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Flora Habitat scan

of

**Kutalo Robert Strachan Station,
South Germiston X 25 on Portion 103
of the farm Driefontein 91-IR**

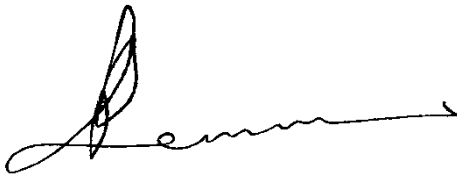
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Report author: Mrs. P. Lemmer (B.Sc., Pr.Sci.Nat.)

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 Kutalo Station 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)

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1. INTRODUCTION

Galago Environmental was appointed to scan the vegetation on Kutalo Robert Strachan Station, South Germiston X 25 on Portion 103 of the farm Driefontein 91-IR, 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 proposed site lies in the quarter degree square 2628AA (Johannesburg). Mucina & Rutherford (2006) classified the area as Soweto Highveld Grassland, a gently to moderately undulating landscape on the Highveld plateau supporting short to medium high, dense, tufted grassland dominated almost entirely by *Themeda triandra*, and accompanied by a variety of other grasses. It is in places undisturbed, with scattered small wetlands, narrow stream alluvia and pans. Occasional ridges or rocky outcrops interrupt the continuous grassland cover. This vegetation unit comprises shale, sandstone or mudstone, or the intrusive Karoo Suite dolerites which feature prominently. The soil is deep and red on the flat plains.

The Soweto Highveld Grassland vegetation unit has summer rainfall and cool-temperate climate with high extremes between maximum summer and minimum winter temperatures, frequent frosts and large thermic diurnal differences, especially in autumn and spring. This vegetation unit is considered endangered. Its conservation target is 24%. Only few patches are conserved in statutory reserves and a few private nature reserves. Almost 50% of the unit is already transformed by cultivation, urbanization, mining and road infrastructure and some areas have been flooded by dams.

2.2 The study site

The 4,7690 ha study site lies north-east of, and abuts, the railway line at Kutalo Station in Germiston (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.

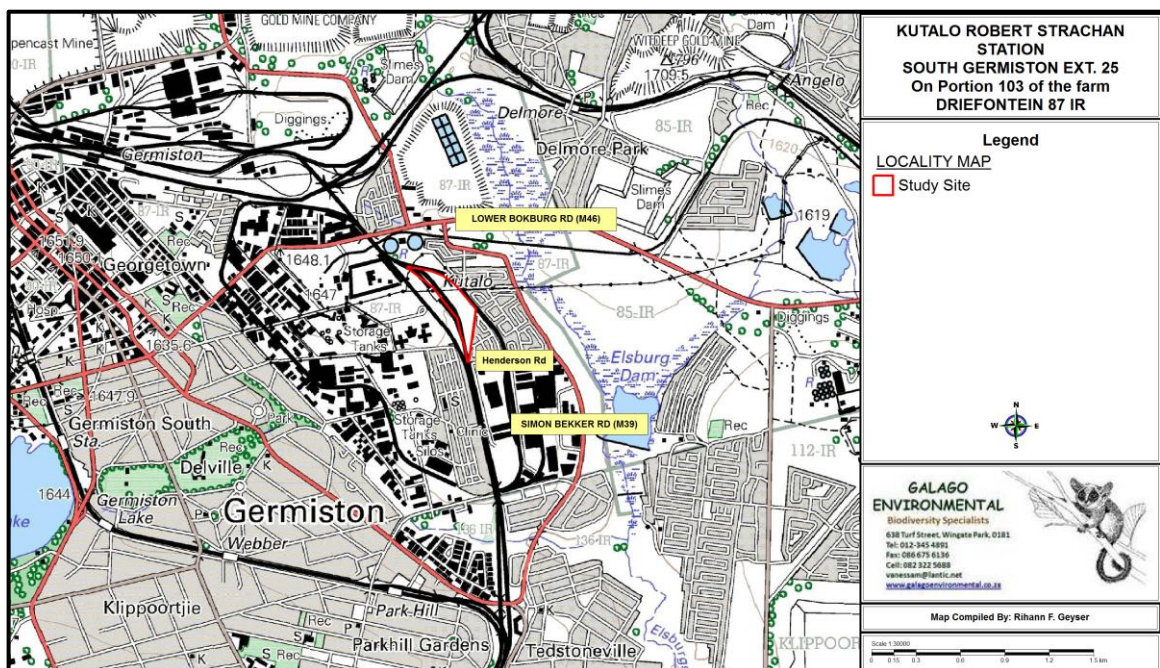


Figure 1: Locality map of the study area

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 2628AA 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).

4. FINDINGS

Eleven Red List plant species and four Orange List species are known to occur in the 2628AA quarter degree square. The study site does not have suitable habitat for any of these species (Annexure A). One Protected tree, listed in terms of the National Forests Act, 1998 (Act No. 84 of 1998) is known to occur in the 2628AA quarter degree square (Annexure B), but the study site does not have suitable habitat for this species. No protected plants listed in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) are known to occur in the 2628AA quarter degree square.

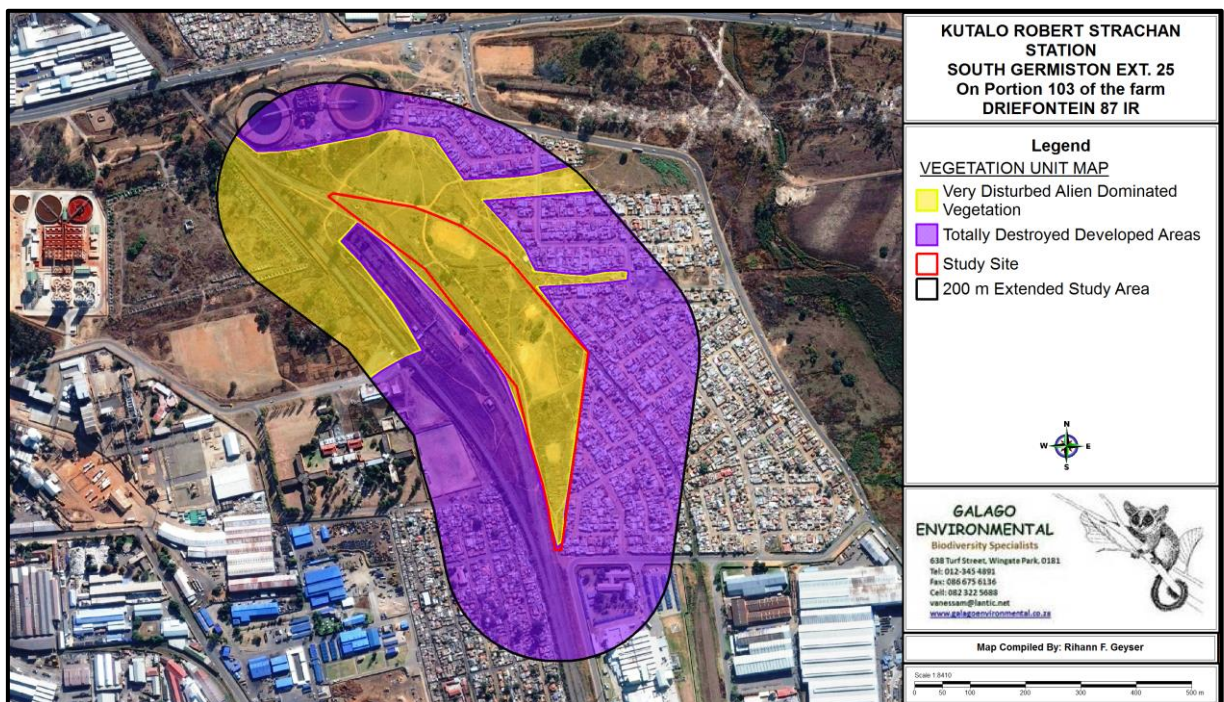


Figure 2: Provisional vegetation study units identified on the study site

The study site comprises very disturbed alien-dominated vegetation (Figure 3). Two cleared areas are used as sports fields (Figure 4). A few *Acacia karroo* trees occur.



Figure 3: Very disturbed alien-dominated vegetation



Figure 4: Cleared area used as sports field

5. MITIGATING MEASURES

The following mitigation measures are proposed by the specialist:

- All alien invasive species should be removed from the site.
- Where possible, trees naturally growing on the site should be retained as part of the landscaping. Measures to ensure that these trees survive the physical disturbance from the development should be implemented. A tree surgeon should be consulted in this regard.

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

During the flora scan it was found that the study site is much disturbed and not considered sensitive. A vegetation survey is not deemed necessary.

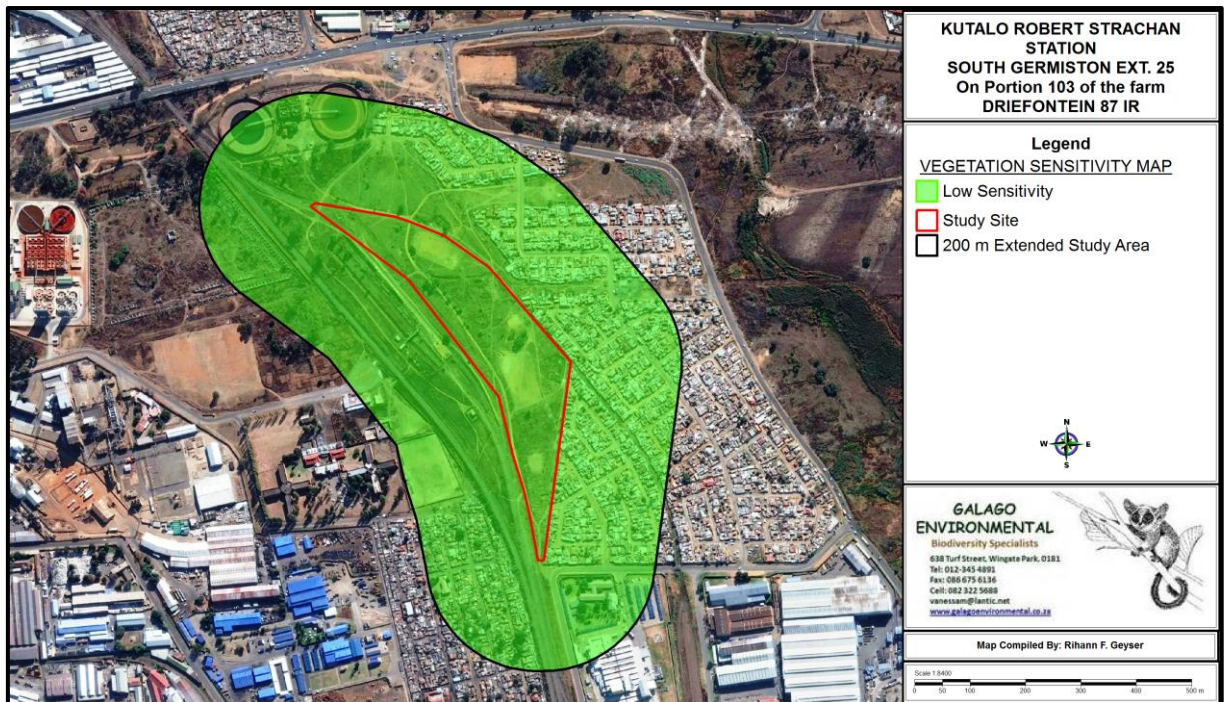


Figure 5: Vegetation sensitivity map

7. REFERENCES

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- 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 2628AA q.d.s.

Species	Flower season	Suitable habitat	Priority group	Conserv status	PRESENT ON SITE
<i>Adromischus umbraticola</i> subsp <i>umbraticola</i>	Sep-Jan	Rock crevices on rocky ridges, usually south-facing, or in shallow gravel on top of rocks, but often in shade of other vegetation.	A2	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>Callilepis leptophylla</i>	Aug-Jan & May	Grassland or open woodland, often on rocky outcrops or rocky hillslopes.	N/A	Declining ²	Habitat not suitable
<i>Cineraria austrotransvaalensis</i>	Mar-Jun	Among rocks on steep slopes of hills and ridges as well as at the edge of thick bush or under trees, on all aspects and on a range of rock types quartzite, dolomite & shale. 1400 – 1700m	A3	Near threatened ¹	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>Eucomis autumnalis</i>	Nov-Apr	Damp open grassland and sheltered places.	N/A	Declining ²	Habitat not suitable
<i>Gunnera perpensa</i>	Oct-Mar	In cold or cool continually moist localities, mainly along upland streambanks.	N/A	Declining ²	Habitat not suitable
<i>Habenaria bicolor</i>	Jan-Apr	Well-drained grassland, at about 1600m.	B	Near Threatened ²	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>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'

ANNEXURE B: PROTECTED TREES

Trees of the 2628AA q.d.s. that are protected trees in terms of section 15(1) of the National Forests Act, 1998

Species	Presence on site
<i>Pittosporum viridiflorum</i>	Habitat not suitable