

Phuthaditjhaba Landfill site

An ornithological assessment of the proposed Phuthaditjhaba Landfill site to determine the status of the White-bellied Korhaan *Eupodotis senegalensis* and Southern Bald Ibis *Geronticus calvus* in the project area.



Cattle and goats grazing on the proposed landfill site

Geoff Lockwood
Delta Environmental Consultants
Delta Environmental Centre

12 February 2015



1. Executive summary

During a site visit to the location of the proposed new Phuthaditjhaba landfill site Christa Custers of Eco Assessments C.c. encountered two Red Data bird species foraging within the project area boundary. Two small korhaans or bustards – thought to be White-bellied Korhaan *Eupodotis senegalensis* were flushed from the project site, and Southern Bald Ibis *Geronticus calvus* was also recorded feeding in the area.

Both these species are listed as VULNERABLE by Barnes, K.N. (ed.) 2000 and, given the concerns about their conservation status, a follow-up, specialist ornithological assessment was proposed to confirm the presence and status of each species on site; and to also determine possible negative impacts on these species should the development go ahead.

Geoff Lockwood of Delta Environmental Consultants, Delta Environmental Centre was appointed by Tholoana Consulting to undertake the specialist study and the site was visited on the 4th/5th February, 2015.

Findings

The site is recovering agricultural land, with a series of raised, water-retaining berms following contour lines around the site. Vegetation was dominated by scrubby “Bankrotbos” or “Slangbos” *Stoebe vulgaris*, with grass cover limited - both in terms of grass height and basal density.

Habitat on site appeared to be more suitable for Blue Korhaan *Eupodotis caerulescens* than for White-bellied Korhaan - the latter species typically favouring areas with more extensive and taller grass cover. The two species are often confused with each other in the field however and, based on the habitat on site; it was suspected that the Eco Assessment sighting was of Blue Korhaan.

A pair of Blue Korhaans was located within the project area on the morning of 05 February 2015. They flushed and flew off in an easterly direction before landing on a hillside across the valley about 1.5 km away. Further investigation of the habitat in the project area indicated that it was sub-optimal foraging, and only marginally suitable nesting habitat for this species.

High levels of vehicle and pedestrian activity; livestock grazing, and also the presence of several dogs observed on site have further reduced the likelihood of Blue Korhaans nesting in the project area.

A single Southern Bald Ibis *Geronticus calvus* was recorded at the turn-off up to the site on the morning of 05 February 2015; with another six birds feeding in slope grassland 560m to the south-east of the project area later the same morning. Bald Ibis do therefore feed in the project area but habitat on site is not considered optimal for the species.

Extensive areas of suitable habitat for the two Red Data bird species recorded exist to the east of the project area and, given the marginal state of the habitat on site, no significant negative impacts on the status of local populations of Blue Korhaan and Southern Bald Ibis are anticipated if development of the landfill is approved. Effective management to prevent contamination of the surrounding area with toxic leachates and wind-blown litter is however essential to minimise negative impacts on the local avifauna.



Geoff Lockwood

Delta Environmental Consultants
Delta Environmental Centre
Private Bag X6
Parkview
2122
Email: geofrey@iafrica.com

Tel: 011 888 4831
Fax: 011 888 4106
Mobile: 082 346 2597

2. Contents

| Section | Page |
|---|------|
| 1. Executive Summary | 2 |
| 2. Contents | 3 |
| 3. Introduction and Terms of Reference | 4 |
| 4. Methods | 4 |
| 5. Findings | 5 |
| 6. Recommendations and Measures in Mitigation | 6 |
| 7. References | 6 |
| 8. Appendix 1: Birds recorded on site and in the surrounding area | 7 |
| 9. Appendix 2: GPS co-ordinates of Red Data bird sightings | 8 |

3 Introduction and Terms of Reference

Delta Environmental Consultants (DEC) were contracted by Tholoana Consulting to conduct an ornithological assessment of the site of the proposed Phuthaditjhaba Landfill to confirm the status of White-bellied Korhaan *Eupodotis senegalensis* and Southern Bald Ibis *Geronticus calvus* on site.

Both species had been recorded during an earlier site survey undertaken by Eco Assessments, and both are listed as VULNERABLE by Barnes, K.N. (ed.) 2000.

Given the concern about the conservation status of these species, it was considered important to clarify their status on site and a follow-up specialist study was commissioned.

The brief required DEC to:-

- determine the on-site status of the two Red Data bird species reported by Christa Custers of Eco Assessments, and to search for other Red Data bird species on the project site, and also within the broader survey area;
- to assess the suitability of habitat(s) on site and in the surrounding area as nesting and/or foraging habitat for the two Red Data species recorded, as well as for any other threatened bird species recorded during the survey;
- to provide a list of all bird species recorded within the project area during the survey;
- to identify any potential negative impacts of the proposed development on the local status of and Red Data bird species recorded on site, and
- to provide recommendations on how to mitigate any negative impacts on such species.

4 Methods

White-bellied Korhaans are a highly cryptic species and are usually best-located by their characteristic “**AAAH.....tak-war-at.....aaaaaah**” calls - typically given mainly during the early mornings and late afternoon/ evenings. For this reason, the site visit was planned so as to be on site in the late afternoon/ evening, and then again at first light the next morning to increase the likelihood of detecting any birds in the area.

The site was visited on the afternoon/evening of 04 February, and again at first light on the morning of 05 February 2015. The site and surrounding area was crisscrossed on foot in a series of random transects to search for all bird species present on site and to assess the habitat on the area as to its suitability for those Red Data bird species known to occur in the general area.

Regular “listening watches” were conducted during both visits to try and pick up any territorial calling by any White-bellied Korhaan groups in the area. No Red Data birds were recorded but a collection of feathers from a Blue Korhaan *Eupodotis caerulescens* were recovered from a point just to the north of the project area (see Fig. 1). The feathers were a mixture of flight-, and wing- and body coverts, and the numbers involved indicated that at least one bird had been predated at the site.

Habitat on site appeared to be more typical of that utilised by *Eupodotis caerulescens* than that favoured by *E. senegalensis* - which typically prefers areas of taller grass, and this suggested that the original Eco Assessment sighting might also have referred to Blue Korhaans.

During the follow-up visit early the next morning, the project area was again surveyed on foot in a series of random transects. Taped calls of both Blue and White-bellied Korhaans were played at regular intervals in the hope of initiating a call-back response.

All bird species identified within the extended survey area – either visually, or on the basis of calls or displays, were recorded and presented as Appendix 1 to this report. An atlas card was also completed and submitted to the South African Bird Atlas Project (SABAP 2).

A total of three-and-a-half hours were spent on site during the first visit, while further four-and-a-quarter hours were spent on site the following morning – giving a total of seven-and-three-quarter hours of fieldwork in the project area.

5. Findings

The site is located in recovering agricultural land on the top of a small hill. A series of raised, water-trapping berms followed the contours around the site. The vegetation was dominated by scrubby “Bankrotbos” or “Slangbos” *Stoebe vulgaris* and other small bushes, with fairly sparse and short grass cover. Soils appeared fairly sandy and there was very little sign of any invertebrates – either of actual insects and worms, or of their burrows, castings etc. and, given that both Blue Korhaans and Bald Ibises feed extensively on insects, the site appears sub-optimal or marginal foraging habitat for both species.

Over the two days, significant human and livestock activity was observed in the project area, with over 80 head of cattle and a small herd of goats accompanied by several herders and their dogs moving through the site in a north-easterly direction during the morning visit. Large trucks were also observed travelling along the western site boundary – apparently transporting sand from quarry areas to the north of the site. This activity has further degraded the value of the site for Red Data birds, particularly for nesting.

No Red Data birds were recorded during the afternoon survey but the remains (feathers) of a predated Blue Korhaan were recovered from just outside the northern boundary of the site (see Figure 1). The early morning survey the following day proved more productive however and both Southern Bald Ibis *Geronticus calvus* and Blue Korhaan *Eupodotis caerulescens* were recorded in the broader project area. Details of these sightings are given below

Southern Bald Ibis *Geronticus calvus*
Estimated Population in SA: ≤ 10,000 birds

VULNERABLE
Endemic

A group of four of these endemic ibis flew over the site at 05:33 heading in an easterly direction; a single bird was observed feeding near the turn off up to the site at 08:45, and six birds were observed feeding in slope grassland to the south of the project area at 09:10.

This species roosts in recesses in the large sandstone buttresses to the south and east of the project area and several of these structures visible from the S20 gravel access road to the site showed evidence of “whitewash” or faecal sprays below the ledges and recesses – indicating a healthy population of Bald Ibis in the area.

This species forages in groups, with flocks of 40 to 100 birds feeding together in high-grade habitat. Group size decreases in lower grade habitat and the records of a single bird; and a flock of only six birds feeding in the project area suggest that habitat on site is sub-optimal for foraging. The low levels of invertebrate activity observed on site tend to support this.

There are extensive areas of more suitable foraging habitat in the surrounding area – particularly towards Sterkfontein Dam, and development of a landfill on the proposed site is therefore unlikely to have a significant negative impact on the local population of Southern Bald Ibis. This assessment is however dependent on the effective prevention of toxic leachates contaminating downslope water systems, as well as the prevention of wind-blown litter dispersing from the site.

Blue Korhaan *Eupodotis caerulescens*
Estimated Population in SA: Probably > 15,000 birds

NEAR-THREATENED
Endemic

A pair of these small bustards was flushed from a position near the south-eastern corner of the project site at 08:15 on 05 February – this after broadcasting recorded calls through an amplified speaker to attract any korhaans in the area. The birds landed close to the center of the site before flushing again and heading off in an easterly direction, landing on a hill some 1.5 km away.

Blue Korhaans are omnivorous – feeding on plant material such as leaves, shoots and seeds, as well as various invertebrates such as termites, beetles, grasshoppers etc. Apart from a number of active Snouted Harvester Termite *Trinervitermes* spp. mounds, insect food was limited during the survey and vegetation cover also appeared to offer little in the way of food. The site appeared to be sub-optimal foraging habitat for this species. The records of korhaans on the site during both the Eco Assessment survey and the present study, as well as the

recovery of the feathers of a predated Blue Korhaan from just outside the project boundary, potentially indicate the use of the hill-top location as a calling/ listening station for territorial displays however.

There are extensive areas of more suitable foraging habitat, as well territorial call sites, in the surrounding area – particularly towards the Sterkfontein Dam, and development of a landfill on the proposed site is therefore unlikely to have a significant negative impact on the local population of Blue Korhaans. This assessment is however dependent on the effective prevention of toxic leachates contaminating downslope water systems, as well as the prevention of wind-blown litter dispersing from the site.



Figure 1: Google Earth image of the site showing the locations of Red Data bird species sightings

6. Recommendations and Measures in Mitigation

Given the disturbed nature of the site; the levels of human activity in the area, and the quality of the habitat observed, it is unlikely that the development of a landfill on the site will have any significant impact on local populations of Blue Korhaans and Southern Bald Ibis. Windblown litter and the contamination of downslope catchments with toxic leachates potentially pose a significantly higher threat to local Red Data bird species however and it is essential to prevent such events.

7. References

Barnes, K.N. (ed.) 2000. **The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland.** BirdLife South Africa, Johannesburg.

Google Earth

Hockey, P.A.R., Dean W.R.J., Ryan, P.G (eds) 2005. **Roberts – Birds of Southern Africa VIIth ed.** The Trustees of the John Voelcker Bird Book Fund, Cape Town.

Appendix 1: Bird species recorded on site and in the surrounding area

| No. | Name | Scientific name | Site | Area |
|---------|---------------------------|--------------------------------------|------|------|
| 63 | Black-headed Heron | <i>Ardea melanocephala</i> | | X |
| 71 | Cattle Egret | <i>Bubulcus ibis</i> | | X |
| 92 | Southern Bald Ibis | <i>Geronticus calvus</i> | X | X |
| 94 | Hadedda Ibis | <i>Bostrychia hagedash</i> | | X |
| 104 | Yellow-billed Duck | <i>Anas undulata</i> | | |
| 180 | Amur Falcon | <i>Falco amurensis</i> | X | X |
| 198 | Red-necked Spurfowl | <i>Pternistes afer</i> | | X |
| 234 | Blue Korhaan | <i>Eupodotis caerulescens</i> | | X |
| 249 | Three-banded Plover | <i>Charadrius tricollaris</i> | X | |
| 349 | Speckled Pigeon | <i>Columba guinea</i> | | X |
| 354 | Cape Turtle-Dove | <i>Streptopelia capicola</i> | | X |
| 415 | White-rumped Swift | <i>Apus caffer</i> | X | X |
| 480 | Ground Woodpecker | <i>Geocolaptes olivaceus</i> | X | |
| 495 (a) | Eastern Clapper Lark | <i>Mirafra fasciolata</i> | X | |
| 506 | Spike-heeled Lark | <i>Chersomanes albofasciata</i> | | X |
| 507 | Red-capped Lark | <i>Calandrella cinerea</i> | X | |
| 518 | Barn Swallow | <i>Hirundo rustica</i> | X | X |
| 526 | Greater Striped Swallow | <i>Hirundo cucullata</i> | X | X |
| 529 | Rock Martin | <i>Hirundo fuligula</i> | | X |
| 534 | Banded Martin | <i>Riparia cincta</i> | X | |
| 547 | Cape Crow | <i>Corvus capensis</i> | X | X |
| 550 | White-necked Raven | <i>Corvus albicollis</i> | | X |
| 568 | Dark-capped Bulbul | <i>Pycnonotus tricolor</i> | | X |
| 586 | Mountain Wheatear | <i>Oenanthe monticola</i> | | X |
| 595 | Ant-eating Chat | <i>Myrmecocichla formicivora</i> | X | X |
| 601 | Cape Robin-Chat | <i>Cossypha caffra</i> | | X |
| 666 | Cloud Cisticola | <i>Cisticola textrix</i> | X | |
| 681 | Neddicky | <i>Cisticola fulvicapilla</i> | | X |
| 713 | Cape Wagtail | <i>Motacilla capensis</i> | X | X |
| 716 | African Pipit | <i>Anthus cinnamomeus</i> | X | X |
| 727 | Cape Longclaw | <i>Macronyx capensis</i> | X | X |
| 732 | Common Fiscal | <i>Lanius collaris</i> | | X |
| 746 | Bokmakierie | <i>Telophorus zeylonus</i> | | X |
| 759 | Pied Starling | <i>Spreo bicolor</i> | X | X |
| 769 | Red-winged Starling | <i>Onychognathus morio</i> | | X |
| 796 | Cape White-eye | <i>Zosterops capensis</i> | | X |
| 814 | Southern Masked-Weaver | <i>Ploceus velatus</i> | | X |
| 821 | Red-billed Quelea | <i>Quelea quelea</i> | X | X |
| 832 | Long-tailed Widowbird | <i>Euplectes progne</i> | | X |
| 846 | Common Waxbill | <i>Estrilda astrild</i> | X | |
| 852 | African Quailfinch | <i>Ortygodpiza atricollis</i> | | X |
| 860 | Pin-tailed Whydah | <i>Vidua macroura</i> | | X |
| 872 | Cape Canary | <i>Serinus canicollis</i> | X | X |
| 885 | Cape Bunting | <i>Emberiza capensis</i> | | X |

Appendix 2: GPS co-ordinates of Red Data bird sightings

| Species | Co-ordinates | Notes |
|--------------------|--------------------------------|-----------------------------|
| Blue Korhaan | S 28°30'00.70", E 28°53'57.80" | Feathers of a predated bird |
| Blue Korhaan | S 28°30'13.28"; E 28°53'56.50" | Pair flushed from location |
| Southern Bald Ibis | S 28°30'20.90"; E 28°53'45.90" | Single bird feeding |
| Southern Bald Ibis | S 28°30'26.34"; E 28°53'54.15" | 6 birds feeding |