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## **AQUATIC BIODIVERSITY COMPLIANCE STATEMENT**

**Proposed Kiboko Landing Strip on Farm 172/1, Honig Klips Kloof,  
Mossel Bay.**

**Prepared for Cape EAPrac**

**by**

**Dr. Jackie Dabrowski (SACNASP 115166)**

Tel: 083 256 3159, Email: [jackie@confluent.co.za](mailto:jackie@confluent.co.za)



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I consider myself bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP);

- At the time of conducting the study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
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- I do not have any influence over decisions made by the governing authorities;
- I undertake to disclose all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by a competent authority to such a relevant authority and the applicant;
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- All the particulars furnished by me in this document are true and correct.



Jackie Dabrowski (Ph.D., Pr.Sci.Nat. *Aquatic Science*)  
SACNASP Registration Number 115166  
Co-director: Confluent Environmental (Pty) Ltd

**Qualifications:** BSc, BSc Honours (Entomology), MSc & PhD (Veterinary Science)

**Expertise:** > 10 years' experience working on aquatic ecosystems across South Africa, with a focus on the Southern Cape in the last 6 years. Includes research and consulting expertise, having published > 10 water-related research articles and compiled > 100 aquatic specialist reports. Research and consulting have been in a range of sectors including agriculture, urban developments, linear structures, renewable energy, conservation, and mining.

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## 1. INTRODUCTION

Confluent Environmental was appointed by Morning Tide Investments 320 (Pty) Ltd to undertake a Freshwater specialist assessment for a proposed landing strip on Farm Portion 1/172 Honig Klips Kloof, Mossel Bay, in the Western Cape Province. The coordinates for the proposed runway from west to east are: 34° 0'34.22"S , 21°51'54.41"E to 34° 0'44.36"S , 21°52'42.02"E (Figure 1). The property is fenced within the Gondwana Private Game Reserve although on its own title deed and zoned for Agricultural Use. It is located approximately 8km east of the town of Herbertsdale as the crow flies. Gondwana is a Big Five game reserve. The purpose of the proposed landing strip is for private flights for the landowner and guests. In addition, due to its proximity to the Gondwana Game Reserve it may be useful for regional fire-fighting and anti-poaching operations. The reservoir nearby will be used to fill fire bomber aircraft.

### 1.1 Description of the development

The proposed airstrip will be 1155 m long and 20m wide, covering an area of 2.3 ha. The runway will be an ICAO Code 2 grass landing strip which will be a compacted grass surface. This will be created by frequent mowing and compaction with a heavy roller. Rocks in the runway will be removed by hand. All of this will be repeated until the surface complies with required standards. A 50 m strip around the landing strip will be brushcut to improve visibility and safety for pilots which will cover an area of 12 ha.

An aircraft hangar (400m<sup>2</sup> area and 7m high), compacted grass parking area, aircraft taxiway and turning area will be constructed next to the runway. The hangar will be constructed of a steel frame with chromadek roof and wall sheeting, and a concrete floor. The hangar will have one toilet, basin, shower and kitchen sink linked to a conservancy tank. The tank will be emptied when necessary, by a private tanker for disposal at a municipal wastewater facility. A semi-permanent corrugated iron reservoir with a capacity of 125 m<sup>3</sup> will be constructed next to the turning area. The reservoir will not require the removal of any soil. A summary of the proposed runway and associated infrastructure is provided in Table 1 below:

Table 1. Summarised development features of the landing strip and associated infrastructure.

Feature	Area
Brushcut and compacted landing strip	2.3 ha
50 m brushcut buffer zone	12.21 ha
Hangar	400 m <sup>2</sup>
Apron / parking area	3 000 m <sup>2</sup>
Taxiway	2 000 m <sup>2</sup>
Turning Circle	±1 427 m <sup>2</sup>
Water Reservoir	33 m <sup>2</sup>

### 1.2 Screening tool result

According to the Department of Environment, Forestry and Fisheries (DFFE) screening tool, aquatic biodiversity at the site has a **Low** sensitivity (Figure 2). The nearest mapped watercourse is a seep on the adjacent farm to the north of the runway.

The scope of work for this report is guided by the legislative requirements of the National Environmental Management Act (NEMA) and the National Water Act (NWA).

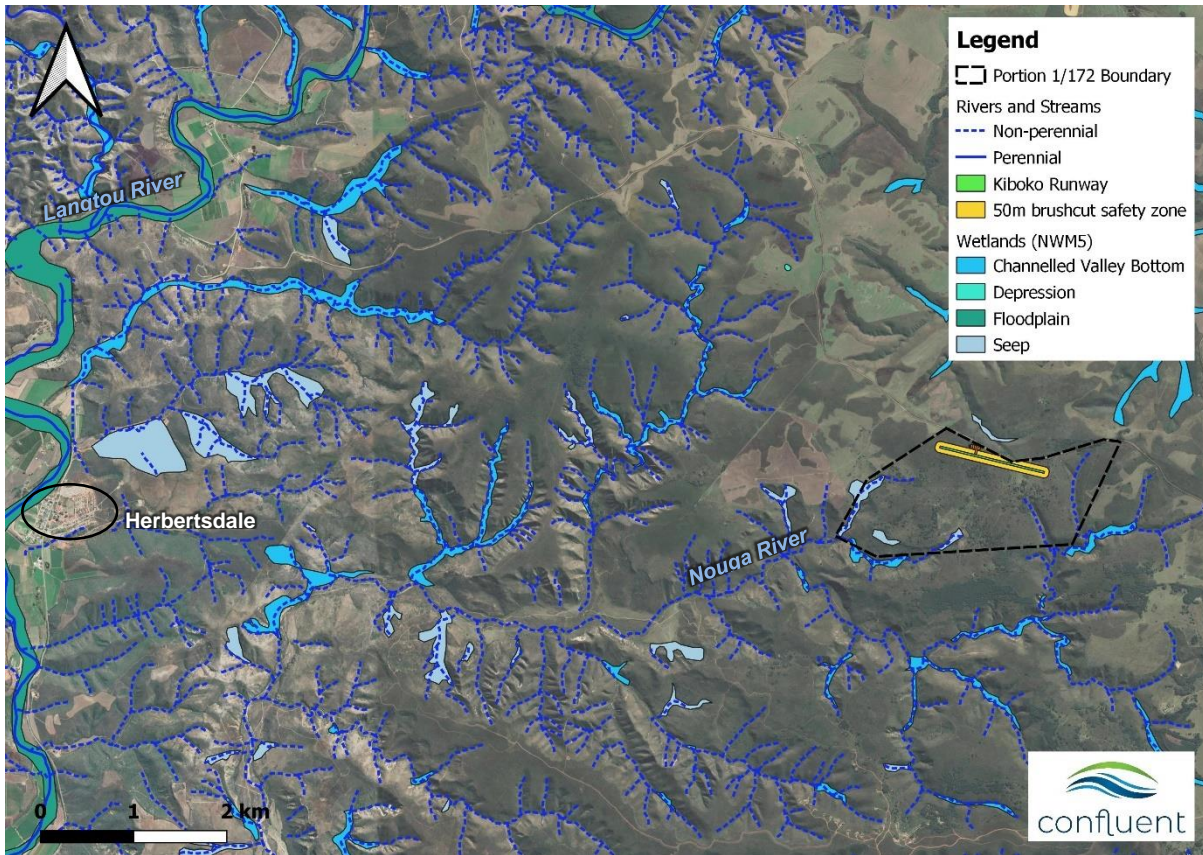


Figure 1: Location of Portion 1/172 in relation to mapped rivers and streams (NGI) and wetlands (NWM5).



Figure 2. Aquatic biodiversity sensitivity for the Kiboko Airstrip indicating Low sensitivity for Aquatic Biodiversity based on the National Environmental Screening Tool.

### 1.3 Terms of Reference

According to the protocols specified in GN 320 (Protocol for the specialist assessment and minimum report content requirements for environmental impacts on aquatic biodiversity) of



the National Environmental Management Act (NEMA; Act No. 107 of 1998), assessment and reporting requirements for aquatic biodiversity are associated with a level of environmental sensitivity identified by the national web-based environmental screening tool (screening tool). An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of:

- **Very High** sensitivity for aquatic biodiversity, must submit an Aquatic Biodiversity Specialist Assessment; or
- **Low** sensitivity for aquatic biodiversity, must submit an Aquatic Biodiversity Compliance Statement.

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

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

#### 1.4 Scope of Work

The objectives of this assessment included the following:

- To undertake a desktop analysis and site inspection to verify the sensitivity of aquatic biodiversity as **Very High** or **Low**; and
- Compile an Aquatic Biodiversity Compliance Statement or Aquatic Biodiversity Specialist Assessment based on the site verification of the sensitivity of the site. This includes assessment of the following:

Interrogation of available desktop resources including:

- DWS spatial layers (1:50 000 rivers)
- National Freshwater Ecosystem Priority Areas (NFEPA) spatial layers (Nel *et al.*, 2011)
- National Wetland Map 5 and Confidence Map (CSIR, 2018)
- Eastern Cape Biodiversity Conservation Plan (ECBCP, 2020).

Conduct a site visit to determine the site sensitivity:

- Identification and classification of watercourses within and adjacent to the site according to methods detailed by Ollis *et al.* (2013);
- Determine the watercourse Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) using an appropriate method.

Based on the outcome of the site visit compile either an aquatic biodiversity impact assessment or compliance statement.

## 1.5 Assumptions and exclusions

- The site assessment was conducted once-off during Autumn, which provides an adequate representation of the flora associated with wetlands. In addition, databases such as iNaturalist and the Freshwater Biodiversity Information System (FBIS) were consulted to augment field observations for the site.
- It is assumed that spatial data and site development plans provided by 3<sup>rd</sup> parties for this assessment are an accurate representation of what will be developed on site unless modifications are stipulated by regulating authorities.
- The complete length of the proposed runway could not be walked due to the presence of dangerous animals. This assessment therefore relied heavily of observations in the botanical and terrestrial biodiversity assessment (Biodiversity Africa, 2022) which did assess the complete footprint. The focus of this assessment was to verify the presence of mapped wetlands and consider potential impacts of the proposed runway.

## 2. DESKTOP SURVEY

The site falls within quaternary catchment J40D (Figure 3). The runway is located along relatively flat terrain on high ground at the northern property boundary. The access road to the property runs along the northern property boundary. The runway is located on the catchment divide between J40D and K10C. According to the National Wetland Map (V5) the nearest mapped watercourse is indicated as a seep on the adjacent property to the north of the runway.

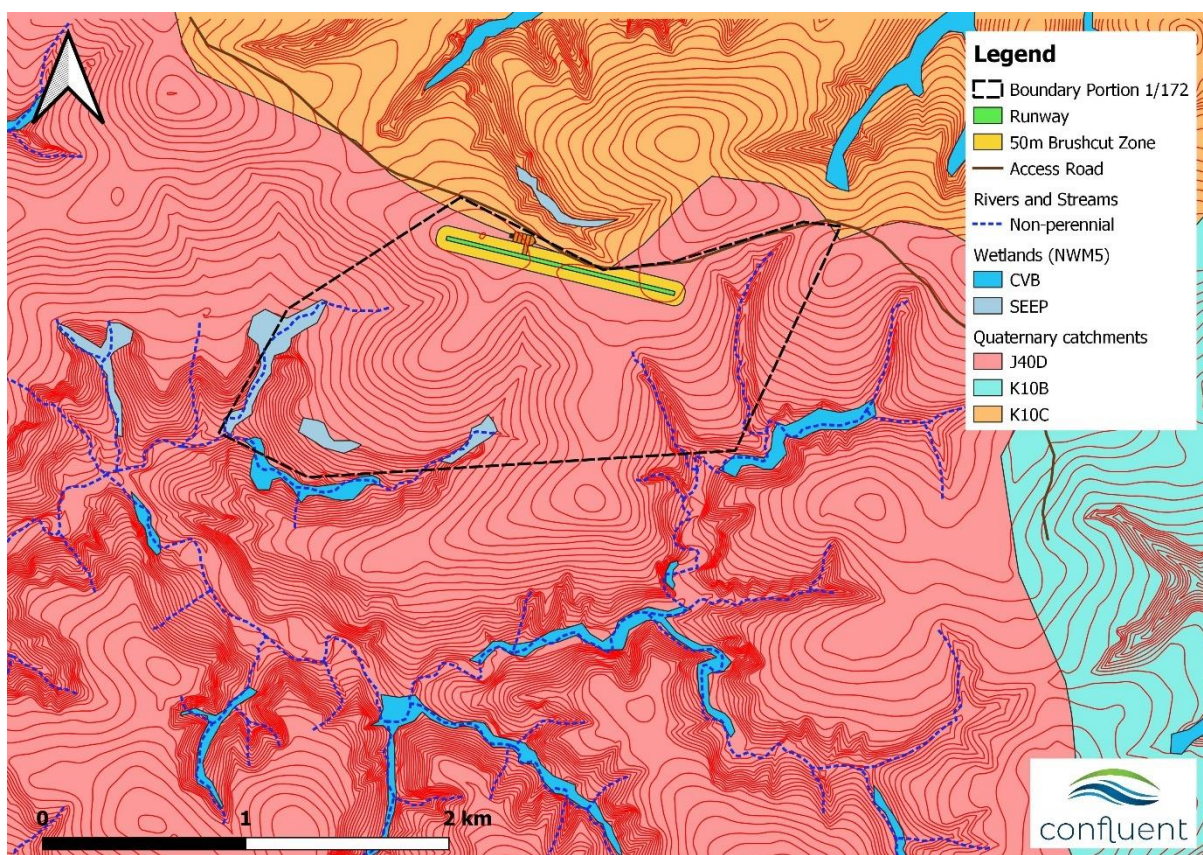


Figure 3. Proposed runway in relation to the quaternary catchment and surrounding topography.

Aquatic ecosystems in the project area are in the Southern Coastal Belt ecoregion which is characterised by undulating hills and moderately undulating plains on the coastal forelands (Table 2). The mapped wetland seep to the north of the runway is in the headwaters of a non-perennial drainage line (Figure 3).

Rainfall at the site can fall year-round although minor peaks occur in spring and autumn (Figure 4). The mean annual rainfall is moderate (446 mm) and is mapped at a moderate to high intensity, which has the potential to exacerbate the erosion potential in the area which is mapped as High.

According to SANBI Vegmap (2018) the mapped vegetation type in the immediate vicinity of the runway is Swellendam Silcrete Fynbos which is classified as Endangered. This vegetation type is described as having a narrow distribution with high rates of habitat loss in the last 28 years, placing the ecosystem time at risk of collapse. According to the botanical specialist assessment the vegetation on the western portion of the runway is degraded Swellendam Silcrete Fynbos, while the eastern section is degraded grassy fynbos.

Table 2. Summary of relevant catchment features for the proposed runway.

Feature	Description
<b>Quaternary catchment</b>	J40D
<b>Mean Annual Runoff</b>	38.90 mm
<b>Mean Annual Precipitation</b>	446 mm
<b>Inherent erosion potential of soils (K-factor)</b>	0.66, High
<b>Rainfall intensity</b>	Moderate to High
<b>Ecoregion Level II</b>	22.02, Southern coastal belt
<b>Geomorphological Zone</b>	Upper, transitional
<b>NFEPA area</b>	Sub-quaternary reach 9164, no classification.
<b>Mapped Vegetation Type</b>	FFc1: Swellendam Silcrete Fynbos (Endangered)
<b>Conservation</b>	Wetland Seep to the north classified as an Ecological Support Area 1 (ESA1; WCBSP) Freshwater Biodiversity Information System (FBIS): No records within 12 km <sup>2</sup> of the runway site.

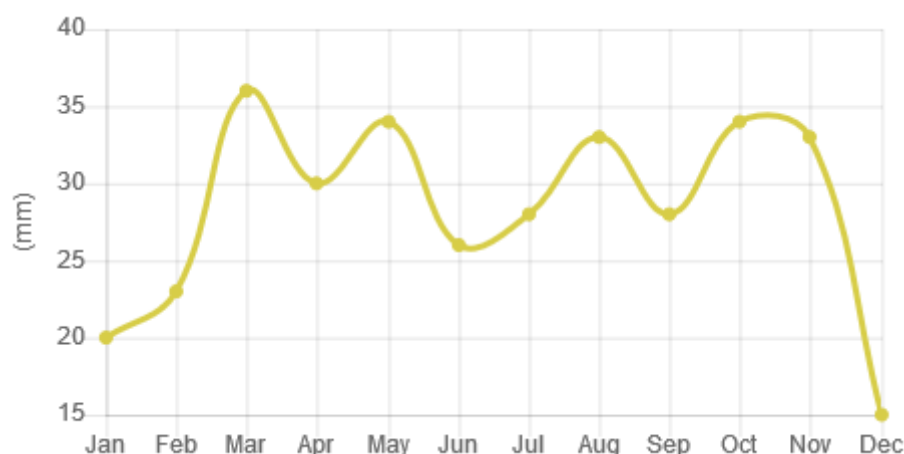


Figure 4. Mean monthly rainfall in the vicinity of Herbertsdale.

According to the Western Cape Biodiversity Conservation Plan (WCBSP) the watercourse to the north of the proposed runway is classified as Ecological Support Area 1: Aquatic (ESA 1:



Aquatic; Figure 5). Two small catchment areas are indicated in this category upstream of the mapped seep. The management objective for this category is:

*“Maintain in a function, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.”*

The layout of the proposed runway is located on the watershed of the adjacent quaternary catchment and does not intersect the mapped ESA1. The proposed runway is therefore consistent with the management objectives for the ESA1:Aquatic.

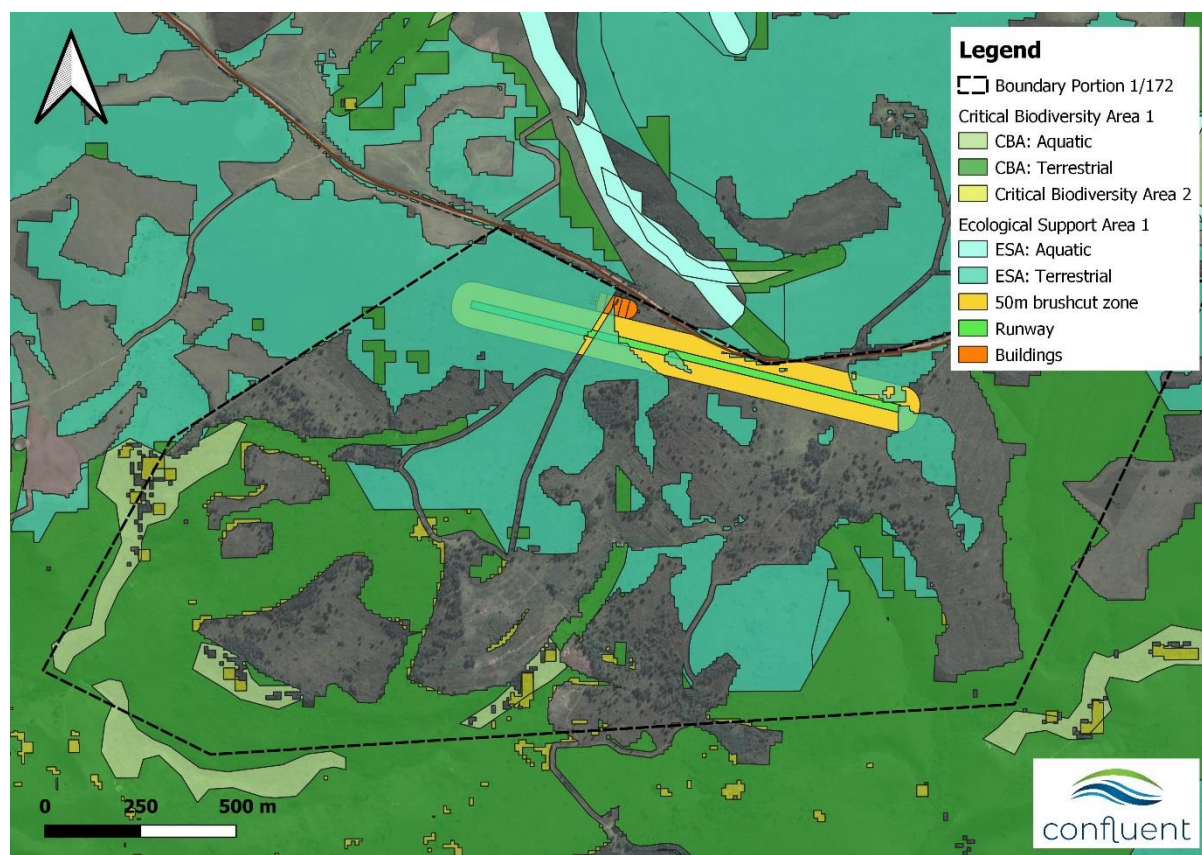


Figure 5. Mapped areas classified by the Western Cape Biodiversity Spatial Plan (2017) in relation to the proposed Kiboko runway.

## 2.1 Historical Assessment

The area has been repeatedly cleared for livestock grazing both on Portion 1/172 and the property to the north since the 1960s, and farming was still active until mid-2000s on 1/172. When the property was incorporated into the Gondwana Game Reserve, farming ceased on 1/172 as it now forms part of the conservation area. The watercourse to the north of the proposed runway has largely been unmodified except in 2000 when a small instream dam was constructed (Yellow circle, Figure 6). However, this dam has never appeared to hold any water and it has subsequently become overgrown with dense vegetation.







Figure 6. Historical images of the approximate runway area including watercourse areas to the north with small dam encircled.

### 3. SITE VISIT

The site was visited on 28 April 2023 which is in autumn. The weather was fine and warm and no significant rainfall had fallen in the preceding 72 hrs. A small area of the proposed runway was inspected near the entrance to Portion 1/172, and an extensive area of the mapped watercourses was assessed to the north of the runway area.

#### 3.1 Site Observations

The area within the footprint of the proposed runway was well vegetated with terrestrial grasses with intermittent fynbos species, as detailed in Biodiversity Africa's report (2023). To the north of the property, the catchment area of the two drainage features is very well vegetated with diverse fynbos species (Figure 7). Both flow paths are densely vegetated and the upper reaches had no definable channel. It is likely that wetland features develop further downstream as the gradient and catchment area increases. However, the upper headwaters were dominated by terrestrial vegetation.





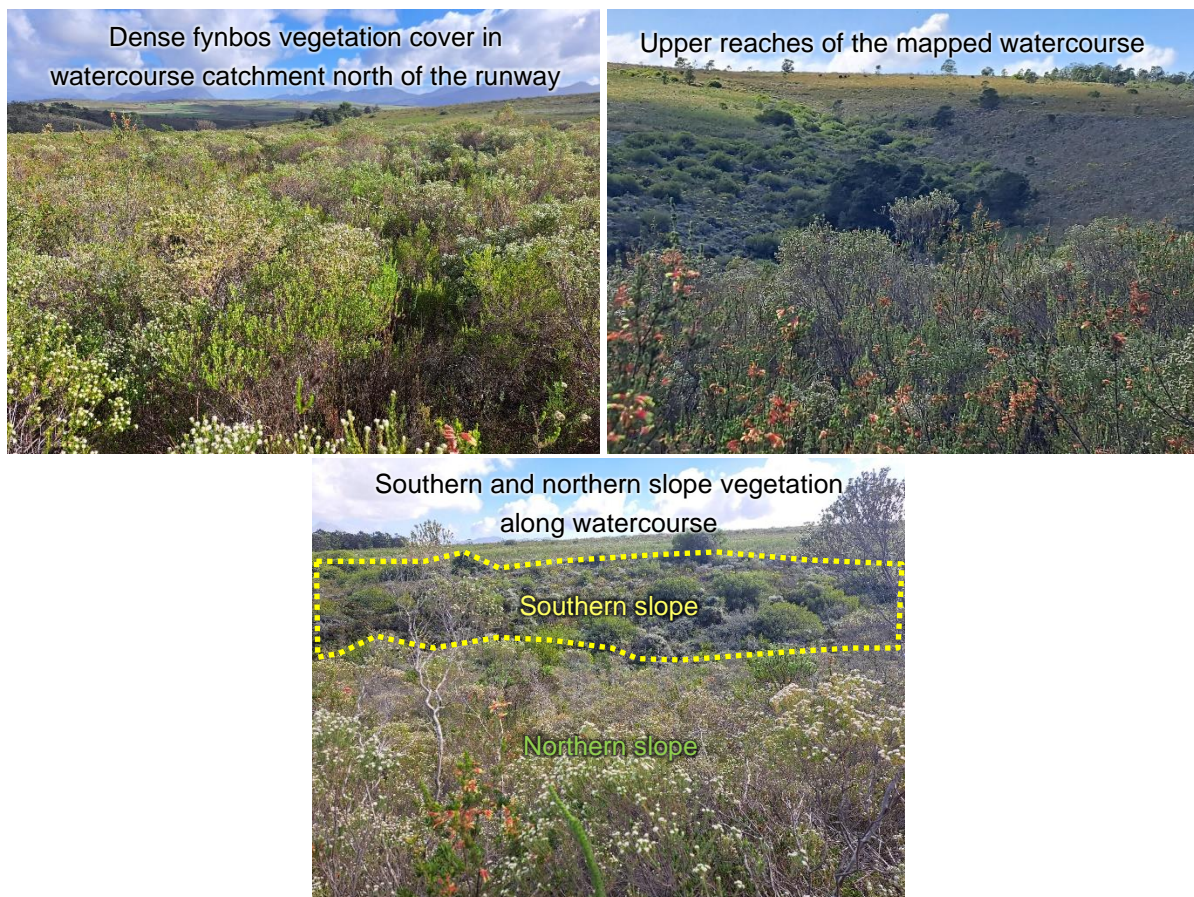


Figure 7. Photos of the runway site and watercourse feature north of the runway.

### 3.2 Site Sensitivity Verification

The Aquatic Biodiversity theme for the proposed runway was classified as Low by the DFFE screening tool. The finding of this assessment confirms the level of sensitivity as **Low**. The reasons are as follows:

- The runway is located on the watershed between KJ40D and K10C but is more orientated to the southern portion which drains in the opposite direction from the watercourse. Therefore, very little runoff from the runway could feasibly enter the watercourse.
- While the site drains slightly in a southerly direction, the drainage lines towards the south of the property are located a significant distance from the runway. Given that the runway will simply be brushcut and rolled, there is no significant risk that the runway could realistically pose to these watercourses.
- The proposed runway will be compacted grass with a 50m mowed area as a buffer. As the surfaces are not paved or concrete the increase in runoff will be minimal. The vegetated soil surface would encourage infiltration as opposed to runoff, and as a result the roughness should not decrease substantially.
- The road located between the proposed runway and the watercourse is an existing cleared surface and there are minimal observable impacts associated with runoff from the road. It is therefore unlikely that the runway (which retains vegetative cover) would create any additional impacts.



The Biodiversity Africa (2023) report recommends that any stormwater should not be directed into wetland areas. This recommendation is supported, and it is further recommended that runoff from the hangar roof be diverted into the proposed zinc reservoir and rainwater tanks for reuse. In addition, any parking areas or walkways should retain a natural surface as far as possible.

#### 4. CONCLUSIONS

The proposed runway and associated hangar building are located on relatively flat terrain near the northern boundary of Portion 1/172. The DFFE screening tool determined the runway to have a Low Sensitivity for the Aquatic Biodiversity Theme. Two drainage lines are located to the north of the proposed runway on the adjacent property, across a road. The watercourse(s) do not have distinct channels and are dominated by terrestrial vegetation in their upper reaches, which may transition to wetland vegetation further downstream. Vegetation in the catchment and along the flow paths is very dense which is a feature that reduces the risk of erosion and sedimentation. Not that development of the landing strip would result in serious impacts of this nature.

This assessment confirms that the proposed runway and associated hangar and brushcut area have a **Low Sensitivity** for Aquatic Biodiversity given the reasons provided in Section 3. My findings indicate that the complete development of the runway, brushcut area, hangar and associated infrastructure will in no way negatively impact watercourses to the north, or non-perennial drainage lines to the south of Portion 1/172.

#### 5. REFERENCES

- Council for Scientific and Industrial Research (CSIR; 2018). National Wetland Map 5 and Confidence Map [Vector] 2018. Available from the Biodiversity GIS website, downloaded on 30 September 2020.
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