

# OPERATION WALLACEA SOUTH AFRICA FINAL REPORT 2007

## AVIFAUNAL ATLASING OF THE MKHUZE GAME RESERVE (GREATER ST LUCIA WETLAND PARK): YEAR 2

June – September, 2007

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### **Introduction:**

Recognition of the presence of numerous rare and threatened species in the Greater St Lucia Wetland Park (GSLWP), that covers an area of nearly 300,000 ha, saw the launching – in 2003 – of the GSLWP Rare, Threatened & Endemic Species (RTE) project, a joint initiative of the Wildlands Conservation Trust (lead NGO on community development issues in KwaZulu-Natal province), Ezemvelo KZN Wildlife (wildlife management authority for the park) and the GSLWP authority (planning body for all park developments). Phase 1 of the project involved 14 rapid field transect surveys (using point counts for birds), and produced initial broad scale data on the presence/absence of some of the target species. Phase 2 is providing much more detailed distributional information on species within each sector of the park, and also on their habitat associations, and is dependent, in part, on collaboration with Operation Wallacea (Opwall). The terrestrial focus for Opwall is the Mkhuzi Game Reserve (13% by area of the GSLWP), that encompasses a wide range of habitats, including savanna, and sand, fig and riverine forest types. The first two of a grid of 5 x 5 km squares were surveyed in 2006, (with one of the squares incorporating the main park facility [Mantuma Camp], and the other taking in part of Nsumo Pan, the principal wetland feature within the reserve) (Brace 2007).

In 2007, a further three grid squares were surveyed, all of which were located in the northern sector of the reserve. Of these, though, just one was located entirely within the reserve. Both of the remaining two squares extended beyond the Mkhuzi River, such that only c. 50% of each square was within the reserve and thus surveyable. Correspondingly, survey effort in each of these two squares was half that of the full 5 x 5 km square (see 2007 Survey Remit and Walk Templates below for details).

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

The rich avifauna (c. 455 species) of Mkhuze is already well documented, though there is a paucity of official, park-based documentation of species. But the status of many species over the winter period – the annual survey programme reported on here takes place towards the end of the South African winter – is not well known, though palearctic migrant representation is obviously limited, and many of the intra-Afrotropical migrants are only just returning or have yet to return to breed. It is listed as an Important Bird Area (ZA043) in Fishpool & Evans (2001). Relevant checklists include the compilation produced by the Birds in Reserves Project (BIRP) (Avian Demography Unit, University of Cape Town) (2008), that produced by Indicator Birding (2007), one available at Mantuma Camp (in 2006), and one published by the Natal Parks Board (1998). With regard to endemics, four South-east African coast species (Endemic Bird Area [EBA] 092) (Stattersfield *et. al.* 1998) occur: Rudd's Apalis (*Apalis ruddi*), Neergaard's Sunbird (*Cinnyris neergaardi*), Pink-throated Twinspot (*Hypargos niveoguttatus*) and Lemon-breasted Seedeater (Canary) (*Serinus citrinipectus*). One South African Forest endemic (EBA 089), Kynsa Turaco (*Tauraco corythaix*), and four South African endemics – (Southern) Bald Ibis (*Geronticus calvus*), Cape Rock-Thrush (*Monticola rupestris*), Southern Tchagra (*Tchagra tchagra*) (but may occur also in Mozambique?) and Cape Weaver (*Ploceus capensis*) – are listed also. With regard to threatened species (BirdLife International 2000), four classed vulnerable have been recorded: (Southern) Bald Ibis (*Geronticus calvus*) (South African endemic – see above), Cape Griffon (Vulture) (*Gyps coprotheres*) (Southern African endemic), Lappet-faced Vulture (*Aegypius tracheliotus*) and Lesser Kestrel (*Falco naumanni*). Two near-threatened species are listed too: Lesser Flamingo (*Phoenicopterus minor*) and Neergaard's Sunbird (see above).

### **2007 Survey Remit and Walk Templates:**

#### **(a) 5 x 5 km survey square selection:**

The selection of 5 x 5 km squares to be surveyed in 2007 was made in conjunction with Xander Combrink (Senior Field Biologist), Anita Rautenbach (mammologist), Carol Smith (arachnologist) and John Warner (herpetologist). As noted above, three such squares were chosen for investigation, and designated squares C, D, and E (following on from the designation and examination of squares A and B in 2006).

#### **(b) 1 x 1 km survey square selection:**

The RTE project remit is that eight 1 x 1 km squares should be surveyed within each full 5 x 5 km square, thus resulting in c. 30% coverage, and that such squares selected, should ideally represent proportionately the various habitats contained within any 5 x 5 km square. Since the whole of Square C was located within the Mkhuze Game Reserve, eight 1 x 1 km squares were identified, but in the case of squares D and E it was appropriate to designate only four such squares in each, since roughly half of each large square lay outside the reserve, with the relevant boundary being the Mkhuze River.

#### **(c) 1 x 1 km square survey protocols**

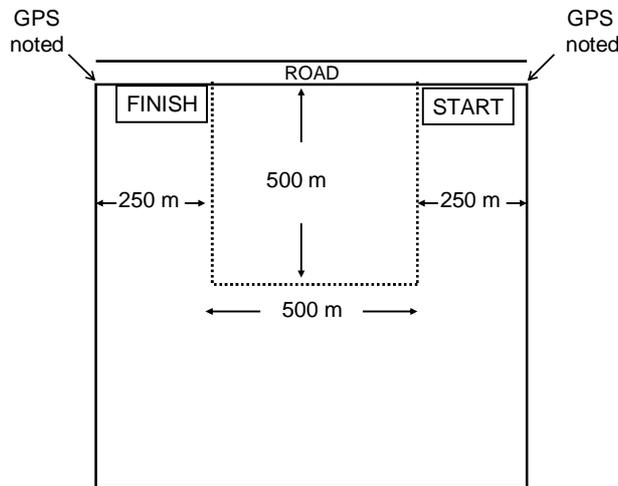
The survey protocols used were those elaborated and successfully field-tested in 2007. For full details of these protocols reference should be made to last year's report (Brace 2007). Basic details only of the selection of 1 x 1 km squares, and of the survey walk timetable and template are given here.

Wherever possible, squares were designated such that one edge was coincident with a road/tract, thus facilitating both prompt initiation of a particular survey and rapid transfer between survey squares. This is important since the walk timetable entails surveying four squares in a morning, with the start times for the 1-hour surveys being as follows: 06-30, 08-00, 09-30 and 11-00. Each square was surveyed six times, with start times 'cycled' sequentially in order that individual squares were sampled at different times, thereby removing – as far as was possible – bias due to the typical, progressive decline in bird activity

through the morning period. Surveys conducted within Square C (a total of 48 walks undertaken) commenced and finished on 11/07/'07 and 23/07/'07 respectively. The first survey walk within Square D (a total of 24 walks conducted) was on 26/07/'07 and the last on 11/08/'07; equivalent dates for Square E (similarly 24 walks in total) were 25/07/'07 and 08/08/'07.

The standard survey walk template is shown in Figure 1. Both start and finish points are sited 250 m from related square corners (thus being 500 m apart from each other). The template is tripartite, with each leg being 500 m in length. The first leg entails walking into the square for 500 m at right angles to the access road/track, whilst each of second and third legs are initiated following 90° turns, thus bringing observers back to the road. Leg duration is 20 minutes. Non-standard walks (see below) – necessitated by either geographical or vegetational constraints – were designed to be of a same overall distance in length. Start and finish points were not switched during the course of survey walks; directionality was governed by favourable early morning lighting conditions.

Figure 1. Diagram to show the standard survey routing through a 1 x 1 km square.



**(d) Survey square locations, and specific 1 x 1 km walk templates**

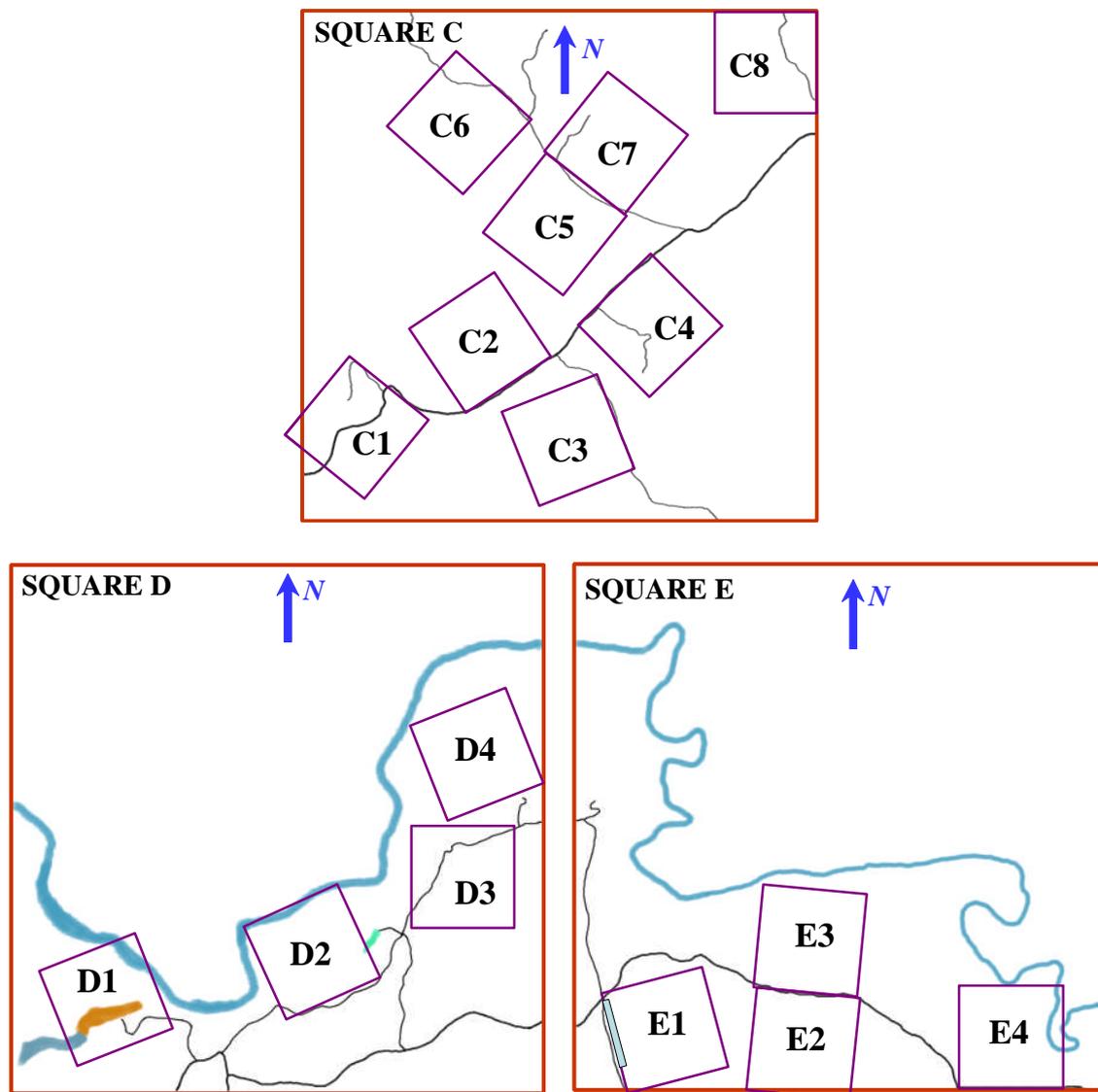
The location of the three, 5 x 5 km squares studied (C, D, and E), are shown in Figure 2, and the positions of the 16 selected 1 x 1 km squares are denoted in Figure 3. (Detailed maps of each of the 1 x 1 km squares – that depict vegetational characteristics in addition to physical features – are housed in discrete files extraneous to this report.)

Walks in four of the C squares (C2, C3, C5 and C7) followed the standard template as shown above. Thus four non-standard routings were employed: (i) The walk in Square C1 – a gorge scenario – in which the associated road ran roughly through the centre line of the square, commenced with a perimeter walk of the Emsshopi Campsite, then followed the road up the gorge, and then tracked along the river-bed back down to the camp-site. (ii) The walk in C4 followed, in part, the tripartite template, related in this case to the track leading to the Malibala Hide car-park; however, the legs were shorter so that 10 minutes could be spent observing from the Malibala Hide itself at the outset of the survey, following which we walked back (five minutes allowed) to the car-park from where we commenced walking the first of the three shortened legs. (iii) The walk in C6 extended across the affiliated track due to an appreciable curvature of that track; in walking the third (return) leg we crossed over the track, and after a short distance executed a further 90° turn to ‘hit’ the road roughly midway



the transect line, it winds its way through the square rather than constituting one edge; we took advantage of this disposition and utilized a section of that track as the final leg of our walk. (iv) Square D4 lies to the north of the Kwajobe Cultural Village that is accessible only by a track arriving from the south, and thus this square can be approached only on foot. Below our start point, that was adjacent to the northern perimeter of the village compound, lies a belt of mixed woodland (with Fever trees) with dense undergrowth and beyond that a more or less continuous swathe of low vegetation, making for very difficult access. However, a search of the area resulted in locating a narrow trail that penetrated through the forest belt and the low vegetation beyond. Observations were made whilst walking both the outbound and return legs. Although this was far from being an ideal survey scenario, the total distance involved was roughly equivalent to that walked in the normal survey template (i.e. 1500 m).

**Figure 2.** Approximate locations of the eight 1 x 1 km survey squares within Square C, and of the four 1 x 1 km squares in both Square D and Square E. Background features (roads, tracks, etc) are portrayed accurately, and based on satellite-derived images.



**Figure notes:** Roads and tracks are depicted, as is the Mkhuzi River (in Squares D and E). For Square C, the (Kwa)Malibala Waterhole is shown, for Square D, Hlonhlela Pan (blue - wet, brown - dry) and the Kumahlahla Waterhole (green - signifying little water present), are shown, and for Square E, the reserve air-strip. The new Ophanzi Gate and related road lie in the south-west corner of E4.

**(e) Square descriptions**

A description of each square was compiled in terms of its major features, and vegetation types and structuring present. Brief synopses of these descriptions appear in Table 3. Full descriptions – that take the form of annotated diagrams using Figure 1 as a template – are available, as noted earlier, as two sets of reference files (JPEG format).

**(f) Mist-netting of birds**

Opportunities for mist-netting were extremely limited since the survey programme was all-consuming in terms of time allocation. However, three nets were erected around the Environmental Camp (our expeditionary base located at the edge of sand forest), and unfurled on two mornings. These nets were moved subsequently to the game transect line in square D3 (within sand forest), and employed on three mornings. Birds trapped, were not fitted with rings, but each was marked by removing a small wedge of the inner shaft of a primary feather so they could be recognized as re-traps if subsequently handled again. Both weight and wing length of all trapped individuals were taken, and age and sex ascertained when feasible.

The principal aim of netting was to familiarize expedition participants with a small selection of species.

**Results:**

**(a) Global avian statistics for Mkhuzi Game Reserve and environs**

Table 1 shows the total number of species seen during formal survey work in the three 5 x 5 km squares investigated this year. It details also the numbers of additional species seen within, and just outside, the reserve.

Table 1. Global avian statistics for the 2007 Opwall expedition.

Species observed/identified	No.	Running total
Recorded in squares C, D and E	173	
Additional species recorded within the Mkhuzi Game Reserve	80	253
Additional species seen just outside the Mkhuzi Game Reserve	9	262

A visit was paid to the Mkhuzi Gorge (located within the game reserve) on 14/08, where a number of species typical of the Lebombo Mountains – that were not seen elsewhere – were encountered: Black Stork, Mountain Wagtail, Familiar Chat and Mocking Cliff-Chat. As was the case last year, it was hoped that (Southern) Bald Ibis (a South African endemic) might be found (the cliffs there have held nests in the past [Combrink pers. comm.]), but we were disappointed in this regard. Nevertheless, a visit paid by Xander Combrink a month later was successful, with one individual being seen in the vicinity of a former nest site.

All species additional to those recorded during survey walks are listed in Appendix 2, and a global, annotated systematic listing provided in Appendix 3.

Several areas were visited that lie just to the east of the Mkhuzi River (and thus just outside the game reserve), including Muzi Pan. A total of nine species additional to those recorded within the reserve, were logged (see Appendix 4).

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### (b) Avian statistics for survey work and other observations in survey squares

Table 2. Numbers of bird species recorded in survey squares C, D and E, together with the affiliated numbers of identified individuals seen.

	Square C			Square D			Square E			C, D & E
	Survey	Other	Total	Survey	Other	Total	Survey	Other	Total	
No. spp.	121	8	129	120	3	123	119	2	121	
No. spp. (surveys)										173
Total No. spp.										186
No birds IDd	2655			1988			2101			6744

Table note: IDd – identified.

Table 2 shows that a total of 173 species were identified during the surveys conducted across the three 5 x 5 km squares examined, The number of species seen in each of these squares was almost identical – 121 in C, 120 in D and 119 in E – despite non-uniformity with regard to the numbers of 1 x 1 km squares involved (eight, four and four). A further eight, three and two species were recorded, respectively, in these squares at times outside of the formal surveys.

The number of species observed in any one 1 x 1 km square within Square C ranged from 48 to 69, within Square D from 65 to 82, and within Square E from 62 to 75 (Table 3). The three squares that were most diverse in species were all adjacent to the Mkhuze River. Species listings for all of the 1 x 1 km survey squares appear in Appendix 1.

Table 3 shows also the major habitat types represented in each square.

Table 3. Habitat summaries and numbers of species recorded during walks in each of the 1 x 1 km squares surveyed.

Survey square	Habitat	No. species
Square C		
C1	hill (Lebombo) bushveld/grassland, rocky crags, gorge (with narrow river bed bordered by woodland), Emshopi campsite	69
C2	open <i>Acacia</i> and <i>Combretum</i> bushveld, grassland, drainage line	62
C3	open <i>Acacia</i> and <i>Combretum</i> bushveld, grassland, drainage line	56
C4	dense <i>Acacia</i> bushveld, grassland, Malibala Waterhole	48
C5	grassland, open <i>Acacia</i> bushveld, drainage line	50
C6	open <i>Acacia</i> bushveld, grassland, small pool	54
C7	open <i>Acacia</i> bushveld, grassland, thornveld, drainage line	61
C8	dense <i>Acacia</i> bushveld, thornveld	48

cont. overleaf/....

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

Table 3 (cont/...)

Survey square	Habitat	No. species
Square D		
D1	Hlonhlela Pan (dry), Fever tree ( <i>Acacia xanthoploea</i> ) woodland (with undergrowth), bushy escarpment, mixed riverine woodland (Mkhuze River)	74
D2	dense shrubveld, Fever tree ( <i>A. xanthoploea</i> ) woodland (with undergrowth), <i>Acacia</i> bushveld, thornveld, mixed riverine woodland (Mkhuze River)	82
D3	sand forest, grassland ('heathland')	65
D4	dense shrubveld (re: old Mkhuze River oxbow) with Num-num ( <i>Carissa bispinosa</i> ), Fever tree ( <i>A. xanthoploea</i> ) woodland (with undergrowth), <i>Acacia</i> bushveld, grassland	65
Square E		
E1	open <i>Acacia</i> bushveld, thornveld, short grassland (airstrip)	62
E2	open <i>Acacia</i> bushveld	64
E3	open and dense <i>Acacia</i> bushveld, grassland	66
E4	<i>Acacia</i> bushveld, thornveld, Num-num ( <i>C. bispinosa</i> ) patches	75

Table notes: Habitat types for each square are listed in order of decreasing prevalence.

### (c) Survey efficacy – identification levels

Our success in identifying birds seen (or heard) within each of the 16, 1 x 1 km squares can be gleaned from Table 4.

Table 4. Percentages of birds seen (or heard) that were identified (to species level) during walks in each of the 16, 1 x 1 km surveyed.

Survey square	% Identified $\pm$ SE	No. IDd birds
Square C		
C1	86.2 $\pm$ 3.1	412
C2	88.3 $\pm$ 1.4	459
C3	86.3 $\pm$ 1.9	377
C4	85.7 $\pm$ 2.4	337
C5	85.5 $\pm$ 3.0	283
C6	85.2 $\pm$ 3.8	261
C7	86.7 $\pm$ 2.8	317
C8	73.3 $\pm$ 8.5	209
Square D		
D1	87.2 $\pm$ 5.4	561
D2	90.7 $\pm$ 1.2	588
D3	90.3 $\pm$ 1.7	448
D4	86.5 $\pm$ 2.9	391
Square E		
E5	83.7 $\pm$ 2.4	420
E6	82.7 $\pm$ 1.1	482
E7	89.0 $\pm$ 1.8	536
E8	87.8 $\pm$ 1.4	663

Table note: IDd – identified.

In all instances bar one our identification 'level' was in excess of 80%, and in two cases it was over 90%. These figures compare favourable with those obtained in 2007, when eight such 'levels' were greater than 80%, and one was over 90% (with all >70%).

### **(d) Survey efficacy – species accumulation analyses**

Each of the sub-tables in Tables 5 and 6 (overleaf) shows species accumulation across walks undertaken in a particular survey square. The Abundance Coverage estimates of Species Richness (ACEs), (that estimate species richness from samples, including species not discovered in any sample) (see Chao & Lee 1992), reveal that species accrual was still occurring at the end of all of the series of walks (e.g. C7 – the final species accumulation figures of 55 and 61, with associated ACE values of 70.40 and 76.54; D2 – final accumulation figures of 76 and 82, and ACEs values of 87.37 and 94.41). With regard to Square C data, there is considerable plateauing of the final ACE values in the majority of cases, but any tail-offs in respect of the C2, C3 and C7 data sets are far less marked. Inspection of Table 6 reveals that plateauing is also less evident in the values for the squares D and E, though welcome exceptions are provided by D4 and E3 data. No doubt the more extensive (and varied) cover met with in D and E – in comparison to that encountered in Square C – was responsible for this dichotomy in survey efficacy.

The inclusion of a seventh walk was recommended following analyses of our 2006 survey data (Brace 2007), but is very difficult to achieve given expeditionary time constraints. As commented on also in last year's report, it is felt that the levels of species detection achieved are sufficient nevertheless to provide a reasonably coherent assessment of the range of species occupying all habitats represented in each of the 1 x 1 km squares, and thus occurring in each of the 5 x 5 km squares, and therefore to enable species comparisons between the latter to be undertaken with some degree of confidence. Since two of the 2007 survey units were 'half-squares' (with only four 1 x 1 km squares established in each rather than eight), however, such comparisons would have been impractical, and thus were not undertaken. Note, though, that such comparisons were undertaken between the two 'entire' squares studied in 2006 (squares A and B) (Brace *loc. cit.*).

### **(e) Synopsis of mist-netting activities**

Just seven species (eight birds) were trapped and processed, of which two – both of which were secured in nets set-up in sand forest in square D3 – are worthy of specific mention: Little Sparrowhawk (*Accipiter minullus*) (1) – only five other sightings of this species, (with just one seen in 2006); Pink-throated Twinspot (*Hypargos margaritatus*) (2) – South-east African coast endemic (EBA 092) (see Table 7).

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

**Table 5.** Species accumulation data and analyses for the C squares. The table shows species accumulations (Spp. Acum.) over the course of the six survey walks in each square, together with associated Abundance-based Coverage estimates of Species Richness (ACE) and standard deviations of ACE among randomizations of sample order (ACE\_SD) (see Cowell 2005), and the numbers of species (Spp.) seen during individual walks (for Walk 1 refer to species accumulation column). See the table note below for relevant information on the generation of ACE values, and that appended to Table 6 for information on ACE itself.

C1			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	23	41.37 _ 10.71	
2	32	54.83 _ 8.30	17
3	46	65.40 _ 8.59	32
4	53	72.47 _ 7.61	35
5	64	78.59 _ 5.13	24
6	69	81.62	33

C 5			
Walk	Spp. Acum	ACE/ACE_SD	Spp.
1	23	32.87 _ 9.80	
2	30	42.49 _ 8.45	24
3	39	48.41 _ 8.12	19
4	45	51.43 _ 5.71	23
5	48	53.49 _ 2.24	26
6	50	56.22	14

C2			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	19	38.72 _ 14.09	
2	33	48.61 _ 7.49	26
3	45	56.07 _ 6.86	29
4	52	58.73 _ 4.46	24
5	55	62.50 _ 2.29	29
6	62	66.15	37

C6			
Walk	Spp. Acum	ACE/ACE_SD	Spp.
1	16	28.61 _ 9.28	
2	32	41.12 _ 5.30	24
3	37	49.89 _ 3.05	11
4	46	55.09 _ 2.62	25
5	51	58.27 _ 1.39	25
6	54	61.80	22

C3			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	22	31.22 _ 6.13	
2	36	42.02 _ 6.18	23
3	46	48.65 _ 5.74	29
4	50	55.07 _ 5.02	19
5	52	61.34 _ 2.57	19
6	56	67.22	23

C7			
Walk	Spp. Acum	ACE/ACE_SD	Spp.
1	19	32.09 _ 2.98	
2	37	46.38 _ 6.88	24
3	43	55.84 _ 6.62	24
4	51	63.99 _ 6.08	25
5	55	70.40 _ 4.52	20
6	61	76.54	26

C4			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	20	25.94 _ 4.59	
2	26	36.13 _ 6.25	16
3	33	43.94 _ 6.25	19
4	44	48.35 _ 4.12	28
5	46	52.19 _ 3.57	15
6	48	55.31	19

C8			
Walk	Spp. Acum	ACE/ACE_SD	Spp.
1	14	26.38 _ 7.81	
2	22	40.11 _ 8.84	15
3	32	46.62 _ 8.16	17
4	41	48.61 _ 5.36	25
5	46	52.47 _ 3.99	14
6	48	56.29	15

**Table note:** Program EstimateS ver. 7.5.0 (Cowell 2005) was used to compute ACE values (see Chao & Lee 1992). Sample order for each data set was randomised 100 times (without replacement). These data can be graphically presented, of course, to yield species accumulation curves.

Table 6 overleaf/....

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

**Table 6.** Species accumulation data and analyses for the D and E squares. The table shows species accumulations (Spp. Acum.) over the course of the six survey walks in each square, together with associated Abundance-based Coverage estimates of species Richness (ACE) and standard deviations of ACE among randomizations of sample order (ACE\_SD) (see Cowell 2005), and the numbers of species (Spp.) seen during individual walks (for Walk 1 refer to species accumulation column). See the table note below for information on ACE, and that appended to Table 5 for relevant information on the generation of ACE values.

D1			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	25	42.55 _ 10.59	
2	44	59.26 _ 11.36	31
3	56	68.70 _ 5.99	36
4	66	76.52 _ 3.96	35
5	71	84.30 _ 3.32	32
6	74	92.00	26

D3			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	27	36.11 _ 9.49	
2	37	49.96 _ 5.32	19
3	48	58.59 _ 4.46	29
4	51	66.04 _ 3.21	15
5	58	71.10 _ 1.55	30
6	65	75.08	31

D2			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	47	38.61 _ 13.05	
2	53	56.63 _ 12.83	28
3	56	69.59 _ 8.94	17
4	64	79.47 _ 6.19	26
5	76	87.37 _ 4.31	31
6	82	94.41	31

D4			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	24	40.15 _ 12.58	
2	35	53.46 _ 9.52	19
3	47	61.61 _ 7.45	26
4	52	65.98 _ 6.07	21
5	63	68.09 _ 4.09	37
6	65	70.43	25

E1			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	29	34.37 _ 7.38	
2	37	48.06 _ 8.28	15
3	45	56.02 _ 6.59	28
4	48	64.39 _ 4.50	21
5	55	72.18 _ 2.60	31
6	62	79.44	26

E3			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	32	41.09 _ 11.07	
2	40	51.81 _ 6.62	22
3	45	59.34 _ 5.50	24
4	53	65.12 _ 3.75	28
5	62	68.80 _ 2.31	36
6	66	71.08	29

E2			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	28	42.36 _ 8.49	
2	43	52.41 _ 6.19	35
3	50	59.46 _ 4.80	26
4	57	65.01 _ 3.49	27
5	60	69.86 _ 2.78	27
6	64	73.66	33

E4			
Walk	Spp. Acum.	ACE/ACE_SD	Spp.
1	26	39.35 _ 10.80	
2	39	55.29 _ 9.77	30
3	56	68.07 _ 10.93	38
4	67	78.49 _ 9.50	36
5	72	89.27 _ 6.57	31
6	75	98.97	33

**Table note:** ACE augments the observed number of species in a sample by a correction term dependent on the relative abundance of the rarest species (those with fewer than 10 individuals) in the sample. It is not possible to estimate an ACE\_SD value for the final walk.

**Discussion:**

The 2007 Opwall inventory of 253 species for the Mkhuze Game Reserve was remarkably close to that for 2006 (252 species). Nevertheless, thirty-three species were new to Opwall (Appendix 6) – yielding a combined expeditionary total of 285 species – with 31 species observed in 2006, not being recorded again (Appendix 7).

The overall number of species tallied across surveys conducted in squares C, D and E, was 173 (Appendix 1); when additional species recorded outside of formal survey work (Appendix 2) are added in, that figure rises to 186. Corresponding numbers of species seen in each of the three individual 5 x 5 km squares (see Table 2) are quite similar to those scored for Square A in 2006 (117 and 129 species), but, not surprisingly, fall similarly short of equivalent data for Square B (2006 survey work) that encompassed Nsumo Pan (173 and 193 species recorded). In comparison to 2006, Palearctic migrant waders were hardly in evidence (with Common Greenshank and Wood Sandpiper being noted on 15/08 and 16/08 respectively), due presumably to the fact that the expedition finished approximately two weeks earlier than was the case in 2006 (waders started coming through in numbers from 14/08 in 2006), but it should be noted too that the high water level severely restricted the availability of pan margin suitable for feeding this time around.

Table 7. Locations of sightings of South-east African coast endemics (EBA 092).

Endemic		Locations / Survey squares & habitats
Rudd's Apalis	<i>Apalis ruddi</i>	D1, D2, D3, D4; E2 sand and riverine (Fever) forest
Neergaard's Sunbird (ZA043 IBA species)	<i>Cinnyris neergaardi</i>	D3 sand forest
Pink-throated Twinspot	<i>Hypargos niveoguttatus</i>	C5, C8; D1, D2, D3, D4; E2 thickets across a range of habitats
Lemon-breasted Seedeater (Canary)	<i>Serinus citrinipectus</i>	Nsumo Pan (southern margin) short grass

With regard to South-east African coast endemics, all four were detected (Table 7). Rudd's Apalis (IUCN Red List criterion - Least Concern) was met with in squares D and E as expected, given that it is described by Hockey, Dean & Ryan (2005) as being – in KwaZulu-Natal – “most common in sand and riverine forests”. Their comment that “an essential habitat feature appears to be a well developed undergrowth layer” concurs with our 2006 observations that revealed the species occupying a fairly wide range of habitats characterised by having thickets/tangles. Also consistent with this was its apparent absence in Square C that is characterised by the presence of much more open (and somewhat elevated) terrain. Neergaard's Sunbird (IUCN Red List criterion - Near-threatened) was recorded within sand forest – a favoured habitat – in square D3, but our expeditionary tally this year was just two birds (c.f. 13 noted in 2006). A total of 30 sightings of Pink-throated Twinspot (IUCN Red List criterion - Least Concern) again a species that frequents thickets – were accumulated; it was recorded from all three 5 x 5 km squares investigated. We were particularly excited to locate Lemon-breasted Seedeater (IUCN Red List criterion - Least Concern) this year, since we failed to do so last time around, despite extensive searches (and survey work) being undertaken along the Enxwala Road, where it is known to occur (Cohen *et al.* 2006) in open grassland/Lala palm (*Hyphaene coriacea*) savanna. The discovery came with our exploration of the southern margin of Nsumo Pan for the first time on 09/08. A loose mono-specific flock of c. 350 birds was watched feeding on short turf; upon being disturbed they flew into nearby Fever trees, but quickly returned to the ground to feed again following disturbances. A few Yellow-fronted canaries (*Serinus mozambicus*) were in the area, but they did not consort with

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this flock. The area was visited again on 15/08, and the flock re-located, though estimated at only c. 200 individuals. This is a species known to form flocks (occasionally >250 birds) – often joining with *S. mozambicus* – during the winter, and one that may exhibit local movements/nomadism (BirdLife International 2007, Hockey, Dean & Ryan *loc. cit.*). Presumably, the flock observed here was constituted – at least in part – by birds that occupy the environs of the Enxwala Road during the breeding season, that in Kwazulu-Natal runs from November to January (Chittenden & Upfold 2006/2007). If so, then the seasonal movements of these birds are very local indeed (c. 5 km), but nevertheless concentrate sufficiently the local population such that the chances of detecting the species away from Nsumo Pan become very low indeed.

Table 8 lists the threatened and near-threatened species (see BirdLife International 2000) that occur in the Mkhuze Game Reserve. Of these, three species – Lappet-faced Vulture, and Plain-backed and Neergaard’ sunbirds – were seen this year.

**Table 8.** Sightings of threatened (all vulnerable status) and near-threatened species.

Threatened species		
(Southern) Bald Ibis	<i>Geronticus calvus</i>	not recorded, but see p. 6
Lappet-faced Vulture	<i>Aegyptius tracheliotus</i>	8 records (at least 2 individuals)
Lesser Kestrel	<i>Falco naumanni</i>	not recorded
Near-threatened species		
Lesser Flamingo	<i>Phoenicopterus minor</i>	not recorded (but seen in 2006)
Plain-backed Sunbird	<i>Anthreptes reichenowi</i>	1 record of 1 individual
Neergaard’s Sunbird	<i>Cinnyris neergaardi</i>	see above

Turning to the species inventories raised across the three 5 x 5 km squares during 2007 surveys (see Appendix 1), no detailed analyses were undertaken this time around (see p. 9), but cursory scrutinies revealed that in terms of the proportions of species shared by each square (i.e. simple incidence-based comparisons) – (C/D – 84 species shared out of a total of 157 [54%], C/E – 86 out of 154 [56%], D/E – 85 out of 155 [55%]) – 40+% of the species in each square pairing were not common to the two squares concerned. That this is so is not surprising given the differences in altitude, terrain and vegetation (see Table 3) – with Square C encompassing Lebombo Mountain slopes and *Acacia/Combetum* bushveld, Square D embracing *Acacia xanthoploea* (Fever Tree) woodland, sand forest, and pan and riverine habitats, and Square E incorporating floodplain grassland with *Carissa bispinosa* (Num-num), thickets and riverine woodland – between the squares.

Detailed species comparisons arising from observations made in squares C, D and E, are inappropriate (see p. 9), and thus are not attempted here. Instead, the few comments that follow are restricted to highlighting the 17 species additions (for Opwall in 2007) (Appendix 6) that were observed within these squares, none of which were new, though, to the Mkhuze Game Reserve.

Long-crested Eagle (*Lophaetus occipitalis*) (recorded in E4) is a widespread species that, although seemingly not uncommon in agricultural areas on the Mkhuze River floodplain, would appear to be rare within the reserve itself. Not only was Peregrine Falcon (*Falco peregrinus*) recorded – as anticipated – in C1 (Lebombo Mountains), it was met with also in E2, and at Nsumo Pan. Bronze-winged Courser (*Rhinoptilus chalcopterus*) – one recorded in E4 and three other sightings – is a nocturnally active bird, and thus encountering it is largely a matter of luck, and fortunately luck was with us in 2007! Rameron Pigeon (*Columba arquatrix*) is a species that can be found on escarpments in addition to evergreen forest, and thus its appearance in C4 – one individual in flight – is explicable in terms of the proximity of the Lebombo Mountains. Subsequent to completion of surveys in Square C, a Marsh Owl

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(*Asio capensis*) was seen on four consecutive days within this square. A party of 10 Alpine swifts (*Apus melba*) – a summer migrant/breeding visitor (August to March) (Hockey, Dean & Ryan 2005) – was seen over E4. Two Gray Cuckoo-shrikes (*Coracina caesia*), a species that is listed by the Natal Parks Board (1998) as being a vagrant to Mkhuze and by BIRP (2007) as occurring from March to September, were seen – one in C1 and one in D4. Similarly, two Black Cuckoo-shrikes (*Camphephaga flava*) – a resident bird (listed for every month by BIRP [*loc. cit.*]) – were recorded (one apiece in squares D2 and E4). A Plain-backed Sunbird (*Anthreptes reichenowi*) (Near-threatened species) was watched feeding in bushes adjacent to the Malibala Waterhole on 17/07. The distribution of this species in coastal lowlands extends from Kenya through to southern Mozambique and just into KwaZulu-Natal. Hockey, Dean & Ryan (*loc. cit.*) note that it is an irregular visitor to Mkhuze, though it does not appear on any of the lists referred to in this report. Three of the six sightings obtained of Eastern Olive Sunbird (*Cyanomitra olivacea*) were secured in Square D (D1 and D2); two came from the southern margin of Nsumo Pan. Olive Bushshrike (*Telophorus olivaceus*) was seen in both E4 and the Fig Forest (just two birds involved); (one individual was recorded in 2006, from just outside the reserve). A Red-headed Weaver (*Anaplectus rubriceps*) was recorded in square D4 on 07/08; it is listed by the Natal Parks Board (*loc. cit.*) as a rare resident. A roadside party of four Swee waxbills (*Estrilda melanotis*) was recorded during a C1 survey on 17/07; the standing of the species is given by the Natal Parks Board (*loc. cit.*) as rare/status uncertain (recorded January and September). Black-faced (African) Quailfinch (*Ortygospiza atricollis*) – a nomadic species when not breeding – was recorded at the Malibala Waterhole on 04/08 (two birds), and seen also whilst surveying E3 on 08/08 (one individual). Bronze Manakin (*Spermestus cucullata*) was seen in each of the three, 5 x 5 km squares examined (recorded in no less than eight 1 x 1 km squares); the final tally was only four short of 200. Its prevalence in one year in Mkhuze and absence in another is suggestive of at least local population movements. A male Pin-tailed Whydah (*Vidua macroura*) in breeding plumage was seen within Square D on 02/08. Brimstone Canary (*Serinus sulphuratus*) was observed in squares C6 (a pair on 21/07) and E4 (two birds observed on 05/08). Natal Parks Board (*loc. cit.*) detail it as being rare (only recorded in September, status uncertain).

Winter surveying – when birds are not singing – presents difficulties with Cisticola identification, and thus it is likely that some species went undetected. But, as was the case in 2007, the predominant species met with was Rattling Cisticola (*Cisticola chiniana*); three other species were recorded: Winding (Rufous-winged/Black-backed) Cisticola (*Cisticola glactotes*), Croaking Cisticola (*Cisticola natalensis*) and Zitting (Fan-tailed) Cisticola (*Cisticola juncidis*).

Further 5 x 5 km squares are being examined by Opwall in 2008. An updated version of the 2006 report, with amendments and corrections, is available (dated March 2008).

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are greatly indebted and thus extend our gratitude – the survey programme simply could not have been undertaken.

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### Map

Natal Parks Board (1998) *Mkhuze Game Reserve visitors map*. Robprint.

Prepared by Robin Brace & Chris Sinclair, 04<sup>th</sup> April 2008



**APPENDIX 1**

**Species listings for the 16, 1 x 1 km squares (C1-8, D1-4 and E1-4) surveyed.**

Species ordering and taxonomic treatments follow Clements (2000). Asterisks highlight taxonomic departures from Hockey, Dean & Ryan (2005) – see Appendix 3 for amplification.

SPECIES	1 x 1 KM SQUARES »	SQUARE C								SQUARE D				SQUARE E				
		1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4	
<i>Scopus umbretta</i>	Hammerkop	X																
<i>Mycteria ibis</i>	Yellow-billed Stork		X						X	X	X			X				X
<i>Bostrychia hagedash</i>	Hadedda Ibis									X			X					X
<i>Alopochen aegyptiacus</i>	Egyptian Goose									X					X			X
<i>Plectropterus gambiensis</i>	Spur-winged Goose			X			X											X
<i>Haliaeetus vocifer</i>	African Fish-Eagle										X							
<i>Gyps africanus</i>	(African) White-backed Vulture	X							X	X		X			X			
<i>Aegyptius tracheliotus</i>	Lappet-faced Vulture								X									
<i>Circaetus pectoralis</i>	Black-breasted(chested) Snake-Eagle								X			X						
<i>Circaetus cinereus</i>	Brown Snake-Eagle										X							
<i>Circaetus fasciolatus</i>	Fasciated (Southern Banded) Snake-Eagle												X					
<i>Terathopius ecaudatus</i>	Bataleur					X	X	X	X			X						
<i>Polyboroides typus</i>	African Harrier-Hawk (Gymnogene)						X					X						
<i>Kaupifalco monogrammicus</i>	Lizard Buzzard									X								
<i>Milvax gaber</i>	Gabar Goshawk																X	
<i>Accipiter tachiro</i>	African Goshawk								X									
<i>Accipiter badius</i>	Shikra (Little Banded Goshawk)																	X
<i>Accipiter minullus</i>	Little Sparrowhawk										X							X
<i>Accipiter melanoleucus</i>	Black Goshawk (Sparrowhawk)									X								
<i>Aquila rapax</i>	Tawny Eagle																	X
<i>Polemaetus bellicosus</i>	Martial Eagle									X								X
<i>Lophaetus occipitalis</i>	Long-crested Eagle																	X
<i>Stephanoaetus coronatus</i>	African Crowned Hawk-Eagle	X								X								X
<i>Sagittarius sepentarius</i>	Secretary-bird			X														
<i>Falco peregrinus</i>	Peregrine Falcon	X													X			
<i>Francolinis sephaena</i>	Crested Francolin		X	X	X				X	X	X	X	X	X	X	X	X	X
<i>Francolinus natalensis</i>	Natal Framcolin																	X
<i>Numida meleagris</i>	Helmeted Guineafowl			X	X													
<i>Guttera pucherani</i>	Crested Guineafowl			X		X				X			X					
<i>Turnix sylvatica</i>	Small (Kurrichane) Buttonquail													X				X
<i>Eupodotis melanogaster</i>	Black-bellied Bustard (Korhaan)								X									

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SPECIES	1 x 1 KM SQUARES »	SQUARE C								SQUARE D				SQUARE E				
		1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4	
<i>Rhinoptilus chalcopterus</i>	Bronze-winged Courser						X											
<i>Vanellus lugubris</i>	Senegal Lapwing (Lesser Black-winged Plover)							X										X
<i>Vanellus coronatus</i>	Crowned Lapwing (Plover)						X	X						X				
<i>Charadrius tricollaris</i>	Three-banded Plover				X													
<i>Columba arquatrix</i>	Rameron (African Olive) Pigeon				X													
<i>Streptopelia semitorquata</i>	Red-eyed Dove	X		X				X	X	X	X	X	X	X	X	X	X	X
<i>Streptopelia capicola</i>	Ring-necked (Cape Turtle-) Dove	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Streptopelia senegalensis</i>	Laughing (Palm) Dove										X	X			X			
<i>Turtur chalcospilos</i>	Emerald-(Green)spotted Wood-Dove	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Turtur tympanistria</i>	Tambourine Dove	X									X							
<i>Treon calva</i>	African Green-Pigeon									X	X	X						X
<i>Poicephalus cryptoxanthus</i>	Brown-headed Parrot										X							
<i>Tauraco porphyreolopha</i>	Purple-crested Turaco (Lourie)	X	X	X	X	X		X		X	X	X		X	X	X	X	X
<i>Corythaixoides concolor</i>	Gray Go-away-bird (Lourie)				X	X	X	X										
<i>Chrysococcyx klaas</i>	Klaas' Cuckoo	X															X	
<i>Centropus superciliosus burchellii</i>	White-browed [Burchall's] Coucal *	X						X		X				X				X
<i>Bubo lacteus</i>	Verreaux's (Giant) Eagle-Owl																	X
<i>Caprimulgus pectoralis</i>	Fiery-necked Nightjar												X					
<i>Caprimulgus fossii</i>	Square-tailed Nightjar			X			X											
<i>Apus melba</i>	Alpine Swift																	X
<i>Apus barbatus</i>	African (Black) Swift	X																
<i>Apus affinis</i>	Little Swift		X						X		X						X	X
<i>Colius striatus</i>	Speckled Mousebird	X				X				X	X	X	X	X				X
<i>Urocolius indicus</i>	Red-faced Mousebird		X	X	X				X	X		X	X	X	X			X
<i>Halycon albiventris</i>	Brown-hooded Kingfisher	X	X				X	X	X	X			X	X	X			X
<i>Halycon chelicuti</i>	Striped Kingfisher		X	X	X	X	X	X	X		X	X		X	X	X		
<i>Merops bullockoides</i>	White-fronted Bee-eater									X	X							
<i>Merops pusillus</i>	Little Bee-eater		X				X	X			X				X	X	X	
<i>Coracias caudata</i>	Lilac-breasted Roller																X	
<i>Upupa epops africana</i>	Eurasian [African] Hoopoe *	X	X	X	X	X	X	X	X								X	
<i>Phoeniculus purpureus</i>	Green (Red-billed) Woodhoopoe	X	X				X	X	X	X	X	X	X		X	X		
<i>Rhinopomastus cynaomelas</i>	Common (Greater) Scimitar-bill	X	X	X	X		X	X	X		X	X		X	X	X	X	X
<i>Tockus leucomelas</i>	Southern Yellow-billed Hornbill	X		X		X	X	X						X	X	X		
<i>Tockus alboterminatus</i>	Crowned Hornbill	X		X								X			X			
<i>Ceratogymna bucinator</i>	Trumpeter Hornbill									X	X	X	X	X				X
<i>Stacholaema leucotis</i>	White-eared Barbet									X		X						X
<i>Pogoniulus bilineatus</i>	Yellow(Golden-)rumped Tinkerbird (Barbet)									X	X							

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SPECIES	1 x 1 KM SQUARES »	SQUARE C								SQUARE D				SQUARE E				
		1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4	
<i>Pogoniulus pusillus</i>	Red-fronted Tinkerbird (Barbet)	X		X		X		X		X	X		X				X	X
<i>Tricholaema leucomelas</i>	(Acacia) Pied Barbet		X	X	X	X	X	X	X						X	X	X	
<i>Lybius torquatus</i>	Black-collared Barbet	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Trachyphonus vaillantii</i>	Crested Barbet		X			X	X	X										
<i>Indicator variegatus</i>	Scaly-throated Honeyguide							X		X			X					
<i>Indicator indicator</i>	Greater Honeyguide	X		X			X	X			X				X			
<i>Indicator minor</i>	Lesser Honeyguide						X		X	X		X						
<i>Prodotiscus regulus</i>	Wahlberg's (Sharp-billed) Honeyguide		X					X										
<i>Campethera abingoni</i>	Golden-tailed Woodpecker	X	X		X		X		X	X	X	X	X	X	X			
<i>Dendropicos fuscescens</i>	Cardinal Woodpecker	X	X		X	X	X	X		X	X	X	X	X	X	X		X
<i>Dendropicos namaquus</i>	Bearded Woodpecker					X	X	X		X	X							
<i>Smithornis capensis</i>	African Broadbill												X					
<i>Mirafra rufocinnamomea</i>	Flappet Lark		X															
<i>Calendulauda sabota</i>	Sabota Lark		X	X	X	X	X	X	X						X			
<i>Riparia paludicola</i>	Plain (Brown-throated) Martin									X	X	X	X	X		X		X
<i>Ptyonoprogne</i>	Rock Martin									X			X					
<i>Cecropis abyssinica</i>	Lesser Striped-Swallow	X	X						X	X	X	X	X			X		X
<i>Psalidoprocne holomelas</i>	Black Saw(-)wing (Swallow)									X	X	X	X					
<i>Macronyx croceus</i>	Yellow-throated Longclaw		X	X		X	X								X			X
<i>Anthus cinnamomeus</i>	African (Grassland[veld]) Pipit														X			X
<i>Anthus caffer</i>	Bush(veld) Pipit														X	X		
<i>Coracina caesia</i>	Gray Cuckoo-shrike	X											X					
<i>Campephaga flava</i>	Black Cuckoo-shrike										X							X
<i>Pycnonotus barbatus</i>	Common (Dark-capped, Black-eyed) Bulbul	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Andropadus importunus</i>	Sombre Greenbul (Bulbul)		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
<i>Chlorocichla flaviventris</i>	(African) Yellow-bellied Greenbul (Bulbul)	X				X	X	X	X	X	X	X	X					
<i>Phyllastrepius terrestris</i>	Terrestrial Brownbul (Bulbul)								X	X	X	X	X					
<i>Nicator gularis</i>	Eastern (Yellow-spotted) Nicator				X						X	X	X					
<i>Turdus libyanus</i>	Kurrichane Thrush	X	X					X		X		X		X	X	X		
<i>Cisticola chiniana</i>	Rattling Cisticola	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
<i>Cisticola juncidis</i>	Zitting (Fan-tailed) Cisticola										X			X				
<i>Prinia subflava</i>	Tawny-flanked Prinia							X		X	X		X					
<i>Apalis flavida</i>	Yellow-breasted Apalis	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X
<i>Apalis ruddi</i>	Rudd's Apalis									X	X	X	X		X			
<i>Camaroptera brachyura</i>	Green-backed Camaroptera (Bleating Warbler)	X		X		X	X		X	X	X		X			X		X
<i>Eremomela icteropygialis</i>	Yellow-bellied Eremomela	X	X			X												
<i>Eremomela usticollis</i>	Burnt-neck Eremomela				X		X	X			X			X	X	X	X	X

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SPECIES	1 x 1 KM SQUARES »	SQUARE C								SQUARE D				SQUARE E			
		1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4
<i>Sylvietta rufescens</i>	Cape (Long-billed) Crombec	X	X	X	X	X		X	X					X	X		X
<i>Bradornis pallidus</i>	Pale (Pallid) Flycatcher	X	X	X		X	X	X						X			
<i>Melaenornis pammelaina</i>	Southern Black-Flycatcher	X	X		X	X	X	X	X		X	X		X	X	X	
<i>Sigelus silens</i>	Fiscal Flycatcher		X	X	X		X							X	X	X	X
<i>Muscicapa adusta</i>	African Dusky Flycatcher	X								X							
<i>Muscicapa caerulescens</i>	Ashy (Blue-gray) Flycatcher	X								X	X		X				
<i>Myioparus plumbeus</i>	Gray Tit-Flycatcher (Fan-tailed Flycatcher)	X	X	X					X	X			X		X		
<i>Cossypha humeralis</i>	(African) White-throated Robin-Chat	X									X	X		X	X		
<i>Cossypha heuglini</i>	White-browed (Heuglin's) Robin-Chat															X	
<i>Cossypha natalensis</i>	Red-capped (Natal) Robin-Chat	X							X	X	X					X	X
<i>Cercotricas quadrivirgata</i>	(Eastern) Bearded Scrub-Robin (Robin)	X	X		X				X					X		X	
<i>Cercotricas leucophrys</i>	Red-backed (White-browed) Scrub-Robin	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Saxicola torquata</i>	African Stonechat										X			X			
<i>Batis molitor</i>	Chinspot Batis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Terpsiphone viridis</i>	African Paradise-Flycatcher									X			X				
<i>Melaniparus niger</i>	Southern Black Tit	X	X		X	X	X	X	X		X	X		X		X	
<i>Anthoscopus caroli</i>	African (Gray) Penduline-Tit		X		X	X	X				X				X		
<i>Hedydipna collaris</i>	Collared Sunbird									X	X	X	X	X		X	
<i>Cyanomitra olivacea</i>	Eastern Olive-Sunbird									X	X						
<i>Cyanomitra veroxii</i>	Mouse-coloured (Gray) Sunbird	X											X				
<i>Chalcomitra amethystina</i>	Amethyst (African Black) Sunbird							X			X				X	X	
<i>Chalcomitra senegalensis</i>	Scarlet-chested Sunbird	X	X	X	X	X	X	X	X	X	X	X	X			X	X
<i>Cinnyris neergaardi</i>	Neergaard's Sunbird											X					
<i>Cinnyris mariquensis</i>	Mariqua (Marico) Sunbird		X	X	X	X	X	X	X		X	X	X	X	X	X	X
<i>Cinnyris bifasciatus</i>	Purple-banded Sunbird											X					
<i>Cinnyris talatala</i>	White-breasted(bellied) Sunbird	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Zosterops senegalensis</i>	African Yellow White-eye									X	X					X	
<i>Oriolus larvatus</i>	(African ) Eastern Black-headed Oriole	X								X	X		X			X	
<i>Lanius collaris</i>	Common Fiscal			X												X	
<i>Nilaus afer</i>	Brubru	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
<i>Dryoscopus cubla</i>	Black-backed Puffback	X	X	X	X	X			X	X	X	X	X	X	X	X	
<i>Tchagra senegala</i>	Black-crowned Tchagra		X	X	X	X	X	X	X		X	X	X	X	X	X	X
<i>Tchagra australis</i>	Brown-crowned (Three-streaked) Tchagra		X	X			X		X			X	X	X	X	X	X
<i>Laniarius ferrugineus</i>	Southern Boubou	X	X	X	X	X			X	X	X		X		X	X	X
<i>Telophorus sulfureopectus</i>	Sulphur(Orange)-breasted Bushshrike				X				X	X		X		X	X	X	
<i>Telophorus olivaceus</i>	Olive Bushshrike																X
<i>Telophorus viridis</i>	Four-colored (Gorgeous) Bushshrike		X	X		X			X	X	X	X	X	X	X	X	X

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SPECIES	1 x 1 KM SQUARES »	SQUARE C								SQUARE D				SQUARE E			
		1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4
<i>Malaconotus blanchoti</i>	Gray-headed Bushshrike	X	X	X			X	X	X			X		X			X
<i>Prionops plumatus</i>	White(-crested) (White) Helmetshrike											X			X	X	X
<i>Dicrurus ludwigii</i>	Square-tailed Drongo	X								X	X	X	X				X
<i>Dicrurus adsimilllis</i>	Fork-tailed Drongo	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Creatophora cinerea</i>	Wattled Starling		X	X													
<i>Lamprotornis nitens</i>	Cape (Red-shouldered) Glossy-Starling	X	X	X	X	X	X	X			X			X	X	X	
<i>Lamprotornis corruscus</i>	Black-bellied Glossy-Starling		X							X	X		X		X	X	X
<i>Buphagus erythrorhynchus</i>	Red-billed Oxpecker	X	X	X	X	X	X	X	X		X	X			X	X	X
<i>Passer diffusus</i>	Southern Gray-headed (Cape) Sparrow	X	X	X									X		X		X
<i>Petronia superciliaris</i>	(African) Yellow-throated Petronia (Sparrow)	X	X	X	X	X	X	X	X					X	X	X	
<i>Ploceus intermedius</i>	Lesser Masked-Weaver	X			X					X	X	X	X	X	X	X	X
<i>Ploceus ocularis</i>	Spectacled Weaver	X								X			X		X	X	X
<i>Ploceus bicolor</i>	Forest (Dark-backed) Weaver	X								X	X	X	X				
<i>Anaplectes rubriceps</i>	Red-headed Weaver												X				
<i>Quelea quelea</i>	Red-billed Quelea													X	X	X	X
<i>Euplectesd albonotatus</i>	White-winged Widowbird (Widow)	X		X													X
<i>Pytilia melba</i>	Green-winged Pytilia (Melba Finch)		X	X	X		X	X	X		X			X	X	X	X
<i>Hypargos margaritatus</i>	Pink-throated Twinspot					X			X	X	X	X	X		X		
<i>Lagonosticta senegala</i>	Red-billed Firefinch															X	
<i>Lagonosticha rubricata</i>	African (Blue-billed) Firefinch										X	X	X				
<i>Lagonosticha rhodopareia</i>	Jameson's Firefinch	X	X	X		X		X	X		X			X			
<i>Uraeginthus angolensis</i>	Blue-breast.(cheeked) Cordonbleu (Blue Waxbill)	X	X	X	X	X	X	X			X	X		X	X	X	X
<i>Estrilda perreini</i>	Black-tailed (Gray) Waxbill									X	X		X				
<i>Estrilda melanotis</i>	Swee Waxbill	X															
<i>Estrilda astrild</i>	Common Waxbill					X				X	X	X	X	X	X		X
<i>Ortygospiza atricollis</i>	Black-faced (African) Quailfinch															X	
<i>Spermestes cucullata</i>	Bronze Mannikin	X	X							X	X	X		X		X	X
<i>Spermestes bicolor</i>	Black-and-white (Red-backed) Mannikin									X	X	X					X
<i>Serinus mozambicus</i>	Yellow-fronted(eyed) Canary	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X
<i>Serinus sulphuratus</i>	Brimstone (Bully) Canary						X										X
<i>Emberiza flaviventris</i>	Golden-breasted Bunting	X	X	X	X		X								X		
	<b>1 x 1 km Quadrat Species Totals</b>	<b>69</b>	<b>62</b>	<b>56</b>	<b>48</b>	<b>50</b>	<b>54</b>	<b>61</b>	<b>48</b>	<b>74</b>	<b>82</b>	<b>65</b>	<b>65</b>	<b>62</b>	<b>64</b>	<b>66</b>	<b>75</b>
<b>TOTAL OF 173 SPECIES RECORDED</b>	<b>5 x 5 km Quadrat Species Totals</b>	<b>121</b>								<b>120</b>				<b>119</b>			



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### APPENDIX 2

**Listing of those species recorded in Mkhuze Game Reserve, but not logged during survey square walks.**

C, D and E – records secured within survey squares C, B and E; O – seen only elsewhere. ). Asterisk highlights taxonomic departure from Hockey, Dean & Ryan (2005) – see Appendix 3 for amplification.

Species	C	D	E	O
<i>Pelecanus onocrotalus</i>				X
<i>Pelecanus rufescens</i>				X
<i>Phalacrocorax cardo lucidus</i>				X
<i>Phalacrocorax africanus</i>				X
<i>Anhinga rufa</i>			X	
<i>Ardea cinerea</i>				X
<i>Ardea melanocephala</i>				X
<i>Ardea goliath</i>		X		
<i>Ardea purpurea</i>				X
<i>Ardea alba</i>				X
<i>Egretta intermedia</i>				X
<i>Egretta garzetta</i>				X
<i>Ardeola ralloides</i>				X
<i>Bubulcus ibis</i>				X
<i>Butoroides stiata</i>				X
<i>Nycticorax nycticorax</i>				X
<i>Ciconia nigra</i>				X
<i>Ciconia episcopus</i>	X			
<i>Threskiornis aethiopicus</i>				X
<i>Plegadis falcinellus</i>				X
<i>Platalea alba</i>				X
<i>Dendrocygna bicolor</i>				X
<i>Sarkidornis melanotis</i>				X
<i>Anas sparsa</i>				X
<i>Anas undulate</i>				X
<i>Anas erythrorhyncha</i>				X
<i>Anas punctata</i>				X
<i>Avicela cuculoides</i>				X
<i>Elanus caeruleus</i>				X
<i>Gyps coprotheres</i>				X
<i>Trigonoceps occipitalis</i>	X			
<i>Circus ranivorus</i>				X
<i>Aquila wahlbergi</i>	X			
<i>Amauornis flavirostra</i>				X
<i>Porphyrio porphyrio madagascariensis</i>				X
<i>Gallinula chloropus</i>				X
<i>Actophilornis africanus</i>				X
<i>Himantopus himantopus</i>				X
<i>Burhinus vermiculatus</i>	X			
<i>Burhinus capensis</i>				X
<i>Glareola pratincola</i>				X
<i>Vanellus armatus</i>				X
<i>Vanellus senegallus</i>				X
<i>Tringa nebularia</i>				X
<i>Tringa glareola</i>				X
<i>Larus cirrocephalus</i>				X
<i>Chlidonias hydriaba</i>				X
<i>Tyto alba</i>			X	
<i>Otus africanus</i>				X
<i>Strix woodfordii</i>				X
<i>Glaucidium capense</i>				X

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Species		C	D	E	O
<i>Asio capensis</i>	Marsh Owl	X			
<i>Caprimulgus natalensis</i>	Swamp (Natal) Nightjar				X
<i>Apaloderma narina</i>	Narina Trogon		X		
<i>Alcedo cristata</i>	Malachite Kingfisher				X
<i>Ispidina picta</i>	African Pygmy-Kingfisher				X
<i>Megaceryle maximus</i>	Giant Kingfisher				X
<i>Ceryle rudis</i>	Pied Kingfisher				X
<i>Motacilla aguimp</i>	African Pied Wagtail	X			
<i>Motacilla capensis</i>	Cape Wagtail				X
<i>Motacilla clara</i>	Mountain (Long-tailed) Wagtail				X
<i>Cisticola glactodes</i>	Winding (Black-backed) Cisticola				X
<i>Cisticola natalensis</i>	Croaking Cisticola				X
<i>Calamonastes undosus stierlingi</i>	Miombo [Stierling's] Camaroptera *				X
<i>Bradypterus baboecala</i>	African Bush-(Sedge) Warbler (Little Rush Warbler)				X
<i>Chloropeta netalensis</i>	African (Dark-capped) Yellow Warbler				X
<i>Cossypha dichroa</i>	Chorister Robin-Chat				X
<i>Cercomela familiaris</i>	Familiar (Red-tailed) Chat				X
<i>Thammodaea cinnamomeiventris</i>	Mocking Cliff-Chat (Chat)				X
<i>Platysteira peltata</i>	Black-throated Wattle-eye (Wattle-eyed Flycatcher)				X
<i>Batis fratrum</i>	Woodward's (Zululand) Batis				X
<i>Trochocercus cyanomelas</i>	African (Blue-mantled) Crested-Flycatcher				X
<i>Anthreptes reichenowi</i>	Plain-backed (Blue-throated) Sunbird	X			
<i>Ploceus xanthops</i>	Holub's (African) Golden-Weaver				X
<i>Ploceus xanthopterus</i>	Southern Brown-throated Weaver				X
<i>Ploceus velatus</i>	Southern (African) Masked Weaver				X
<i>Euplectes axillaries</i>	Fan-tailed (Red-shouldered) Widowbird (Widow)				X
<i>Vidua macroura</i>	Pin-tailed Whydah		X		
<i>Serinus citrinipectus</i>	Lemon-breasted Seedeater (Canary)				X
<i>Emberiza tahapisi</i>	Cinnamon-breasted (Rock) Bunting	X			
<b>TOTAL OF 80 SPECIES RECORDED</b>	<b>Totals</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>68</b>

### APPENDIX 3

#### Systematic listing of species recorded within the Mkhuze Game Reserve

Species ordering and taxonomic treatments follow Clements (2000). Taxonomic departures from Hockey, Dean & Ryan (2005) are denoted by asterisks. These departures (re: South African 'splits') are highlighted through the provision of trinomial scientific designations, and given emphasis in the English names column through inclusion of the South African name in squared parentheses. Status information was gleaned in part from the Natal Parks Board (1998) Mkhuzi Game Reserve Bird List. Accompanying those species recorded during survey walks are relevant survey square designators. Those species not recorded during formal survey work are appended accordingly; in those cases where such species were observed, though, in any of the three 5 x 5 km squares investigated in 2007, relevant survey square designators are listed.

F. PELECANIDAE (Pelicans): 2 spp.

***Pelecanus onocrotalus* Great (Eastern) White Pelican** (Visitor)

One individual on Nsumo Pan (15/08).

(Not recorded during survey work.)

***Pelecanus rufescens* Pink-backed Pelican** (Summer Breeder)

Up to 40 recorded on Nsumo Pan during July, where much activity (immatures present) at the breeding colony sited in Fever trees on the northern shoreline; but fewer present there during early August. A single noted on Ediza Pan on 11/07.

(Not recorded during survey work.)

F. PHALACROCORACIDAE (Cormorants): 2 spp.

***Phalacrocorax carbo lucidus* Great [White-breasted] Cormorant** \* (Visitor)

Small numbers on Nsumo Pan throughout the period; a maximum of 10 scored.

(Not recorded during survey work.) (Not recorded – surprisingly – in 2006.)

***Phalacrocorax africanus* Long-tailed (Reed) Cormorant** (Resident)

A maximum of 10 birds counted on Nsumo Pan, where immatures much in evidence. Seen also on Ediza Pan; a couple of sightings too from Ediza Pan.

(Not recorded during survey work.)

F. ANHINGIDAE (Anhingas): 1 sp.

***Anhinga rufa* (African) Darter** (Resident)

Up to five recorded from Nsumo Pan; one observed on Ediza Pan on 15/07. A few additional observations secured also of singles in flight elsewhere (including over Square E).

(Not recorded during survey work.)

F. ARDEIDAE (Herons, Egrets & Bitterns): 11 spp.

***Ardea cinerea* Gray Heron** (Resident)

Continually present on Nsumo Pan, but with a maximum of only three birds. Seen on Ediza Pan also (e.g. two on both 11/07 and 15/07).

(Not recorded during survey work.)

***Ardea melanocephala* Black-headed Heron** (Resident)

Five sightings on Nsumo Pan across three days; one individual noted on Ediza Pan on 15/07.

(Two were seen at Muzi Pan on 30/07.)

(Not recorded during survey work.)

***Ardea goliath* Goliath Heron** (Resident)

Eight sightings across six days, all coming from Nsumo Pan with the exception of one from Hlonhlela Pan (Square D).

(Not recorded during survey work.)

***Ardea purpurea* Purple Heron** (Resident)

Recorded only along the well vegetated southern margin of Nsumo Pan, that was visited on 09/08 (3 birds seen) and 15/08 (2 individuals noted). (Not recorded in 2006.)

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(Not recorded during survey work.)

***Ardea alba* Great (White) Egret** (Resident)

Twenty eight sightings across 16 days, coming overwhelmingly from Nsumo Pan where the maximum count was four on 15/07; singles seen on Ediza Pan.

(Not recorded during survey work.)

***Egretta intermedia* Intermediate (Yellow-billed) Egret** (Resident/Visitor)

Just one record – an individual on Ediza Pan on 16/07.

(Not recorded during survey work.)

***Egretta garzetta* Little Egret** (Resident)

Routinely seen on Nsumo Pan, with a daily maximum of three; recorded too (singles) from Ediza Pan.

(Not recorded during survey work.)

***Ardeola ralloides* Squacco Heron** (Resident)

Three singles recorded from Nsumo Pan; one hide-based observation on 26/07, and one seen during each of the two forays made to the southern margin of that pan (on 09/08 and 15/08).

(Not recorded during survey work.)

***Bubulcus ibis* Cattle Egret** (Resident)

Occasional sightings, with 10 observed in the Mkhuze Gorge on 14/08.

(c. 80 birds were observed flying north [to roost] when returning from Muzi Pan to the Ophanzi Gate late afternoon on 04/08.)

(Not recorded during survey work.)

***Butoroides striata* Striated (Green-backed) Heron** (Resident)

Four individuals logged – across three days – on Nsumo Pan; two observed along the Mkhuze Gorge on 14/08.

(Not recorded during survey work.) (Not recorded in 2006.)

***Nycticorax nycticorax* Black-crowned Night-Heron** (Resident)

Just one record – an individual in flight over Nsumo Pan at dusk on 11/08.

(Not recorded during survey work.)

F. SCOPIIDAE (Hammerkop): 1 sp.

***Scopus umbretta* Hammerkop** (Resident)

Fifteen sightings secured across eight days, including two birds seen along the Mkhuze Gorge on 14/08.

(C1)

F. CICONIIDAE (Storks): 3 spp.

***Mycteria ibis* Yellow-billed Stork** (Resident)

A total of 379 birds logged across 21 days, with a daily maximum of 90 on 15/08; the majority of sightings came from Nsumo Pan, but small concentrations were seen on Ediza Pan (e.g. 15 on 15/07); one was noted by Hlonhlela Pan on 11/07.

(C2, C8; D1, D2; E1, E4)

***Ciconia nigra* Black Stork** (Status unclear)

One seen in the Mkhuze Gorge on 14/08.

(Not recorded during survey work.)

***Ciconia episcopus* Woolly-necked Stork** (Resident)

Only eight sightings – across five days, with records coming from Nsumo Pan, from the Malibala and Kumasinga hides (the former located in Square C), and the Mkhuze Gorge (three birds seen).

(Not recorded during survey work.)

F. THRESKIORNITHIDAE (Ibises & Spoonbills): 4 spp.

***Threskiornis aethiopicus* (African) Sacred Ibis** (Resident)

Despite a number of visits made to Nsumo Pan (though no formal surveying undertaken there as was the case in 2006), the species was recorded on just one day; two individuals were noted on 15/08.

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(Not recorded during survey work.)

***Bostrychia hagedash* Hadedda Ibis** (Resident)

A total of 87 sightings across 23 days, with a daily maximum of 10.

(D1, D4; E4)

***Plegadis falcinellus* Glossy Ibis** (Resident)

Twenty four sightings across 12 days; up to three birds seen on Nsumo Pan and up to two recorded from Ediza Pan.

(Not recorded during survey work.)

***Platalea alba* African Spoonbill** (Resident)

Up to 25 birds recorded from both Nsumo Pan and Ediza Pan.

(Not recorded during survey work.)

F. ANATIDAE (Ducks, Geese & Swans): 8 spp.

***Dendrocygna viduata* White-faced Whistling-Duck** (Resident)

A maximum daily count of 120 – a combined total for Nsumo and Ediza pans – was obtained on 15/08; other such counts yielded far lower numbers ( $\leq 35$ ).

(Not recorded during survey work.)

***Alopochen aegyptiacus* Egyptian Goose** (Resident)

Ninety seven sightings across across 17 days, with the great majority coming from Nsumo Pan; observed on Ediza Pan too (e.g. eight on 15/07).

(D1; E2, E4)

***Plectropterus gambiensis* Spur-winged Goose** (Resident/Winter Visitor)

Present on Nsumo Pan throughout the expeditionary period, with a maximum of 60 on 15/07, but of irregular occurrence on Ediza Pan (with a maximum count there of 15). (A count of 105 was obtained at Muzi Pan on 04/08.)

(C3, C6; E4)

***Sarkidiornis melanotus* Comb (Knob-billed) Duck** (Resident)

Unlike the situation in 2006 when continually present on Nsumo Pan during August, just one sighting there of three birds was secured (08/07). (Four were seen on Muzi Pan on both 30/07 and 04/08.)

(Not recorded during survey work.)

***Anas sparsa* African Black Duck** (Resident)

A single was seen on Ediza Pan on 15/07, and four were logged along the Mkhuze Gorge on 14/08.

(Not recorded during survey work.) (Not recorded in 2006.)

***Anas undulata* Yellow-billed Duck** (Resident)

Far less prevalent than was the case in 2006; seven sightings across four days, all coming from Nsumo Pan.

(Not recorded during survey work.)

***Anas erythrorhyncha* Red-billed Duck (Teal)** (Status uncertain)

In common with the previous species, relatively few sightings; 10 were observed on 12/07 and four were noted 04/08, both records relating to Nsumo Pan. (Nine were on Muzi Pan on 04/08.)

(Not recorded during survey work.)

***Anas punctata* Hottentot Teal** (Resident)

Two were on a road-side pool adjacent to Ediza Pan on 15/07. Additionally, there were two sightings from the southern margin of Nsumo Pan – three and two birds on 09/08 and 15/08 respectively.

(Not recorded during survey work.)

F. ACCIPITRIDAE (Hawks, Eagles & Kites): 24 spp.

***Avicela cuculoides* African Cuckoo-Hawk (Baza)** (Resident)

A juvenile was seen close to the start of the track leading to the Environment Camp on 26/07.

(Not recorded during survey work.) (Not recorded in 2006.)

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### *Elanus caeruleus* **Black-shouldered Kite** (Resident/Migrant)

Five records, of which four were singles hunting over vegetation fringing Nsumo Pan; the remaining individual was detected along the Enxwala Road.

(Not recorded during survey work.) (Not recorded in 2006.)

### *Haliaeetus vocifer* **African Fish-Eagle** (Resident)

Sixteen sightings across 11 days; two immatures were noted by Ediza Pan on 15/08.

(D2)

### *Gyps africanus* (African) **White-backed Vulture** (Resident)

Recorded on an almost daily basis. Daily tallies all >10 during July, but up to 45 seen in August attending carcasses put out by the park management adjacent to the Malibala Hide (Square C) with the aim of attracting and identifying ringed individuals.

(C1, C7; D1, D3; E2)

### *Gyps coprotheres* **Cape Griffon (Vulture)** (Non-breeding Visitor)

One was reported on 23/07, and one was observed circling over the Environmental Camp on 14/08.

(Not recorded during survey work.)

### *Aegypius tracheliotus* **Lappet-faced Vulture** (Resident)

Up to two birds were attracted to the carcasses placed adjacent to the Malabala Hide (Square C) (see above); the C7 survey record was obtained on 18/07.

(C7)

### *Trgonoceps occipitalis* **White-headed Vulture** (Resident)

A single bird was seen attending a planted carcass (Square C – see above) on each of two dates (04/08 and 16/08).

(Not recorded during survey work.)

### *Circaetus pectoralis* **Black-breasted(chested) Snake-Eagle** (Resident)

Five observations secured (one of which was within Square E), all of single birds.

(C7; D3)

### *Circaetus cinereus* **Brown Snake-Eagle** (Resident)

In common with the afore-listed species, just four observations.

(D2)

### *Circaetus fasciolatus* **Fasciated (Southern Banded) Snake-Eagle** (Resident)

Two records of a single bird from the same area of mixed sandveld/riverine woodland within D4 (26/07 and 07/08); presumably just one individual involved. (Additionally, one was seen perched on a road-side telegraph post a little south of Muzi Pan on 30/07.)

(D4)

### *Terathopius ecaudatus* **Bataleur** (Resident)

A total of 21 sightings across 13 days; both adults and immatures observed.

(C5, C6, C7, C8; D3)

### *Circus ranivorus* **African Marsh-Harrier** (Resident)

One watched quartering vegetation fringing Nsumo Pan on 12/07.

(Not recorded during survey work.) (Not recorded within the reserve in 2006, but a single was observed just to the south-east on one date.)

### *Polyboroides typus* **African Harrier-Hawk (Gymnogene)** (Resident)

A total of nine sightings; two were seen together in flight in C6 on 18/07.

(C6; D3)

### *Kaupifalco monogrammicus* **Lizard Buzzard** (Resident)

Just three well scattered sightings (24/07 and 02/08).

(D1)

### *Milvax gabar* **Gabar Goshawk** (Resident)

Three birds observed (12/07, 08/08 and 16/08).

(E3)

### *Accipiter tachiro* **African Goshawk** (Resident)

Again, three birds recorded (18/07, 23/07 and 29/07).

(C8)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### *Accipiter badius* **Shikra (Little Banded Goshawk)** (Resident)

Four sightings secured over a four-day period (25-28/07).

(E4)

### *Accipiter minullus* **Little Sparrowhawk** (Status unclear)

A total of eight well scattered (spatially and temporally) observations; including a bird that was mist-netted in sandveld woodland in D3.

(D2; E4)

### *Accipiter melanoleucus* **Black Goshawk (Sparrowhawk)** (Resident)

A good low flight view of one at Hlonhlela Pan (Square D1) was obtained whilst surveying on 26/07; a second flight observation was made whilst surveying D2 (02/08), but the bird concerned remained just outside that square.

(D1)

### *Aquila rapax* **Tawny Eagle** (Resident)

We were alerted by Dennis Ellis (Northern Section Ranger) to the presence of a bird along the Beacon Road on 05/08; a second observation of what seems likely to have been the same individual was made on 16/08 whilst scanning attendance at a carcass placed near the Malibala Hide (Square C – see above). The E4 survey sighting was on 16/08.

(E4)

### *Aquila wahlbergi* **Wahlberg's Eagle** (Summer Migrant)

Only one record of this species this year – an individual in flight near Emshopi Gate (Square C1) on 16/08. (In 2006 no less than 12 sightings were logged!)

(Not recorded during survey work.)

### *Polemaetus bellicosus* **Martial Eagle** (Resident)

A total of six sightings, all coming from within (or close) to survey squares D and E.

(D1; E4)

### *Lophaetus occipitalis* **Long-crested Eagle** (Resident)

Four sightings, three of which were within of adjacent to Square E; one was obtained from the south-east extremity of the reserve.

(E4) (Not seen within the reserve in 2006, though observed just outside of it.)

### *Stephanoetus coronatus* **(African) Crowned Hawk-Eagle** (Resident)

Most observations related to a pair nesting close to the Emshopi Gate (Square C1). Observations in D1 related to the Hlonhlela Pan area, where a large nest (in a Fever tree) discovered, was either of this species or of Martial Eagle. Observed also within E4 on 01/08. (A juvenile was seen on two occasions in the same area in 2006.)

(C1; D1; E4)

## F. SAGITTARIIDAE (Secretary-bird): 1 sp.

### *Sagittarius serpentarius* **Secretary-bird** (Resident)

Seven sightings across four days, with Square C being the 'favoured' area.

(C3)

## F. FALCONIDAE (Falcons & Caracaras): 1 sp.

### *Falco peregrinus* **Peregrine Falcon** (Resident)

Two records secured whilst surveying squares, and a further one from Nsumo Pan.

(C1; E2) (Not recorded in 2006.)

## F. PHASIANIDAE (Pheasants & Partridges): 2 spp.

### *Francolinis sephaena* **Crested Francolin** (Resident)

Widespread; seen almost daily, with a daily maximum of 25.

(C2, C3, C4, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

### *Francolinus natalensis* **Natal Francolin** (Resident)

Surveying in Square E4 provided all three reports of this species – two were heard and subsequently flushed on 27/07, and a further one heard on 29/07.

(E4) (Observed only in the Mkhuze Gorge in 2006.)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

F. NUMIDIDAE (Guineafowl): 2 spp.

*Numida meleagris* **Helmeted Guineafowl** (Resident)

Thirty one sighting across six days, with the largest group seen, consisting of 12 individuals (logged in C3 on 17/07).

(C3, C4)

*Guttera pucherani* **Crested Guineafowl** (Resident)

A very widespread species with large groups seen frequently; a tally of 327 sightings was accumulated across 25 days.

(C3, C5; D1, D4)

F. TURNICIDAE (Buttonquail): 1 sp. (Resident)

*Turnix sylvatica* **Small (Kurrichane) Buttonquail**

No less than four of the eight sightings came from surveys undertaken in E4. One very obliging individual was encountered in the middle of the Enxwala Road!

(E1, E4)

F. RALLIDAE (Rails, Gallinules & Coots): 3 spp.

*Amaurornis flavirostra* **Black Crake** (Resident)

Two birds were seen well during the first of our two visits to the southern margin of Nsumo Pan on 09/08.

(Not recorded during survey work.)

*Porphyrio porphyrio madagascariensis* **Purple [African Purple] Swamphen**

(**Gallinule**) (Resident)

One individual showed itself at the edge of a reed-bed during our second visit to the southern margin of Nsumo Pan on 15/08.

(Not recorded during survey work.)

*Gallinula chloropus* **Common Moorhen** (Resident)

Four records of single birds from Nsumo Pan.

(Not recorded during survey work.)

F. OTIDIDAE (Bustards): 1 spp.

*Eupodotis melanogaster* **Black-bellied Bustard (Korhaan)** (Resident)

A total of five well scattered sightings; one very obliging bird near the Firing Range (off the Enxwala Road) was highly photogenic!

(C7)

F. JACANIDAE (Jacanas): 1 sp.

*Actophilornis africana* **African Jacana** (Resident)

All birds logged (33 across 11 days, with daily maximum of 6) were on Nsumo Pan.

(Not recorded during survey work.)

F. RECURVIROSTRIDAE (Avocets & Stilts): 1 spp.

*Himantopus himantopus* **Black-winged Stilt** (Resident/Winter Migrant)

The maximum count for Nsumo Pan was 10 birds (c.f. 40 in 2006); up to four birds were observed on Ediza Pan/nearby pool adjacent to the eastern park road.

(Not recorded during survey work.)

F. BURHINIDAE (Thick-knees): 2 spp.

*Burhinus vermiculatus* **Water Thick-knee (Dikkop)** (Resident)

A total of 17 sightings relating principally to Nsumo Pan; but including, for example, two birds seen by the Malibala waterhole (31/07) (square C4). (Four were encountered at Muzi Pan on 30/07.)

(Not recorded during survey work.)

*Burhinus capensis* **Spotted Thick-knee (Dikkop)** (Resident)

Encountered during night (evening) drives; a total of 16 sightings acquired across eight days.

## Avifaunal Atlasing of the Mkhuzi Game Reserve, 2007

(Not recorded during survey work.)

F. GLAREOLIDAE (Practincoles & Coursers): 2 sp.

***Rhinoptilus chalcopterus* Bronze-winged Courser** (Visitor/Resident)

Four records including an individual flushed in C5 on 16/06, (that may well have been seen very briefly too on 10/06 when establishing this square), and one road-side bird (that was photographed) along the Beacon Road during a night drive on 28/07.

(C6) (Not recorded in 2006.)

***Glareola pratincola* Collared (Red-winged) Pratincole** (Winter Migrant)

Just 1 bird seen in flight over Nsumo Pan during our last visit there on 16/08, a paucity of observations that contrasts starkly with 2006 when – during August – up to 10 were seen per visit. (The species was recorded too from Muzi Pan, with 40+ and 10+ seen on 30/07 and 04/08 respectively.)

(Not recorded during survey work.)

F. CHARADRIIDAE (Plovers and Lapwings): 5 spp.

***Vanellus armatus* Blacksmith Plover (Lapwing)** (Resident)

Up to five birds recorded from the margins of Nsumo Pan.

(Not recorded during survey work.)

***Vanellus lugubris* Senegal Lapwing (Lesser Black-winged Plover)** (Resident)

A total of 15 well dispersed sightings accumulated across 6 days.

(C7; E4)

***Vanellus coronatus* Crowned Lapwing (Plover)** (Resident)

More in evidence than in 2006, but nevertheless the tally of birds seen was only 14.

(C6, C7; E1)

***Vanellus senegallus* (African) Wattled Lapwing (Plover)** (Resident)

The majority of the 12 sightings were from the margins of Nsumo Pan, where the maximum count was four birds.

(Not recorded during survey work.)

***Charadrius tricollaris* Three-banded Plover** (Resident)

Recorded from Nsumo Pan (maximum daily count of five birds), Ediza Pan (maximum of two), the Malibala waterhole (pair habitually present) and the Mkhuzi Gorge (one noted on 14/08).

(C4)

F. SCOLOPACIDAE (Sandpipers): 2 spp.

***Tringa nebularia* Common Greenshank** (Winter Migrant)

Seen only right at the end of the expeditionary period, with four present on Nsumo Pan and one observed on Ediza Pan on 15/08.

(Not recorded during survey work.)

***Tringa glareola* Wood Sandpiper** (Winter Migrant)

One individual recorded during our last visit to Nsumo Pan (16/08).

(Not recorded during survey work.)

F. LARIDAE (Gulls): 1 sp.

***Larus cirrocephalus* Gray-headed Gull** (Winter Visitor)

One in flight over Nsumo Pan on 15/08.

(Not recorded during survey work.) (Not recorded in 2006.)

F. STERNIDAE (Terns): 1 sp.

***Chlidonias hybrida* Whiskered Tern** (Non-breeding Visitor)

Present on Nsumo Pan throughout our stay in Mkhuzi, with a maximum count of 40 on 10/08; occasional sightings (one or two individuals) from Ediza Pan also.

(Not recorded during survey work.)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

F. COLUMBIDAE (Pigeons & Doves): 7 spp.

***Columba arquatrix* Rameron (African Olive-)Pigeon** (Vagrant)

The sole observation was of a bird seen during survey work on 17/08.

(C4) (Not recorded in 2006.)

***Streptopelia semitorquata* Red-eyed Dove** (Resident)

Recorded on an almost daily basis, with a total of 117 sightings; undoubtedly commoner in more wooded/forested areas closer to the Mkhuze River. The absence of the species from some of the C squares should be noted.

(C1, C3, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

***Streptopelia capicola* Ring-necked (Cape Turtle-) Dove** (Resident)

Extremely widespread – as the list of survey squares testifies – and conspicuous, with daily counts generally in double figures; a total of 301 sightings tallied.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

***Streptopelia senegalensis* Laughing (Palm) Dove** (Resident)

Only 10 birds seen (just two noted in 2006), with most records coming from the second half of the expeditionary period.

(D2, D3; E2)

***Turtur chalcospilos* Emerald-(Green)spotted Wood-Dove** (Resident)

Numerically the most abundant dove in Mkhuze (463 birds recorded); heard and seen in all habitats.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

***Turtur tympanistria* Tambourine Dove** (Resident)

Four singles – observed across a range of habitats.

(C1; D1)

***Treon calva* African Green-Pigeon** (Resident)

Most of the 53 sightings came from areas relatively close or adjacent to the Mkhuze River; (note the absence of records for the C square). Presence almost guaranteed at particular fruiting trees within squares D and E (affiliated maximum count of 10 from D1 on 20/07).

(D1, D2, D3; E4)

F. PSITTACIDAE (Parrots): 1 sp.

***Poicephalus cryptoxanthus* Brown-headed Parrot** (Resident)

As was the case in 2006, seen only very infrequently – in wooded areas. Heard by Hlonhela Pan on 10/07, one seen in the Fig Forest on 13/07 and recorded from D2 on 07/08, with a total of five birds involved.

(D2)

F. MUSOPHAGIDAE (Turacos): 2 spp.

***Tauraco porphyreolopha* Purple-crested Turaco (Lourie)** (Resident)

Relatively widespread and conspicuous across a range of habitats; a total of 68 sightings tallied across 32 days.

(C1, C2, C3, C4, C5, C7; D1, D2, D3; E1, E2, E3, E4)

***Corythaixoides concolor* Gray Go-away-bird (Lourie)** (Resident)

Virtually all of the 13 sightings came from Square C, where seven were logged during survey walks (with a party of three being observed in C5 on 23/07). Clearly restricted to the more open thornveld in the western and southern sectors of the park (noted along the Enxwala Road in 2006).

(C4, C5, C6, C7)

F. CUCULIDAE (Cuckoos): 2 spp.

***Chrysococcyx klaas* Klaas' Cuckoo** (Summer Migrant + some Over-winter)

The earliest of the four individuals recorded, was seen on 15/07.

(C1; E3)

## Avifaunal Atlasing of the Mkhuzi Game Reserve, 2007

### *Centropus superciliosus burchellii* **White-browed [Burchall's] Coucal** \* (Resident)

A surprisingly cosmopolitan species in terms of habitat occupation; seen not only in riverine/pan fringe habitats, but also – at times – in more elevated, drier terrain (e.g. square C1); a total of 21 birds scored.

(C1, C7; D1; E1, E4)

F. TYTONIDAE (Barn Owls): 1 spp.

### *Tyto alba* **Barn Owl (Resident)**

A single seen on each of two consecutive days within Square D (by Johnny Minnaar [security officer]) whilst overseeing herpetological work), were the only records; presumably just one individual involved.

(Not recorded in 2006.)

F. STRIGIDAE (Owls): 5 spp.

### *Otus africanus* **African Scops-Owl (Resident)**

Heard on nine evenings (one/two birds) in the Kumasinga/Environmental Camp area.

(Not recorded during survey work.)

### *Bubo lacteus* **Verreaux's (Giant) Eagle-Owl (Resident)**

One heard one early morning (01/08) at the start of an E4 walk. The species was searched for where found roosting in 2006 (Mbiza), but without success.

(E4)

### *Strix woodfordii* **African Wood-Owl (Resident)**

Noted on three dates, calling from the northern perimeter of Mantuma Camp.

(Not recorded during survey work.) (Not recorded in 2006.)

### *Glaucidium capense* **African Barred Owlet (Resident)**

Calling from sand forest between the Kumasinga and Kubube hides on four dates. Responses were reliably elicited by the playing of pre-recorded calls, but we were unable to draw an owl in sufficiently close to establish visual contact.

(Not recorded during survey work.)

### *Asio capensis* **Marsh Owl (Resident)**

Four sightings – on consecutive days (30/07-02/08) – of what was obviously the same individual quartering (and perched-up on one date) a restricted area of Square C immediately east of the Malibala Hide turn-off from the road linking the Emshopi Gate and Mantuma Camp.

(Not recorded during survey work.) (Not recorded in 2006.)

F. CAPRIMULGIDAE (Nightjars): 3 spp.

### *Caprimulgus pectoralis* **Fiery-necked Nightjar (Resident)**

Less in evidence than in 2006, with most vocal activity confined to the second half of July. A total of 34 birds scored across 17 days, but only one individual flushed whilst surveying squares. Good views obtained of birds perched on floodlights at Mantuma Camp and during night drives.

(D4)

### *Caprimulgus natalensis* **Swamp (Natal) Nightjar (Resident)**

Just two records – coming from night drives (on 13/07 and 09/08); this is double last year's count!

(Not recorded during survey work.)

### *Caprimulgus fossii* **Square-tailed (Mozambique) Nightjar (Resident)**

Three of the six sightings were of birds flushed during survey walks; the remaining three birds were encountered during night drives.

(C3, C6)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

F. APODIDAE (Swifts): 3 spp.

***Apus melba* Alpine Swift** (Summer Migrant + Other Seasons)

A party of 10 – accompanied by three Little swifts – seen during a survey walk on 08/08 was the only record.

(E4) (Not recorded in 2006.)

***Apus barbatus* African (Black) Swift** (Resident)

Three records – two seen over square C1 on 15/07), two observed on 27/07 and one noted on 08/08.

(C1)

***Apus affinis* Little Swift** (Resident)

Noted on six days, but only two double-figure counts obtained – 15 on 26/07 and 46 on 05/08, (with 40 over E4 during a survey walk).

(C2, C8; D2; E3, E4)

F. COLIIDAE (Mousebirds): 2 spp.

***Colius striatus* Speckled Mousebird** (Resident)

Parties frequently encountered; a total of 243 sightings across 21 days.

(C1, C5; D1, D2, D3, D4; E1, E4)

***Urocolius indicus* Red-faced Mousebird** (Resident)

A widespread and abundant species; a total of 347 sightings across 26 days.

(C2, C3, C4, C8; D1, D3, D4; E1, E2, E4)

F. TROGONIDAE (Trogon & Quetzals): 1 sp.

***Apaloderma narina* Narina Trogon** (Resident)

One was observed in thick mixed woodland when setting up square D4 (25/07), and one flashed across the road in front of our vehicle just north of the turn-off to the Fig Forest. But not seen within the Fig Forest this year.

(Not recorded during survey work.)

F. ALECEDINIDAE (Kingfishers): 6 spp.

***Alcedo cristata* Malachite Kingfisher** (Resident)

A total of seven singles seen on the margins of Nsumo and Ediza Pans.

(Not recorded during survey work.)

***Ispidina picta* African Pygmy Kingfisher** (Summer Migrant)

What was presumably the same individual was seen twice – on 09/08 and 15/08 – at the edge of a specific area of low thickets skirting the southern margin of Nsumo Pan.

(Not recorded during survey work.) (Not recorded in 2006.)

***Halycon albiventris* Brown-hooded Kingfisher** (Resident)

Frequently met with in both thornveld and open woodland (i.e. especially within Square C), with a tally of 37 observations spanning 23 days.

(C1, C2, C6, C7, C8; D1, D4; E1, E2, E4)

***Halcyon chelicuti* Striped Kingfisher** (Resident)

The kingfisher species of the thornveld, with a tally of 74 observations over 23 days; up to 11 birds seen in a day.

(C2, C3, C4, C5, C6, C7, C8; D2, D3; E1, E2, E3)

***Megaceryle maximus* Giant Kingfisher** (Resident)

Just two individuals seen (13/07 and 13/08) – both locations were close to/along the Mkhuze River.

(Not recorded during survey work.)

***Ceryle rudis* Pied Kingfisher** (Resident)

One or two birds seen on most sojourns in the hides on the northern flank of Nsumo Pan; seven noted during our second foray to the southern margin of that pan on 15/08.

(Not recorded during survey work.)

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F. MEROPIDAE (Bee-eaters): 2 spp.

***Merops bullockoides* White-fronted Bee-eater** (Resident)

A pair was observed on 10/07 during a brief visit to Hlonhlela Bush Lodge, two were seen whilst surveying D2 on 26/07, one was noted in D1 (Hlonhlela Pan) on 11/08, and one was seen in the Mkhuze Gorge on 14/08. All locations concerned, border the Mkhuze River.  
(D1, D2)

***Merops pusillus* Little Bee-eater** (Resident)

Met with in open or semi-open terrain in small numbers on 17 days, with a maximum daily count of six birds scored.  
(C2, C6, C7; D2; E2, E3, E4)

F. CORACIIDAE (Rollers): 1 sp.

***Coracias caudata* Lilac-breasted Roller** (Resident)

Ten scattered reports (particularly from in the western sector of the reserve, including Square C), but only one actually recorded during survey walks.  
(E3)

F. UPUPIDAE (Hoopoes): 1 sp.

***Upupa epops africana* Eurasian [African] Hoopoe** \* (Resident)

The great majority of the 32 observations came through surveying Square C, with one or two seen during each daily 'circuit' of four constituent squares (though four were encountered on 23/07); but two birds were met with in the more open section of E3 on one occasion.  
(C1, C2, C3, C4, C5, C6, C7; E3)

F. PHOENICILIDAE (Woodhoopoes & Scimitar-bills): 2 spp.

***Phoeniculus purpureus* Green (Red-billed) Woodhoopoe** (Resident)

Widespread and seen (usually in small parties) almost daily, with 115 birds logged across 28 days.  
(C1, C2, C5, C6, C7; D1, D2, D3, D4; E2, E3)

***Rhinopomastus cynaomelas* Common (Greater) Scimitar-bill** (Resident)

In common with the aforementioned species, seen across a range of habitats, but generally occurring either singly or in pairs; daily maximum of seven birds.  
(C1, C2, C3, C4, C6, C7, C8; D2, D3; E1, E2, E3, E4)

F. BUCEROTIDAE (Hornbills): 3 spp.

***Tockus leucomelas* Southern Yellow-billed Hornbill** (Resident)

Encountered frequently, but restricted to more open habitats (hence the recorded absence from survey Square E). Eight birds was the maximum number recorded in a day.  
(C1, C3, C5, C6, C7; E1, E2, E3)

***Tockus alboterminatus* Crowned Hornbill** (Resident)

Typically seen in pairs, with a total of 24 birds seen across 12 days; seen not only in forest, but in open terrain also.  
(C1, C3; D3; E2)

***Ceratogymna bucinator* Trumpeter Hornbill** (Resident)

Most evident in evergreen/riverine woodland (i.e. along the Mkhuze River), with sightings pretty much guaranteed in the Fig Forest (up to eight+ recorded there), though birds obviously range quite widely; but seen only rarely in the more open western sector (note the absence of any records relating to Square C walks).  
(D1, D2, D3, D4; E1, E4)

F. CAPTIONIDAE (Barbets): 6 spp.

***Stacholaema leucotis* White-eared Barbet** (Resident)

The distribution of this species matches that of the above. Not abundant, but seen regularly in small numbers (parties), with 74 birds scored across 15 days.  
(D1, D3; E4)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### ***Pogoniulus bilineatus* Yellow-(Golden-)rumped Tinkerbird (Barbet)** (Resident)

Restricted very much to riparian woodland (re: along/adjacent to the Mkhuze River); of the total of 12 sightings, three were logged – in Fever tree forest – in Square D.

(D1, D2)

### ***Pogoniulus pusillus* Red-fronted Tinkerbird (Barbet)** (Resident)

A widely distributed species, but met with most frequently in thornveld; 19 individuals recorded.

(C1, C3, C5, C7; D1, D2, D4; E3, E4)

### ***Tricholaema leucomelas* (Acacia) Pied Barbet** (Resident)

An inconspicuous species, whose name portrays accurately its habitat preference in Mkhuze (i.e. found almost exclusively in thornveld), though one that gives itself away by its call; 25 sightings across 18 days.

(C2, C3, C4, C5, C6, C7, C8; E1, E2, E3)

### ***Lybius torquatus* Black-collared Barbet** (Resident)

A ubiquitous species; if not seen, then heard!

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

### ***Trachyphonus vaillantii* Crested Barbet** (Resident)

The barbet of the thornveld. Note that all survey records (eight) come solely from Square C; several seen also along the Enxwala.

(C2, C5, C6, C7)

## F. INDICATORIDAE (Honeyguides): 4 spp.

### ***Indicator variegates* Scaly-throated Honeyguide** (Resident)

A total of 12 sightings – of which seven were scored during survey walks (with the four from D1 perhaps involving the same individual) encompassing Fever tree woodland; two were seen in the Fig Forest on 13/07.

(C7; D1, D4)

### ***Indicator indicator* Greater Honeyguide** (Resident)

Generally met with (or greeted by!) in the thornveld (or in open woodland); 23 sightings spanning 17 days.

(C1, C3, C6, C7; D2; E2)

### ***Indicator minor* Lesser Honeyguide** (Resident)

A total of seven birds recorded.

(C6, C8; D1, D3)

### ***Prodotiscus regulus* Wahlberg's (Sharp-billed) Honeyguide** (Resident)

Just two birds observed – both seen on survey walks.

(C2, C7)

## F. PICIDAE (Woodpeckers): 3 spp.

### ***Campethera abingoni* Golden-tailed Woodpecker** (Resident)

A widespread species, but one that is perhaps most typical of the thornveld. Encountered on an almost daily basis, (with a maximum daily count of four).

(C1, C2, C4, C6, C8; D1, D2, D3, D4; E1, E2)

### ***Dendropicos fuscescens* Cardinal Woodpecker** (Res)

This and the last species were found in roughly equal abundance, but in terms of habitat preferences the Cardinal Woodpecker is seemingly somewhat more catholic.

(C1, C2, C4, C5, C6, C7; D1, D2, D3, D4; E1, E2, E4)

### ***Dendropicos namaquus* Bearded Woodpecker** (Resident)

An inconspicuous occupant of both thornveld and woodland; only nine records.

(C6, C7, C8; D1, D2)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

F. EURYLAIMIDAE (Broadbills): 1 sp.

***Smithornis capensis* African Broadbill** (Resident)

Two sightings (singles) from an area of dense, mixed sandveld/riverine woodland in square D4, one observed whilst setting up D2 (but not recorded from this square during survey walks), two records (one/two birds) from the Fig Forest, one sighting from the Sand Forest, and one in bushes/trees sited immediately behind the eastern Nsumo Pan Hide (where noted in 2006 also). (In contrast to the situation in 2006, when heard on many early mornings (before light) in sand forest by the Environmental Camp, not heard there at all in 2007.)

(D4)

F. ALAUDIDAE (Larks): 2 spp.

***Mirafra rufocinnamomea* Flappet Lark** (Resident)

Just one survey record (17/07); two birds heard and seen in an area of the Lebombo Mountains to the north of C1 on 16/08.

(C2)

***Calendulauda sabota* Sabota Lark** (Resident)

As the list of survey squares in which this species was recorded, suggests, it is widely – though thinly – spread through the elevated western areas of Mkhuze, where there is mixed *Acacia/Combretum* savanna. The species was far less frequently encountered in the lower, eastern reaches of the reserve, where the terrain is far less open.

(C2, C3, C4, C5, C6, C7; E1)

F. HIRUNDINIDAE (Swallows & Martins): 4 spp.

***Riparia paludicola* Plain (Brown-throated Sand) Martin** (Resident)

Approximately two-thirds of the 60+ sightings – acquired almost exclusively from squares D and E over a total of 10 days – were attributable to a flock observed just after finishing a D4 survey walk (on 26/07).

(D1, D2, D3, D4; E1, E3, E4)

***Ptyonoprocne fuligula* Rock Martin** (Resident)

As expected, this species was recorded during our Mkhuze Gorge walk on 14/08, though – as was the case in 2006 – just one bird was encountered. But unexpectedly, the species was recorded too in Square D (a total of 10 birds on 28/07, accompanied by Plain martins and Lesser Striped swallows). It is possible that these birds had followed the nearby Mkhuze River down from the Lebombo Mountains, but since the species is known to exhibit partial migration (Hockey, Dean & 2005), they may have been in the course of undertaking a far more extensive movement.

(D1, D4)

***Cecropis abyssinica* Lesser Striped-Swallow** (Summer Migrant)

Birds that were more-or-less continually present in small numbers around both the Emshopi Gate Campsite and Mantuma Camp, were supplemented by small numbers in mixed species flocks – seemingly in transit – noted over the D square (e.g. see above); but only a total of 94 observations across 21 days.

(C1, C2, C7; D1, D2, D3, D4; E3, E4)

***Psalidoprocne holomelas* Black Saw(-)wing (Swallow)** (Resident)

Eleven of the 43 sightings came from Square D. Fifteen were seen over Nsumo Pan on 10/08. One was seen in the Mkhuze Gorge on 14/08.

(D1, D2, D3, D4)

F. MOTACILLIDAE (Wagtails and Pipits): 6 spp.

***Motacilla aguimp* African Pied Wagtail** (Resident)

A scattering of records, emanating principally from the margins of Nsumo Pan (maximum of five per visit there), but three encountered at Ediza Pan on 15/07 and seen at the Malibala Waterhole (square C4) on one occasion. Three were seen along the Mkhuze Gorge on 14/08.

(Not recorded during survey work.)

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### ***Motacilla capensis* Cape Wagtail** (Resident)

All of the five records came from the margins of Nsumo Pan; two were seen during our first foray to the southern fringe of that pan on 09/08.

(Not recorded during survey work.)

### ***Motacilla clara* Mountain (Long-tailed) Wagtail** (Resident)

Pair found foraging along the Mkhuze river bed during our Mkhuze Gorge walk on 14/08.

(Not recorded during survey work.)

### ***Macronyx croceus* Yellow-throated Longclaw** (Resident)

Thirty one observations across 14 days; apart from those emanating from survey squares C and E, others came, for example, from the southern fringe of Nsumo Pan and the Enxwala Road.

(C2, C3, C5, C6; E1, E4)

### ***Anthus cinnamomeus* African (Grassland[veld]) Pipit** (Resident)

Of the 21 sightings of this species, no less than 13 came from E1, with the air-strip being the favoured location. All other records came similarly from the lower reaches of the park, including from along the Enxwala Road and the southern margin of Nsumo Pan.

(E1, E4)

### ***Anthus caffer* Bush(veld) Pipit** (Resident)

Just nine sightings of this species, with a daily maxima of three (on two occasions); a total of five birds being observed in E3.

(E2, E3)

## F. CAMPEPHAGA (Cuckoo-shrikes): 2 spp.

### ***Coracina caesia* Gray Cuckoo-shrike** (Visitor)

Two records – one roadside individual seen above the Emshopi Entrance Gate (C1) on 15/07, and one observed in mixed sandveld/riverine woodland in square D4 on 28/07.

(C1; D4) (Not recorded in 2006.)

### ***Campephaga flava* Black Cuckoo-shrike** (Resident)

One record on each of two consecutive days – a female was observed in bushes during an E4 survey walk on 25/07, and a female was seen in Fever tree woodland in D2 on the following day.

(D2; E4) (Not recorded in 2006.)

## F. PYCNONOTIDAE (Bulbuls): 5 spp.

### ***Pycnonotus barbatus* Common (Dark-capped, Black-eyed) Bulbul** (Resident)

Ubiquitous – recorded from all 16, 1 x 1 km survey squares, but far from evenly distributed across squares; daily counts of up to 40 birds, with an overall tally of 676 birds.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

### ***Andropadus importunus* Sombre Greenbul (Bulbul)** (Resident)

A widely distributed, though cryptic, species, that usually reveals itself by calling (from within bushes). As was the case in 2006 the incidence of records increased during the course of the expedition, similarly due in part to birds progressively calling more, but undoubtedly due also to the fact that squares D and E – that were surveyed after Square C – were especially replete with dense thickets that the species frequents. A total of 304 sightings were scored across 37 days.

(C2, C3, C4, C5, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

### ***Chlorocichla flaviventris* (African) Yellow-bellied Greenbul (Bulbul)** (Resident)

Seen almost daily, but in small numbers; continually present around (and within!) the Environmental Camp. Note that this widespread species was not detected in Square E.

(C1, C5, C6, C7, C8; D1, D2, D3, D4)

### ***Phyllastrepius terrestris* Terrestrial Brownbul (Bulbul)** (Resident)

This species is restricted to areas of dense scrub and mixed/riverine woodland, as reflected by the range of survey squares in which it was recorded. Forty birds were seen across nine days, including c. 10 observed in the Fig Forest on 04/08.

(C8; D1, D2, D3, D4)

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### *Nicator gularis* **Eastern (Yellow-spotted) Nicator** (Resident)

Eighteen sightings across 15 days; met with in/at the edge of dense 'tangles'.

(C4; D2, D3, D4)

### F. TURDIDAE (Thrushes): 1 sp.

#### *Turdus libonyanus* **Kurrichane Thrush** (Resident)

A widely distributed, though often inconspicuous inhabitant of thickets and woodlands.

(C1, C2, C7; D1, D3; E1, E2, E3)

### F. CISTICOLIDAE (Cisticolas & Allies): 9 spp.

#### *Cisticola chiniana* **Rattling Cisticola** (Resident)

Heard and seen in all but the most enclosed locations; a total of 282 sightings across 31 days, with a daily maximum of 26. Far more abundant in the four E squares and in D2 (23-37 birds scored) than in any of the other 1 x 1 km squares examined.

(C1, C2, C3, C4, C5, C6, C7, C8; D2, D3, D4; E1, E2, E3, E4)

#### *Cisticola glactotes* **Winding (Rufous-winged/Black-backed) Cisticola** (Resident)

Just two birds were seen (on 09/08 and 15/08), both inhabiting sedges/long grass fringing the southern margin of Nsumo Pan. (Two individuals only were observed also in 2006, of which one was found similarly on the margin (northern) of Nsumo Pan.

(Not recorded during survey work.)

#### *Cisticola natalensis* **Croaking Cisticola** (Resident)

Two observations from grassland locations – on 12/07 and 15/08.

(Not recorded during survey work.)

#### *Cisticola juncidis* **Zitting (Fan-tailed) Cisticola** (Resident)

A scattering of records, with eight birds, of which three were in low grass bordering the airstrip, seen in E1 (with two of these observed on one survey walk [01/08]).

(D2; E1)

#### *Prinia subflava* **Tawny-flanked Prinia** (Resident)

Sixty seven sightings across 24 days, of which no less than 21 related to square D1 (with a survey walk maximum of seven) that centered on Hlonhlela Pan, where they were found in rank vegetation and mixed/riverine woodland understorey.

(C7; D1, D2, D4)

#### *Apalis flavida* **Yellow-breasted Apalis** (Resident)

An extremely widely distributed species found in a range of both low and tall woodland types. Seen on a daily basis, with a daily maximum of 19.

(C1, C2, C3, C4, C5, C8; D1, D2, D3, D4; E1, E2, E3, E4)

#### *Apalis ruddi* **Rudd's Apalis** (Resident)

Eleven records, with five birds being seen in an area of mixed woodland with dense understorey in square D5. That we encountered only one individual in sandveld in D3 was disappointing, since the species was found regularly in sand forest locations in 2006 (when the overall tally was 18 birds).

((D1, D2, D3, D4; E2)

#### *Camaroptera brachyuran* **Green-backed Camaroptera (Bleating Warbler)** (Resident)

Widely distributed in understorey and scrub at low density; 38 sightings across 20 days.

(C1, C3, C5, C6, C8; D1, D2, D4; E3, E4)

#### *Calamonastes undosus stierlingi* **Miombo [Stierling's] Camaroptera (Wren-Warbler)** \*

(Resident)

Only one record this year, a bird found c. 4 km south of Ediza Pan on 08/07 that flew across in front of our vehicle and was watched subsequently in roadside scrub.

(Not recorded during survey work.)

### F. SYLVIIDAE (Old World Warblers): 5 spp.

#### *Bradypterus baboecala* **African Bush-(Sedge) Warbler (Little Rush Warbler)** (Resident)

A total of four birds identified in reed-beds during our two forays to the southern margin of Nsumo Pan, three on 09/08 and one on 15/08.

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(Not recorded during survey work.)

***Chloropeta natalensis* African (Dark-capped) Yellow-Warbler** (Winter Migrant)

Three birds seen and heard at the edge of reed-beds fringing the southern edge of Nsumo Pan on 09/08; very responsive to the playing of pre-recorded calls.

(Not recorded during survey work.) (Not recorded in 2006.)

***Eremomela icteropygialis* Yellow-bellied Eremomela** (Resident)

Five birds observed, all within Square C (four of which were logged during survey walks).

(C1, C2, C5)

***Eremomela usticollis* Burnt-neck Eremomela** (Resident)

Found in small numbers (parties) in both thornveld and woodland; a total of 31 observed.

(C4, C6, C7; D2; D1, D2, D3, D4)

***Sylvietta rufescens* Cape (Long-billed) Crombec** (Resident)

Quite widely distributed in more open habitats; note the absence of records from Square D surveys. A total of 23 individuals logged across 16 days.

(C1, C2, C3, C4, C5, C7, C8; E1, E2, E4)

F. MUSCICAPIDAE (Old World Flycatchers): 15 spp.

***Bradornis pallidus* Pale (Pallid) Flycatcher** (Resident?)

A total of 48 sightings over 24 days from – principally – thornveld (half of all sightings came from Square C); occurring either singly or in small groups close to or on the ground (very chat-like in behaviour). In 2006, slightly more birds were seen (tally of 58 from similar terrain), but scored across only 15 days, suggesting perhaps that birds move locally.

(C1, C2, C3, C5, C6, C7; E1)

***Melaenornis pammelaina* Southern Black-Flycatcher** (Resident)

A widespread and conspicuous resident of the bushveld and open woodlands, with 64 birds logged across 24 days.

(C1, C2, C4, C5, C6, C7, C8; D2, D3; E1, E2, E3)

***Sigelus silens* Fiscal Flycatcher** (Resident/Winter influxes)

Frequently encountered in thornveld in 'ones and twos', with a total of 54 scored. Note its absence from survey Square C (a square with much woodland). (Twenty only seen in 2006.)

(C2, C3, C4, C6; E1 E2, E3, E4)

***Muscicapa adusta* African Dusky Flycatcher** (Resident)

Three noted during survey square work, and a further eight singles recorded, including two in the Fig Forest; (a very similar number seen in 2006).

(C1; D1)

***Muscicapa caerulescens* Ashy (Blue-gray) Flycatcher** (Resident)

An inhabitant of mixed woodland and riverine forest. A total of 11 were met with on Square D walks, and a further 15 registered.

(C1; D1, D2, D4)

***Myioparus plumbeus* Gray Tit-Flycatcher (Fan-tailed Flycatcher)** (Resident)

Infrequently met with denizen of a range of habitats, ranging from thornveld to evergreen forest. Eleven birds were seen, just one more than in 2006.

(C1, C2, C3, C8; D1, D4; E2)

***Cossypha humeralis* (African) White-throated Robin-Chat** (Resident)

Records were spatially well scattered. Of the 20 birds logged, eight were noted during survey walks (five of which were in Square D)

(C1; D2, D3; E1, E2)

***Cossypha heuglini* White-browed (Heuglin's) Robin-Chat** (Resident)

Only three records, two of which were from E3.

(E3)

***Cossypha natalensis* Red-capped (Natal) Robin-Chat** (Resident)

Noted in a wide range of habitats containing thickets/tangles, with many heard before being seen. Numerically far more frequent in square D1 than in any of the other squares listed below, with 18 birds logged there out of the overall tally of 53.

(C1, C8; D1, D2, D4; E3, E4)

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### *Cossypha dichroa* **Chorister Robin-Chat** (Migrant)

One individual showed itself at the edge of bushes adjacent to the swimming pool in Mantuma Camp (27/07): a 'sun-lounger tick'!

(Not recorded during survey work.) (Not recorded in 2006.)

### *Cercotricas quadrivirgata* **(Eastern) Bearded Scrub-Robin (Robin)** (Resident)

Regularly met with in semi-open terrain, including thornveld, and sand forest. Although not recorded from the D squares during surveys, one was trapped nevertheless in D3 (in sandveld). Twenty eight birds were logged across 14 days.

(C1, C2, C4, C8; E1, E3)

### *Cercotricas leucophrys* **Red-backed (White-browed) Scrub-Robin** (Resident)

A ubiquitous species that was heard and seen in a variety of open and wooded habitats, and that was recorded from every 1 x 1 km square; the final tally of birds detected during the expeditionary period was 79.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

### *Saxicola torquata* **African Stonechat** (Winter Migrant)

Fourteen sightings in total – that related to a pair apparently resident in D2, two birds seen on one date within E1, and other scattered records including five along the southern margin of Nsumo Pan on 09/08.

(D2; E1)

### *Cercomela familiaris* **Familiar (Red-tailed) Chat** (Resident)

Five individuals were recorded along the Mkhuze Gorge on 14/08.

(Not recorded during survey work.)

### *Thamnodia cinnamomeiventris* **Mocking Cliff-Chat (Chat)** (Resident)

Three birds were seen during our Mkhuze Gorge walk (14/08).

(Not recorded during survey work.) (Not recorded in 2006.)

## F. PLATYSTEIRIDAE (Wattle-eyes): 3 spp.

### *Platysteira peltata* **Black-throated Wattle-eye (Wattle-eyed Flycatcher)** (Resident)

A pair showed well in the Fig Forest on 04/08.

(Not recorded during survey work.)

### *Batis molitor* **Chin-spot Batis** (Resident)

A very widely distributed species, readily detected through being both highly active and vocal. The final tally of 241 sightings spanned 40 days; 14 was the daily maximum.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

### *Batis fratrum* **Woodward's (Zululand) Batis** (Resident)

One seen in the Fig Forest on 27/07.

(Not recorded during survey work.) (Not recorded in 2006.)

## F. MONARCHIDAE (Monarch Flycatchers): 2 spp.

### *Trochocercus cyanomelas* **African (Blue-mantled) Crested-Flycatcher** (Resident)

Good views obtained of a pair in the Fig Forest on 04/04.

(Not recorded during survey work.)

### *Terpsiphone viridis* **African Paradise-Flycatcher** (Resident)

Thirteen sightings, of which four were in square D1 and one in D4. Remaining observations came similarly from woodland/forest adjacent to the River Mkhuze, including the Fig Forest and the eastern margin of Ediza Pan.

(D1, D4)

## F. PARIDAE (Chickadees & Tits): 1 sp.

### *Melaniparus niger* **Southern Black Tit** (Resident)

Met with in a variety of habitats, but most prevalent in thornveld and open woodland – 38 sightings across 28 days.

(C1, C2, C4, C5, C6, C7, C8; D2, D3; E1, E3)

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F. REMIZIDAE (Penduline Tits): 1 sp.

***Anthoscopus caroli* African (Gray) Penduline-Tit** (Resident)

The tally for this inconspicuous species found in open/semi-open habitats, was 15.  
(C2, C4, C5, C5; D2; E2)

F. NECTARINIIDAE (Sunbirds & Spiderhunters): 10 spp.

***Anthreptes reichenowi* Plain-backed (Blue-throated) Sunbird** (Vagrant)

One male was seen in good light in an acacia bush on the fringe of the Malibala Waterhole (square C4) on 09/07.

(Not recorded during survey work.) (Not recorded in 2006.)

***Hedydipna collaris* Collared Sunbird** (Resident)

All but one of the total of the 21 birds logged, were seen during survey walks, with no less than 16 encountered in square D that was characterized by much woodland/forest; one was seen in the Fig Forest (04/08).

(D1, D2, D3, D4; E1, E3)

***Cyanometra olivacea* Eastern Olive-Sunbird** (Resident)

Three of the six records of single birds came from Square D survey walks; two were seen on the southern margin of Nsumo Pan 09/08.

(D1, D2) (Not recorded in 2006.)

***Cyanomitra veroxii* Mouse-coloured (Gray) Sunbird** (Resident)

Just five sightings, with three attributable to survey walks; birds were seen across quite different habitats – bushes within rocky terrain in C1 and thick undergrowth in mixed woodland in D4. Another was seen from the Kumasinga Hide (located in the Sand Forest).

(C1; D4)

***Chalcomitra amethystine* Amethyst (African Black) Sunbird** (Resident)

Seven records, including a pair seen in E2 on 05/08.

(C7; D2; E2, E3)

***Chalcomitra senegalensis* Scarlet-chested Sunbird** (Resident)

A total of 46 sightings secured across 15 days and across a variety of habitats ranging from thornveld/savanna through to mixed/riverine forest. Encountered far more frequently than was the case in 2006, when only 12 birds were recorded.

(C1, C2, C3, C4, C5, C6, C7; D1, D2, D3, D4; E3, E4)

***Cinnyris neergaardi* Neergaard's Sunbird** (Resident)

A very disappointing tally of just two sightings, both of which came – not surprisingly – from sandveld in square D3. (In 2006 we were surveying the Sand Forest belt *per se*, and thus came into contact with the species more [with a total of 13 birds being seen].)

(D3)

***Cinnyris mariquensis* Mariqua (Marico) Sunbird** (Resident)

Almost ubiquitous, but not seen in square C1 that was comprised largely of mountain slopes and D1 that took in Hlonhehla Pan and adjacent Fever forest. A total of 92 sightings accumulated across 26 days.

(C2, C3, C4, C5, C6, C7, C8; D2, D3, D4; E1, E2, E3, E4)

***Cinnyris bifasciatus* Purple-banded Sunbird** (Resident)

Strangely only one record this year, coming – in common with Neergaard's Sunbird records – from sandveld in square D3. In 2006, Purple-banded was encountered far more frequently than Mariqua (41 *versus* three birds) that, even after allowing for the fact that we were not operating to anywhere near the same extent in sandveld and thornveld in 2007, is suggestive of a real difference in relative abundance of the two species between the two years concerned. (Note that the two species are superficially similar, but males are readily distinguished on the basis of body size, bill length and curvature, and lower breast band coloration, and females readily identifiable on the basis of absence/presence of breast streaking.)

(D3)

***Cinnyris talatala* White-breasted(bellied) Sunbird** (Resident)

The most abundant and widespread sunbird – recorded from every 1 x 1 km square; 229 sightings scored across 30 days. (Following on from the comments on abundance appended to

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the previous species, it is interesting to note that the number of sightings of this species – one that exhibits catholic habitat occupancy – was c. 3.5 times greater than in 2006, a statistic that again is suggestive of a real difference in abundance of the species between years in Mkhuze.)

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

F. ZOSTEROPIDAE (White-eyes): 1 spp.

**Zosterops senegalensis African Yellow White-eye** (Resident)

Sixteen of the 31 sightings were attributable to survey work in squares D1 and D2.

(D1, D2; E3)

F. ORIOLIDAE (Old World Orioles): 1 sp.

**Oriolus larvatus (African) Eastern Black-headed Oriole** (Resident)

Of the 15 birds seen, most – including the seven logged during survey walks undertaken in Square D – were located in woodland, but at least two individuals were seen in much more open/elevated terrain (Lebombo mountain slopes).

(C1; D1, D2, D4; E3)

F. LANIIDAE (Shrikes): 1 sp.

**Lanius collaris Common Fiscal** (Resident)

Ten well scattered records, of which only two were attributable to formal survey work.

(C3; E3)

F. MALACONOTIDAE (Bushshrikes & Allies): 9 spp.

**Nilaus afer Brubru** (Resident)

Recorded from a range of open and semi-open habitats (i.e. *Acacia* savanna, thornveld, sandveld and mixed woodland); often heard before being seen. A total of 64 birds seen.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D3, D4; E1, E2, E3)

**Dryoscopus cubla Black-backed Puffback** (Resident)

Readily observed in a wide range of habitats; a total of 115 sightings logged over 39 days.

(C1, C2, C3, C4, C5, C8; D1, D2, D3, D4; E1, E2, E3)

**Tchagra senegala Black-crowned Tchagra** (Resident)

Widely distributed across a range of habitats; a total of 33 birds logged.

(C2, C3, C4, C5, C6, C7, C8; D2, D3, D4; E1, E2, E3, E4)

**Tchagra australis Brown-crowned (Three-streaked) Tchagra** (Resident)

The more frequently encountered of the two tchagra species recorded, with 53 birds logged. Many tchagras seen briefly, remained unidentified, but familiarity with their respective calls reduced significantly the quota of those that 'got away'.

(C2, C3, C6, C8; D3, D4; E1, E2, E3, E4)

**Laniarius ferrugineus Southern Boubou** (Resident)

The total number of birds recorded was 100 (with many heard, but not seen), with the tallies for the three 5 x 5 km squares being as follows: C – 20; D – 49, E – 9. Despite being relatively abundant in squares D1, D2 and D3, it was not recorded in D3 (much sandveld); the tangles and mixed/riverine woodland so prevalent in D2 were preferred by this species. (In 2006 we recorded just 13 birds, a low figure that to some extent seems linked to the different habitat characteristics of the two 5 x 5 km squares examined, but one that is probably attributable also in no small measure to birds starting to call earlier in 2007 (in July rather than August).

(C1, C2, C3, C4, C5, C8; D1, D2, D4; E2, E3, E4)

**Telophorus sulfureopectus Sulphur(Orange)-breasted Bushshrike** (Resident)

Records of this species – 26 birds logged – came from a range of locations and habitats.

(C4, C7, C8; D2, D4; E1, E2, E3)

**Telophorus olivaceus Olive Bushshrike** (Resident)

Two records – a bird showed well in the Fig Forest on 04/08, and another was seen during an E4 survey walk on the following day.

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(Not recorded in the reserve in 2006, but an individual was seen on the Mkhuze River bank immediately outside it.)

***Telophorus viridis* Four-colored (Gorgeous) Bushshrike** (Resident)

Fifty one birds were recorded across 24 days, of which roughly half were encountered during survey walks. Far more prevalent in the densely vegetated, Square D (17 birds) than was the case in the other two, 5 x 5 km squares surveyed.

(C2, C3, C5, C8; D1, D2, D3, D4; E1, E2, E3, E4)

***Malaconotus blanchoti* Gray-headed Bushshrike** (Resident)

The majority of the 18 birds recorded were in relatively open *Acacia/Combretum* dominated terrain characteristic of Square C. The far-carrying 'whistle' of this bushshrike was often the first indication of its presence.

(C1, C2, C3, C6, C7, C8; D3; E1, E4)

F. PRIONOPIDAE (Helmetshrikes & Allies): 1 sp.

***Prionops plumatus* White(-crested) (White) Helmetshrike** (Resident)

Small, single figure parties were met with in a variety of open and semi-open situations, yielding a final expeditionary tally of 110 birds.

(D3; E2, E3, E4)

F. DICRURIDAE (Drongos): 2 spp.

***Dicrurus ludwigii* Square-tailed Drongo** (Resident)

Not expectedly this species that haunts mixed and evergreen woodland, and sand forest, in Mkhuze was found in all four of the D squares (total tally of 22 birds), and E4 (adjacent to the Mkhuze River) (tally of two), but expectedly it was found too on one occasion at the Emshopi Campsite (square C1). An overall total of 34 sightings tallied.

(C1; D1, D2, D3, D4; E4)

***Dicrurus adsimillus* Fork-tailed Drongo** (Resident)

A very prevalent and conspicuous species that was recorded from every 1 x 1 km square, with a total of 244 birds being logged. The observation statistics from walks conducted in the three survey squares studied this year are illuminating: whilst 84 birds were recorded from Square C, just 20 were seen in Square D (far less open terrain) and a paltry four in E. Clearly the relatively open *Acacia/Combretum* savanna of the western sector of the park is greatly favoured over the *Acacia tortillus* savanna and mixed *Acacia*- and *Euclea*-thicketed areas typical of the eastern sector.

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3, D4; E1, E2, E3, E4)

F. STURNIDAE (Starlings): 4 spp.

***Creatophora cinerea* Wattled Starling** (Nomadic)

Several parties were seen of this open country species, with roughly a third of the total of 69 birds scored, being recorded on survey walks in Square C.

(C2, C3)

***Lamprotornis nitens* Cape (Red-shouldered) Glossy-Starling** (Resident)

Seen virtually on a daily basis in small numbers/parties. A daily maximum of 25 was 'logged', and 339 birds scored by the end of the expedition. But, with regard to survey square observations, all but five individuals out of a total of 106 birds counted on survey walks were seen in Square C.

(C1, C2, C3, C4, C5, C6, C7; D2; E1, E2, E3)

***Lamprotornis corruscus* Black-bellied Glossy-Starling** (Resident)

The species was noted on 11/07 and 13/07 (total of 25, with 11 counted during a C2 walk on the latter date), but all remaining records came from the 24/07 to 04/08 period, with 100 seen on 29/07, 64 of which were in E3 and 31 in E4, observations that are suggestive of influxes into Mkhuze. (Note that we did not complete our survey of Square E until 08/08.)

(C2; D1, D2, D4; E2, E3, E4)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### ***Buphagus erythrorhynchus* Red-billed Oxpecker** (Resident)

Day counts were all  $\leq 20$  birds, with one exception – 50 were seen on 15/07, 37 of which were logged during a walk in square C3. A total of 188 sightings (162 recorded in 2006). Yellow-billed Oxpecker – a vagrant to Mkhuze – was specifically looked for, but not found.) (C1, C2, C3, C4, C5, C6, C7, C8; D2, D3; E2, E3, E4)

F. PASSERIDAE (Old World Sparrows): 2 spp.

### ***Passer diffusus* Southern Gray-headed (Cape) Sparrow** (Resident)

A little under a third of the 54 sightings of this species derived from survey square observations (principally those undertaken in Square C). But curiously, although sparrows were noted on two or three occasions on the ground/in bushes immediately south of the Ophanzi Gate road – that forms the southern border of Square E – only two individuals were actually recorded from that square!

(C1, C2, C3; D4; E2, E4)

### ***Petronia superciliaris* (African) Yellow-throated Petronia (Sparrow)** (Resident)

Seen frequently, though day counts predominantly  $< 10$  (maximum of 20). Thirty seven birds were logged in Square C (20 in C5). The Malibala Waterhole (in C4) was a favoured location, as was the Kumasinga Waterhole too.

(C1, C2, C3, C4, C5, C6, C7, C8; E1, E2, E3)

F. PLOECIDAE (Weavers and Allies): 10 spp.

### ***Ploceus intermedius* Lesser Masked-Weaver** (Resident)

By far and away the most prevalent and widespread weaver met with in Mkhuze in 2007, with 76 birds logged, but many weavers in flight seen during survey walks that remained unidentified, were probably of this species too).

(C1, C4; D1, D2, D3, D4; E1, E2, E3, E4)

### ***Ploceus ocularis* Spectacled Weaver** (Resident)

Met with in well vegetated areas – a total of 18 sightings.

(C1; D1, D4; E2, E3, E4)

### ***Ploceus subaureus* African (Yellow) Golden-Weaver** (Resident)

One observed close to Ediza Pan on 16/07 and two seen from the Kumasinga Hide on 06/08. (Not recorded during survey work.)

### ***Ploceus xanthopterus* Southern Brown-throated Weaver** (Resident)

Four were observed during our first foray to the southern margin of Nsumo Pan on 09/08. (The one individual seen in 2006 was similarly by this pan.)

(Not recorded during survey work.)

### ***Ploceus velatus* Southern (African) Masked-Weaver** (Resident)

Unlike 2006 when a tally of 161 birds was logged (with 121 coming from the Square B that was centered on Nsumo Pan), we recorded only eight birds, with most being seen at the Kumasinga Waterhole.

(Not recorded during survey work.)

### ***Ploceus bicolour* Forest (Dark-backed) Weaver** (Resident)

As anticipated, this weaver was present in Square D (23 observations, with most coming from D1 and D2, both of which abut the Mkhuze River). A further five birds were seen in the Fig Forest. Interestingly, one individual was found in C1 (on 11/07), far from evergreen woodland.

(C1; D1, D2, D3, D4)

### ***Anaplectes rubriceps* Red-headed Weaver** (Resident)

One observed during a survey walk on 07/08.

(D4) (Not recorded in 2006.)

### ***Quelea quelea* Red-billed Quelea** (Resident!)

Predominantly met with in the Square E, where 26 out of a total of 38 birds were logged.

(E1, E2, E3, E4)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### *Euplectes axillaris* **Fan-tailed (Red-shouldered) Widowbird (Widow)** (Resident)

A small number was seen in reed-beds on the southern fringe of Nsumo Pan during each of the two visits made there – with 10 and 15 counted on 09/08 and 15/08 respectively. Nsumo Pan was similarly the sole location at which the species was recorded in 2006.

(Not recorded during survey work.)

### *Euplectes albonotatus* **White-winged Widowbird (Widow)** (Resident!)

A total of 61 birds seen across just five days (encompassing both July and August), with 40 counted along the Beacon Road on 05/08. Other widows were seen, but not specifically identified, but were probably this species; such observations included a party of 60 in flight over Hlonhlela Pan during our first survey walk of D1. (Note that the only 2006 record was of two individuals on the air-strip.)

(C1, C3; E4)

## F. ESTRILDIDAE (Waxbills & Allies): 12 spp.

### *Pytilia melba* **Green-winged Pytilia (Melba Finch)** (Resident!)

The total number of sightings was very similar to 2006, with 75 birds being recorded. Sixty two of these were encountered during survey walks, but only two – rather surprisingly in view of its wide occupancy across habitat types in 2006 – were noted within Square D. The remaining 60 logged during walks, were split equally between squares D and E.

(C2, C3, C4, C6, C7, C8; D2; E1, E2, E3, E4)

### *Hypargos margaritatus* **Pink-throated Twinspot** (Resident)

Often heard before being seen. Forty eight birds – of which 35 came from survey walks – were recorded. Square D with its abundance of thick bushes and tangles, yielded 23, of which roughly half the observations were made in sandveld in D3, where two birds were mist-netted.

(C5; C8; D1, D2, D3, D4; E2)

### *Lagonosticta senegala* **Red-billed Firefinch** (Resident!)

One party of five seen in square E3 on 25/07 was the sole encounter with this species during the 2007 expedition. (Just eight were seen in 2006.)

(E3)

### *Lagonosticha rubricata* **African (Blue-billed) Firefinch** (Resident!)

A total of 12 birds were observed, 10 of which were logged during walks in Square D (seven in D2).

(D2, D3, D4)

### *Lagonosticha rhodopareia* **Jameson's Firefinch** (Resident)

By far the most frequently encountered of the three firefinch species recorded, with a final tally of 44 birds, of which 29 were logged in Square C (11 in C2). That it was especially prevalent in Square C is in agreement with the habitat preferences of this species that include rank grass (savanna), thornveld and rocky hillsides. (With regard to 2006, the only two individuals recorded, were close to Mantuma Camp; surveying closer to the Lembomo Mountains seemingly increases substantially the chances of finding this firefinch species.)

(C1, C2, C3, C5, C7, C8; D2; E1)

### *Uraeginthus angolensis* **Blue-breasted(cheeked) Cordonbleu (Blue Waxbill)** (Resident!)

As was the case in 2006, it was found to be almost ubiquitous, with 268 birds scored across 33 days; seen almost daily, with a daily maximum of 25.

(C1, C2, C3, C4, C5, C6, C7; D2, D3; E1, E2, E3, E4)

### *Estrilda perreini* **Black-tailed (Gray) Waxbill** (Resident)

Just seven birds seen (less than half the figure for 2006), with all records coming from walks in Square D (four in D1 that contains Fever forest with much undergrowth).

(D1, D2, D4)

### *Estrilda melanotis* **Swee Waxbill** (Visitor)

A party of four were observed feeding on a rocky slope above the Emshopi Campsite during a survey walk in C1 on 17/07.

(C1) (Not recorded in 2006.)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### *Estrilda astrild* **Common Waxbill** (Resident!)

A total of 241 sightings, with 74 and 79 being seen during survey walks in squares D and E respectively. Typically observed in small/medium sized parties; daily maximum of c. 40.

(C5; D1, D2, D3, D4; E1, E2, E4)

### *Ortygospiza atricollis* **Black-faced (African) Quailfinch** (Visitor)

One visited the Malibala Waterhole on 04/08, and one was flushed from an open grassy area in E3 during a survey walk (08/08).

(E3) (Not recorded in 2006.)

### *Spermestes cucullata* **Bronze Mannikin** (Resident)

No less than 241 birds (mainly in small parties) were counted, with 69 being seen in both Square D and Square E; 39 were recorded in Square C. By contrast, the species was not recorded in 2006. In this context it is interesting to note that in 2006, formal survey work did not commence until 29/07, and that this time around only eight birds were seen in August. Perhaps there are local seasonal movements with birds largely vacating Mkhuze during August?

(C1, C2; D1, D2, D3; E1, E3, E4) (Not recorded in 2006.)

### *Spermestes bicolor* **Black-and-white (Red-backed) Mannikin** (Resident)

All birds logged (28) were met with during survey walks, with one only being recorded in E4. Square D1 with its dense undergrowth was the 'favoured' 1 x 1 km square, with 13 birds observed.

(D1, D2, D3; E4)

## F. VIDUIDAE (Indigobirds): 1 spp.

### *Vidua macroura* **Pin-tailed Whydah** (Resident)

A male in full breeding plumage flew in front of our vehicle whilst travelling between the Kwajobe Cultural Village and the air-strip (located within Square D) on 02/08.

(Not recorded during survey work.) (Not recorded in 2006.)

## F. FRINGILLIDAE (Siskins, Crossbills & Allies): 3 spp.

### *Serinus citrinipectus* **Lemon-breasted Seedeater (Canary)** (Resident)

Following the disappointment of not finding this species in 2006 – despite repeatedly searching for it (and undertaking survey work) along the Enxwala road, where Lala Palm savanna, its favoured habitat, occurs – the observation of large flocks along the southern margin of Nsumo Pan in 2007 came as a very welcome discovery. Roughly 350 were estimated to be present in on 09/08, and c. 200 birds were counted in the same area on 15/08. Although some Yellow-fronted canaries (below) – a species with which it is known to associate with in the non-breeding season – were in the vicinity, the flocks concerned were mono-specific. Birds were foraging in short grass along the pan margin, but when disturbed flew up into neighbouring Fever trees where they remained (and preened), until safe to descend to the ground to resume feeding.

(Not recorded during survey work.) (Not recorded in 2006.)

### *Serinus mozambicus* **Yellow-fronted(eyed) Canary** (Resident)

A widespread species seen on an almost daily basis; a total of 225 sightings recorded, with 82 birds counted during survey work in Square C, but only 11 and 27 in Square D and Square E respectively. Not uncommon along the Enxwala Road (see comments under Lemon-breasted Seedeater).

(C1, C2, C3, C4, C5, C6, C7, C8; D1, D2, D3; E1, E2, E3, E4)

### *Serinus mozambicus* **Brimstone (Bully) Canary** (Visitor)

A pair was seen during whilst surveying square C6 on 21/07, and two were recorded in E4 on 05/08.

(C6; E4) (Not recorded in 2006.)

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F. EMBERIZIDAE (Buntings, Sparrows, Seedeaters & Allies): 2 spp.

***Emberiza tahapisi* Cinnamon-breasted (Rock) Bunting** (Resident!)

Two visited the Malibala Waterhole (square C4) on 04/08. (The only record of this species in 2006 came from herpetologists combing an area of the Lebombo Mountains above the Emshopi Gate [within or adjacent to C].)

(Not recorded during survey work.)

***Emberiza flaviventris* Golden-breasted Bunting** (Resident)

Met with principally in areas of *Acacia* and *Combretum* savanna in the western reaches of the reserve, with no less than 18 of the total of 29 sightings made during survey walks in Square C; just one bird was recorded whilst surveying Square D and none were counted whilst inspecting Square E!

(C1, C2, C3, C4, C6; E2)

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### **APPENDIX 4**

**Additional Species recorded just outside the Mkhuze Game Reserve (east of the Mkhuze River).**

Asterisks highlight taxonomic departures from Hockey, Dean & Ryan (2005) – see Appendix 3 for amplification.

Species		Location
<i>Nettapus auritus</i>	African Pygmy-goose	Muzi Pan
<i>Recurvirostra avosetta</i>	Pied Avocet	Near Ophanzi Gate
<i>Charadrius pecuarius</i>	Kittlitz's Plover	Near Ophanzi Gate & Muzi Pan
<i>Actitis hypoleucos</i>	Common Sandpiper	Muzi Pan
<i>Sterna caspia</i>	Caspian Tern	Muzi Pan
<i>Pseudohirundo griseopyga</i>	Gray-rumped Swallow	Muzi Pan
<i>Hirundo albigularis</i>	White-throated Swallow	Muzi Pan
<i>Turdoides jardineii</i>	Arrow-marked Babbler	Muzi Pan
<i>Corvus albus</i>	Pied Crow	Near Ophanzi Gate
<b>TOTAL OF 9 SPECIES RECORDED</b>		

### **APPENDIX 5**

**Birds mist-netted at the Environmental Camp or in Survey Square D3 (Sand Forest Locations).**

Asterisks highlight taxonomic departures from Hockey, Dean & Ryan (2005) – see Appendix 3 for amplification.

Species		Env. Camp	Square D3
<i>Accipiter minullus</i>	Little Sparrowhawk		1
<i>Phyllastrephus terrestris</i>	Terrestrial Brownbul (Bulbul)		1
<i>Turdus libonyanus</i>	Kurrichane Thrush	1	
<i>Cossypha humeralis</i>	(African) White-throated Robin-Chat	1	
<i>Cossypha natalensis</i>	Red-capped (Natal) Robin-Chat	1	
<i>Cercotricas qadrivirgata</i>	(Eastern) Bearded Scrub-Robin (Robin)		1
<i>Hypargos margaritatus</i>	Pink-throated Twinspot		2
<b>TOTAL OF 8 BIRDS TRAPPED</b>	<b>7 SPECIES</b>	<b>TOTALS</b>	<b>3</b>
			<b>5</b>

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### **APPENDIX 6**

**Species recorded in the Mkhuze Game Reserve in 2007, but not in 2006.**

Species		Location(s) in 2007
<i>Phalacrocorax carbo lucidus</i>	Great [White-breasted] Cormorant *	Nsumo Pan
<i>Ardea purpurea</i>	Purple Heron	Nsumo Pan (southern margin)
<i>Butoroides striata</i>	Striated (Green-backed) Heron	Mkhuze Gorge, Nsumo Pan
<i>Anas sparsa</i>	African Black Duck	Ediza Pan, Mkhuze Gorge
<i>Avicela cuculoides</i>	African Cuckoo-Hawk (Baza)	within Square A (surveyed in 2006)
<i>Elanus caeruleus</i>	Black-shoulded Kite	Nsumo Pan, Enxwala Road
<i>Circus ranivorus</i>	African Marsh Harrier	Nsumo Pan
<i>Lophaetus occipitalis</i>	Long-crested Eagle	eastern sector of reserve (e.g. sq. E4)
<i>Falco peregrinus</i>	Peregrine Falcon	Squares, C1 & E2
<i>Rhinoptilus chalcopterus</i>	Bronze-winged Courser	square C5, Beacon Road
<i>Larus cirrocephalus</i>	Gray-headed Gull	Ediza Pan, Nsumo Pan
<i>Columba arquatrix</i>	Rameron (African Olive) Pigeon	square C4
<i>Strix woodfordii</i>	African Wood-Owl	Mantuma Camp
<i>Asio capensis</i>	Marsh Owl	Square C
<i>Apus melba</i>	Alpine Swift	square E4
<i>Ispidina picta</i>	African Pygmy Kingfisher	Nsumo Pan (southern margin)
<i>Motacilla clara</i>	Mountain (Long-tailed) Wagtail	Mkhuze Gorge
<i>Coracina caesia</i>	Gray Cuckoo-shrike	squares C1 & D4
<i>Campephaga flava</i>	Black Cuckoo-shrike	squares D2 & E4
<i>Chloropeta natalensis</i>	African Yellow Warbler	Nsumo Pan (southern margin)
<i>Cossypha dichroa</i>	Chorister Robin-Chat	Mantuma Camp
<i>Thamnolaea cinnamomeiventris</i>	Mocking Cliff-chat	Mkhuze Gorge
<i>Batis fratrum</i>	Woodward's Batis	Fig Forest
<i>Anthreptes reichenowi</i>	Plain-backed (Blue-throat.) Sunbird	square C4
<i>Cyanomitra olivacea</i>	Eastern Olive Sunbird	sqs D1 & D2, Nsumo Pan (s. margin)
<i>Telophorus olivaceus</i>	Olive Bushshrike	square E4, Fig Forest
<i>Anaplectus rubriceps</i>	Red-headed Weaver	square D4
<i>Estrilda melanotis</i>	Swee Waxbill	square C1
<i>Ortygospiza atricollis</i>	Black-faced (African) Quailfinch	square D3, Malibala Waterhole
<i>Spermestes cucullata</i>	Bronze Mannikin	squares C, D & E
<i>Vidua macroura</i>	Pin-tailed Whydah	Square D
<i>Serinus citrinipectus</i>	Lemon-breasted Seedeater (Canary)	Nsumo Pan (southern margin)
<i>Serinus sulphuratus</i>	Brimstone (Bully) Canary	squares C6 & E4
<b>TOTAL OF 33 SPECIES</b>		

## Avifaunal Atlasing of the Mkhuze Game Reserve, 2007

### APPENDIX 7

Species recorded in the Mkhuze Game Reserve in 2006, but not in 2007.

Species	Location(s) in 2006	
<i>Phoenicopterus minor</i>	Lesser Flamingo	Nsumo Pan
<i>Milvus migrans parasiticus</i>	Black (inc. Yellow-billed) Kite	Enxwala Road
<i>Gypohierax angolensis</i>	Palm-nut Vulture	Between Emshopi and Mantuma
<i>Necrosyrtes monarchus</i>	Hooded Vulture	Beacon Road
<i>Buteo rufofuscus</i>	Jackel Buzzard	Beacon Road
<i>Falco biarmicus</i>	Lanner Falcon	Mkhuze Gorge
<i>Eupodotis ruficrista</i>	Red-crested Bustard (Korhaan)	Enxwala Road
<i>Recurvirostra avosetta</i>	Pied Avocet	Nsumo Pan
<i>Charadrius pecuarius</i>	Kittlitz's Plover	Nsumo Pan
<i>Charadrius marginatus</i>	White-fronted Plover	Nsumo Pan
<i>Tringa stagnatilis</i>	Marsh Sandpiper	Nsumo Pan
<i>Actitis hypoleucos</i>	Common Sandpiper	Nsumo Pan
<i>Calidris minuta</i>	Little Stint	Nsumo Pan
<i>Calidris ferruginea</i>	Curlew Sandpiper	Nsumo Pan
<i>Philomachus pugnax</i>	Ruff (and Reeve)	Nsumo Pan
<i>Chrysococcyx cupreus</i>	Emerald Cuckoo	Mkhuze Gorge
<i>Bubo africanus</i>	Spotted Eagle-Owl	Beacon Road, etc
<i>Miafra africana</i>	Rufous-naped Lark	Enxwala Road (squares B7 & B8)
<i>Cecropsis semirufa</i>	Rufous-chested (beasted) Swallow	Beacon Road
<i>Cisticola erythrops</i>	Red-faced Cisticola	Nsumo Pan
<i>Cisticola fulvicapillus</i>	Piping Cisticola (Neddicky)	Several locations (squares A & B)
<i>Acrocephalus baeticus</i>	African Reed-(Marsh) Warbler	Nsumo Pan
<i>Eremomela scotops</i>	Greencap(ped) Eremomela	squares A4 & A6
<i>Corvus albus</i>	Pied Crow	Square A
<i>Corvus albicollis</i>	White-necked Raven	Mkhuze Gorge
<i>Onychognathus morio</i>	Red-winged Starling	Beacon Road
<i>Ploceus capensis</i>	Cape Weaver	Enxwala Vista Point
<i>Ploceus cucullatus</i>	Village (Spotted-backed) Weaver	Mantuma Camp
<i>Mandingoa nitidula</i>	Green-backed Twinspot	Sand Forest (edge) in Square A
<i>Vidua funereal</i>	Variable Indigobird (Widowfinch)	Mantuma Camp
<i>Anomalospiza imberbis</i>	Parasitic Weaver	Square A (A6)
<b>TOTAL OF 31 SPECIES</b>		