



SPECIALIST REPORT

**Wetland delineation and vegetation verification:
Sulphur Springs, Ekland Safaris, Limpopo Province**

Author

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Specialist declaration

I, Danie van der Walt, declare that -

- I act as an independent specialist in this application;
- I have performed 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;
- I have expertise in conducting the specialist report relevant to this application, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the relevant environmental legislation, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in this project;
- I undertake to disclose to the applicant and the authorities 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 report are true and correct.

L.D. VAN DER WALT

Date: 2018-10-22

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1. Introduction

The applicant intends to construct an eco-tourism facility that is directly related to the spring on the site. The developer appointed *Afrika Enviro & Biology* to verify the type and amount of indigenous vegetation that will be affected as well as to delineate the edge of the spring, the objective being to ensure that environmental legislation is not offended. The study site was investigated on 2018-10-19.

2. Methods and Reporting

2.1 Vegetation verification

The study site in the affected areas was intensively searched for important species and the potential for Red Data Listed (RDL) and other important species were established and cross referenced with data basis for the relevant quarter degree grid/s as obtained from the SANBI data base (POSA). One of the objectives is to qualify diversity and quantify the surface area where vegetation will be cleared.

2.2 Watercourse classification & delineation

It is important to differentiate between different types of watercourses and in particular wetlands and riparian habitats. Riparian zones are not wetlands, however, depending on the ecosystem structure; wetlands can also be classified as riparian zones if they are located in this zone (e.g. valley bottom wetlands). Although these distinct ecosystems will be interactive where they occur in close proximity it is important not to confuse their hydrology and Eco functions.

These delineations are performed according to “*A practical field procedure for identification and delineation of wetlands and riparian areas*” as amended and published by the Department of Water Affairs and Forestry (2005); (Henceforth referred to as DWAF Guidelines (2005)). Aerial photographs and land surveys were used to determine the different features and potential wetland and riparian areas of the study area. The morphology and geophysical features of the watercourse is investigated and described as part of these procedures. The classification of the type of watercourse/s present on site is discussed in section 4.1.

3. Results

3.1 Study area

The study area is located to the north of the Soutpansberg, approximately 40km north of the town Louis Trichardt by road (N1). The landscape is comprised of the plains to the north of the Soutpansberg Mountains with prominent rock outcrops (hills) and ridges in areas. Ephemeral drainage lines are present and draining occurs in a northerly direction. Classified on a local scale the vegetation type is classified as *Musina Mopane Bushveld*.

3.2 Vegetation verification

The site is situated on a wooded plain to the north east of a ridge line. It is understood that the development has been planned to use as much of the natural character of the site and indigenous vegetation removal will be limited to the building footprints only.

A large circular water reservoir and building is present and three vehicle tracks converge at the site. The general vegetation of the local area is dominated by *Colophospermum mopane* and the vegetation structure can be described as Mopane woodland. A relatively small area of approximately 80m² of this vegetation type will be affected by the proposed activity. The section to the south of the reservoir has evidently been used for crop production and was cleared in the historic past for this purpose. However, this area is not recommended for development for geotechnical reasons (unstable sandy soil). Natural vegetation is sparse in the area of the proposed development site but a few *Acacia tortilis* shrubs are present, totaling a surface area of approximately 20m². A wetland zone is present to the east of the site and is described under the heading below.



Existing reservoir and building on site



Fallow croplands to the south



Mopane woodland that will be affected



Acacia shrubs that will be affected

3.3 Wetland description and delineation (Figure 1)

This spring / wetland is classified as a *wetland flat*: a level or near-level wetland area that is not fed by water from a river channel, and which is typically situated on a plain or a bench. Closed elevation contours are not evident around the edge of a wetland flat. It is unlikely that the source is associated with strong groundwater to surface water linkages (as in the case of aquifer-dependent ecosystems) and it is more likely that the wetland is 'perched' above bedrock or dense clay (and, therefore, not linked to groundwater). Wetland flats are associated with very weak, multidirectional horizontal water movements.



Permanent zone



Soil sample with calcrete

A small permanent zone is present at the source of the spring and the soil sampled is wet and sandy with a slight clay content, no mottling is present but gleying is evident. A hard calcrete horizon is present at a depth of 50cm, implying that the source of water is dependent on a perched water table associated with rainfall. The soil samples taken in the seasonal zone did not positively indicate wetland conditions. However, by using vegetation indicators, a definite delineation was completed. The sedge, *Schoenoplectus brachyceras* and *Cyperus sexangularis*, are the dominant vegetation indicators present in the wetland and forms a definite line on the outer edge of the seasonal zone, indicating the extent of the wetland.



Vegetation indicators was used for the delineation the soil samples were indecisive



Terrestrial vegetation encroaches into the as wetland zone

It should be noted that terrestrial woody vegetation encroaches into the wetland (e.g. *Colophospermum mopane* and *Acacia tortilis*). This feature, together with the poor soil indication of the seasonal zone implies that this zone is not saturated for long periods of time.

Precautionary Note: The wetland delineation projected in Figure 1 is approximate only - the final delineation was determined by a qualified surveyor upon the findings of this report and was used for the proposed layout plan.

3.4 Impacts and alternatives

The terrestrial component of this site is not deemed to be ecologically sensitive and the proposed activities will not have a significant impact on the natural environment. This is motivated by the fact that the design / incorporate most of the natural vegetation without the consequence of loss of vegetation. The vegetation that will be lost is well represented in the surrounding area and no threatened species are present or will be affected.

The wetland is very small and if it is conserved with a buffer zone it will not be significantly affected by the proposed activity. No alternatives are deemed necessary. As this small wetland is of a seasonal / temporary nature and is not important for biodiversity maintenance a large buffer is not necessary. The 32m buffer zone as subject to the EIA regulations is more than adequate as a buffer zone.

4. Conclusion and Recommendations

This report concludes the proposed activities will not compromise the important biodiversity or ecological functions and the proposed layout of the development can be recommended from an ecological perspective.