

SSVR Report

Aquatic Biodiversity Assessment – 118/489 Zwarte Jongers Fontein, Western Cape Province

EAP: Bluepebble Sustainability Solutions

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EXECUTIVE SUMMARY

- This assessment report will focus on the desktop study and field survey of the aquatic biodiversity and potential impacts on the natural resources at the site i.e. **Portion 118 of Erf 489, Zwarte Jongers Fontein** in the Western Cape Province (Figure 1.1). The focus is on the status of the habitat and aquatic biodiversity and possible impacts on the receiving environment.
- BioAssets CC was appointed by Bluepebble Sustainability Solutions on behalf of Mr. Danie Maree, the applicant for the proposed development (extension) of a dwelling on the property (Figure 1.1). For the assessment the Protocols for the Specialist Assessment and Minimum Report Content Requirements for Applicable protocols or minimum information requirements, which were published in Government Notice No. 320 of 20 March 2020 (Government Gazette No. 43110 of 20 March 2020 refers), which came into effect on 9 May 2020, which must be applied to the impact assessment process that must be followed. This protocol replaces the requirements of Appendix 6 of the EIA Regulations, 2014 (as amended).
- As part of the biodiversity requirements (DFFE, 2020), a site sensitivity screening was undertaken using the national web based environmental screening tool prior to the commencement of the ecological habitat assessment. The aim of the screening tool is to compile a Screening Tool Report (STR) that will highlight all the sensitive areas of concern with the aspects that must be investigated.
- This process is completed prior to the specialist assessment when the current use of the land and the environmental sensitivity of the site under consideration must be confirmed by undertaking a site sensitivity verification assessment. The site sensitivity verification assessment therefore includes the:
 - desk top analysis, using satellite imagery,
 - a preliminary on-site inspection and
 - the integration of other available and relevant information.
- For the project, the screening tool assessment was done and in the Screening Tool Report (STR) that was generated, the Aquatic Biodiversity Theme for the property was listed with a “**very high**” sensitivity rating. The area associated with the dwelling where the extension is planned, falls within the “**low**” sensitivity area.
 - The development falls within the 100 m zone from the highwater mark.
- Site Sensitivity Verification Statement – Aquatic Biodiversity Theme
 - In the Screening Tool Report (DFFE, 2024) for the site, the sensitivity rating for the site is listed as **very high** because of the proximity to the coastline. **The dwellings are constructed within the 100 m zone from the highwater mark.**
 - It is recommended that the **sensitivity is adjusted to a low sensitivity for the development footprint only**. It is important that the sensitivity for the larger area is maintained to ensure that the receiving environment, i.e. the marine environment gets maximum protection. As the landowner is conscious of the sensitivity of the area and want to conserve the land for future generations, it was noted that they will ensure that the water resources are protected.
- **CONCLUSIONS**

- The habitat on site is modified (low impacts).
- This includes the historic cultivation on the site.
- Current cattle grazing is a low impact.
- The constant removal of *Acacia cyclops* is a positive contribution to the improvement of the habitat, biodiversity and water resources.
- The site where the extension to the dwelling will be done is on a flat area. It is near the edge of the dune slope, but it is currently stable with very little erosion visible.
- It will be important to monitor the property regularly for erosion. If noted, immediate rehabilitation must be done. The actions will be site specific.
- If the development is restricted to the modified areas, it will ensure that no future loss to natural habitat occur.

Declaration of Independence

The Environmental Impact Assessment Regulations (Regulation 17 of Government Notice No R354 of 2010), requires that certain information is included in specialist reports. The terms of reference, purpose of the report, methodologies, assumptions and limitations, impact assessment and mitigation (where relevant to the scope of work) and summaries of consultations (where applicable) are included within the main report. Other relevant information is set out below:

Expertise of author:

- Working in the field of ecology since 1996 and in specific vegetation related assessments since 2000.
- Worked in the field of freshwater ecology and wetlands since 2000.
- Involved with visual assessments since 2009.
- Is registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions (Reg. No. 400109/95).

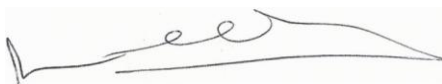
Declaration of independence:

BioAssets CC is an independent consultant and hereby declare that it does not have any financial or other vested interest in the undertaking of the proposed activity, other than remuneration for the work performed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998). In addition, remuneration for services provided by BioAssets CC is not subjected to or based on approval of the proposed project by the relevant authorities responsible for authorising this proposed project.

Disclosure:

BioAssets CC undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and will provide the competent authority with access to all information at its disposal regarding the application, whether such information is favourable to the applicant or not.

Based on information provided to BioAssets CC by the client and in addition to information obtained during the course of this study, BioAssets CC present the results and conclusion within the associated document to the best of the author's professional judgement and in accordance with best practise.



Dr Wynand Vlok

28 May 2026

Date

ASSUMPTIONS AND LIMITATIONS

Availability of baseline information

Baseline information for the study of the site was obtained from historic maps, photographs and reports. The desktop survey provided adequate baseline information for the area and therefore this was not a constraint.

Constraints

The survey was conducted during daytime only. All the different habitat types at the site were investigated and it was therefore possible to complete a rapid habitat and animal survey and obtain information on the habitats that are present at the site, or that are likely to occur there.

Bio-physical constraints

Weather conditions during the period were fine with a light wind and sunny conditions. The region has received some rainfall prior to the site visit and the survey was conducted during the late autumn.

There was no open water on the site observed during the survey. This will have no obvious implications on the aquatic biodiversity assessment conducted for this study.

Confidentially constraints

There were no confidentiality constraints.

Implications for the study

All the different habitat types were observed during the field survey. There is sufficient good quality data available in the literature that partially negates the negative effect that the type of survey had on the quality of the assessment.

It is unlikely that more surveys would radically alter the outcome of this study.

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1 INTRODUCTION

This assessment report will focus on the desktop study and field survey of the aquatic biodiversity and potential impacts on the natural resources at the site i.e. **Portion 118 of Erf 489, Zwarte Jongers Fontein** in the Western Cape Province (Figure 1.1). The focus is on the status of the habitat and aquatic biodiversity and possible impacts on the receiving environment.

1.1 Background

BioAssets CC was appointed by Bluepebble Sustainability Solutions on behalf of Mr. Danie Maree, the applicant for the proposed development (extension) of a dwelling on the property (Figure 1.1). For the assessment the Protocols for the Specialist Assessment and Minimum Report Content Requirements for Applicable protocols or minimum information requirements, which were published in Government Notice No. 320 of 20 March 2020 (Government Gazette No. 43110 of 20 March 2020 refers), which came into effect on 9 May 2020, which must be applied to the impact assessment process that must be followed. This protocol replaces the requirements of Appendix 6 of the EIA Regulations, 2014 (as amended).

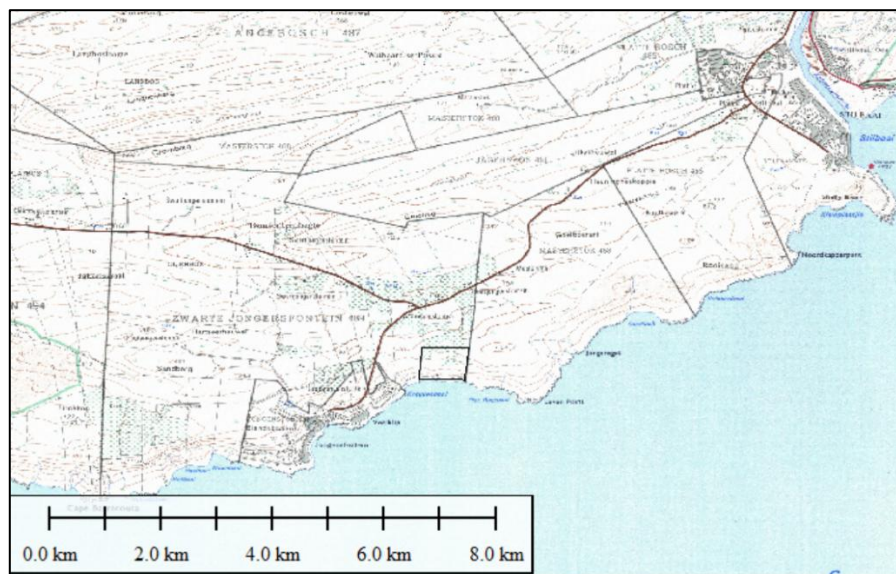


Figure 1.1: The study site (black) in the Jongensfontein area.



Figure 1.2: Aerial image of the property in Jongersfontein.



Figure 1.3: Aerial view of the area affected by the proposed development – the area associated with the dwelling.

1.2 Screening Tool

As part of the biodiversity requirements (DFFE, 2020), a site sensitivity screening was undertaken using the national web based environmental screening tool prior to the commencement of the ecological

habitat assessment. The aim of the screening tool is to compile a Screening Tool Report (STR) that will highlight all the sensitive areas of concern with the aspects that must be investigated.

This process is completed prior to the specialist assessment when the current use of the land and the environmental sensitivity of the site under consideration must be confirmed by undertaking a site sensitivity verification assessment. The site sensitivity verification assessment therefore includes the:

- desk top analysis, using satellite imagery,
- a preliminary on-site inspection and
- the integration of other available and relevant information.

For the project, the screening tool assessment was done and in the Screening Tool Report (STR) that was generated, the Aquatic Biodiversity Theme for the property was listed with a “**very high**” sensitivity rating (Figure 1.4) (DFFE, 2024). The area associated with the dwelling where the extension is planned, falls within the “**low**” sensitivity area (Figure 1.5). Figure 1.4 and Figure 1.5 are the STR generated maps and Table 1.1 is a summary of the STR ratings with the sensitive features listed in Table 1.2 (DFFE, 2024).

Table 1.1: Summary of the “Site Sensitivity” as determined by the National Web-Based Environmental Screening Tool. This report focusses on the Aquatic Biodiversity Theme.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Aquatic Biodiversity Theme	X			

Table 1.2: The features and sensitivity rating as reflected in the Screening Tool Report.

Feature	Sensitivity
ESA 1	Very High
Wetland Seep	Very High

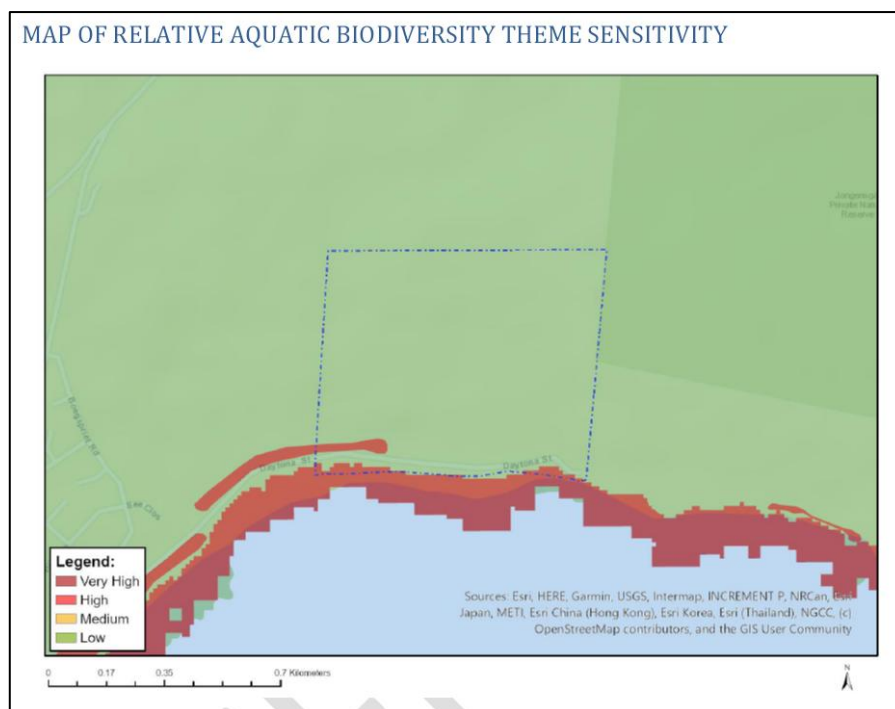


Figure 1.4: The STR map of with the Aquatic Biodiversity Theme associated with the study site.

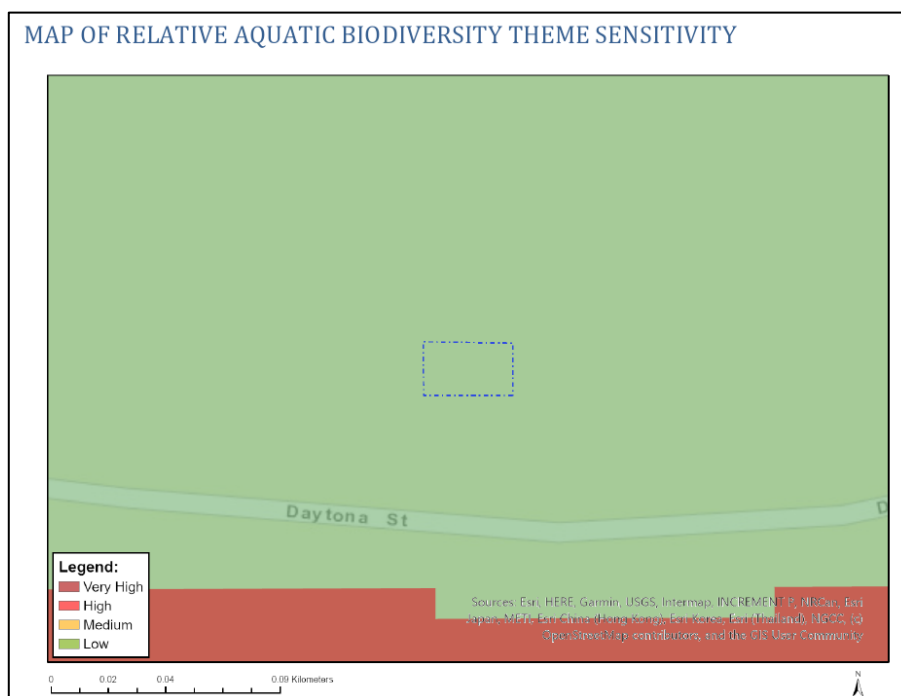


Figure 1.5: STR image of the position of the dwelling assessed during the study.

The protocols to evaluate the information generated in the STR (DFFE, 2024) are the final product of a collaboration between the South African National Biodiversity Institute (SANBI) and the Council for

Scientific and Industrial Research (CSIR). The aim was to “produce a document that provide a minimum set of assessment and reporting criteria that must form the basis of specialist investigations required for the Environmental Authorisation (EA) process”. As there were no standardised approaches or requirements for the assessment of impacts in specialist studies in Environmental Impact Assessment (EIAs) processes, i.e. “protocols and guidelines”, this study was the commissioned outcome (Stewart et. al, 2021).

The product of the study is the relevant protocols that guide an EIA applicant to comply with the relevant studies identified through the national web-based environmental screening tool as part of the pre-screening process. In the screening tool report (STR) the relevant environmental sensitivities in the landscape are identified. This process will then steer the EA process (Stewart et. al, 2021).

The Aquatic Biodiversity Protocol aim to standardise specialist assessments of ecosystem-level aspects of EIAs and the reporting of potential impacts from proposed developments on ecosystems. The protocol describes the type of assessments that should occur for each sensitivity level represented in the Screening Tool for the Aquatic Biodiversity Theme (Stewart et. al, 2021).

SANBI and its partners, have developed an Ecosystem Environmental Assessment Guideline which provides background and context to the minimum assessment and reporting criteria contained within Aquatic Biodiversity Theme Protocol and provides guidance on sampling and data collection methodologies pertaining to relevant biodiversity features. This includes detailed guidance for implementing the relevant Aquatic Biodiversity Theme Protocol by ecologists and any other relevant specialists, as well as competent authorities (CA) (Stewart et. al, 2021).

The guidelines direct the specialist studies undertaken for activities that have triggered a listed activity in terms of the National Environmental Management Act (No. 107 of 1998) as contained in GNR 983, 984 and 985 and the National Water Act (NWA) (Stewart et. al, 2021).

South Africa’s Biodiversity Priority Areas (BPAs) are natural or semi-natural areas in the landscape that are important for conserving a representative sample of ecosystems and species, for maintaining ecological processes, or for the provision of ecosystem services (Stewart et. al, 2021).

It is important for specialists and developers to take note of the different BPAs, their management objectives, and to identify mitigation measures that will ensure these management objectives are met.

- **It is important to note that these guidelines are broad based and refined assessment and validation on site is needed.**
- **The STR is a management tool and not a decision-making tool – therefore site validation by the Competent Authority and Specialists are critical in the final assessment and evaluation and the recommendation for the specific project.**

When the screening tool flags an area for aquatic biodiversity, the assessment typically evaluates whether the proposed development footprint intersects with the following priority areas:

- **Freshwater Ecosystem Priority Areas (FEPAs):** Defined in the National Freshwater Ecosystem Priority Areas (NFEPA) project, these are vital sub-catchments, rivers and wetlands identified as priorities for maintaining the country's freshwater biodiversity.
- **Critical Biodiversity Areas (CBAs) & Ecological Support Areas (ESAs):** Spatial planning units prioritised by provincial authorities (e.g. CapeNature) that must be maintained in a natural or near-natural state to meet conservation targets.
- **Strategic Water Source Areas (SWSAs):** Areas that supply a disproportionately large volume of mean annual runoff to national water resources, vital for regional and national water security.
- **Priority Estuaries:** Coastal ecosystems prioritized in the National Biodiversity Assessment for conservation, functioning and estuarine biodiversity.
- **Wetland Clusters and Free-Flowing Rivers:** Important corridors and aggregations of wetlands that support ecological processes and migratory species.
- **Protected Areas:** Declared environments, national parks and legally recognized conservation buffer zones.

1.3 Water Resources associated with the site

As reflected in the STR (Section 1.2) the site is associated with the water resources to the south i.e. the marine environment and mapped natural wetlands to the west (Figure 1.7). The proximity of the site to the aquatic resources therefore reflect as an Ecological Support Area 1 (ESA 1) (Figure 1.6 and Section 1.2). The ESA (aquatic) sensitivity refers to a natural or near-natural state to meet conservation targets and the CBA (terrestrial) is an area that must be maintained in a fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or not necessary to meet them in natural or near-natural areas” (refer to Botanical assessment).



Figure 1.6: The CBA map associated with the study site.

The wetland type reflected in Figure 1.7 is known as the **South/Western Strandveld channelled valley-bottom wetland**. This is a specific aquatic ecosystem type found in the low-lying coastal regions of the Western Cape and is characterised by a distinct valley floor that directs slow-flowing water. This wetland type plays a vital ecological role in filtering runoff and supporting unique vegetation within the broader Fynbos biome and is generally considered to be threatened by development along the coastline.



Figure 1.7: The wetlands map associated with the study site.

1.4 Site and Development

1.4.1 Proposed Development

The owner seeks to expand one of the existing dwellings (dwelling 3) on Portion 118 of the farm 489, Zwarte Jongers Fontein. There are three (3) existing building on the site (Figure 1.3) and the first building (main dwelling) was completed in 1972 with some upgrades in 1978 and 2005. Thereafter a second dwelling was completed in 1999 and in 2011 the last (3rd) was added. This dwelling (dwelling 3) has a footprint of approximately 104 m² and the proposed addition will be 132 m². The property is zoned Agricultural Zone I and is regarded by the competent authority to be outside an urban area.

1.4.2 Receiving Environment

The site is located next to the Daytona Way, approximately 600 m west Groot Jongensfontein (Western Cape Province). The dwellings have been established on land considered as flat, sloping south to the rocky coastline south of Daytona Way. The surrounding land uses are mainly agricultural zoned land with little to no agricultural activities taking place.

With regards to aquatic features, no watercourses are mapped on the site as defined in the Environmental Impact Assessment Regulations Listing Notices of 2014 Environmental Impact Assessment Regulations Listing Notice 1 of 2014 (GN R983 of 4 December 2014, as amended) Environmental Impact Assessment Regulations Listing Notice 2 of 2014 (GN R984 of 4 December 2014, as amended) Environmental Impact Assessment Regulations Listing Notice 3 of 2014 (GN R985 of 4 December 2014, as amended) (DEADPEIA, Reference: 16/3/3/6/1/D5/8/0406/25, 2026).

On the NFEPA map (Figure 1.7) there is the channelled valley-bottom wetland to the west of the dwellings that is contained north of Daytona Way (Western Cape Department of Agriculture, 2026). It is evident that the runoff (surface and subsurface) is blocked by the road. It is still an important feature as highlighted in the assessment document.

1.4.3 Geology and Soils

A general summary of the geology and soils of the Jongensfontein/Stilbaai coastline are defined by extensive Cenozoic coastal deposits, ancient cemented dune formations and alkaline, nutrient-poor sands that support unique Limestone Fynbos.

- The coastal plain that stretches across Stilbaai and Jongensfontein is dominated by thick, ancient marine and dune deposits dating to the Cenozoic era. These vast accumulations of ancient dunes have hardened over time into dune rock, locally referred to as aeolianite (often the Wankoe and Bredasdorp Formations).
- In addition, the region is known for large outcroppings of calcrete which is a hardened, calcium-rich rock formed by the breakdown and accumulation of seashells. Other formations present are the laterite, silcrete and ferricrete which often form hardpans beneath the surface.
- There is a bedrock layer that underlies the younger coastal sands and are from the older Paleozoic rocks belonging to the Cape Supergroup (specifically the Table Mountain and Witteberg groups) and the Cretaceous Enon Formation.
- The soils are predominantly shallow, nutrient-poor, quartzose and iron-stained sands. The unconsolidated Jongensfontein Silica Sand Member is a well-known local geological feature. The abundance of shell fragments in the aeolianite and calcretes results in soils that are highly alkaline and the high pH levels can sometimes limit the availability of certain micro-elements impacting on plant growth.

1.4.4 Rainfall and Temperature

Jongensfontein has a mild, year-round temperate climate typical of the Cape Garden Route and receive rainfall throughout the year, with peaks in the spring and autumn months.

- **Rainfall:** A slightly wetter microclimate that averages around 639 mm of rain per year, peaking during autumn and spring.
- **Summer Temperatures:** Summers are mild, with temperatures fluctuating between 20 °C and 28 °C.
- **Winter Temperatures:** Winters are mild, keeping within a comfortable average range of 12 °C to 20 °C.
- Figure 1.8 is data for a year (January 2025 to January 2026) for the rainfall and temperature with the maximum fluctuating between 23 °C and 30 °C and the minimum fluctuating between 14 °C and 22 °C.

- Figure 1.8 shows that for the particular year, the spring/early summer had the highest rainfall.
- Figure 1.9 is a graph with rainfall and temperature data for approximately 5 years (from July 2021 to May 2026) indicating the mild temperatures and year-round rainfall.

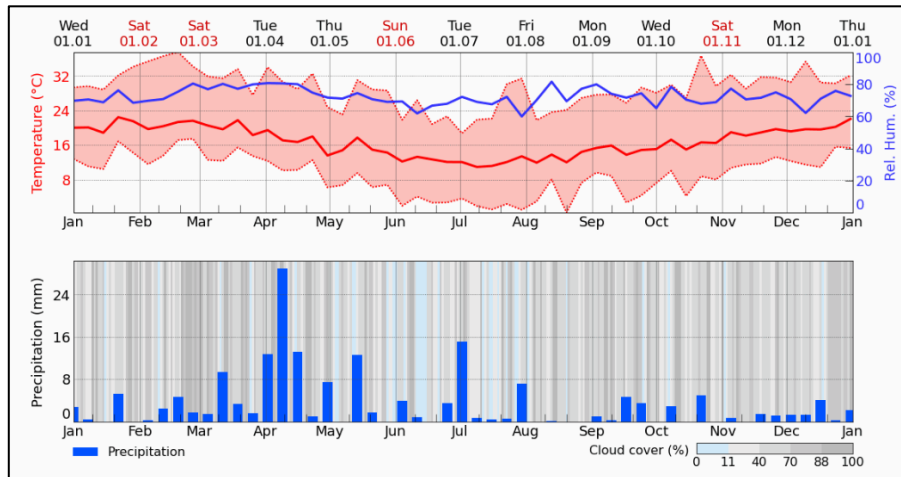


Figure 1.8: Data for a year (January 2025 to January 2026) for the rainfall and temperature.

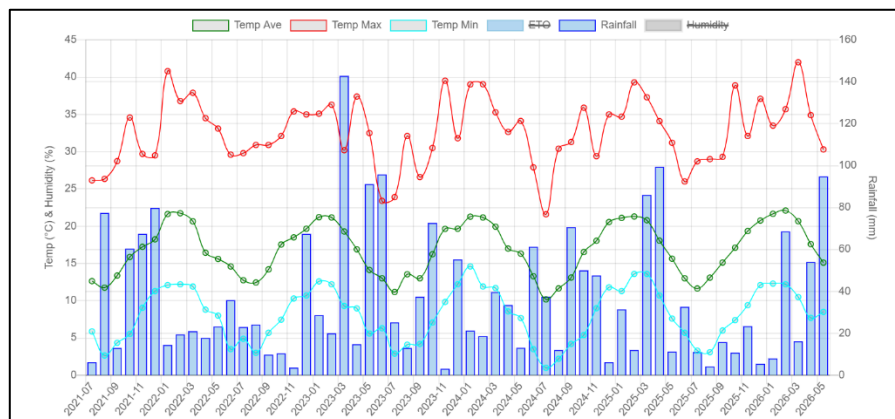


Figure 1.9: Data for approximately 5 years (from July 2021 to May 2026) indicating the mild temperatures and year-round rainfall.

2 TERMS OF REFERENCE

This report focuses on the Aquatic Biodiversity and Sensitivity associated with development on RE 118 Erf 489 Zwarte Jongers Fontein and will link to the Animal, Plant and Terrestrial Biodiversity Reports (separate assessments).

When conducting an **Aquatic Biodiversity assessment in the Western Cape, South Africa**, several layers of **legislation, regulations, spatial planning instruments and guidelines** apply at national and provincial

levels. These govern how biodiversity is assessed, protected and integrated into land-use and development decisions.

- **National Environmental Framework**
 - **Constitution of the Republic of South Africa (1996) - Section 24:** “Everyone has the right to an environment that is not harmful to health or well-being and to have environmental protection legislated and enforced” and this underpins all biodiversity and environmental assessment legislation.
- **National Environmental Management Act (NEMA), 1998 — Act No. 107 of 1998**
 - NEMA sets the **overarching environmental governance framework** for South Africa which establishes **environmental principles** (e.g. avoidance, minimisation, mitigation) that must inform decisions affecting biodiversity.
 - **Environmental Impact Assessment (EIA) Regulations** under NEMA list activities requiring environmental authorisation, many of which trigger biodiversity assessment requirements and biodiversity impacts must be considered in all decisions.
- **National Environmental Management: Biodiversity Act (NEMBA), 2004 — Act No. 10 of 2004**
 - This Act provides specific biodiversity protection and management provisions within the NEMA framework and the key elements relevant to biodiversity assessments include:
 - **Threatened or Protected Species (ToPS) Regulations** — regulating species that are nationally threatened or protected and requiring permits/assessments for activities affecting them.
 - Management of invasive alien species and prohibitions on harmful activities.
 - Biodiversity is defined broadly to include species, ecosystems, ecological processes and genetic diversity.
- **Other National Laws Often Applicable**
 - **National Water Act, 1998 (Act No. 36 of 1998)** — regulates water use and protection of aquatic biodiversity.
 - **Conservation of Agricultural Resources Act (CARA), 1983** — controlling invasive alien plants and soil degradation.
 - **National Environmental Management: Protected Areas Act (NEMPAA), 2003** — for assessments in or adjacent to protected areas.
 - **National Environmental Management: Integrated Coastal Management Act (ICMA), 2008** — if coastal/estuarine biodiversity is included.
- **Western Cape Provincial Laws**
 - **Western Cape Biodiversity Act, 2021 — Act No. 6 of 2021** — a **province-specific biodiversity law** tailored to the Western Cape context that aims to provide a comprehensive framework for conservation, sustainable use and systematic biodiversity planning in the province. Certain chapters have commenced (governance, planning and reporting), while others will come into effect on proclamation.
 - **Western Cape Biodiversity Spatial Plan (WCBSP)** is the **provincial spatial informant** identifying **Biodiversity Priority Areas (BPAs)**, such as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs). It is used to inform environmental assessments

and decision-making, highlighting zones where biodiversity impacts must be carefully considered. While developed under provincial policy, it supports decisions under both provincial and national legislation (especially NEMA/EIA).

2.1 Objectives of the Survey

The objectives were:

- To determine the current impacts on the proposed development site.
- To do a rapid survey to determine the presence of any aquatic resources.
- To make recommendation and mitigation measures needed for the developer to ensure that minimal environmental risks are taken during the development activities.
- To make some recommendations on rehabilitation needed at the site – to areas damaged and modified during the development.

3 METHODOLOGY

During the desktop assessment for this project, the Screening Tool (DFFE) was used to determine the importance of the site in relation to the different ecological components. This report focusses on the aquatic resources. All relevant layers in the SANBI BGIS database were interrogated to determine any other additional sensitive zone or areas and included the Western Cape Biodiversity Spatial Plan (WCBSP, 2017) (Figure 1.6 and Figure 1.7).

The field survey (25 May 2026) was carried out to evaluate the current ecological status at the study site. This included a habitat assessment and a rapid survey to confirm the presence and/or absence of any water resources.

The assessment was done as a walkdown survey to visit all habitat types around the dwelling where the activities (proposed construction) will be carried out. The surrounding landscape was assessed to understand how the water on the site is received and dispersed and how the development of the will impact on the resources.

4 RESULTS and DISCUSSION

4.1 General habitat description

The habitat on the property is transformed as the land was used for agricultural activities for decades. Figure 4.1 show some of the earliest activities where clearing occurred in 1954. Additional historic aerial survey images include 1967 and a more recent image of 2016 (Chief Directorate: Surveys and Mapping, 2026). During the onsite assessment, it was noted that the natural vegetation near the dwellings (southern section of the property) is in a fair condition with the area around the houses cleared (refer to the Botanical Report for detail). The larger northern part of the property was and still is used for agricultural activities. Historically, the land was tilled for crop production, but more recently used a grazing for cattle (Google Images, Figure 4.2).

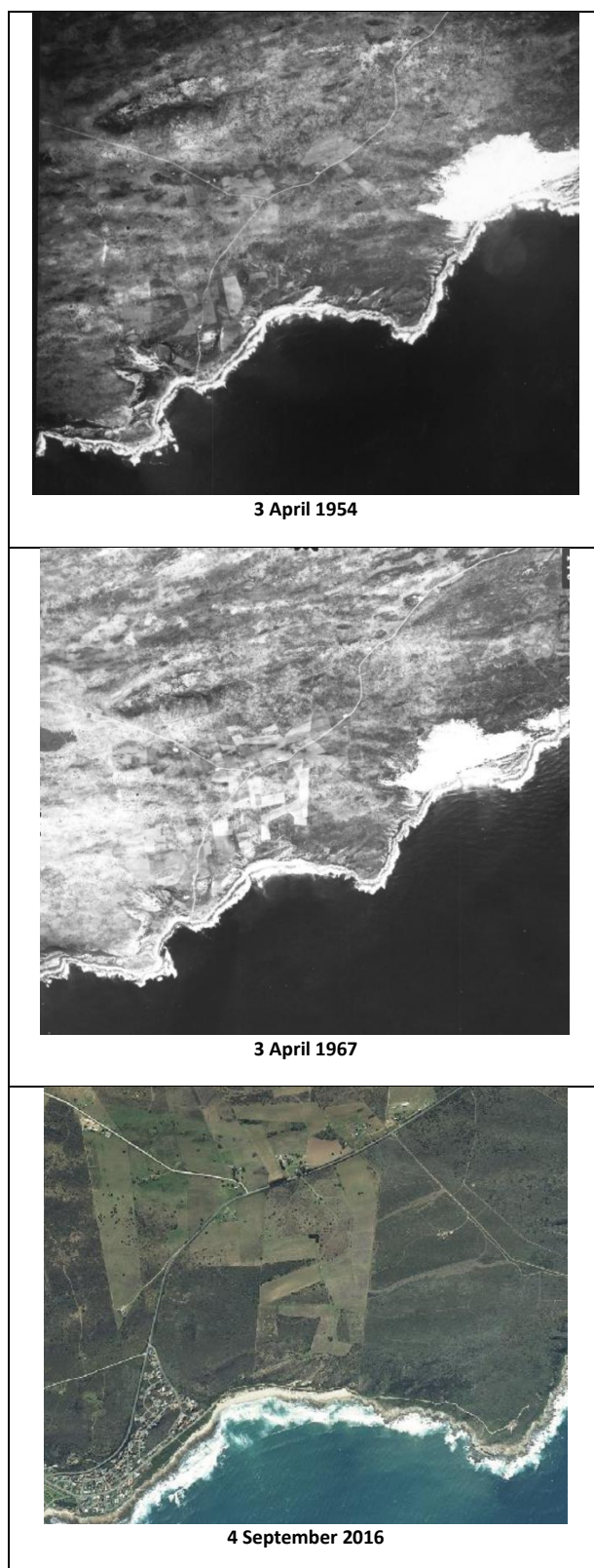


Figure 4.1: Aerial photographs from the Chief Directorate: Surveys and Mapping.

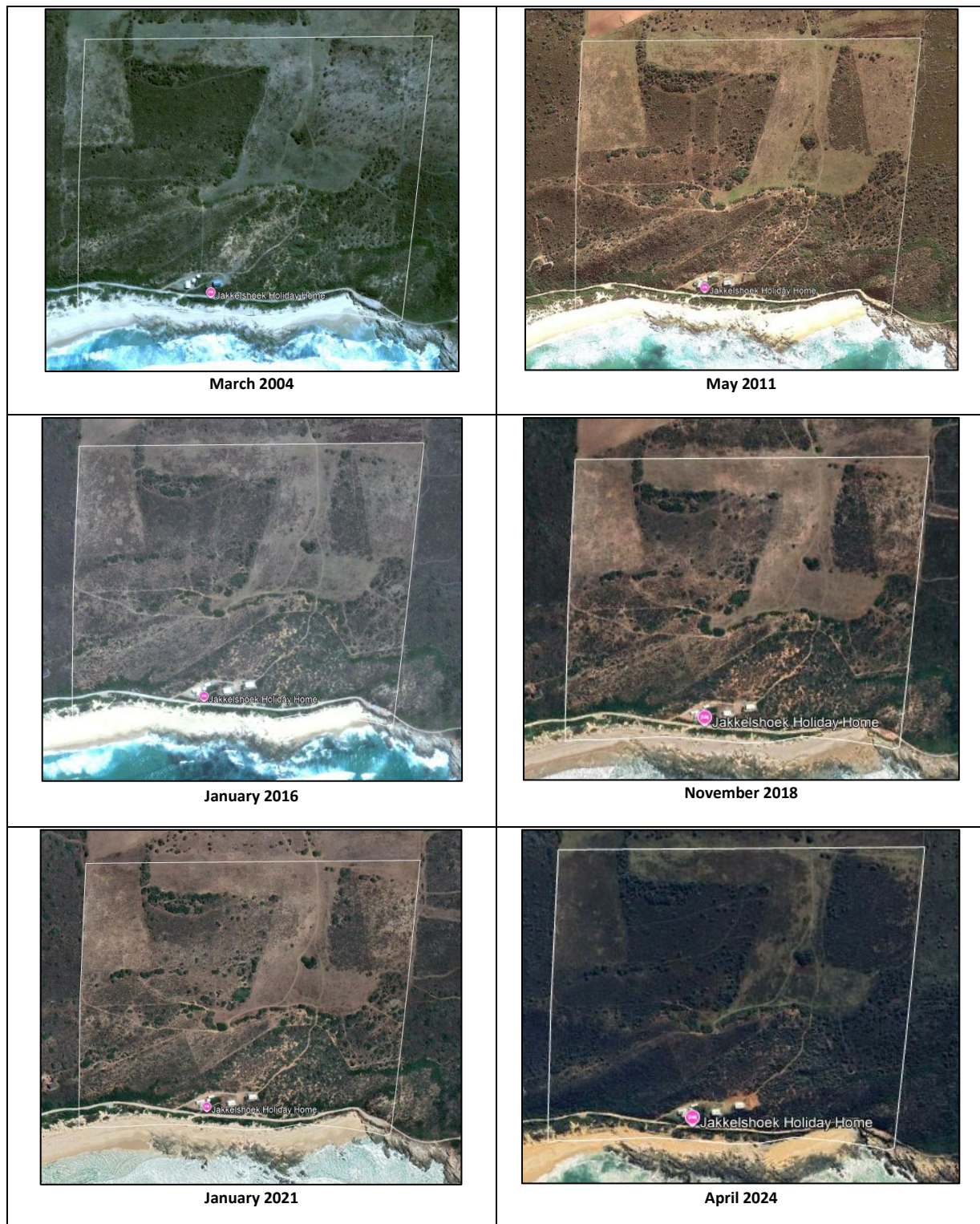


Figure 4.2: A time series of images from Google Earth indicating land use associated with the farm where the assessment was conducted.

4.2 Aquatic resources

During the site assessment, no natural water resources were encountered near the proposed development site. The landscape to the north of the dwelling is the receiving environment for rain and due to the sand profile, water will rapidly penetrate. The vegetation on the property is covering the soil well and very little runoff will occur during rain events. The portion of the property currently utilised for cattle grazing, has no erosion or large areas devoid of vegetation. The jeep track used to service the water supply for the property is in a good condition and it is recommended that regular monitoring is done to ensure that no erosion occur.

There is little evidence of erosion on the property. A runoff channel east of the dwellings that showed some erosion was rehabilitated by the landowner. This channel is now covered with brush (alien vegetation brush) and the natural plants have grown to stabilise the sand dune.

The wetland (Figure 1.7) on the southeastern boundary of the property is in a stable condition. It is well vegetated with a mixture of indigenous shrubs and alien *Acacia spp.* This wetland is fed with rainwater that percolate from the steep south facing slopes between Daytona Way and the access road from Stilbaai to Jongensfontein. The proposed development will not have a negative impact on the wetland.

It is noted that the development of the dwellings is close to the steep drop-off to Daytona Way and it is important to stabilise the slope. The landowner is regularly removing the *Acacia cyclops* (invasive alien) from the property to lower the fire risk to the dwellings. Mr Maree mentioned that they are also keeping the alien vegetation out to maintain the natural vegetation on the property.

During the construction of the proposed extension, the steep slope south of the dwelling will be susceptible to erosion and loss of topsoil. The activities will be near the edge of the dune and it will be important to ensure that heavy equipment is not used that can compromise the dune stability. It is recommended that a 5 m zone is created from the edge of the dune slope where the vegetation must establish and maintained as this will ensure a more stable dune edge. During the visit, this aspect of maintenance and stabilisation of the dune was discussed landowner.

The extension to the dwelling will have a negligible impact on the marine environment south of the property. It is recognised that the development is within the 100 m zone from the highwater mark, but this development will not increase on the cumulative impacts on the water flowing from the north of the site (i.e. agriculture, roads, maintenance to infrastructure, chemicals from the town). It is recommended that the sewage system for the property is regularly inspected to ensure that no leakage or spilling occur. According to the owner it is a “soakaway” that was installed in 2011 and the sewage from the dwellings is directed into the tanks. Although it has not spilled previously, regular inspections and pumping is recommended. The pumping and removal of the sludge from the approved facility will lower the concentration of contaminants in the tank. This will lower the input of contaminants into the receiving environment. In addition, it is recommended that the systems filtration is checked for clogging, as this will lower the effectivity of the system.

4.3 Impact Assessment

When looking at the impacts (on site and on a larger, cumulative scale) it can be summarised as follows:

- **Habitat loss and biodiversity concerns** is linked to the existing and future developments in the Jongensfontein area (e.g. residential homes, estates, access roads, agricultural activities) and will *permanently reduce natural habitat*, that will impact on water resources.
- **Terrain and landscape sensitivities** relate to the surrounding landscape which includes *steep slopes, coastal dunes, wetlands, protected vegetation and unstable geology*. The extension to the dwelling (House 3) is on a stable dune platform with good vegetation cover that is protecting the landscape.
- **Environmental planning safeguards and conservation areas** are generally included in the urban development (e.g. the CBA areas) and the development proposals must *mitigate environmental impacts and concerns* and adapt to site sensitivities as reflected in the various legislative regulations and guidelines.

5 SITE SENSITIVITY VERIFICATION

5.1 Aquatic Biodiversity

It is important to recognise that the area is within an ESA 1 area and therefore regarded as having a high sensitivity and conservation status (Figure 1.7). An Ecological Support Area 1 (ESA 1) for aquatic systems refers to a functional zone that is required to maintain the ecological integrity of nearby rivers, wetlands, riparian zones and catchments. In addition, the aquatic ESA 1 act as vital buffer zones, corridors and hydrological catchments to sustain overall ecological processes.

As the development (upgrade to the dwelling) is to the east of the mapped wetland, it is important to note that there is no flow in the direction of the water resource. The flow is in a southerly direction towards the marine environment. Impacts from the site to the marine environment will be linked to the activities on site and runoff from the structures.

It is recommended that the runoff rainwater is controlled to ensure even dissipation into the sand profile. This can be attained by gravel layers around downpipes from roofs and a continuous plant cover to promote dissipation of flow velocity.

5.1.1 Site Sensitivity Verification Statement – Aquatic Biodiversity Theme

In the Screening Tool Report (DFFE, 2024) for the site, the sensitivity rating for the site is listed as **very high** because of the proximity to the coastline. The dwellings are constructed within the 100 m zone from the highwater mark.

It is recommended that the sensitivity is adjusted to a **low sensitivity for the development footprint only**. It is important that the sensitivity for the larger area is maintained to ensure that the receiving environment, i.e. the marine environment gets maximum protection. As the landowner is conscious of the sensitivity of the area and want to conserve the land for future generations, it was noted that they will ensure that the water resources are protected.

5.1.2 Impact Assessment of the Aquatic Resources associated with the project.

- Baseline Description – the receiving environment

- The coastal and dune habitat in the study area features steep sloped areas with a sensitivity to erosion and landslides when the vegetation is removed and the soils are exposed.
- The presence of the natural vegetation of the property of the site is important to stabilise the dunes. The removal of the alien species over the years by the landowners contribute to a stable system. The good vegetation cover further contribute to effective water penetration and lowering the potential for water and wind erosion.

Identified Impacts on Aquatic Resources

- **Habitat Loss and Fragmentation**

Description:

The development of the dwelling will not result in a permanent loss of habitat, as the area is cleared and stabilised to limit erosion. The larger section of the property has good natural vegetation and facilitate water penetration and the lowering of water and wind erosion. It is recommended to utilise the cleared area for the footprint of the proposed development. The continued removal of alien vegetation on the property is recommended.

Extent: Local

Duration: Long-term

Intensity: Low

Probability: High

Pre-mitigation significance: Medium

Mitigation Measures

- **Avoidance and Planning**
 - Limit clearing and the modification of habitat for the development footprint of the dwelling to the modified vegetation areas.
- **Construction Phase**
 - Clearly demarcate construction areas to avoid loss of habitat and vegetation outside the approved footprint, as this will result in a loss of the dune stability.
 - Keep a 5 m buffer exclusion zone from the edge of the dune and ensure that the vegetation cover is maintained.
- **Operational Phase**
 - Rehabilitate and stabilise exposed soils.
 - Ensure that the dune edge (south of the dwelling) is kept well protected.
 - Ensure that the sewage system is regularly inspected and pumped once a year to lower the potential of pollutants entering the receiving environment.

Residual Impact Assessment (Post-Mitigation)

- **Habitat loss:** Low
- **Disturbance:** Low

With mitigation measures implemented, residual impacts on the receiving environment (water resources) will be low. One must realise that there is a cumulative negative impact (increased impacts in the area) that will have long-term impacts on the natural resources in the region.

Conclusion

The habitat of the study area is moderately modified due to the historic land use practices (i.e. agriculture). Currently the low intensity grazing is having a low impact on the habitat. The concerted effort by the owner to remove the *Acacia cyclops* is important to lower loss of water to the alien species, lower the risk of intensive brush fires and improve the natural diversity of the area.

Some general images of the study site.



Figure 5.1: View from the site, illustrating the slope in front of the dwelling.



Figure 5.2: View from the level section where the dwellings are towards the north.



Figure 5.3: Access road from the dwellings to the northern section of the property.



Figure 5.4: Dwelling 3 with the area for the extension.



Figure 5.5: The northern section, previously cultivated but now used for grazing.



Figure 5.6: Old erosion gully rehabilitated with *Acacia cyclops* brush and the natural vegetation growing.



Figure 5.7: View from the road towards the property (western section) in the area of the wetland.

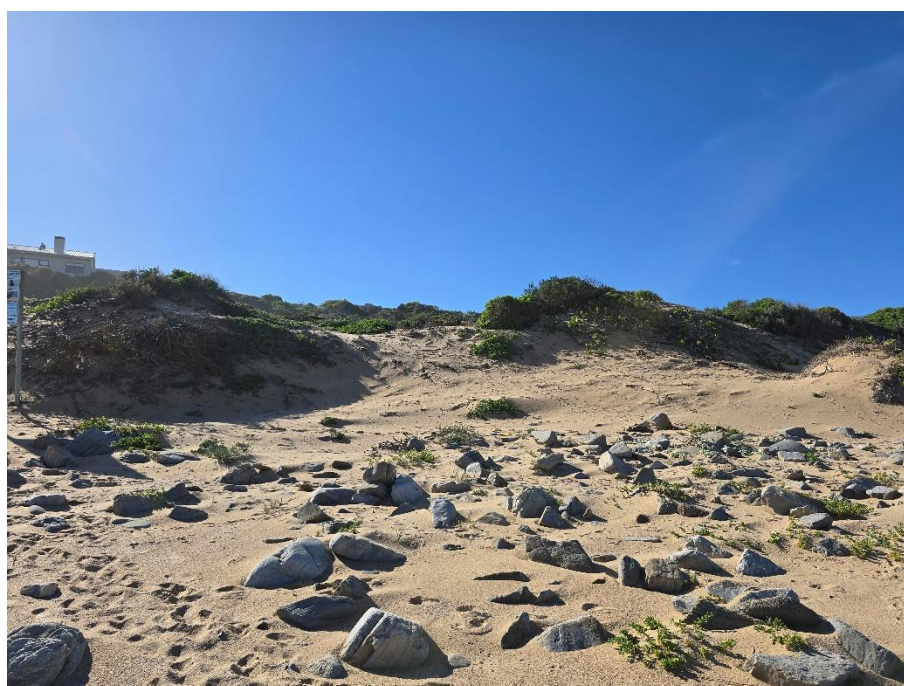


Figure 5.8: View from the beach towards the dwelling.

6 CONCLUSIONS

- The habitat on site is modified (low impacts).
 - This includes the historic cultivation on the site.
 - Current cattle grazing is a low impact.
 - The constant removal of *Acacia cyclops* is a positive contribution to the improvement of the habitat, biodiversity and water resources.
- The site where the extension to the dwelling will be done is on a flat area. It is near the edge of the dune slope, but it is currently stable with very little erosion visible.
 - It will be important to monitor the property regularly for erosion. If noted, immediate rehabilitation must be done. The actions will be site specific.
- If the development is restricted to the modified areas, it will ensure that no future loss to natural habitat occur.

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