



GEOHYDROLOGY

GEOTECHNICAL

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SOCIAL DEVELOPMENT



## Basic Assessment Report

L20 100 E

**CONSULTATION BASIC ASSESSMENT REPORT FOR THE PROPOSED CLEARANCE OF APPROXIMATELY 13 HECTARES OF INDIGENOUS VEGETATION FOR ORCHARDS ON THE REMAINDER OF PTN 37 AND PTN 3 OF THE FARM SCHOONUITZICHT 10 LT IN THE LEVUBU AREA, ± 6.5 KM NORTHEAST OF THE ALBASINI DAM, MAKHADO LOCAL MUNICIPALITY, VHEMBE DISTRICT, LIMPOPO**

January 2021

Prepared for: Muirhead & Roux CC

Compiled by: L Wendel

Document version 1.0 – Draft



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January 2021

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## DOCUMENT HISTORY

Report no	Date	Version	Status
L20 100 E	January 2021	1.0	Draft

## RELATED DOCUMENTS

Report no	Date	Name
L20 100 E	January 2021	Draft EMPR
	January 2021	Terrestrial Biodiversity Impact Assessment
	January 2021	Archaeological Impact Assessment

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## **APPENDICES TO BE FOUND AFTER THE BASIC ASSESSMENT REPORT**

### **Appendix A: Site plans**

**A.1 Locality 1:50 000 topographical map**

**A.2 Locality on Google Earth map**

**A.3 Aerial view indicating proposed areas for orchards**

**A.4 Sensitivity map**

### **Appendix B: Photographs of the site**

### **Appendix D: Specialist Reports**

**D.1 Terrestrial Biodiversity Impact Assessment Report**

**D.2 Heritage Impact Assessment Report**

### **Appendix E: Proof of Public Participation Process**

### **Appendix F: Environmental Management Programme**

### **Appendix G: Other information**

**G.1 Environmental Screening Report**

**G.2 Proof of Registered Water Use**

**G.3 Fertiliser and Pest Control management strategy**

## 1. INTRODUCTION

AGES Limpopo (Pty) Ltd was appointed by **Muirhead & Roux CC** to conduct an Environmental Impact Basic Assessment in order to obtain the necessary environmental authorisation for the proposed clearing of an area of approximately 13 ha for new orchards on the Remainder of Portion 37 and Portion 3 of the farm Schoonuitzicht 10 LT in the Levubu area, ± 6.5 km northeast of the Albasini Dam, Makhado Local Municipality, Vhembe District, Limpopo.

### 1.1. PROJECT OBJECTIVE

The project objective is the clearance of approximately 13 ha of indigenous vegetation, for new banana orchards within an existing macadamia and banana farm.

### 1.2. BASIC ASSESSMENT REPORT OBJECTIVE

The Environmental Impact Assessment Report was done with the objective to supply the Limpopo Department of Economic Development, Environment and Tourism (LEDET) with the necessary environmental information to make a decision regarding the environmental impact assessment process.

The following listed activities of Regulations 983 and 985 of 4 December 2014 as amended, of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) will be triggered;

- R983 - Activity 27 "The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation".
- R985 - Activity 12 (e) (ii) "The clearance of an area of 300 m<sup>2</sup> or more of indigenous vegetation within critical biodiversity areas identified in bioregional plans".

"Indigenous vegetation" refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years".

This Basic Assessment Report (BAR) is compiled to provide detail of the proposed project as well to reflect the specific impacts that the proposed activity may have on the environment. For each of the potential impacts mitigating and management measures are provided in the BAR as well as in the Environmental Management Programme (EMPR).

## 2. LEGAL AND POLICY REQUIREMENTS

The following is a list of the relevant policy and legal requirements applicable to the undertaking of the proposed orchards:

<b>Title of legislation, policy or guideline:</b>	<b>Administering authority:</b>	<b>Date:</b>
Constitution of South Africa	Office of the President	1996
National Environmental Management Act	Environmental Affairs	1998
Environmental Impact Assessment Regulations	Environmental Affairs	2014
Occupational Health and Safety Act	Department of Labour	1993
National Veld and Forest Fires Act	Department of Agriculture, Forestry & Fisheries	1998



Conservation of Agricultural Resources Act	Department of Agriculture, Forestry & Fisheries	1983
National Water Act	Department of Water & Sanitation	1998
National Heritage Resources Act	Department of Arts & Culture	1999
NEM: Biodiversity Act	Department of Environmental Affairs	2004

### 3. DETAILED DESCRIPTION OF PROPOSED ACTIVITY

#### 3.1. PROJECT LOCALITY

The Remainder of Portion 37 and Portion 3 of the farm Schoonuitzicht 10 LT is located ± 6.5 km northeast of the Albasini Dam directly north of the R524 road Louis Trichardt/Thohoyandou road at the following coordinates (centre of site):

- 23° 03' 18.20" S and 30° 09' 13.68" E

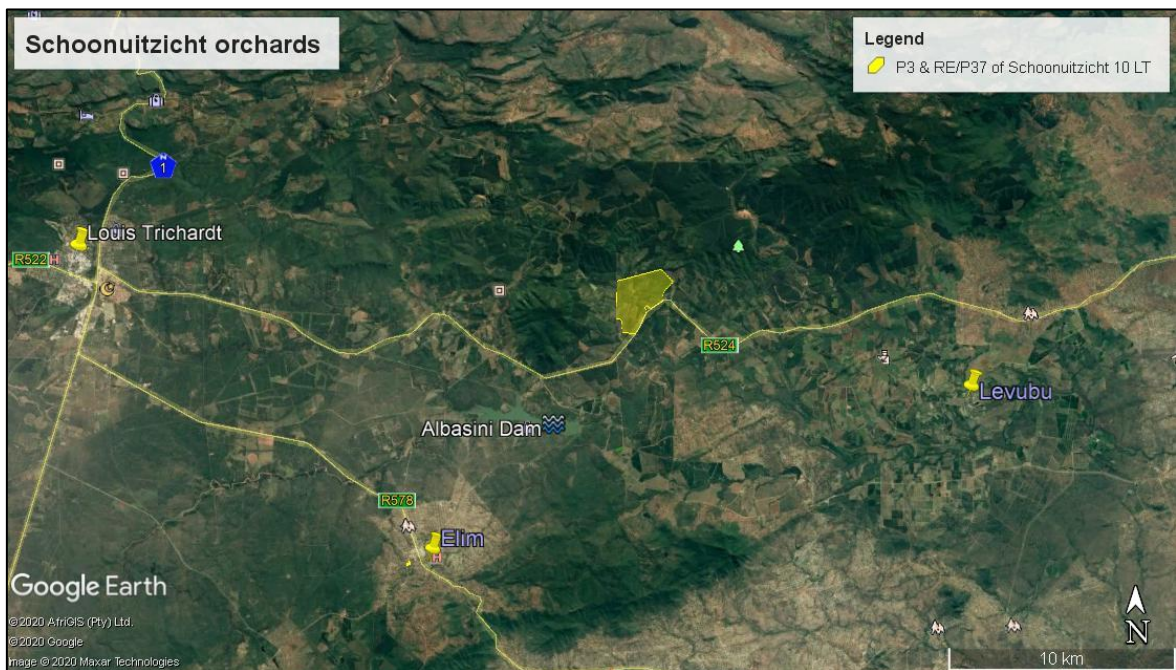


Figure 1. Project locality

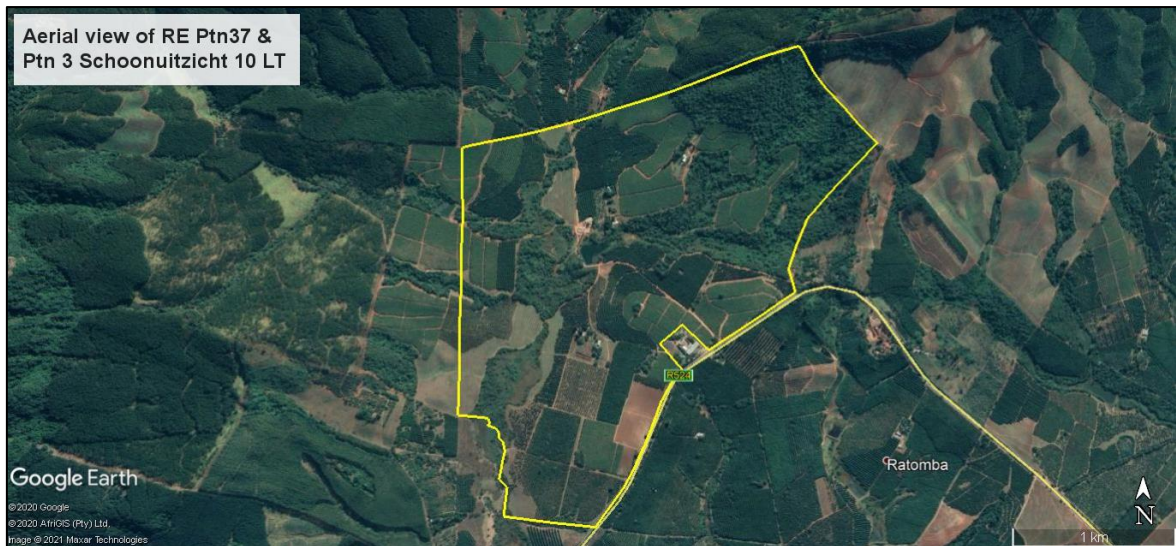


Figure 2. Aerial view of the farm

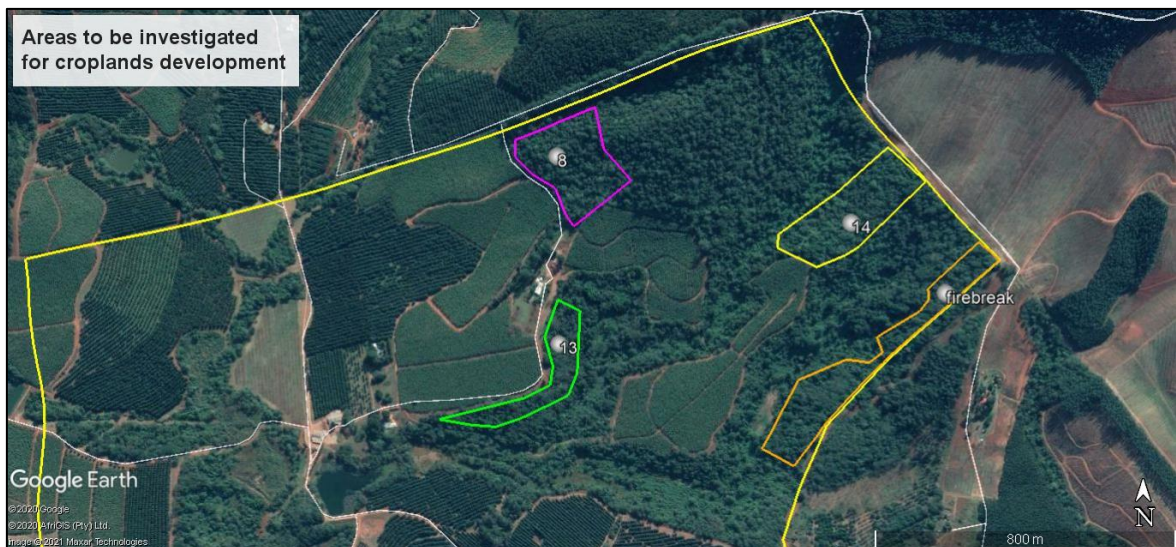


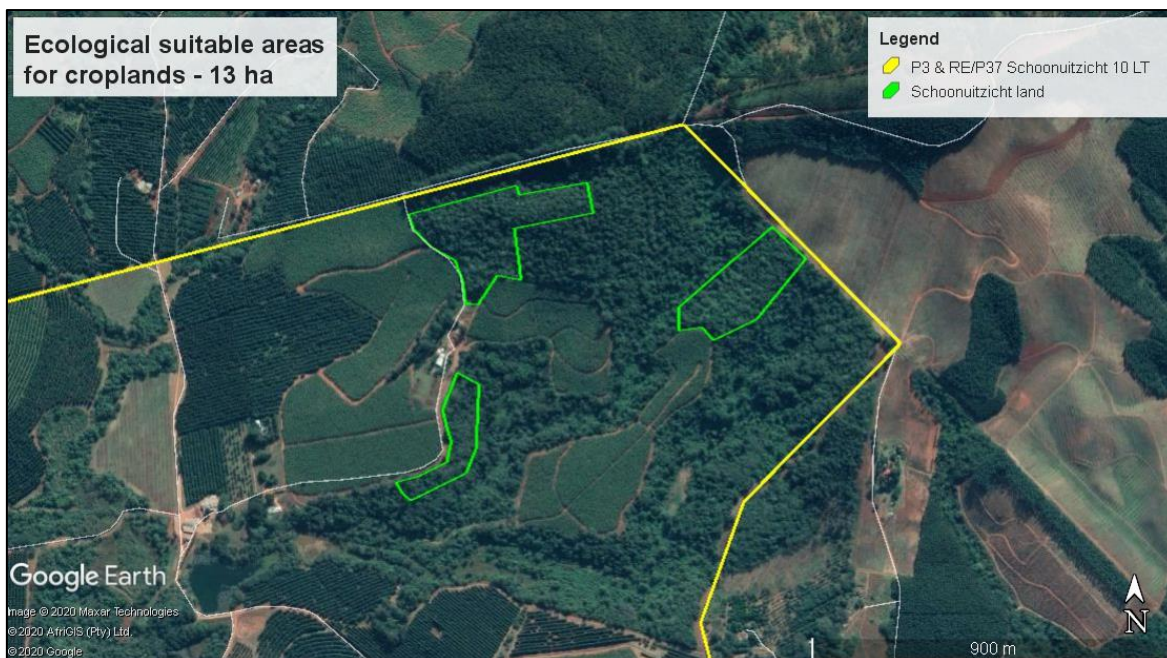
Figure 3. Areas to be investigated for croplands development

Current farming practices surrounding the proposed orchards consist of predominantly commercial farming (orchards and crops) as well as forestry plantations. The R524 road borders the farm along its southern boundary.

### 3.2. NATURE OF ACTIVITY

The activity entails the clearance and preparation of approximately 13 ha of indigenous vegetation to expand current banana orchards on the farm. Although the new orchards will mostly not be irrigated but rely on the high frequency of natural precipitation characteristic of the region, water for irrigation is available from the existing water allocation in terms of the Registered Water Use for the properties. Drip irrigation will be used when required.





**Figure 4. Areas determined as ecologically suitable for croplands development**

## **4. DESCRIPTION OF THE ENVIRONMENT**

### **4.1. TOPOGRAPHY**

The regional topography of the study area is classified as moderately undulating hills and mountains, with the soils mostly suitable for tree and banana farming.

#### **4.1.1. Climate**

The area normally receives about 752mm of rain per year, with most rainfall occurring mainly during mid-summer. It receives the lowest rainfall (4mm) in June and the highest (154mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures range from 22.9°C in June to 30.3°C in January. The region is the coldest during July when the mercury drops to 7.5°C on average during the night.

#### **4.1.2. Drainage**

The study area is located within the quaternary drainage region A91C which forms part of the Levubu and Letaba Water Management Area (WMA). Drainage occurs as sheet-wash into the drainage channels and wetlands on site that eventually drain into the major river namely the Levuvhu River that occurs to the south of the site.

#### **4.1.3. Geology & soils**

The geology of the area consists of grey Biotite gneiss and migmatite, muscovite-biotite granite as well as Basalt of the Sibasa Formation, Soutpansberg Group with red-yellow apedal, freely drained

soils and red, dystrophic and/or mesotrophic soils.

#### 4.1.4. Vegetation

The vegetation according to Mucina and Rutherford (2006) is classified as Soutpansberg Mountain Bushveld, while portions of the areas to be investigated are classified by the South African National Biodiversity Institute as Critical Biodiversity Area 1 (CBA1) (<http://bgisviewer.sanbi.org>). The state of the vegetation of the proposed development site can be considered as degraded forest where the lower shrub stratum has become invaded by alien invasive species. Areas of pristine indigenous forest were excluded from the proposed development.

## 4.2. SPECIALIST RECOMMENDATIONS

### 4.2.1. Terrestrial Biodiversity Assessment Report Findings

**The site surveys were conducted on the 11<sup>th</sup> of November 2020. The relevance of the season (early summer months) had NO impact on the outcome of the assessment.** The vegetation was in a moderate to good condition and most species could be identified, although some species might have been missed because of the dense vegetation cover along the ridge footslopes and plateaus.

The following were concluded from the site visit and database studies:

- Vegetation units identified during the survey:
  - Degraded *Antidesma venosum* – *Caesalpinia decapetala* low forest – Medium sensitivity.
  - *Anthocleista grandiflora* – *Bridela micrantha* - *Albizia adianthifolia* forest – High Sensitivity.
- Drainage features – High sensitivity
  - Drainage channels & riparian woodland (ravines);
  - Valleybottom wetlands with channel
  - Exorheic depressions;
- According to the Limpopo Conservation Plan the proposed orchard footprints are in CBA1 areas, although only one of these areas were confirmed as CBA1 during the ecological surveys namely the Firebreak Block. The other blocks should classify as ESA2 zones or Other Natural Areas based on the state of the vegetation. The management objective for this area is to maintain ecosystem functionality and connectivity allowing for limited loss of biodiversity pattern.
- Areas associated with drainage channels and riparian woodland should be classified as ESAs, while the wetland areas and dams should be classified as CBA2.
- The degraded forest represents indigenous forest where the lower shrub stratum has become

invaded by alien invasive species. These areas have a Medium Sensitivity and development can be supported in the area provided certain mitigation measures are implemented. Where the clearance of the vegetation would cause protected trees or other fauna to be removed, permits should be obtained from the relevant authorities;

- The wetlands and riparian woodland associated with the rivers and riparian woodland (including instream dams) have a high sensitivity and should be preserved as important fauna and flora habitats;
- The pristine forests in the area have a High Sensitivity and represent important corridors that link mist-belt forests at higher altitudes with these lower-lying forests / sour bushveld.
- Negative impacts can be minimised by strict enforcement and compliance with an Environmental Management Plan which considers the recommendations for managing impacts detailed above.
- The conservation of corridors such as pristine forests, wetlands and riparian woodland that support red listed fauna habitats should be prioritized;
- All possible efforts must be made to ensure as little disturbance as possible to the sensitive habitats such as drainage channels during construction;
- Only necessary damage must be caused and, for example, unnecessary driving around in the veld or bulldozing natural habitat must not take place;
- Construction activities must remain within defined construction areas and the road servitudes. No construction / disturbance will occur outside these areas.

**The following are recommendations for the rivers, wetlands and riparian woodland in the area:**

- The vegetation associated with the water courses has a high sensitivity with a high conservation priority. No major alteration of these important drainage areas is recommended, especially considering it to form part of an important catchment as well as an important corridor for various fauna. **The potential to impact on the habitat is high and therefore a sufficient buffer zone of 32 meters is applicable for the development site or the floodline zone;**
- All construction and maintenance activities should be conducted in such a way that minimal damage is caused to the drainage features on site. **No development can be done within the floodline zone or within 500 meters of a wetland, or within 100 meters of a river, without a Water Use Licence.**

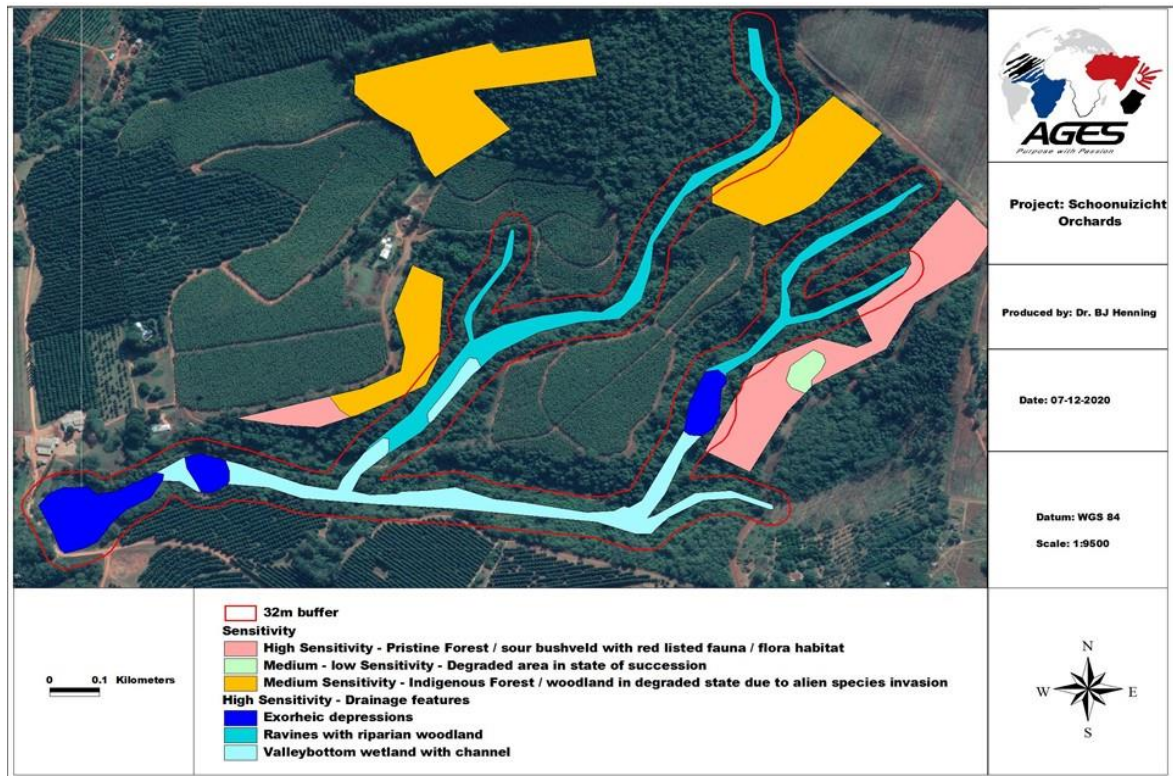


Figure 5. Sensitivity map

Provided that the proposed development and layout plans are consistent with the sensitivity map and take all the mitigation measures into consideration stipulated in this report, the planned development can be supported.

#### 4.2.2. Heritage Report Conclusion

From a heritage resources management point of view, there is no objection to the development. Monitoring during land clearance has been recommended as a mitigation measure.

The discovery of previously undetected subterranean heritage remains on the terrain must be reported to the Limpopo Heritage Authority or the archaeologist, which may require further mitigation measures.

#### 4.3. WATER SITUATION

Water will be sourced from the Registered Water Use for the properties – see Appendix G.2.

Annual water balance - Schoonuitzicht orchards			
Sources of water in m <sup>3</sup>			Totals (m <sup>3</sup> )
<b>Water Registration Certificates</b>			
<b>27064710/Ptn 3 _ 27064667/RE Ptn 37 Schoonuitzicht 10 LT</b>			
Legal water use from boreholes			167,280
Legal water use from Molozi river			439,500
Water allocation from dam			80,840
Total			<b>687,620</b>
<b>Water Requirements</b>			
	Ha	Need m <sup>3</sup> /ha/year	Totals (m <sup>3</sup> )
Current Macadamia orchards	131	1.3740	180
Current banana plantation	114	3.0701	350
Orchards to be developed	13	3.0701	40
Totals	258		570
Surplus / Deficit (-)			<b>687,050</b>

Table 1. Water balance calculation

## 5. SCREENING TOOL ASSESSMENT – APPENDIX G.1

A Screening Report generated by the National Screening Tool (Department of Environmental Affairs: <https://screening.environment.gov.za> on 07/12/2020) identified the following attributes potentially relevant to the project site and which require consideration:

### 5.1. RELEVANT DEVELOPMENT INCENTIVES, RESTRICTIONS, EXCLUSIONS OR PROHIBITIONS:

The development area falls within the:

- **Limpopo Conservation Plan** – Critical Biodiversity Area 1 (South African Biodiversity Institute). Only one of the proposed cropland footprint areas were confirmed as CBA1 during the ecological surveys namely the Firebreak Block. The other blocks should classify as ESA2 zones or Other Natural Areas based on the state of the vegetation.

### 5.2. ENVIRONMENTAL SENSITIVITY IDENTIFIED FOR THE DEVELOPMENT AREA:

- **Agriculture Theme**  
Sensitivity - Very high land capability  
The proposed land use is considered compatible with this theme.
- **Animal Species Theme**  
Sensitivity - Medium

*The connectivity of the project site to the remainder of the larger area is poor due to other*



orchards and roads. Of significance is the role of the river and riparian zone as zoogeographical dispersal corridor to the following mammals:

- The endemic red duiker has been documented on site as one of the few remaining endemic antelope species in the Soutpansberg region;
- The forest provides foraging grounds for various red data bat species such as the Botswanan Long-eared Bat, Welwitsch's Myotis, Temminck's Myotis and Rusty Pipistrelle.

**Listed fauna species for the project area (see Appendix D.1, Terrestrial Biodiversity Impact Assessment) according to the EIA screening tool:**

*Smithornis capensis* (African broadbill) - **Probability of occurrence on site** is Moderate due to the presence of low scrub and deciduous woodland as well as pristine forests; p 58.

*Nettapus auratus* (African pygmy goose) - **Probability of occurrence on site:** Confirmed population of pygmy geese occur at the Muirhead Dams and wetlands that forms part of the project area; p 59.

*Ciconia nigra* (Black stork) - **Probability of occurrence on site:** Moderate due to the presence of forests and wetlands on site; p 59.

*Crociodura maquasiensis* (Makwassie Musk Shrew) - **Probability of occurrence on site:** Moderate to low due to the presence of wetlands in the area, although the Soutpansberg subpopulation occur in Montane Grasslands that do not occur on site; p 60.

*Cercopithecus albogularis schwarzi* (Samango monkey) - **Probability of occurrence on site:** Moderate due to the presence of forests on site; p 61-62.

*Dasymus robertsi* (African Marsh Rat) - **Probability of occurrence on site:** Moderate to low due to the presence of wetlands in the area although population was not confirmed; p 60-61.

*Anthene minima minima* (little hairtail butterfly) - **Probability of occurrence on site:** Very Low as none of the habitat for this taxon appears on site. No sign of the species was documented during the surveys; p 62.

*Thoracistus viridicrus* (Green-kneed Seedpod Shieldback) - **Probability of occurrence on site:** Moderate due to the presence of mountainous areas; p 62-63.

- **Aquatic Biodiversity Theme**

Sensitivity - Very High

The vegetation associated with the water courses has a high sensitivity with a high conservation priority. No major alteration of these important drainage areas is recommended, especially considering it to form part of an important catchment as well as an



*important corridor for various fauna. The potential to impact on the habitat is high and therefore a sufficient buffer zone of 32 meters is applicable for the development site or the floodline zone.*

*All construction and maintenance activities should be conducted in such a way that minimal damage is caused to the drainage features on site.*

**No development can be done within the floodline zone or within 500 meters of a wetland, or within 100 meters of a river, without a Water Use Licence; p 44 - 45.**

- **Archaeology and Heritage Theme**

Sensitivity - Low

*A Phase I Scoping Heritage Assessment was conducted and it is concluded that there is no objection to the proposed orchards development. The sighting of a burial site (**Site Exigo-SCH-BP01**) found outside the development footprint will not be impacted on by the proposed development, provided mitigation measures as indicated are implemented. General monitoring of the development progress by an ECO or by the heritage specialist is recommended for all stages of the project. See Appendix D.2.*

- **Civil Aviation Theme**

Sensitivity - High

*The project site is 21 km west of the PR Mphephu aviation aerodrome. There are no discernible factors/risks connecting the project site to air traffic, either in terms of proximity or infrastructure. It is concluded that sensitivity is Low.*

- **Defence Theme**

Sensitivity - Low

*There are no indicators that any linkages exist between the project site and the National Defence Forces. It is concluded that sensitivity is Low.*

- **Palaeontology Theme**

Sensitivity - Medium (as per Screening Tool)

*The project site is situated within the grey zone on the SAHRIS map and no palaeontological study is required (Sensitivity: Insignificant/zero)*

- **Plants species Theme**

Sensitivity - Medium and High for sensitive species.

*No red data or protected species were identified on the proposed development site by the specialist. See Appendix D.1, Terrestrial Biodiversity Impact Assessment p 46 - 48.*

- **Terrestrial Biodiversity Theme**

Sensitivity - Very High

*The project site is situated within a Critical Biodiversity Area 1 (high sensitivity) and this section was excluded from the development. The remainder of the site has been classified as Ecological Support Area 2 and Other Natural Area respectively. See Appendix D.1, Terrestrial Biodiversity Impact Assessment p 73.*

The Screening Report request the submission of specialist assessments for:

- **Landscape/Visual Assessment**  
– *this assessment is not deemed necessary as the proposed development is compatible with adjacent land uses.*
  
- **Hydrology Impact Assessment**  
– *no portion of the proposed development will have an impact on rivers or streams provided that buffers and mitigation measures to protect waterbodies, as stipulated in the Terrestrial Biodiversity Impact Assessment Report (Appendix D.1, p. 44 – 45) are implemented. Water abstraction will not impact on hydrology as the volume of water to be abstracted is far below the existing Registered Water Use for the farms – Table 1 and Appendix G.2.*
  
- **Socio-economic Assessment**  
– *the socio-economic environment has been discussed in Section 9 (b)/p.8 of the Consultation Basic Report.*

## 6. PUBLIC PARTICIPATION PROCESS

### 6.1. PROCESS FOLLOWED

#### 6.1.1. Newspaper Advertisement

A notice was placed in the *Zoutpansberger* newspaper of 19 November 2020. See attached proof in APPENDIX E.

#### 6.1.2. Site Notice (Environmental Impact Assessment Process)

A site notice was placed at the entrance to the farm along the R524 on 19 November 2020. See attached APPENDIX E for proof of placement of this notice.

#### 6.1.3. Background Information Document:

Background Information Documents were provided to the following government departments:

Name of Authority informed:	Comments received (Yes or No)
Department Agriculture	No
Department Agriculture, Land Reform and Rural Development	No
Department of Water Affairs	No
Vhembe District Municipality	No
Makhado Local Municipality	Yes
Department of Rural Development & Land Reform	No
Limpopo Department of Economic Development, Environment and Tourism (LEDET)	No

Background information documents were provided to all directly adjoining landowners.

The Public Participation Plan required in accordance with Regulation no R650 of 5 June 2020 namely the “Directions regarding measures to address, prevent and combat the spread of Covid -19 relating to National Environmental Management permits and licences” was submitted to LEDET and was approved.

Copies of the Public Participation Plan, Background Information Document, proof of distribution as well as comments received and responses thereto are included in Appendix E.

Hard copies of the CBAR will be submitted to LEDET, DWS and the Makhado Local Municipality. Electronic links will be sent to DALRRD and Vhembe District Municipality as well as all directly adjoining landowners and other interested and affected parties. The CBAR will be available for comment from 26 January 2021 – 25 February 2021.

## **7. CONSIDERATION OF ALTERNATIVES**

### **7.1.1. Site Alternative**

Muirhead & Roux CC has been farming on these properties for generations and wish to expand the current macadamia and banana orchards into the study areas. An ecological study was conducted to determine the ecological sensitivity of the site.

### **7.1.2. Process alternatives**

The best farming option is macadamia and/or banana trees as the soils and climate are very suitable as proved by the existing orchards on the remainder of the farms. Dripper irrigation or micro-jets will be used to optimise water use, should irrigation be required.

### **7.1.3. No Go Alternative**

The portion of land would remain in its current state, undeveloped and with continued invasion of alien plant species and increased fire and safety risk. Illegal poaching of forest animals occur on the farm and control and prevention of poaching is hampered by the dense vegetation resulting from alien encroachment and absence of productive land use activities.

## **8. CONCLUSION**

A Basic Environmental Impact Assessment is required to obtain the necessary environmental authorisation for the proposed project.

The Limpopo Department of Economic Development, Environment and Tourism is kindly requested to review the report for decision making to approve or reject environmental authorisation.

## 9. BIBLIOGRAPHY

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