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Altitudinal distribution of birds in Mukowa primary forest, Irangi area, eastern Democratic Republic of Congo

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Summary

In three adjacent 100 m altitude bands, from 800 to 1100 m, in Mukowa primary forest, Irangi area, I recorded 21 new species for the Irangi area, bringing the number of bird species known there to 201. Ten species are listed that were encountered outside their known altitudinal range for Uganda and Congo Democratic Republic.

Resumé

Distribution altitudinale des oiseaux dans la forêt primaire de Mukowa, milieu d'Irangi, est de la République Démocratique du Congo. Dans trois adjacentes bandes altitudinales de 100 m, entre 800 m et 1100 m dans la forêt primaire de Mukowa, localité d'Irangi, j'ai identifié 21 nouvelles espèces pour la région d'Irangi. Ceci ramène le nombre d'espèces d'oiseaux connues dans cette localité à 201 espèces. Dix espèces sont listées en dehors des limites altitudinales connues de l'Uganda et de la République Démocratique du Congo.

Introduction

Mukowa primary forest is a part of Irangi Forest, which is described by Kizungu (2001). It belongs to the Albertine Rift Sub-Region. The status of birds along the Albertine Rift is not well known (Dowsett 1985, Prigogine 1985, Collar & Stuart 1988) and the patterns of distribution have not been related to environmental factors. Work on Irangi birds has comprised surveys in the forests and savanna (Wilson & Catsis 1990, Kizungu 1996, Kizungu & Beyers 1994, Kizungu *et al.* 1998, Kizungu

2001) rather than ecological study. In this paper I investigate the altitudinal range of the bird species found in the Irangi area at higher altitudes than in Kizungu (2001).

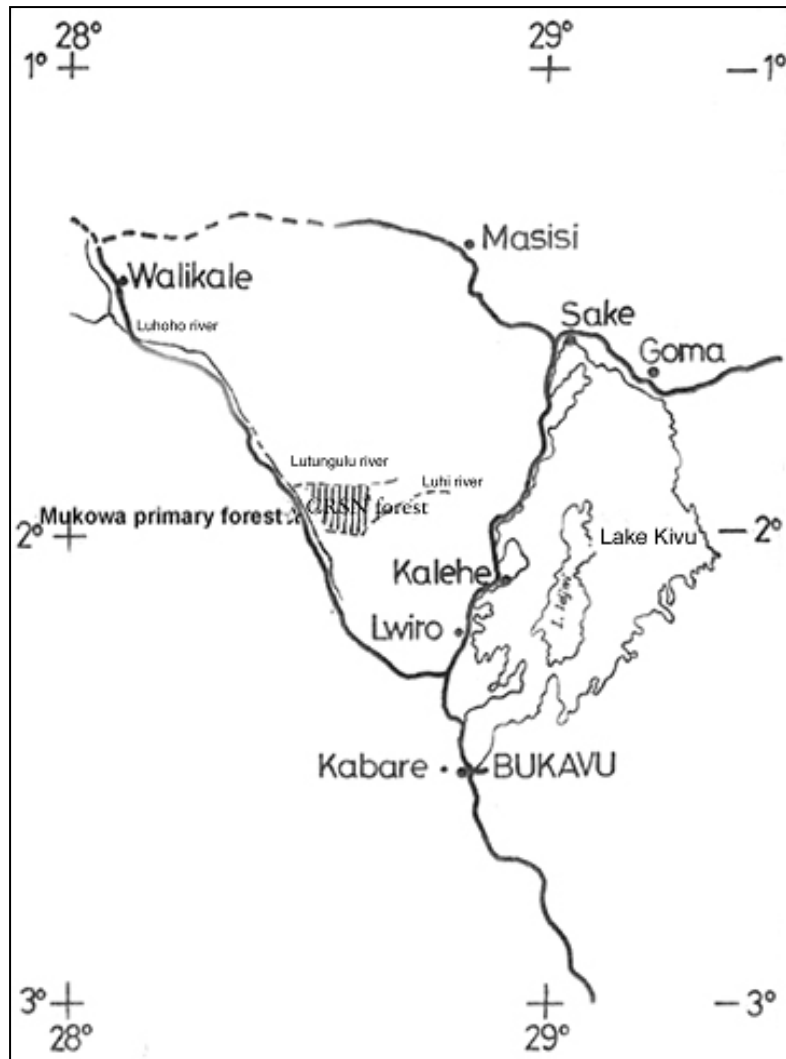


Figure 1. Mukowa primary forest on the west side of the Bukavu-Walikale-Kisangani road, opposite the CRSN forest reserve.

Mukowa primary forest (altitude 830–1100 m, 1°53'S, 28°27'E) is a private forest situated 108 km NNE of Bukavu on the west side of the Bukavu-Walikale road, between Bunyakiri and Hombo (Fig. 1). Mukowa is a *c.* 4 km² fragment of primary forest which forms part of the Centre de Recherche en Sciences Naturelles forest reserve of *c.* 15 km². The forest fragmentation is due to the increasing human population, most settlements being at the foot of hills where people can find water from rivers and farm. New areas of land are being claimed and large trees felled for building and farming. Smaller trees are cut for firewood and bushes cleared.

I chose a hill which was both accessible (many areas being unsafe due to war in the region) and where I could find at least three altitudinal bands of at least 100 m width, which might produce avifaunal differences as proposed by Prigogine (1980). The slope in Irangi Forest goes from 700 m in the east (near the main Bukavu-Walikale road) to 1500m in the west (away from the main road in the deeper forest). Three altitudinal bands were studied: 800–900 m (1°53'4''S, 28°26'49''E); 900–1000 m (1°53'12''S, 28°26'59''E); 1000–1100 m (1°53'24''S, 28°27'4''E). A 102-m transect line comprising seven 12-m mist-nets and three 6-m nets was oriented N–S in each altitudinal band while a 1-km transect line of point counts was set E–W across the altitudinal range (from lower to higher altitude). Four months of field work were carried out: Dec 2002, Jan 2003, Mar 2003 and in Sep–Oct 2003. Nets were opened from dawn to 16h00 for four net-days, when they were moved to the next altitude band. Identifications of captured birds were made with reference to Urban *et al.* (1997), Stevenson & Fanshawe (2002) and Perlo (1995).

Point counts followed the protocol of Kanyamibwa (1992) and Bibby *et al.* (1998). Using a pedometer, I walked 1 km on a trail from east to west. Six points were established at 200m intervals along the transect, where I stopped for 14 min. For the last 10 min. of the 14, I identified birds seen or heard within an estimated radius of 25 m of the point, and additional birds (mostly heard) beyond 25 m. Eighteen points were counted in Dec 2002, 18 in Jan 2003, six in Mar 2003 and 72 in Sep–Oct 2003: a total of 114 points.

I also relied heavily on general observation including tape recording and playback, and I devoted most of my time between net checks looking for species along the trails and along the forest edge, trying to make sure that I had covered all of the habitat available.

Results

A total of 1024 individuals of 71 species were inventoried during four months of fieldwork, of which 225 individuals were captured and 799 observed at point counts. The lowest altitude band (800–900 m) produced the highest number of both species and individuals netted while 900–1000 m had the highest number of both species and individuals recorded from point counts. Table 1 includes only species recorded outside the altitudinal range given for Congo Democratic Republic (Prigogine 1975,

1980) and Uganda (or E Africa generally) (Stevenson & Fanshawe 2002), as well as species not yet recorded for Irangi (Wilson & Catsis 1990, Kizungu & Beyers 1994, Kizungu 1996, 2001).

Table 1. New species (¹) or new altitudinal records (²) at Mukowa forest. Numbers are birds seen or heard and (in parentheses) netted.

	800–900	900–1000	1000–1100
Anatidae			
<i>Pteronetta hartlaubi</i> Hartlaub's Duck ²	7		
Accipitridae			
<i>Urotriochis macrourus</i> Long-tailed Hawk ^{1,2}		3	
Columbidae			
<i>Turtur brehmeri</i> Blue-headed Wood Dove ¹		(2)	
<i>Streptopelia capicola</i> Ring-necked Dove ¹		1	
Trogonidae			
<i>Apaloderma narina</i> Narina's Trogon ¹		2	3
Alcedinidae			
<i>Alcedo leucogaster</i> White-bellied Kingfisher ¹	4(4)	3(1)	2
Bucerotidae			
<i>Tropicranus albocristatus</i> White-crested Hornbill ²	1	2	3
<i>Bycanistes cylindricus</i> White-thighed Hornbill ²	3	3	1
<i>Ceratogymna atrata</i> Black-casqued Walled Hornbill ²	8	9	8
Picidae			
<i>Sasia africana</i> African Piculet ²	(1)		(1)
<i>Campethera nivosa</i> Buff-spotted Woodpecker ¹	(1)		(1)
<i>Picoides obsoletus</i> Brown-backed Woodpecker ¹		2	
Pycnonotidae			
<i>Phyllastrephus icterinus</i> Icterine Greenbul ¹	4(2)	(3)	(2)
<i>Phyllastrephus xavieri</i> Xavier's Greenbul ¹	(1)		(4)
<i>Criniger chloronotus</i> Eastern Bearded Greenbul ²	1(1)		
Turdidae			
<i>Stiphronis erythrothorax</i> Forest Robin ¹	(1)	(1)	(1)
<i>Alethe poliocephala</i> Brown-chested Alethe ¹			(1)
<i>A. diademata</i> Fire-crested Alethe ¹	(3)	(2)	1(3)
<i>Neocossyphus poensis</i> White-tailed Ant Thrush ¹	(1)	(2)	
<i>N. rufus</i> Red-tailed Ant Thrush ¹	3(2)	6(1)	2
Sylviidae			
<i>Sylvietta brachyura</i> Northern Crombec ¹	1		
<i>Apalis cinerea</i> Grey Apalis ¹		(1)	
Muscicapidae			
<i>Muscicapa olivascens</i> Olivaceous Flycatcher ^{1,2}	(1)		

	800–900	900–1000	1000–1100
Monarchidae			
<i>Terpsiphone bedfordi</i> Bedford's Paradise Flycatcher ²	15(7)	19(4)	12(1)
Malaconotidae			
<i>Nicator vireo</i> Yellow-throated Nicator ¹	(1)		
Ploceidae			
<i>Malimbus coronatus</i> Red-crowned Malimbe ²		3	1
Estrildidae			
<i>Nigrita bicolor</i> Chestnut-breasted Negrofinch ¹	(1)		
<i>Parmoptila woodhousei</i> Woodhouse's Antpecker ¹	1(2)	(2)	
<i>Mandingoa nitidula</i> Green-backed Twinspot ¹		(1)	

Discussion

Twenty-one species had not been included by Wilson & Catsis (1990), Kizungu (1996, 2001) or Kizungu & Beyers (1994), bringing the number of bird species now known in the Irangi area to 201. Some species might have a restricted altitudinal range as indicated in the table.

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