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THE BIRDS OF BAMINGUI-BANGORAN NATIONAL PARK, CENTRAL AFRICAN
REPUBLIC

by Arthur A. Green

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INTRODUCTION

Bamingui-Bangoran National Park (10,700 km²) and Vassako-Bolo Total Reserve (860 km²) form a unit in northern Central African Republic (CAR) between latitudes 07°30' and 08°45' N and longitudes 19°05' and 20°20' E. The park was created in 1936 to protect the Black Rhinoceros *Diceros bicornis* living there in high density, following the massacres of these animals in Chad and surrounding areas during 1925-35. In accordance with recommendations made at the London Convention of 1933, the central portion of the park was designated a total reserve in 1940.

The limits of the park are the M'Brés-N'Délé road to the east, the Bangoran River to the north, and the Bamingui River to the south and west. These two rivers unite at the north-west corner of the park on the Chad border, forming the Chari River (Fig. 1). Two-thirds of the park lies on a plateau of 400 to 500 m elevation; the flat northwestern third slopes gently into the Chari Basin. Two regions of granite inselbergs are located in the south and east of the park.

The 1200 mm and 1300 mm isohyets traverse the park in a NE-SW direction (Fig. 1). The 1200 mm isohyet may be considered as the limit between the sudan savanna zone to the north and the more humid guinea savanna zone to the south. The average rainfall at Bamingui village during 12 years (1952-65) was 1365 mm. The rainy season begins with showers in March or April; heaviest rainfall occurs during July-September, and the season generally ends abruptly at the end of October, although in some years rain continues through November. The mean annual temperature at Bamingui is about 27°C. The range of temperatures during the rainy season is 20°-36° C; during December and January lows are 8°-16° and highs are 33°-37° C; the hot season of March-April seldom sees daytime highs exceeding 40°C, and the harmattan is never severe during the dry season.

Although the Bamingui River flows all year, the Bangoran may dry up, but retains water in basins, pools and channels. The floodplains, which are not extensive along either river, may be filled in August-September. In the interior, the Vassako is the principal stream; numerous other streams (some flowing well into January), ponds and waterholes supply wildlife with water in the dry period. Salt licks are numerous, some (e.g. Mandabalé) very large.

The mammal fauna is rich. Small herds of *Korrigum Damaliscus lunatus* occur on the ironstone plains in the west-centre of the park. Giraffes *Giraffa camelopardalis* are found here as well as in the shrub and tree savanna of the northeast of the park. Cheetahs *Acinonyx jubatus* may still

survive in the north. The extensive areas of dry deciduous forest and gallery forests provide habitat for Bush-pigs *Potamochoerus porcus*, Blue Duikers *Cephalophus monticola*, Yellow-backed Duikers *Cephalophus sylvicultor*, and Black-and-white Colobus *Colobus abyssinicus*. Other large mammals include Elephant *Loxodonta africana*, Buffalo *Syncerus caffer*, Black Rhino, Hippo *Hippopotamus amphibius*, Warthog *Phacochoerus aethiopicus*, Eland *Taurotragus derbianus*, ten other species of antelopes, four of primates, Lion *Panthera leo*, Leopard *Panthera pardus*, Wild Dog *Lycaon pictus*, Spotted Hyaena *Crocuta crocuta* and numerous small carnivores.

There have been few studies of the birds of CAR. Malbrant (1952) dealt with the birds of all of central Africa in a general way. Dragesco (1960a, 1960b) made some references to birds at Lake Gata in the northeast of Manovo-Gounda-Saint Floris National Park (sudan savanna). Jehl (1974) studied Palearctic migrants to CAR mainly at Bangui on the north edge of the rain-forest, with only two references to Bamingui.

The present paper is based on field observations made in the south and east of the park from July 1980 to April 1982. Henceforth "the park" will refer to the guinea savanna zone (south of the 1200 mm isohyet) portion of Bamingui-Bangoran National Park and extending about 10 km beyond the park boundaries. Directing a school to train national park guards (Green, 1982) did not leave me any time for studying raptors and other hard-to-identify species, for mist-netting or for searching specific habitats; most observations were made while going about my duties, and so lists for certain families are short and incomplete.

HABITATS AND BIRDS

I recognise seven habitats supporting distinctive bird communities as follows:

Riparian Rivers or streams and the fringing forest on their banks, often dominated by *Syzygium guineense* trees. (Typical birds include kingfishers, flycatchers, Fish Eagle, Fishing Owl, Green-backed Heron, Hadada, White-crested Turaco and Red-throated Bee-eater.)

Wetland Of several types. In the floodplain grasslands and in other low grounds with deep soils (bas-fonds) there are marshes and shallow ponds which may dry up in the dry season. On the ironstone plains there are depressions which fill rapidly at the beginning of the rains, but which are generally unable to retain water through the dry season.

Mare Kaha (50 km west of Bamingui village) is a good example of the first type of pond. In December it is an open-water lake of about 50 ha surrounded by tall grass and a few bushes. By late February when the water level has gone down leaving half the area in mud-flats, multitudes of waterfowl, herons, storks and waders occur. Mare Ava Kaba on the Bangoran floodplain (50 km downstream of Bangoran village) is similar, but three times as large (Glossy Ibis and Open-bills occur). On the floodplain at Bamingui village a large Oxbow pond holds Lesser Jacanas in January-April, and I have seen Bitterns there. Black Storks occasionally occur in the dry season.

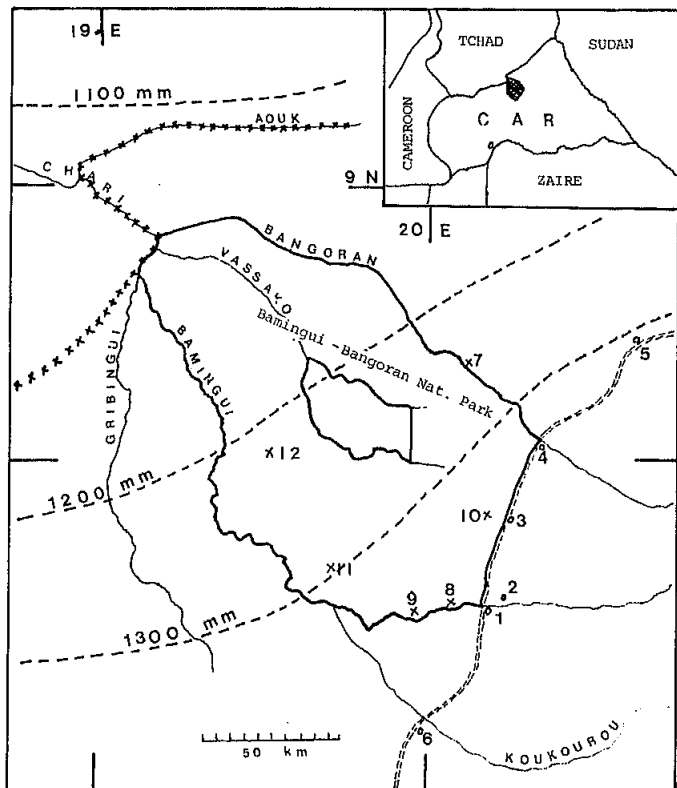


Figure 1 Map of Bamingui-Bangoran National Park, Central African Republic.
 1 - Bamingui, 2 - Gandossi's Safari, 3 - Dangavo village, 4 - Bangoran village, 5 - N'Délé village, 6 - Koukourou village, 7 - Ava Kaba, 8 - Saltlick Mandabalé, 9 - Mare Kaha, 10 - Eastern Inselbergs, 11 - Southern Inselbergs, 12 - Cinq Mares.

On the ironstone plains in the west of the study area there is a group of shallow ponds known as the Cinq Mares, each up to 1.5 m deep and 1-4 ha in area; there are other ponds and bas-fond ponds here too, and waterfowl congregate in December-January, including White-eyed Pochard, Fulvous Whistling-duck, Teal, Ringed Plover, Little Ringed Plover, Redshank, Curlew and Marsh Harrier (most are rare in the east of the park).

Grass Savanna Grassy floodplain prairies occur along rivers and larger streams, invaded on deeply flooded portions by *Mitragyna inermis* trees. On higher ground there are widely spaced *Lophira lanceolata* and *Crossopteryx febrifuga* trees and mushroom-shaped termitaria. In large bas-fonds along minor streams there are open grasslands with clusters of large trees (*Khaya senegalensis*, *Tamarindus indica*, *Anogeissus leiocarpus*) on "cathedral" termitaria (*Macrotermes*). On ironstone plains with thin soil, short-grass prairies are found; on sloping land over ironstone the soil is generally deeper, the grasses taller and mushroom termitaria abound.

Evidently Ostriches were formerly frequent in the west of the park; they are nearly extinct, but I saw a pair near Ava Kaba in April 1981.

Many grass savanna birds are migratory, and some arrival and departure dates are given in Table 1. Rainy season visitors include Forbes' Plover (ironstone plains and inselbergs, June-August), Blue Rough-wing Swallow (floodplains, March-October), Grey-rumped Swallow (June-September), and Red-headed Quelea (grasslands and near villages). Several Red-headed Queleas nested near Bamingui village in August 1980 (absent 1981).

Wooded Savanna Includes shrub and tree savanna mainly in the northeast, and savanna woodland or open forest elsewhere. Thorny trees are rare. Dominant trees are *Terminalia laxiflora*, *Grewia mollis*, *Combretum hypopilinum*, *Anogeissus leiocarpus*, *Isobertlinia doka*, *Hymenocardia acida*, *Monotes kerstingii*, *Crossopteryx febrifuga*.

Table 1 shows several migratory birds of wooded savannas. European Golden Orioles disappear from the region by mid-April, but I saw one at Cinq Mares on 31 May. African Golden Orioles are less common during December-February. Vitelline Masked Weavers nested this far south in 1981, disappearing in early November. Swallow-tailed Bee-eaters have been found near Dangavo and at Kaga Zou in the dry season. I found a dead Spotted Thicknee near Dangavo in December 1980.

Forest Dry deciduous forest (composed for the most part of savanna tree species) and gallery forest are quite extensive in the park, and south of the Bamingui are several km in diameter. Typical birds include Piping, Brown-cheeked and Black-and-white Casqued Hornbills, African Wood Owls, Red-chested Cuckoos (calling February-July), Crested Guinea-fowls, Oriole Warblers and Paradise Flycatchers.

Apparently rarer are Great Sparrowhawk, Narina's Trogon, Fraser's Eagle Owl (Mandabalé salt-lick, 31 March) and Red-bellied Paradise Flycatcher.

Inselberg Bare granitic rock with occasional potholes holding water,

Table 1 Sojourn and passage of migrants in Bamingui-Bangoran National Park

	Arrival 1980	Arrival 1981	Departure*	Period of passage
<i>Ardeola ibis</i>	23/10/80	19/10/81	early Jun	
<i>Ciconia abdimi.</i>	26/10/80	09/11/81	late Nov	Oct-Nov
" "	01/03/82	15/03/81	late Apr	Mar-Apr
<i>Butastur rufipennis</i>	01/12/80	11/11/81	mid-Jun	
<i>Buteo auguralis</i>	09/11/80	04/12/81	mid-Apr	
<i>Milvus migrans</i>	31/10/81	02/11/81	mid-Jun	
<i>Neotis denhami</i>	early Dec	29/11/81	early Jun	
<i>Eupodotis melanogaster</i>	07/12/80	30/11/81	mid Jun	
<i>Burhinus senegalensis</i>	late Nov	late Nov	mid-Jun	
<i>Vanellus senegallus</i>	19/11/80	05/11/81	mid-Jun	
<i>Pterocles quadricinctus</i>	11/11/80	22/11/81	Mar?	
<i>Streptopelia vinacea</i>	20/09/80	23/09/81	late May	
<i>Macrodipteryx longipennis</i>	Jan	01/01/81	Apr	
<i>M. vexillarius</i>				16-21 Jun 81
<i>Caprimulgus climacurus</i>	14/09/80	Nov?	early Apr	
<i>Tockus nasutus</i>	09/10/80	17/10/81	early Jun	
<i>Upupa epops</i>	19/11/80	23/11/81	May	
<i>Phoeniculus purpureus</i>	11/11/80	05/11/81	late Jun	
<i>Motacilla flava</i>	26/10/80	17/11/81	early Mar	
<i>Hirundo rustica</i>				14/10/80
<i>H. griseopyga</i>	mid-June	mid-June	mid-Sep	
<i>Delichon urbica</i>				31/11/81
<i>Psalidoprocne pristoptera</i>	?	01/04/81	Oct	
<i>Oriolus oriolus</i>	12/10/80	19/10/81	Apr	
<i>O. auratus</i>	?	Dec	Mar	
<i>Cinnyricinclus leucogaster</i>	12/04/82	28/03/81	mid-Apr	Mar-Apr

* "Departure" is when the last birds have finally disappeared; the majority may have left a month or more earlier.

patches of grass and shrubs, and clusters of trees such as *Bombax costatum*. (Typical birds: Cinnamon-breasted Rock Bunting, Rock-loving Cisticola and White-crowned Cliff-chat.

Human Habitation Along the M'Brés-N'Délé road on the east of the park there are a few small villages of 100-750 persons. Living mostly by hunting and fishing, their cultivation (manioc and sorghum) is of limited extent. Eight km upstream of Bamingui there is Mr. Gandossi's sport hunting safari where a few families are permanently installed in their fields. A few semi-permanent poachers' and fishermen's camps built of straw are found in the west of the park with small gardens of maize, tomatoes, etc. Otherwise, for hundreds of kms east and west, there is only virgin savanna.

Commoner near villages than elsewhere are Hooded Vultures, Black Kites, Laughing Doves, Red-headed Lovebirds, and Grey-headed Sparrows.

DISCUSSION

The Appendix lists 258 species of birds recorded in the park. Casual observations during less than two years are insufficient, but I have attempted to indicate the migratory status and abundance of each species and the habitat where it was seen. Sequence and nomenclature follow White (1960-65) except for the cliff chat *Myrmecocichla coronata* (see Green, 1980). The bird fauna of the park is typical of the guinea savanna zone, with the addition of some forest and sudan savanna species. Water birds are less varied and abundant than farther north, where the vast floodplains of the Ouaka and other rivers provide abundant habitat. Raptors are certainly more varied than indicated in the Appendix.

Birds are protected in the parks and reserves, but some species may be threatened by the use of pesticides to poison fish in the Bamingui, Bangoran, Koukourou and other smaller rivers by fishermen from Kaga Bandoro (100 km SW of the park) and from Chad who come here illegally. Being outsiders and having no concern for the long term effects of their actions, they poison the rivers in order quickly to obtain large quantities of fish to sell in Bangui and elsewhere. The local Bamingui fishermen apparently seldom use poisons. There appear to be more Fish Eagles and Pied Kingfishers upstream of Bamingui village than downstream in the park, and C. A. Spinage has suggested to me that pesticides in fish could be responsible. Analysis of fish samples from the park, carried out by the US Fish and Wildlife Service Columbia National Fisheries Research Laboratory demonstrated that benzene hexachloride (BHC), lindane, cis-chlordane, DDD, DDE, and DDT are present; but dieldrin (often used by fishermen) is absent. Total DDD, DDE and DDT was high (1.4-2.8 ppm). According to the US Food and Drug Administration, persistent human exposure to the lindane residues found (0.26-0.31 ppm) could be of health significance (pers. comm. to C. A. Spinage).

When a poisoning occurs, the river is covered with dead fish for 25 km or more downstream; for a week thereafter, scavengers feed on rotting fish on the riverbanks. Although I have no direct evidence of deaths in birds, sub-lethal poisoning must occur if they eat contaminated fish or carrion.

South of the Bamingui River the savanna becomes more and more heavily

wooded with vast areas of open forest and of dry deciduous forest. Ninety km south of Bamingui I saw a Black-headed Bee-eater *Bombylonax breweri*. North of the Bangoran River thorn trees become common; I saw a Blue Rock Thrush *Monticola solitarius* at N'Délé in November. White Pelicans *Pelecanus onocrotalus* and Pink-backed Pelicans *P. rufescens* are found on the flood-plain ponds in Manovo-Gounda-Saint Floris National Park northeast of N'Délé (neither has yet been reported from the park).

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APPENDIX Birds observed in guinea savanna, Bamingui-Bangoran National Park, 1980-1982

Status	R resident whole year, I irregular visitor, A intra-African migrant, P Palaearctic migrant
Abundance	A 1-2 sightings, B rare, C frequent, D common, E abundant
Nesting	x indicates definite breeding in study area
Habitat	Commonest habitat shown by x: A riparian, B wetland, C grass savanna, D wooded savanna, E forest, F inselberg, G human occupation

	Status	Abundance	Nesting	Month (1-12)	Habitat						
					A	B	C	D	E	F	G
STRUTHIONIDAE											
<i>Struthio camelus</i>		A		4				x			
PHALACROCORACIDAE											
<i>Phalacrocorax africanus</i>		B		1-6	x	x					
<i>Anhinga rufa</i>		B		2-6	x	x					
ARDEIDAE											
<i>Botaurus stellaris</i>	P	A		2		x					
<i>Ixobrychus minutus</i>		A		1		x					
<i>Ardeola ralloides</i>	P	C		11-12, 1-6		x					
<i>Ardeola ibis</i>	A	D		10-12, 1-6	x	x	x	x			x
<i>Butorides striatus</i>	R	C		1-12	x						
<i>Egretta alba</i>		C		10-12, 1-6	x	x					
<i>Ardea cinerea</i>	P	D		10-12, 1-5	x	x					
<i>Ardea melanocephala</i>	A	D		11-12, 1-2		x	x				x
<i>Ardea goliath</i>		B		12, 1-4	x	x					
<i>Ardea purpurea</i>	P	B		2-3		x					
SCOPIDAE											
<i>Scopus umbretta</i>	R	D	x	1-12	x	x	x				
CICONIIDAE											
<i>Ciconia nigra</i>	P	B		1-3		x	x				
<i>Ciconia abdimii</i>	A	D		10-11, 1, 3-4		x					x
<i>Ciconia episcopus</i>	A	B		11-12, 1-4	x	x	x				
<i>Ephippiorhynchus senegalensis</i>		C		11-12, 1-6		x	x				
<i>Anastomus lamelligerus</i>	A	B		1-4		x	x				
<i>Leptoptilus crumeniferus</i>		C		11-12, 1-5	x	x	x				
<i>Ibis ibis</i>	A	B		1-4		x					
THRESKIORNITHIDAE											
<i>Threskiornis aethiopica</i>	A	C		12, 1-4	x	x					
<i>Bostrychia hagedash</i>	R	D		1-12	x						
<i>Plegadis falcinellus</i>	P	B		1-3		x					

	Status	Abundance	Nesting	Month	Habitat						
					A	B	C	D	E	F	G
ANATIDAE											
<i>Dendrocygna bicolor</i>	I	B		1-2		x					
<i>Dendrocygna viduata</i>		D		12,1-6	x	x					
<i>Alopochen aegyptiaca</i>		B		1-6		x					
<i>Plectropterus gambensis</i>		D		12,1-6	x	x					
<i>Sarkidiornis melanotos</i>	R	D	x	1-12	x	x					
<i>Nettapus auritus</i>	I	B		12,1-3		x					
<i>Anas crecca</i>	P	B		1-3		x					
<i>Anas acuta</i>	P	A		1-2		x					
<i>Aythya nyroca</i>	P	A		1-2		x					
ACCIPITRIDAE											
<i>Trionoceph occipitalis</i>	R	B		1-12	x		x	x			
<i>Gyps ruppellii</i>		B		12,1-6			x	x			
<i>Gyps bengalensis</i>	R	D	x	1-12			x	x			
<i>Neophron monachus</i>	R	C		1-12			x	x			x
<i>Gypohierax angolensis</i>		B		8,11	x						
<i>Circus aeruginosus</i>	P	B		1-2		x	x				
<i>Polyboroides radiatus</i>		B		10-12,4	x			x			
<i>Terathopius ecaudatus</i>	R	D		1-12			x	x		x	
<i>Circaetus cinereus</i>		A		4						x	
<i>Accipiter melanoleucos</i>		A		3					x		
<i>Melierax metabates</i>		C		1-4			x	x			
<i>Kaupifalco monogrammicus</i>		A		11					x		
<i>Butastur rufipennis</i>	A	D		11-12,1-6			x	x		x	x
<i>Buteo auguralis</i>	A	D		11-12,1-4			x	x		x	
<i>Lophoaetus occipitalis</i>		A		2-3			x	x			
<i>Polemaetus bellicosus</i>		B		1-2,4				x			
<i>Haliaeetus vocifer</i>	R	D	x	1-12	c						
<i>Milvus migrans</i>	A	E		10-12,1-6		x	x	x		x	x
FALCONIDAE											
<i>Falco chicquera</i>		A		11				x			
<i>Falco ardosiaceus</i>	R	D		1-12				x			x
SAGITTARIIDAE											
<i>Sagittarius serpentarius</i>		C		12,1-6			x				
PHASIANIDAE											
<i>Fringilla schlegelii</i>	R	B		1-12				x			
<i>Fringilla icterorhynchus</i>	R	E	x	1-12			x	x			x
<i>Ptilopachus petrosus</i>	R	D	x	1-12				x		x	
<i>Numida meleagris</i>	R	D	x	1-12	x			x		x	
<i>Guttera edouardi</i>	R	B		1-12					x		
RALLIDAE											
<i>Limnecorax flavirostra</i>		B		1-4	x	x					
<i>Gallinula chloropus</i>		C		2-3		x					
HELIORNITHIDAE											
<i>Podica senegalensis</i>		A		10-11	x						
GRUIDAE											
<i>Balearica pavonina</i>		B		1-3	x	x	x				

	Status	Abundance	Nesting	Month	A	B	Habitat					
					C	D	E	F	G			
OTIDIDAE												
<i>Neotis denhami</i>	A	D		12,1-6		x	x					
<i>Eupodotis melanogaster</i>	A	D		11-12,1-6			x					
JACANIDAE												
<i>Actophilornis africana</i>		D		12,1-6		x						
<i>Microparra capensis</i>		B		2-4		x						
BURHINIDAE												
<i>Burhinus senegalensis</i>	A	D		11-12,1-6	x		x	x				
<i>Burhinus capensis</i>		A		12				x				
CHARADRIIDAE												
<i>Vanellus tectus</i>		A		1-2			x	x				
<i>Vanellus albiceps</i>	A	D	x	10-12,1-6	x							
<i>Vanellus senegallus</i>	A	D		11-12,1-6	x	x	x					
<i>Charadrius hiaticula</i>	P	B		1-2		x						
<i>Charadrius dubius</i>	P	B		1-3		x						
<i>Charadrius forbesi</i>		C		6-8			x				x	
<i>Numenius arquata</i>	P	B		1-2		x						
<i>Tringa nebularia</i>	P	D		1-3	x	x						
<i>Tringa glareola</i>	P	D		1-3	x	x						
<i>Tringa cchropus</i>	P	D		9-12,1-3	x	x						
<i>Tringa hypoleucos</i>	P	D		12,1-3	x	x						
<i>Tringa totanus</i>	P	B		1-2		x						
<i>Gallinago gallinago</i>	P	B		2		x						
<i>Philomachus pugnax</i>	P	C		1-3	x	x						
<i>Himantopus himantopus</i>		D		12-4		x						
<i>Rostratula benghalensis</i>		B		1-4		x	x					
GLAREOLIDAE												
<i>Pluvianus aegyptius</i>	I	A		10-11	x							
LARIDAE												
<i>Sterna leucoptera</i>	P	A		3		x						
PTEROCLIDIDAE												
<i>Pterocles quadricinctus</i>	A	C		11-12,1-3			x					
COLUMBIDAE												
<i>Streptopelia semitorquata</i>	R	D	x	1-12	x		x	x				
<i>Streptopelia vinacea</i>	A	D		9-12,1-5			x	x				
<i>Streptopelia senegalensis</i>	R	D	x	1-12			x				x	
<i>Oena capensis</i>	A	C		12,1-3			x	x		x		
<i>Turtur afer</i>	R	E	x	1-12			x					
<i>Treron australis</i>	I	D		1-12			x	x				
<i>Treron waalia</i>	I	A		12,1			x					
PSITTACIDAE												
<i>Poicephalus meyeri</i>	R	D		1-12			x	x	x			
<i>Psittacula krameri</i>	I	B		11,3-4			x				x	
<i>Agapornis pullaria</i>	R	D	x	1-12			x				x	

	Status	Abundance	Nesting	Month	A	B	Habitat				
							C	D	E	F	G
MUSOPHAGIDAE											
<i>Tauraco leucolophus</i>	R	C		1-12	x						
<i>Musophaga violacea</i>	R	B		1-12	x						
<i>Crinifer zonurus</i>	R	C		1-12	x			x			
CUCULIDAE											
<i>Clamator glandarius</i>		B		11,4				x			
<i>Cuculus solitarius</i>		C		2-7	x					x	
<i>Cuculus canorus</i>		A		11						x	
<i>Chrysococcyx caprius</i>	A	A		10	x						
<i>Centropus monachus</i>		A		10	x						
<i>Centropus senegalensis</i>	R	D		1-12			x	x			
STRIGIDAE											
<i>Tyto alba</i>	R	C		1-12			x	x			
<i>Otus scops</i>	R	D		1-12				x			
<i>Otus leucotis</i>		A		6	x						
<i>Bubo africanus</i>	R	D		1-12			x	x			x
<i>Bubo poensis</i>		A		3-4					x		
<i>Scotopelia peli</i>	R	C		1-12	x						
<i>Glauclidium perlatum</i>	R	C		1-12				x	x		
<i>Ciccaba woodfordii</i>		C		12,1-3						x	
CAPRIMULGIDAE											
<i>Caprimulgus climacurus</i>	A	D		9-12,1-4	x	x	x				
<i>Macrodipteryx longipennis</i>	A	D	x	12,1-4			x	x			
<i>Macrodipteryx vexillarius</i>	A	C		6			x	x			
APODIDAE											
<i>Apus apus</i>	P	B		1-3	x	x					
<i>Apus affinis</i>	R	C		1-12	x	x				x	x
<i>Cypsiurus parvus</i>	R	B	x	1-12	x	x					x
COLIIDAE											
<i>Colius macrourus</i>		A		10-11				x			
TROGONIDAE											
<i>Apaloderma narina</i>		B		1,3-4	x				x		
ALCEDINIDAE											
<i>Ceryle maxima</i>	R	B		1-12	x	x					
<i>Ceryle rudis</i>	R	D		1-12	x						
<i>Alcedo quadribrachys</i>		A		10,6	x						
<i>Alcedo cristata</i>	R	D		1-12	x	x					
<i>Ceyx picta</i>	R	D		1-12	x			x			
<i>Halcyon malimbica</i>		B		6-9	x			x	x		
<i>Halcyon chelicuti</i>	R	C		1-12				x			
<i>Halcyon leucocephala</i>	A	D		11-12,1-6	x			x			
MEROPIDAE											
<i>Merops nubicus</i>		D		10-12,1-6	x		x	x		x	
<i>Merops pusillus</i>	R	D		1-12		x	x				
<i>Merops bullocki</i>	R	E		1-12	x						
<i>Merops hirundineus</i>	A			1,3				x		x	

	Status	Abundance	Nesting	Month	A	B	Habitat						
							C	D	E	F	G		
CORACIIDAE													
<i>Coracias abyssinica</i>	A	D		11-12, 1-6			x	x		x			
<i>Coracias cyanogaster</i>	R	B		1-12			x	x					
<i>Eurystomus glaucurus</i>		B		1, 6-9			x	x					
UPUPIDAE													
<i>Upupa epops</i>		C		11-12, 1-5					x				
<i>Phoeniculus purpureus</i>	A	D		11-12, 1-6		x		x	x				
<i>Phoeniculus aterrimus</i>		D		7-10		x			x				
BUCEROTIDAE													
<i>Tockus nasutus</i>	A	D		10-12, 1-6					x				
<i>Bycanistes fistulator</i>	R	B		1-12						x			
<i>Bycanistes cylindricus</i>	R	C		1-12						x			
<i>Bycanistes subcylindricus</i>	R	C		1-12						x			
<i>Bucorvus abyssinicus</i>	R	C		1-12					x				
CAPITONIDAE													
<i>Lybius dubius</i>		C		12, 1-2					x				
<i>Lybius bidentatus</i>	I	A		2								x	
<i>Lybius leucocephalus</i>	I	A		2								x	
<i>Lybius vieillotii</i>	R	E		1-12					x			x	
<i>Pogoniulus chrysoconus</i>		A		5								x	
INDICATORIDAE													
<i>Indicator indicator</i>	R	D		1-12					x	x			
PICIDAE													
<i>Campethera punctiligera</i>		B		3-4, 6						x		x	
<i>Campethera caillautii</i>		A		3-4						x			
<i>Dendropicos fuscescens</i>	R	C		1-12					x	x			
<i>Dendropicos obsoletus</i>		A		10, 1					x			x	
<i>Mesopicos goertae</i>	R	C		1-12					x	x			
ALAUDIDAE													
<i>Mirafra rufocinnamomea</i>	R	C		1-12					x	x			
HIRUNDINIDAE													
<i>Hirundo rustica</i>	P	A		10					x				
<i>Hirundo smithii</i>	R	E		1-12		x		x			x		
<i>Hirundo aethiopica</i>		A	x	8-12								x	
<i>Hirundo senegalensis</i>	R	B		1-12		x		x	x				
<i>Hirundo abyssinica</i>	R	E		1-12		x		x	x				
<i>Hirundo griseopyga</i>	A	C		6-9		x		x					
<i>Delichon urbica</i>	P	A		11-12				x					
<i>Psallidoprocne pristoptera</i>		D		3-10		x		x					
MOTACILLIDAE													
<i>Motacilla flava</i>	P	D		10-12, 1-3			x	x					
<i>Motacilla alba</i>	R	D		1-12		x						x	
<i>Macronyx croceus</i>	R	B		1-12				x					
LANIIDAE													
<i>Prionops plumata</i>		A		8-9				x	x				
<i>Dryoscopus gambensis</i>		A		10		x							
<i>Dryoscopus senegalensis</i>	R	C		1-12					x				

	Status	Abundance	Nesting	Month	Habitat						
					A	B	C	D	E	F	G
<i>Tchagra minuta</i>	R	C		1-12			x				
<i>Tchagra senegal</i>	R	D		1-12				x			x
<i>Laniarius ferrugineus</i>	R	D		1-12				x	x		
<i>Laniarius barbarus</i>	R	D		1-12	x				x		
<i>Malaconotus sulfureopectus</i>		B		3-4					x		x
<i>Malaconotus multicolor</i>		A		3-4					x		
<i>Malaconotus blanchoti</i>	A	B		10,3-4					x		x
<i>Lanius senator</i>	P	B		1-3			x				
ORIOLIDAE											
<i>Oriolus oriolus</i>	P	D		10-12, 1-4,5	x			x			
<i>Oriolus auratus</i>	A	C		12,1-3	x			x			
DICRURIDAE											
<i>Dicrurus adsimilis</i>	R	C		1-12				x			
STURNIDAE											
<i>Lamprolornis purpurea</i>	R	D		1-12	x			x			x
<i>Cinnyricinclus leucogaster</i>	A	B		3-4	x			x			x
<i>Buphagus africanus</i>	R	C		1-12		x		x			
CORVIDAE											
<i>Corvus albus</i>	R	C		1-12							x
CAMPEPHAGIDAE											
<i>Coracina pectoralis</i>		B		6,8-9				x			
<i>Campephaga phoenicea</i>		B		9,2,4				x			x
PYCNONOTIDAE											
<i>Pycnonotus barbatus tricolor</i>	R	E		1-12	x			x	x		x
MUSCICAPIDAE											
<i>Saxicola rubetra</i>	P	B		1-4			x	x			
<i>Oenanthe oenanthe</i>	P	C		12,1-2			x			x	
<i>Oenanthe bottae</i>	A	B		1-4			x			x	
<i>Cercomela familiaris</i>	R	D		1-12				x		x	x
<i>Myrmecocichla nigra</i>	R	D		1-12			x				x
<i>Myrmecocichla coronata</i>	R	C		1-12						x	
<i>Cossypha niveicapilla</i>	R	D		1-12	x			x	x		
<i>Turdus pelios</i>	R	B		1-12	x						
<i>Turdoides plebejus</i>		A		2-3	x						
<i>Cisticola erythropus</i>		B		1-3		x	x				
<i>Cisticola lateralis</i>		B	x	8-10				x			
<i>Cisticola aberrans</i>	R	B		1-12						x	
<i>Cisticola galactotes</i>		B		1-3			x				
<i>Cisticola juncidis</i>		A		10		x	x				
<i>Prinia erythroptera</i>		A		9				x			
<i>Hypergerus atriceps</i>		A		1,4					x		
<i>Camaropectera brachyura</i>		A		8-9					x		
<i>Eremomela pusilla canescens</i>	R	D		1-12				x	x		x
<i>Sylvietta brachyura</i>	R	D		1-12				x			x
<i>Muscicapa aquatica</i>	R	D		1-12	x						
<i>Melaenornis edolioides</i>	R	C		1-12	x	x					
<i>Hyliota flavigaster</i>	R	B		1-12				x			
<i>Batis orientalis</i>		A		3-4	x						

	Status	Abundance	Nesting	Month	A	B	C	D	E	F	G
<i>Platysteira cyanea</i>	R	D		1-12	x				x		
<i>Trochocercus longicauda</i>	R	C		1-12	x				x		
<i>Terpsiphone rufiventer</i>	R	C		1-12	x				x		x
<i>Terpsiphone viridis</i>	R	D		1-12	x			x	x		x
PARIDAE											
<i>Parus leucomelas</i>	R	D		1-12				x			x
NECTARINIIDAE											
<i>Anthreptes longuemarei</i>		A		7							x
<i>Anthreptes platyura</i>	A	C		11-12, 1-4				x			x
<i>Nectarinia verticalis</i>		A		2-3	x						x
<i>Nectarinia senegalensis</i>	R	D		1-12				x			x
<i>Nectarinia venustus</i>		A		2				x			
<i>Nectarinia chloropygia</i>		A		2-3				x			x
<i>Nectarinia pulchella</i>	R	D		1-12	x			x			x
ZOSTEROPIDAE											
<i>Zosterops senegalensis</i>		D		8-10							x
EMBERIZIDAE											
<i>Emberiza cabanisi</i>		B		1-3			x	x			
<i>Emberiza forbesi</i>		B		8-9, 3				x			x
<i>Emberiza tahapisi</i>	R	D		1-12						x	
FRINGILLIDAE											
<i>Serinus mozambicus</i>	R	C		1-12				x			x
PLOCEIDAE											
<i>Ploceus luteolus</i>	R	D	x	1-12	x						
<i>Ploceus velatus</i>	I	A	x	8-11							x
<i>Ploceus cucullatus</i>	R	E	x	1-12	x						x
<i>Ploceus ocularis</i>		A		2, 4	x						
<i>Quelea erythrops</i>	A	C	x	7-9		x	x				x
<i>Euplectes afer</i>	R	C	x	1-12	x	x					x
<i>Euplectes ardens</i>		B		8-10			x				x
<i>Euplectes hordeaceus</i>	R	D	x	1-12			x	x			x
<i>Euplectes macrourus</i>	R	D	x	1-12		x	x				x
<i>Euplectes orix</i>	R	E	x	1-12		x	x	x			x
<i>Plocepasser superciliosus</i>		A		9				x			
<i>Passer griseus</i>	R	B		1-12							x
<i>Vidua macroura</i>	R	C		1-12		x					x
<i>Vidua chalybeata</i>		A		10	x						x
<i>Vidua orientalis</i>	R	C		1-12				x			x
<i>Nesocharis capistrata</i>	R	B	x	1-12				x		x	
<i>Pytilia hypogrammica</i>		A		8-9	x			x			
<i>Estrilda melpoda</i>	R	C		1-12		x		x			
<i>Estrilda nonnula</i>		A		8-9							x
<i>Estrilda troglodytes</i>		B		8-9, 2-3		x	x				x
<i>Estrilda astrild</i>		B		2, 8		x	x	x			
<i>Estrilda bengala</i>	R	E		1-12	x	x		x			x
<i>Estrilda larvata</i>	R	D		1-12				x	x		x
<i>Lagonosticta rufopicta</i>		A		8, 10	x						x
<i>Lagonosticta senegala</i>		A		1-2	x			x			
<i>Lagonosticta rara</i>	R	D		1-12				x	x		x
<i>Amandava subflava</i>		A		2-3		x	x				
<i>Lonchura cucullata</i>	R	D		1-12		x		x			x