

# The avifauna of two woodlands in southeast Tanzania

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In Tanzania *Brachystegia* or miombo woodland occupies about two-thirds of the country including the central plateau to the north and the south eastern plateau (Lind & Morrison 1974). Along the coast more luxuriant woodlands are found in what White (1983) terms the “Zanzibar-Inhambane regional mosaic” floristic region. This highly complex vegetation comprises unique types of forest, thicket, woodland, bushland and grassland, interspersed with areas presently under cultivation and fallow (Hawthorne 1993). The coastal woodlands are usually deciduous or semi-deciduous but contain some evergreen species and often merge with coastal thickets, scrub forest and coastal forest (Hawthorne 1993, Vollesen 1994).

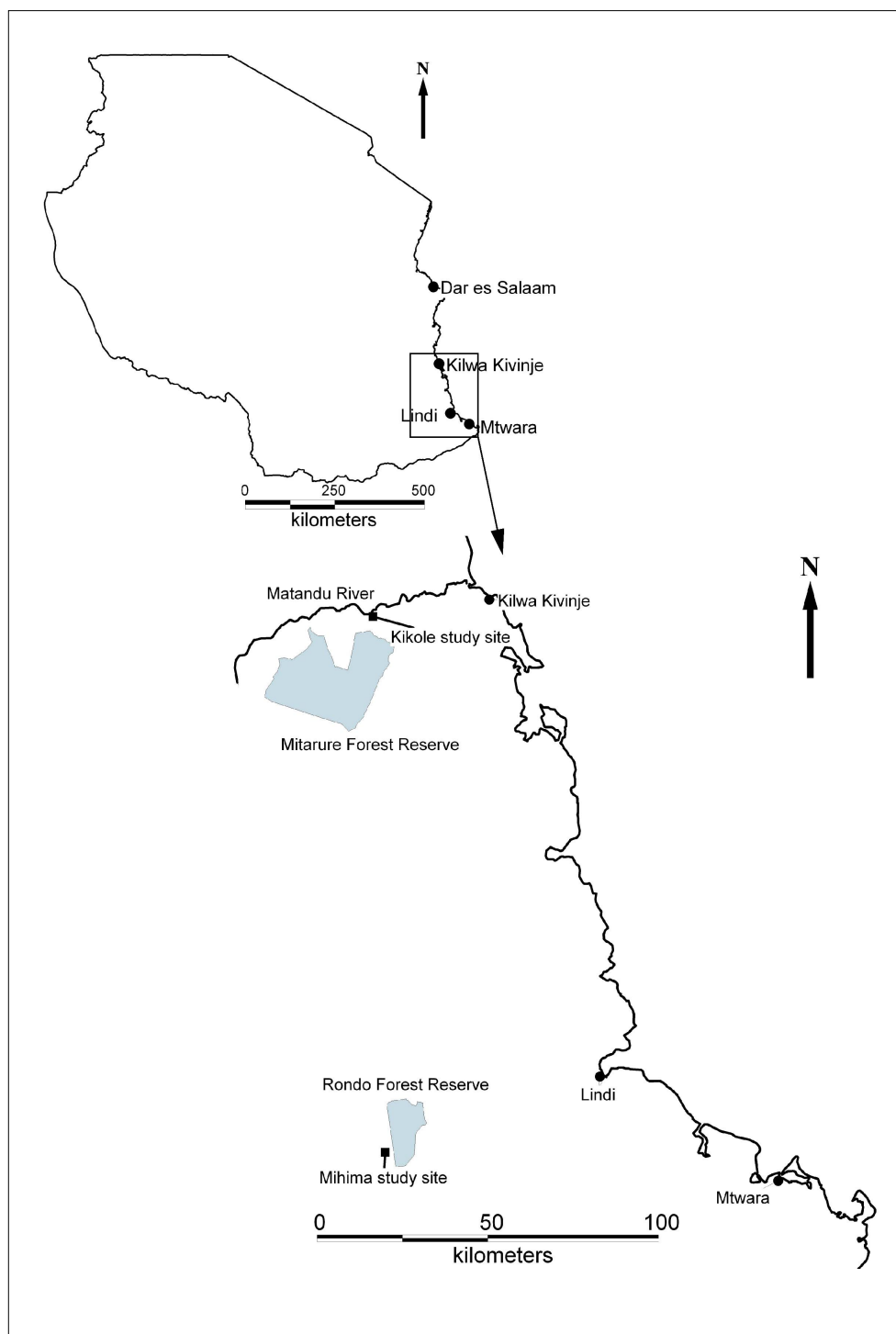
The avifauna of miombo woodlands has been described for Zambia (e.g. Benson & Irwin 1966) and Zimbabwe (e.g. Vernon 1968, 1984, 1985), while little has been published on the birds of the coastal woodlands. An exception is Stjernstedt (1970) who reported on the birds in lush and dense *Brachystegia microphylla* vegetation in a “sea of miombo” in southeast Tanzania. Here we report our observations of birds in two woodlands in coastal southeast Tanzania, one of which harboured miombo trees. We present information on the number of species encountered during the fieldwork, and compare the avifauna of the two sites. We discuss possible causes for the differences observed and provide new information on habitat preferences for some of the species we recorded at these sites.

## Study sites

Field work was carried out in two coastal woodlands in the Lindi Region, southeast Tanzania in September and October 2001. Mean annual rainfall in this region ranges between 800 and 1200 mm. Rains of short duration occurs from November to December, while longer rains extend from February/March to April/May. This is followed by a dry period lasting up to six months (Werger & Coetzee 1978).

### *Mihima*

The Mihima study site (10°12'S, 39°08'E) was located c. 4.5 km north of the village of Mihima on the western part of the Rondo Plateau west of Rondo Forest Reserve at an elevation of 600 m (Figure 1). The Rondo Forest Reserve



**Figure 1.** Location of the two coastal woodland study sites in Lindi Region, southeast Tanzania.

is mainly known for its forest, which contains a far greater number of endemic plant species than any other coastal forest in eastern Africa (Burgess & Clarke 2000). However, the western part of the plateau (including the survey area of this study) is covered with woodland, thickets, grasslands and other open vegetation types. The vegetation of the study site was dominated by rather open woodland with only a few large trees reaching a height of 10–15 m. Dense grassy vegetation mixed with patches of shrub and thickets covered the woodland floor. Common trees were *Parinari curatellifolia*, *Brachystegia microphylla*, *Pterocarpus angolensis* and *Strychnos panganiensis*, all of which are widespread in woodland vegetations of coastal Tanzania (Burgess & Clarke 2000). The study site was heavily used by the local human population. Many large trees were recently cut down and there were widespread signs of intensive pole cutting. Part of the study area was recently burned and it seems likely that the entire woodland area is burned annually. Wild animals seemed few with Yellow Baboon *Papio cynocephalus* being the only large wild mammal recorded during the field study.

### *Kikole*

The Kikole study site (08°48'S, 39°06'E) was located near Kikole village approximately 30 km west of Kilwa Kivinje (Figure 1). This study site at 110 m elevation was situated just north of the large Mitarura Forest Reserve. The area consisted of relatively dry ridges and damper depressions. The Matandu River, with associated moist thickets, is situated a few kilometres from the study site. The vegetation consisted of well-developed woodland with stands of trees reaching a height of 10–15 m with the crowns just touching to form a closed canopy. The ground flora consisted of a large variety of small shrubs, herbs and many grasses. Dominant tree species were *Lannea stuhlmannii*, *Kigelia africana*, *Maprounea africana*, *Markhamia obtusifolia* and *Salvaarora persica*. Shrubs were mainly *Millettia stuhlmannii*, *Dalbergia melanoxylon*, *Sclerocarya birrea*, *Pteleopsis myrtifolia* and *Combretum zeyheri*. Large parts of the woodlands were burned annually but otherwise the vegetation showed almost no signs of human impact. The density of wild animals was high and included several species of monkeys, large carnivores as well as ungulates such as Bush Pig *Potamochoerus larvatus*, Bushbuck *Tragelaphus scriptus* and Waterbuck *Kobus ellipsiprymnus*.

### **Methods**

Field work was carried out at the Mihima site from 22–27 September 2001 and at the Kikole site from 18–23 October 2001. To assess the species richness at each site we conducted random walks within a specific study area of 1.5–2 km<sup>2</sup>, following the method described by Fjeldså (1999). Standardised field observations were conducted by two people and initiated at sunrise and were carried out continuously throughout the day

for six days at both Mihima and Kikole. We recorded all bird species and their abundances, considering each observation (species and number of individuals) as one sample. Birds flying overhead were included if they were specifically associated with the habitat (e.g. swallows and raptors actively foraging in the area). Birds that were simply passing through were excluded.

To detect elusive ground-dwelling species, mist-nets were operated in the densest parts of the study sites. Our total trapping effort at Mihima and Kikole was 2160 and 1080 net-metre-hours, respectively. Species only recorded through trapping or outside the standardised observations were added to the total species list, but not included in the species richness analyses.

In this study, we have chosen Jackknife1 and Chao2 to estimate species richness because they have been shown to perform well on bird communities (Walther & Martin 2001). Species richness estimates were produced with EstimateS software (Colwell 2000). To compare the species diversity found at the two sites, we chose the Simpson Index ( $1/D$ ) and Simpson Evenness ( $E_{1/D}$ ).

From our collected samples we computed rarefaction curves (100 randomisations, without replacement) for the two sites using EstimateS software (Colwell 2000). The resulting rarefaction curve can be viewed as the statistical expectation of the corresponding empirical species accumulation curve (Gotelli & Colwell 2001). To compare the community species diversity at the two study sites we added 95 % confidence limits to the upper rarefaction curve (Magurran 2004).

Species recorded were ranked according to their abundances and the rank abundance patterns at the two sites were compared. To test whether the abundance curves from the two sites were different, we used a Kolmogorov-Smirnov two-sample test (SAS 2000).

We follow the nomenclature of The Birds of Africa (Brown *et al.* 1982, Urban *et al.* 1986, Fry *et al.* 1988, Keith *et al.* 1992, Urban *et al.* 1997, Fry & Keith 2000, Fry & Keith 2004), except in three cases where we follow Stevenson & Fanshawe (2002) in recognising Black-chested Snake Eagle *Circaetus pectoralis* as a separate species and use the common names Grey-backed Camaroptera for *Camaroptera brachyura*, and Southern Cordon-Bleu for *Uraeginthus angolensis*. Furthermore, following Bennun *et al.* (1996) we categorised birds into two forest-dependent groupings: Forest Generalists (species that breed in the forest interior as well as secondary forest vegetation) and Forest Specialists (species that breed primarily in the interior of forests).

## Results

A total of 1179 records (samples) of 1855 individuals were collected at Mihima and 1107 records (samples) of 2075 individuals were recorded at

Kikole. Our trapping effort resulted in 82 and 30 mist-netted individual birds at Mihima and Kikole respectively.

### *Species richness and diversity*

We recorded a total of 141 species within the two study sites combined, of which 67 species were observed at both sites (Appendix). This total includes two Palaearctic migrants on passage (European Bee-eater *Merops apiaster* and Eurasian Golden Oriole *Oriolus oriolus*).

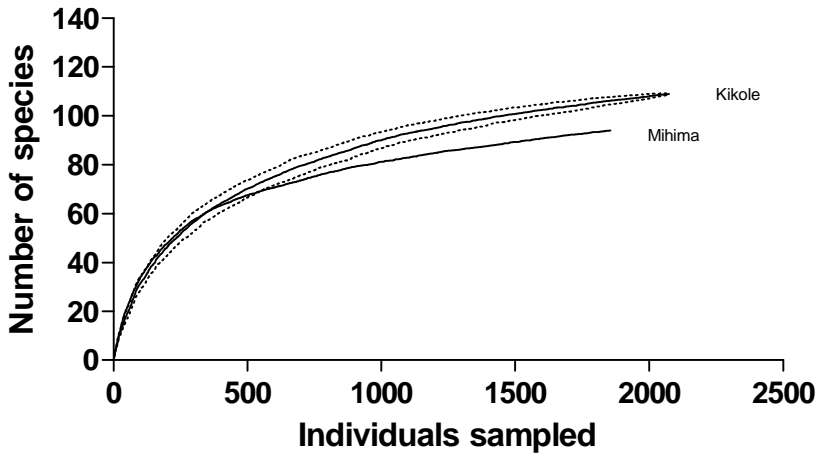
The total number of species recorded and the observed species richness were higher at Kikole (111 and 109 species) than Mihima (97 and 93 species). The species richness estimates confirm this result. Kikole seems to be more species rich (131–135 species) than Mihima (116–117 species), while the Simpson's index shows higher diversity and evenness at the Kikole site compared to Mihima (Table 1).

**Table 1.** Summary statistics from the Mihima and Kikole study sites. The total number of recorded species includes species mist-netted and those recorded outside the standardised random walks. The observed species richness includes species recorded during random walks only. Numbers in parenthesis are standard deviations.

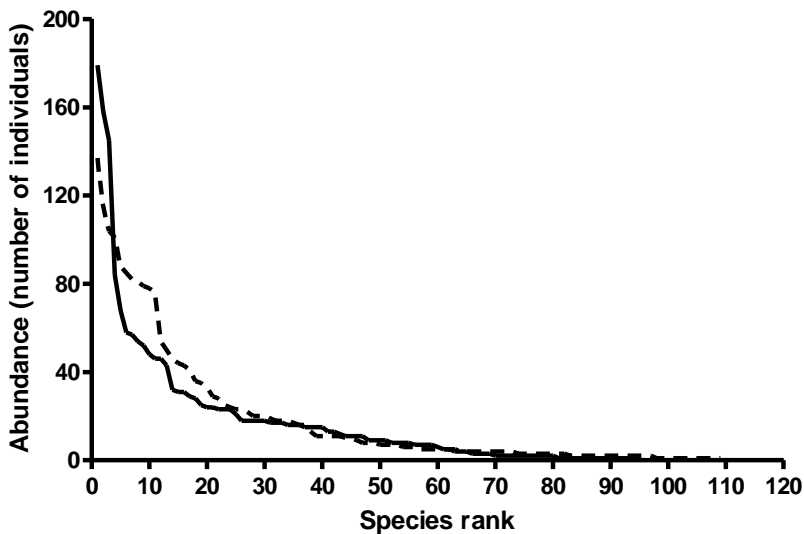
	Mihima	Kikole
Total number of species recorded	97	111
Observed species richness	93	109
Estimated species richness, Chao2	117 ( $\pm 17.5$ )	131 ( $\pm 12.5$ )
Estimated species richness, Jackknife1	116 ( $\pm 4.6$ )	135 ( $\pm 5.0$ )
Simpson Index (1/D)	28.0 ( $\pm 0.05$ )	34.8 ( $\pm 0.03$ )
Simpson Evenness ( $E_{1/D}$ )	0.30	0.32

The rarefaction curves for the two study sites do not seem to reach an asymptote indicating that more observations are needed for a full comparison of the two sites (Figure 2). However, the lower curve (Mihima) lies outside of the 95 % confidence limits of the Kikole curve indicating that the two communities differ in diversity.

Although the patterns found in the ranked abundance curves (Figure 3) of the two study sites are not statistically different ( $p = 0.06$ ,  $n = 91$ ) they do indicate that Mihima is dominated by relatively few very common species while Kikole has a larger number of abundant species. Both curves show long tails of rare species; however, Kikole has a higher abundance of middle-ranking species. The difference in species composition is further indicated by the 15 most abundant species at each of the two study sites (Table 2). Of these most frequently recorded birds only seven species were shared by the two sites: Emerald-spotted Wood Dove *Turtur chalcospilos*, Common Bulbul *Pycnonotus barbatus*, East Coast Batis *Batis soror*, Black-backed Puffback *Dryoscopus cubla*, Eastern Black-headed Oriole *Oriolus larvatus*, Common Drongo *Dicrurus adsimilis* and Violet-backed Starling *Cinnyricinclus leucogaster*.



**Figure 2.** Species richness at the Mihima (lower line) and Kikole (upper line) study sites described by rarefaction curves. 95 % confidence limits (dotted lines) have been added to the rarefaction curve for Kikole.



**Figure 3.** Ranked abundance curve with lines representing the ranked abundance distributions for Mihima (solid line) and Kikole (dotted line).

### *Notes on particular species*

Two birds of conservation concern were recorded during this study and a number of birds were previously unrecorded from southeast Tanzania. (Urban *et al.* 1997, Fry & Keith 2000, Stevenson & Fanshawe 2002).

**Southern Banded Snake Eagle *Circaetus fasciolatus*** was recorded on 28 September 2001 at Mihima. It was probably a visitor from the closed forest in Rondo Forest Reserve. This species is considered to be near-threatened (IUCN 2004).

**Stierling's Woodpecker** *Dendropicos stierlingi* was recorded relatively commonly at Mihima with six records in six days: five observations of single birds and one of a pair. A few records from the southwest of Selous Game Reserve (Baker & Baker 2002) seem to be the only other published records of this rare low-density miombo woodland endemic from southeast Tanzania. This species is considered to be near-threatened (IUCN 2004).

**Miombo Wren-Warbler** *Calamonastes undosus stierlingi* was recorded six times at Mihima and one individual was mist-netted at Mihima on 27 September 2001. All observations were of single birds.

**Yellow-bellied Eremomela** *Eremomela icteropygialis* was a common bird in woodland at Mihima and recorded every day, usually in pairs or as members of mixed bird parties.

**Red-faced Crombec** *Sylvietta whytii* was another common member of mixed bird parties at Mihima. Most observations were of pairs and it often occurred in parties, which also included Yellow-bellied Eremomela. It was also recorded at Kikole but in smaller numbers.

**Southern Black Flycatcher** *Melaenornis pammelaina* was observed in low numbers in the woodlands at Kikole.

**African Grey Flycatcher** *Melaenornis microrhynchus* was found in low density at Kikole and more commonly at Mihima. Although usually a bird of open thorn bush and dry bushland it also occurs in woodland where it is mainly found in clearings and secondary growth (Britton 1980). At Mihima this species was recorded together with Pale Flycatcher *Melaenornis pallidus* but in smaller numbers and restricted to the most open parts of the vegetation.

**Shelley's Sunbird** *Cinnyris shellyi* was recorded four times at Mihima.

**Table 2.** The 15 most abundant species at each of the two study sites. The birds are arranged in descending order. Species appearing in both lists are shown in bold.

Mihima	Kikole
Amethyst Sunbird	Crowned Hornbill
<b>East Coast Batis</b>	Helmeted Guineafowl
<b>Common Bulbul</b>	Retz's Helmet Shrike
<b>Eastern Black-headed Oriole</b>	<b>Emerald-spotted Wood Dove</b>
Piping Cisticola	<b>Common Drongo</b>
<b>Violet-backed Starling</b>	<b>Eastern Black-headed Oriole</b>
<b>Common Drongo</b>	Green Wood Hoopoe
<b>Emerald-spotted Wood Dove</b>	Village Weaver
Yellow-fronted Tinkerbird	<b>Common Bulbul</b>
Yellow-bellied Hyliota	<b>Violet-backed Starling</b>
Yellow White-eye	Ring-necked Dove
Black-backed Puff-back	Little Purple-banded Sunbird
Tawny-flanked Prinia	<b>East Coast Batis</b>
Yellow-fronted Canary	Red-eyed Dove
Red-faced Crombec	Little Bee-eater

**White Helmet-Shrike** *Prionops plumatus* was regularly observed in small flocks at both sites and two individuals were mist-netted at Mihima on 23 September 2001.

## Discussion

Many bird species found in woodland in Tanzania have a wide distribution in eastern and southern Africa. We investigated the avifauna of what appeared to be two rather similar coastal woodlands from the same region of Tanzania and found comparatively different species richness and diversity at the two sites. We also observed several species previously unrecorded from southeast Tanzania.

Our results clearly indicate that the coastal woodlands of south eastern Tanzania contain a surprisingly diverse avifauna with species associated with a wide range of habitats. The species diversity was higher at Kikole than Mihima and we found marked differences with regard to species composition in the two areas. Only 67 out of 141 species were observed at both sites and only seven out of the 15 most abundant species were found at both sites. These results might be due to insufficient data collection or a difference in climate (time of year for data collection and altitude of study site differed slightly). However, the occurrence of typical miombo woodland species such as Stierling's Woodpecker, Yellow-bellied Hyliota *Hyliota flavigaster* and Shelley's Sunbird at Mihima but not at Kikole also point to a stronger link to the presence of miombo at Mihima. On the other hand, the proximity of the sea at Kikole most likely explains the occurrence of Yellow-bellied Greenbul *Chlorocichla flaviventris* and Fischer's Greenbul *Phyllastrephus fischeri* mainly associated with coastal thickets and forest.

The woodland at Kikole was clearly less damaged by human activity (burning and logging) and contained a higher number of large trees than Mihima. The structurally more diverse and richer vegetation found at Kikole was likely to account for the higher species richness and diversity found at this site compared to Mihima. The more homogeneous habitat at Mihima, partly attributable to regular burning of the understorey, might explain the abundance pattern in birds. Only a few very common species are adapted to this environment compared to Kikole which had a higher number of common and rare species. This suggests that frequent burning and logging influence the species richness and diversity of coastal woodland vegetations as habitats for birds.

Most of the bird species recorded at the two study sites are widespread in different types of woodland (Britton 1980). However, over one fifth of the species recorded are listed as forest-dependent (Forest Specialists or Forest Generalists, *sensu* Bennun *et al.* 1996). The proximity of large tracts of closed forest near the study site at Mihima probably explains why the highest number of Forest Specialists was recorded there. The number of Forest Generalists, however, is almost the same at the two sites and indicates that a



number of forest-dependent species are able to penetrate far into woodland areas for at least part of the year.

African Broadbill *Smithornis capensis* is one of the Forest Specialists recorded from both study sites. We found this species very hard to detect during the standardised field observations because of its unobtrusive behaviour. However, when the males started to 'sing' while performing display flights just before sunrise, we discovered that the species was surprisingly common. Stjernstedt (1970) also recorded this species in woodland at Liwale approximately 150 km northwest of Mihima. This suggests that although primarily a forest bird in most parts of its range, it is also widespread in woodlands with dense thickets in southeast Tanzania. The many singing males recorded in September, which is shortly before the onset of the rains and the breeding season (Brown & Britton 1980), suggest that some of these birds may stay in woodland to breed.

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**Appendix**

Bird species recorded at the two coastal woodland sites. FF = Forest Specialists and F = Forest Generalists following Bennun *et al.* (1996). Number of records is followed by the total number of individuals observed at the each site in parentheses. "x" indicates that the species was recorded from the woodland outside the systematic field survey.

English name	Scientific name	Forest dependence	Mihima	Kikole
Marabou Stork	<i>Leptoptilos crumeniferus</i>	-		1 (1)
African White-backed Vulture	<i>Gyps africanus</i>	-		12 (36)
Black-chested Snake Eagle	<i>Circaetus pectoralis</i>	-	3 (3)	
Southern Banded Snake Eagle	<i>Circaetus fasciolatus</i>	F	1 (1)	
Bateleur	<i>Terathopius ecaudatus</i>	-	3 (3)	14 (16)
African Harrier Hawk	<i>Polyboroides typus</i>	-	1 (1)	
Gabar Goshawk	<i>Micronisus gabar</i>	-		2 (2)
Dark Chanting Goshawk	<i>Melierax metabates</i>	-	1 (1)	1 (2)
African Goshawk	<i>Accipiter tachiro</i>	F		1 (1)
African Little Sparrowhawk	<i>Accipiter minullus</i>	-		3 (3)
Lizard Buzzard	<i>Kaupifalco monogrammicus</i>	-	1 (1)	2 (2)
Wahlberg's Eagle	<i>Aquila wahlbergi</i>	-		3 (3)
African Hawk Eagle	<i>Hieraaetus spilogaster</i>	-		1 (2)
Crowned Eagle	<i>Stephanoaetus coronatus</i>	FF	x	
Helmeted Guineafowl	<i>Numida meleagris</i>	-		7 (115)
Coqui Francolin	<i>Francolinus coqui</i>	-	1 (2)	
Crested Francolin	<i>Francolinus sephaena</i>	-		11 (17)
African Green Pigeon	<i>Treron calva</i>	F	10 (24)	4 (5)
Blue-spotted Wood Dove	<i>Turtur afer</i>	-		3 (3)
Emerald-spotted Wood Dove	<i>Turtur chalcospilos</i>	-	47 (54)	77 (101)
Red-eyed Dove	<i>Streptopelia semitorquata</i>	-		37 (46)
Ring-necked Dove	<i>Streptopelia capicola</i>	-	2 (2)	61 (76)
Laughing Dove	<i>Streptopelia senegalensis</i>	-		1 (2)
Brown-necked Parrot	<i>Poicephalus robustus</i>	-	14 (28)	11 (28)
Brown-headed Parrot	<i>Poicephalus cryptoxanthus</i>	F		12 (24)
Violet-crested Turaco	<i>Musophaga porphyreolopha</i>	-	7 (7)	7 (11)
Thick-billed Cuckoo	<i>Pachycoccyx audeberti</i>	-	1 (1)	
African Cuckoo	<i>Cuculus gularis</i>	-		2 (2)
Klaas's Cuckoo	<i>Chrysococcyx klaas</i>	-	2 (2)	3 (3)
White-browed Coucal	<i>Centropus superciliosus</i>	-		2 (2)

Spotted Eagle-Owl	<i>Bubo africanus</i>	-	1 (1)	
African Wood Owl	<i>Strix woodfordii</i>	F	1 (1)	x
Fiery-necked Nightjar	<i>Caprimulgus pectoralis</i>	F	1 (2)	
Mottled Spinetail	<i>Telacanthura ussheri</i>	F		1 (1)
Böhm's Spinetail	<i>Neafrapus boehmi</i>	F		1 (2)
African Palm Swift	<i>Cypsiurus parvus</i>	-		1 (4)
Brown-hooded Kingfisher	<i>Halcyon albiventris</i>	-		7 (8)
Grey-headed Kingfisher	<i>Halcyon leucocephala</i>	-		1 (1)
Striped Kingfisher	<i>Halcyon chelicuti</i>	-	x	2 (2)
Little Bee-eater	<i>Merops pusillus</i>	-	1 (2)	29 (44)
Swallow-tailed Bee-eater	<i>Merops hirundineus</i>	-	11 (15)	6 (7)
White-fronted Bee-eater	<i>Merops bullockoides</i>	-		3 (4)
European Bee-eater	<i>Merops apiaster</i>	-	3 (5)	3 (10)
Lilac-breasted Roller	<i>Coracias caudate</i>	-		1 (2)
Broad-billed Roller	<i>Eurystomus glaucurus</i>	-		10 (13)
Green Wood-Hoopoe	<i>Phoeniculus purpureus</i>	-	5 (17)	29 (82)
Scimitarbill	<i>Phoeniculus cyanomelas</i>	-	11 (18)	12 (16)
Hoopoe	<i>Upupa epops</i>	-	1 (1)	
Southern Ground Hornbill	<i>Bucorvus cafer</i>	-		7 (10)
Crowned Hornbill	<i>Tockus alboterminatus</i>	-	1 (1)	62 (137)
African Grey Hornbill	<i>Tockus nasutus</i>	-		2 (11)
Trumpeter Hornbill	<i>Ceratogymna bucinator</i>	F	6 (8)	17 (5)
Green Tinkerbird	<i>Pogoniulus simplex</i>	FF	10 (11)	
Yellow-rumped Tinkerbird	<i>Pogoniulus bilineatus</i>	F	30 (31)	1 (1)
Yellow-fronted Tinkerbird	<i>Pogoniulus chrysoconus</i>	-	46 (52)	18 (19)
Brown-breasted Barbet	<i>Lybius melanopterus</i>	-		2 (3)
Crested Barbet	<i>Trachyphonus vaillantii</i>	-		2 (3)
Black-throated Honeyguide	<i>Indicator indicator</i>	-	11 (11)	18 (18)
Lesser Honeyguide	<i>Indicator minor</i>	-		3 (4)
Golden-tailed Woodpecker	<i>Campethera abingoni</i>	F	6 (7)	5 (7)
Little Spotted Woodpecker	<i>Campethera cailliautii</i>	-	2 (2)	5 (5)
Cardinal Woodpecker	<i>Dendropicos fuscescens</i>	-	3 (3)	12 (18)
Stierling's Woodpecker	<i>Dendropicos stierlingi</i>	-	5 (7)	
Bearded Woodpecker	<i>Dendropicos namaquus</i>	-	1 (1)	
African Broadbill	<i>Smithornis capensis</i>	FF	x	6 (6)
Flappet Lark	<i>Mirafra rufocinnamomea</i>	-	2 (2)	
Black Saw-wing	<i>Psaldiprocne pristoptera</i>	-	7 (9)	4 (8)
Mosque Swallow	<i>Hirundo senegalensis</i>	-		3 (6)
Lesser Striped Swallow	<i>Hirundo abyssinica</i>	-		1 (1)
Black Cuckoo-Shrike	<i>Campephaga flava</i>	-	1 (1)	5 (5)
White-breasted Cuckoo-Shrike	<i>Coracina pectoralis</i>	-	7 (13)	1 (1)
Yellow-bellied Greenbul	<i>Chlorocichla flaviventris</i>	F		14 (20)
Fischer's Greenbul	<i>Phyllastrephus fischeri</i>	FF		1 (3)
Common Bulbul	<i>Pycnonotus barbatus</i>	-	78 (145)	41 (79)
Eastern Bearded Scrub-Robin	<i>Cercotrichas quadrivirgata</i>	-	8 (9)	x
White-browed Scrub-Robin	<i>Cercotrichas leucophrys</i>	-	14 (18)	4 (4)
White-headed Black Chat	<i>Myrmecocichla arnotti</i>	-		2 (4)
Kurrichane Thrush	<i>Turdus libyanus</i>	-	13 (17)	4 (4)
Siffling Cisticola	<i>Cisticola brachypterus</i>	-		3 (5)
Piping Cisticola	<i>Cisticola fulvicapillus</i>	-	43 (68)	18 (22)
Tawny-flanked Prinia	<i>Prinia subflava</i>	-	19 (43)	17 (41)
Red-winged Warbler	<i>Heliolais erythroptera</i>	-	2 (4)	2 (6)
Yellow-breasted Apalis	<i>Apalis flavida</i>	-	8 (18)	5 (8)
Black-headed Apalis	<i>Apalis melanocephala</i>	FF	6 (9)	

Grey-backed Camaroptera	<i>Camaroptera brachyura</i>	-	7 (7)	9 (11)
Miombo Wren-Warbler	<i>Calamonastes undosus (stierlingi)</i>	-	6 (6)	
Yellow-bellied Eremomela	<i>Eremomela icteropygialis</i>	-	18 (29)	
Red-faced Crombec	<i>Sylvietta whytii</i>	-	17 (31)	5 (7)
Yellow-bellied Hyliota	<i>Hyliota flavigaster</i>	-	26 (48)	
Southern Black Flycatcher	<i>Melaenornis pammelaina</i>	-		6 (11)
Pale Flycatcher	<i>Melaenornis pallidus</i>	-	10 (29)	
African Grey Flycatcher	<i>Melaenornis microrhynchus</i>	-	7 (12)	11 (18)
Ashy Flycatcher	<i>Muscicapa caerulescens</i>	F	7 (9)	
Livingstone's Flycatcher	<i>Erythrocerus livingstonei</i>	F	8 (15)	17 (43)
Blue-mantled Crested Flycatcher	<i>Trochocercus cyanomelas</i>	FF	10 (18)	
East Coast Batis	<i>Batis soror</i>	-	85 (158)	29(50)
Rufous-bellied Tit	<i>Parus rufiventris</i>	-	13 (24)	3 (5)
African Penduline Tit	<i>Anthoscopus caroli</i>	-	3 (4)	
Western Violet-backed Sunbird	<i>Anthreptes longuemarei</i>	-	13 (18)	2 (3)
Eastern Olive Sunbird	<i>Cyanomitra olivacea</i>	FF	21 (23)	5 (5)
Amethyst Sunbird	<i>Chalcomitra amethystina</i>	-	112 (179)	10(20)
Scarlet-chested Sunbird	<i>Chalcomitra senegalensis</i>	-	8 (11)	19 (29)
Collared Sunbird	<i>Hedydipna collaris</i>	F	20 (23)	17 (23)
Shelley's Sunbird	<i>Cinnyris shelleyi</i>	F	4 (5)	
Little Purple-banded Sunbird	<i>Cinnyris bifasciata</i>	-	11 (20)	33 (54)
Yellow White-eye	<i>Zosterops senegalensis</i>	F	23 (46)	1 (1)
Grey-headed Bush-Shrike	<i>Malaconotus blanchoti</i>	-	2 (2)	
Orange-breasted Bush-Shrike	<i>Malaconotus sulphureopectus</i>	-	1 (1)	1 (1)
Gorgeous Bush-Shrike	<i>Telophorus viridis (quadricolor)</i>	F	14 (15)	
Brown-crowned Tchagra	<i>Tchagra australis</i>	-	13 (16)	6 (9)
Black-crowned Tchagra	<i>Tchagra senegala</i>	-	3 (3)	1 (1)
Black-backed Puffback	<i>Dryoscopus cubla</i>	F	36 (46)	21 (23)
Tropical Boubou	<i>Laniarius aethiopicus</i>	-	9 (13)	1 (1)
Brubru	<i>Nilaus afer</i>	-	20 (21)	
Eastern Nicator	<i>Nicator gularis</i>	F	1 (1)	2 (3)
White Helmet-Shrike	<i>Prionops plumatus</i>	-	7 (23)	6 (35)
Retz's Helmet-Shrike	<i>Prionops retzii</i>	-	2 (8)	24 (104)
Eastern Black-headed Oriole	<i>Oriolus larvatus</i>	-	74 (84)	71 (85)
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	-		2 (2)
Square-tailed Drongo	<i>Dicrurus ludwigii</i>	F	1 (1)	
Common Drongo	<i>Dicrurus adsimilis</i>	-	40(57)	62 (88)
Pied Crow	<i>Corvus albus</i>	-	X	
Black-bellied Starling	<i>Lamprotornis corruscus</i>	F		2 (2)
Violet-backed Starling	<i>Cinnyricinclus leucogaster</i>	-	22 (58)	32(78)
Red-billed Oxpecker	<i>Buphagus erythrorhynchus</i>	-		1 (4)
Red-headed Weaver	<i>Anaplectes rubriceps</i>	-		3 (5)
Lesser Masked Weaver	<i>Ploceus intermedius</i>	-		1 (2)
Village Weaver	<i>Ploceus cucullatus</i>	-		3 (81)
Dark-backed Weaver	<i>Ploceus bicolor</i>	F		12 (20)
Yellow Bishop	<i>Euplectes capensis</i>	-		1 (2)
White-winged Widowbird	<i>Euplectes albonotatus</i>	-		1 (4)
Southern Cordon-Bleu	<i>Uraeginthus angolensis</i>	-	1 (4)	
Peter's Twinspot	<i>Hypargos niveoguttatus</i>	F	2 (2)	3 (4)
Green-winged Pytilia	<i>Pytilia melba</i>	-	1 (2)	8 (11)
Bronze Mannikin	<i>Spermestes cucullatus</i>	-	1 (16)	3 (33)
Black-and-white Mannikin	<i>Spermestes bicolor</i>	-	1 (8)	1 (7)
Reichenow's Seedeater	<i>Serinus reichenowi</i>	-	1 (8)	
Yellow-fronted Canary	<i>Serinus mozambicus</i>	-	13 (32)	1 (4)

Stripe-breasted Seedeater	<i>Serinus reichardi (striatipectus)</i>	-	12 (25)	
Cabanis's Bunting	<i>Emberiza cabanisi</i>	-	9 (11)	1 (2)
Golden-breasted Bunting	<i>Emberiza flaviventris</i>	-	5 (8)	1 (1)

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