

A Survey of the Avifauna of Mahale Mountains National Park, Tanzania.

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The avifauna of Mahale Mountains National Park in Western Tanzania has received surprisingly little systematic attention over the years. In 1957, Clutton-Brock and a student team from Oxford University made a general ecological survey of the area which included some bird information, and subsequently the Japanese Research Teams from Kyoto and Tokyo Universities have collated total species lists for both mammals and birds (JICA, 1980), but no systematic survey had been conducted of the bird life within the park area. The area is a biogeographical oddity due to the fact that it shares faunal and floral affinities with both the Albertine Rift forests and the Central African forests more so than with the East African forests, either those of the Eastern Arc or the Rift Valley Highlands. Since there is good data on avifauna emanating from both the Congo Basin and the northern Albertine Rift forest blocks, (Kahindo Ngabo et al., 2002) a more quantitative and comprehensive account of the bird life in the Mahale area can positively contribute to our absolute and comparative knowledge of this interesting and overlooked area. This paper records the results of a systematic survey of the main habitats within the National Park undertaken over a two-week period in June 2004.

Study Area

Mahale Mountains National Park covers an area of 1613 km² and lies on the eastern shore of Lake Tanganyika approximately half way down its length, some 120 kms south of the main Tanzanian port of Kigoma. The park was gazetted by the Tanzanian Government in 1985 primarily to protect a

large population of the Eastern Chimpanzee (*Pan troglodytes schweinfurthi*) that exists throughout the forest which borders the lake shore on the western flank of the Mahale Mountains as well as in the drier Miombo woodlands to the east and south of the mountains (Nishida, 1990). The park is dominated by the Mahale Mountains, a tall crystalline ridge of peaks running southeast across the park, which rises steeply from the lakeshore at 700m to a high point of 2462m, the peak of Nkungwe Hill.

The Park is a mosaic of habitats ranging from river delta and lake edge vegetation, through moist *Brachystegia* savannah (miombo) to lowland moist rainforest-allied Kasoge Forest with tall trees mainly from *Albizia*, *Ficus*, *Pseudospondias* and *Cynometra*. This forest gives way at higher altitudes to tongues of montane forest, including tree species such as *Croton megalocarpus* and *Podocarpus spp.*, and this in turn is pierced from above by highland vegetation comprising grassland and bracken scrub with a variety of flowering species of shrubs including *Phillippa benguelensis*, *Vigna Spp.* and *Hypericum spp.*, To the east of the mountain ridge and in the southern part of the park the forest is much less dense and quickly disappears in favour of the drier miombo woodland which extends throughout south and west Tanzania and much of south-central Africa. This vegetation within the Mahale Mountains National Park is defined by a stunning variety of miombo species, representing almost all known types of moist savannah woodland, as well as vast tracts of bamboo (*Arundinalia alpina*). There are mature stands of *Brachystegia boehmii*, *Brachystegia longifolia*, *Brachystegia spiciformis*, *Uopaca spp*, *Julbernardia spp* and *Isolberlina angolensis* among others, all interspersed with classic miombo trees such as *Pterocarpus angolensis* (Collins and McGrew, 1988; Nishida, 1981).

The systematic data in this paper were collected from three main sites using three main recording techniques, namely mist-netting, timed species counts and total counts (see *Survey Techniques*).

Kasoge Forest

The Kasoge Forest is a unique habitat type described for the Mahale area. Due to the high humidity maintained by the presence of the lake, the steep relief of the mountains and the nearby Congo Basin there exists on the Western slope of the mountain ridge a forest that shares more biological and climatic affinities with the West African forests. It also shares some faunal and floral affinities with those forests, as well as representing the southernmost outlier of the Albertine Rift vegetation. The forest covers the western flank of the mountains beginning close to Bilenge in the north and extending approximately 20kms south before petering out in the drier southern reaches of the mountain ridge. At some points the Kasoge Forest touches the shoreline of the lake, and from there it extends through a narrow coastal plain and subsequently carpets the steep sides of the mountain ridge up to an altitude of approximately 2000m. It is the stronghold of the intensively studied population of Eastern Chimpanzee and throughout the forest there is a system of variously maintained trails that the Japanese research teams have used for their observational studies. This allows for an observer to cover a great amount of ground in what is otherwise a generally impenetrable moist forest habitat.

We chose a site within the Kasoge Forest at the point where the coastal plain gives way to the slope of the mountains and erected mist nets there, after cutting small net-rides through a promising section of thick undergrowth and forest under-canopy. We avoided setting nets close to the invasive stands of *Senna spectabilis*, a fast growing exotic tree from South East Asia introduced by the original Japanese research teams for the purpose of shade, since when they arrived the coastal plain was largely deforested and was under agricultural use by local tribes. Other areas exhibiting evidence of recent human habitation such as oil palm, coconut palm and exotic fruit trees such as mango were also avoided. However, casual observations from these areas were nonetheless included in the final species list. Timed species counts and total counts were conducted in the vicinity of the nets.

Riverine Forest

Within the Kasoge Forest at lower altitudes there are strips of thick Riverine vegetation fringing the well watered but seasonally fluctuating streams that flow down from the mountain ridge. These areas are dominated by large fig trees, *Xylopia spp.* and *Parkia spp.* The vegetation supports a great variety of lianas and other epiphytes, and represents a distinctly different habitat to that of the main Kasoge Forest.

Mist-nets were erected along and striking off from one such stream to the north of the Kashia area on Mkala Bay. Timed species counts and total counts were conducted in the vicinity of the nets.

Montane Forest

The folded ridgeline of the Mahale Mountains presents a mosaic of highland vegetation made up of bracken scrub and grassland which covers the ridges and exposed northern and eastern flanks of the backbone, invaded in the west and south facing draws by thick tongues of Montane Forest. This habitat is characterised by having *Podocarpus spp.* and various other species associated with East African Montane environments such as *Croton Megalocarpus*.

We conducted timed species counts, total counts and casual observations in a small patch of Montane Forest on the northwestern side of Musenabantu peak.

Other Habitats

Occasional records were also collated from random observations while walking throughout the park. In addition to the above three described habitats, these observations were made in the following areas: river delta vegetation, *Hyparrhenia* marshland, dry acacia coastal strip and a variety of Miombo woodland types.

Survey Techniques

Three techniques were employed in order to obtain quantitative data relating to the variety and abundance of bird species occurring in the three main study area habitats.

As well as using these survey techniques in the three study habitats, we also employed total counts and casual observations of bird species recorded at any time during our stay in the park, in order to obtain as many additions to the final species list for the park, which was originally generated by the Tanzanian Bird Atlas (Baker and Baker, in process) – see *Appendix 1*.

Mist-netting

Fine filament nets of varying lengths (6 metres or 12 metres) were strung between bamboo poles, each of length no less than 8 feet. These were tied and secured to trees, vegetation or pegs in order for the nets to be held in tension. Each net thus held had five “pockets” which lie to one side of the net and into which birds fell when they collided with the upright part of the net. The nets were checked by the team of recorders at least every half an hour so that any birds caught were exposed to the minimum of physiological stress. Once caught, the bird was then retrieved for the purpose of identification (Britton (ed), 1980; Fry et al. (eds), 1988; Sinclair and Ryan, 2003; Stevenson and Fanshawe, 2002; Zimmerman et al., 1996) taking biometric data (including wing length, tail length, bill length, tarsus length, moult condition, sex and age status) and the fitting of leg rings.

This final stage when leg-rings are fitted to the bird is the process of “ringing”, which allows for long-term studies of bird species over time and space. Once a ring is fitted to an individual bird there is the chance that the same individual may be re-caught by a subsequent ringing operation and then the location, time lapse since originally caught, relative condition of the bird and other data can be recorded. These data along with brood patch data are routinely stored with the Tanzanian Ringing Scheme.

N.B. For the purpose of this survey rings were not fitted to any individual birds at the request of Tanzania National Parks.

Timed Species Counts

To obtain an indication of the relative abundance of certain species within a particular area of habitat we conducted a number of timed species counts at each mist-net site that we established.

Timed species counts were carried out in the mornings between 0700 and 0900 in forest and between 1800 and 1900 in forest edge. Two counts were carried out in the morning, the first being at an arbitrary point along a path, at least 500m into forest. The second count was carried out 300m and no more than 15 minutes from the first in a direct line walked on a compass bearing.

On arrival at the sampling point the following information was recorded;

- i. Habitat: A brief description of the surrounding vegetation, particularly structure and stratification of the canopy was measured using an estimate of the percentage of sky in view, a note made as to fallen trees, amount of dead wood or fruiting/flowering vegetation.
- ii. UTM and Lat/Long coordinates.
- iii. Altitude, time and weather conditions.

To reduce bias in the sampling technique the following information was recorded;

- i. Whether the bird was recorded by sight or sound.
- ii. A fixed radius of 25m (estimate of error is 3m, 12%) was set and each bird recorded as near (within the 25m radius) or far (outside of the 25m radius).
- iii. Whether the bird was 3 m above ground.

These three restrictions serve to discount large birds seen high up, small birds seen close by and noisy birds easily identified by call.

Total Counts

To gain a general picture of species occurring within a certain patch of forest, total counts were used. All total counts were conducted between 5pm and 6pm each day. These are less quantitatively interesting than timed species counts since they allow observations of *all* species within the range of sight and hearing of the observer over a period of one hour from a fixed point within the habitat. However they allow for the recording of species neglected by timed species counts and offer the possibility of observing rare or obscure species. Total counts were conducted in the following habitats in addition to our three study areas (Kasoge, Riverine and Montane forests): river delta vegetation, swamp vegetation, montane grassland and bracken scrub and miombo woodland. Table 1 below shows the GPS reference points for the three surveying techniques used.

Table 1. GPS Reference points for the three surveying techniques

Technique	UTM East	UTM	Habitat type
Mist-net site 1 (and TSC 1)	0802884	9323078	Kasoge Forest (Dry)
Mist-net site 2 (and TSC2)	0902657	9325213	Kasoge Forest (Riverine)
Times species count 3	0804678	9322397	Kasoge Forest (Dry)
Total count 1	0802006	9322588	Coastal Scrub
Total count 2	0803778	9323305	Kasoge Forest (Dry)
Total count 3	0803786	9322476	Kasoge Forest (Dry)
Total count 4	0802433	9320512	River vlei / grassland
Total count 5	0802446	9318873	River delta (Ng' Anja)
Total count 6	0805664	9322733	Kasoge / montane forest margin
Total count 7	0802289	9325488	Riverine forest / shoreline margin
Total count 8	0803178	9325221	Kasoge Forest (Dry)
Total count 9	0806120	9326822	Montane grassland / thicket

Results

Mist-netting

The results for the two sites where mist-nets were erected are shown in Table 2 below:

A total of 136 species were recorded by total counts, mist-netting (Table 2) and timed species counts (TSC) (Table 3) and over the survey period of 10 days.

Table 2. Species caught and numbers during mist-netting

Species	Kasoge Forest (Site 1) Numbers Caught (5000nmh)	Riverine Forest (Site 2) Numbers Caught (5000nmh)
Red – capped Robin Chat	25	6
Little Greenbul	22	4
Tambourine Dove	12	14
Green Twinspot	9	1
Brown Illadopsis	5	-
Pygmy Kingfisher	5	1
Yellow-Whiskered Greenbul	4	2
Western Olive Sunbird	3	1
Western Nicator	2	-
Red-headed Bluebill	2	-
Leaf Love	1	1
Yellow-rumped Tinkerbird	1	-
Paradise Flycatcher	1	3
Narina Trogon	1	-
Half-collared Kingfisher	-	1
Blue-breasted Kingfisher	-	1

N.B. Because rings were not fitted to any birds, the data presented here is not a true representation of abundance of each of these bird species within the habitats. When rings are fitted, birds that are recaptured at the same site are discounted from the overall data set. This was not possible in this instance, and therefore it is likely that we may have recaptured the same Little Greenbuls, Red-capped Robin-chats and Tambourine Doves a number of times during the survey.

Timed Species Counts

The results for the timed species counts conducted in and around the sites where mist-nets were erected are as follows in Table 3:

Table 3. Species recorded by timed species counts in ranked order.

Species	Kasoge Forest (Dry) (Site 1)		Kasoge Forest (Riverine) (Site 2)	
	TSC index	Rank	TSC index	Rank
Little Greenbul	2	1	0.8	4
Red Capped Robin Chat	1.6	2	1	3
Western Olive Sunbird	1.1	3	-	-
Olive Pigeon	1	4	0.3	6
Tambourine Dove	1	5	1.6	1
Brown Iladopsis	0.6	6	-	-
Half-collared Kingfisher	-	-	1.3	2
Collared Sunbird	-	-	0.5	5
Green Twinspot	-	-	0.1	7

Total Counts

The results from our total counts are reflected in the updated and annotated list for the park. All observations were absorbed into this list which appears in *Appendix 1*. Total count data taken together with mist-net data and casual observations of various species over the period of the survey produce a “Species Accumulation Curve” (see Figure 1, below).

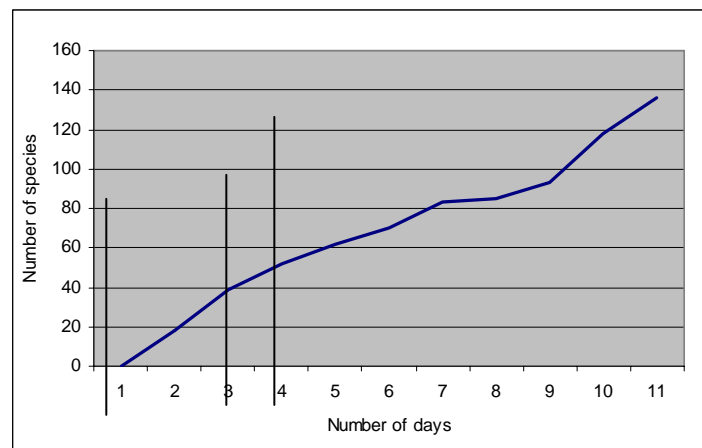


Figure 1: Species accumulation curve.

From this we can see that as we moved into each new habitat or study area, the number of species recorded dramatically increased as taken against the amount of observation time. The normal pattern during a long term study is to see the species accumulation curve flattening off as fewer and fewer new species are recorded. Due to the short time of our study the species accumulation curve for the survey is seen to be still rising steeply at the end. This reflects the fact that there are many areas and some habitats that justify further study.

Discussion

Systematic and quantitative surveys of forest habitats are the only practical means by which to obtain meaningful data about relative abundance, distribution and breeding activity of forest bird species. The nature of forest areas precludes the use of many techniques routinely employed in more open and accessible habitats, and for this reason forest species are often overlooked, underrepresented or just ignored.

Our short but intense survey shows us that casual observation and occasional snippets of data cannot give a true picture or even a close approximation of the relative amount and variety of species in a particular forest. The Mahale Mountains area, and specifically the National Park has been poorly studied in terms of bird life, and our results, as is often the case with preliminary studies, should provide a platform for future survey and monitoring work. Bird species can be a useful indicator of the health of forest habitats, and good long-term data on bird numbers and distribution can be of great benefit to protected areas and National Park management.

Thanks to the well-established network of forest paths developed by the Japanese research teams we were able relatively easily to access good areas of Kasoge and Riverine Forest.

In the Kasoge Forest we can see that there is a fairly easily identifiable caucus of species that comprise the resident bird life. Red-capped Robin-chat, Western Olive Sunbird and Little Greenbul are prominent throughout the Timed Species Count data, a fact that partly reflects their solicitous and common nature, while birds such as Tambourine Dove, Brown Illadopsis and Green Twinspot appear high up in the mist-netting results which directly reflects their abundance, even though they are not so easily observed during Timed Species Counts. However, it must be again noted that the data from the mist-netting exercise is partially unreliable because rings were not fitted to any birds. Therefore the relative abundance of each of the most prominent species has probably been exaggerated.

In the short time we were in the park our attempts to reach true examples of Montane Forest were hindered by difficult access as well as by lack of knowledge of the exact location of Montane Forest patches. Since past research into Chimpanzee ecology has concentrated so intensively on the Kasoge forest, and to a lesser extent on the Miombo woodland, the highland vegetation has been overlooked and few researchers have even visited the Montane Forest areas, let alone studied them. When we did eventually reach the Montane Forest on the flank of Musenabantu Hill the remaining time did not allow us to erect mist-nets, and therefore data from that habitat was less complete than for the other two study areas. However the small amount of time spent in the highland habitats yielded some very common species which were new for the park list (*viz* Variable Sunbird, Yellow Bishop, Red Collared Widowbird, Familiar Chat, Evergreen Forest Warbler). Future surveys should concentrate on obtaining quantitative data for the Montane Forest and other highland habitats.

Comments on selected species

Here we present comments on selected species where our data indicates a change in the status of the species, relating either to abundance, distribution or other known biological data for that species, or where our record of the species invites questions and further investigation.

White-Backed Night-Heron *Gorsachius leuconotus* Previously unrecorded in the park and generally a very rare bird throughout its range, a pair was observed in the estuary area of the Lubulungu River.

Yellow-billed Stork *Mycteria ibis* This single record of a bird flying along the lake shore is the first for the park. This lack of previous data prevents us from saying whether this species is a resident in the Mahale area, but presumably these birds regularly move between the Great East African Lakes and the lack of a former sighting is simply a gap in data.

Gull-billed Tern *Sterna nilotica* This is the first record for this bird in Mahale. This species is known as a migrant to East Africa from August to April, and a resident of North West Africa. This

bird could be considered to be either a resident of Lake Tanganyika, or alternatively an intra-African or local migrant.

Red-Capped Robin-Chat *Cossypha natalensis* The most common bird throughout our survey. Were we observing a resident population or were the high numbers due to a seasonal influx of migratory birds from other areas? This is a renowned inter-African migrant, but more data is needed from future studies and ringing operations to answer this question.

Miombo species of note

1. Orange-winged Pytilia *Pytilia afra* This is a characteristic bird of miombo woodland which was formerly more common. This is the first record for Mahale which represents a lack of data for the extensive miombo areas within and around the National Park. **2. Miombo (Central Bearded) Scrub Robin** *Cercotrichus barbata* As the first record for the park, this bird has probably previously been overlooked or misidentified in the past by voice as Eastern Bearded Scrub Robin. **3. Black-backed Barbet** *Lybius minor* Previously unrecorded in the Mahale area, this rare and striking species is Central African and only comes into Tanzania in the west.

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References

- BAKER, E.M. and BAKER, N.E (*in process*) Tanzanian Bird Atlas: www.tanzaniabirdatlas.com
- BRITTON, P.L. (ED) 1980. *The Birds of East Africa*. Nairobi: EANHS.
- COLLINS, D.A. and MCGREW, W.C. 1988. *Habitats of three groups of chimpanzees (Pan troglodytes) in western Tanzania compared*. Journal of Human Evolution vol 17: 553-574.
- FRY, C.H., KEITH, S. and URBAN, E.K. (Eds) 1988. *The birds of Africa. Volume 3*. Academic Press, London.
- JICA 1980. *Study for the Proposed Mahale Mountains National Park*.
- KAHINDO NGABO, C., PLUMPTRE, A., BAKER, N.E., OWIUNJI, I., WILSON, M., WILLIAMS, C.T., BYARUHANGA, A., LANGUY, M., HERREMANS, M., BUTYNSKI, T. and MOYER, D. (Online). *The Biodiversity of the Albertine Rift Section 3: Birds*. Wildlife Conservation Society New York. www.wcs.org.
- NISHIDA, T. 1990. A quarter of a century of research in the Mahale Mountains: An overview. In T. Nishida (ED), *The Chimpanzees of the Mahale Mountains: Sexual and life history strategies*. Tokyo: University of Tokyo Press, pp. 3-35.
- NISHIDA, T. 1981. *Kitongwe Name of Plants: A Preliminary Listing*. African Study Monographs 1: 109-131.
- SINCLAIR, I. and RYAN, P. 2003 *Birds of Africa South of the Sahara*. Struik Publishers.
- STEVENSON, T. and FANSHAW, J. 2002 *Field Guide to the Birds of East Africa*. T & A D Poyser, London.
- ZIMMERMAN, D.A., TURNER, D.A. and PEARSON, D.J. 1996 *Birds of Kenya and Northern Tanzania*. Helm Identification Guides.

Appendix 1: List of Species recorded from Mahale Mountains National Park

PHALACROCORACIDAE - CORMORANTS

Long-tailed Cormorant *Phalacrocorax africanus*

ARDEIDAE - BITTERNs, EGRETS and HERONS

Dwarf Bittern *Ixobrychus sturmii*
 White-backed Night Heron *Gorsachius leuconotus*
 Squacco Heron *Ardeola ralloides*
 Rufous-bellied Heron *Ardeola rufiventris*
 Cattle Egret *Bubulcus ibis*
 Green-backed Heron *Butorides striatus*
 Black Heron *Egretta ardesiaca*
 Little Egret *Egretta garzetta*
 Purple Heron *Ardea purpurea*
 Grey Heron *Ardea cinerea*
 Goliath Heron *Ardea goliath*

SCOPIDAE - HAMERKOP

Hamerkop *Scopus umbretta*

CICONIIDAE - STORKS

Yellow-billed Stork *Mycteria ibis*
 Open-billed Stork *Anastomus lamelligerus*

THRESKIORNITHIDAE - IBIS and SPOONBILLS

African Spoonbill *Platalea alba*

ANATIDAE - DUCKS and GEESE

Knob-billed Duck *Sarkidiornis melanotos*

ACCIPITRIDAE - VULTURES, EAGLES, KITES, HAWKS etc

Bat Hawk *Macheiramphus alcinus*
 Black-shouldered Kite *Elanus caeruleus*
 Black-billed Kite *Milvus migrans*
 Yellow-billed Kite *Milvus parasiticus*
 Fish Eagle *Haliaeetus vocifer*
 Palmnut Vulture *Gypohierax angolensis*
 Hooded Vulture *Necrosyrtes monachus*
 White-backed Vulture *Gyps africanus*
 Bateleur *Terathopius ecaudatus*
 Gymnogone *Polyboroides typus*
 Great Sparrowhawk *Accipiter melanoleucus*
 Ovambo Sparrowhawk *Accipiter ovampensis*
 African Goshawk *Accipiter tachiro*
 Steppe Buzzard *Buteo buteo vulpinus*
 Augur Buzzard *Buteo augur*
 Wahlberg's Eagle *Aquila wahlbergi*
 Steppe Eagle *Aquila nipalensis*
 African Hawk Eagle *Hieraaetus spilogaster*
 Booted Eagle *Hieraaetus pennatus*
 Ayres' Hawk Eagle *Hieraaetus ayresii*
 Crowned Eagle *Stephanoaetus coronatus*
 Osprey *Pandion haliaetus*

FALCONIDAE - FALCONS

Eurasian Hobby *Falco subbuteo*
 African Hobby *Falco cuvierii*
 Lanner Falcon *Falco biarmicus*

PHASIANIDAE - FRANCOLINS and QUAILS

Scaly Francolin *Francolinus squamatus*
 Common Quail *Coturnix coturnix*

NUMIDIDAE - GUINEAFOWLS

Crested Guineafowl *Guttera pucherani*

RALLIDAE - RAILS and CRAKES

Buff-spotted Flufftail *Sarothrura elegans*
 Black Crake *Amaurornis flavirostris*

Allen's Gallinule	<i>Porphyryla alleni</i>
JACANIDAE - JACANAS	
Jacana	<i>Actophilornis africanus</i>
RECURVIROSTRIDAE - STILTS and AVOCETS	
Black-winged Stilt	<i>Himantopus himantopus</i>
BURHINIDAE - STONE CURLEWS	
Water Thicknee	<i>Burhinus vermiculatus</i>
GLAREOLIDAE - COURSERS and PRATINCOLES	
Rock Pratincole	<i>Glareola nuchalis</i>
CHARADRIIDAE - PLOVERS	
Three-banded Plover	<i>Charadrius tricollaris</i>
Brown-chested Plover	<i>Vanellus superciliosus</i>
SCOLOPACIDAE - SNIPES, GODWITS, SANDPIPERS etc	
Whimbrel	<i>Numenius phaeopus</i>
Curlew	<i>Numenius arquata</i>
Greenshank	<i>Tringa nebularia</i>
Wood Sandpiper	<i>Tringa glareola</i>
Common Sandpiper	<i>Actitis hypoleucos</i>
LARIDAE - GULLS	
Grey-headed Gull	<i>Larus cirrocephalus</i>
STERNIDAE - TERNS	
Gull-billed Tern	<i>Gelochelidon nilotica</i>
White-winged Tern	<i>Chlidonias leucopterus</i>
COLUMBIDAE - PIGEONS and DOVES	
Speckled Pigeon	<i>Columba guinea</i>
Olive Pigeon	<i>Columba arquatrix</i>
Lemon Dove	<i>Aplopelia larvata</i>
Dusky Turtle Dove	<i>Streptopelia lugens</i>
Ring-necked Dove	<i>Streptopelia capicola</i>
Red-eyed Dove	<i>Streptopelia semitorquata</i>
Emerald-spotted Wood Dove	<i>Turtur chalcospilos</i>
Blue-spotted Wood Dove	<i>Turtur afer</i>
Tambourine Dove	<i>Turtur tympanistreria</i>
Namaqua Dove	<i>Oena capensis</i>
African Green Pigeon	<i>Treron calva</i>
PSITTACIDAE - PARROTS	
Red-headed Lovebird	<i>Agapornis pullarius</i>
MUSOPHAGIDAE - TURACOS and GO-AWAY BIRDS	
Schalow's Turaco	<i>Tauraco schalowi</i>
Purple-crested Turaco	<i>Tauraco porphyreolophus</i>
Ross's Turaco	<i>Musophaga rossae</i>
CUCULIDAE - CUCKOOS	
Thick-billed Cuckoo	<i>Pachycoccyx audeberti</i>
Red-chested Cuckoo	<i>Cuculus solitarius</i>
Emerald Cuckoo	<i>Chrysococcyx cupreus</i>
Klaas' Cuckoo	<i>Chrysococcyx klaas</i>
CENTROPODIDAE - COUCALS	
Yellowbill	<i>Ceuthmochares aereus</i>
White-browed Coucal	<i>Centropus superciliosus</i>
STRIGIDAE - OWLS	
Verreaux's Eagle Owl	<i>Bubo lacteus</i>
Pel's Fishing Owl	<i>Scotopelia peli</i>
Pearl-spotted Owlet	<i>Glaucidium perlatum</i>
Barred Owlet	<i>Glaucidium capense</i>
African Wood Owl	<i>Strix woodfordii</i>
CAPRIMULGIDAE - NIGHTJARS	
Fiery-necked Nightjar	<i>Caprimulgus pectoralis</i>
Swamp Nightjar	<i>Caprimulgus natalensis</i>
Gabon Nightjar	<i>Caprimulgus fossii</i>
Standard-winged Nightjar	<i>Macrodipteryx longipennis</i>

Pennant-winged Nightjar

*Macrodipteryx vexillarius***APODIDAE - SWIFTS**

Scarce Swift

Schoutedenapus myoptilus

Palm Swift

Cypsiurus parvus

Eurasian Swift

Apus apus

Black Swift

Apus barbatus

Little Swift

Apus affinis

White-rumped Swift

*Apus caffer***COLIIDAE - MOUSEBIRDS**

Speckled Mousebird

*Colius striatus***TROGONIDAE - TROGONS**

Narina Trogon

*Apaloderma narina***ALCEDINIDAE - KINGFISHERS**

Malachite Kingfisher

Corythornis cristata

Half-collared Kingfisher

Alcedo semitorquata

Pygmy Kingfisher

Ceyx picta

Brown-hooded Kingfisher

Halcyon albiventris

Chestnut-bellied Kingfisher

Halcyon leucocephala

Blue-breasted Kingfisher

Halcyon malimbica

Giant Kingfisher

Megaceryle maxima

Pied Kingfisher

*Ceryle rudis***MEROPIDAE - BEE-EATERS**

Little Bee-eater

Merops pusillus

Blue-breasted Bee-eater

Merops variegatus

Cinnamon Bee-eater

Merops oreobates

White-fronted Bee-eater

Merops bullockoides

White-throated Bee-eater

Merops albicollis

Madagascar Bee-eater

Merops superciliosus

Blue-cheeked Bee-eater

Merops persicus

Eurasian Bee-eater

Merops apiaster

Southern Carmine Bee-eater

*Merops nubicoides***CORACIIDAE - ROLLERS**

Lilac-breasted Roller

Coracias caudata

Broad-billed Roller

*Eurystomus glaucurus***UPUPIDAE - HOOPOES**

African Hoopoe

*Upupa africana***BUCEROTIDAE - HORNBILLS**

Crowned Hornbill

Tockus alboterminatus

Trumpeter Hornbill

*Bycanistes bucinator***LYBIIDAE - BARBETS and TINKERBIRDS**

Grey-throated Barbet

Gymnabucco bonapartei

Yellow-rumped Tinkerbird

Pogoniulus bilineatus

Black-collared Barbet

Lybius torquatus

Black-backed Barbet

*Lybius minor***INDICATORIDAE - HONEYGUIDES**

Scaly-throated Honeyguide

Indicator variegatus

Lesser Honeyguide

Indicator minor

Golden-tailed Woodpecker

Campethera abingoni

Olive Woodpecker

*Dendropicos griseocephalus***HIRUNDINIDAE - SWALLOWS and MARTINS**

Black Roughwing

Psalidoprocne holomelas

White-headed Roughwing

Psalidoprocne albiceps

Sand Martin

Riparia riparia

Mosque Swallow

Hirundo senegalensis

Lesser Striped Swallow

Hirundo abyssinica

Red-rumped Swallow

Hirundo daurica

African Rock Martin

Hirundo fuligula

Wire-tailed Swallow

Hirundo smithii

European Swallow

Hirundo rustica

Angola Swallow

Hirundo angolensis

House Martin

*Delichon urbica***MOTACILLIDAE - WAGTAILS, PIPITS, LONGCLAWS**

Mountain Wagtail

Motacilla clara

African Pied Wagtail

Motacilla aguimp

African Pipit

*Anthus cinnamomeus***CAMPEPHAGIDAE - CUCKOO SHRIKES**Black Cuckoo Shrike
Grey Cuckoo Shrike
White-breasted Cuckoo Shrike*Campephaga flava*
Coracina caesia
*Coracina pectoralis***PYCNONOTIDAE - GREENBULS**Shelley's Greenbul
Mountain Greenbul
Little Greenbul
Slender-billed Greenbul
Yellow-whiskered Greenbul
Yellow-throated Leaflove
Leaflove
Grey-olive Greenbul
Cabanis' Greenbul
Olive Mountain Greenbul
Yellow-streaked Greenbul
Sharpe's Greenbul
Yellow-vented Bulbul*Andropadus masukuensis*
Andropadus nigriceps
Andropadus virens
Andropadus gracilirostris
Andropadus latirostris
Chlorocichla flavicollis
Phyllastrephus scandens
Phyllastrephus cerviniventris
Phyllastrephus cabanisi
Phyllastrephus placidus
Phyllastrephus flavostriatus
Phyllastrephus alfredi
*Pycnonotus barbatus***TURDIDAE - THRUSHES, ROBINS, WHEATEARS, CHATS**Miombo Rock Thrush
Kurrichane Thrush
Brown-chested Alethe
Starred Robin
Bocage's Akalat
Cape Robin Chat
White-browed Robin Chat
Red-capped Robin Chat
Miombo Scrub Robin
White-browed Scrub Robin
Stonechat
Whinchat
Familiar Chat*Monticola angolensis*
Turdus libyanus
Alethe poliocephala
Pogonochila stellata
Sheppardia bocagei
Cossypha caffra
Cossypha heuglini
Cossypha natalensis
Cercotrichas barbata
Cercotrichas leucophrys
Saxicola torquata
Saxicola rubetra
*Cercomela familiaris***SYLVIIDAE - WARBLERS**Evergreen Forest Warbler
Bamboo Warbler
Olivaceous Warbler
Upcher's Warbler
Yellow Warbler
White-browed Crombec
Willow Warbler
Wood Warbler
Yellow-throated Warbler
Yellow-bellied Hyliota
Blackcap
Trilling Cisticola
Singing Cisticola
White-chinned Prinia
Red-winged Warbler
Yellow-breasted Apalis
Kungwe Apalis
Grey-backed Camaroptera*Bradypterus mariae*
Bradypterus alfredi
Hippolais pallida
Hippolais languida
Chloropeta natalensis
Sylvietta leucophrys
Phylloscopus trochilus
Phylloscopus sibilatrix
Phylloscopus ruficapilla
Hylia flavigaster
Sylvia atricapilla
Cisticola woosnami
Cisticola cantans
Prinia leucopogon
Heliolais erythroptera
Apalis flavida
Apalis argentea
*Camaroptera brachyura***MUSCICAPIDAE - FLYCATCHERS**Southern Black Flycatcher
Spotted Flycatcher
Swamp Flycatcher*Melaenornis pammelaina*
Muscicapa striata
*Muscicapa aquatica***PLATYSTEIRIDAE - WATTLE-EYES and BATIS**Yellow-bellied Wattle-eye
Black-throated Wattle-eye*Platysteira concreta*
*Platysteira peltata***MONARCHIDAE - MONARCH FLYCATCHERS**Livingstone's Flycatcher
White-tailed Blue Flycatcher
Crested Flycatcher
Paradise Flycatcher*Erythrocerus livingstonei*
Elminia albicauda
Trochocercus cyanomelas
*Terpsiphone viridis***TIMALIIDAE - BABBLERS, IIADOPSIS, CHATTERERS**Brown Illadopsis
Mountain Illadopsis*Illadopsis fulvescens*
Illadopsis pyrrhopter

African Hill Babbler	<i>Alcippe abyssinica</i>
Arrow-marked Babbler	<i>Turdoides jardineii</i>
REMIZIDAE - PENDULINE TITS	
African Penduline Tit	<i>Anthoscopus caroli</i>
NECTARINIIDAE -- SUNBIRDS	
Western Violet-backed Sunbird	<i>Anthreptes longuemarei</i>
Collared Sunbird	<i>Anthreptes collaris</i>
Western Olive Sunbird	<i>Nectarinia obscura</i>
Green-headed Sunbird	<i>Nectarinia verticalis</i>
Scarlet-chested Sunbird	<i>Nectarinia senegalensis</i>
Variable Sunbird	<i>Nectarinia venusta</i>
Olive-bellied Sunbird	<i>Nectarinia chloropygia</i>
Eastern Double-collared Sunbird	<i>Nectarinia mediocris</i>
Regal Sunbird	<i>Nectarinia regia</i>
Mariqua Sunbird	<i>Nectarinia mariquensis</i>
Red-chested Sunbird	<i>Nectarinia erythroceri</i>
Copper Sunbird	<i>Nectarinia cuprea</i>
Malachite Sunbird	<i>Nectarinia famosa</i>
ZOSTEROPIDAE - WHITE-EYES	
Yellow White-eye	<i>Zosterops senegalensis</i>
ORIOLIDAE - ORIOLES	
Golden Oriole	<i>Oriolus oriolus</i>
African Golden Oriole	<i>Oriolus auratus</i>
Montane Oriole	<i>Oriolus percivali</i>
Western Black-headed Oriole	<i>Oriolus brachyrhynchus</i>
LANIIDAE - SHRIKES	
Red-backed Shrike	<i>Lanius collurio</i>
MALACONOTIDAE - PUFFBACKS, TCHAGRAS, BOUBOUS, BUSH SHRIKES	
Brubru	<i>Nilaus afer</i>
Black-backed Puffback	<i>Dryoscopus cubla</i>
Pink-footed Puffback	<i>Dryoscopus angolensis</i>
Marsh Tchagra	<i>Tchagra minuta</i>
Black-crowned Tchagra	<i>Tchagra senegala</i>
Lühder's Bush Shrike	<i>Laniarius luehderi</i>
Tropical Boubou	<i>Laniarius aethiopicus</i>
Sulphur-breasted Bush Shrike	<i>Malacotus sulfureopectus</i>
Western Nicator	<i>Nicator chloris</i>
PRIONOPIDAE -- HELMET SHRIKES	
White Helmet Shrike	<i>Prionops plumatus</i>
Retz's Helmet Shrike	<i>Prionops retzii</i>
DICRURIDAE - DRONGOS	
Drongo	<i>Dicrurus adsimilis</i>
CORVIDAE - CROWS	
White-necked Raven	<i>Corvus albicollis</i>
STURNIDAE - STARLINGS	
Stuhlmann's Starling	<i>Poeoptera stuhlmanni</i>
Waller's Starling	<i>Onychognathus walleri</i>
Red-winged Starling	<i>Onychognathus morio</i>
Sharpe's Starling	<i>Cinnyricinclus sharpii</i>
Violet-backed Starling	<i>Cinnyricinclus leucogaster</i>
PASSERIDAE -- SPARROWS and PETRONIAS	
Grey-headed Sparrow	<i>Passer griseus</i>
PLOCEIDAE - WEAVERS, QUELEAS, BISHOPS	
Baglafaecht Weaver	<i>Ploceus baglafaecht</i>
Spectacled Weaver	<i>Ploceus ocularis</i>
Holub's Golden Weaver	<i>Ploceus xanthops</i>
Tanganyika Masked Weaver	<i>Ploceus reichardi</i>
Vieillot's Black Weaver	<i>Ploceus nigerrimus</i>
Village Weaver	<i>Ploceus cucullatus</i>
Golden-backed Weaver	<i>Ploceus jacksoni</i>
Dark-backed Weaver	<i>Ploceus bicolor</i>
Brown-capped Weaver	<i>Ploceus insignis</i>

Red-headed Weaver
 Red-headed Quelea
 Yellow Bishop
 Red-collared Widowbird
 Grosbeak Weaver

Anaplectes rubriceps
Quelea erythropis
Euplectes capensis
Euplectes ardens
Amblyospiza albifrons

ESTRILDIDAE - WAXBILLS, CORDON-BLEUS, MANNIKINS etc

Red-fronted Antpecker
 Grey-headed Negrofinch
 Orange-winged Pytilia
 Red-faced Crimsonwing
 Red-headed Bluebill
 Peters' Twinspot
 Green-backed Twinspot
 African Firefinch
 Black-tailed Waxbill
 Common Waxbill
 Bronze Mannikin
 Black and White Mannikin

Parmoptila woodhousei
Nigrita canicapilla
Pytilia afra
Cryptospiza reichenovii
Spermophaga ruficapilla
Hypargos niveoguttatus
Mandingoa nitidula
Lagonosticta rubricata
Estrilda perreini
Estrilda astrild
Lonchura cucullata
Lonchura bicolor

FRINGILLIDAE - CANARYS and SEED-EATERS

Western Citril
 Thick-billed Seedeater
 Oriole Finch

Serinus frontalis
Serinus burtoni
Linurgus olivaceus

EMBERIZIDAE - BUNTINGS

Cinnamon Rock Bunting
 Cabanis' Bunting

Emberiza tahapisi
Emberiza cabanisi