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Birds of Irangi Forest, Albertine Rift, Democratic Republic of Congo

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Summary

I document 116 bird species recorded in the Irangi area, Jan–Jun 1996, including 67 additions to the Irangi avifauna. The total number of bird species now known from Irangi is about 180. Most birds recorded are forest-dependent (forest specialists or generalists). The 40% coefficient of similarity between the birds of primary and secondary forests is caused mainly by primary forest birds entering clearings to feed, and by forest fragmentation. Of the 116 species recorded, 76 are also found in Budongo forest (Albertine Rift, NW Uganda). Conservation issues in the area are also discussed.

Résumé

Les oiseaux du Forêt d'Irangi, Rift Albertin, République Démocratique du Congo. Les 116 espèces d'oiseaux inventoriées à Irangi de janvier à juin 1996, dont 67 s'ajoutent à cette avifaune, sont ici annotées. Le nombre total d'espèces actuellement connues à Irangi est d'environ 180. La plupart dépendent de la forêt comme spécialistes ou généralistes. Le coefficient de similarité de 40% entre les espèces de forêt secondaire et primaire est dû au fait que les espèces de forêt primaire vont dans les clairières pour se nourrir, et de la fragmentation de la forêt. Des 116 espèces inventoriées, 76 se trouvent également dans la forêt de Budongo (Rift Albertin, NO de l'Ouganda). Je fournis enfin des données sur les moyens de conserver ces espèces.

Introduction

Irangi Forest is close to Kahuzi-Biega National Park, eastern Democratic Republic of Congo (DRC), and belongs to the Albertine Rift Sub-Region (Fig.1). The sub-region

is an endemic bird area and important for many other endemic taxa (Collar & Stuart 1988, Bibby *et al.* 1992). The high diversity of species and habitats is due to the biogeographic position of the Albertine Rift, a transition zone between the Guineo-congolian, the Lake Victoria mosaic and the Zambezi region (White 1983). Two important factors seem to have played a significant role in the distribution and composition of biodiversity in this sub-region: natural events (including the dry Pleistocene period, eruptions and altitude barriers) and high human population density (Hamilton 1976, Diamond & Hamilton 1980, Harcourt & Fossey 1981). 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 the environmental factors mentioned above. Although species lists are available for most of the Albertine forests, these are not complete (Britton 1980), partly due to identification problems (Dranzoa 1997).

Most work on Irangi birds has comprised only surveys in the forests and savanna (Wilson & Catsis 1990, Kizungu 1996, Kizungu & Beyers 1994, Kizungu *et al.* 1998) rather than ecological study. This paper attempts to determine the habitats used by the bird species found in the Irangi area and discusses their conservation.

Study Area

Irangi station (alt. 700–1200 m, 1°59'S, 28°27'E) is situated 110 km NNE from Bukavu on the Bukavu-Walikale-Kisangani road, between Bunyakiri and Hombo. It has a high rainfall all year, with a minimum in Jan–Feb; the mean temperature is *c.* 25°C. It is essentially an equatorial rainforest. The Irangi area is characterized by the presence of fog each morning until about 8h00, which affects bird activities.

The primary forest at Irangi is characterized by the canopy trees *Gilbertiodendron dewevrei*, *Julbernardia sereti*, *Cynometra alexandri* and *Piptadeniastrum africanum*, with *Puelia ciliata* and *Aframomum* spp. dominant in the herb layer and the shrub stratum characterized by *Sapium ellipticum*, *Scaphopetalum thonneri* and *Thomandersia laurifolia* (Kizungu & Beyers 1994). The secondary forest is dominated by the trees *Uapaca guineensis* and *Musanga cecropioides*, by the shrubs and lianas *Macaranga spinosa*, *Albizia gummifera*, *Harungana madagascariensis*, *Alchornea cordifolia* and *A. floribunda*, with understorey plants including *Costus afer*, *Sporobolus* sp., *Panicum* sp. and *Setaria* sp.. Within the secondary forest are primary forest patches comprising tree species which characterize primary forest relicts, such as *Antiaris welwitschii*, *Canarium schweinfurthii*, *Celtis dubia* and *Gilbertiodendron dewevrei*. In the open areas are fish-rearing ponds, which attract some additional bird species.

The Irangi area exhibits forest fragmentation. The people living near the forest collect lianas and wood for house construction, and hunt game. Among the rich biodiversity of the forest other than the birds, are many plants of the Guineo-

congolian Region (e.g. *Gilbertiendron dewevrei*, *Musanga cecropioides*, *Macaranga spinosa*) and others endemic to the eastern DRC (e.g. *Polyscias kivuensis*). Important animal species found within the area include primates characteristic of lowlands (e.g. *Cercopithecus ascanius*) and the otter shrew *Potamogale velox*.

Methods

The study was carried out in the Reserve Forest of the Centre de Recherche en Sciences Naturelles (CRSN-Lwiro) in Irangi. All observations were in lowland habitats, between 700 and 950 m altitude (cf. Prigogine 1975). North-south transects, of 3 km in primary forests and 5 km in secondary forest, were walked on ten days per month in the six months Jan-June 1996. Transect times were between 6h00 and 12h00 in primary and from 14h00 in secondary on the first day, and then in reverse order on the second day. I recorded all birds seen or heard in four habitat types: primary forest, secondary forest, fishponds, air. Birds were identified using Mackworth-Praed & Grant (1973), Williams & Arlott (1989), Lippens & Wille (1976), Sinclair *et al.* (1993) and Perlo (1995).

Results

The 116 species recorded in Irangi are presented below. Of these, 69 species occurred in secondary forest (SF: 58%), 49 in primary forest (PF: 42%), 12 in the fishponds (P: 10%), and 10 in the air (A: 8%). Species known or suspected to be forest-dependent in the region (Matthews 1996) are indicated by the following abbreviations in parentheses: (FG) forest generalists; (FS) forest specialists; (FGL) lowland forest generalists; (FSL) lowland forest specialists. Palearctic migrants are indicated by PM. Numbers in parentheses indicate the months when observations were made. Abundance is indicated by: c (common: at least one individual recorded in 5-6 months); f (frequent: at least one individual recorded in 3-4 months); u (uncommon: at least one individual recorded in 1-2 months). * indicates not recorded by Wilson & Catsis (1990), Kizungu & Beyers (1994) or Kizungu (1996). B indicates species recorded in Budongo Forest by Matthews (1996).

Podicipedidae

Tachybaptus ruficollis Little Grebe. P(1-4)f* B.

Phalacrocoracidae

Phalacrocorax africanus Long-tailed Shag. P(1,3-5)f B.

Ardeidae

Bubulcus ibis Cattle Egret. A(1-4)f* B.

Egretta garzetta Little Egret. A(1–2)u*.

E. intermedia Yellow-billed Egret. A(1)u*.

Ardea purpurea Purple Heron. A(3–4)u*.

Threskiornithidae

Bostrychia rara Spot-breasted Ibis. P(1)u*.

Anatidae

Pteronetta hartlaubii Hartlaub's Duck. P(1–4)f.

Accipitridae

Pernis apivorus Honey Buzzard. SF(1,4–5)f* B.

Gypohierax angolensis Palm-nut Vulture. SF(1,3–4)f B.

Polyboroides radiatus Harrier Hawk. SF(4)u* B.

Accipiter tachiro African Goshawk. SF(2)u*.

Kaupifalco monogrammicus Lizard Buzzard. SF(1)u* B.

Buteo vulpinus Common Buzzard. PM,SF (1,4–5)f*.

Lophaetus occipitalis Long-crested Hawk-Eagle. SF(1,4–5)f*B.

Falconidae

Falco cuvierii African Hobby. (FG) PF(4)u* B.

Scolopacidae

Tringa ochropus Green Sandpiper. PM, P(1,4)u* B.

Actitis hypoleucos Common Sandpiper. PM, P(1,4)u.

Columbidae

Columba unicincta Grey Wood-Pigeon. (FS) SF(4)u* B.

C. iriditorques Western Bronze-naped Pigeon. (FG) PF,SF (3–5)f.

Turtur afer Red-billed Wood-Dove. SF(1,3–4)f* B.

T. tympanistris Tambourine Dove. (FG) SF(3)u* B.

Treron australis Green Fruit-Pigeon. (FG) PF,SF (3–4,6)f B.

Psittacidae

Psittacus erithacus Grey Parrot. (FS) SF(1–6)c B.

Musophagidae

Corythaeola cristata Great Blue Turaco. (FG) SF(1–3,5–6)f B.

Cuculidae

Clamator levaillantii Levaillant's Cuckoo. PM , PF(4)u* B.

Cuculus clamosus Black Cuckoo. (FS) PF,SF(3)u* B.

Chrysococcyx cupreus Emerald Cuckoo. (FG) SF,PF (1–6)c B.

C. flavigularis Yellow-Throated Green Cuckoo. (FG) PF(6)u*.

C. klaas Klaas's Cuckoo. SF(1–3)f*.

Ceuthmochares aureus Yellowbill. (FG) PF(3)u*.

Centropus monachus Blue-headed Coucal. SF(1–6)c B.

Apodidae

Rhaphidura sabini Sabine's Spinetail. (FS) PF(5)* B.

Neafrapus cassini Cassin's Spinetail. (FSL) A(2–4)f B.

Cypsiurus parvus Palm Swift. SF(2)u* B.

Apus apus Eurasian Swift. PM, A(1)u B.

A. barbatus African Black Swift. A(1)u.

A. horus Horus Swift. A(1)u*.

Alcedinidae

Alcedo quadibrachys Shining Blue Kingfisher. (FG) P(4)u* B.

Ceyx pictus Pygmy Kingfisher. P(4,6)u* B.

Halcyon badia Chocolate-backed Kingfisher. (FSL) PF(3,5)u* B.

H. malimbica Blue-breasted Kingfisher. (FG) PF(4)u* B.

H. senegalensis Woodland Kingfisher. P(1–4,6)c* B.

Coraciidae

Eurystomus gularis Blue-throated Roller. (FG) PF(5)u* B.

Bucerotidae

Tropicranus albocristatus White-crested Hornbill. (FG) PF(3,5)u.

Tockus camurus Red-billed Dwarf Hornbill. (FG) PF(1)u.

T. fasciatus Pied Hornbill. (FG) SF(1–6)c B.

Bycanistes fistulator Piping Hornbill. (FG) PF,SF (2–3,5)u B.

B. cylindricus White-thighed Hornbill. (FG) PF,SF (1–3,6)f B.

Ceratogymna atrata Black-casqued Wattled Hornbill. (FS) PF(1–6)c.

Lybiidae

Pogoniulus scolopaceus Speckled Tinkerbird. (FS) PF,SF (1–6)c B.

P. subsulphureus Yellow-throated Tinkerbird. (FS) PF,SF (1–6)c B.

P. atroflavus Red-rumped Tinkerbird. (FS) SF(1,4–5)f*.

Tricholaema hirsuta Hairy-breasted Barbet. (FS) PF,SF (1–3,6)f.

Indicatoridae

Indicator maculatus Spotted Honeyguide. (FS) PF(3)u*.

Picidae

Campethera caillauti Green-backed Woodpecker. (FG) SF(3)u.

C. caroli Brown-eared Woodpecker. (FG) PF(5)u B.

Hirundinidae

Psalidoprocne nitens Square-Tailed Roughwing. PF(3,5–6)f.

Pseudhirundo griseopyga Grey-rumped Swallow. PF,SF (5)u.

Hirundo nigrita White-throated Blue Swallow. A(1)u.

Motacillidae

Motacilla capensis Cape Wagtail. P(1–4)f.

M. clara Mountain Wagtail. P(1,3)u.

M. aguimp African Pied Wagtail. P(1–4,6)c.

Pycnonotidae

Andropadus virens Little Greenbul. (FG) PF,SF(4)u B.

A. latirostris Yellow-whiskered Bulbul. (FG) PF,SF (2,4)u B.

Ixonotus guttatus Spotted Bulbul. (FS) SF(4–5)u* B.

Chlorocichla flavicollis Yellow-throated Bulbul. SF(2)u B.

Criniger calurus Red-tailed Bulbul. (FS) PF(1–2)u* B.

Pycnonotus barbatus Common Bulbul. SF(1–6)c B.

Turdidae

Stizorhina fraseri Fraser's Ant-Thrush. (FS) PF(2–4,6)f* B.

Sylviidae

Eremomela badiceps Brown-crowned Eremomela. (FGL) SF(3–4,6)f B.

Sylvietta virens Green Crombec. (FG) SF(4)u B.

S. denti Lemon-bellied Crombec. (FSL) SF(1)u* B.

Hylia prasina Green Hylia. (FG) PF,SF (2,5–6)f.

Prinia subflava West African Prinia. SF(4–6)f* B.

Apalis nigriceps Black-capped Apalis. (FSL) SF(5)u*B.

A. rufogularis Buff-throated Apalis. (FS) PF,SF (2–4)f B.

Camaroptera brachyura Grey-backed Camaroptera. PF,SF (1–4,6)c B.

Muscicapidae

Fraseria ocreata Forest Flycatcher. (FG) PF,SF(3)u B.

Muscicapa cassini Cassin's Grey Flycatcher. (FG) SF(1–5)c B.

M. sethsmithi Yellow-footed Flycatcher. (FS) PF(2–3,5)f* B.

M. infuscata Sooty Flycatcher. (FG) SF(4)u*.

Platysteiridae

Dyaphorophya castanea Chestnut Wattle-eye. (FS) PF,SF(1)u B.

Monarchidae

Erythrocerus mccallii Chestnut-capped Flycatcher. (FS) PF(2–3)u* B.

Terpsiphone viridis African Paradise Flycatcher. PF,SF(3)u B.

T. bedfordi Bedford's Paradise Flycatcher. (FS) PF(2–3,5)f.

Nectariniidae

Anthreptes rectirostris Green Sunbird. (FS) SF(4)u* B.

A. collaris Collared Sunbird. (FG) SF(1,3,5)f B.

Nectarinia seimundi Little Olive Sunbird. (FGL) PF(3)u B.

N. olivacea Olive Sunbird. (FS) PF,SF (2,4)u B.

N. verticalis Green-headed Sunbird. (FG) SF(2,3)u* B.

N. cyanolaema Blue-throated Sunbird. (FS) SF(5)u* B.

N. senegalensis Scarlet-chested Sunbird. (FG) SF(5)u* B.

N. chloropygia Olive-bellied Sunbird. (FG) SF(1–4)f B.

N. superba Superb Sunbird. (FGL) SF(1,3–4)f* B.

Oriolidae

Oriolus brachyrhynchus Black-headed Oriole. (FS) PF,SF (1,3–6)f B.

Malaconotidae

Dryoscopus senegalensis Pink-footed Puffback. (FG) SF(1)u*.

Nicator chloris Common Nicator. (FG) SF(1–2,4–6)f B.

Dicruridae

Dicrurus atripennis Shining Drongo. (FS) PF(1)u.

Corvidae

Corvus albus Pied Crow. SF(1,3–5)f.

Sturnidae

- Onychognatus fulgidus* Forest Chestnut-winged Starling. (FS) PF,SF (1,3–4,6)f B.
Lamprotornis purpureiceps Purple-headed Glossy Starling. (FG) PF,SF (1–4,6)c B.
Cinnyricinclus leucogaster Amethyst Starling. SF(3)u B.

Ploceidae

- Ploceus tricolor* Yellow-mantled Weaver. (FS) PF(3)u* B.
P. preussi Preuss's Golden-backed Weaver. PF(3)u*.
Malimbus malimbicus Crested Malimbe. (FG) PF(3)u B.
M. rubricollis Red-collared Malimbe. (FS) PF(6)u* B.
M. coronatus Red-crowned Malimbe. (FG) PF(1)u*.

Estrildidae

- Nigrita canicapilla* Grey-crowned Negrofinch. (FG) SF(4–5)f B.
N. luteifrons Pale-fronted Negrofinch. SF(4)u.
N. bicolor Chestnut-breasted Negrofinch. (FSL) SF(1–2,4–5)f B.
N. fusconota White-breasted Negrofinch. (FG) SF(4–5)u* B.
Estrilda melpoda Orange-cheeked Waxbill. SF(1–6)c.
E. atricapilla Black-headed Waxbill. SF(4–6)f.
Lonchura bicolor Red-backed Mannikin. SF(1–2)u.
L. fringilloides Pied Mannikin. SF(3–4)u.

In primary forest, *Chrysococcyx cupreus* and *Pogoniulus subsulphureus* were the commonest species, and they were inventoried during all 6 months in both primary and secondary forests. Of the bird species found only in primary forest, *Ceratogymna atrata* was the most conspicuous. Among the 49 primary forest species, 46% were forest generalists, 32% forest specialists, 6% lowland forest specialists, and 2% lowland forest generalists. The remainder include widespread species and visitors from other habitats, including Palaearctic migrants.

In secondary forest, *Pycnonotus barbatus* and *Pogoniulus subsulphureus* were the most common species, with records during all six months. Of the 69 secondary forest species, 37% were forest generalists, 19% forest specialists, 4% lowland forest specialists and 3% lowland forest generalists.

Among the 12 fishpond species, *Motacilla aguimp* and *Halcyon senegalensis* were the most common species. Only *H. senegalensis* was recorded during all six months.

In the air, *Apus horus* and *Bubulcus ibis* were the most common of the ten species recorded, which included one lowland forest generalist.

With 49 bird species inventoried only in primary forest, 69 in secondary forest and 24 in both primary and secondary forests, the Sorensen coefficient of similarity (Bachelier 1963) was 40%.

Discussion

Among the species inventoried, 67 had not been included by Wilson & Catsis (1990), Kizungu & Beyers (1994) or Kizungu (1996). Of the 116 species recorded in the Irangi area, 76 are also found in Budongo Forest.

In Irangi, some Palearctic migrants, such as *Apus apus*, winter above the forest, while others concentrate along forest edges, clearings, in secondary forest and around villages and roads. They are thus somewhat favoured by the destruction of the primary forest which has probably allowed many of them to extend their winter range, for instance *Pernis pivorus*.

The African Peacock *Afropavo congensis*, previously reported by the local Tembo people (Kizungu *et al.* 1998), has been extinguished from Irangi forest due to severe damage and heavy hunting. However, *Alcedo quadibrachys* and *Muscicapa cassini* are still observed in Irangi (700–950 m), although they were thought extinguished from Nyungwe forest (Rwanda) by Dowsett-Lemaire (1990). *Estrilda atricapilla* and *Nigrita canicapilla* were observed at relatively low altitudes in Irangi (700–950 m), thus extending their formerly known altitudinal range (Dowsett-Lemaire 1990, Perlo 1995) down to 700 m.

Among the hornbills listed by Kemp (1979) as African lowland forest endemics, four (*Tockus fasciatus*, *Tropicranus albocristatus*, *Bycanistes fistulator*, *Ceratogymna atrata*) have been found in Irangi at 700–1000 m, while only one (*Bycanistes subcylindricus*: pers. obs.) has been found at Kahuzi-Biega (1300–3300 m).

The 40% coefficient of similarity between primary and secondary forest birds was caused mainly by forest birds entering clearings for feeding (Kizungu 1996). Further, because of the destruction of primary forest, some truly primary forest species, like *Ceratogymna atrata*, *Corythaeola cristata*, *Psittacus erithacus*, *Terpsiphone bedfordi* and *Tropicranus albocristatus*, have also been inventoried in the secondary forest.

Since most Irangi birds are forest specialists, generalist or visitors, action to conserve the forest is essential because the current intense and uncontrolled destruction may cause all these birds to disappear. Because of forest destruction, we lack recent information about the status of the rare species and we need more surveys to assess their situation in the study area. However, some of the following species are potentially threatened: the Congo endemic *Terpsiphone bedfordi*, the hornbills *Tockus fasciatus*, *Bycanistes fistulator*, *Tropicranus albocristatus* and *Ceratogymna atrata*, and all species that suffer from trade (*Psittacus erithacus*, *Corythaeola cristata*) or hunting (*Ceratogymna atrata*, *Bycanistes* spp., *Corythaeola cristata*). In many parts of Irangi, the large hornbills have completely disappeared, mainly due to hunting. Hunting laws usually ignore the breeding seasons of forest birds and are rarely (if ever) enforced. It will be difficult to stop or even reduce hunting because of reliance on bird hunting for food and income. The trade in wild caught birds is also important in Irangi.

As stated by Thiollay (1985), the most efficient way to protect all the concerned species is to set aside large areas of undisturbed habitat or to let them recover if they have been exploited. Where only exploited forest can be preserved, it will be better to set apart some tiny undisturbed patches (the least accessible), rather than promote selective exploitation throughout. In cultivated areas, the only way to maintain many forest species is to leave as many big trees as possible, scattered through the plantations, as well as woodlots and larger patches of forest between relatively small clearings.

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