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Tholoana Sustainable Development and Environmental Consultants
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ATTENTION: Vusmuzi Hlatshwayo
Snowy Mothiba

By email

Dear Sir/Madam

**INITIAL ECOLOGICAL ASSESSMENT –PROPOSED LANDFILL AND WASTE MANAGEMENT SITE PHUTHADITJHABA,
MALUTI0A-PHOFUNG LOCAL MUNICIPALITY FREE STATE**

Eco Assessments was approached by Tholoana Consulting to ascertain the ecological features & sensitivities of a site located south east of the town of Phuthaditjhaba, to motivate if further ecological studies would be necessary for the site.

BACKGROUND

The project entails the establishment of a new landfill site, which will be located on Portion 110 of the Farm Witsieshoek 1903 at Phuthadithjaba, Maluti-A-Phofung Local Municipality. The landfill site will have the following:

- Recycling facility
- Compost facility
- Area allocated for inert waste proposal.

The estimated sized of the landfill site is about 20 hectares.

LOCATION

Phuthaditjhaba is located close to the Lesotho border in the Free State (Figure 1). Towns to the west and east of Phuthaditjhaba are Clarens and Harrismith respectively. The main roads to Phuthaditjhaba are the R712 and the R57. The proposed development site is located east of the town. The total area of the property investigated is 20 ha in extent.

NATURAL FEATURES AND LAND USE

The site is located on the crest of a hill that is bordered by streams along its western, northern and eastern sides (Figure 2 - Red). Typical to the area, the streams have formed eroded dongas over time which has been vegetated in some areas. Landscape features in the area include sandstone cliffs and low mountainous areas at the foothills of the Drakensberg.

Closer to the site and located down towards the streams, the landscape is characterized by flat rocky outcrops (Figure 2 – yellow) and natural grassland. Also very obvious on the site, in-between the flat rocky areas are signs of present and past ad hoc sand “mining” activities (Figure 2 – purple). This has led to several vehicle tracks on the

site. An area around the site (Figure 2 – Orange) seems to have been used for agricultural purposes in the past such as ploughing. Presently grazing was observed on the site.

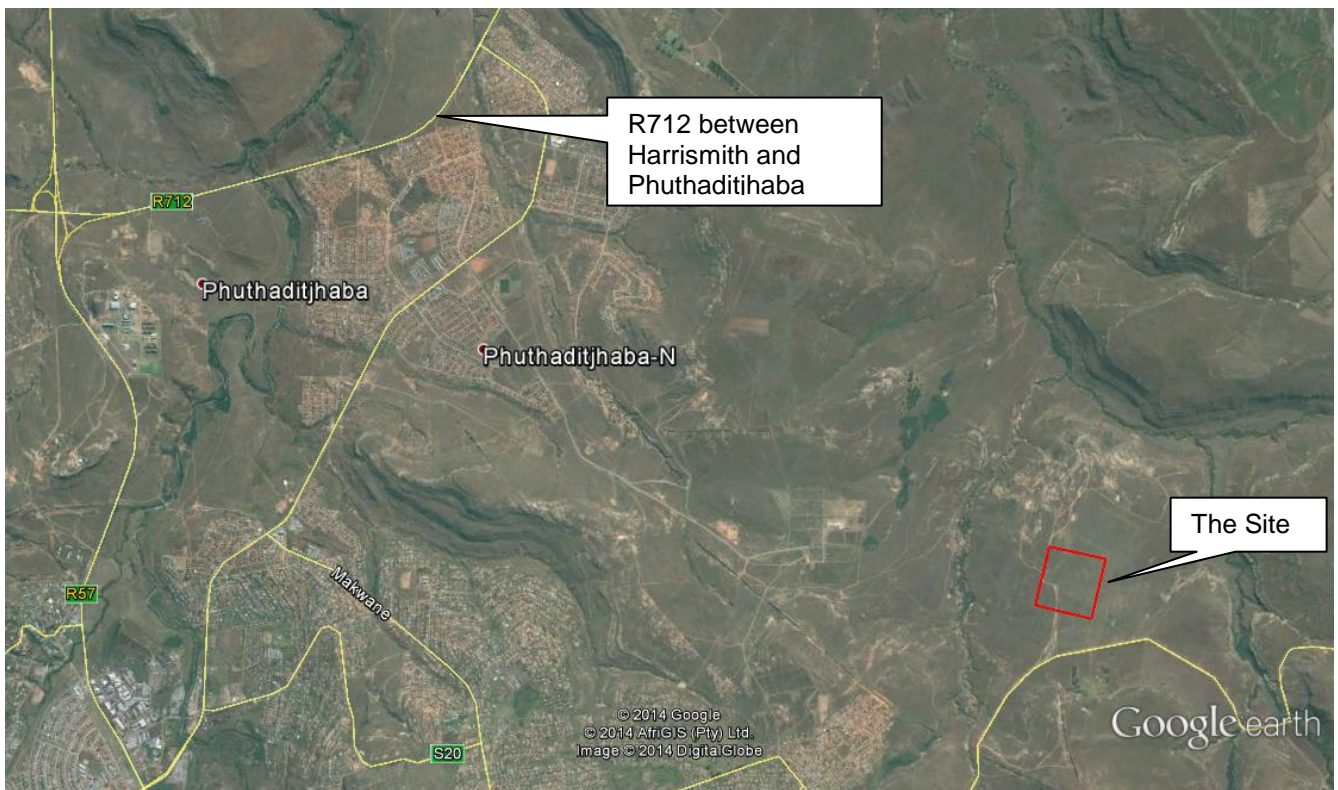


Figure 1 Aerial locality map

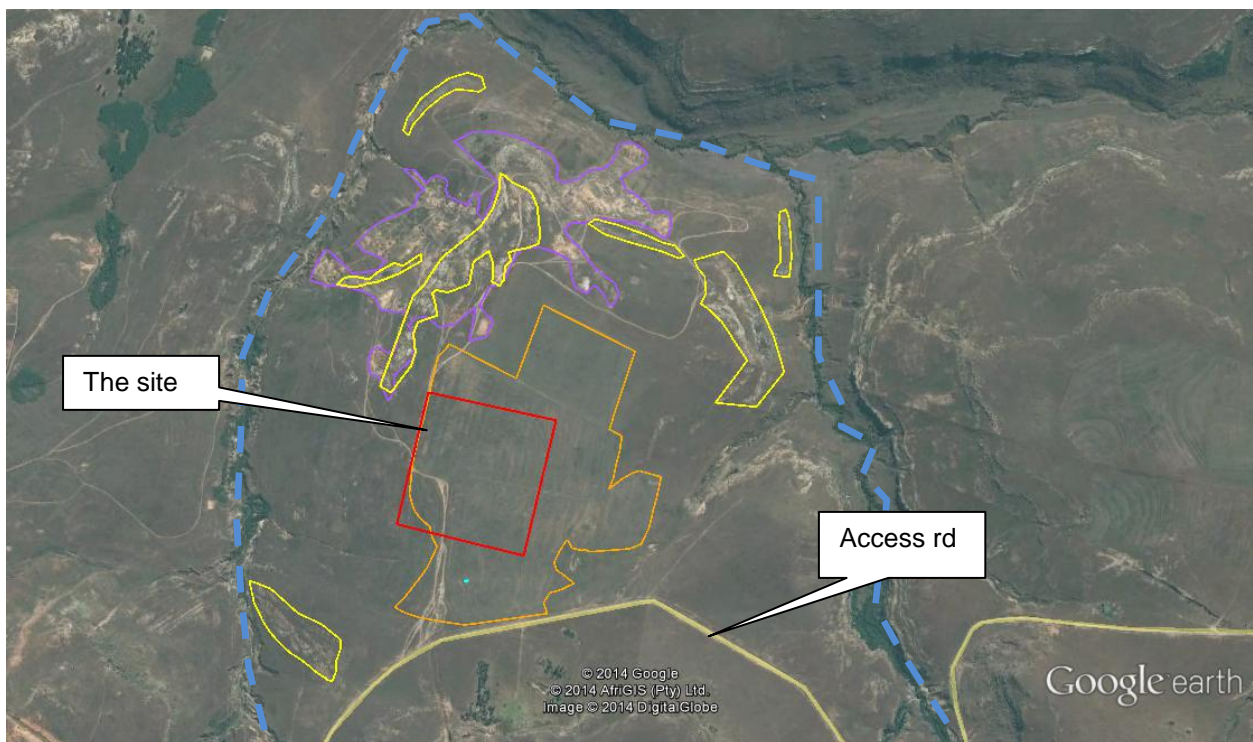


Figure 2 Aerial site map

VEGETATION TYPES

The site is located on the border of two main vegetation types namely the Northern Drakensberg Highland Grassland (Gd5) – in the south, and the Eastern Free state Sandy grassland (Gm4) in the north. The status of the former vegetation type is Least Threatened due to protection in the uKhahlamba Drakensberg Park and the Golden Gate Highlands National Park. The latter vegetation type is Endangered as only 2% is statutorily conserved in the Golden Gate Highlands National Park. Almost half has been transformed by cultivation and dams.

FAUNA AND FLORA

Several databases were assessed as a desktop assessment in order to assess if any sensitive ecological feature could be affected. 2828DB

Flora

13 (thirteen) species in the Free State has an IUCN conservation status, of which 2 are Endangered, 7 are Vulnerable and 4 are Near Threatened. The proposed site for the landfill site was not considered optimal for scarce species since the habitat has been overgrazed and may have been ploughed in the past taking into consideration the contour walls present on site. Habitat *around* the proposed landfill site may lend itself more towards the presence of scarcer plants. These were associated with rocky areas (Yellow Figure 2) where ploughing and grazing impacts may have been limited over time and where scarcer plants may have survived. These habitats may have even survived the informal mining activities that are happening in-between the rocky areas.

Common plant species observed on site included:

Stoebe vulgaris	Oxalis sp.	Eragrostis racemosa
Helichrysum aureonitens	Gazania krebsiana	Nemesia denticulata
Harporchloa falx	Helichrysum nudifolium	Solanum panduriforme
Senecio erubescens	Helichrysum rugulosum	Vernonia natalensis
Eragrostis gummiflua	Melinis nerviglumis	Helichrysum chionoshaerum
Tephrosia capensis	Eragrostis capensis	Themeda triandra
Sporobolus africanus	Wahlenbergia huttonii	Felicia muricata
Helichrysum pilosellum	Delosperma obtusum	Senecio sp.
Felicia filifolia		

Mammals

22 Mammal species in the Free State have an IUCN conservation status. The proposed development site only provides short grassland as habitat for mammal species. No riverine area is included and no rocky areas. Subsequently it is unlikely that any of these species will directly be threatened by the proposed development. Small species that move slowly such as South African Hedgehog may however be threatened by immediate construction activities.

Birds

The SABAP2 (South African Bird Atlas Programme 2) recorded 40 species for the 9 x 9 km pentad into which the site falls. This should not be seen as a measure of the bird species richness of the area, as this area has not been surveyed extensively through this programme. Bird species that were observed on site during the assessment that would need attention, were the Southern Bald Ibis *Geronticus calvus* (Vulnerable) and the White-bellied Korhaan *Eupodotis cafra* (Vulnerable) or Blue Korhaan *Eupodotis caerulescens* – to be confirmed.

Bald Ibis *Geronticus calvus* (Vulnerable)

Preferred habitats for this species are high rainfall, sour and alpine grasslands, characterized by an absence of trees and a short, dense grass layer.

White-bellied Korhaan *Eupodotis cafra* (Vulnerable)

The habitat of this species is described as tall, fairly dense grassland in either open or lightly wooded areas. Distribution maps indicate that the site is on the edge of its area of occurrence.

Blue Korhaan *Eupodotis caerulescens* (Near Threatened)

This species inhabits open, fairly short grassland in the grassland biome but also in a mixture of grassland and Karoo dwarf shrubland.

Personal communication with Geoff Lockwood (Ornithologist) confirmed that such sightings would need to be further investigated to determine the density of the populations in the area. Response as to the way forward is presently awaited from him.

Amphibians and Reptiles

The Red Data book of Frogs in SA, Lesotho and Swaziland indicate that no frogs with an IUCN sensitivity rating occur in the study area (Minter et al 2004). 49 species of reptiles were found for the locus 2828B and 2828D in the virtual museum of the Animal Demographic Unit of the University of Cape Town. From these species, the following species have an IUCN conservation status:

These are:

Lang's Crag Lizard - Near threatened

Spiny crag lizard - Near Threatened

Giant Girdled Lizard - Vulnerable

Breyer's Long-tailed Seps - Vulnerable

Cottrell's Mountain Lizard - Near threatened

Drakensberg Dwarf Chameleon - Near threatened









Lang's Crag Lizard (*Pseudocordylus langi*) is restricted to the rim of the escarpment and its summit in the vicinity of Mont-aux-Sources and Nemahadi Pass in QwaQwa and the Spiny Crag Lizard (*Pseudocordylus spinosus*) is found nearby along the Sentinel trail (Bates, 2005). Both species are largely protected by their relatively inhospitable habitat and rupicolous (living on or amongst rocks) nature although they may be easily collected and exploited for the pet trade. Both these species have been recorded for the 2828DB grid in which the site is located and therefore might occur in the vicinity of the site.

SENSITIVITY TABLE

Sensitivity class	Presence on site Y/N	Sensitivity class H/M/L
Primary grassland/vegetation	N	M
Red listed flora	N	L
Red listed fauna	Y	H
Ridge	N	Low
Cave	N	Low
Wetland	N	Low
River/Stream	N	Low
River stream crossing –access road to site	Y	M
Ecological function (other)	Unknown	Unknown

In summary: The site vegetation has a moderate to low status and sensitivity. It is unlikely that Red listed flora will occur on site. Red data birds were observed that needs to be assessed by an ornithologist. NO ridges, caves, wetland or streams occurs on the site. The access road from Phuthaditjhaba to the site will cross at least one stream where impacts could occur. This information is based on a screening level assessment to highlight red flags, and therefore the detailed ecological function of the site and all species possibly occurring is not described in this report.

Photos

	
<p>Moderate to Low quality grassland</p>	<p>Moderate to Low quality grassland</p>
	
<p>Rocky areas below site towards streams</p>	<p>Illegal sand mining</p>
	
<p>Helichrysum pilosellum</p>	<p>Bald Ibis (Vulnerable)</p>
	
<p>Blue Korhaan (Near Threatened)</p>	<p>Whitebellied Korhaan (Vulnerable)</p>

DISCUSSION AND CONCLUSION

The proposed landfill development was scanned for possible ecological sensitivities. The habitat was found to have a low diversity consisting mainly of grazed grassland on a small plateau between two streams. The habitat consisted of natural species although it seems like the grassland may have previously been ploughed as contour walls were visible all over the site. In addition, cattle and goats were observed grazing the site and overgrazing may have altered the habitat even further. The species richness recorded was found to be moderate to low based on plot samples done in Rocky Highveld grassland grasslands elsewhere.

The observation of two Vulnerable (or 1 Vulnerable and 1 Near threatened) bird species *on the actual site*, is a concern for the site and would need further investigation. These species are southern Whitebellied Korhaan or Blue Korhaan and the Southern Bald Ibis.

Habitat occurs around the site on rocky outcrops where scarcer plant and reptile species may be found. While the proposed development site is located outside these areas, it should be taken into consideration with regards to indirect impacts associated with the construction and operation of the site.



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