



Ecological Assessment for the Skhemelele landfill site

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1. Introduction

Pachnoda Consulting (and Kyllinga Consulting) has been appointed by SE Solutions to conduct an ecological assessment of the site including:

- Desktop analyses and literature reviews of existing ecology-related information, including available recent and historic aerial photographs.
- Site surveys to identify ecology-related risk features at each site by a Pr. Sci. Nat. Specialist, who will also delineate and assess sensitive areas.
- The creation of an ecological sensitivity spatial data (e.g. shapefiles) based on site surveys and desktop assessments, which can be used for map production.
- Description of identified sensitive areas/ species and other ecological indicators.
- Description of the conservation status and threat status of all vegetation types and faunal species identified on each site.

1.1. Uncertainties and limitations

The site visit was conducted at the end of the dry season, during a drought period. Some of the species could therefore not be identified up to species level. It is also likely that some species were not recorded during the site visit, due to lack of inflorescences or poor growth. The time spent on time were also limited and not trapping took place. The fauna assessment therefore mainly focussed on the available habitat.

2. Site

2.1. Location

The site is located to the north of the P522, approximately 1.15 km to the west of Tembe Elephant Park. The D1861 road is located approximately 2.5 km to the west of the site. Houses are located in small clearings scattered to the north and south of road P522.

2.2. Site description

The site has an active landfill which receives household waste. The waste are sorted on site for recycling purposes, but it is unclear if the sorting is formal or informal. A large excavation is present on site and vegetation clearing took place over a large portion of the site.

3. Background information

3.1. Vegetation

According to Mucina & Rutherford (2006), the site is located in the Tembe Sandy Bushveld vegetation veld. This vegetation type is located to the east of the Pongola River, in the Maputaland Lowveld, at an altitude between 40 and 140 m. The vegetation type is located in extensive plain that is undulating in areas. The vegetation type is an open to closed woodland, with several leguminous woody species and *Terminalia sericea*, and with several shrub species. A number of grass species are also present including *Panicum* sp., *Urelytrum agropyroides*, *Diheteropogon* sp., *Hyperthelia dissoluta* and *Perotis* sp. The vegetation type is mostly located on reddish to grey sandy dune soils of marine origin. Several Maputaland endemics are present in the vegetation type. The vegetation type is classified as Least Threatened, with approximately 17% conserved in the Tembe Elephant Park.



Figure 1. Active dumping on a portion of the excavation on site.

The Sand Forest vegetation type is located in close proximity to the site and the vegetation on site more closely resembles this vegetation type. The vegetation consists of dense thickets, or short forest, up to tall forests. A well-developed shrub and tree layer is present, with a very poorly developed ground layer. Dominant species tree include *Dialium schlechteri*, *Newtonia hildebrandtii* and *Cleistanthus schlechteri* and the dominant shrub species include *Cola greenwayi*, *Pteleopsis myrtifolia*, *Croton pseudopulchellus*, *Drypetes arguta* and *Psydrax locuples*. The vegetation type is classified as Critically Endangered, with approximately 42% located in several reserves in the area. The Sand Forest provide habitat to a large number of fauna and flora species endemic to the Maputaland area. The vegetation type is listed under the Black Rhino Range protected ecosystem under the NEMBA Threatened and Protected Ecosystems (Government Notice 1002 of 9 December 2011).

3.2. Centres of floristic endemism

The site falls within the Maputaland-Pondoland Region, which is a floristic unit with a number of centres of floristic endemism. The site does not however fall into any of the centres of floristic endemism within this region.

The Maputaland Centre of Plant Endemism is located in the northern portion of the Maputaland-Pondoland Region. The centre is located along the coast, approximately from Richards Bay in South Africa to Xai Xai in Mozambique and the centre gets wider to the north, stretching from the Lebombo Mountains to the coast. The Lebombo Range mostly consists of Rhyolite lavas, which appears to have been extruded before the breakup of Gondwana. The coastal plains consists mostly of marine sediments. More than 230 plant species are endemic to the centre. The centre is very diverse and include grassland, bushveld, thicket, forest and swamp forest. Two interesting vegetation types are also present including Sand Forest and Woody Grassland.

3.3. C-Plan

A Conservation Plan (C-Plan) were developed for KwaZulu-Natal and include all sensitive features expected on site. The sites are prioritised as follows:

- Critical Biodiversity Area 1 Mandatory (R2)
 - Planning area contains one or more feature that is irreplaceable.
- Critical Biodiversity Area 2 Mandatory (R1)
 - Planning area contains one or more feature with high irreplaceability.
- Critical Biodiversity Area 3 Mandatory (R0)
 - The area contains one or more feature with low irreplaceability.
- Biodiversity Area (OCO)
 - These areas are located close priority areas (R0, R1 and R2) and still contain features of conservation importance. These areas are therefore not priority areas, but still contain species of conservation importance, that should be taken into account.

The area falls within Critical Biodiversity Area 1 (R2), which means that the area contains one or more feature which is Irreplaceable. This means that it is unlikely that a replacement site will be available for sensitive features. The landfill site is however an existing landfill. The area is therefore already largely transformed. The sensitive features of the site indicated on C-Plan include:

- Bird species:
 - *Anthreptes reichenowi*
 - *Cinnyris neergaardi*
- Mollusca species
 - *Edouardia conulus*
- Butterfly species
 - *Teriomima zuluana*
- Vegetation
 - Tembe Sandy Bushveld
 - Licuati Sand Forests : Eastern Licuati Sand Forest

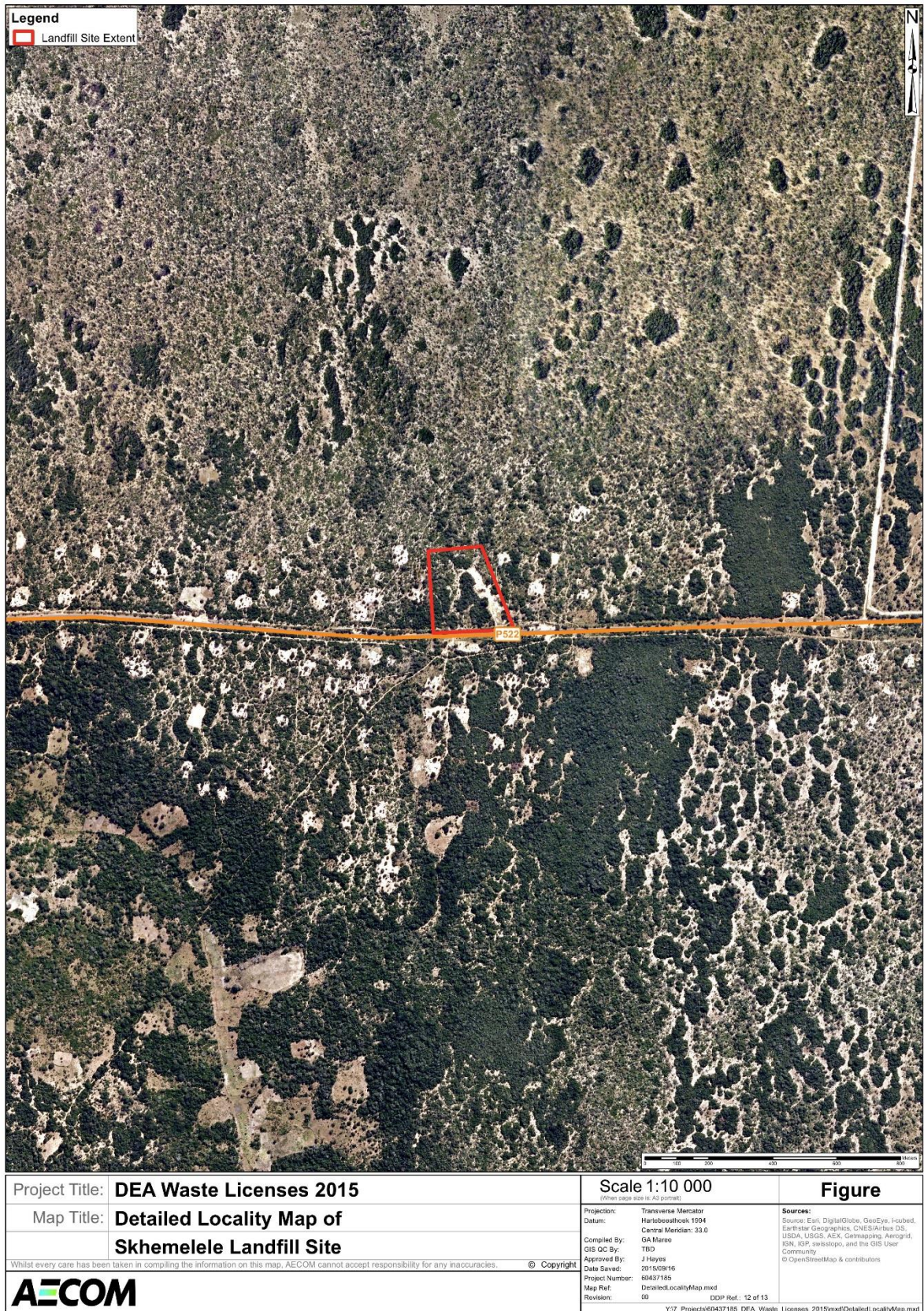


Figure 2. Shkemelele locality map.

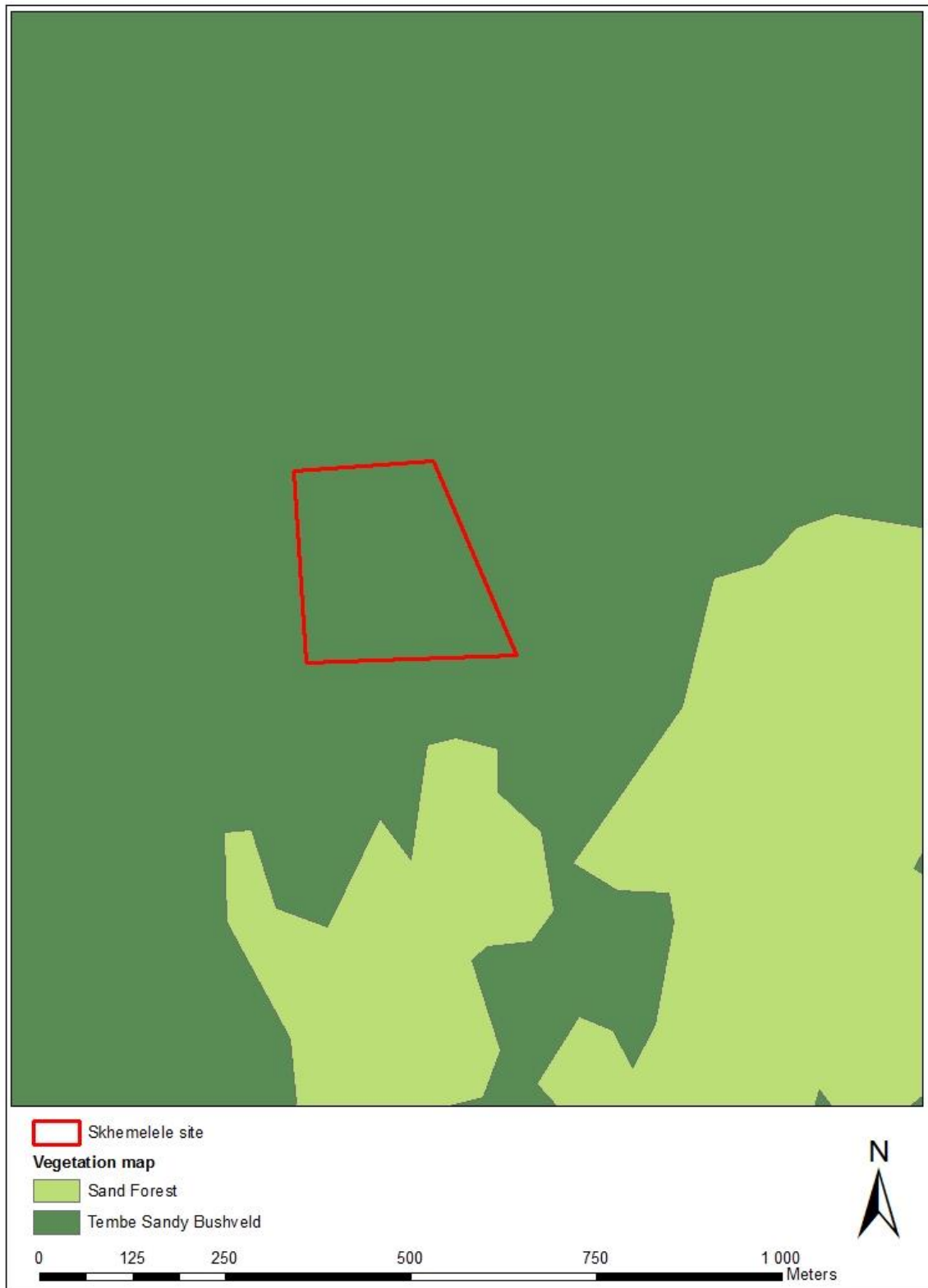


Figure 3. Vegetation types on site and surrounding the site.

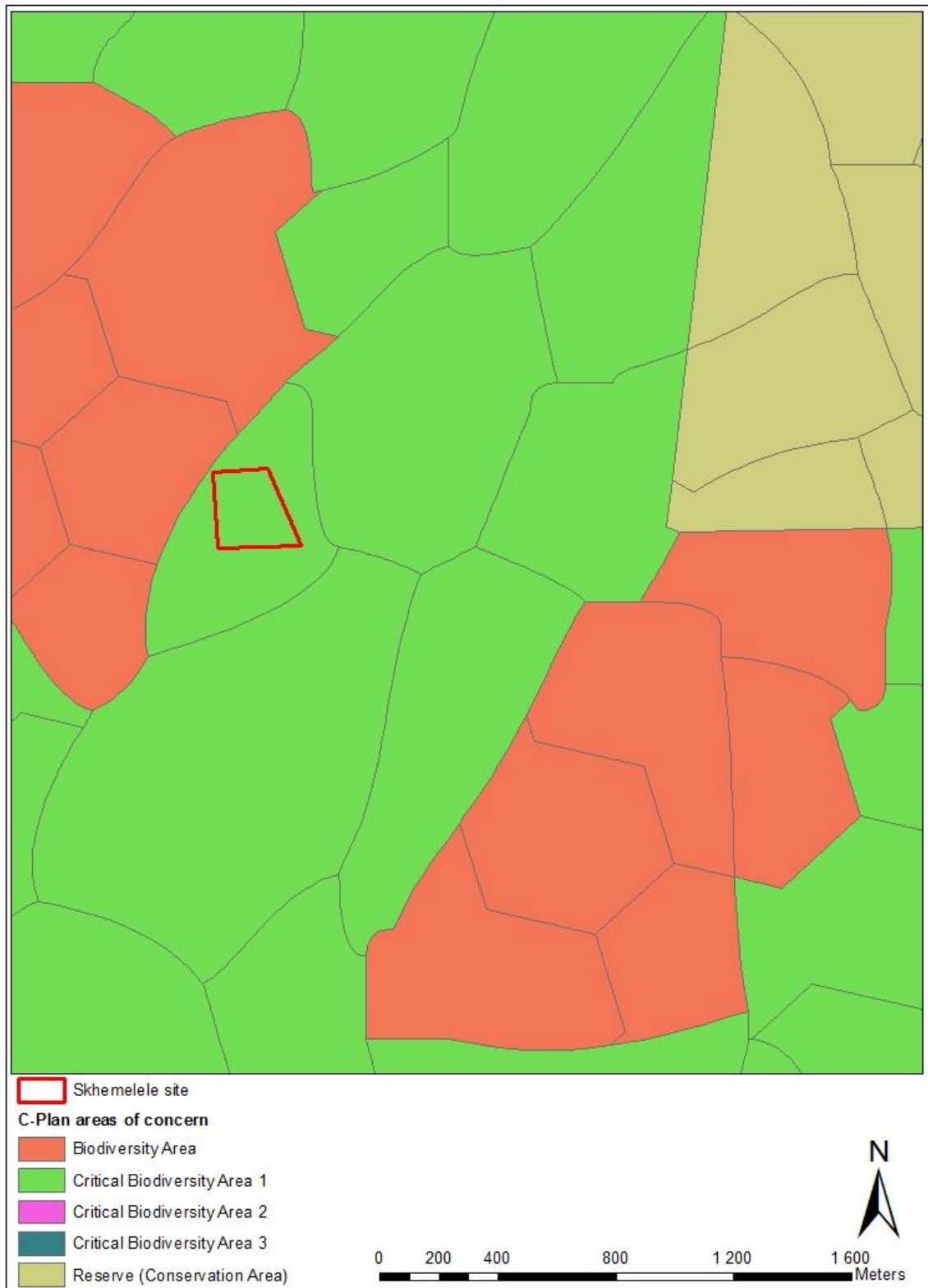


Figure 4. C-Plan biodiversity areas.

4. Methods

4.1. Vegetation Assessment

Aerial photographs of the site was investigated and habitat units identified. A list of the species that have been recorded in the quarter degree grid (2732AB) has been downloaded from SIBIS (<http://sibis.sanbi.org/>). From this list, a list of Red Data species, medicinal plant species and invasive plant species were extracted. These lists were used to inform the assessment.

The site visit took place on 26 October 2015. The vegetation in each of the habitat units was recorded. The vegetation was recorded along random transect walks. The assessment focused on the vegetation on site, but the vegetation immediately adjacent to the site was also recorded. The habitat adjacent to the site are assumed to be similar to the habitat prior to commissioning of the landfill. A search for the Red Data species was also conducted.

4.2. Fauna Assessment

Species lists of species that have been recorded on site were downloaded from the Virtual Museum on the Animal Demography Unit website (<http://vmus.adu.org.za/>), and a bird species list was downloaded from the South African Bird Atlas Project (SABAP2) website (<http://sabap2.adu.org.za/>). A list of the threatened bird species from the area has also been downloaded from SIBIS. These lists include species that were recorded in the area by various observers and which may therefore be present on site.

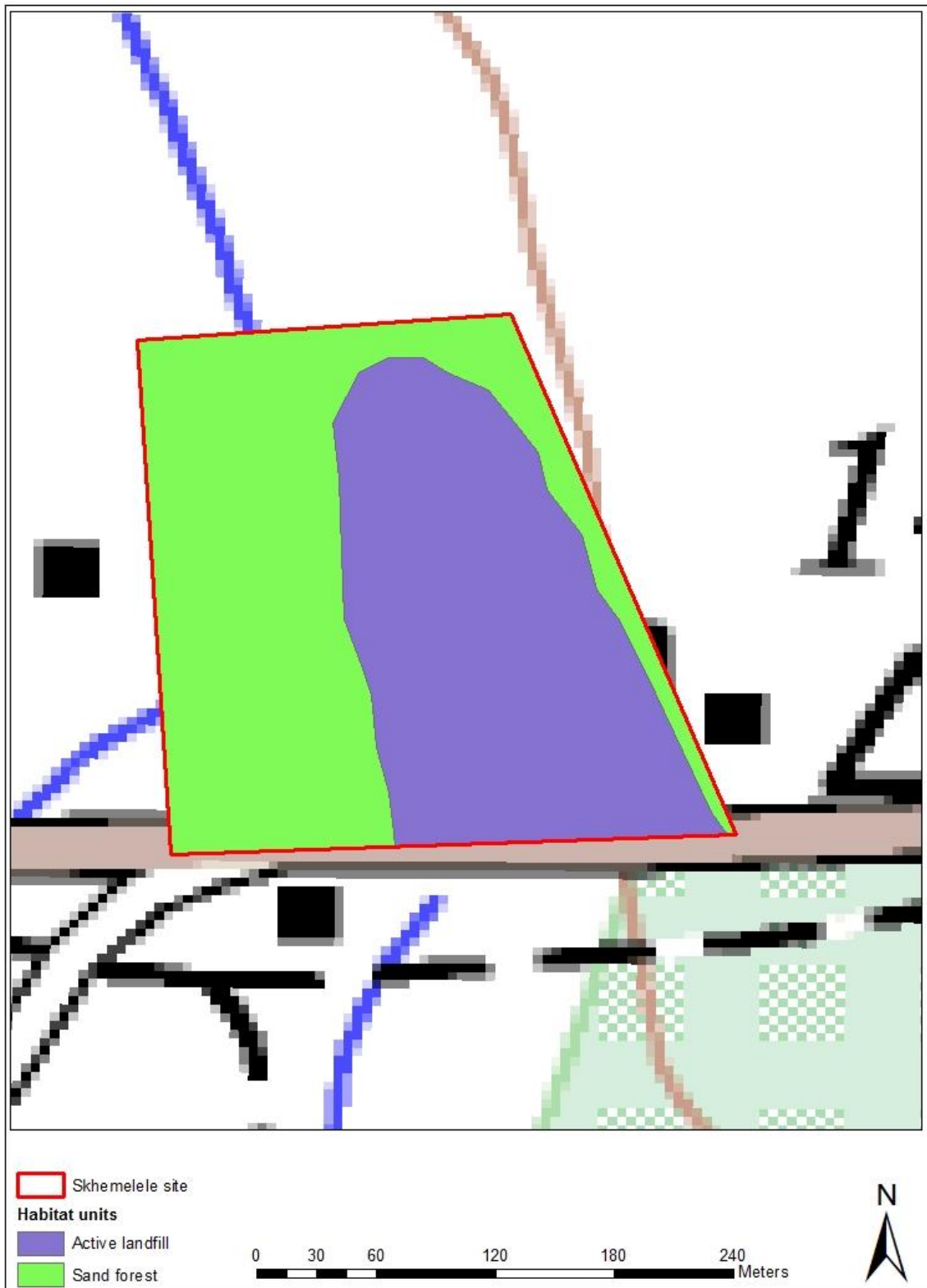
The site visit took place on 26 October 2015. Species were recorded along random walks, mainly on the edges of the landfill and adjacent to the landfill, but also in the surrounding areas. The site was mostly investigated for available habitat and species observed on site during the site visit were noted. Potential habitat for Red Data species were also noted in the surrounding area. No trapping took place.

5. Results

5.1. Vegetation

5.1.1. Description

The site can be divided into two portions, the active landfill area, which also contains areas with disturbances such as site clearing, and the remaining Sand Forest vegetation. The site visit took place at the beginning of the summer season, during a drought, and a number of species could therefore not be identified to species level.



1.1.1.1. Sand Forest

The remaining vegetation on site and surrounding the site and has a high canopy cover, but fairly low basal cover and closely resembles the threatened Sand Forest vegetation type. The vegetation is a short Sand Forest, with several shrubs and short trees, but few tall tree species. The few remnants of vegetation in the southern portion of the site has some characteristics of tall Sand Forest, but not enough is left to be classified into a different vegetation unit. No species of conservation importance were observed in this unit, but the vegetation type is considered to be of high conservation importance.

1.1.1.2. Active landfill

The vegetation in this area has mostly been removed, although a few large trees and a number of shrubs are still present, especially round the edges. A few more forb species are also present, including a few pioneer species. The invasive species *Psidium guajava* is also present in this area, but not the surrounding vegetation. In addition, only one other alien species is present in this unit. The vegetation cover in this unit is very low.



Figure 5. Sand Forest on site.



Figure 6. Active landfill with a few large trees and shrubs remaining.

Table 1. Plant species observed on site.

Species	Growth form	Alien / Invasive	Sand Forest	Disturbed area
<i>Anthericum sp</i>	Bulb		x	
<i>Asparagus cf setaceus</i>	Shrub		x	
<i>Asparagus densiflorus</i>	Shrub		x	x
<i>Asparagus falcatus</i>	Shrub		x	
<i>Capparis brassii</i>	Tree			x
<i>Catunaregam obovata</i>	Shrub		x	x
<i>Cochorus sp</i>	Forb	Alien		x
<i>Coddia rudis</i>	Shrub		x	
<i>Commelina sp</i>	Forb		x	x
<i>Commicarpus pentandrus</i>	Forb			x
<i>Commiphora neglecta</i>	Tree		x	
<i>Croton pseudopulchellus</i>	Shrub		x	
<i>Cynodon dactylon</i>	Grass			x
<i>Dialium schlechteri</i>	Tree		x	
<i>Diospyros inhacaensis</i>	Shrub		x	
<i>Dovyalis longispina</i>	Shrub		x	x
<i>Ehretia amoena</i>	Shrub		x	x
<i>Eragrostis rigidior</i>	Grass			x

Species	Growth form	Alien / Invasive	Sand Forest	Disturbed area
<i>Euclea natalensis</i>	Shrub			x
<i>Euphorbia grandidens</i>	Tree		x	
<i>Gardenia volkensii</i>	Tree		x	
<i>Gisekia sp</i>	Forb			x
<i>Grewia occidentalis</i>	Shrub		x	
<i>Guillemea densa</i>	Forb			x
<i>Gymnosporia buxifolia</i>	Shrub		x	x
<i>Helichrysum krausii</i>	Shrub			x
<i>Hymenocardia ulmoides</i>	Tree		x	
<i>Ipomoea bolusiana</i>	Forb			x
<i>Kalanchoe cf brachyloba</i>	Succulent		x	x
<i>Leucas glabrata</i>	Tree			x
<i>Ozoroa obovata</i>	Tree		x	
<i>Psidium guajava</i>	Shrub	Category 3		x
<i>Pteleopsis myrtifolia</i>	Tree		x	
<i>Sanseveria hyacinthoides</i>	Forb		x	
<i>Scadoxus multiflorus</i>	Bulb		x	
<i>Searsia pentheri</i>	Shrub		x	x
<i>Senecio viminalis</i>	Succulent		x	
<i>Senegalia burkeii</i>	Tree		x	x
<i>Sesamum alatum</i>	Forb		x	
<i>Strychnos decussata</i>	Tree		x	x
<i>Strychnos gerrardii</i>	Tree		x	x
<i>Stylochiton natalensis</i>	Tree		x	
<i>Terminalia sericea</i>	Tree - dwarf form		x	
<i>Tragus berternianus</i>	Grass			x
<i>Tylecon sp</i>	Succulent			x
<i>Viscum verrucosum</i>	Epiphyte		x	x
<i>Xanthoxylum capense</i>	Tree		x	
<i>Ximenia caffra</i>	Tree		x	
<i>Zanthoxylum capense</i>	Tree		x	

5.1.2. Invasive species

A list of alien and invasive species has been published in the Government Gazette of 1 August 2014 in the Alien and Invasive Species Regulations (AIS) under the National Environmental Management Biodiversity Act (Act 10 of 2004). Invasive species are divided into the following four categories:

- “Category 1a: Invasive species which must be combatted and eradicated. Any form of trade or planting is strictly prohibited.
- Category 1b: Invasive species which must be controlled and wherever possible, removed and destroyed. Any form of trade or planting is strictly prohibited.

- Category 2: Invasive species, or species deemed to be potentially invasive, in that a permit is required to carry out a restricted activity. Category 2 species include commercially important species such as pine, wattle and gum trees. Plants in riparian areas are Category 1b.
- Category 3: Invasive species which may remain in prescribed areas or provinces. Further planting, propagation or trade, is however prohibited. Plants in riparian areas are Category 1b.”

The only invasive plant species recorded on the site during the site visit is *Psidium guayava*, a Category 3 invader. The category 3 invasive bird species *Acridotheres tristis* (Common Mynah) were also observed during the site visit.

5.1.3. Species of conservation importance

Several species of conservation importance has been recorded in the area and may potentially be present on site. The species can however only be present in the remaining vegetation on site, and will not be present in the active landfill area. These species are included in Table 2 below.

Table 2. Plant species of conservation importance that were recorded in the quaternary degree catchment.

Family Name	Species Name	IUCN Status	NEMBA status	Habitat	Habitat on site
CANELLACEAE	<i>Warburgia salutaris</i>	Endangered	Not listed	Coastal, riverine, dune and montane forest as well as open woodland and thickets.	In thicket on and adjacent to the site.
COMBRETACEAE	<i>Combretum mkuzense</i>	Near Threatened	Not listed	Closed woodland savanna and sand forest.	In thicket on and adjacent to the site.
DRACAENACEAE	<i>Sansevieria metallica</i>	Rare	Not listed	Savanna in deep sand usually in shade of trees, 20-100 m	In thicket on and adjacent to the site.
FABACEAE	<i>Erythrophleum lasianthum</i>	Near Threatened	Not listed	Sand forest.	Yes
FABACEAE	<i>Newtonia hildebrandtii</i> var. <i>hildebrandtii</i>	Declining	Not listed	Sand Forest.	Yes
GERANIACEAE	<i>Pelargonium tongaense</i>	Rare	Not listed	Dense, shady woodland in Sand Forest.	Yes
ORCHIDACEAE	<i>Eulophia speciosa</i>	Declining	Not listed	Occupies various habitats including sand dunes, bushveld, thornveld and montane grasslands.	In thicket on and adjacent to the site.
PASSIFLORACEAE	<i>Schlechterina mitostemmatoides</i>	Vulnerable	Not listed	Sand forest and may occasionally be found in lowland coastal forest 0-700 m.	Yes

Family Name	Species Name	IUCN Status	NEMBA status	Habitat	Habitat on site
RHIZOPHORACEAE	<i>Cassipourea malosana</i>	Declining	Not listed	In the understorey of Afromontane forest or in thickets on rocky outcrops in Mpumalanga, also in coastal and midland forests in KwaZulu-Natal.	Yes

5.2. Fauna

5.2.1. Mammals

Several mammal species of conservation importance has been recorded in the quarter degree catchment, several of which were recorded in the Tembe Elephant Park. A few of these species may be present in the remaining habitat on site. Refer to Table 3 for more information. The complete list of mammal species recorded in the quarter degree catchment is included in Addendum C.

Table 3. Mammal species of conservation importance that were recorded in the area in the past.

Family	Species	Common name	Red list category	Habitat	Habitat on site
Bovidae	<i>Hippotragus niger subsp. niger</i>	Giant Sable Antelope	Vulnerable	A savanna woodland species, very closely associated with the miombo <i>Brachystegia</i> woodland zone.	No
Bovidae	<i>Neotragus moschatus subsp. zuluensis</i>	Suni	Vulnerable	Dense underbrush	No
Canidae	<i>Lycaon pictus</i>	African wild dog	Endangered	Open grassland and woodland scrub	No, requires larger ranging area.
Felidae	<i>Panthera leo</i>	Lion	Vulnerable	Most habitat types.	No, requires larger ranging area.
Macroscelididae	<i>Petrodromus tetradactylus</i>	Four-toed Elephant Shrew	Endangered	Forest, dense woodlands, and thickets with surface leaf litter.	Marginal habitat is present, the leaf litter is limited.
Manidae	<i>Smutsia temminckii</i>	Ground Pangolin	Vulnerable	Savanna woodland in low-lying regions with moderate to dense scrub. Also in floodplain grassland, rocky slopes and sandveld.	Occasional foraging visitor.

Muridae	<i>Gerbilliscus leucogaster</i>	Bushveld Gerbil	Data Deficient	Bushland and grasslands.	Yes
Muridae	<i>Lemniscomys rosalia</i>	Single-Striped Lemniscomys	Data Deficient	Savanna habitats, but tall grass is essential	No

5.2.2. Avifauna

A few bird species were observed during the site visit and are included in Table 4 below, while the bird species recorded in the quarter degree catchment are included in Addendum D.

Table 4. Bird species observed on site.

Species name	Common name
<i>Acridotheres tristis</i>	Common Mynah
<i>Cisticola juncidis</i>	Zitting Cisticola
<i>Corvus albus</i>	Pied Crow
<i>Delichon urbicum</i>	Common House-martin
<i>Hirundo rustica</i>	Barn (European) Swallow

Several bird species of conservation importance has been recorded in the area and which may be present in the area. The species *Anthreptes reichenowi* (Plain-backed Sunbird) and *Cinnyris neergaardi* (Neergaard's Sunbird) has also been identified in the KZN C-Plan database as species of conservation importance that may potentially be present in the area. Both of these species are endemic to the Maputaland area, with the majority of habitat area for *Anthreptes reichenowi* (Plain-backed Sunbird) located in Mozambique and only a small area located in South Africa.

Table 5. Bird species of conservation importance.

Common name	Taxon name	Regional Red List Status 2014	Regional Red List Status 2000	Habitat	Habitat on site
Half-collared Kingfisher	<i>Alcedo semitorquata</i>	Near threatened	Near threatened	Wooded streams and coastal lagoons.	No
Plain-backed Sunbird	<i>Anthreptes reichenowi</i>	N/A	N/A	Moist, mixed woodland and coastal forest.	Rare visitor.
Tawny Eagle	<i>Aquila rapax</i>	Endangered	Vulnerable	Thornveld and semi-desert areas.	Occasional foraging visitor.
Nightjar, Swamp	<i>Caprimulgus natalensis</i>	Vulnerable	Vulnerable	Open grassland and palm savanna.	No
Neergaard's Sunbird	<i>Cinnyris neergaardi</i>	Vulnerable	Near threatened	Thornveld and sand forest.	Sand Forest on site is suitable.

Snake-eagle, Southern Banded	<i>Circaetus fasciolatus</i>	Critically Endangered	Vulnerable	Marshy areas, riverine forest, coastal evergreen forest and open woodland.	Sand Forest on site and adjacent to site is suitable foraging habitat.
Marsh-harrier, African	<i>Circus ranivorus</i>	Endangered	Vulnerable	Marshland, vleis and flooded grassland.	No
Stork, Saddle- billed	<i>Ephippiorhynchus senegalensis</i>	Endangered	Endangered	Floodplains, river, dams and pans.	No
Black-bellied Bustard	<i>Lissotis melanogaster</i>	Near threatened	Near threatened	Woodland and tall open grassland.	Foraging habitat.
Stork, Yellow- billed	<i>Mycteria ibis</i>	Endangered	Near threatened	Lakes, estuaries and large rivers.	No
Pygmy-Goose, African	<i>Nettapus auritus</i>	Vulnerable	Near threatened	Nests in tree holes. Freshwater areas with floating vegetation, especially with <i>Nymphaea</i> sp.	No
Great White Pelican	<i>Pelecanus onocrotalus</i>	Vulnerable	Near threatened	Open, freshwater lakes and estuaries. Nests on flat islands.	No
Pelican, Pink- backed	<i>Pelecanus rufescens</i>	Vulnerable	Vulnerable	Estuaries, rarely fresh water. Nest in trees.	No
Eagle, Martial	<i>Polemaetus bellicosus</i>	Endangered	Vulnerable	Savanna, but present in any habitat from desert to forest edge.	Sand Forest on site and adjacent to site is suitable foraging habitat.
African Broadbill	<i>Smithornis capensis</i>	Vulnerable	Near threatened	Thickets, coastal forests and riverine forests.	Yes
Eagle, African Crowned	<i>Stephanoaetus coronatus</i>	Vulnerable	Near threatened	Evergreen and riverine gallery forest.	No
Tern, Caspian	<i>Sterna caspia</i>	Vulnerable	Near threatened	Estuaries, bays, lagoons, large rivers and inshore waters.	No
Bateleur	<i>Terathopius ecaudatus</i>	Endangered	Vulnerable	Savanna.	Yes

5.2.3. Herpetofauna

Several reptile and frog species were recorded in the area and are listed in Addendum E. None of these species are of conservation importance. No species of conservation importance are indicated in the KZN C-Plan.

5.2.4. Invertebrates

Several butterfly species and two scorpion species were recorded in the area and are listed in Addendum F. None of the recorded species are a threatened species. Two species of conservation importance are listed in Table 6. Habitat is present in the remaining vegetated habitat on site for the snail species *Edouardia conulus*.

Table 6. Invertebrate species of conservation importance.

Group	Species	Habitat	Habitat on site
Mollusca	<i>Edouardia conulus</i>	Forest and thickets	Possible habitat
Lepidoptera	<i>Teriomima zuluana</i>	Coastal lowland forests	Possible habitat

6. Buffer recommendations

A buffer zone is intended as an area to mitigate the impact of the development on sensitive features on site. Since the landfill is already in use, no buffer zone is applicable to the site.

7. Sensitivity

The active landfill area is considered to be of low sensitivity, but the thicket around the active landfill have potential habitat for several species of conservation importance and is considered to be of high sensitivity and conservation importance. Similar habitat surrounds the site and is available to species of conservation importance.

8. Impact assessment and mitigation recommendations

Nature	Extent	Duration	Intensity	Probability	Status	Significance	Significance with mitigation	Confidence	Reversibility	Replaceability
Loss of habitat and indigenous species	Site	Permanent	Medium-High	Definite	Negative	High	Medium - High	High	Irreversible	Low - Moderate
Loss of habitat for species of conservation importance	Site	Permanent	Medium-High	Definite	Negative	High	Medium - High	High	Partially reversible	Low - Moderate
Loss of ecological corridors	Footprint	Long term	Low	Improbable	Negative	No Impact	No Impact	Medium	Partially reversible	Low - Moderate
Infestation by invasive plant species	Local	Long term	Low	Definite	Negative	Low	No Impact	High	Reversible with management	Moderate - High
Infestation by pest species	Local	Long term	Low	Possible	Negative	Medium - High	Low	Medium	Reversible with management	Moderate - High
Pollution of habitat by hazardous material from the site	Local	Long term	Medium	Likely	Negative	Low	Low	Medium	Partially reversible	Low - Moderate
Spreading of rubbish from site	Local	Long term	Low	Possible	Negative	Medium - High	Low	Medium	Reversible with management	High

Loss of habitat and indigenous species

The habitat on site is partially transformed by the landfill in place. Some habitat and indigenous species remain on site and adjacent to the site. This habitat falls within the Sand Forest vegetation type, which is protected under protected Black Rhino Range ecosystems (NEMBA threatened and protected ecosystems). The remaining habitat and indigenous species on site will likely be altered by the landfill. In addition, the vegetation adjacent to the site may also be affected by the activities on site, and the landfill may extend into these areas should additional landfill capacity be required.

Mitigation:

- Dumping activities must be confined to the fenced area.
- The northern boundary of the site must be fenced.
- Confine the landfill to the cleared area. Do not clear additional areas of vegetation. It is however preferable that the vegetation on site is cleared, rather than additional Sand Forest areas at another site.
- Vehicle movement must be restricted to the fenced area and the road to the landfill.
- The site may not be expanded without the relevant environmental authorisations.
- Confine the litter to the site.
- Maintain the fence around the site.

Loss of habitat for species of conservation importance

Several species of conservation importance may potentially be present in the area as discussed in Section 5 of this report and habitat remains in the Sand Forest on site. Similar habitat surround the site and habitat therefore remain in the area.

Mitigation:

- Dumping activities must be confined to the fenced area.
- Do not clear additional areas of vegetation. It is however preferable that the vegetation on site is cleared, rather than additional Sand Forest areas at another site.
- Vehicle movement must be restricted to the fenced area and the road to the landfill.
- The site may not be expanded without the relevant environmental authorisations.
- Confine the litter to the site.
- Maintain the fence around the site.

Ecological corridors

Given the relatively small size of the site and the large undeveloped area surrounding it, the impact is negligible. No mitigation is therefore required.

Infestation by invasive plant species

Invasive plant species tend to establish in disturbed areas. The species must however be transported to these areas in some way. The only invasive plant species recorded on site is the category 3 invasive



shrub *Psidium guajava*. The species are present in low numbers and does not appear to be present in the surroundings. The impact is considered to be low and can be negligent with mitigation.

Mitigation:

- The spread of invasive and weedy species from the site must be prevented.
- Care must be taken not to control indigenous species.

Infestation by animal pest species

Landfill sites can potentially provide habitat and food to several indigenous and alien pests and scavengers, including rats (*Rattus rattus* & *Rattus norvegicus*), mice (*Mus musculus*), jackals (*Canis* sp.), feral dogs (*Canis domesticus*) and feral cats (*Felis catus*). Several bird species including crows (*Corvus* sp.), as well as insect species such as flies (*Musca domestica*) may also become a problem.

Mitigation:

- Do not dispose of abattoir waste at the site.
- Cover newly dumped rubbish containing food scraps at least once a week.
- If excessive numbers of flies are present the rubbish must be covered at the end of each day.

Pollution of habitat by hazardous waste from the site

Hazardous materials are associated with several waste products, which may end up in a landfill site. Common sources of hazardous materials are old batteries, fluorescent (energy saver) light bulbs, motor oil etc. These products should not be disposed of at a normal landfill site, but should rather be recycled. If not, these hazardous materials must be disposed of at a facility registered to dispose of hazardous waste.

Mitigation:

- Provide bins for recycling in the town.
- Educate people on the value and need for recycling.
- Do not dispose of abattoir waste at the site.
- Cover any food waste etc. to prevent pest insects breeding on site and scavenging.

Spreading of rubbish from the site

Rubbish can spread from the site either by wind, run-off or informal dumping. Rubbish are currently present in the area to the east of the site. This appears to be due to spreading by wind.

Mitigation:

- Put up a fence around the site. This will prevent the spread of rubbish from the site by wind or water action.
- Take measures to prevent informal dumping, if necessary.



9. Conclusion

The site is an active landfill site and vegetation has therefore been cleared over most of the site. Sand Forest vegetation remains on the northern and western portions of the site and provide habitat for several fauna and flora species of conservation importance, as discussed in section 5 of the report. The impacts are currently confined to the site, but may potentially extend outside the site. The impact can however be mitigated, as detailed in section 8 of the report.



10. References & further reading

- Bromilow, C. 2010. *Problem Plants and Alien Weeds of South Africa*. Briza Publications, Pretoria.
- Chittenden, H. *Roberts Bird Guide. A comprehensive field guide to over 950 bird species in southern Africa*. John Voecker Bird book Fund, Cape Town.
- Court, D. 2010. *Succulent Flora of Southern Africa*. Struik Nature, Cape Town.
- Crouch, N.R.; Klopper, R.R.; Burrows, J.E. & Burrows, S.M. 2011. *Ferns of Southern Africa. A Comprehensive Guide*. Struik Nature, Cape Town.
- Gerber, A.; Cilliers, C.J.; van Ginkel, C. & Glen, R. 2004. *Easy identification of Aquatic Plants. A guide for the identification of water plants in and around South African impoundments*. Department of Water Affairs, Pretoria.
- Gordon-Gray, K.D. 1995. *Cyperaceae in Natal*. South African National Biodiversity Institute, Strelitzia 2, Pretoria.
- Kirby, G. 2013. *Wild Flowers of Southeast Botswana*. Struik Nature, Cape Town.
- Le Roux, A. & Schelpe, E.A.C.L.E. 1981. *South African Wild Flower Guide. Namaqualand and Clanwilliam*. Botanical Society of South Africa, Pretoria.
- Macfarlane, D.; Kotze, D.; Ellery, W.; Walters, D.; Koopman, V.; Goodman, P. & Goge, M. 2009. *Wetland Management Series. WET-Health. A technique for rapidly assessing wetland health*. WRC report no. TT340/09, Pretoria.
- McMurtry, D.; Grobler, L.; Grobler, J. & Burns, S. *Field Guide to the Orchids of Northern South Africa and Swaziland*. Umdaus Press, Pretoria.
- Mucina, L. & Rutherford, M.C. 2006. *The Vegetation of South Africa, Lesotho and Swaziland*. South African National Biodiversity Institute, Strelitzia 19, Pretoria.
- Oberprieler, U & Cillie, B. 2002. *SAPPI Raptor Identification Guide for Southern Africa*. Random House, Cape Town.
- Pooley, E. 1998. *A Field Guide to Wild Flowers. KwaZulu-Natal and the Eastern Region*. Natal Flora Publications Trust, Durban.
- Sinclair, I., Hocky, P. & Tarbot, W. 2002. *Sasol Birds of Southern Africa*. Third edition. Struik Publishers, Cape Town.
- Smit, N. 1999. *Guide to the Acacias of South Africa*. Briza Publications, Pretoria.
- Van Ginkel, C.E.; Glen, R.P.; Gordon-Gray, K.D.; Cilliers, C.J.; Muasya, M. & van Deventer, P.P. 2011. *Easy identification of some South African Wetland Plants*. WRC report no TT479/10, Pretoria.
- Van Oudtshoorn, F. 1999. *Guide to Grasses of Southern Africa*. Briza Publications, Pretoria.
- Van Wyk, B. & Malan, S. 1997. *Field Guide to the Wild Flowers of the Highveld*. Struik Publishers, Cape Town.



Van Wyk, A.E. & Smith, G. 2001. *Regions of Floristic Endemism in Southern Africa. A Review with Emphasis on Succulents*. Umdauss Press, Pretoria.

Van Wyk, B. & Smith, G.F. 2014. *Guide to the Aloes of South Africa*. Briza Publications, Pretoria.

Van Wyk, B; Van Oudtshoorn, B. & Gericke, N. 1997. *Medicinal Plants of South Africa*. Briza Publications, Pretoria.

Van Wyk, B. & van Wyk, P. 2013. *Veldgids tot Bome van Suider-Africa*. Struik Nature, Cape Town.



Addendum A – CV

CURRICULUM VITAE

Name: **Catharina Elizabeth Venter** trading as Kyllinga Consulting
Position: Senior Ecologist and Wetland Scientist
Date of Birth: 29 December 1979
Nationality: South African
Languages: Afrikaans, English

EDUCATIONAL QUALIFICATIONS

- M.Sc (Botany), University of Pretoria (2003)
- B.Sc Hons (Botany), University of Pretoria (2001)
- B.Sc (Environmental Sciences), University of Pretoria (2000). Majored in Geography and Botany
- Matriculated, Sasolburg High School (1997)

Additional

- Introduction to ArcGIS 1 (2006)
- Bringing your data into ArcGIS (2006)
- Introduction to ArcView 3.x (2003).

FIELDS OF EXPERTISE

- **Ecological Assessment:**
Ecological Assessments as part of the Environmental Impact Assessment Process
- **Wetland Assessment:**
Wetland Assessments as part of the Environmental Impact Assessment Process and Water Use Applications, as well as rehabilitation plans for wetlands, including planning or the Working for Wetlands programme. Large scale wetland assessments (catchment scale).
- **GIS:**
Compilation of maps for submission as part of Environmental Impact Assessment Process. Creating spatial databases and large scale wetland maps (catchment scale). Projection conversions and matching/overlaying different format GIS maps.
- **Environmental Impact Assessment**
Undertaken numerous Environmental Scoping Reports, as required by the Environment Conservation Act, 1989 (Act 73 of 1989), the National Environmental Management Act, 1998 (Act 107 of 1998), as amended and the Development Facilitation Act, 1995 (Act 67 of 1995). Project experience includes the establishment of various housing typologies, golf courses, commercial and industrial projects, infrastructure development (roads), resorts and/or game lodges as well as filling stations.
- **Public Participation:**
Undertaken numerous public participation processes, ranging from basic to extensive, as required by relevant environmental legislation.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Professional Natural Scientist (Pr.Sci.Nat) in the field of Botanical Science (Reg no. 400048/08)
- Member of the Botanical Society of South Africa



EMPLOYMENT HISTORY EXPERIENCE

Kyllinga Consulting (July 2015 - present)

Senior Ecologist responsible for wetland and ecological specialist assessments.

Spatial Ecological Consulting (February 2010 – June 2015)

Senior Ecologist responsible for wetland and ecological specialist assessments.

- Wetland Related Assessments
More than 40 wetland assessments conducted between 2010 and 2015.
- Vegetation Assessments
Approximately 16 vegetation assessments between 2010 and 2015.
- Management Plans
Completed two ecological management plans.

MSA Group Services (previously Exigent Environmental CC) (August 2004 – January 2010)

Environmental Scientist responsible for ecological and wetland assessments and the compilation of maps. Also conducted various scoping and EIA applications and EMPRs.

- Ecological Assessments
In excess of 50 ecological assessments conducted between 2004 and 2010, including managing the inclusion of the fauna specialist assessments.
- Wetland Assessments
More than 60 wetland verification projects, wetland delineations and wetland assessments, completed between 2004 and 2010.
- As well as:
Rehabilitation Projects; Fatal Flaw / Screening Assessments; National Department of Agriculture Authorisations; Mining Related Assessments; Private, Public Partnership Projects; Resource Management Plans (RMP); Environmental Management Plans; Environmental Management Programme; Environmental Exemption Processes; Basic Assessments; Environmental Impact Assessments

Part-time employment (2002-2004)

Tutor for botany practicals; Assisting Wildlife management students with Braun-Blanquette analysis; Researcher for a project on the vegetation communities and ecology of the Kruger National Park; Research assistant for the analysis of street trees in Tshwane urban forest; Various part time projects related to vegetation and wetlands

COUNTRIES OF WORK EXPERIENCE

- South Africa
- Lesotho
- Botswana
- Mozambique

PAPERS AND PUBLICATIONS

Co-author and data contributor to: SIEBEN, E. *et al.* The vegetation of inland wetlands with salt-tolerant vegetation in South Africa: description, classification and explanatory environmental factors, submitted to the South African Journal of Botany for review in Feb 2015.



Co-author and data contributor to: SIEBEN, E. *et al.* The herbaceous vegetation of subtropical freshwater wetlands in South Africa: description, classification and explanatory environmental factors, submitted to the South African Journal of Botany for review in Feb 2015.

Co-author and data contributor to: SIEBEN, E. *et al.* The vegetation of grass lawn wetlands of floodplains and pans in semi-arid regions of South Africa: description, classification and explanatory environmental factors, submitted to the South African Journal of Botany for review in Jan 2015.

Co-author of several vegetation descriptions in: MUCINA, L. & RUTHERFORD, M.C. (eds) 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

VENTER, C.E. & BREDEKAMP, G.J. In prep. Major plant communities on the Mfabeni swamp, St Lucia. *Bothalia*.

VENTER, C.E.; BREDEKAMP, G.J. & GRUNDLING, P-L. 2003. Plant community types, and their association with habitat factors as ecosystem driving forces, of Mfabeni swamp. Proceedings of the congress: *Environment of the St Lucia Wetland: Processes of Change*, Cape Vidal, September 4th- 7th, 2003.

VENTER, C.E.; BREDEKAMP, G.J.; GRUNDLING P-L. 2002. Vegetation change on rehabilitated peatland on Rietvlei Nature Reserve. *Kudu* 46(1):53-63.

PRESENTATIONS

Venter, C.E.; Bredenkamp, G.J. & Grundling, P-L. 2003. Plant community types, and their association with habitat factors as ecosystem driving forces, of Mfabeni Swamp. *Environment of the St Lucia Wetland: Processes of Change*, Cape Vidal, September 4th- 7th, 2003.

Poster Presentations

Venter, C.E.; Bredenkamp, G.J.; Grundling P-L. 2002. Baseline vegetation surveys of rehabilitated peatland on Rietvlei Nature Reserve. SAAB Convergence. Grahamstown.

Venter, C.E.; Bredenkamp, G.J.; Grundling P-L. 2003. Vegetation change on rehabilitated peatland on Rietvlei Nature Reserve. SAAB Convergence. Pretoria.



Addendum B – Declaration of Independence

Specialist:	Ina Venter, trading as Kyllinga Consulting		
Nature of specialist study compiled:	Wetland Assessment		
Contact person:	Ina Venter		
Postal address:	53 Oakley street, Rayton		
Postal code:	1001	Cell:	083 370 0850
Telephone:	012 734 5642	Fax:	
E-mail:	i.venter@telkomsa.net		
Qualifications relevant experience:	& M.Sc. Botany South African National Association of Scientific Professions		
Professional affiliation(s) (if any)			



I, CE Venter (Ina) , declare that -

General declaration:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in Regulation 8;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.

Signature of specialist:

Ina Venter, trading as Kyllinga Consulting

Name of company:

30 October 2015

Date:

Addendum C – Mammal species observed in the area (ADU database)

Family	Species	Common name	Red list category
Bovidae	<i>Aepyceros melampus</i>	Impala	Least Concern
Bovidae	<i>Cephalophus natalensis</i>	Red Duiker	Least Concern
Bovidae	<i>Eudorcas thomsonii</i>	Thomson's Gazelle	Not listed
Bovidae	<i>Hippotragus niger subsp. niger</i>		Vulnerable
Bovidae	<i>Kobus ellipsiprymnus subsp. ellipsiprymnus</i>		Least Concern
Bovidae	<i>Nanger granti</i>	Grant's Gazelle	Least Concern (IUCN ver 3.1)
Bovidae	<i>Neotragus moschatus</i>	Suni	Not listed
Bovidae	<i>Neotragus moschatus subsp. zuluensis</i>		Vulnerable
Bovidae	<i>Redunca arundinum</i>	Southern Reedbuck	Least Concern
Bovidae	<i>Syncerus caffer</i>	African Buffalo	Least Concern
Bovidae	<i>Tragelaphus angasii</i>	Nyala	Least Concern
Bovidae	<i>Tragelaphus scriptus</i>	Bushbuck	Least Concern
Bovidae	<i>Tragelaphus strepsiceros</i>	Greater Kudu	Least Concern
Canidae	<i>Lycaon pictus</i>	African wild dog	Endangered
Elephantidae	<i>Loxodonta africana</i>	African Bush Elephant	Least Concern
Felidae	<i>Panthera leo</i>	Lion	Vulnerable
Galagidae	<i>Galago granti</i>	Grant's Bushbaby	Not listed
Galagidae	<i>Galago moholi</i>	Moholi Bushbaby	Least Concern
Giraffidae	<i>Giraffa camelopardalis subsp. camelopardalis</i>	Nubian Giraffe	Least Concern
Giraffidae	<i>Giraffa camelopardalis subsp. giraffa</i>	The South African Giraffe	Least Concern
Herpestidae	<i>Herpestes sanguineus</i>	Slender Mongoose	Least Concern
Herpestidae	<i>Mungos mungo</i>	Banded Mongoose	Least Concern
Hippopotamidae	<i>Hippopotamus amphibius</i>	Common Hippopotamus	Least Concern
Hyaenidae	<i>Crocuta crocuta</i>	Spotted Hyena	Near Threatened
Leporidae	<i>Lepus saxatilis</i>	Scrub Hare	Least Concern



Macroscelididae	<i>Petrodromus tetradactylus</i>	Four-toed Elephant Shrew	Endangered
Manidae	<i>Smutsia temminckii</i>	Ground Pangolin	Vulnerable
Molossidae	<i>Chaerephon pumilus</i>	Little Free-tailed Bat	Least Concern
Muridae	<i>Gerbilliscus leucogaster</i>	Bushveld Gerbil	Data Deficient
Muridae	<i>Lemniscomys rosalia</i>	Single-Striped Lemniscomys	Data Deficient
Muridae	<i>Mastomys natalensis</i>	Natal Mastomys	Least Concern
Muridae	<i>Mus minutoides</i>	Southern African Pygmy Mouse	Least Concern
Mustelidae	<i>Mellivora capensis</i>	Honey Badger	Near Threatened
Nesomyidae	<i>Dendromus mystacalis</i>	Chestnut African Climbing Mouse	Least Concern
Nesomyidae	<i>Saccostomus campestris</i>	Southern African Pouched Mouse	Least Concern
Suidae	<i>Phacochoerus africanus</i>	Common Wart-hog	Least Concern
Suidae	<i>Potamochoerus porcus</i>	Red River Hog	Not listed
Thryonomyidae	<i>Thryonomys swinderianus</i>	Greater Cane Rat	Least Concern
Vespertilionidae	<i>Scotophilus</i>	House Bats	Not listed
Vespertilionidae	<i>Scotophilus viridis</i>	Green House Bat	Least Concern



Addendum D – Bird species observed in the area (SABAP2 database)

Common name	Taxon name	Regional Red List Status 2014	Regional Red List Status 2000
Goshawk, African	<i>Accipiter tachiro</i>	Not listed	Not listed
Myna, Common	<i>Acridotheres tristis</i>	Not listed	Not listed
Swamp-warbler, Lesser	<i>Acrocephalus gracilirostris</i>	Not listed	Not listed
Sandpiper, Common	<i>Actitis hypoleucos</i>	Not listed	Not listed
Jacana, African	<i>Actophilornis africanus</i>	Not listed	Not listed
Kingfisher, Malachite	<i>Alcedo cristata</i>	Not listed	Not listed
Goose, Egyptian	<i>Alopochen aegyptiacus</i>	Not listed	Not listed
Waxbill, Orange-breasted	<i>Amandava subflava</i>	Not listed	Not listed
Crake, Black	<i>Amaurornis flavirostris</i>	Not listed	Not listed
Weaver, Thick-billed	<i>Amblyospiza albifrons</i>	Not listed	Not listed
Teal, Red-billed	<i>Anas erythrorhynchos</i>	Not listed	Not listed
Teal, Hottentot	<i>Anas hottentota</i>	Not listed	Not listed
Shoveler, Cape	<i>Anas smithii</i>	Not listed	Not listed
Duck, Yellow-billed	<i>Anas undulata</i>	Not listed	Not listed
Openbill, African	<i>Anastomus lamelligerus</i>	Not listed	Not listed
Greenbul, Sombre	<i>Andropadus importunus</i>	Not listed	Not listed
Darter, African	<i>Anhinga rufa</i>	Not listed	Not listed
Penduline-tit, Grey	<i>Anthoscopus caroli</i>	Not listed	Not listed
Pipit, African	<i>Anthus cinnamomeus</i>	Not listed	Not listed
Apalis, Yellow-breasted	<i>Apalis flava</i>	Not listed	Not listed
Apalis, Rudd's	<i>Apalis ruddi</i>	Not listed	Not listed
Trogon, Narina	<i>Apaloderma narina</i>	Not listed	Not listed
Heron, Grey	<i>Ardea cinerea</i>	Not listed	Not listed
Heron, Goliath	<i>Ardea goliath</i>	Not listed	Not listed
Heron, Black-headed	<i>Ardea melanocephala</i>	Not listed	Not listed
Heron, Purple	<i>Ardea purpurea</i>	Not listed	Not listed
Heron, Squacco	<i>Ardeola ralloides</i>	Not listed	Not listed



Turnstone, Ruddy	<i>Arenaria interpres</i>	Not listed	Not listed
Hawk, African Cuckoo	<i>Aviceda cuculoides</i>	Not listed	Not listed
Batis, Woodward's	<i>Batis fratrurn</i>	Not listed	Not listed
Batis, Chinspot	<i>Batis molitor</i>	Not listed	Not listed
Ibis, Hageda	<i>Bostrychia hagedash</i>	Not listed	Not listed
Flycatcher, Pale	<i>Bradornis pallidus</i>	Not listed	Not listed
Rush-warbler, Little	<i>Bradypterus baboecala</i>	Not listed	Not listed
Eagle-owl, Spotted	<i>Bubo africanus</i>	Not listed	Not listed
Egret, Cattle	<i>Bubulcus ibis</i>	Not listed	Not listed
Thick-knee, Spotted	<i>Burhinus capensis</i>	Not listed	Not listed
Thick-knee, Water	<i>Burhinus vermiculatus</i>	Not listed	Not listed
Heron, Green-backed	<i>Butorides striata</i>	Not listed	Not listed
Hornbill, Trumpeter	<i>Bycanistes bucinator</i>	Not listed	Not listed
Sanderling, Sanderling	<i>Calidris alba</i>	Not listed	Not listed
Sandpiper, Curlew	<i>Calidris ferruginea</i>	Not listed	Not listed
Stint, Little	<i>Calidris minuta</i>	Not listed	Not listed
Camaroptera, Green-backed	<i>Camaroptera brachyura</i>	Not listed	Not listed
Cuckoo-shrike, Black	<i>Campephaga flava</i>	Not listed	Not listed
Woodpecker, Golden-tailed	<i>Campethera abingoni</i>	Not listed	Not listed
Nightjar, Square-tailed	<i>Caprimulgus fossii</i>	Not listed	Not listed
Nightjar, Swamp	<i>Caprimulgus natalensis</i>	Vulnerable	Vulnerable
Nightjar, Fiery-necked	<i>Caprimulgus pectoralis</i>	Not listed	Not listed
Coucal, Burchell's	<i>Centropus burchellii</i>	Not listed	Not listed
Scrub-robin, White-browed	<i>Cercotrichas leucophrys</i>	Not listed	Not listed
Scrub-robin, Bearded	<i>Cercotrichas quadrivirgata</i>	Not listed	Not listed
Scrub-robin, Brown	<i>Cercotrichas signata</i>	Not listed	Not listed
Kingfisher, Pied	<i>Ceryle rudis</i>	Not listed	Not listed
Malkoha, Green	<i>Ceuthmochares australis</i>	Not listed	Not listed
Sunbird, Amethyst	<i>Chalcomitra amethystina</i>	Not listed	Not listed
Sunbird, Scarlet-chested	<i>Chalcomitra senegalensis</i>	Not listed	Not listed



Plover, Common Ringed	<i>Charadrius hiaticula</i>	Not listed	Not listed
Plover, White-fronted	<i>Charadrius marginatus</i>	Not listed	Not listed
Plover, Kittlitz's	<i>Charadrius pecuarius</i>	Not listed	Not listed
Plover, Three-banded	<i>Charadrius tricollaris</i>	Not listed	Not listed
Tern, Whiskered	<i>Chlidonias hybrida</i>	Not listed	Not listed
Tern, White-winged	<i>Chlidonias leucopterus</i>	Not listed	Not listed
Greenbul, Yellow-bellied	<i>Chlorocichla flaviventris</i>	Not listed	Not listed
Cuckoo, Diderick	<i>Chrysococcyx caprius</i>	Not listed	Not listed
Cuckoo, African Emerald	<i>Chrysococcyx cupreus</i>	Not listed	Not listed
Cuckoo, Klaas's	<i>Chrysococcyx klaas</i>	Not listed	Not listed
Stork, Woolly-necked	<i>Ciconia episcopus</i>	Not listed	Not listed
Starling, Violet-backed	<i>Cinnyricinclus leucogaster</i>	Not listed	Not listed
Sunbird, Purple-banded	<i>Cinnyris bifasciatus</i>	Not listed	Not listed
Sunbird, White-bellied	<i>Cinnyris talatala</i>	Not listed	Not listed
Snake-eagle, Brown	<i>Circaetus cinereus</i>	Not listed	Not listed
Snake-eagle, Southern Banded	<i>Circaetus fasciolatus</i>	Critically Endangered	Vulnerable
Snake-eagle, Black-chested	<i>Circaetus pectoralis</i>	Not listed	Not listed
Marsh-harrier, African	<i>Circus ranivorus</i>	Endangered	Vulnerable
Cisticola, Rattling	<i>Cisticola chiniana</i>	Not listed	Not listed
Cisticola, Pale-crowned	<i>Cisticola cinnamomeus</i>	Not listed	Not listed
Neddicky, Neddicky	<i>Cisticola fulvicapilla</i>	Not listed	Not listed
Cisticola, Rufous-winged	<i>Cisticola galactotes</i>	Not listed	Not listed
Cisticola, Zitting	<i>Cisticola juncidis</i>	Not listed	Not listed
Cisticola, Croaking	<i>Cisticola natalensis</i>	Not listed	Not listed
Cisticola, Cloud	<i>Cisticola textrix</i>	Not listed	Not listed
Mousebird, Speckled	<i>Colius striatus</i>	Not listed	Not listed
Dove, Rock	<i>Columba livia</i>	Not listed	Not listed
Crow, Pied	<i>Corvus albus</i>	Not listed	Not listed
Robin-chat, White-throated	<i>Cossypha humeralis</i>	Not listed	Not listed
Robin-chat, Red-capped	<i>Cossypha natalensis</i>	Not listed	Not listed



Seedeater, Streaky-headed	<i>Crithagra gularis</i>	Not listed	Not listed
Canary, Yellow-fronted	<i>Crithagra mozambicus</i>	Not listed	Not listed
Canary, Brimstone	<i>Crithagra sulphuratus</i>	Not listed	Not listed
Cuckoo, Black	<i>Cuculus clamosus</i>	Not listed	Not listed
Cuckoo, Red-chested	<i>Cuculus solitarius</i>	Not listed	Not listed
Cursorer, Temminck's	<i>Cursorius temminckii</i>	Not listed	Not listed
Sunbird, Olive	<i>Cyanomitra olivacea</i>	Not listed	Not listed
Sunbird, Grey	<i>Cyanomitra veroxii</i>	Not listed	Not listed
Duck, White-faced	<i>Dendrocygna viduata</i>	Not listed	Not listed
Fringolin, Crested	<i>Dendroperdix sephaena</i>	Not listed	Not listed
Woodpecker, Cardinal	<i>Dendropicos fuscescens</i>	Not listed	Not listed
Drongo, Fork-tailed	<i>Dicrurus adsimilis</i>	Not listed	Not listed
Drongo, Square-tailed	<i>Dicrurus ludwigii</i>	Not listed	Not listed
Puffback, Black-backed	<i>Dryoscopus cubla</i>	Not listed	Not listed
Egret, Great	<i>Egretta alba</i>	Not listed	Not listed
Heron, Black	<i>Egretta ardesiaca</i>	Not listed	Not listed
Egret, Little	<i>Egretta garzetta</i>	Not listed	Not listed
Egret, Yellow-billed	<i>Egretta intermedia</i>	Not listed	Not listed
Kite, Black-shouldered	<i>Elanus caeruleus</i>	Not listed	Not listed
Bunting, Golden-breasted	<i>Emberiza flaviventris</i>	Not listed	Not listed
Stork, Saddle-billed	<i>Ephippiorhynchus senegalensis</i>	Endangered	Endangered
Waxbill, Common	<i>Estrilda astrild</i>	Not listed	Not listed
Waxbill, Grey	<i>Estrilda perreini</i>	Not listed	Not listed
Widowbird, White-winged	<i>Euplectes albonotatus</i>	Not listed	Not listed
Widowbird, Fan-tailed	<i>Euplectes axillaris</i>	Not listed	Not listed
Bishop, Southern Red	<i>Euplectes orix</i>	Not listed	Not listed
Roller, Broad-billed	<i>Eurystomus glaucurus</i>	Not listed	Not listed
Falcon, Amur	<i>Falco amurensis</i>	Not listed	Not listed
Snipe, African	<i>Gallinago nigripennis</i>	Not listed	Not listed
Moorhen, Common	<i>Gallinula chloropus</i>	Not listed	Not listed



Turaco, Purple-crested	<i>Gallirex porphyreolophus</i>	Not listed	Not listed
Pratincole, Collared	<i>Glareola pratincola</i>	Not listed	Not listed
Guineafowl, Crested	<i>Guttera edouardi</i>	Not listed	Not listed
Vulture, Palm-nut	<i>Gypohierax angolensis</i>	Not listed	Not listed
Kingfisher, Brown-hooded	<i>Halcyon albiventris</i>	Not listed	Not listed
Fish-eagle, African	<i>Haliaeetus vocifer</i>	Not listed	Not listed
Sunbird, Collared	<i>Hedydipna collaris</i>	Not listed	Not listed
Stilt, Black-winged	<i>Himantopus himantopus</i>	Not listed	Not listed
Swallow, Lesser Striped	<i>Hirundo abyssinica</i>	Not listed	Not listed
Swallow, Barn	<i>Hirundo rustica</i>	Not listed	Not listed
Swallow, Red-breasted	<i>Hirundo semirufa</i>	Not listed	Not listed
Swallow, Wire-tailed	<i>Hirundo smithii</i>	Not listed	Not listed
Twinspot, Pink-throated	<i>Hypargos margaritatus</i>	Not listed	Not listed
Honeyguide, Greater	<i>Indicator indicator</i>	Not listed	Not listed
Honeyguide, Lesser	<i>Indicator minor</i>	Not listed	Not listed
Honeyguide, Scaly-throated	<i>Indicator variegatus</i>	Not listed	Not listed
Pygmy-Kingfisher, African	<i>Ispidina picta</i>	Not listed	Not listed
Buzzard, Lizard	<i>Kaupifalco monogrammicus</i>	Not listed	Not listed
Firefinch, African	<i>Lagonosticta rubricata</i>	Not listed	Not listed
Starling, Black-bellied	<i>Lamprotornis corruscus</i>	Not listed	Not listed
Starling, Cape Glossy	<i>Lamprotornis nitens</i>	Not listed	Not listed
Boubou, Southern	<i>Laniarius ferrugineus</i>	Not listed	Not listed
Fiscal, Common (Southern)	<i>Lanius collaris</i>	Not listed	Not listed
Gull, Grey-headed	<i>Larus cirrocephalus</i>	Not listed	Not listed
Gull, Kelp	<i>Larus dominicanus</i>	Not listed	Not listed
Godwit, Bar-tailed	<i>Limosa lapponica</i>	Not listed	Not listed
Bustard, Black-bellied	<i>Lissotis melanogaster</i>	Near threatened	Near threatened
Eagle, Long-crested	<i>Lophaetus occipitalis</i>	Not listed	Not listed
Barbet, Black-collared	<i>Lybius torquatus</i>	Not listed	Not listed
Longclaw, Rosy-throated	<i>Macronyx ameliae</i>	Near threatened	Near threatened



Longclaw, Cape	<i>Macronyx capensis</i>	Not listed	Not listed
Longclaw, Yellow-throated	<i>Macronyx croceus</i>	Not listed	Not listed
Bush-shrike, Grey-headed	<i>Malaconotus blanchoti</i>	Not listed	Not listed
Twinspot, Green	<i>Mandingoa nitidula</i>	Not listed	Not listed
Kingfisher, Giant	<i>Megaceryle maximus</i>	Not listed	Not listed
Flycatcher, Southern Black	<i>Melaenornis pammelaina</i>	Not listed	Not listed
Bee-eater, European	<i>Merops apiaster</i>	Not listed	Not listed
Bee-eater, Blue-cheeked	<i>Merops persicus</i>	Not listed	Not listed
Bee-eater, Little	<i>Merops pusillus</i>	Not listed	Not listed
Jacana, Lesser	<i>Microparra capensis</i>	Near threatened	Near threatened
Kite, Yellow-billed	<i>Milvus aegyptius</i>	Not listed	Not listed
Lark, Rufous-naped	<i>Mirafraga africana</i>	Not listed	Not listed
Wagtail, African Pied	<i>Motacilla aguimp</i>	Not listed	Not listed
Wagtail, Cape	<i>Motacilla capensis</i>	Not listed	Not listed
Flycatcher, African Dusky	<i>Muscicapa adusta</i>	Not listed	Not listed
Flycatcher, Ashy	<i>Muscicapa caerulescens</i>	Not listed	Not listed
Flycatcher, Spotted	<i>Muscicapa striata</i>	Not listed	Not listed
Stork, Yellow-billed	<i>Mycteria ibis</i>	Endangered	Near threatened
Tit-flycatcher, Grey	<i>Myioparus plumbeus</i>	Not listed	Not listed
Pygmy-Goose, African	<i>Nettapus auritus</i>	Vulnerable	Near threatened
Nicator, Eastern	<i>Nicator gularis</i>	Not listed	Not listed
Brubru, Brubru	<i>Nilaus afer</i>	Not listed	Not listed
Whimbrel, Common	<i>Numenius phaeopus</i>	Not listed	Not listed
Oriole, Black-headed	<i>Oriolus larvatus</i>	Not listed	Not listed
Quailfinch, African	<i>Ortygospiza atricollis</i>	Not listed	Not listed
Osprey, Osprey	<i>Pandion haliaetus</i>	Not listed	Not listed
Tit, Southern Black	<i>Parus niger</i>	Not listed	Not listed
Sparrow, Southern Grey-headed	<i>Passer diffusus</i>	Not listed	Not listed
Sparrow, House	<i>Passer domesticus</i>	Not listed	Not listed
Pelican, Pink-backed	<i>Pelecanus rufescens</i>	Vulnerable	Vulnerable



Francolin, Coqui	<i>Peliperdix coqui</i>	Not listed	Not listed
Petronia, Yellow-throated	<i>Petronia superciliaris</i>	Not listed	Not listed
Cormorant, Reed	<i>Phalacrocorax africanus</i>	Not listed	Not listed
Cormorant, White-breasted	<i>Phalacrocorax carbo</i>	Not listed	Not listed
Ruff, Ruff	<i>Philomachus pugnax</i>	Not listed	Not listed
Flamingo, Lesser	<i>Phoenicopterus minor</i>	Not listed	Not listed
Flamingo, Greater	<i>Phoenicopterus ruber</i>	Near threatened	Near threatened
Wood-hoopoe, Green	<i>Phoeniculus purpureus</i>	Not listed	Not listed
Brownbul, Terrestrial	<i>Phyllastrephus terrestris</i>	Not listed	Not listed
Warbler, Willow	<i>Phylloscopus trochilus</i>	Not listed	Not listed
Spoonbill, African	<i>Platalea alba</i>	Not listed	Not listed
Wattle-eye, Black-throated	<i>Platysteira peltata</i>	Not listed	Not listed
Goose, Spur-winged	<i>Plectropterus gambensis</i>	Not listed	Not listed
Ibis, Glossy	<i>Plegadis falcinellus</i>	Not listed	Not listed
Weaver, Dark-backed	<i>Ploceus bicolor</i>	Not listed	Not listed
Weaver, Village	<i>Ploceus cucullatus</i>	Not listed	Not listed
Masked-weaver, Lesser	<i>Ploceus intermedius</i>	Not listed	Not listed
Weaver, Spectacled	<i>Ploceus ocularis</i>	Not listed	Not listed
Weaver, Yellow	<i>Ploceus subaureus</i>	Not listed	Not listed
Masked-weaver, Southern	<i>Ploceus velatus</i>	Not listed	Not listed
Weaver, Southern Brown-throated	<i>Ploceus xanthopterus</i>	Not listed	Not listed
Tinkerbird, Yellow-rumped	<i>Pogoniulus bilineatus</i>	Not listed	Not listed
Tinkerbird, Red-fronted	<i>Pogoniulus pusillus</i>	Not listed	Not listed
Robin, White-starred	<i>Pogonocichla stellata</i>	Not listed	Not listed
Eagle, Martial	<i>Polemaetus bellicosus</i>	Endangered	Vulnerable
Swamphen, African Purple	<i>Porphyrio madagascariensis</i>	Not listed	Not listed
Prinia, Tawny-flanked	<i>Prinia subflava</i>	Not listed	Not listed
Helmet-shrike, White-crested	<i>Prionops plumatus</i>	Not listed	Not listed
Saw-wing, Black (Southern race)	<i>Psolidoprocne holomelaena</i>	Not listed	Not listed
Swallow, Grey-rumped	<i>Pseudhirundo griseopyga</i>	Not listed	Not listed



Spurfowl, Natal	<i>Pternistis natalensis</i>	Not listed	Not listed
Bulbul, Dark-capped	<i>Pycnonotus tricolor</i>	Not listed	Not listed
Rail, African	<i>Rallus caerulescens</i>	Not listed	Not listed
Avocet, Pied	<i>Recurvirostra avosetta</i>	Not listed	Not listed
Scimitarbill, Common	<i>Rhinopomastus cyanomelas</i>	Not listed	Not listed
Martin, Banded	<i>Riparia cincta</i>	Not listed	Not listed
Martin, Brown-throated	<i>Riparia paludicola</i>	Not listed	Not listed
Duck, Comb	<i>Sarkidiornis melanotos</i>	Not listed	Not listed
Flufftail, Buff-spotted	<i>Sarothrura elegans</i>	Not listed	Not listed
Flufftail, Red-chested	<i>Sarothrura rufa</i>	Not listed	Not listed
Stonechat, African	<i>Saxicola torquatus</i>	Not listed	Not listed
Francolin, Shelley's	<i>Scleroptila shelleyi</i>	Not listed	Not listed
Hamerkop, Hamerkop	<i>Scopus umbretta</i>	Not listed	Not listed
Flycatcher, Fiscal	<i>Sigelus silens</i>	Not listed	Not listed
Mannikin, Red-backed	<i>Spermestes bicolor</i>	Not listed	Not listed
Mannikin, Bronze	<i>Spermestes cucullatus</i>	Not listed	Not listed
Barbet, White-eared	<i>Stactolaema leucotis</i>	Not listed	Not listed
Eagle, African Crowned	<i>Stephanoaetus coronatus</i>	Vulnerable	Near threatened
Tern, Little	<i>Sterna albifrons</i>	Not listed	Not listed
Tern, Swift	<i>Sterna bergii</i>	Not listed	Not listed
Tern, Caspian	<i>Sterna caspia</i>	Vulnerable	Near threatened
Tern, Common	<i>Sterna hirundo</i>	Not listed	Not listed
Turtle-dove, Cape	<i>Streptopelia capicola</i>	Not listed	Not listed
Dove, Red-eyed	<i>Streptopelia semitorquata</i>	Not listed	Not listed
Dove, Laughing	<i>Streptopelia senegalensis</i>	Not listed	Not listed
Wood-owl, African	<i>Strix woodfordii</i>	Not listed	Not listed
Crombec, Long-billed	<i>Sylvietta rufescens</i>	Not listed	Not listed
Grebe, Little	<i>Tachybaptus ruficollis</i>	Not listed	Not listed
Turaco, Livingstone's	<i>Tauraco livingstonii</i>	Not listed	Not listed
Tchagra, Brown-crowned	<i>Tchagra australis</i>	Not listed	Not listed



Tchagra, Black-crowned	<i>Tchagra senegalus</i>	Not listed	Not listed
Bush-shrike, Olive	<i>Telophorus olivaceus</i>	Not listed	Not listed
Bush-shrike, Gorgeous	<i>Telophorus quadricolor</i>	Not listed	Not listed
Bush-shrike, Orange-breasted	<i>Telophorus sulfureopectus</i>	Not listed	Not listed
Paradise-flycatcher, African	<i>Terpsiphone viridis</i>	Not listed	Not listed
Ibis, African Sacred	<i>Threskiornis aethiopicus</i>	Not listed	Not listed
Hornbill, Crowned	<i>Tockus alboterminatus</i>	Not listed	Not listed
Barbet, Crested	<i>Trachyphonus vaillantii</i>	Not listed	Not listed
Green-pigeon, African	<i>Treron calvus</i>	Not listed	Not listed
Sandpiper, Wood	<i>Tringa glareola</i>	Not listed	Not listed
Greenshank, Common	<i>Tringa nebularia</i>	Not listed	Not listed
Sandpiper, Marsh	<i>Tringa stagnatilis</i>	Not listed	Not listed
Crested-flycatcher, Blue-mantled	<i>Trochocercus cyanomelas</i>	Not listed	Not listed
Thrush, Kurrichane	<i>Turdus libonyanus</i>	Not listed	Not listed
Buttonquail, Kurrichane	<i>Turnix sylvaticus</i>	Not listed	Not listed
Wood-dove, Emerald-spotted	<i>Turtur chalcospilos</i>	Not listed	Not listed
Dove, Tambourine	<i>Turtur tympanistria</i>	Not listed	Not listed
Owl, Barn	<i>Tyto alba</i>	Not listed	Not listed
Hoopoe, African	<i>Upupa africana</i>	Not listed	Not listed
Waxbill, Blue	<i>Uraeginthus angolensis</i>	Not listed	Not listed
Mousebird, Red-faced	<i>Urocolius indicus</i>	Not listed	Not listed
Lapwing, Blacksmith	<i>Vanellus armatus</i>	Not listed	Not listed
Lapwing, Crowned	<i>Vanellus coronatus</i>	Not listed	Not listed
Lapwing, Senegal	<i>Vanellus lugubris</i>	Not listed	Not listed
Lapwing, African Wattled	<i>Vanellus senegallus</i>	Not listed	Not listed
Whydah, Pin-tailed	<i>Vidua macroura</i>	Not listed	Not listed
White-eye, African Yellow	<i>Zosterops senegalensis</i>	Not listed	Not listed
White-eye, Cape	<i>Zosterops virens</i>	Not listed	Not listed

Addendum E – Herpetofauna species observed in the area (ADU database)

Reptiles

Family	Species	Common name	Red list category
Amphisbaenidae	<i>Monopeltis sphenorhynchus</i>	Slender Worm Lizard	Least Concern (SARCA 2014)
Amphisbaenidae	<i>Zygaspis vandami subsp arenicola</i>	Maputoland Dwarf Worm Lizard	Not listed
Atractaspididae	<i>Amblyodipsas microphthalma subsp microphthalma</i>	Eastern Purple-glossed Snake	Least Concern (SARCA 2014)
Atractaspididae	<i>Aparallactus capensis</i>	Black-headed Centipede-eater	Least Concern (SARCA 2014)
Atractaspididae	<i>Atractaspis bibronii</i>	Bibron's Stiletto Snake	Least Concern (SARCA 2014)
Atractaspididae	<i>Xenocalamus bicolor subsp lineatus</i>	Striped Quill-snouted Snake	Least Concern (SARCA 2014)
Atractaspididae	<i>Xenocalamus transvaalensis</i>	Speckled Quill-snouted Snake	Least Concern (SARCA 2014)
Chamaeleonidae	<i>Chamaeleo dilepis subsp dilepis</i>	Common Flap-neck Chameleon	Least Concern (SARCA 2014)
Colubridae	<i>Crotaphopeltis hotamboeia</i>	Red-lipped Snake	Least Concern (SARCA 2014)
Colubridae	<i>Dasypeltis medici subsp medici</i>	East African Egg-eater	Least Concern (SARCA 2014)
Colubridae	<i>Dasypeltis scabra</i>	Rhombic Egg-eater	Least Concern (SARCA 2014)
Colubridae	<i>Duberria variegata</i>	Variegated Slug-eater	Least Concern (SARCA 2014)
Colubridae	<i>Lycodonomorphus rufulus</i>	Brown Water Snake	Least Concern (SARCA 2014)
Colubridae	<i>Prosymna stuhlmannii</i>	East African Shovel-snout	Least Concern (SARCA 2014)
Colubridae	<i>Psammophis mossambicus</i>	Olive Grass Snake	Least Concern (SARCA 2014)
Colubridae	<i>Telescopus semiannulatus subsp semiannulatus</i>	Eastern Tiger Snake	Least Concern (SARCA 2014)



Colubridae	<i>Thelotornis capensis subsp capensis</i>	Southern Twig Snake	Least Concern (SARCA 2014)
Cordylidae	<i>Cordylus jonesii</i>	Jones' Girdled Lizard	Least Concern (SARCA 2014)
Elapidae	<i>Aspidelaps scutatus subsp intermedius</i>	Intermediate Shield Cobra	Least Concern (SARCA 2014)
Gekkonidae	<i>Hemidactylus mabouia</i>	Common Tropical House Gecko	Least Concern (SARCA 2014)
Gekkonidae	<i>Homopholis wahlbergii</i>	Wahlberg's Velvet Gecko	Least Concern (SARCA 2014)
Gekkonidae	<i>Lygodactylus capensis subsp capensis</i>	Common Dwarf Gecko	Least Concern (SARCA 2014)
Gekkonidae	<i>Pachydactylus vansonii</i>	Van Son's Gecko	Least Concern (SARCA 2014)
Lacertidae	<i>Ichnotropis capensis</i>	Ornate Rough-scaled Lizard	Least Concern (SARCA 2014)
Lacertidae	<i>Meroles squamulosus</i>	Common Rough-scaled Lizard	Least Concern (SARCA 2014)
Lacertidae	<i>Nucras intertexta</i>	Spotted Sandveld Lizard	Least Concern (SARCA 2014)
Lacertidae	<i>Nucras ornata</i>	Ornate Sandveld Lizard	Least Concern (SARCA 2014)
Leptotyphlopidae	<i>Leptotyphlops incognitus</i>	Incognito Thread Snake	Least Concern (SARCA 2014)
Leptotyphlopidae	<i>Leptotyphlops scutifrons subsp conjunctus</i>	Eastern Thread Snake	Not listed
Pelomedusidae	<i>Pelusios subniger</i>	Black-bellied Hinged Terrapin	Least Concern (SARCA 2014)
Pythonidae	<i>Python natalensis</i>	Southern African Python	Least Concern (SARCA 2014)
Scincidae	<i>Acontias aurantiacus subsp aurantiacus</i>	Golden Blind Legless Skink	Least Concern (SARCA 2014)
Scincidae	<i>Acontias plumbeus</i>	Giant Legless Skink	Least Concern (SARCA 2014)
Scincidae	<i>Afroablepharus wahlbergii</i>	Wahlberg's Snake-eyed Skink	Least Concern (SARCA 2014)

Scincidae	<i>Scelotes arenicolus</i>	Zululand Dwarf Burrowing Skink	Least Concern (SARCA 2014)
Scincidae	<i>Trachylepis depressa</i>	Eastern Coastal Skink	Least Concern (SARCA 2014)
Scincidae	<i>Trachylepis striata</i>	Striped Skink	Least Concern (SARCA 2014)
Typhlopidae	<i>Afrotyphlops fornasinii</i>	Fornasini's Dwarf Blind Snake	Least Concern (SARCA 2014)
Varanidae	<i>Varanus albigularis subsp albigularis</i>	Rock Monitor	Least Concern (SARCA 2014)
Viperidae	<i>Bitis arietans subsp arietans</i>	Puff Adder	Least Concern (SARCA 2014)

Frogs

Family	Species	Common name	Red list category
Arthroleptidae	<i>Arthroleptis stenodactylus</i>	Shovel-footed Squeaker	Least Concern
Arthroleptidae	<i>Leptopelis mossambicus</i>	Brownbacked Tree Frog	Least Concern
Brevicipitidae	<i>Breviceps adpersus</i>	Bushveld Rain Frog	Least Concern
Brevicipitidae	<i>Breviceps mossambicus</i>	Mozambique Rain Frog	Least Concern
Bufonidae	<i>Amietophrynus garmani</i>	Olive Toad	Least Concern
Bufonidae	<i>Amietophrynus gutturalis</i>	Guttural Toad	Least Concern
Bufonidae	<i>Amietophrynus maculatus</i>	Flatbacked Toad	Least Concern
Bufonidae	<i>Schismaderma carens</i>	Red Toad	Least Concern
Hemisotidae	<i>Hemissus marmoratus</i>	Spotted Shovel-nosed Frog	Least Concern
Hyperoliidae	<i>Afrixalus delicatus</i>	Delicate Leaf-folding Frog	Least Concern
Hyperoliidae	<i>Afrixalus fornasinii</i>	Greater Leaf-folding Frog	Least Concern
Hyperoliidae	<i>Hyperolius argus</i>	Argus Reed Frog	Least Concern
Hyperoliidae	<i>Hyperolius marmoratus</i>	Painted Reed Frog	Least Concern
Hyperoliidae	<i>Hyperolius pusillus</i>	Water Lily Frog	Least Concern
Hyperoliidae	<i>Hyperolius tuberilinguis</i>	Tinker Reed Frog	Least Concern
Hyperoliidae	<i>Kassina maculata</i>	Redlegged Kassina	Least Concern
Hyperoliidae	<i>Kassina senegalensis</i>	Bubbling Kassina	Least Concern



Phrynobatrachidae	<i>Phrynobatrachus mababiensis</i>	Dwarf Puddle Frog	Least Concern
Ptychadenidae	<i>Ptychadena anchietae</i>	Plain Grass Frog	Least Concern
Ptychadenidae	<i>Ptychadena mascareniensis</i>	Mascarene Grass Frog	Least Concern
Ptychadenidae	<i>Ptychadena mossambica</i>	Broadbanded Grass Frog	Least Concern
Ptychadenidae	<i>Ptychadena oxyrhynchus</i>	Sharpnosed Grass Frog	Least Concern
Ptychadenidae	<i>Ptychadena taenioscelis</i>	Dwarf Grass Frog	Least Concern
Pyxicephalidae	<i>Cacosternum boettgeri</i>	Common Caco	Least Concern
Pyxicephalidae	<i>Pyxicephalus edulis</i>	African Bull Frog	Least Concern
Pyxicephalidae	<i>Tomopterna cryptotis</i>	Tremelo Sand Frog	Least Concern
Pyxicephalidae	<i>Tomopterna krugerensis</i>	Knocking Sand Frog	Least Concern
Rhacophoridae	<i>Chiromantis xerampelina</i>	Southern Foam Nest Frog	Least Concern

Addendum F – Invertebrate species observed in the area (ADU database)

Butterflies

Family	Species	Common name	Red list category	Atlas region endemic
HESPERIIDAE	<i>Abantis paradisea</i>	Paradise skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Abantis tettensis</i>	Spotted velvet skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Abantis venosa</i>	Veined skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Acleros mackenii subsp. mackenii</i>	Macken's dart	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Borbo borbonica subsp. borbonica</i>	Olive-haired swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Borbo detecta</i>	Rusty swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Borbo fallax</i>	False swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Borbo fatuellus subsp. fatuellus</i>	Long-horned swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Borbo gemella</i>	Twin swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Borbo micans</i>	Marsh swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Coeliades forestan subsp. forestan</i>	Striped policeman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Coeliades keithloa</i>	Red-tab policeman	Least Concern (SABCA 2013)	Yes
HESPERIIDAE	<i>Coeliades libeon</i>	Spotless policeman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Coeliades lorenzo</i>	Coastal Red-tab policeman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Coeliades pisistratus</i>	Two-pip policeman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Eagris nottoana subsp. nottoana</i>	Rufous-winged elfin	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Fresna nyassae</i>	Variegated acraea hopper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Gegenes hottentota</i>	Marsh hottentot skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Gegenes niso subsp. niso</i>	Common hottentot	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Gegenes pumilio subsp. gambica</i>	Dark hottentot	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Gomalia elma subsp. elma</i>	Green-marbled skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Kedestes callicles</i>	Pale ranger	Least Concern (SABCA 2013)	



HESPERIIDAE	<i>Kedestes macomo</i>	Macomo ranger	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Leucochitonea levubu</i>	White-cloaked skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Netrobalane canopus</i>	Buff-tipped skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Parosmodes morantii subsp. morantii</i>	Morant's orange	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Pelopidas</i>		Not listed	
HESPERIIDAE	<i>Pelopidas mathias</i>	Black-banded swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Pelopidas thrax</i>	White-banded swift	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Platylesches</i>		Not listed	
HESPERIIDAE	<i>Platylesches moritili</i>	Honey hopper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Sarangesa motozi</i>	Elfin skipper	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Sarangesa phidyle</i>	Small elfin	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Sarangesa seineri subsp. durbana</i>	Dark elfin	Least Concern (SABCA 2013)	Yes
HESPERIIDAE	<i>Spialia confusa subsp. confusa</i>	Confusing sandman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Spialia delagoae</i>	Delagoa sandman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Spialia diomus subsp. ferax</i>	Common sandman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Spialia dromus</i>	Forest sandman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Spialia spio</i>	Mountain sandman	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Tagiades flesus</i>	Clouded forester	Least Concern (SABCA 2013)	
HESPERIIDAE	<i>Tsitana tsita</i>	Dismal sylph	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Actizera lucida</i>	Rayed blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Aloeides aranda</i>	Aranda copper	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Aloeides taikosama</i>	Dusky copper	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Aloeides trimeni subsp. trimeni</i>	Trimen's copper	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Anthene amarah subsp. amarah</i>	Black striped hairtail	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Anthene larydas</i>	Spotted hairtail	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Anthene lemnos subsp. lemnos</i>	Large hairtail	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Anthene liodes subsp. bihe</i>	Liodes hairtail	Least Concern (SABCA 2013)	



LYCAENIDAE	<i>Anthene princeps</i>	Lebombo hairtail	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Axiocerses amanga subsp. amanga</i>	Bush scarlet	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Axiocerses tjoane subsp. tjoane</i>	Eastern scarlet	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Azanus jesous</i>	Topaz babul blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Azanus mirza</i>	Pale babul blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Azanus moriqua</i>	Black-bordered babul blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Azanus natalensis</i>	Natal babul blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Azanus ubaldus</i>	Velvet-spotted babul blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Baliochila</i>		Not listed	
LYCAENIDAE	<i>Baliochila aslanga</i>	Natal buff	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Cacyreus linzeus</i>	Bush bronze	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Chilades trochylus</i>	Grass jewel	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Chloroselas mazoensis</i>	Purple gem	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Chloroselas pseudozeritis subsp. pseudozeritis</i>	Brilliant gem	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Cigaritis ella</i>	Ella's bar	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Cigaritis natalensis</i>	Natal bar	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Cupidopsis jobates subsp. jobates</i>	Tailed meadow blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Eicochrysops hippocrates</i>	White-tipped blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Eicochrysops messapus subsp. mahallakoaena</i>	Cupreous blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Euchrysops barkeri</i>	Barker's smoky blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Euchrysops dolorosa</i>	Sabie smoky blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Euchrysops malathana</i>	Common smoky blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Euchrysops osiris</i>	Osiris smoky blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Euchrysops subpallida</i>	Ashen smoky blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Hypolycaena buxtoni subsp. buxtoni</i>	Buxton's hairstreak	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Hypolycaena lochmophila</i>	Coastal hairstreak	Least Concern (SABCA 2013)	



LYCAENIDAE	<i>Hypolycaena philippus subsp. philippus</i>	Purplebrown hairstreak	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Iolaus pallene</i>	Saffron sapphire	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Iolaus sidus</i>	Red-line sapphire	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Iolaus silarus subsp. silarus</i>	Straight-line sapphire	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Lachnocnema bibulus</i>	Common woolly legs	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Lachnocnema durbani</i>	D'Urban's woolly legs	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Lachnocnema laches</i>	Southern pied woolly legs	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Lampides boeticus</i>	Pea blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Lepidochrysops patricia</i>	Patricia blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Lepidochrysops plebeia subsp. plebeia</i>	Twin-spot blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Leptomyrina hirundo</i>	Tailed black-eye	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Leptotes</i>		Not listed	
LYCAENIDAE	<i>Leptotes jeanneli</i>	Jeannel's zebra blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Leptotes pirithous subsp. pirithous</i>	Common zebra blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Leptotes pulchra subsp. pulchra</i>	Sesbania blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Oraidium barberae</i>	Dwarf blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Ornipholidotos peucetia subsp. penningtoni</i>	Large glasswing	Least Concern (SABCA 2013)	Yes
LYCAENIDAE	<i>Pentila tropicalis subsp. tropicalis</i>	Spotted pentila	Least Concern (SABCA 2013)	Yes
LYCAENIDAE	<i>Pseudonacaduba sichela subsp. sichela</i>	Dusky line blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Stugeta bowkeri subsp. tearei</i>	Bowker's marbled sapphire	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Teriomima puellaris</i>	Two dotted buff	Not listed	
LYCAENIDAE	<i>Teriomima zuluana</i>	Zulu buff	Least Concern (SABCA 2013)	Yes
LYCAENIDAE	<i>Tuxentius calice</i>	White pie	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Tuxentius melaena subsp. melaena</i>	Black pie	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Virachola antalus</i>	Brown playboy	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Virachola dariaves</i>	Black-and-orange playboy	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Virachola dinochares</i>	Apricot playboy	Least Concern (SABCA 2013)	



LYCAENIDAE	<i>Virachola dinomenes subsp. dinomenes</i>	Orange playboy	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Virachola diocles</i>	Orange-barred playboy	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Virachola vansoni</i>	Van Son's playboy	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Zizeeria knysna subsp. knysna</i>	African grass blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Zizina otis subsp. antanossa</i>	Dark grass blue	Least Concern (SABCA 2013)	
LYCAENIDAE	<i>Zizula hylax</i>	Tiny grass blue	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea acara subsp. acara</i>	Acara acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea acrita subsp. acrita</i>	Fiery acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea aganice subsp. aganice</i>	Wanderer	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea aglaonice</i>	Clear-spotted acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea anemosa</i>	Broad-bordered acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea axina</i>	Little acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea boopis subsp. boopis</i>	Rainforest acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea lygus</i>	Lygus acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea natalica</i>	Natal acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea neobule subsp. neobule</i>	Wandering donkey acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea oncaea</i>	Window acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea petraea</i>	Blood-red acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea rabbaiae subsp. perlucida</i>	Clear-wing acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea rabbaiae subsp. rabbaiae</i>	Clear-wing acraea	Not listed	
NYMPHALIDAE	<i>Acraea satis</i>	East-coast acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Acraea violarum</i>	Speckled red acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Amauris niavius subsp. dominicanus</i>	Friar, common friar	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Amauris ochlea subsp. ochlea</i>	Novice, novice friar	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Bicyclus anynana subsp. anynana</i>	Squinting bush brown	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Bicyclus safitza subsp. safitza</i>	Common bush brown	Least Concern (SABCA 2013)	

NYMPHALIDAE	<i>Byblia anvatara subsp. acheloia</i>	Joker	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Byblia ilithyia</i>	Spotted joker	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Catacroptera cloanthe subsp. cloanthe</i>	Pirate	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes achaemenes subsp. achaemenes</i>	Bushveld charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes brutus subsp. natalensis</i>	White-barred charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes candiope</i>	Green-veined charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes castor subsp. flavifasciatus</i>	Giant charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes cithaeron subsp. cithaeron</i>	Blue-spotted charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes etesipe subsp. tavetensis</i>	Scarce forest charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes ethalion subsp. ethalion</i>	Coast charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes jahlusa subsp. argynnides</i>	Pearl-spotted charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes jasius subsp. saturnus</i>	Foxy charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes phaeus</i>	Demon charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes protoclea subsp. azota</i>	Flame-bordered charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes varanes subsp. varanes</i>	Pearl charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes varanes subsp. vologeses</i>	Pearl charaxes	Not listed	
NYMPHALIDAE	<i>Charaxes wakefieldi</i>	Forest queen	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Charaxes zoolina</i>	Club-tailed charaxes	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Coenyrha hebe</i>	Zulu shade fly	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Danaus chrysippus subsp. orientis</i>	African monarch, Plain tiger	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Euphaedra neophron subsp. neophron</i>	Gold-banded forester	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Euryphura achlys</i>	Mottled-green nymph	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Eurytela dryope subsp. angulata</i>	Golden piper	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Eurytela hiarbas subsp. angustata</i>	Pied piper	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Hamanumida daedalus</i>	Guinea-fowl butterfly	Least Concern (SABCA 2013)	



NYMPHALIDAE	<i>Heteropsis perspicua subsp. perspicua</i>	Eyed bush brown	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Hypolimnas misippus</i>	Common diadem	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Junonia hierta subsp. cebrene</i>	Yellow pansy	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Junonia natalica subsp. natalica</i>	Brown commodore	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Junonia oenone subsp. oenone</i>	Blue pansy	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Junonia orithya subsp. madagascariensis</i>	Eyed pansy	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Libythea labdaca subsp. laius</i>		Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Melanitis leda</i>	Twilight Brown	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Neptis goochii</i>	Streaked sailer	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Neptis jordani</i>	Jordan's sailer	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Neptis saclava subsp. marpeasa</i>	Spotted sailer	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Phalanta eurytis subsp. eurytis</i>	Forest leopard	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Phalanta phalantha subsp. aethiopica</i>	African leopard	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Physcaeneura panda</i>	Dark-webbed ringlet	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Precis archesia subsp. archesia</i>	Garden commodore	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Precis octavia subsp. sesamus</i>	Gaudy Commodore	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Protogoniomorpha anacardii subsp. nebulosa</i>	Clouded Mother-of-pearl	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Protogoniomorpha parhassus</i>	Mother-of-pearl	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Pseudacraea boisduvalii subsp. trimenii</i>	Trimen's false acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Sevenia</i>		Not listed	
NYMPHALIDAE	<i>Sevenia boisduvali subsp. boisduvali</i>	Boisduval's tree nymph	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Sevenia natalensis</i>	Natal tree-nymph	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Telchinia cabira</i>	Yellow-banded acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Telchinia encedon subsp. encedon</i>	White-barred acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Telchinia esebria</i>	Dusky acraea	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Telchinia serena</i>	Dancing acraea	Least Concern (SABCA 2013)	

NYMPHALIDAE	<i>Vanessa cardui</i>	Painted lady	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Ypthima asterope subsp. asterope</i>	African ringlet	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Ypthima granulosa</i>	Granular ringlet	Least Concern (SABCA 2013)	
NYMPHALIDAE	<i>Ypthima impura subsp. paupera</i>	Impure ringlet	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium angolans subsp. angolans</i>	Angola white-lady swordtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium antheus</i>	Large striped swordtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium colonna</i>	Mamba swordtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium leonidas subsp. leonidas</i>	Veined swordtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium morania</i>	White lady	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium policeses subsp. policeses</i>	Small striped swordtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Graphium porthaon subsp. porthaon</i>	Cream striped swordtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Papilio constantinus subsp. constantinus</i>	Constantine's swallowtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Papilio dardanus subsp. cenea</i>	Mocker swallowtail, Flying Handkerchief	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Papilio demodocus subsp. demodocus</i>	Citrus swallowtail	Least Concern (SABCA 2013)	
PAPILIONIDAE	<i>Papilio nireus subsp. lyaeus</i>	Green-banded swallowtail	Least Concern (SABCA 2013)	
PIERIDAE	<i>Afrodryas leda</i>	Autumn leaf vagrant	Least Concern (SABCA 2013)	
PIERIDAE	<i>Appias epaphia subsp. contracta</i>	Diverse Albatross White	Least Concern (SABCA 2013)	
PIERIDAE	<i>Appias sabina subsp. phoebe</i>	Sabine albatross white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Belenois aurota</i>	Brown-veined white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Belenois creona subsp. severina</i>	African common white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Belenois gidica subsp. abyssinica</i>	African veined white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Belenois thysa subsp. thysa</i>	False dotted border	Least Concern (SABCA 2013)	
PIERIDAE	<i>Belenois zochalia subsp. zochalia</i>	Forest white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Catopsilia florella</i>	African migrant	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis annae subsp. annae</i>	Scarlet tip	Least Concern (SABCA 2013)	



PIERIDAE	<i>Colotis antevippe subsp. gavis</i>	Red tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis auxo subsp. auxo</i>	Sulphur orange tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis calais subsp. calais</i>	Topaz arab	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis celimene subsp. amina</i>	Lilac tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis erone</i>	Coast purple tip	Least Concern (SABCA 2013)	Yes
PIERIDAE	<i>Colotis euippe subsp. mediata</i>	Smoky orange tip	Not listed	
PIERIDAE	<i>Colotis euippe subsp. omphale</i>	Smoky orange tip	Least Concern (LC)	
PIERIDAE	<i>Colotis evagore subsp. antigone</i>	Small orange tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis evenina subsp. evenina</i>	Orange tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis ione</i>	Bushveld purple tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis pallene</i>	Bushveld orange tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis regina</i>	Queen purple tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Colotis vesta subsp. argillaceus</i>	Veined tip	Least Concern (SABCA 2013)	
PIERIDAE	<i>Dixeia charina subsp. charina</i>	African small white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Dixeia doxo subsp. parva</i>	Black-veined small white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Dixeia pigea</i>	Ant-heap white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Dixeia spilleri</i>	Sulphur small white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Eronia cleodora</i>	Vine-leaf vagrant	Least Concern (SABCA 2013)	
PIERIDAE	<i>Eurema</i>		Not listed	
PIERIDAE	<i>Eurema brigitta subsp. brigitta</i>	Broad-bordered grass yellow	Least Concern (SABCA 2013)	
PIERIDAE	<i>Eurema hecabe subsp. solifera</i>	Lowveld yellow	Least Concern (SABCA 2013)	
PIERIDAE	<i>Leptosia alcesta subsp. inalcesta</i>	African wood white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Mylothris agathina subsp. agathina</i>	Common dotted border	Least Concern (SABCA 2013)	
PIERIDAE	<i>Nepheronia argia subsp. variegata</i>	Large vagrant	Least Concern (SABCA 2013)	
PIERIDAE	<i>Nepheronia buquetii subsp. buquetii</i>	Buquet's vagrant	Least Concern (SABCA 2013)	
PIERIDAE	<i>Nepheronia thalassina subsp. sinalata</i>	Cambridge vagrant	Least Concern (SABCA 2013)	



PIERIDAE	<i>Pinacopteryx eriphia subsp. eriphia</i>	Zebra white	Least Concern (SABCA 2013)	
PIERIDAE	<i>Teracolus eris subsp. eris</i>	Banded gold tip	Least Concern (SABCA 2013)	

Scorpions

Family	Species	Red list category
BUTHIDAE	Uroplectes formosus	Not listed
HORMURIDAE	Opisthacanthus asper	Not listed