

The conservation status and vocalizations of threatened birds from the scarp forests of the Western Angola Endemic Bird Area

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Summary

The western Angola Endemic Bird Area has 14 range-restricted species. Little is known about the conservation status of the region's birds due to the civil war that has raged in Angola for the last 27 years. The greatest diversity of restricted-range species is found in Cuanza Sul province, and given the uncertainty about their current status, many of these species are listed as Threatened. In this paper we report the first significant ornithological visits to the Gabela region since 1974. We visited an extensive scarp forest patch at Kumbira Primero, near Conda, as well as smaller forest areas along the Sumbe–Gabela and Sumbe–Seles roads. Most of the threatened species were relocated, including several species not seen since the 1970s. Gabela Bush-shrike *Laniarius amboimensis* was common and Monteiro's Bush-shrike *Malaconotus monteiri* was fairly common in degraded secondary forest, old coffee plantations and primary forest at Kumbira. Pulitzer's Longbill *Macrosphenus pulitzeri* was fairly common at higher elevations at Kumbira as well as in the dense understorey of secondary forest west of Seles. Gabela Akalat *Sheppardia gabela* was less common, with only three birds found at Kumbira and one near Seles, but may have been overlooked. Only one group of eight Gabela Helmet-shrike *Prionops gabela* was recorded, in open woodland at the base of the scarp between Kumbira and Seles. Angola Cave-chat *Xenocopsychus ansorgei* was found on the rocky slopes above the forest at Kumbira. We describe the first sound recordings for five threatened species, which will help future systematic surveys of the region's forests. Vocal evidence confirms the close relationship between Gabela Bush-shrike and Lühder's Bush-shrike *L. luehderi*. The most pressing need is to assess the extent of remaining forests, map the distribution of key species of conservation concern, and then draft a strategy to conserve key habitat blocks.

Introduction

Western Angola is one of 19 Endemic Bird Areas (EBAs) in continental Africa, with 14 range-restricted species (Hall 1960, Collar and Stuart 1985, Bibby *et al.* 1992, Dean 2001). In terms of current conservation status, it is also one of the least well known of Africa's EBAs. Angola suffered from a protracted civil war from 1974, when the Portuguese pulled out of the country, until 2002, when Jonas Savimbi, UNITA's leader, was killed. During this time, virtually no ornithological research took place in Angola (Dean 2000). Indeed, until recently, prospects for further work in the country were considered bleak. Llewellyn Grimes, writing the foreword to Dean (2000), suggested that Dean's checklist

would be “the best source of information on Angolan birds ... for the next few decades because of the continuing political instability”. Currently five of the country’s endemic or range-restricted species are considered Endangered, three Vulnerable, three Near Threatened and four Data Deficient (BirdLife International 2000). Although much forest loss occurred due to the establishment of coffee plantations prior to the civil war, for many of these species the threat status ascribed to them is based on uncertain data. Information on their current status is thus a priority (BirdLife International 2000).

The central Angolan scarp and adjacent highlands form the core of the Western Angolan EBA (Dean 2001). The forests around Gabela in western Cuanza Sul are especially important, because they are home to three restricted-range species that are not known to occur outside the province: Gabela Akalat *Sheppardia gabela*, Gabela Bush-shrike *Laniarius amboimensis* and Gabela Helmet-shrike *Prionops gabela*. Hawkins (1993) made a brief visit to the Angolan scarp forest near Gabela during a ceasefire in 1992, but observed only one of the key endemic bird species, Gabela Bush-shrike. He also was pessimistic about the state of the forests in the region, reporting widespread clearing for subsistence agriculture.

In this paper, we report the relative abundance of key species of conservation concern in small forest patches near Conda and Seles in western Cuanza Sul. We also describe the calls of key species, which will facilitate future surveys. The description of calls is listed as a specific target for their conservation (Hawkins 1993, BirdLife International 2000).

Study area and methods

Angola lies on the west coast of central Africa. The civil war forced many rural people to move to towns and cities, and many agricultural areas were abandoned. Almost half the population of some 10 million people live in the capital, Luanda. However, with the end of the civil war, the country is rebuilding its economy and infrastructure. Cuanza Sul province lies in the centre of the country, and extends from the coast inland over the marginal mountains to the old plateau. The coastal plain is semi-arid, but moving inland rainfall increases markedly, with scarp forests on the slopes of the marginal mountains (Dean 2000).

We visited the Gabela district of Cuanza Sul on 2–8 February (I. S.), 22–27 February (IS and PGR), 13–17 October 2003 (CC, MSLM and CNS) and 2–5 November 2003 (RC). Most time was spent in a large patch of primary scarp forest, adjacent farm bush and regenerating coffee forest near the village of Kumbira Primeiro, 7 km south-west of Conda (11°07'S, 14°20'E). Most of the coffee plantations in the area had been abandoned for the duration of the war, and there was significant recovery of the understorey. We estimated the remaining patch of forest, consisting of old coffee plantations and of previously logged primary forest (selectively logged in about 1967 according to one local source), to have a core approximately 2 km wide and at least 6 km long, running south-south-west along the western slope of Njelo mountain.

The forest was visited on 14 days, and all birds seen or heard were recorded. We also visited the grassland and open savanna around Conda, another fairly

large forest block on the main Sumbe–Gabela road (10°56'S, 14°20'E), as well as small forest fragments along the Sumbe–Seles road around Bango village (11°21'S, 14°13'E). In October 2003 an attempt was made to reach Mombolo (11°55'S, 14°51'E) and Mt Moco (12°25'S, 15°11'E), but this was abandoned at Atome (11°53'S, 14°34'E) due to reports that the roads further south still contained landmines. Landmines were also reported to be fairly common away from roads in the Mombolo area. However, R. C. visited Mt Moco, Huambo province, on 9–10 November 2003, via the Lobito–Huambo road. He camped in well-developed miombo *Brachystegia* woodland at c. 1,750 m (12°21.3'S, 15°10.5'E), whence it was an easy walk to the plateau at 2,100 m (12°23.8'S, 15°10.4'E). RC also visited Tundavala, near Lubango, Huila province, on 30–31 October 2003.

Altitude was estimated using a hand-held GPS as well as an aneroid altimeter. Recordings of bird calls were made with Sennheiser MKE-300 and ME-67 directional microphones and a Sony TCM 459V tape recorder or minidisk recorders. Comparisons with related species were made using recordings from Chappuis (2000). Sonograms were produced using Canary (Charif *et al.* 1995) on an iMac computer. Copies of recordings have been sent to the Wildlife Section of the British Library Sound Archive as well as the Cornell Sound Library. Threat status categories are as listed by BirdLife International (2000).

Results

A total of 232 bird species were recorded in the scarp forests and adjacent grassland and woodland, of which 110 were at least partly dependent on forest (Appendix). Most species were observed in and around Kumbira ($n = 147$; 98 forest species). Fewer species were recorded at the other localities, and although less time was spent at these sites they probably support fewer species because they are much smaller forest patches. Only a few hours was spent in the grassland and forest habitat at Mt Moco, and it is possible that some key species were overlooked, including Swierstra's Francolin *Pternistes swierstrai*.

Birds of the scarp forests of the Gabela region have been collected fairly extensively (Dean 2000), yet there were a few surprises in the avifauna. We recorded minor range extensions for Gabon Coucal *Centropus anelli*, Slender-billed Greenbul *Andropadus gracilirostris*, Red-tailed Bristlebill *Bleda syndactylus* and the drab central African race of Hairy-breasted Barbet *Tricholaema hirsuta angolensis*, all formerly known only as far south as Cuanza Norte (Dean 2000). The coucal and, to a lesser extent, bristlebill are skulking in behaviour, and the other two are canopy-dwelling species that occur at low densities and were probably easy to overlook. In the grasslands surrounding the forest we recorded the first Compact Weavers *Pachyphantus superciliosus* for Cuanza Sul. This species is known from Cuanza Norte, although there is an old record from Caconda, Huila, well to the south, which is generally considered to be erroneous (Dean 2000). Other interesting sightings include Scarce Swift *Schoutedenapus myioptilus*, which was previously known from Angola from only a single specimen collect at Mt Moco (12°25'S, 15°11'E).

All species of conservation concern were found in the Conda–Kumbira area, with Gabela Akalat, Pulitzer's Longbill *Macrosphenus pulitzeri* and White-fronted

Wattle-eye *Platysteira albifrons* also found in secondary forest around Bango, west of Seles. Of the 14 species characterizing the Western Angola EBA, only four were not recorded in the region: Swierstra's Francolin, Braun's Bush-shrike *Laniarius brauni*, Cinderella Waxbill *Estrilda thomensis* and Golden-backed Bishop *Euplectes aureus*. Golden-backed Bishop was common on the coastal plain west of the survey area.

Gabela Bush-shrike (Endangered) was common in thickets in secondary forest and primary forest at Kumbira, and was also heard in forest near the junction with the Sumbe–Gabela road. Monteiro's Bush-shrike *Malaconotus monteiri* (Data Deficient) was fairly common, calling from the canopy of degraded secondary forest and primary forest. At least three singing males were observed around Kumbira village, often calling from *Grevillea* trees planted to shade coffee plantations, and another pair was found closer to Conda. Pulitzer's Longbill (Endangered) was common in the dense understorey of secondary forest and at the forest edge in the Bango region west of Seles, as well as in the upper reaches of Kumbira forest. After locating the first calling bird near Bango, we used playback to locate at least six other pairs here by stopping at suitable-looking habitat along 5 km of road between 870 and 1,020 m elevation. Most pairs initially responded aggressively to playback, calling vigorously. Gabela Akalat was less common, with three birds found in forest at Kumbira, including one in regenerating coffee and one in secondary forest at Bango. Angola Cave-chat *Xenocopsychus ansorgei* (Near Threatened) was found on the rocky slopes above the forest at Kumbira, and was common at Tundavala. Grey-striped Francolin *Pternistes griseostriatus* (Vulnerable) was heard calling from the forest edge at Kumbira. Gabela Helmet-shrike (Endangered) was not observed in the forest at Kumbira, but a flock of eight birds was encountered in more open woodland 10 km beyond Kumbira on the road leading to the foot of the escarpment. The habitat in which this species occurred is widespread, especially at lower elevations. White-fronted Wattle-eye (Near Threatened) was recorded in secondary growth near Conda, Bango and in coastal *Croton* thicket along the Longa River (10°12'S, 13°31'E).

In addition to the threatened species, several endemic species and subspecies were observed: Red-crested Turaco *Tauraco erythrolophus* was common in all forest patches; Red-backed Mousebird *Colius castanotus* was fairly common in farmbush and open woodland; Naked-faced Barbet *Gymnobucco calvus vernayi* occurred in secondary forest and farmbush, nesting in *Grevillea* trees at Kumbira; Brown-chested Alethe *Alethe poliocephala hallae* was present in small numbers in dense forest and old coffee plantations at Kumbira and along the Gabela road; Forest Scrub-robin *Cercotrichas leucosticta reichenowi* was common in primary and secondary forest understorey; Hartert's Camaroptera *Camaroptera [brachyura] harterti* was abundant throughout; Dusky Tit *Parus funereus gabela* was fairly common in bird parties at Kumbira; Angola Slaty Flycatcher *Dioptrornis brunneus* was found on the upper margin of Kumbira forest and in small forest patches at Tundavala; Dusky Twin-spot *Euschistospiza c. cinereovinacea* was found in scrubby grassland south of Conda; and Pale-billed Firefinch *Lagonosticta [rubricata] landanae* was common along forest margins and in farmbush. Near-endemics to Angola included Pale Olive Greenbul *Phyllastrephus fulviventris* (scarce in

secondary growth at Kumbira), Bubbling Cisticola *Cisticola bulliens* (common in virtually all habitats except primary forest), Angola Batis *Batis minulla* (fairly common in primary forest and mature secondary growth) and Ludwig's Double-collared Sunbird *Cinnyris ludovicensis* (fairly common at the upper edge of the forest).

Vocalizations

Among the threatened species, the calls of Gabela Akalat, Pulitzer's Longbill, White-fronted Wattle-eye and Gabela Bush-shrike were previously unknown (Keith *et al.* 1992, Urban *et al.* 1997, Fry *et al.* 2000). BirdLife International (2000) reported that both Gabela and Braun's Bush-shrike *L. [l.] brauni* utter throaty "whaark" and "whook" calls, similar to that of Lühder's Bush-shrike *L. luehderi*. This presumably arises from Chapin's (1954, p. 51) comment, apparently based on observations by R. H. Braun, that Braun's Bush-shrike *L. [l.] brauni* "has a voice much less pleasing than that of *L. ferrugineus*, and similar no doubt to that of nominate *luehderi*" (R. J. Dowsett *in litt.*). There appears to be no description of Gabela Bush-shrike calls.

Gabela Bush-shrikes typically were located by their deep, guttural call, repeated every 3–4 seconds (Figure 1A). In most cases this was divided into two parts "wor-worrrk", but occasionally had only a single element "worrrk". They also made other calls spontaneously, but these calls were mostly heard in response to playback. In three trials, pairs responded to playback in the same sequence. Repeated playback of the rattling call soon caused the birds to switch to a deep, fast-whistled boubou call "whioo whioo", repeated every 1.5–1.6 seconds (Figure 1B). Further playback resulted in a dry rattle "ker-r-r-r-r-r-r-r-r" or a harsh "tsik ksh-ksh-kshk" (Figure 1C, D). It was hard to discern which of these calls were duets, but it is likely that at least some of the last two call types were duetted. Some of the dry rattle calls were distinctly longer (1.3–1.4 seconds as opposed to 0.7–0.8 seconds), with two components (Figure 1C). The harsh call also appeared to be a duet, with the initial "tsik" and "ksh-ksh-kshk" given by different birds. These calls were similar in general structure to recordings of Lühder's Bush-shrike from Gabon and Rwanda (Thorpe 1972, Dowsett-Lemaire 1990, Chappuis 2000). Together with Braun's Bush-shrike *L. brauni* of Cuanza Norte, Gabela Bush-shrike is often considered a well-marked subspecies of Lühder's Bush-shrike (e.g. Dean 2000, but see BirdLife International 2000, Fry *et al.* 2000).

The first Pulitzer's Longbill was located by its repetitive "chew-it" call, repeated every 3–4 seconds (Figure 2A). When this call was taped and played back, both members of the pair responded aggressively, emerging from the dense vegetation, with apparently only one bird giving a higher-pitched and more urgent "tit chi-wut", repeated every 1.5–2 seconds (Figure 2B). There was little variation among pairs. Pulitzer's Longbill is usually placed in a superspecies with Grey Longbill *M. concolor* and Kretschmer's Longbill *M. kretschmeri* (Hall and Moreau 1970), but Pulitzer's Longbill song appears to be much simpler and perhaps closer to that of Kretschmer's Longbill (Urban *et al.* 1997).

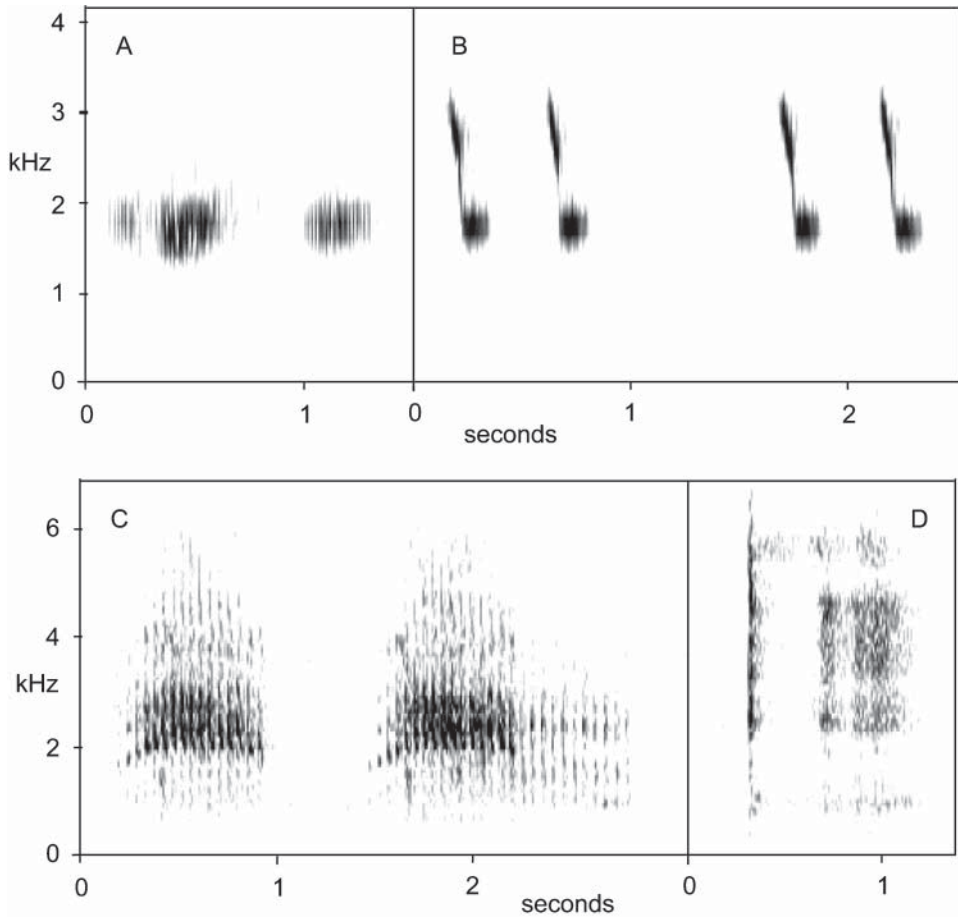


Figure 1. Sonograms of Gabela Bush-shrike calls. (A) Typical “wor-worrk” and “worrk” calls from two different birds. (B) Two iterations of the “boubou” call. (C) Two varieties of dry rattle “ker-r-r-r-r-r”, with the latter being a possible duet. (D) Harsh “tsik ksh-ksh-kshk” call. Intervals between successive calls have been cut in (A) and (C). All recordings from Kumbira forest, February 2003 (PGR).

Three pairs of White-fronted Wattle-eyes were recorded. Males uttered a burry, two-note call “phoo phee” (Figure 3A) as well as whistled calls similar to those of Brown-throated Wattle-eye *Platysteira cyanaea* (Figure 3B). The male was sometimes accompanied by the female, who followed the male with a softer version of the male’s song after roughly 0.5 seconds. White-fronted Wattle-eye is placed in a superspecies with Brown-throated, Black-throated *P. peltata* and Banded *P. laticincta* Wattle-eyes (Hall and Moreau 1970, Urban *et al.* 1997). Vocally, it is similar to the melodic song of Brown-throated Wattle-eye, which also duets, whereas Black-throated Wattle-eye has harsher calls and does not duet (Urban *et al.* 1997). Both White-fronted and Brown-throated Wattle-eyes share a white wing stripe, and are perhaps best treated as a superspecies distinct from the *P. peltata-laticincta* complex, as suggested by Hall (1960).

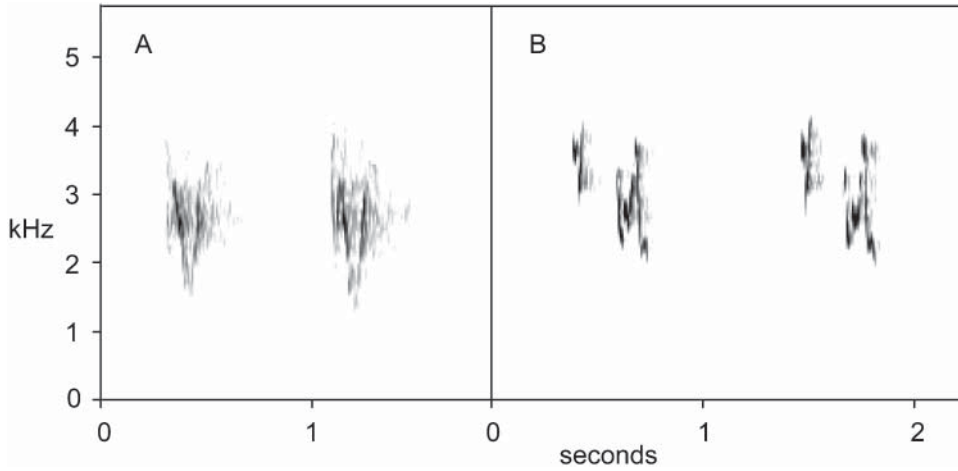


Figure 2. Sonograms of the song of Pulitzer’s Longbill. (A) The standard advertising call “chew-it”. (B) The faster, aggressive “tit chi-wut” given in response to playback. Intervals between successive calls have been cut in both cases. Both recorded near Bango, February 2003 (PGR).

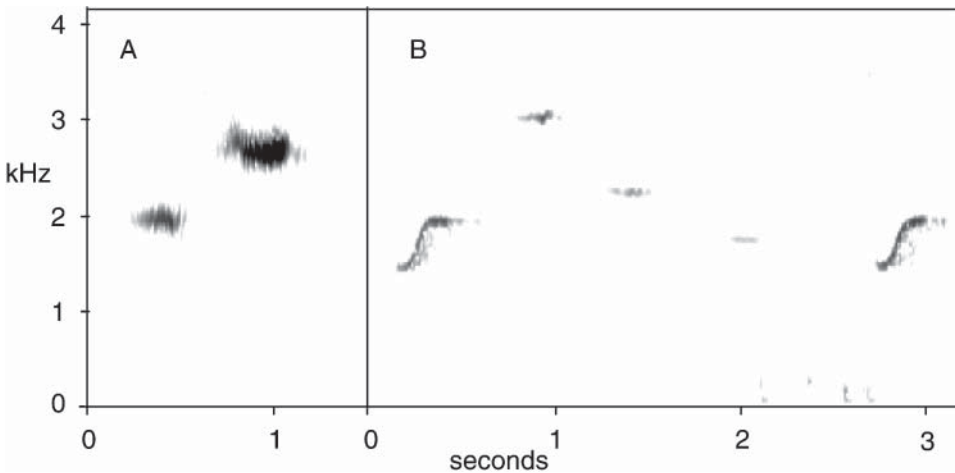


Figure 3. Sonograms of the song of White-fronted Wattle-eye. (A) Male’s burry “phoo phee” song (recorded by P. G. R. near Bango, February 2003). (B) More melodic, whistled song similar to Brown-throated Wattle-eye (recorded by CC, Longa river, October 2003).

One Gabela Akalat was located by a soft, deep, rather mournful “tseeo tseeoo tseeoo tseeoo” call that lasted about 3 seconds (Figure 4). Although the bird was not actually observed to utter this call, it was the only place this call was heard, and led to locating the bird. The simple structure of the song is typical of *Sheppardia*, being similar to recordings of Lowland *S. cyornithopsis* and Equatorial Akalats *S. aequatorialis* (Dowsett-Lemaire 1997); more work is needed to confirm the repertoire of this species.

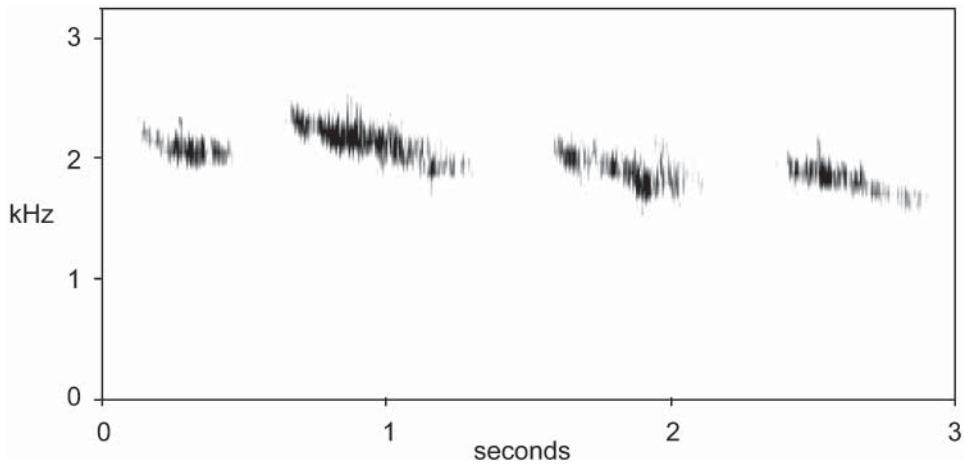


Figure 4. Sonogram of the putative song of Gabela Akalat (recorded by PGR at Kumbira forest, February 2003).

The song of Angola Cave-chat has been described but not recorded (Braun 1956). We recorded one bird calling from a rock outcrop above the forest edge at Kumbira. Only one member of the pair, presumably the male, was observed to call, giving an ethereal, echoing call lasting 2 seconds, that increased in strength then faded away (Figure 5). The bird tended to call in *c.* 5 min bouts, during which it perched prominently on the exposed pinnacle of a boulder. Song bouts were repeated approximately every 30 min.

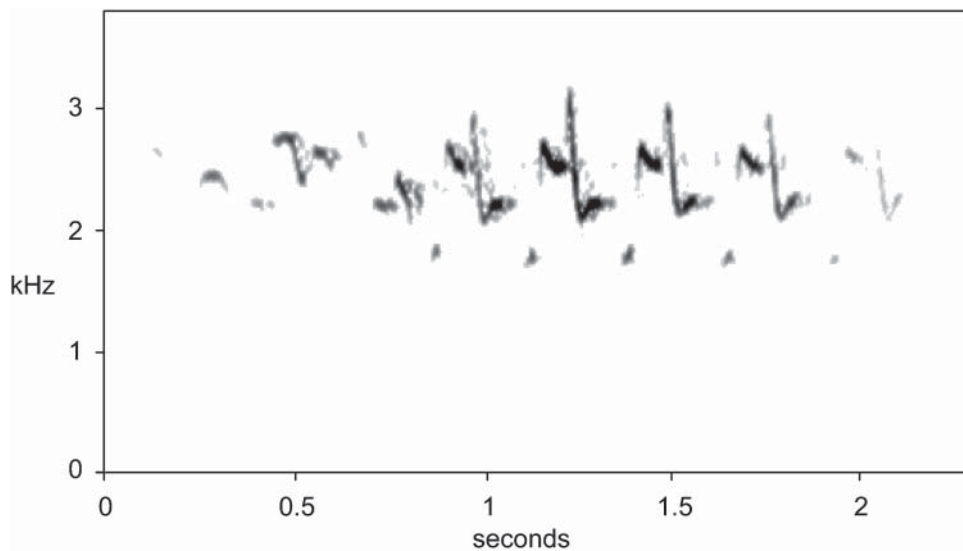


Figure 5. Sonogram of Angola Cave-Chat song (recorded by CC above Kumbira forest, October 2003).

Discussion

Although our observations are limited, they provide a valuable update on the status of threatened, range-restricted species in western Cuanza Sul, several of which have not been seen since 1974 (Collar and Stuart 1985, BirdLife International 2000). With the possible exception of Gabela Akalat, all species are fairly common within at least some of the forest patches visited. It is premature to revise the levels of threat facing different species, but for species such as Gabela Bush-shrike and Pulitzer's Longbill, which are tolerant of fairly degraded vegetation, current threat status listings may be overly pessimistic. Perhaps our most surprising finding was the relative abundance of Monteiro's Bush-shrike, which was previously known from only a handful of specimens (Dean 2000). This species is effectively an Angolan endemic; the specimen and sight record from south-east Cameroon are likely to be yellow-morphs of Green-breasted Bush-shrike *Malaconotus gladiator* (Stuart and Jensen 1986, Williams 1998, Fotso *et al.* 2001). It is possible that previous workers did not recognize this species' song, which closely resembles that of Grey-headed Bush-shrike *M. blanchoti*. Caution is needed when identifying calling birds, however, because Grey-headed Bush-shrike has been collected in the Gabela area (Dean 2000) (although we did not encounter it).

Given that most species currently listed as threatened are relatively common in remaining forest patches, the key questions are how much of the original forest remains, and what the current rate of forest loss is. Our visits were brief, and restricted to a few sites, but we could gain some insights by talking to local farmers. Rui Araujo grew up at Kumbira, and was starting a commercial farming enterprise based in Conda. He reported that the forest extent at Kumbira has decreased considerably over the last 40 years, with the most rapid loss due to wood-cutting in the years immediately after independence. However, there had been little change in forest extent in the last 10 years. With regards to other forests in the area, he reported that a forest of similar extent to the Kumbira patch remains to the west of Conda, but that another equally large patch had disappeared completely.

With the cessation of hostilities in the country, it is likely that pressure on the forest will again increase as agricultural demand grows. At present, fresh produce commands high prices in Luanda, even for locally abundant produce such as bananas and pineapples. The main barrier to produce reaching markets in Luanda is the poor road infrastructure. Currently the Sumbe-Gabela road is badly pot-holed, and reduced to stretches of mud in places on the scarp. However, this road is reported to be a priority for reconstruction, which will place further development pressure on the area. Hawkins (1993) considered growth in subsistence agriculture to pose perhaps the gravest threat to the forest birds, but the re-establishment of the coffee industry also would have serious impacts given the abundance of threatened species in old coffee plantations. Re-establishing coffee plantations would have particularly severe impacts if current varieties that require shade were replaced by sun-tolerant varieties.

Further south, the presence of large numbers of landmines towards the former UNITA strongholds of Atome and Huambo are likely to limit agricultural impacts. However, it would be rash to rely on these areas to conserve the

region's birds without confirming their continued presence there. The area around Mt Moco is apparently largely free of mines. Although it currently supports large areas of miombo woodland, this was being encroached by subsistence agriculture. Similarly, most of the miombo woodland at Tundavala has been removed for firewood, timber and charcoal burning, with only the woodland at the picnic site remaining. During our visit in October 2003, wood-cutters were active in the small remnant forest patches.

The immediate need is to assess the extent of remaining forests and determine the distribution and abundance of key species of conservation concern. Once this is done, a strategy will have to be developed and implemented to conserve key habitat blocks. The vocalizations reported here will prove useful in future surveys for threatened species within the remaining scarp forests.

Acknowledgements

PGR and IS are grateful to Jorge Jovir, MITC Investments, for inviting us to conduct this study, and funding our visit to Angola. João Guerra made sure we negotiated the roads and politics of Cuanza Sul safely, and provided many interesting insights into life in Angola. Rui Araujo graciously hosted our stay in Conda, and shared his recollections of growing up in Kumbira. Pedro vaz Pinto helped arrange access to the forest at Kumbira. CC, CS and MSLM thank Henk Burger and John Jones from Wings over Africa and Rio Longa Lodge for their excellent logistical support and good company. RC's visit was made possible by Mitsubishi South Africa.

Appendix. Forest birds observed in scarp forest at selected sites in western Angola

*Denotes range-restricted species. See text for description of sites; species order and names adapted from Dean (2000).

Species		Kumbira	Bango	Mt Moco	Tundavala
African Goshawk	<i>Accipiter tachiro</i>	+			
Black Sparrowhawk	<i>Accipiter melanoleucos</i>		+		
Lizard Buzzard	<i>Kaupifalco monogrammicus</i>	+		+	+
*Grey-striped Francolin	<i>Pternistes griseostriatus</i>	+			
Red-necked Spurfowl	<i>Pternistes afer</i>	+		+	+
African Green-Pigeon	<i>Treron calva</i>	+			+
Tambourine Dove	<i>Turtur tympanistria</i>	+	+		
Blue-spotted Wood-Dove	<i>Turtur afer</i>	+	+		
Schalow's Turaco	<i>Tauraco schalowi</i>				+
*Red-crested Turaco	<i>Tauraco erythrolophus</i>	+	+	+	
Red-chested Cuckoo	<i>Cuculus solitarius</i>			+	
Black Cuckoo	<i>Cuculus clamosus</i>	+			
Emerald Cuckoo	<i>Chrysococcyx cupreus</i>	+			
Klaas's Cuckoo	<i>Chrysococcyx klaas</i>	+	+	+	+
Olive Long-tailed Cuckoo	<i>Cercococcyx olivinus</i>	+			
Blue Malkoha (Yellowbill)	<i>Ceuthmochares aereus</i>	+			
Gabon Coucal	<i>Centropus anelli</i>	+			

Appendix. Continued

Species		Kumbira	Bango	Mt Moco	Tundavala
Blue-headed Coucal	<i>Centropus monachus</i>	+			
African Wood-owl	<i>Strix woodfordii</i>	+			
*Red-backed Mousebird	<i>Colius castanotus</i>	+	+	+	+
Narina Trogon	<i>Apaloderma narina</i>	+			
Trumpeter Hornbill	<i>Ceratogymna bucinator</i>	+			
Naked-faced Barbet	<i>Gymnobucco calvus</i>	+			
Golden-rumped Tinkerbird	<i>Pogoniulus bilineatus</i>	+	+		
Hairy-breasted Barbet	<i>Tricholaema hirsuta</i>	+			
Black-backed Barbet	<i>Lybius minor</i>	+			
Yellow-billed Barbet	<i>Trachyphonus purpuratus</i>	+			
Lesser Honeyguide	<i>Indicator minor</i>	+			
Buff-spotted Woodpecker	<i>Campethera nivosa</i>	+			
Brown-eared Woodpecker	<i>Campethera caroli</i>	+			
Olive Woodpecker	<i>Dendropicos griseocephalus</i>	+			+
African Broadbill	<i>Smithornis capensis</i>	+			
Black Saw-wing	<i>Psalidoprocne pristoptera</i>	+	+	+	+
Petit's Cuckoo-shrike	<i>Campephaga petiti</i>	+	+		
Slender-billed Greenbul	<i>Andropadus gracilirostris</i>	+			
Yellow-whiskered Greenbul	<i>Andropadus latirostris</i>	+			
Yellow-necked Greenbul	<i>Chlorocichla falkensteini</i>	+	+		
*Pale Olive Greenbul	<i>Phyllastrephus fulvoventris</i>	+			
Red-tailed Bristlebill	<i>Bleda syndactylus</i>				
Yellow-throated Nicator	<i>Nicator vireo</i>	+	+		
*Gabela Akalat	<i>Sheppardia gabela</i>	+	+		
White-browed Robin-chat	<i>Cossypha heuglini</i>	+	+	+	+
Red-capped Robin-chat	<i>Cossypha natalensis</i>	+	+		
*Angola Cave-chat	<i>Xenocopsychus ansorgei</i>	+			+
Brown-chested Alethe	<i>Alethe poliocephala</i>	+			
Rufous Flycatcher-thrush	<i>Neocossyphus fraseri</i>	+			
Forest Scrub-robin	<i>Cercotrichas leucosticta</i>	+	+		
African Thrush	<i>Turdus pelios</i>	+	+	+	
*Bubbling Cisticola	<i>Cisticola bulliens</i>	+	+		
Masked Apalis	<i>Apalis binotata</i>	+	+		
Black-throated Apalis	<i>Apalis jacksoni</i>	+	+		
Buff-throated Apalis	<i>Apalis rufogularis</i>	+			
Grey Apalis	<i>Apalis cinerea</i>	+	+		
*Hartert's Camaroptera	<i>Camaroptera harterti</i>	+	+		
*Pulitzer's Longbill	<i>Macrosphenus pulitzeri</i>	+	+		
Green Crombec	<i>Sylvietta virens</i>	+	+		
Yellow-bellied Hyliota	<i>Hyliota flavigaster</i>	+			+
Southern Hyliota	<i>Hyliota australis</i>	+	+		
Green Hylia	<i>Hylia prasina</i>	+			
*Angola Slaty Flycatcher	<i>Dioptornis brunneus</i>	+			+
African Dusky Flycatcher	<i>Muscicapa adusta</i>				+
Ashy Flycatcher	<i>Muscicapa caerulescens</i>	+		+	
African Blue Flycatcher	<i>Elminia longicauda</i>	+	+		
Blue-headed Crested Flycatcher	<i>Trochocercus nitens</i>	+			
African Paradise Flycatcher	<i>Terpsiphone viridis</i>	+	+	+	+
Rufous-vented Paradise Flycatcher	<i>Terpsiphone rufocinerea</i>	+			
Yellow-bellied Wattle-eye	<i>Dyaphorophya concreta</i>	+			

Appendix. Continued

Species		Kumbira	Bango	Mt Moco	Tundavala
*White-fronted Wattle-eye	<i>Platysteira albifrons</i>		+		
Black-throated Wattle-eye	<i>Platysteira peltata</i>	+			
Angola Batis	<i>Batis minulla</i>	+	+		
Rockrunner	<i>Achaetops damarensis</i>	+			
Brown Illadopsis	<i>Illadopsis fulvescens</i>	+			
Arrow-marked Babbler	<i>Turdoides jardinei</i>			+	+
Dusky Tit	<i>Parus funereus</i>	+			
Collared Sunbird	<i>Anthreptes collaris</i>	+			
Olive Sunbird	<i>Cyanomitra olivacea</i>	+	+	+	
Green-headed Sunbird	<i>Cyanomitra verticalis</i>	+			
Scarlet-chested Sunbird	<i>Chalcomitra senegalensis</i>				+
Carmelite Sunbird	<i>Chalcomitra fuliginosa</i>	+			
Amethyst (Black) Sunbird	<i>Chalcomitra amethystina</i>	+			+
Bronze Sunbird	<i>Nectarinia kilimensis</i>			+	
Olive-bellied Sunbird	<i>Cinnyris chloropygia</i>	+			
Superb Sunbird	<i>Cinnyris superba</i>	+			
Oustalet's Sunbird	<i>Cinnyris oustaleti</i>	+		+	
*Ludwig's Double-collared Sunbird	<i>Cinnyris ludovicensis</i>	+	+		+
Purple-banded Sunbird	<i>Cinnyris bifasciatus</i>	+			
African Yellow White-eye	<i>Zosterops senegalensis</i>	+	+		
Eastern Black-headed Oriole	<i>Oriolus larvatus</i>	+			+
Mackinnon's Shrike	<i>Lanius mackinnoni</i>	+			
Black-backed Puffback	<i>Dryoscopus cubla</i>				+
Pink-footed Puffback	<i>Dryoscopus angolensis</i>	+	+		
*Gabela Bush-shrike	<i>Laniarius amboimensis</i>	+			
Orange-breasted Bush-shrike	<i>Telophorus sulfureopectus</i>	+	+		+
Perrin's Bush-shrike	<i>Telophorus viridis</i>	+	+		
*Monteiro's Bush-shrike	<i>Malaconotus monteiri</i>	+			
*Gabela Helmet-shrike	<i>Prionops gabela</i>				
Square-tailed Drongo	<i>Dicrurus ludwigii</i>	+			
Thick-billed Weaver	<i>Amblyospiza albifrons</i>	+	+		
Black-necked Weaver	<i>Ploceus nigricollis</i>	+	+		
Dark-backed (Forest) Weaver	<i>Ploceus bicolor</i>	+	+		
Brown-capped Weaver	<i>Ploceus insignis</i>	+			
Grey-headed Nigrita	<i>Nigrita canicapilla</i>	+			
Red-faced Crimson-wing	<i>Cryptospiza reichenovii</i>	+			
Red-headed Bluebill	<i>Spermophaga ruficapilla</i>	+			
*Pale-billed Firefinch	<i>Lagonosticta landanae</i>	+			
Grey Waxbill	<i>Estrilda perreini</i>	+	+		
Yellow-bellied Waxbill	<i>Estrilda quartinia bocagei</i>			+	
Black-and-white Mannikin	<i>Spermestes bicolor</i>	+	+	+	
Magpie (Pied) Mannikin	<i>Spermestes fringilloides</i>	+			
Black-faced Canary	<i>Serinus capistratus</i>	+	+	+	
Total		98	40	18	21

References

- Bibby, C. J., Collar, N. J., Crosby, M. J., Heath, M. F., Imboden, C., Johnson, T. H., Long, A. J., Stattersfield, A. J. and Thirgood, S. J. (1992) *Putting biodiversity on the map: priority areas for global conservation*. Cambridge, U.K.: International Council for the Conservation of Birds.
- BirdLife International (2000) *Threatened birds of the world*. Barcelona and Cambridge, U.K.: Lynx Edicions and BirdLife International.
- Braun, R. H. (1956) Beitrag zur Biologie von *Xenocopsychus ansorgei* Hartert. *J. Orn.* 97: 41–43.
- Chapin, J. P. (1954) The birds of the Belgian Congo. Part 4. *Bull. Amer. Mus. Nat. Hist.* 75B: 1–846.
- Chappuis, C. (2000) *African bird sounds* [15 CDs]. Paris: Société d'Etudes Ornithologiques de France.
- Charif, R. A., Mitchell, S. and Clark, C. W. (1995). *Canary 1.2 user's manual*. Ithaca: Cornell Laboratory of Ornithology.
- Collar, N. J. and Stuart, S. N. (1985) *Threatened birds of Africa and related islands*. Cambridge, U.K.: International Council for the Conservation of Birds.
- Dean, W. R. J. (2000) *The birds of Angola: an annotated checklist*. BOU Checklist 18. Tring, U.K.: British Ornithologists' Union.
- Dean, W. R. J. (2001) Angola. Pp. 71–91 in L. D. C. Fishpool and M. I. Evans, eds. *Important bird areas in Africa and associated islands: priority sites for conservation*. Newbury and Cambridge, U.K.: Pisces Publications and BirdLife International.
- Dowsett-Lemaire, F. (1990) Eco-ethology, distribution and status of Nyungwe Forest birds (Rwanda). *Tauraco Res. Rep.* 3: 31–85.
- Dowsett-Lemaire, F. (1997) The avifauna of Odzala National Park, northern Congo. *Tauraco Res. Rep.* 7: 15–48.
- Fotso, R., Dowsett-Lemaire F., Dowsett R. J., Cameroon Ornithological Club, Scholte P., Languy M. and Bowden C. (2001). Cameroon. Pp. 133–159 in L. D. C. Fishpool and M. I. Evans, eds. *Important bird areas in Africa and associated islands: priority sites for conservation*. Newbury and Cambridge, U.K.: Pisces Publications and BirdLife International.
- Fry, C. H., Keith, S. and Urban, E. K. (2000) *The birds of Africa Vol. VI*. London: Academic Press.
- Hall, B. P. (1960) The faunistic importance of the scarp of Angola. *Ibis* 102: 420–442.
- Hall, B. P. and Moreau, R. E. (1970) *An atlas of speciation in African passerine birds*. London: Trustees of the British Museum (Natural History).
- Hawkins, F. (1993) An integrated biodiversity conservation project under development: the ICBP Angola Scarp project. *Proc. VIII Pan-Afr. Orn. Congr.* 279–284.
- Keith, S., Urban, E.K. and Fry, C.H. (1992) *The birds of Africa Vol. IV*. London: Academic Press.
- Stuart, S. N. and Jensen, F. P. (1986) The status and ecology of montane forest bird species in western Cameroon. Pp. 38–105 in S. N. Stuart, ed. *Conservation of Cameroon montane forests*. Cambridge, U.K.: ICBP.
- Thorpe, W. (1972) Duetting and antiphonal song in birds. *Behaviour Suppl.* 18: 1–197.
- Urban, E. K., Fry, C. H. and Keith, S. (1997) *The birds of Africa Vol. V*. London: Academic Press.
- Williams, E. (1998) Green-breasted Bush-shrike *Malaconotus gladiator* and its relationship with Monteiro's Bush-shrike *M. monteiri*. *Bull. Afr. Bird Club* 5: 101–104.

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Received 3 June 2003; revision accepted 24 June 2004