

Site Description

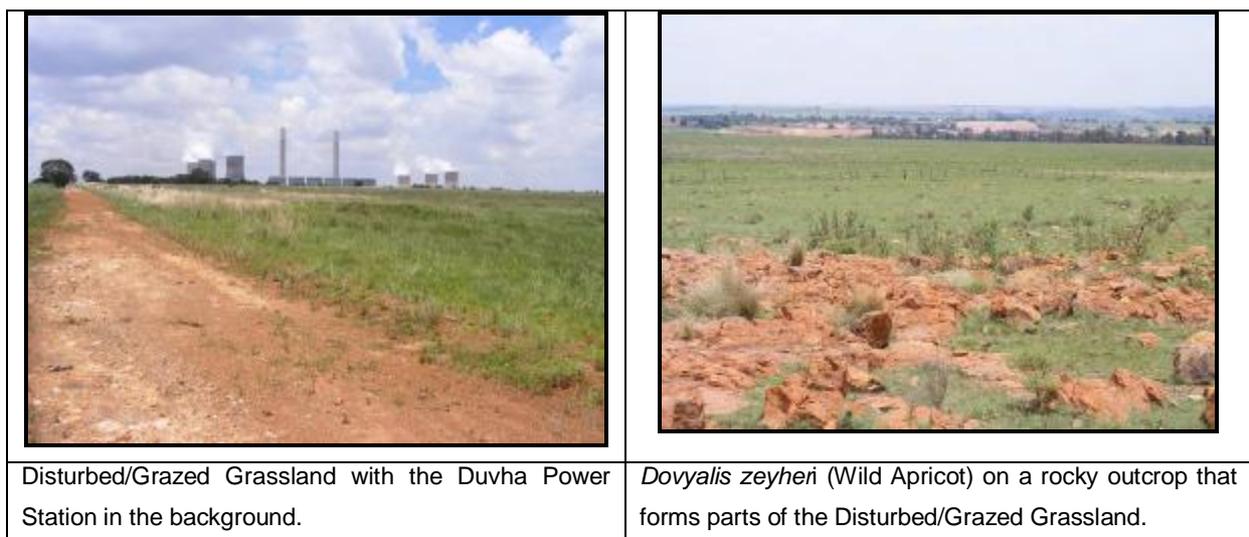
Three main vegetation types were identified, namely Disturbed/Grazed Grassland, Undisturbed/Natural Grassland and Wetland and Riparian communities. Each of these vegetation types are described in more detail below and illustrated in Figure 22 below. The species list for the site is attached in Appendix R. The species that could occur in the quarter degree grid was obtained from the Plants of Southern Africa (POSA) online database upheld by the South African National Botanical Institute (SANBI) and supplemented with field notes. The list provides species names, common names, as well as notes on which species were observed on site. In total 136 species could occur in the area with 43 confirmed species.

Disturbed/Grazed Grassland

Disturbed grassland or other disturbed areas such as road reserves or fallow fields, not cultivated for some years, are also usually *Hyparrhenia* dominated. However, while *Hyparrhenia* – is present in this vegetation unit, it is not dominate. This grassland is a result of high disturbance as a result of over-grazing, characterised by Bankrupt Bush (*Stoebe vulgaris*), an invader dwarf shrub which usually indicates grassland’s degraded condition.

This grassland mostly has low species richness, with only a few other species able to establish or survive in the shade of the dense sward of tall grass. Most of these species are relict pioneers or early seral species. The most prominent species include the grasses *Cynodon dactylon*, *Eragrostis plana*, *E. racemosa*, *E. curvula* and *E. capensis*. Herbaceous species such as *Anthospermum rigidum*, *Conyza podocephala*, *Crabbea angustifolia* and *Helichrysum rugulosum* are present. Alien species such as *Acacia mearnsii* (Black Wattle) have also invaded this vegetation unit.

Figure 19 below provides an illustration of the Disturbed/Grazed Grassland unit.



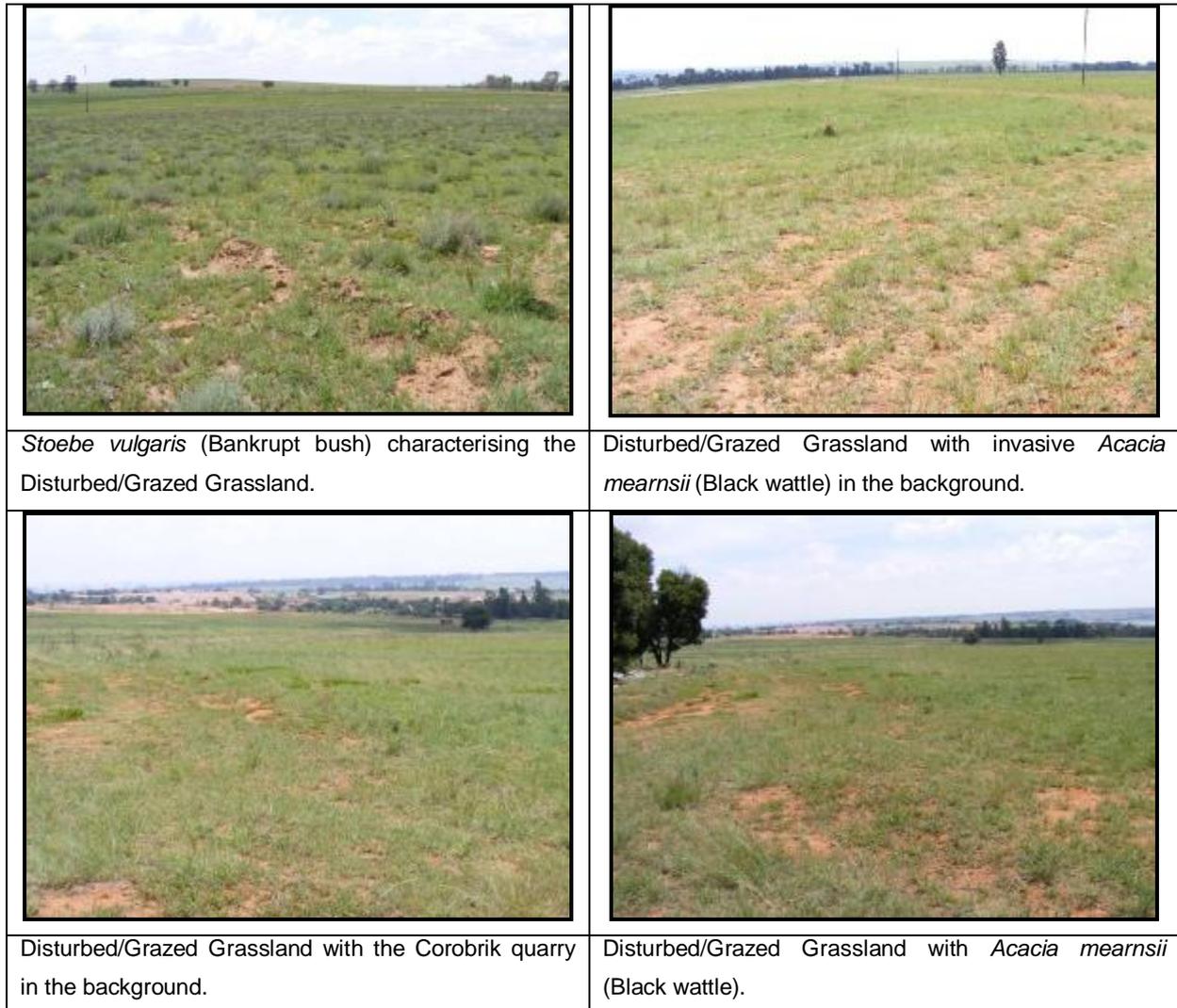


FIGURE 19: DISTURBED / GRAZED VEGETATION.

Undisturbed/Natural Grassland

This grassland comprises both the Eastern Highveld Grassland and the Rand Highveld Grassland and is dominated by the grasses of these vegetation types (Figure 20).

The vegetation is species rich located on a landscape is dominated by undulating plains and low hills with short dense, sour grassland alternating with low shrubland on rocky outcrops. The most common grasses on the plains belong to the genera *Themeda*, *Eragrostis*, *Heteropogon*, *Aristida*, *Digitaria*, *Tristachya* and *Elionurus*. High numbers of herbs, especially *Asteraceae* are also found. In rocky areas shrubs and trees also prevail and are mostly *Protea caffra*, *Acacia caffra*, *Celtis africana* and *Rhus spp.*

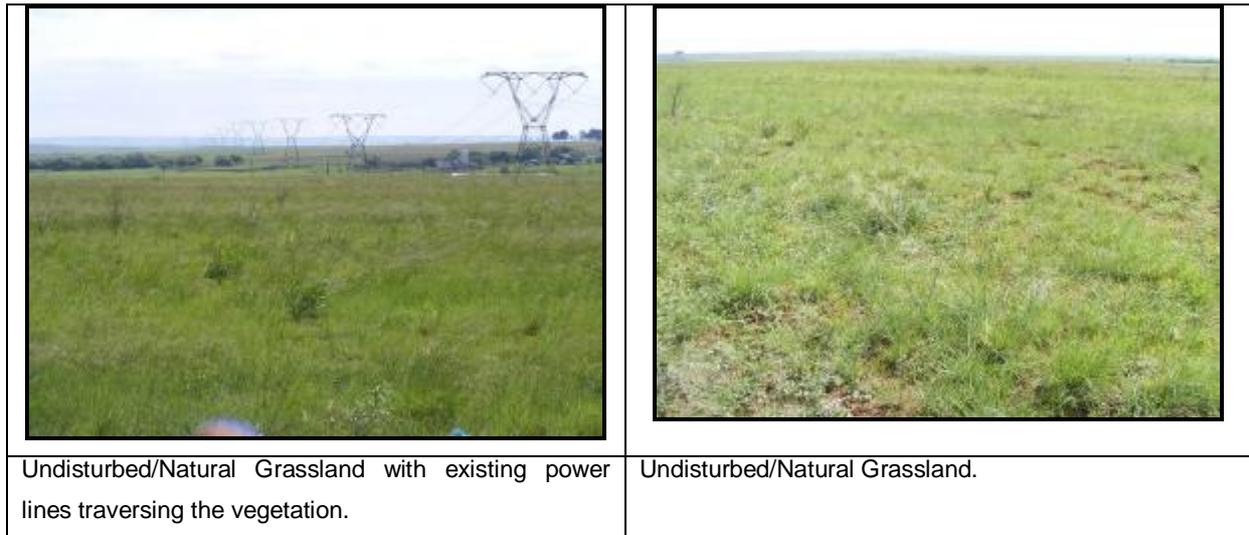


FIGURE 20: UNDISTURBED VEGETATION.

Wetland and Riparian communities

Wetland and Riparian communities are seasonally wet areas that occur in sandy areas where water seeps into lowlying drainage lines after rains. These areas are usually covered by hygrophytes such as sedges and reeds. The dominant sedge in the study area is *Juncus rigidus*. Sometimes bulrush (*Typha capensis*) and reeds (*Phragmites australis*) also occurs.

Wetlands are of a more permanent nature and occur in low-lying areas such as tributaries of streams and rivers. Wetlands are typically found in flat landscapes or shallow depressions filled with (temporary) water bodies supporting zoned systems of aquatic and hydrophilous (water loving) vegetation of temporarily flooded grasslands and ephemeral herblands. Typical plants are the Orange River Lily (*Crinum bulbispermum*), bulrush (*Typha capensis*) and reeds (*Phragmites australis*), sedges of the *Cyperus*, *Fuirena* and *Scirpus* genera also occur (Figure 21).

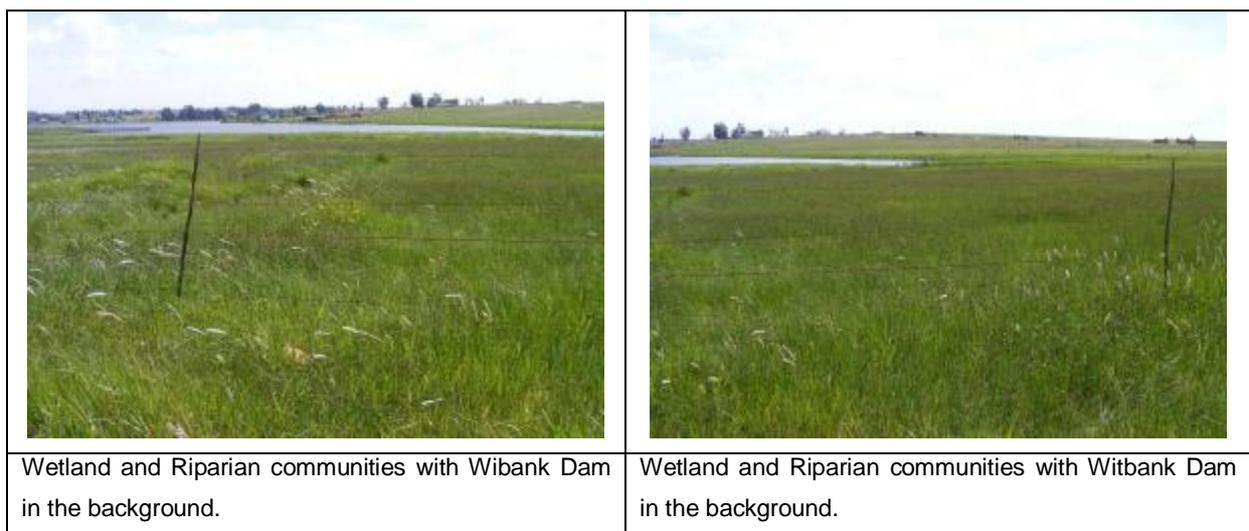


FIGURE 21: WETLAND AND RIPARIAN COMMUNITIES.

Red data Flora Species

The Mpumalanga Parks Board provided information as to sensitive plant species occurring in the area and it was found that only one sensitive plant species, *Hypoxis hemerocallidea*, occurs in the quarter

degree square 2529CD. *Hypoxis hemerocallidea* is rated as “Least Concern” in Mpumalanga and throughout the rest of South Africa, however populations are declining. It should be noted that during the site visit, *Hypoxis hemerocallidea* was not found to occur on site; however its presence can not be completely excluded.

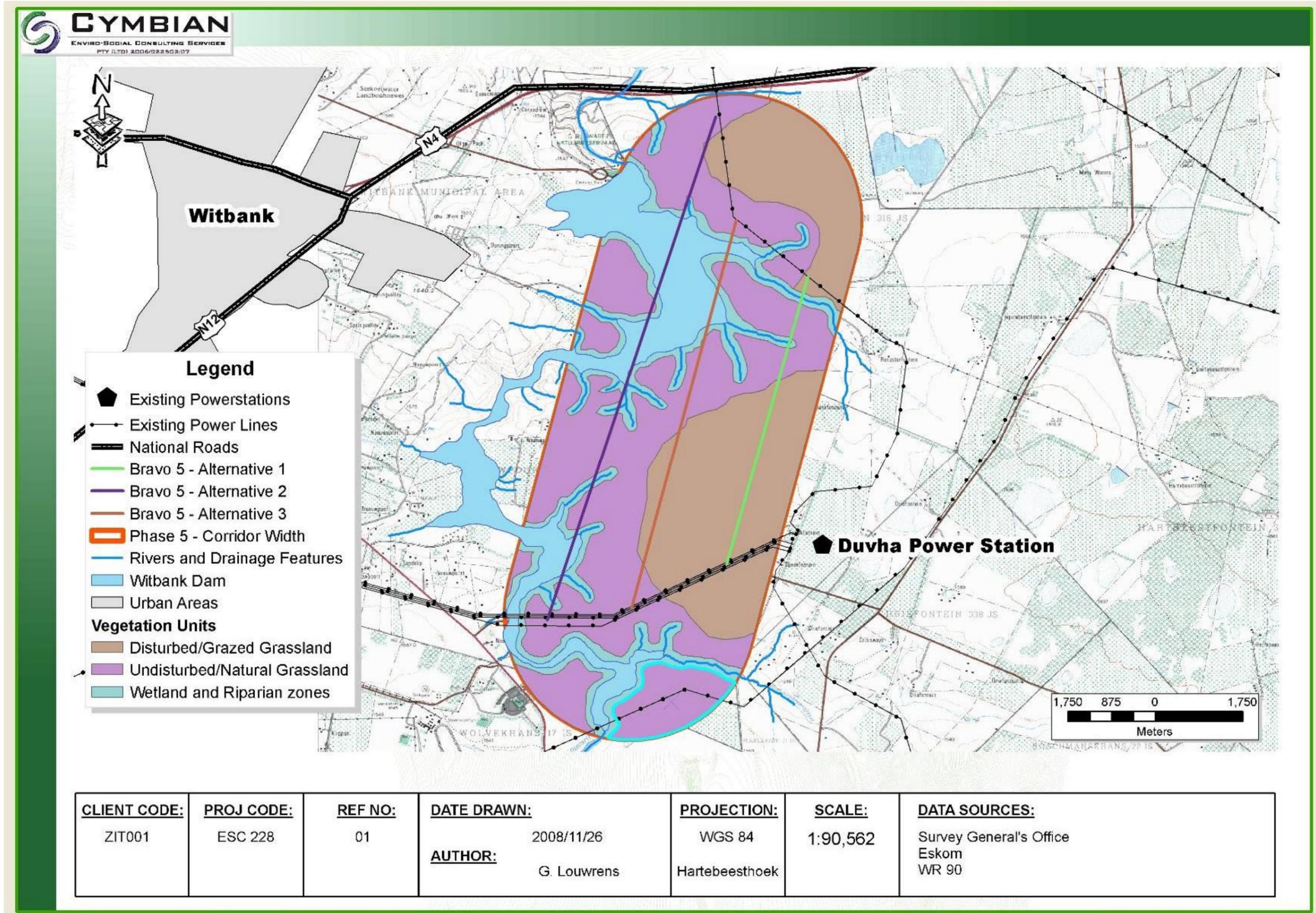


FIGURE 22: VEGETATION UNITS FOUND ON SITE.

7.1.9 Fauna

Data Collection

A literature review of the faunal species that could occur in the area was conducted. C-Plan data provided from the Mpumalanga provincial department was used to conduct a desktop study of the area. This data consists of terrestrial and aquatic components, ratings provide an indication as to the importance of the area with respect to biodiversity. Additionally, all fauna were noted during the site visit conducted on the 17th – 20th November 2008.

Regional Description

As a consequence of mining and farming in the area, it appears that only small animals are to be found at the site. Small mammals known to occur in the area include hedgehog, rabbits, polecat, meerkat and the ubiquitous rats and mice. Given the habitat, it is likely that korhaans, larks, longclaws, species of Euplectes (bishops and widows), weavers, starlings and sparrows occur in the grassland.

The area surrounding the proposed loop in lines does include areas of terrestrial and aquatic habitats. These areas should be treated as sensitive and should therefore be managed accordingly; if feasible they should be avoided.

Site Description

The scope of work indicated that an avifauna assessment was required. An avifaunal assessment will be undertaken and the report will be provided as part of the EIA. All herpetofauna and mammals observed on site were noted during the site visit.

Habitat

The habitat on site is described in the vegetation site description in Section 7.1.8 above. All of the vegetation types identified have been disturbed to a certain extent, as the main land use in the area is grazing of livestock. The largest portion of the site is comprised of Undisturbed Grassland, totalling approximately 50.1 % of the study site. The remainder of the site comprises Disturbed Grassland and Riparian and Wetland zones. All of these are suitable habitat to a number of protected species found in the region.

Species potentially occurring on site

A detailed list of the species potentially occurring on site is attached in Appendix R.

Herpetofauna

Herpetofauna could potentially occur in all the habitat types. The Riparian and Wetland zones could potentially support amphibians representative of the region, specifically *Pyxicephalus adspersus* (African Bullfrog) which is a species rated as “near threatened” and is a protected species in South Africa.

The quarter degree square is known to contain *Geochelone pardalis* (Leopard tortoise), *Aparallactus capensis* (Cape Centipede Eater), *Atractaspis bibronii* (Southern or Bibron's Burrowing Asp), *Causus rhombeatus* (Common Night Adder), *Crotaphopeltis hotamboeia* (Herald or Red-lipped Snake), *Dasyplectis scabra* (Common or Rhombic Egg Eater), *Hemachatus haemachatus* (Rinkhals), *Lycodonomorphus rufulus* (Common Brown Water Snake), *Naja annulifera annulifera* (Snouted Cobra), *Psammophylax tritaeniatus* (Striped Skaapsteker), *Agama atra* (Southern Rock Agama), *Bitens arietans* (Puff Adder), *Cordylus vittifer* (Transvaal Girdled Lizard), *Gerrhosaurus flavigularis* (Yellow Throated Plated Lizard), *Lygodactylus ocellatus* (Spotted Dwarf Gecko), *Pachydactylus affinis* (Transvaal Thick-toed Gecko), *Telescopus semiannulatus semiannulatus* (Eastern Tiger Snake), *Psammophis brevirostris brevirostris* (Leopard or Short-snouted Grass Snake) and *Varanus niloticus* (Water Monitor). *Hemachatus haemachatus* (Rinkhals), *Psammophis brevirostris brevirostris* (Leopard or Short-snouted Grass Snake) and *Cordylus vittifer* (Transvaal Girdled Lizard) are endemic to Southern Africa, while *Lygodactylus ocellatus* (Spotted Dwarf Gecko) and *Pachydactylus affinis* (Transvaal Thick-toed Gecko) are endemic to South Africa.

None of the above mentioned Herpetofauna were encountered on site during the site visit that took place from the 17th-20th November 2008.

Avifauna

Avifauna that could potentially occur on site is provided in Table 9 below. The avifaunal assessment (Appendix R) focused on identifying a preferred alignment for the new Bravo-Vulcan 400 kV line from a bird impact perspective, and the description of associated impacts on birds. Recommendations were also provided to mitigate for potential impacts.

TABLE 9: AVIFAUNA SPECIES LIST

| Species | Common name |
|--------------------------------|----------------------|
| <i>Phalacrocorax africanus</i> | Reed Cormorant |
| <i>Ardea cinerea</i> | Grey Heron |
| <i>Ardea melanocephala</i> | Blackheaded Heron |
| <i>Bubulcus ibis</i> | Cattle Egret |
| <i>Bostrychia hagedash</i> | Hadedda Ibis |
| <i>Plegadis falcinellus</i> | Glossy Ibis |
| <i>Alopochen aegyptiacus</i> | Egyptian Goose |
| <i>Elanus caeruleus</i> | Blackshouldered Kite |
| <i>Francolinus swainsonii</i> | Swainson's Francolin |

| Species | Common name |
|----------------------------------|----------------------|
| <i>Numida meleagris</i> | Helmeted Guineafowl |
| <i>Fulica cristata</i> | Redknobbed Coot |
| <i>Gallinula chloropus</i> | Moorhen |
| <i>Anthropoides paradisea</i> | Blue Crane |
| <i>Sagittarius serpentarius</i> | Secretary Bird |
| <i>Eupodotis cafra</i> | Whitebellied Korhaan |
| <i>Vanellus armatus</i> | Blacksmith Plover |
| <i>Vanellus coronatus</i> | Crowned Plover |
| <i>Streptopelia semitorquata</i> | Redeyed Dove |
| <i>Streptopelia senegalensis</i> | Laughing Dove |
| <i>Asio capensis</i> | Marsh Owl |
| <i>Colius striatus</i> | Speckled Mousebird |
| <i>Mirafra africana</i> | Rufousnaped Lark |
| <i>Corvus albus</i> | Pied Crow |
| <i>Saxicola torquata</i> | Stone Chat |
| <i>Phylloscopus trochilus</i> | Willow Warbler |
| <i>Cisticola fulvicapilla</i> | Neddicky |
| <i>Motacilla clara</i> | Cape Wagtail |
| <i>Anthus cinnamomeus</i> | Grassveld Pipit |
| <i>Passer domesticus</i> | House Sparrow |
| <i>Ploceus velatus</i> | Masked Weaver |
| <i>Euplectes orix</i> | Red Bishop |
| <i>Emberiza capensis</i> | Cape Bunting |

The species that could potentially occur on site include waterfowl, grassland specialists and common generalists. This is attributed to the variety of habitats that occur on site, as well as the adequate supply of fresh water.

Sensitive species known to occur in the quarter degree square include *Oxyura maccoa* (Maccoa Duck) and *Geronticus calvus* (Bald Ibis) which is endemic to South Africa.

The following conclusions from the avifaunal impact assessment are put forward:

- A number of power line sensitive, Red Data species could potentially occur along any of the alignments, although the occurrence of these species would be the exception rather than the rule.
- The proposed power line, unless mitigated, will pose a limited collision risk to power line sensitive bird species in the study area. Another potential risk is the destruction of sensitive wetland habitat through the construction of access roads.
- Of the Red Data species potentially present in the area, none are particularly at risk by the power line due to the very small densities at which the species occur. The latter is a result of the extensive habitat degradation that has taken place.
- There is, however, a substantial risk of collisions for several non Red Data species which warrants the application of mitigation measures.

The following recommendations are put forward:

- A sensitivity map indicating the areas where anti-collision devices need to be applied to the proposed line is shown in Figure 23 below.
- The construction of access roads in sensitive wetland habitat should be avoided.

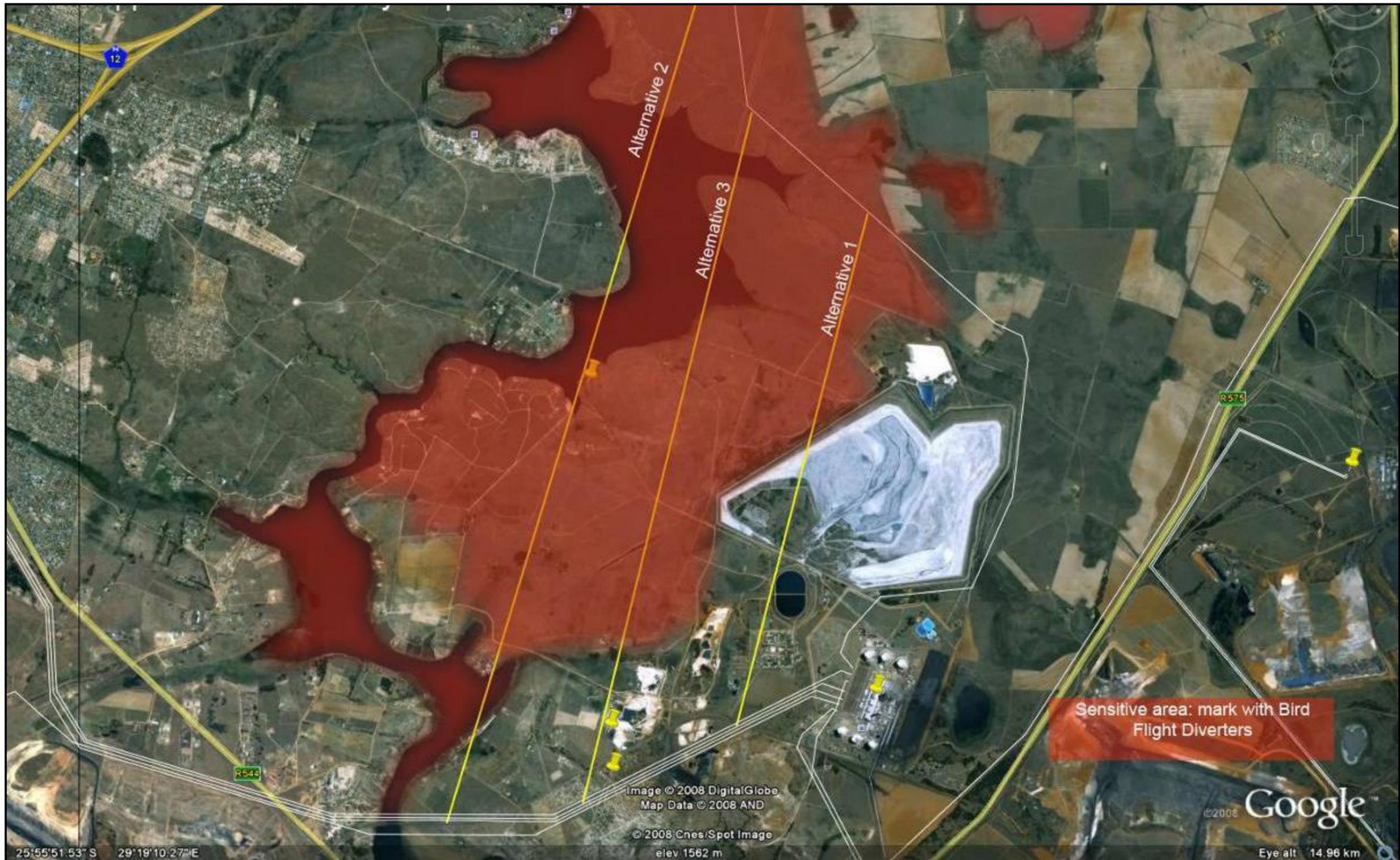


FIGURE 23: AVIFAUNAL SENSITIVITY.