

GALAGO ENVIRONMENTAL

Biodiversity & Aquatic Specialists

638 Turf Street

Wingate Park, 0180

Tel: 012-345 4891

Fax: 086 675 6136

Cell: 082 322 5688

vanessam@lantic.net

www.galagoenvironmental.co.za



Flora Habitat scan

of

**The remainder of the farm Vlakplaats 138-IR
(also known as Mapleton X 10)**

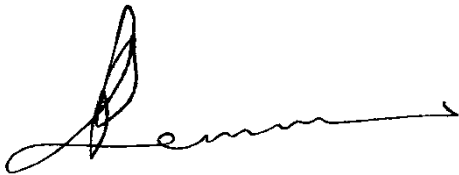
March 2017

Report author: Mrs. P. Lemmer (B.Sc., Pr.Sci.Nat.)

DECLARATION OF INDEPENDENCE

I, Petro Lemmer (440129 0025 085) declare that I:

- am committed to biodiversity conservation but concomitantly recognize the need for economic development. Whereas I appreciate the opportunity to also learn through the processes of constructive criticism and debate, I reserve the right to form and hold my own opinions and therefore will not willingly submit to the interests of other parties or change my statements to appease them
- abide by the Code of Ethics of the S.A. Council for Natural Scientific Professions
- act as an independent specialist consultant in the field of botany
- am subcontracted as specialist consultant by Galago Environmental CC for the proposed Mapleton Extension 10 development project described in this report
- have no financial interest in the proposed development other than remuneration for work performed
- have or will not have any vested or conflicting interests in the proposed development
- undertake to disclose to Galago Environmental CC and its client as well as the competent authority any material information that have or may have the potential to influence the decision of the competent authority required in terms of the Environmental Impact Assessment Regulations, 2014.



Petro Lemmer Pr.Sci.Nat (400567/15)

TABLE OF CONTENTS

1.	INTRODUCTION.....	4
2.	STUDY AREA	4
2.1	Regional vegetation	4
2.2	The study site.....	4
3.	METHODS	5
4.	FINDINGS	5
5.	MITIGATING MEASURES	7
6.	CONCLUSION	7
7.	REFERENCES.....	8
	ANNEXURE A: Red- and Orange List* plants of the 2628AC q.d.s.....	9

FIGURES:

Figure 1:	Locality map of the study area	4
Figure 2:	Provisional vegetation study units identified on the study site	5
Figure 3:	A wide swathe of alien species along Luvuyo Street.....	6
Figure 4:	Secondary grassland dominated by <i>Eragrostis curvula</i> & <i>Hyparrhenia hirta</i>	6
Figure 5:	Vegetation sensitivity map.....	7

1. INTRODUCTION

Galago Environmental was appointed to scan the vegetation on the Remainder of the farm Vlakplaats 138-IR (also known as erven 832 – 863 and 865 – 866 Mapleton X10), scheduled for residential development. The objective is to determine whether Red List or Orange List species were likely to occur on the site and to determine whether a full vegetation survey is necessary.

2. STUDY AREA

2.1 Regional vegetation

The study site lies in the quarter degree square 2628AC (Alberton). Mucina & Rutherford (2006) classified the area as Carltonville Dolomite Grassland, a species-rich grassland with shallow soil and slightly undulating plains on dolomite dissected by prominent rocky chert ridges. This grassland falls within a warm-temperate summer-rainfall region with high summer temperatures and severe frequent winter frosts.

This vegetation unit is considered vulnerable. Its conservation target is 24%. Small parts of this unit are conserved in statutory reserves and a few private conservation areas. Almost a quarter of the unit is already transformed by cultivation, urbanization, mining and the building of two dams.

2.2 The study site

The 3,6822 ha study site lies north-east of, and abuts, the N3 highway just south of the Leondale interchange (Figure 1). According to the GDARD C-Plan 3.3 the site is not situated within a Critical Biodiversity Area or an Ecological Support Area.

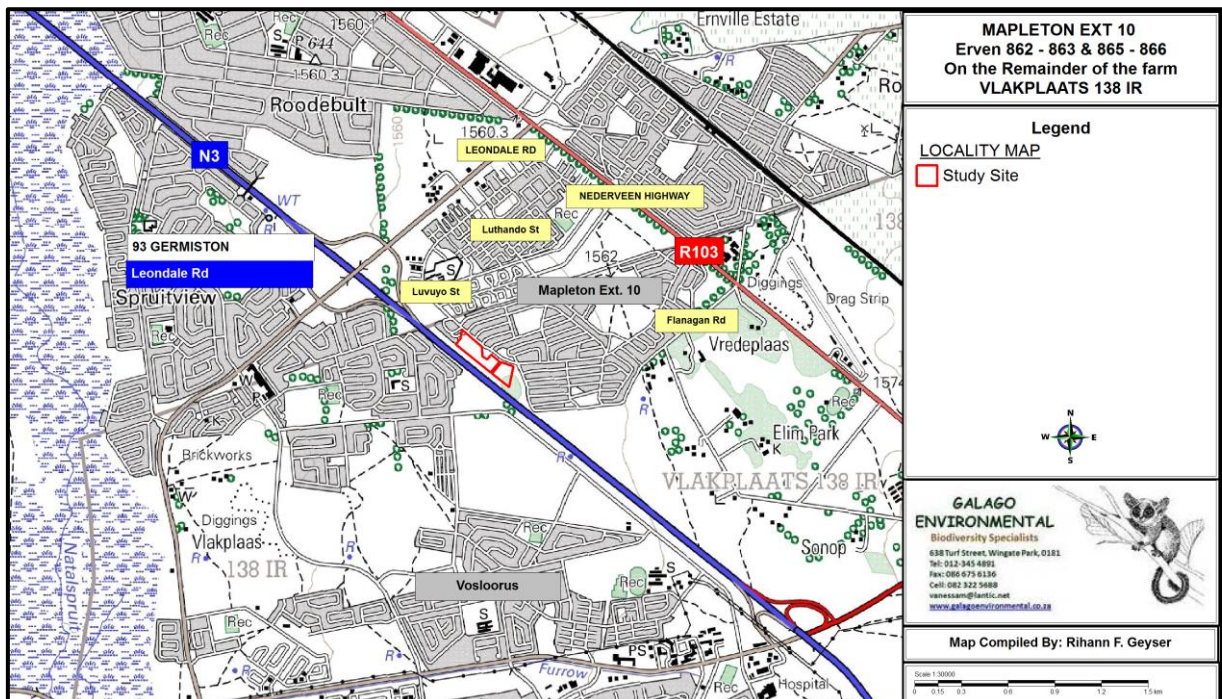


Figure 1: Locality map of the study area

3. METHODS

A desktop study of the habitats of the Red List and Orange List species known to occur in the area was done before the site visit. Information about the Red List and Orange List plant species that occur in the area was obtained from GDARD. The Guidelines issued by GDARD to plant specialists were consulted to ascertain the habitat of the Red- and Orange List species concerned. Various Acts and Ordinances were consulted about the protected trees and other protected plant species that might occur on the site (Section 7). The various publications (Section 7) as well as the local herbaria were consulted about the habitat preferences of the species concerned.

The list of plants recorded in the 2628AC quarter degree square was obtained from SANBI and consulted to verify the record of occurrence of the plant species expected to be seen on the site. The important taxa listed by Mucina and Rutherford (2006) were also taken into account. Locality maps were obtained from Planet GIS and information about the Critical Biodiversity Areas and Ecological Support Areas were obtained from the GDARD C-Plan 3.3.

The study site was visited on 9 March 2017 to determine whether the site and the neighbouring properties within 200 meters of the boundaries of the site have suitable habitat for the Red List species and other protected species known to occur in the quarter degree square and whether a vegetation survey was deemed necessary. The vegetation on the site was examined to identify provisional vegetation study units (Figure 2).

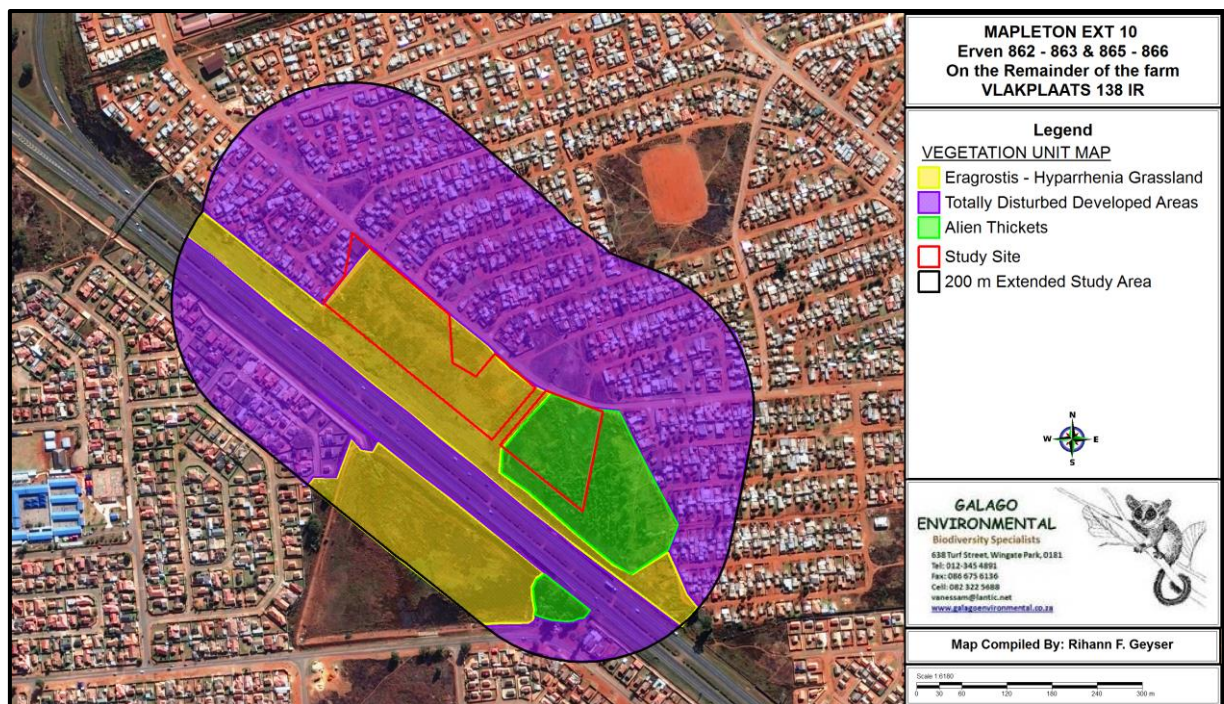


Figure 2: Provisional vegetation study units identified on the study site

4. FINDINGS

Twelve Red List plant species and two Orange List species are known to occur in the 2628AC quarter degree square, one of the Red List species within 5 km of the site. The study site does not have suitable habitat for any of these species (Annexure A indicates the Red List species previously found within 5 km of the site). No Protected trees listed in terms of the National Forests Act, 1998 (Act No. 84 of 1998) or protected plants listed in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) are known to occur in the 2628AC quarter degree square.

A broad swathe of alien species occurs along Luvuyo Street in an area where shallow excavations had been made. A small shallow pan-like depression occurs in the southern corner of the site and a thicket of alien trees, mostly *Eucalyptus* sp. has invaded erf 862 of the site. The rest of the site comprises secondary *Eragrostis* – *Hyparrhenia* grassland on very disturbed soil.

The habitat is not suitable for any of the Red List or orange List species known to occur in the 2628AC q.d.s.



Figure 3: A wide swathe of alien species along Luvuyo Street



Figure 4: Secondary grassland dominated by *Eragrostis curvula* and *Hyparrhenia hirta*

5. MITIGATING MEASURES

The following mitigation measures are proposed by the specialist:

- All alien invasive species should be removed from the site.

The following mitigation measures were developed by GDARD 2014 (Department of Agriculture and Rural Development, Biodiversity Management Directorate) and are applicable to the study site:

- An appropriate management authority (e.g. the body corporate) that must be contractually bound to implement the Environmental Management Plan (EMP and Record of Decision (ROD) during the operational phase of the development should be identified and informed of their responsibilities in terms of the EMP and ROD.
- Only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but would otherwise be destroyed during clearing for development purposes, should be incorporated into landscaped areas. Forage and host plants required by pollinators should also be planted in landscaped areas.
- In order to minimize artificially generated surface storm water runoff, total sealing of paved areas such as parking lots, driveways, pavements and walkways should be avoided. Permeable material should rather be utilized for these purposes.

6. CONCLUSION

The flora habitat scan found that most of the site comprises secondary *Eragrostis* – *Hyparrhenia* grassland on very disturbed soil. A wide swathe of alien forbs occurs along Luvoyo Street and a thicket of alien trees occur on erf 862. The study site is not considered sensitive. A vegetation survey is not deemed necessary.

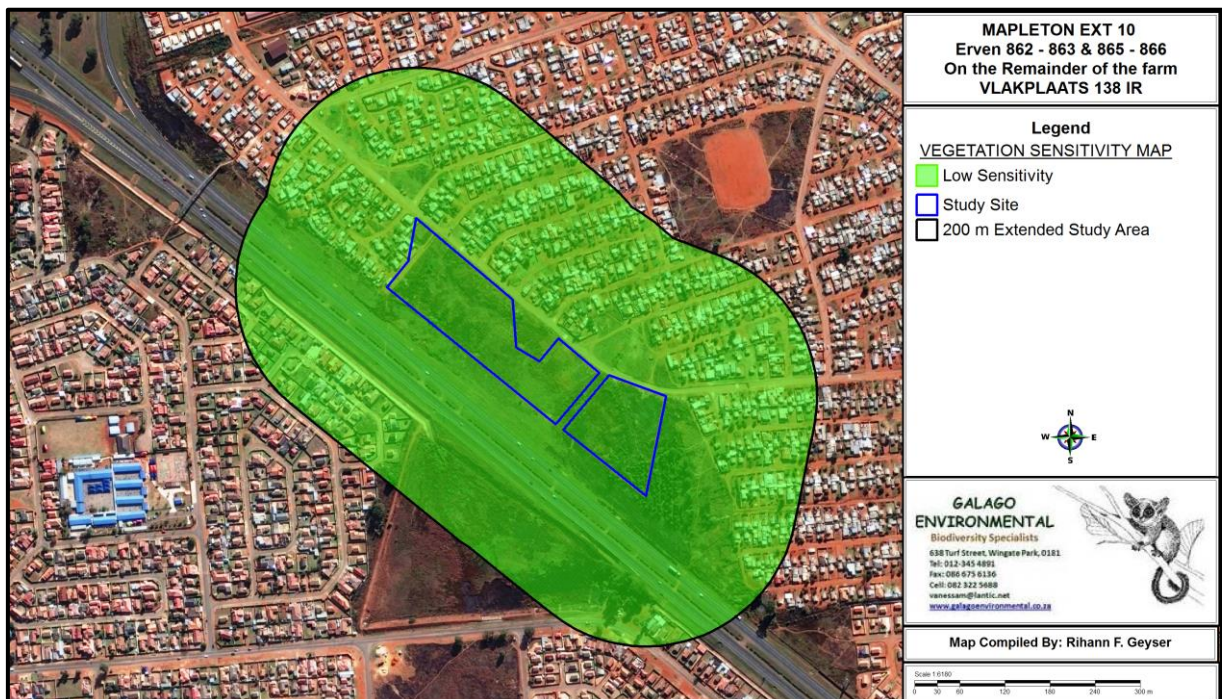


Figure 5: Vegetation sensitivity map

7. REFERENCES

- GDARD (Gauteng Department of Agriculture and Rural Development). Gauteng Conservation Plan: Version 3.1.0.12.
- GDARD, 2014. *Requirements for biodiversity assessments Version 3*. Biodiversity Management Directorate, Department of Agriculture and Rural development.
- GDARD, 2014. *Red List Plant Species Guidelines*. Compiled 26 June 2006 and updated in September 2014. Biodiversity Management Directorate, Department of Agriculture and Rural development.
- Mucina, L. & Rutherford, M.C. (eds). 2006. *The vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

ANNEXURE A: Red- and Orange List* plants of the 2628AC q.d.s.

Species	Flower season	Suitable habitat	Priority group	Conserv status	PRESENT ON SITE
<i>Argyrolobium campicola</i>	Nov-Feb	Highveld grassland	A3	Near threatened ¹	Habitat not suitable
<i>Bowiea volubilis</i> subsp. <i>volubilis</i>	Sep-Apr	Shady places, steep rocky slopes and in open woodland, under large boulders in bush or low forest.	B	Vulnerable ²	Habitat not suitable
<i>Cineraria longipes</i>	Mar-May	Grassland, on koppies, amongst rocks and along seep lines exclusively on basalt on south-facing slopes.	A1	Vulnerable ¹	Habitat not suitable
<i>Delosperma purpureum</i>	Nov-Apr	South-facing slopes, grows in shallow soils among quartzitic rocks of crystalline or coglamoratte type in open or broken shade rarely in shade, in grassland with some trees. .	A1	Endangered ¹	Habitat not suitable
<i>Dioscorea sylvatica</i>	Oct-Jan	Wooded places with fair to reasonably good rainfall, such as the moister bushveld areas, coastal bush and wooded mountain kloofs.	B	Vulnerable ²	Habitat not suitable
<i>Eucomis autumnalis</i>	Nov-Apr	Damp open grassland and sheltered places.	N/A	Declining ²	Habitat not suitable
<i>Eulophia coddii</i>	Early Dec	Steep hillsides on soil derived from sandstone, grassland or mixed bush.	A2	Vulnerable ¹	Habitat not suitable
<i>Habenaria mossii</i>	Mar-Apr	Open grassland on dolomite or in black sandy soil.	A1	Endangered ¹	Habitat not suitable
<i>Holothrix micrantha</i>	Oct	Terrestrial on grassy cliffs, recorded from 1500 to 1800m.	A1	Endangered ¹	Habitat not suitable
<i>Holothrix randii</i>	Sep-Jan	Grassy slopes & rock ledges, usually southern aspects.	B	Near Threatened ²	Habitat not suitable
<i>Hypoxis hemerocallidea</i>	Sep-Mar	Occurs in a wide range of habitats. Grassland and mixed woodland.	N/A	Declining ²	Habitat not suitable
<i>Khadia beswickii</i>	Jul-Apr	Open areas on shallow surfaces over rocks in grassland.	A1	Vulnerable ¹	Habitat not suitable
<i>Lithops lesliei</i> subsp. <i>lesliei</i>	Mar-Jun	Arid grasslands in rocky places, growing under the protection of surrounding herbs and grasses.	B	Near threatened ²	Habitat not suitable
<i>Stenostelma umbelluliferum</i>	Sep-Mar	Deep black turf in open woodland mainly in the vicinity of drainage lines.	A3	Near threatened ¹	Habitat not suitable

¹) global status

²) national status

* Orange listed plants have no priority grouping and are designated 'N/A'

▲ Has been recorded from the farm on which the study site is situated / within 5km of the study site. Should suitable habitat be present, it is highly likely that this species occur on the study site.