near Malgas, encompassing a total surface area of approximately 1,367.8 ha. While the estuary lies within a winter/bimodal rainfall transition zone, most of the catchment falls within the winter rainfall region, resulting in strongly seasonal flows with peak discharges and flooding during the winter months. The estuary enters the Indian Ocean through a permanently open mouth, approximately 12 km from the study area.

According to the latest *Breede River Estuarine Management Plan* (2025), and considering its size, habitat diversity, and associated biota, the Breede River Estuary has been classified as a "Highly Important" estuary and ranked as the 19th most important estuary in South Africa. The present ecological condition (PES) of the estuary is described as "good," corresponding to a **PES Category of B/C—largely natural** with some modification. The **Recommended Ecological Category (REC) for the estuary is Category B.**

As the Breede River and its Estuarine Functional Zone were not directly affected by the clearing activities, they are only briefly described here. The current ecological condition and importance, as reflected in the *Breede River Estuarine Management Plan* (2025), are adopted as the Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) for the section of the river adjoining the property.

Figure 16: Satellite imagery showing the Breede River and its Estuarine Functional Zone (turquoise polygon) located directly adjacent to the study area. (Google Earth, 2025)

Figure 17: Views over the Breede Rivers' Estuarine Functional Zone situated below Cleared Area 2.

TABLE 3. SUMMARY OF THE BASIC ASSESSMENT FOR THE BREEDE RIVER ESTUARINE FUNCTIONAL ZONE

BREEDE RIVER ESTUARINE FUNCTIONAL ZONE		
DWA catchment	H70K	
Vegetation type	Estuarine Habitat	
Rainfall region	Winter	
System	Estuarine System	
Regional Setting	Southern Coastal Belt	
Level 3: Subsystem	Permanently Open	
Level 4: Hydrogeomorphic Unit	Open Estuary	
Level 5: Tidal Regime	Intertidal	
Special conservational features (from desktop study)	**WCSBP (2017)**	From the 2023 WCBSP, it is the largest part of the wetland areas is indicated as aquatic CBA: Estuary, with the house and Cleared Area 2 being located on a Valley-bottom Wetland (CBA: Southwest Ferricrete Fynbos Channelled valley bottom wetland). Most of the remainder of the property is indicated as Terrestrial CBA: Threatened Ecosystem. **During the field verification, the valley-bottom wetland indicated at Cleared Area 2 was found invalid, with no wetland features found at this site.**
	NFEPA and National Wetlands Map	According to the NFEPA and the National Wetlands Map (NWM5) (Figure 10), the larger catchment encompassing the project area is classified as an FISH-FEPA. Within the project area, Cleared Area 2 falls within a FEPA wetland classified as Southwest Ferricrete Fynbos – Channelled Valley-Bottom Wetland (Condition C; FEPA Rank 2). The remainder of the disturbed areas is located within an estuarine wetland. According to the National Wetlands Map, both disturbed areas fall within either the estuarine functional zone, which is considered vulnerable and poorly protected and a floodplain wetland (critically endangered). **During the field visit, it was once again confirmed that Cleared Area 2 does not fall within any wetland areas.**
PES	B/C	
EIS	Very High	
RMO and REC	**RMO – B/C: Maintain; REC – B/C**	
Proposed Buffer Zone	30m	

Impact Assessment

The freshwater impacts are rated in accordance with the Environmental Impact Assessment Regulations, 2010 and the criteria drawn from the IEM Guidelines Series, Guideline 5: Assessment of Alternatives and Impacts, published by the DEAT (2006) as well as the Guideline Document on Impact Significance (DEAT, 2002).

As with any development activity within a natural or semi-natural system, potential impacts—both positive and negative—on the surrounding environment may arise. This section evaluates the significance of both existing and potential impacts of the proposed activity on freshwater ecology across the entire project site, as well as on downstream freshwater features. Furthermore, it outlines the mitigation measures required to minimise negative impacts and assesses the significance of these impacts, assuming full implementation of the proposed mitigation measures.

The following unauthorised activities have affected the surrounding wetland areas, either directly or indirectly (as indicated in Figure 2):

- Clearance of vegetation within the floodplain marsh (direct impact);
- Clearing and levelling activities within the broader Breede River Estuarine Functional Zone buffer (indirect impact).

In addition, the client proposes to undertake the following activities within the proposed 30 m buffer zone:

- Additions to the existing main dwelling within Cleared Area 2, including the construction of a roofed deck on the north-western side of the dwelling. This activity will fall within the proposed 30 m buffer zone;
- Landscaping using primarily indigenous vegetation within all remaining disturbed portions of Cleared Areas 2 and 3 not occupied by structures or access roads;
- Rehabilitation of the floodplain salt marsh within Cleared Area 1, where unauthorised clearing has occurred and where no development is proposed.

Both the existing and proposed activities will result in impacts during the construction and operational phases and are expected to affect the following aspects:

- Loss of biodiversity within both the floodplain salt marsh and the Breede River Estuarine Functional Zone;
- Potential water quality impacts on the Breede River Estuarine Functional Zone.

Loss of biodiversity:

The existing clearance of vegetation within the Floodplain Saltmarsh has resulted in a notable loss of biodiversity, encompassing both the vegetation itself and the temporary loss of invertebrate species dependent on this habitat. Some vegetation has begun to re-establish naturally; however, the cleared area remains largely barren, corresponding to an estimated reduction of approximately 7% in the ecological function of the larger wetland. This impact is assessed as having a **local, long-term, Low to Medium negative significance** on biodiversity within the broader wetland area.

The other disturbance, which involved clearing and levelling activities within the larger Breede River Buffer Zone, had the potential to cause a loss of biodiversity within the adjacent wetland area. However, this activity was confined to a sloped area, significantly elevated above the wetland, and was buffered by the existing dirt road running along the site. As a result, no notable loss of biodiversity occurred within the Breede River Estuarine Functional Zone, and the impact on biodiversity within the surrounding wetland area is considered **negligible to none**.

The client also intends to add infrastructure around the existing dwelling and to revegetate the remainder of the cleared site with indigenous plants. Although the small pumphouse and roofed deck area located to the north-east of the main dwelling will be located inside the 30 m buffer zone, it will fall outside of the 1:100-year flood line, within an already cleared platform area. Thus, these activities are expected to have a general, **low to negligible negative impact on the biodiversity of the Estuarine Functional Zone**. The revegetation of the remaining cleared area will also serve as rehabilitation, enhancing overall biodiversity within the buffer zone, providing a **long-term, local, low positive benefit to the bordering estuarine wetland.**

Mitigation measures

- During the construction of the new pumphouse and roofed deck area, all activities should be confined to the existing cleared platform, with no construction vehicles or materials permitted outside of the established footprint.
- Disturbed areas should be rehabilitated using locally indigenous wetland and riparian plant species, including Salicornia perennis, Atriplex semibaccata, and Disphyma crassifolium within the floodplain marsh.
- Invasive plant species within and adjacent to the wetland and riparian areas should be identified and removed, with a focus on Acacia saligna.
- Follow-up monitoring and control should be implemented at least annually to prevent re-establishment of invasive species.
- A 20 m buffer zone should be maintained around the floodplain salt marsh, with all future activities restricted to areas outside this buffer.
- A 30 m buffer zone should be maintained around the Breede River Estuarine Functional Zone, with all future activities restricted to areas outside this buffer.

Water Quality and Sedimentation Impacts:

Once again, given that the clearing and levelling activities took place within the Breede River's buffer zone, these activities could have had an impact on water quality in the area. Excavation of soils on a slope could have led to sedimentation in the downstream wetland, potentially resulting in some loss of wetland habitat. However, as noted above, this wetland was well buffered by the existing road running along its edge, and no signs of disturbance or sedimentation were observed north of the road. Therefore, this

activity is considered to have had **no to negligible impact on water quality or sedimentation in the downstream wetland.**

Similarly, the construction of the small pumphouse and roofed deck area will be located within the already cleared section of the 30 m buffer zone, and is expected to have only a short-term, **local, low to negligible impact on water quality and sedimentation in the downstream wetland.**

To mitigate potential future soil erosion and sedimentation, the client has already planted the slopes, which showed generally good vegetation cover at the time of the field visit. The client also intends to revegetate the remainder of the cleared area as part of the final development, further reducing this risk. Consequently, any negative impacts associated with erosion from this area are considered **low and of short-term duration.**

Mitigation measures

Operational Phase:

- During the construction of the new pumphouse and roofed deck area, care should be taken that no sediment and/or other pollutants wash down from the platform into the wetland area. This can be prevented through the installation of silt fences on the edge of the platform.
- Stabilise any of the remaining exposed soils using geotextiles, mulch, or vegetative cover.
- Install temporary silt fences or sediment traps if and where necessary during rehabilitation of the slopes.
- Monitor vegetation establishment and slope stability over the life of the infrastructure, addressing any erosion or vegetation issues as necessary.

Summary of the impacts:

TABLE 2: SUMMARY OF THE EXPECTED IMPACTS RELATING TO THE CONSTRUCTION PHASE.

SITE CLEARANCE, CONSTRUCTION PHASE		
	Preferred Alternative	
Nature of impact:	Development of the new pumphouse and roofed deck area.	
Description and consequence of impact or risk:	Negligible loss of biodiversity around the already cleared area. Improved biodiversity due to the rehabilitation of remaining cleared areas.	
Indirect impacts:	Possibility of water quality impairment and possible sedimentation towards the Estuarine Functional Zone.	
	Without mitigation	**With mitigation**
MAGNITUDE of impact:	**Low to Negligible (-)** This impact could result in a slight alteration of the aquatic function and processes within the directly surrounding freshwater features.	**Negligible (-)** This impact could result in a slight to negligible alteration of the aquatic function and processes within the directly surrounding freshwater features.

SITE CLEARANCE, CONSTRUCTION PHASE		
	Preferred Alternative	
DURATION:	**Short term** 0-3 years.	
EXTENT (special scale/ influence of impact):	**Local** The impacted area should be limited to the site and the immediate surrounding area.	
IRREPLACEABLE loss of resources:	**Medium potential** Resources can be replaced with effort.	
INTENSITY and degree to which the impact can be REVERSED:	**Low** With no mitigation in place, the natural processes of the affected freshwater features could be minimally affected. Natural functions and processes can be reversed to their pre-activity state.	
PROBABILITY of occurrence:	**Low** The probability of the impact occurring is low due to the design and historical experience.	
Significance rating of impact <u>without and with</u> mitigation:	**Low (-)** The overall significance of the above potential impact is predicted to be Low, without mitigation. Although impacts fall within an acceptable range, impacts are still considered important, and mitigation measures are required to reduce the negative impacts.	**Low to negligible (-) to Low (+)** With mitigation, the overall significance of the above potential impacts is predicted to be low to negligible, and within the acceptable range. With rehabilitation, the activities could have a generally low positive impact on the directly surrounding freshwater features.
Cumulative impact (with mitigation):	**Low on the larger freshwater system**	

TABLE 3: SUMMARY OF THE IMPACTS RELATING TO THE OPERATION PHASE.

Operational Phase				
	Preferred Alternative		**No-go alternative**	
Nature of impact:	Direct impact on the Floodplain Saltmarsh and Indirect impacts on the Breede River Estuarine Functional Zone.		N/A – Status quo would remain.	
Description and consequence of impact or risk:	Loss of approximately 7% of the biodiversity within the Floodplain Saltmarsh.		N/A	
Indirect impacts:	Possibility of sedimentation and water quality impacts on the Breede River Estuarine Functional Zone.		N/A	
	Without mitigation	**With mitigation**	**Without mitigation**	**With mitigation**
MAGNITUDE of impact:	**Low to Medium (-)** This impact could result in a slight to moderate alteration of the aquatic function	**Low (-)** This impact could result in a slight alteration of the aquatic function and	N/A	N/A

Operational Phase				
	Preferred Alternative		No-go alternative	
	and processes of the receiving wetland features.	processes of the receiving wetland features.		
DURATION:	**Long term** More than 10 years.		N/A	
EXTENT (special scale/ influence of impact):	**Local** Impacted area is limited to the site and its immediate surrounding area.		N/A	
IRREPLACEABLE loss of resources:	**Medium potential** Resources can be replaced with effort.		N/A	
INTENSITY and degree to which the impact can be REVERSED:	**Low** With no mitigation in place, the natural processes of the receiving freshwater areas will be minimally affected. Natural processes can be reversed to their previous state.		N/A	
PROBABILITY of occurrence:	**Medium** There is a distinct probability that an impact might occur.			
Significance rating of impact <u>without and with</u> mitigation:	**Medium-low (-)** The overall significance of the above potential impact is predicted to be Low to Medium, without mitigation. Impacts are within the acceptable range, but should be mitigated to lower significance levels where possible.	**Low (-)** Impacts are within the acceptable range.	N/A	N/A
Cumulative impact:	**Very low**		**N/A**	

Risk Assessment:

Following the assessment of the characteristics of the identified aquatic habitats, the DWS Risk Assessment Matrix (which is specified in the Government Notice No.4167 (December 2023) for section 21 (c) and (i) water uses as defined under the NWA (1998)), was conducted to ascertain the significance of perceived impacts of the proposal on the key drivers and response processes (hydrology, water quality, geomorphology, habitat and biota) of the aquatic habitats (attached under Annexure B).

The activities associated with the operational phases of the project include the following:

- Clearance of vegetation within the Floodplain Saltmarsh.
- Excavation of soils (clearing and levelling activities) within 32m of the Breede River and its Estuarine Functional Zone.
- Construction of pumphouse and roofed deck area within 30m of the Breede River and its Estuarine Functional Zone (within existing cleared area).
- Rehabilitation of the Floodplain saltmarsh and revegetation of the remainder of the cleared areas falling within the regulated area of the affected watercourses.

Following the Risk Assessment Matrix (See Appendix C), which assumes the full implementation of proposed mitigation measures, the risk of impact would be considered to be Low.

Results and recommendations:

The alleged unauthorised activities occurred within a Floodplain Saltmarsh and within 32 metres of the Breede River and its associated Estuarine Functional Zone. The following table provides a summary of the freshwater assessment findings for the features located on and surrounding the disturbed areas:

	Floodplain Saltmarsh	**Breede River Estuarine Functional Zone**
DWA catchment	H70K	
Vegetation type	Potberg Ferricrete Fynbos (FFf2)	
Rainfall region	Winter	
CBA and FEPA status	Aquatic CBA: Estuary	Aquatic CBA: Estuary; CBA: Southwest Ferricrete Fynbos Channelled valley bottom wetland
PES	B/C	B/C
EIS	Moderate	Very High
RMO and REC	RMO – B/C: Maintain; REC – C	RMO – B/C: Maintain; REC – B/C
Buffer Zone	20m	30m

According to the Screening report for an Environmental Authorisation as required by the 2014 EIA regulations (PHS Consulting, 2025), the environmental sensitivity for the Aquatic Biodiversity Theme was found to be of High sensitivity.

The following unauthorised activities have affected the surrounding wetland areas, either directly or indirectly (as indicated in Figure 2):

- Clearance of vegetation within the floodplain marsh (direct impact);
- Clearing and levelling activities within the broader Breede River Estuarine Functional Zone buffer (indirect impact).

In addition, the client proposes to undertake the following activities within the proposed 30 m buffer zone:

- Additions to the existing main dwelling within Cleared Area 2, including the construction of a roofed deck on the north-western side of the dwelling. This activity will fall within the proposed 30 m buffer zone;
- Landscaping using primarily indigenous vegetation within all remaining disturbed portions of Cleared Areas 2 and 3 not occupied by structures or access roads;
- Rehabilitation of the floodplain salt marsh within Cleared Area 1, where unauthorised clearing has occurred and where no development is proposed.

Both the existing and proposed activities will result in impacts during the construction and operational phases and are expected to affect the following aspects:

- Loss of biodiversity within both the floodplain salt marsh and the Breede River Estuarine Functional Zone;
- Potential water quality impacts on the Breede River Estuarine Functional Zone.

In order to mitigate the existing impacts, a list of mitigation measures has been set out under the Impact Assessment.

Conclusion:

The impact assessment concluded that with full implementation of the mitigation measures, the above-mentioned activities have had a **Low negative impact on the larger relict wetland area, and a negligible negative cumulative impact on the larger surrounding freshwater features.** Furthermore, following the Risk Assessment Matrix, which assumes the full implementation of proposed mitigation measures, the risk of impact would be considered to be **Low**

As the Floodplain Saltmarsh and the Breede River Estuarine Functional Zone are both defined as watercourses under the National Environmental Management Act, 1998 (Act No. 107 of 1998), any activities undertaken within 32 metres thereof would require authorisation in terms of the relevant regulations promulgated under NEMA.

In addition, Section 21 of the National Water Act, 1998 (Act No. 36 of 1998), together with Government Notice No. 1199 of 2009, applies specifically to activities that occurred within the Floodplain Saltmarsh.

The Estuarine Functional Zone, however, would in this case be classified as a water resource under the National Water Act.

Accordingly, any development occurring within 500 metres of the delineated wetland boundary would require a Water Use Licence (WUL), unless such activity qualifies for exemption under a General Authorisation issued by the Department of Water and Sanitation.

References:

Department of Water Affairs and Forestry. (1999). *Resource Directed Measures for Protection of Water Resources. Volume 3: River Ecosystems Version 1.0*. Resource Directed Measures for Protection of Water Resources, Pretoria, South Africa.

Department of Water Affairs and Forestry, 2005. A practical field procedure for identification and delineation of wetlands and riparian areas. Final Draft. DWAF, Pretoria, South Africa.

DWAF (2007). *Manual for the assessment of a Wetland Index of Habitat Integrity for South African floodplain and channelled valley bottom wetland types* by M. Rountree (ed); C.P. Todd, C. J. Kleynhans, A. L. Batchelor, M. D. Louw, D. Kotze, D. Walters, S. Schroeder, P. Illgner, M. Uys. and G.C. Marneweck. Report no. N/0000/00/WEI/0407. Resource Quality Services, Department of Water Affairs and Forestry, Pretoria, South Africa.

Driver, Nel, Snaddon, Murray, Roux, Hill. (2011). *Implementation Manual for Freshwater Ecosystem Priority Areas*. Draft Report for the Water Research Commission.

Kleynhans C.J, Institute for Water Quality Studies, Department of Water Affairs and Forestry (1999). Procedure For Desktop Estimate Of The Water Quantity Component Of The Ecological Reserve, For Use In The National Water Balance.

Kleynhans C.J., Thirion C. and Moolman J. 2005. A Level 1 Ecoregion Classification System for South Africa, Lesotho and Swaziland. Report No. N/0000/00/REQ0104. Resource Quality Services, Department of Water Affairs and Forestry, Pretoria

Kotze D.C., Marneweck G.C., Batchelor A.L., Lindley D.S. and Collins N.B. 2009. WETEcoServices: A technique for rapidly assessing ecosystem services supplied by wetlands. WRC Report No. TT 339/09. Water Research Commission, Pretoria.

Macfarlane, D.M., Bredin, I.P., Adams, J.B., Zungu, M.M., Bate, G.C. and Dickens, C.W.S. 2014. *Preliminary guideline for the determination of buffer zones for rivers, wetlands and estuaries. Final Consolidated Report.* WRC Report No TT 610/14, Water Research Commission, Pretoria

Macfarlane D; Kotze D; Ellery W; Koopman V; Goodman PS; Goge M; Walters D. 2009. WET-Health. WRC Report No TT 340/09, Water Research Commission, Pretoria

Marnewecke, G. & Kotze, D., 1999. Appendix W6: Guidelines for delineating the boundaries of a wetland and the zones within a wetland in terms of the South African Water Act. Version 1.0. Department of Water Affairs and Forestry, Pretoria, South Africa.

Mucina, L. and Rutherford, M. C. (eds.) (2004) *Vegetation map of South Africa, Lesotho and Swaziland*. Strlitzia 18. South African National Biodiversity Institute, Pretoria.

National Environmental Management Act (NEMA) 107 of 1998

National Water Act 36 of 1998. Section 21(c) and (i).

PHS Consulting, 2025. Screening report for an environmental authorization as required by the 2014 eia regulations – proposed site environmental sensitivity. (EIA Reference number: Pre-App DEA&DP S24G)

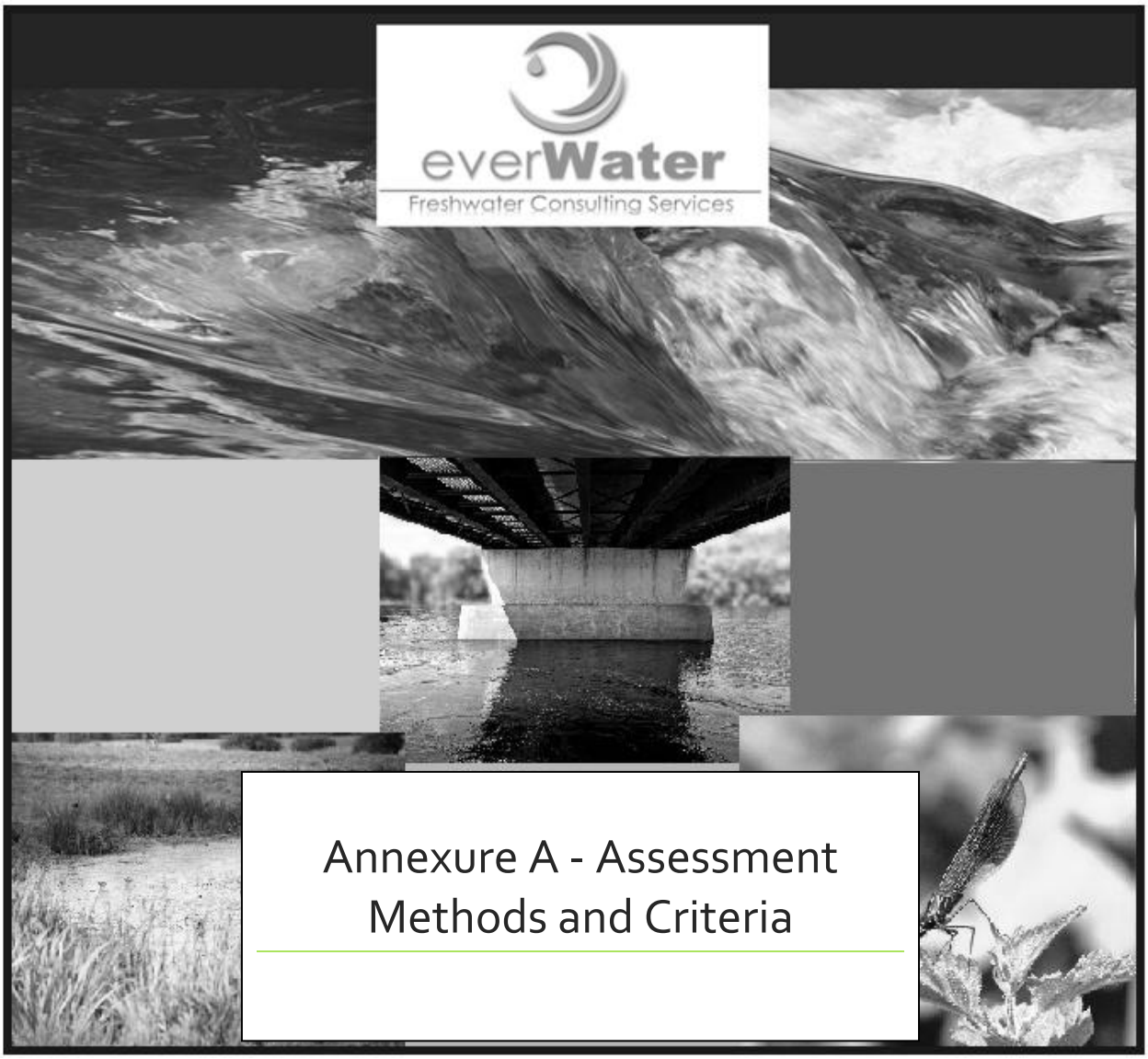
SANBI Biodiversity GIS. http://bgis.sanbi.org

SANBI (2009). Further Development of a Proposed National Wetland Classification System for South Africa. Primary Project Report. Prepared by the Freshwater Consulting Group (FCG) for the South African National Biodiversity Institute (SANBI).

Saul.L, et al. 2015. Driftsands Nature Reserve: Protected Area Management Plan. Version 1.0.

Van Ginkel, C. E., Glen, R. P., Gordon-Gray, K. D., Cilliers, C. J., Muasya, M. and P. P. van Deventer (2011) *Easy identification of some South African wetland plants.* WRC Report No TT 479/10

WRC. (2011). *Atlas for Freshwater Ecosystem Priority Areas* – Maps to support sustainable development of water resources (WRC Report No. TT 500/11).

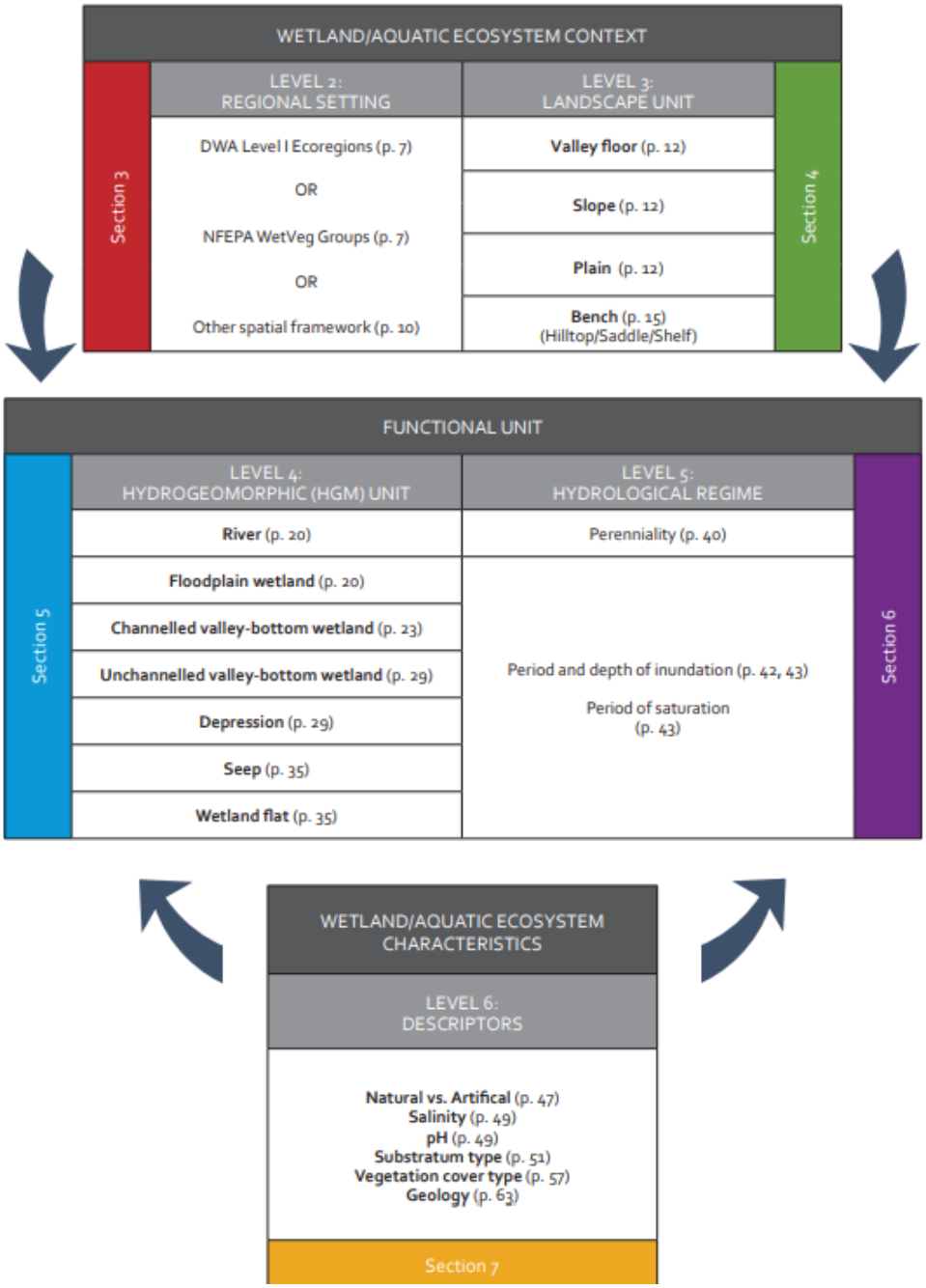


Annexure A - Assessment Methods and Criteria

Freshwater assessment methods:

Geomorphological and Physical Description of the Freshwater Features

The Classification System for Wetlands and Other Aquatic Ecosystems in South Africa (Ollis, 2013), was utilised to classify freshwater features encountered within the proposed study area. A summary of the classification system is presented below.



Classification of aquatic systems and Present ecological State calculation

A formal Habitat Integrity (PES), EIS (Ecostatus level III) and REC assessment were conducted to get a good representation of the present ecological state of the affected freshwater areas.

Ecological Assessment

Wetland Habitat Integrity:

The Wetland Habitat Integrity (WETLAND-IHI) model, as developed by the Department of Water Affairs and Forestry, was used as RAPID assessment of the wetland areas, for the purpose of reporting on the Present Ecological state (PES) of the wetland system in question. The Wetland Index of Habitat Integrity (WETLAND-IHI) is a tool developed for use in the National Aquatic Ecosystem Health Monitoring Programme (NAEHMP), formerly known as the River Health Programme (RHP) (Department of Water Affairs and Forestry Resource Quality Services, 2007). The output scores from the WETLAND-IHI model are presented in the standard DWAF A-F ecological categories (Table A-1) and provide a score of the Present Ecological State of the habitat integrity of the wetland system being examined.

TABLE 1-1. IHI ECOLOGICAL CATEGORIES

Ecological Category	PES % Score	Description
A	90-100 %	**Unmodified, natural.**
B	80-89 %	**Largely natural with few modifications:** A small change in natural habitats may have taken place but the ecosystem functions are essentially unchanged.
C	60-79 %	**Moderately modified:** Loss and change of natural habitat and biota have occurred, but the basic ecosystem functions are still predominantly unchanged.
D	40-59%	**Largely modified.** A large loss and change of natural habitat, biota and basic ecosystem functions has occurred.
E	20-39%	**Seriously modified.** The loss of natural habitat, biota and basic ecosystem functions is extensive.
F	0-20 %	**Critically / Extremely modified:** Modifications have reached a critical level and the system has been modified completely with an almost complete loss of natural habitat and biota. In the worst

		instances, the basic ecosystem functions have been destroyed and the changes are irreversible.

WET-EcoServices Assessment:

WET-EcoServices is used to assess the goods and services that individual wetlands provide, thereby aiding informed planning and decision-making. It is designed for a class of wetlands known as palustrine wetlands (i.e. marshes, floodplains, vleis or seeps). The tool provides guidelines for scoring the importance of a wetland in delivering each of 15 different ecosystem services (including flood attenuation, sediment trapping and provision of livestock grazing). The first step is to characterize wetlands according to their hydro-geomorphic setting (e.g. floodplain). Ecosystem service delivery is then assessed either at Level 1, based on existing knowledge or at Level 2, based on a field assessment of key descriptors (e.g. flow pattern through the wetland).

Ecological Importance and Sensitivity (EIS)

The ecological importance of a water resource is an expression of its importance to the maintenance of ecological diversity and functioning on local and wider scales. Ecological sensitivity refers to the system's ability to resist disturbance and its capability to recover from disturbance once it has occurred.

The Ecological Importance and Sensitivity (EIS) assessment considers a range of biotic and habitat determinants that indicate either ecological importance or sensitivity. These determinants are evaluated using a four-point scale, and the median of the scores is calculated to establish the overall EIS category.

TABLE 1-2 DEFINITION OF THE SCALE USED TO ASSESS BIOTIC AND HABITAT DETERMINANTS

Scale	Definition
1	One species/taxon judged as rare or endangered at a local scale.
2	More than one species/taxon judged to be rare or endangered on a local scale.
3	One or more species/taxon judged to be rare or endangered on a Provincial/regional scale.
4	One or more species/taxon judged as rare or endangered on National scale (SA Red Data Books)

TABLE 1-3. ECOLOGICAL IMPORTANCE AND SENSITIVITY CATEGORIES (DWAF, 1999)

EISC	General description	Range of median
Very high	Quaternaries/delineations considered to be unique on a national and international level based on unique biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually very sensitive to flow modifications and have no or only a small capacity for use.	>3-4

High	Quaternaries/delineations considered to be unique on a national scale based on their biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) may be sensitive to flow modifications but in some cases may have substantial capacity for use.	>2-≤3
Moderate	Quaternaries/delineations considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are not usually very sensitive to flow modifications and often have substantial capacity for use.	>1-≤2
Low/ marginal	Quaternaries/delineations not unique on any scale. These rivers (in terms of biota and habitat) are generally not very sensitive to flow modifications and usually have substantial capacity for use.	≤1

Recommended Management Objective (RMO), Recommended Ecological Category (REC), Freshwater Delineation and Buffer Zones

Recommended Management Objective

The RMO (table below) was determined based on the results obtained from the PES, reference conditions and EIS of the freshwater resource (sections above), with the objective of either maintaining, or improving the ecological integrity of the freshwater resource in order to ensure continued ecological functionality.

TABLE 1-4: RECOMMENDED MANAGEMENT OBJECTIVES (RMO) FOR WATER RESOURCES BASED ON PES & EIS SCORES.

PES			Ecological Importance and Sensitivity (EIS)			
			Very High	High	Moderate	Low
	A	Pristine	A Maintain	A Maintain	A Maintain	A Maintain
	B	Natural	A Improve	A/B Improve	B Maintain	B Maintain
	C	Good	A Improve	B/C Improve	C Maintain	C Maintain
	D	Fair	C Improve	C/D Improve	D Maintain	D Maintain
	E/F	Poor	D* Improve	E/F* Improve	E/F* Maintain	E/F* Maintain

***PES Categories E and F are considered ecologically unacceptable (Malan and Day, 2012) and therefore, should a freshwater resource fall into one of these PES categories, an REC class D is allocated by default, as the minimum acceptable PES category.**

Recommended Ecological Category

The four ecological importance and sensitivity categories can be regarded as equivalent to the four default ecological management classes (DEMC; A to D) proposed for the purposes of the National Water

Act (Table A-4), i.e. it is suggested that a very high ecological importance and sensitivity should justify the assignment of a very high ecological management class, etc. Default ecological management classes are defined in terms of the sensitivity of a system to disturbance and the risk of damaging the system (i.e. its capacity for sustainability and self-recovery). Based on this, there would be a desire to manage the system within particular ranges of protection. The Recommended Ecological Class (REC) for the affected freshwater features were determined by considering the results of the IHI and EIS assessments.

TABLE 1-5: DEFAULT ECOLOGICAL MANAGEMENT CLASSES FOR RIVERS (ADAPTED FROM KLEYNHANS 1996 AND KLEYNHANS ET AL. 1998).

Default Ecological Management Classes	Description Of Perceived Conditions And Allowable Risk
A Highly sensitive systems: No human-induced hazards	Highly sensitive systems. The natural abiotic template should not be modified. The characteristics of the resource should be determined by unmodified natural disturbance regimes. There should be no human-induced hazards to the abiotic and biotic maintenance of the resource.
B Sensitive systems: Small risk allowed	Sensitive systems. Only a small risk of modifying the natural abiotic template and exceeding the resource base should be allowed. Although the risk to the well-being and survival of especially intolerant biota (depending on the nature of the disturbance) at a very limited number of localities may be slightly higher than expected under natural conditions, the resilience and adaptability of biota must not be compromised. The impact of acute disturbances must be totally mitigated by the presence of sufficient refuge areas.
C Moderately sensitive systems: Moderate risk allowed	Moderately sensitive systems. A moderate risk of modifying the abiotic template and exceeding the resource base may be allowed. Risks to the well being and survival of intolerant biota (depending on the nature of the disturbance) may generally be increased with some reduction of resilience and adaptability at a small number of localities. However, the impact of local and acute disturbances must at least partly be mitigated by the presence of sufficient refuge areas.
D Resilient systems: Large risk allowed	Resilient systems. A large risk of modifying the abiotic template and exceeding the resource base may be allowed. Risks to the well-being and survival of intolerant biota (depending on the nature of the disturbance) may be allowed to generally increase substantially with resulting low abundances and frequency of occurrence, and a reduction of resilience and adaptability at a large number of localities. However, the associated increase in the abundance of tolerant species must not be allowed to assume pest proportions. The impact of local and acute disturbances must at least to some extent be

Freshwater Delineation and Buffer Zones

Freshwater features were delineated at a desktop level using historical digital satellite imagery (2003-2024) as well as topographical maps and were verified during a field visit according to the guidelines suggested by DWA (2008). Furthermore, the Buffer Zone Tool for the Determination of Aquatic Impact

Buffers developed by the Department of Water and Sanitation (2014) was used to determine the extent of the buffer zone required for all freshwater features.

Impact Assessment Criteria

The freshwater impacts are rated in accordance with the Environmental Impact Assessment Regulations, 2014, as amended, and the criteria are drawn from the IEM Guidelines Series, Guideline 5: Assessment of Alternatives and Impacts, published by the (DEAT, 2006) as well as the Guideline Document on Impact Significance (DEAT, 2002).

The following criteria have been used to evaluate the significance of impacts:

- **Nature**: This is an appraisal of the type of effect the activity is likely to have on the affected environment. The description includes what is being affected and how. The nature of the impact will be classified as positive or negative, and direct or indirect.
- **Extent and location**: This indicates the spatial area that may be affected

Rating	Extent	Description
1	Site	Impacted area is only at the site – the actual extent of the activity.
2	Local	Impacted area is limited to the site and its immediate surrounding area
3	Regional	Impacted area extends to the surrounding area, the immediate and the neighbouring properties.
4	Provincial	Impact considered of provincial importance
5	National	Impact considered of national importance – will affect entire country.

- **Duration**: This measures the lifetime of the impact

Rating	Duration	Description
1	Short term	0 – 3 years, or length of construction period
2	Medium term	3 – 10 years
3	Long term	> 10 years, or entire operational life of project.
4	Permanent – mitigated	Mitigation measures of natural process will reduce impact – impact will remain after operational life of project.
5	Permanent – no mitigation	No mitigation measures of natural process will reduce impact after implementation – impact will remain after operational life of project.

- **Intensity/magnitude**: This is the degree to which the project affects or changes the environment; it includes a measure of the reversibility of impacts

Rating	Intensity	Description
1	Negligible	Change is slight, often not noticeable, natural functioning of environment not affected.
2	Low	Natural functioning of environment is minimally affected. Natural, cultural and social functions and processes can be reversed to their original state.
3	Medium	Environment remarkably altered, still functions, if in modified way. Negative impacts cannot be fully reversed.
4	High	Cultural and social functions and processes disturbed – potentially ceasing to function temporarily.
5	Very high	Natural, cultural and social functions and processes permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected. Negative impacts cannot be reversed.

- **Probability**: This is the likelihood or the chances that the impact will occur

Rating	Probability	Description
1	Improbable	Under normal conditions, no impacts expected.
2	Low	The probability of the impact to occur is low due to its design or historic experience.
3	Medium	There is a distinct probability of the impact occurring.
4	High	It is most likely that the impact will occur
5	Definite	The impact will occur regardless of any prevention measures.

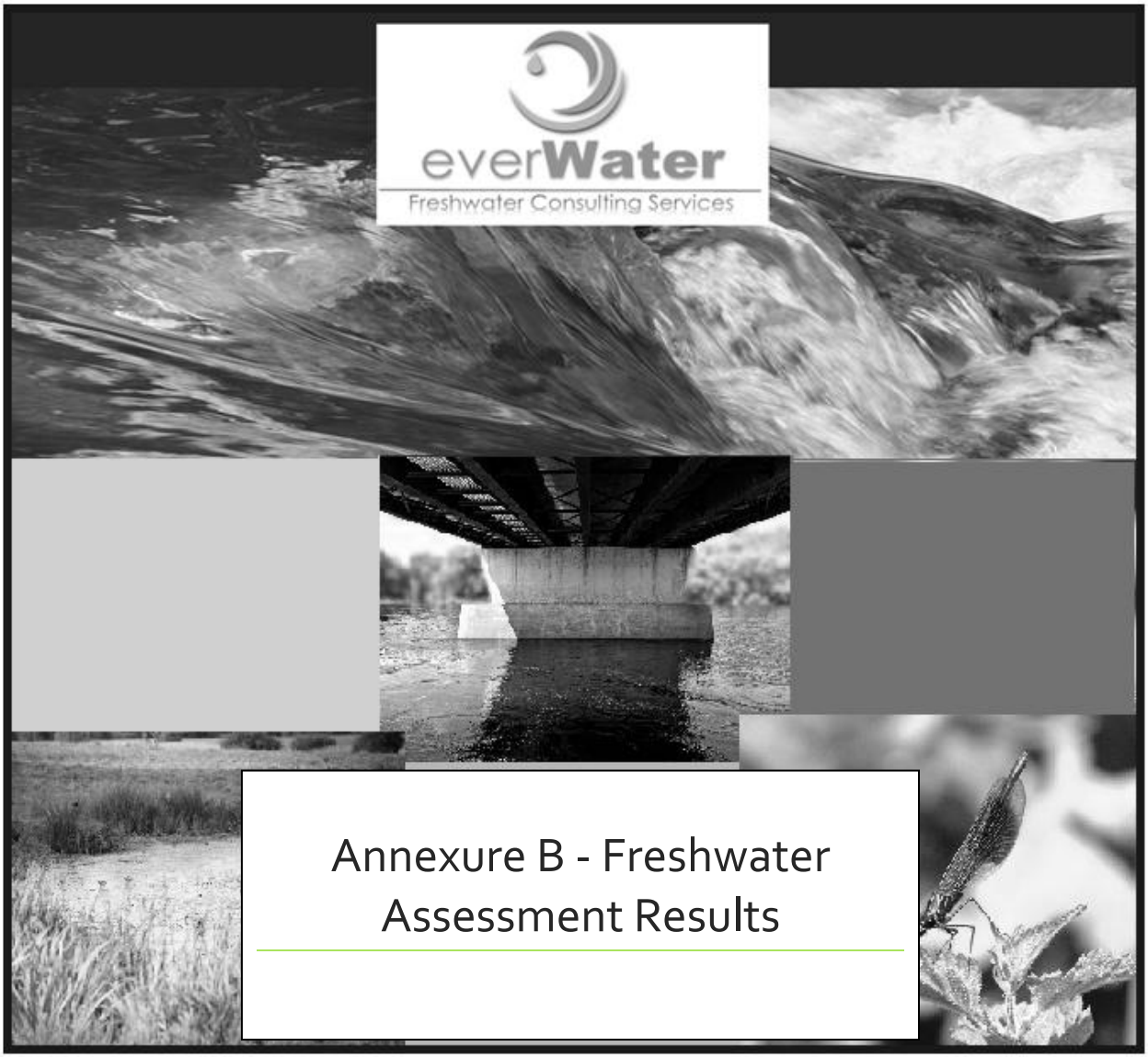
- **Potential for irreplaceable loss of resources:** This is the degree to which the project will cause loss of resources that are irreplaceable

Rating	Potential for irreplaceable loss of resources	Description
1	Low	No irreplaceable resources will be impacted.
3	Medium	Resources can be replaced, with effort.
5	High	There is no potential for replacing a particular vulnerable resource that will be impacted.

- **Significance**: The significance will be rated by combining the consequence of the impact and the probability of occurrence (i.e. consequence x probability = significance). The maximum value which can be obtained is 100 significance points

Rating	Significance	Description
1-14	Very low	No action required.
15-29	Low	Impacts are within the acceptable range.
30-44	Medium-low	Impacts are within the acceptable range but should be mitigated to lower significance levels wherever possible.
45-59	Medium-high	Impacts are important and require attention; mitigation is required to reduce the negative impacts to acceptable levels.
60-80	High	Impacts are of great importance, mitigation is crucial.
81-100	Very high	Impacts are unacceptable.

Cumulative Impacts: This refers to the combined, incremental effects of the impact. The possible residual impacts will also be considered.



Annexure B - Freshwater Assessment Results

Habitat Integrity (PES)

This assessment was applied to the extent of the floodplain saltmarsh as described in Table 2.

TABLE 2-1. RESULTS OF THE WETLAND IHI ASSESSMENT FOR THE FLOODPLAIN SALTMARSH

Wetland name:	Floodplain Saltmarsh
Date of assessment:	05/11/2025
Name/s of assessor/s:	J. Snyman

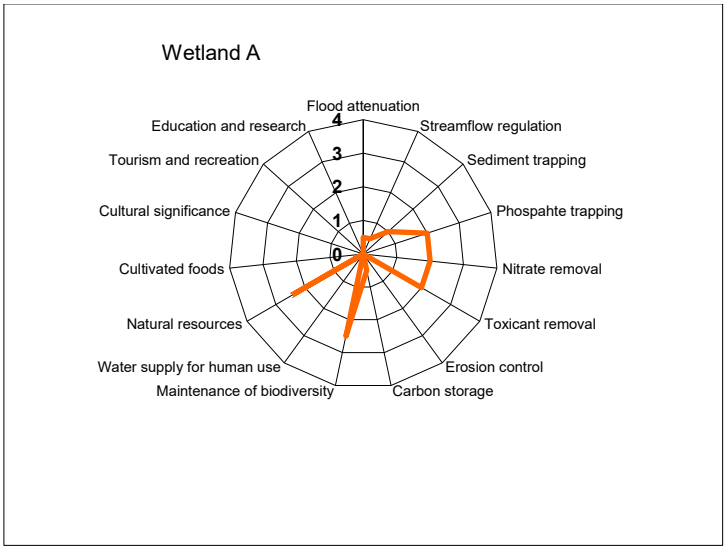
Components	Selected method	PES% scores	Overall PES%	Overall Ecological Category
Hydrology PES%	WET-Health Hydro Module	80	**81%**	**B/C**
Geomorphology PES%	WET-Health Geomorph Module	98		
Water quality PES%	Landuse-WQ Model	104		
Vegetation PES%	WET-Health Veg Module	67		

The most significant impacts on the floodplain saltmarsh is that of the general clearing of vegetation over the years, with very little natural vegetation re-establishing in these areas. The small upstream dam also has some impact on reducing runoff towards the wetland.

Wetland Ecosystem Services:

TABLE 2-4. RESULTS OF THE WETLAND ECOSERVICES ASSESSMENT

	HGM1
Flood attenuation	0.5
Streamflow regulation	0.5
Sediment trapping	1
Phosphate trapping	2
Nitrate removal	2
Toxicant removal	2
Erosion control	0
Carbon storage	0.5
Maintenance of biodiversity	2.5
Water supply for human use	0
Natural resources	2.5
Cultivated foods	0
Cultural significance	0
Tourism and recreation	0
Education and research	0
Threats	1.5
Opportunities	2.0



The saltmarsh delivers a moderate level of functionality in the Maintenance of biodiversity and Natural resources, with some function in Phosphate trapping and removal of Nitrates and Toxicants.

Ecological Importance and Sensitivity (EIS)

TABLE 2-5. RESULTS OF THE EIS ASSESSMENT

Biotic Determinants	HGM1
Rare and endangered biota	1.5
Unique biota	1
Intolerant biota	2
Species/taxon richness	2
Aquatic Habitat Determinants	
Diversity of aquatic habitat types or features	1
Refuge value of habitat type	1.5
Sensitivity of habitat to flow changes	1
Sensitivity of flow related water quality changes	1
Migration route/corridor for instream and riparian biota	2.5
National parks, wilderness areas, Nature Reserves, Natural Heritage sites, Natural areas, PNEs	2
Total	1,5
EIS CATEGORY	**Moderate**

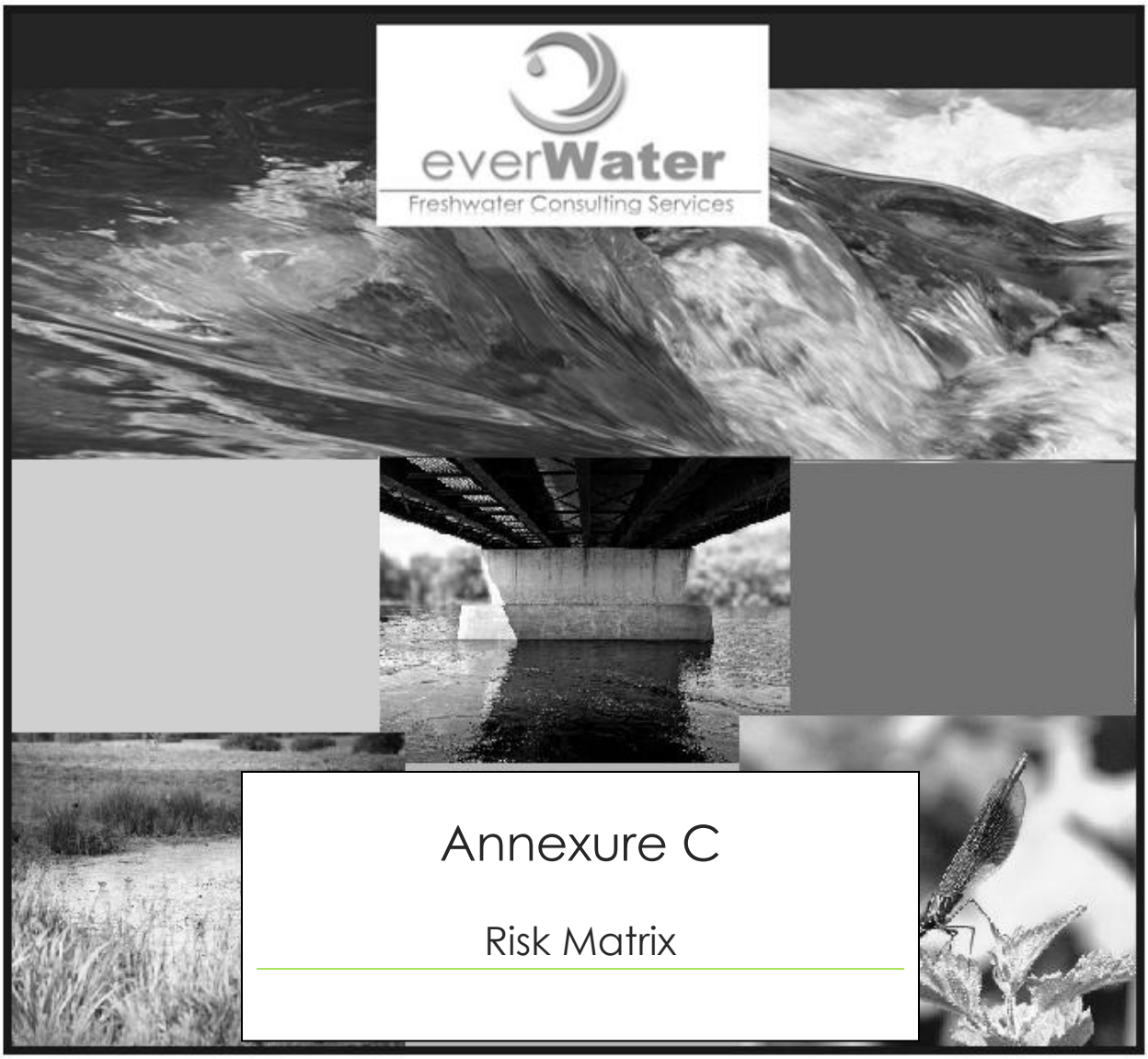
According to the Department of Water and Sanitation's desktop assessment (DWS, 2014), the Ecological Importance and Sensitivity (EIS) score for quaternary catchment H70J is **2.3**, indicating **high ecological importance**. This rating reflects the catchment's uniqueness on a national scale, based on factors such as habitat diversity, species richness, the presence of unique or endemic species, and the occurrence of rare or threatened species. While these rivers may be sensitive to flow modifications due to their biota and habitat characteristics, they can, in some cases, accommodate a substantial level of sustainable use.

Based on the EIS assessment, the floodplain saltmarsh within the catchment is characterised by **moderate ecological importance and sensitivity** with a score of **1.5**. This slightly lower rating is attributed to the drier conditions and the more degraded state of the saltmarsh compared to less impacted wetlands along the river.

RMO, REC and Buffer zone.

TABLE 2-6. RESULTS OF THE RMO, REC AND BUFFER ZONE ASSESSMENT

	RMO	REC	Buffer zone
Floodplain Saltmarsh	B/C: Maintain	C - Moderately sensitive systems. A moderate risk of modifying the abiotic template and exceeding the resource base may be allowed. Risks to the well-being and survival of intolerant biota (depending on the nature of the disturbance) may generally be increased with some reduction of resilience and adaptability at a small number of localities. However, the impact of local and acute disturbances must at least partly be mitigated by the presence of sufficient refuge areas.	20m



Annexure C

Risk Matrix

PROJECT: Risk Assessment for the Alleged Unlawful Activities on Portion 54 of the Farm Potteberg Estates No 516,Infanta, Western Cape

RISK ASSESSMENT MATRIX for Section 21 (c) and (i) Water Use activities - Version 2.1

Name of Assessor: Jeanne Snyman **Signature:** 

SACNASP Registration Number: 400091/17

Date of assessment: 11/11/2025 (Updated 18/03/2026)

Risk to be scored for all relevant phases of the project (**factoring in specified control measures**). MUST BE COMPLETED BY SACNASP PROFESSIONAL MEMBER REGISTERED IN AN APPROPRIATE FIELD OF EXPERTISE.

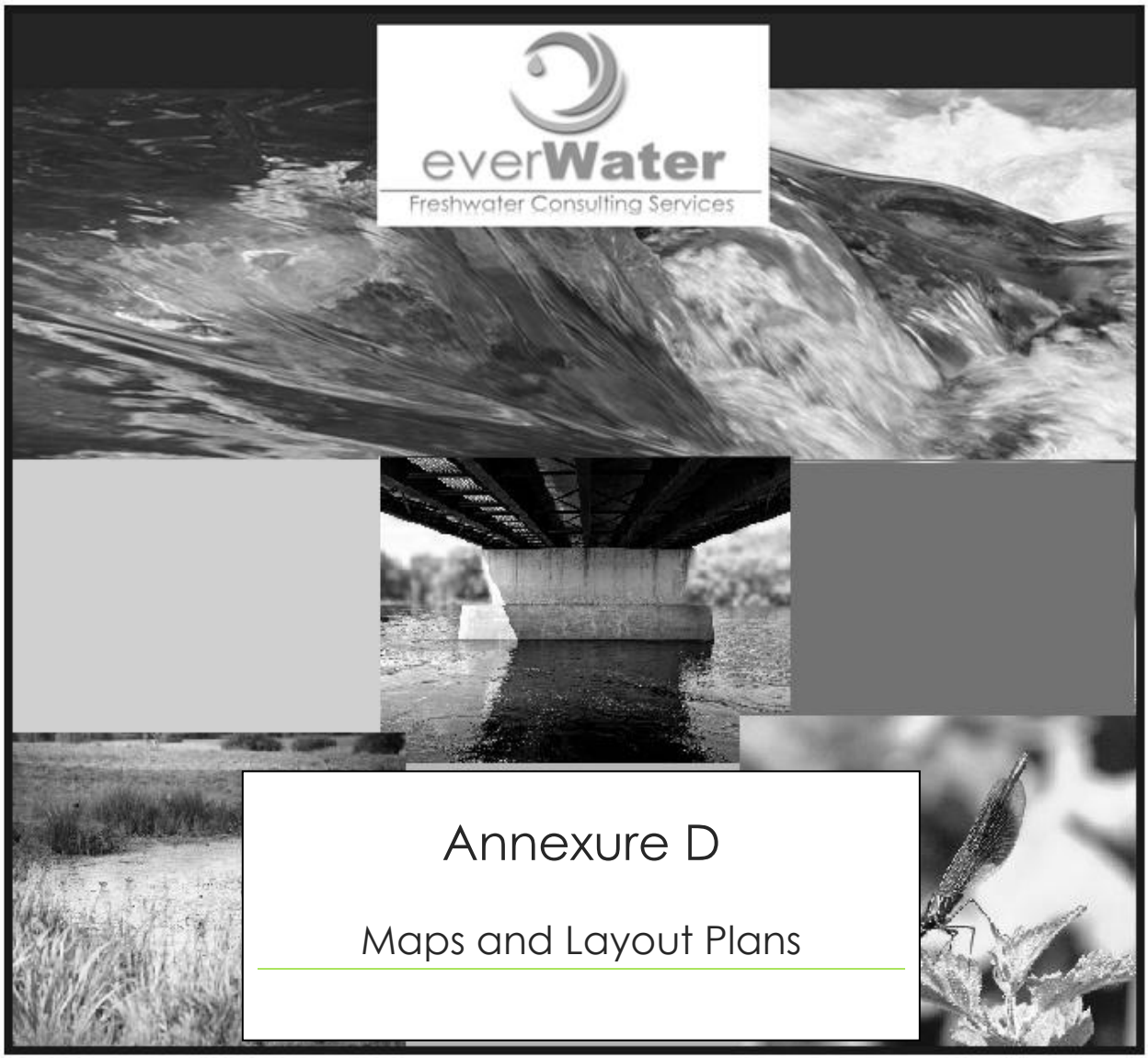
Phase	Activity	Impact	Potentially affected watercourses			Overall Intensity (max = 10)	Spatial scale (max = 5)	Duration (max = 5)	Severity (max = 20)	Importance rating (max = 5)	Consequence (max = 100)	Likelihood (Probability) of impact	Significance (max = 100)	Risk Rating	Confidence level
			Name/s	PES	Overall Watercourse Importance										
Existing Activities	<1>Site access	<1a>Slight loss of biodiversity in the surrounding wetlands buffer zone.	Floodplain Saltmarsh	B/C	Moderate	2	1	1	4	3	12	100%	12	L	High
		<1b>Hardinging/compaction of soils around the wetland area.	Floodplain Saltmarsh	B/C	Moderate	2	1	1	4	3	12	100%	12	L	High
	<2> Vegetation removal within the wetland	<2a>Altering the geomorphology within the wetland	Floodplain Saltmarsh	B/C	Moderate	2	1	1	4	3	12	100%	12	L	High
		<2b>Loss of Biodiversity	Floodplain Saltmarsh	B/C	Moderate	4	1	1	6	3	18	100%	18	L	High
Construction Phase (Pumphouse and Roofed Deck)	<1>Construction activities	<1a>Limited loss of biodiversity in the surrounding wetlands buffer zone.	Breede Estuarine Functional Zone	B/C	Very high	2	1	1	4	5	20	100%	20	L	High
		<1b>Possibility of sedimentation and wash of pollutants into the Breede Estuarine Functional Zone	Breede Estuarine Functional Zone	B/C	Very high	2	1	1	4	5	20	100%	20	L	High
	<2> Rehabilitation of the remainder of Cleared area 2.	<2a>Improving biodiversity within the buffer zone	Breede Estuarine Functional Zone	B/C	Very high	0	1	1	2	5	10	100%	10	L	High
OPERATIONAL	<1>Proposed rehabilitation activities within the wetland	<1a>Altering the geomorphology in and around the wetland	Floodplain Saltmarsh	B/C	Moderate	0	1	1	2	3	6	100%	6	L	High
		<1b>Improvement of already lost of Biodiversity	Floodplain Saltmarsh	B/C	Moderate	0	1	1	2	3	6	100%	6	L	High
	<2>Monitoring of rehabilitated area to ensure proper vegetation cover within 2 years of the start of the project.	<2a>Improvement of current biodiversity	Floodplain Saltmarsh	B/C	Moderate	0	1	3	4	3	12	100%	12	L	High
	<3>Operation of the newly constructed pumphouse and roofed deck area.	<3a>Negligible impact on surrounding biodiversity.	Breede Estuarine Functional Zone	B/C	Very high	2	1	4	7	5	35	40%	14	L	High
	<4>Strict application of the 20m buffer zone for all future activities with no activities allowed within this area.	<4a>Preserved wetland function and biodiversity	Floodplain Saltmarsh	B/C	Moderate	-4	1	3	-8	3	-24	100%	-24	+	High

Specific Mitigation Measures:

- During the construction of the new pumphouse and roofed deck area, all activities should be confined to the existing cleared platform, with no construction vehicles or materials permitted outside of the established footprint.
- Disturbed areas should be rehabilitated using locally indigenous wetland and riparian plant species, including Salicornia perennis, Atriplex semibaccata, and Disphyma crassifolium within the floodplain marsh.
- Invasive plant species within and adjacent to the wetland and riparian areas should be identified and removed, with a focus on Acacia saligna.

- Follow-up monitoring and control should be implemented at least annually to prevent re-establishment of invasive species.
- A 20 m buffer zone should be maintained around the floodplain salt marsh, with all future activities restricted to areas outside this buffer.
- A 30 m buffer zone should be maintained around the Breede River Estuarine Functional Zone, with all future activities restricted to areas outside this buffer
- During the construction of the new pumphouse and roofed deck area, care should be taken that no sediment and/or other pollutants wash down from the platform into the wetland area. This can be prevented through the installation of silt fences on the edge of the platform.
- Stabilise any of the remaining exposed soils using geotextiles, mulch, or vegetative cover.
- Install temporary silt fences or sediment traps if and where necessary during rehabilitation of the slopes.
- Monitor vegetation establishment and slope stability over the life of the infrastructure, addressing any erosion or vegetation issues as necessary.

.



Annexure D

Maps and Layout Plans

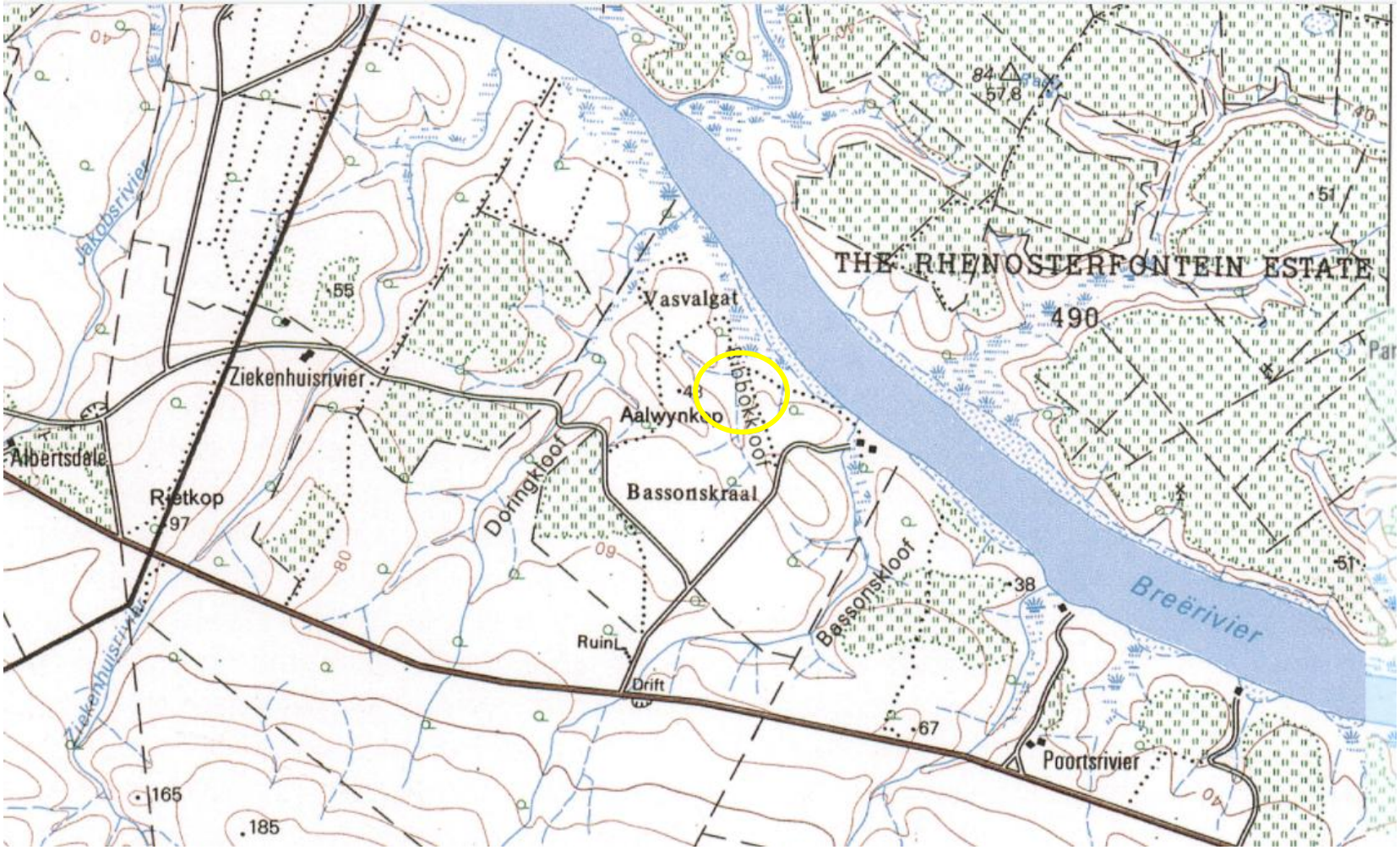


Figure D-1: 1:50 000 Topographical map of the area with the property location (3420BC).

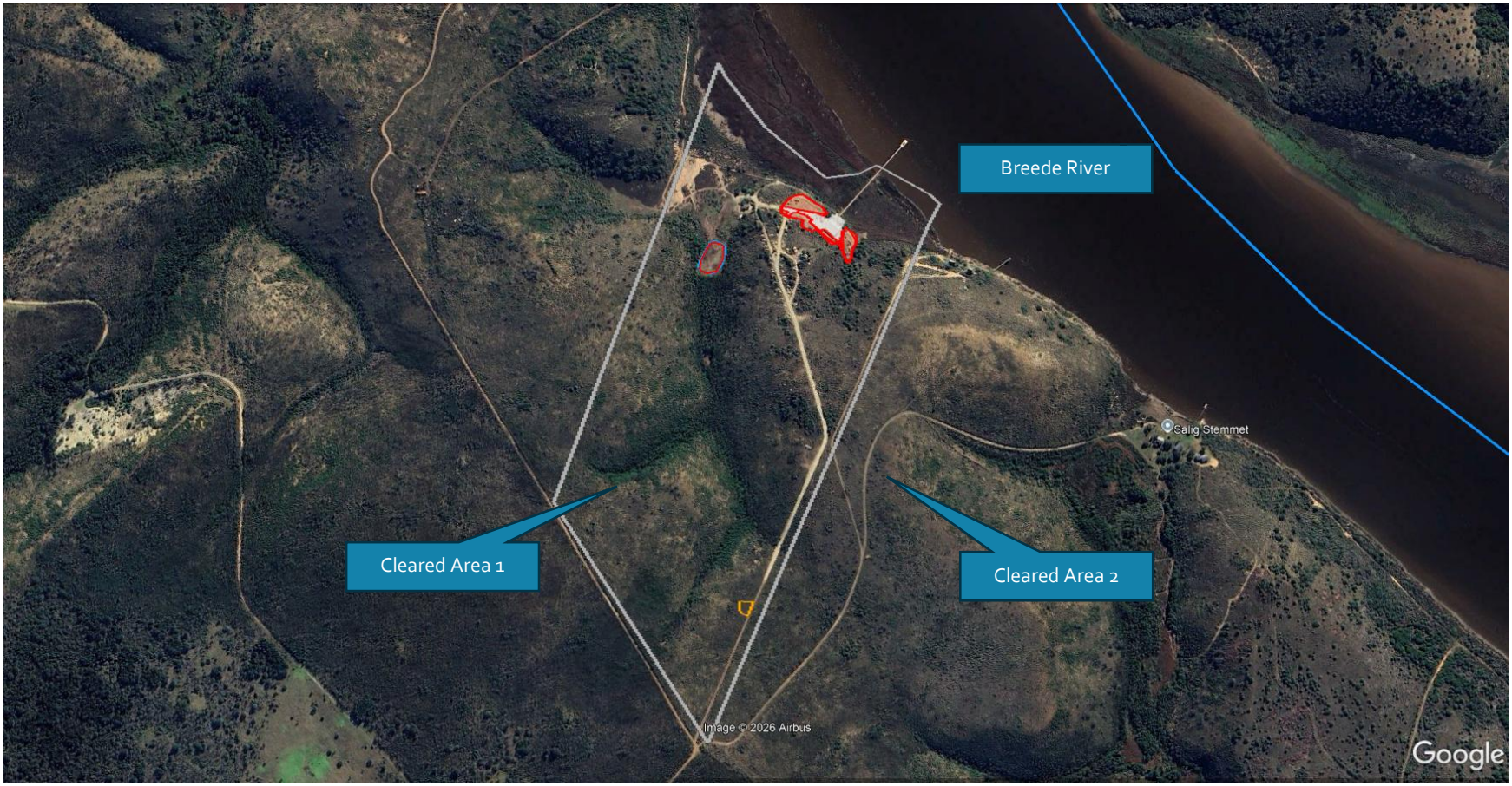


Figure D-2: A satellite image showing the property boundary (grey polygon), as well as the cleared areas(red and orange polygons). (Google Earth, 2025)

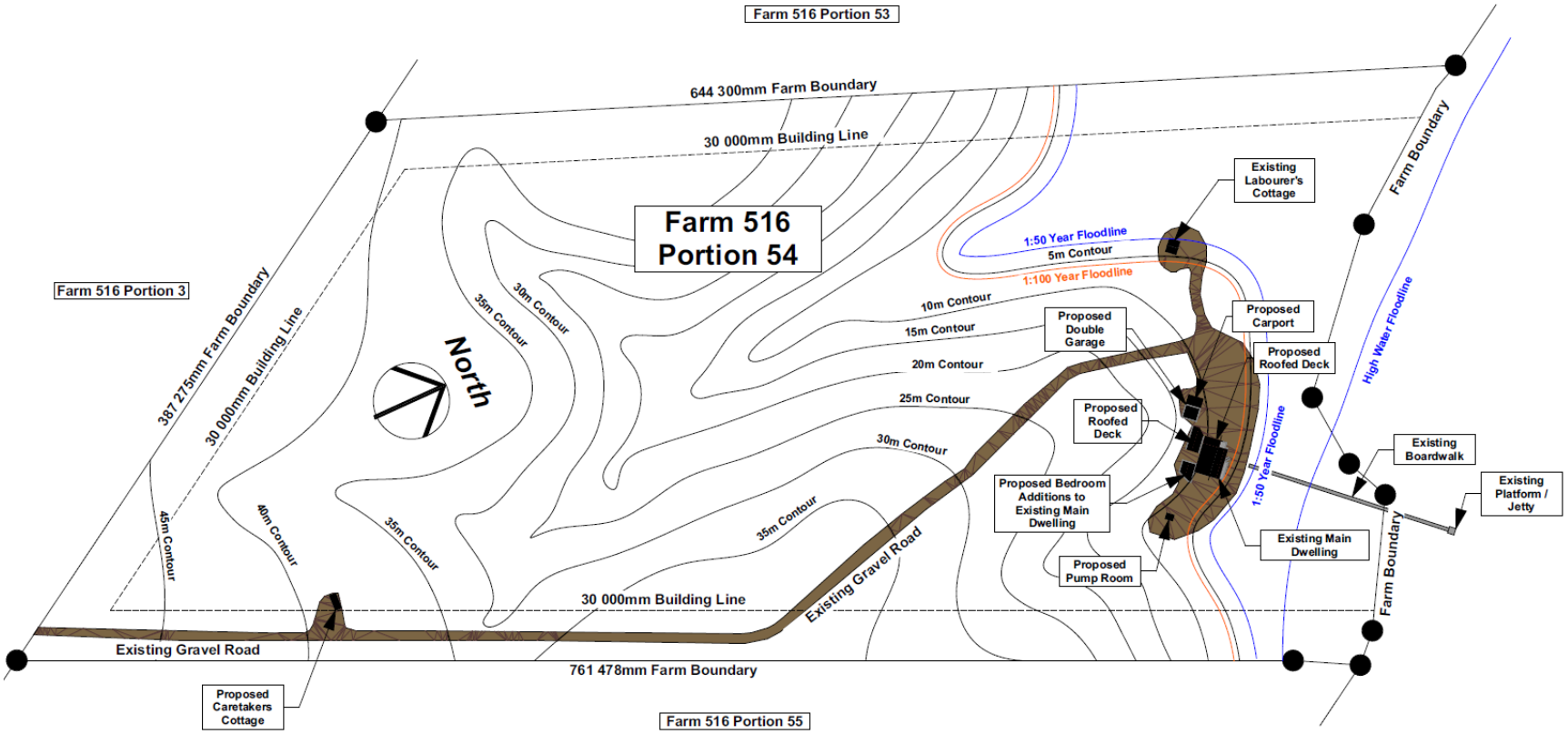


Figure D-3: Site layout plan for the project.

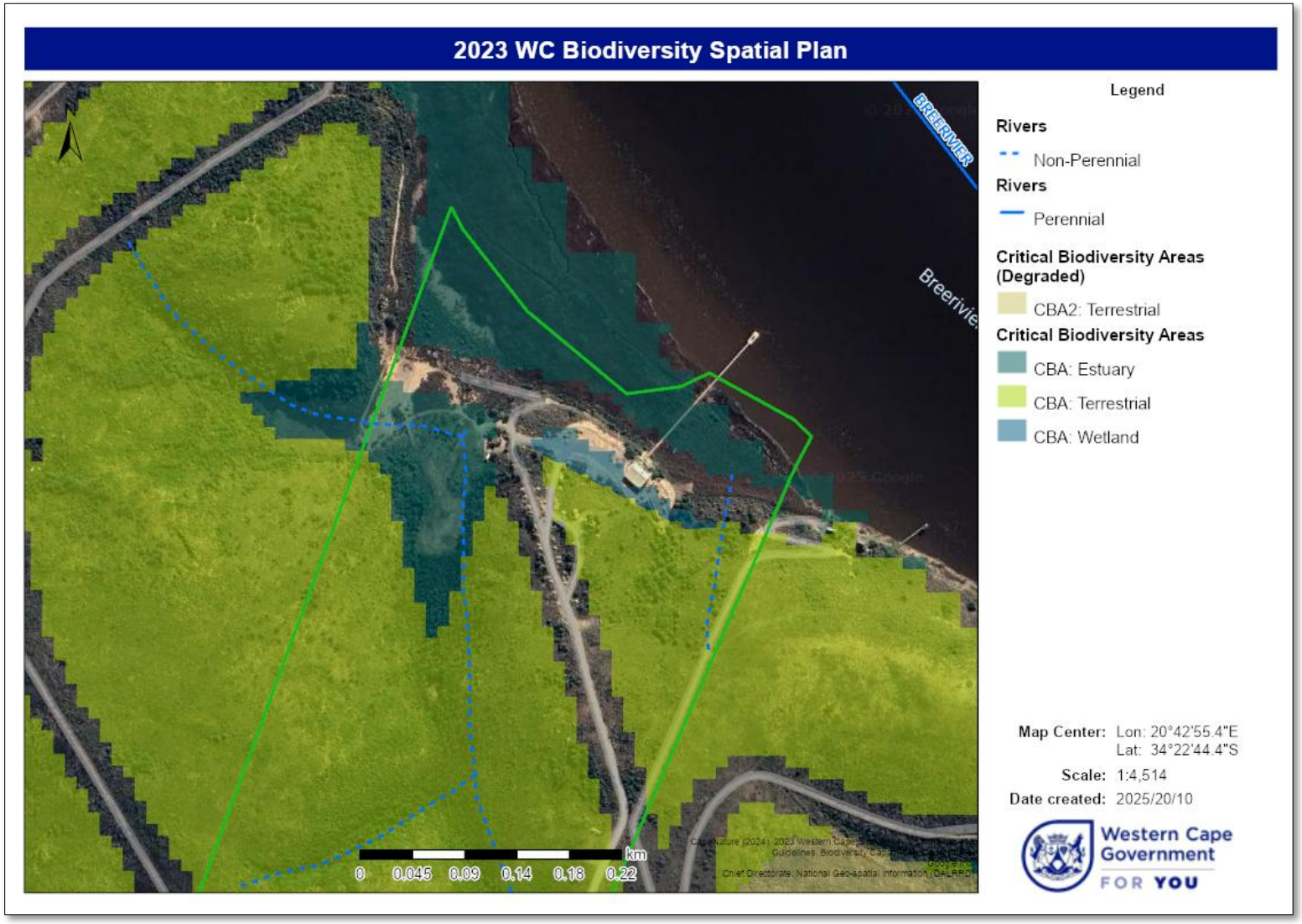


Figure D-4: The 2023 Western Cape Biodiversity Spatial Plan (WCBSP) map (CFM, 2025)

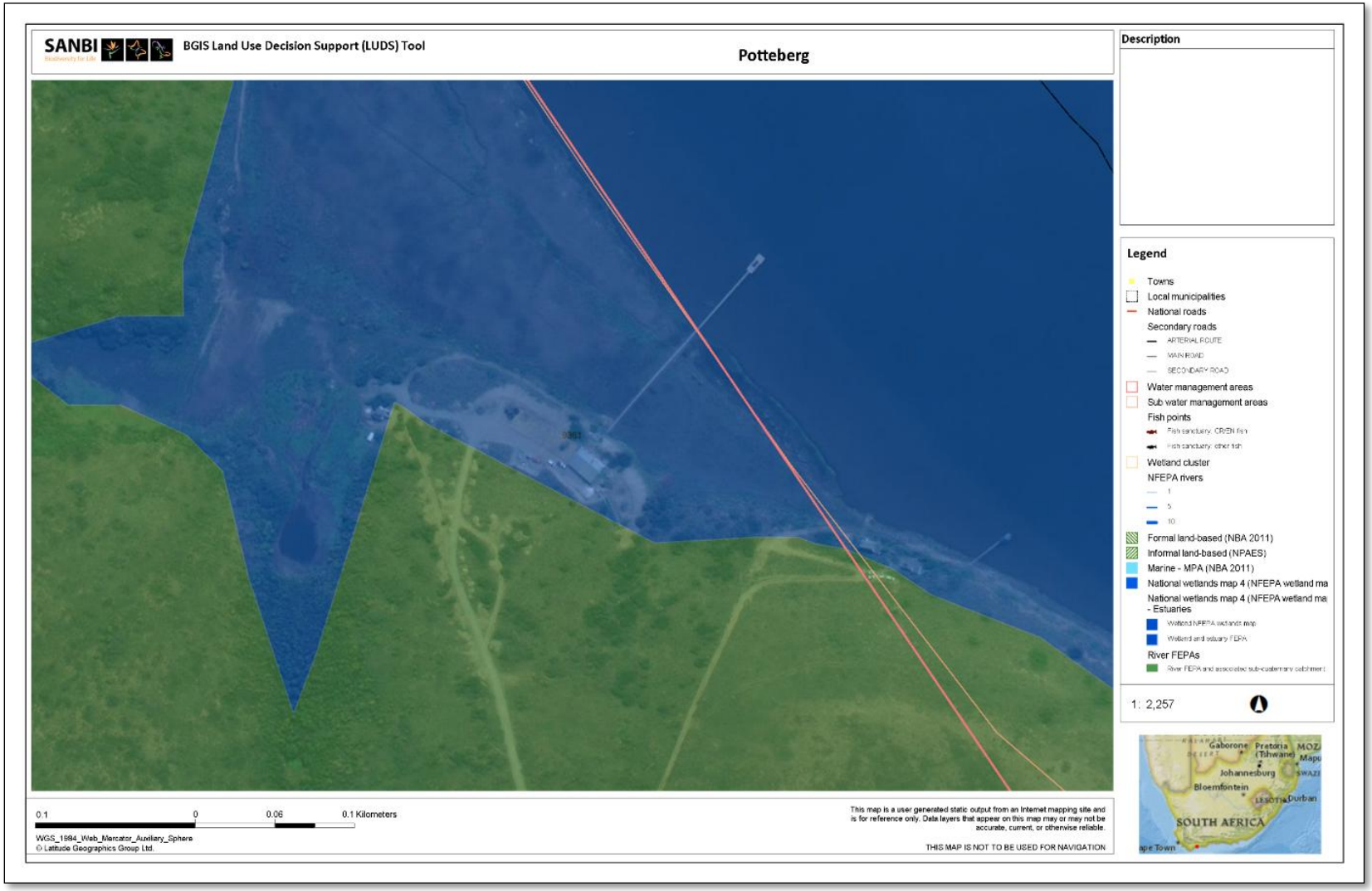


Figure D-5: NFEPA and NWM5 map for the area (CFM, 2025)

Figure D-6: Satellite image of the broader area showing surrounding freshwater features, including the Floodplain Saltmarsh (green polygon), the estuarine wetland (turquoise polygon) with the Breede River to the north-east, and the two cleared areas (red polygons) (Google Earth, 2025).

Annexure E

DETAILS, EXPERTISE AND CURRICULUM VITAE OF SPECIALIST

Abbreviated Curriculum Vitae

Personal Details

Surname : Snyman

Names : Jeanne Celeste

Date of Birth : 17 June 1983

Nationality : RSA

Profession : Freshwater Ecologist (SACNASP reg nr: 400091/17)

Key Qualifications

Academic Qualifications Institution (Date finished)	**Degree(s) or Diploma(s) obtained:**
North West University _ Potchefstroom campus. (2004)	BSc degree with Zoology and Microbiology
North West University _ Potchefstroom campus. (2006)	M.Env degree in Water Sciences (Cum laude),
North West University _ Potchefstroom campus. (2006)	Postgraduate Certificate In Education (PGCE)

Work Experience

Jeanne Snyman is Pr Sci Nat registered (400091/17) in the following fields of practice: Water Resource Science. Jeanne is an Aquatic, Wetland and Biodiversity Specialist with more than 13 years' experience in the environmental consulting field. She possesses a BSc. Masters in Freshwater Sciences and has worked on projects related to residential developments, infrastructural developments, sustainable energy and general natural resource management. Her work focusses mostly on doing Freshwater Impact Assessments, River Management and Maintenance plans, Rehabilitation plans and Audit Reports.

List of 2023/2024 projects:

- Snyman, J.C. August 2023. Freshwater Constraints and Opportunity Assessment for the Proposed New Development at Farm 264, Dollas Downs, Arniston, Western Cape Western Cape.
- Snyman, J.C. August 2023. Freshwater Assessment For The Proposed Periodic Maintenance Of MR00261 (Km 0.8 To 29.03 And 31.65 To 35.20), Western Cape
- Snyman, J.C. October 2023. Freshwater Impact Assessment for the Proposed Periodic Maintenance Activities Associated with MR 289, MR291, DR1365, DR1363 and DR1358, Bonnievale, Western Cape.
- Snyman, J.C. March 2024. Freshwater Assessment For Alleged Unlawful Activities That Took Place On Portion 16 Of Farm Derde Heuvel 149, Montagu Rd, Western Cape
- Snyman, J.C. March 2024. Freshwater Impact Assessment for the Proposed Maintenance Activities Associated with Main Road 174, Stellenbosch, Western Cape
- Snyman, J.C. May 2024. Freshwater Assessment For The Proposed Expansion Of The Berg River Boulevard, Paarl, Western Cape.
- Snyman, J.C. May 2024. Situation Assessment For The Rehabilitation Of A Section Of A Non-Perennial Watercourse, at Farm Sandfontein 232/5, Swellendam RD.
- Snyman, J.C. July 2024. Freshwater Compliance Statement For The Proposed Extension Of The Quay Link Road, Saldanha Feeport Development, Saldanha, Western Cape
- Snyman, J.C. September 2024. Freshwater Assessment And RMMP For The Proposed Dam Repair Works On Farm 43, Stellenbosch, Western Cape
- Snyman, J.C. September 2024. Freshwater Assessment For The Proposed Upgrading Of The Klapmuts Wastewater Treatment Works (Wwtw), Portion 5 Of Farm 736, Paarl, Western Cape
- Snyman, J.C. September 2024. Freshwater Assessment For The Proposed New Development On Portion 14 Of Farm Slange Rivier 303, Swellendam, Western Cape.
- Snyman, J.C. September 2024. Freshwater Assessment For The Proposed Upgrading Of The Onrus Main Pump Station, On The Remainder Of Erf 2702, Caledon, Western Cape
- Snyman, J.C. October 2024. Freshwater Compliance Statement For The Proposed Works Within The Bok River As Part Of The Extension Of The Blue Bay Lodge Development, Saldanha, Western Cape
- Snyman, J.C. October 2024. Freshwater Monitoring Plan For The Proposed Operation Of The New Korhaanshoogte Dam, Portion 25 Of Farm 433, Clanwilliam
- Snyman, J.C. November 2024. Audit Report For The Rehabilitation Of A Section Of A Non-Perennial Watercourse, At Farm Sandfontein 232/5, Swellendam Rd